

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

Case PGR2024-00050
Patent No. 11,920,339

**PATENT OWNER'S RESPONSE TO THE PETITION FOR POST
GRANT REVIEW**

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2002	Curriculum Vitae of Richard Kaczkowski
2003	U.S. Patent No. 11,142,902
2004	U.S. Patent No. 11,225,787
2005	U.S. Publication No. 2021/0396000
2006	U.S. Publication No. 2022/0243455
2007	DGT/DGHT Fire Wall Hangers
2008	“Mass Timber and Wood Framing,” Architectural Record Magazine, McGraw Hill Construction, November 2012, pp. 165-169
2009	Top Flange Hangers LBV/BA/B/HB
2010	Merriam-Webster’s Collegiate Dictionary – Definition of Bound
2011	New Oxford American Dictionary – Definition of Bound
2012	U.S. Patent No. 11,065,667
2013	U.S. Publication No. 2019/0136520
2014	U.S. Patent No. 4,560,301
2015	U.S. Patent No. 6,112,495
2016	Simpson Strong-Tie: New Fire Wall Hangers Optimized for Power Nailers
2017	Simpson Strong-Tie: DGHT Top-Flange Fire Wall Hanger

2018	Simpson Strong-Tie: DGT Top-Flange Fire Wall Hanger
2019	Simpson Strong Tie Co., Inc. Design No. SST/WPCF 120-01 Fire Resistant Joist Hanger DG Series Fire Wall Hanger
2020	Simpson Strong-Tie: Your Go-To, Load-Rated Fire Wall Hanger
2021	Simpson Strong-Tie: Allowable Loads for the DG and DGH hanger installed on walls over wood structural panel sheathing
2022	Simpson Strong-Tie: DGH Fire Wall Hanger Now Available Skewed or with Offset Top Flange
2023	Simpson Strong-Tie: DG/DGB/DGH Fire Wall Hangers
2024	Merriam-Webster's Collegiate Dictionary – Definition of Outwardly
2025	New Oxford American Dictionary – Definition of Outward
2026	U.S. Publication No. 2002/0104279
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2043	Structural Design for Fire Safety
2044	Press Releases – MiTek Residential Construction Industry
2045	MiTek Releases FWH Fire Wall Hanger, A New USP Structural Connector Product
2046	USP Structural Connectors 2015-2016 Product Catalog
2047	Wood-Frame House Construction
2048	Proposed Stipulated Protective Order
2049	Amended Protective Order
2050	Second Declaration of Richard Kaczkowski
2051	Declaration of Paul Tucker

2052	Declaration of Tom Irtmer
2053	Declaration of Andrea Baranyk
2054	Expert Report of Michael Alley
2055	Declaration of Dwight J. Duncan, CFA
2056	Declaration of Matt Church
2057	Declaration of Joe Dunkle
2058	Declaration of Ryan Holmes
2059	Declaration of Michael Nelson
2060	Declaration of Chris Horwitz
2061	May 14, 2025 Deposition of William Andrew Fennell
2062	May 25, 2022 Deposition of William Andrew Fennell
2063	October 5, 2022 Deposition of William Andrew Fennell
2064	January 28, 2025 Deposition of Sam Hensen
2065	March 17, 2025 Deposition of Sam Hensen
2066	January 29, 2025 Deposition of Bryan Wert
2067	April 16, 2025 Deposition of Bryan Wert
2068	January 27, 2025 Deposition of Roger Dankel
2069	January 22, 2025 Deposition of Steven Brekke
2070	January 31, 2025 Deposition of Mark Rolf
2071	January 23, 2025 Deposition of Kristi Campbell
2072	January 24, 2025 Deposition of Mike Nelson
2073	Declaration of W. Andrew Fennell in Support of Petitioner's Reply to Patent Owner's Response and

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2087	Simpson Emails Re: DHU vs. USP's FHW (1/2)
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2090	MiTek Emails Re: FWH
2091	USP: FWH Fire Wall Hanger Testing
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2093	MiTek Emails Re: Cantilevered Hanger (Highly Confidential – Prosecution Bar)
2094	Simpson Emails Re: Status of DHU/DHUTF
2095	Simpson Emails Re: New DHT Drywall Hanger – Forecast Estimate
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2097	Simpson Emails Re: Group Field Trial in Baltimore
2098	Simpson Emails Re: USP FWH
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2131	Technical Bulletin: FWH Series Fire Wall Hangers
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2142	Curriculum Vitae of Paul Tucker
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2144	2012 International Building Code: Chapters 6 and 7
2145	2000 International Building Code
2146	FW Hangers Top Mount
2147	1994 Timber Construction Manual
2148	DU-DHU-DHUTF Drywall Hangers
2149	1967 Uniform Building Code

2150	Performance Standard for Wood-Based Structural-Use Panels
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2153	Performance Standard Considerations for I-Joists Used in Residential Floor Construction
2154	Fire Rated Systems
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2162	File History of U.S. Application No. 16/225,517
2163	File History of U.S. Application No. 15/675,409
2164	File History of U.S. Application No. 14/555,049
2165	Simpson Emails Re: Do You Have a Match for This?

Emphasis Added Throughout Unless Indicated Otherwise

I. INTRODUCTION

Simpson's Petition is deficient in many respects and, upon full review of the evidence and argument below, fails to establish the '339 Patent claims are invalid. As admitted by its expert, Mr. Fennell, Simpson's prior art grounds fail to teach multiple key steps of U.S. Patent No. 11,920,339's ("the '339 Patent") independent claims. Simpson cannot, as it does in its Petition, rely solely on expert intuition to fill these gaps. In addition to these failures, Simpson fails to establish that a POSA would be motivated to combine any of the disparate references that were plainly selected with the benefit of hindsight. More concerning, Simpson fails to consider substantial objective indicia of non-obviousness in its own possession that undermine the conclusions it urges the Board to make. This is because, as viewed by Mr. Fennell, *no amount* of objective evidence *could* change his mind about the '339 Patent's validity. This is error and exacerbates the hindsight underlying his opinions.

In response, Columbia presents the Board with Simpson's own documents and communications detailing: Simpson's copying of the '339 Patent's invention; skepticism the '339 Patent's method of installation would work; customer requests and praise for such installation sequence; and market success of its infringing products. As detailed below, Mr. Fennell admits he had this evidence at his disposal

from Simpson—and could have analyzed it—but did not. Mr. Fennell intentionally turns a blind-eye to this evidence as it directly contradicts his opinions.

For its part, MiTek presents detailed substantial objective evidence from customers, industry experts, technical experts, a surveyist, and an economist that substantially weigh in favor of non-obviousness. The '339 Patent claims are distinct from other claims previously considered by the Board and must be evaluated separately. Simpson fails to establish invalidity under § 112, and its incomplete obviousness analysis fails to establish invalidity of the '339 Patent claims under § 103. The Board should find that the challenged claims are not invalid.

II. THE '339 PATENT

Unlike the claims directed to the hanger (i.e., the structure alone) in prior PGRs, the claims here are directed to “[a] *method* of constructing a fire-resistive wall assembly.” EX1001: claim 1. Thus, the present claims not only positively claim the hanger, frame wall, and fire-retardant sheathing, but also *recite a specific sequence of certain steps to form the fire-resistive wall assembly*. EX1001: claim 1.

Specifically, independent claims 1 and 27 recite the steps of “mounting a fire wall hanger [26] on a frame wall [28]” and “cutting an opening [72] into an exterior edge of fire retardant sheathing [34].” EX1001: claims 1, 27; EX2001: ¶¶22-23, 26; EX2051: ¶¶24-25.

requiring the sheathing 34 to be installed” and allows “[t]rade workers ... [to] have *complete access to the wall cavity* to install components without interference from the sheathing 34.” EX1001: 7:67-8:5; EX2001: ¶¶25, 27-28; EX2051: ¶¶27-30.

Thus, the sequence of these specific steps is central to the invention.

III. CLAIM CONSTRUCTION

A. The POSA

The parties largely agree as to the level of skill, with the primary difference being Columbia further specifies work experience as being in: (1) construction connector design, development, or use, (2) drywall construction practices/sequencing, and (3) performance requirements related to fire-rated drywall construction. EX2001: ¶21; EX2051: ¶23.

B. “Bounding”

Claim 1 recites “an edge of the fire retardant sheathing *bounding* the opening.”

Simpson suggests the term “bounding” means to *fully or completely* enclose or confine. Pet: 12, 16-18. But this is not the plain and ordinary meaning of the term. EX2001: ¶¶91-92, 200-202.

The definition of “bounding” is “to set the limits or bounds to,” “to form the boundary of.” EX1035: 5; EX2010: 4; EX2011: 4 (“form[ing] the boundary of”); EX2001: ¶92. This allows for a single-edge to bound an opening—per a dictionary

example: “the ground was bounded by a main road on one side and a meadow on the other.” EX2011: 4; EX2001: ¶¶92, 95-96; EX2051: ¶¶74-77.

Even Simpson uses “bounding” to describe the boundary of only one side of an element (e.g., a partial boundary), not the entire boundary, in the claims of their own patent:

- “a third boundary bend (333) ***bounding*** the central portion (111) of the first body part (20).” EX2012: claims 5, 10.
- “a fourth boundary bend (433) ***bounding*** the central portion (111) of the second body part (220).” EX2012: claims 10, 25.

EX2001: ¶¶93-94, 203.

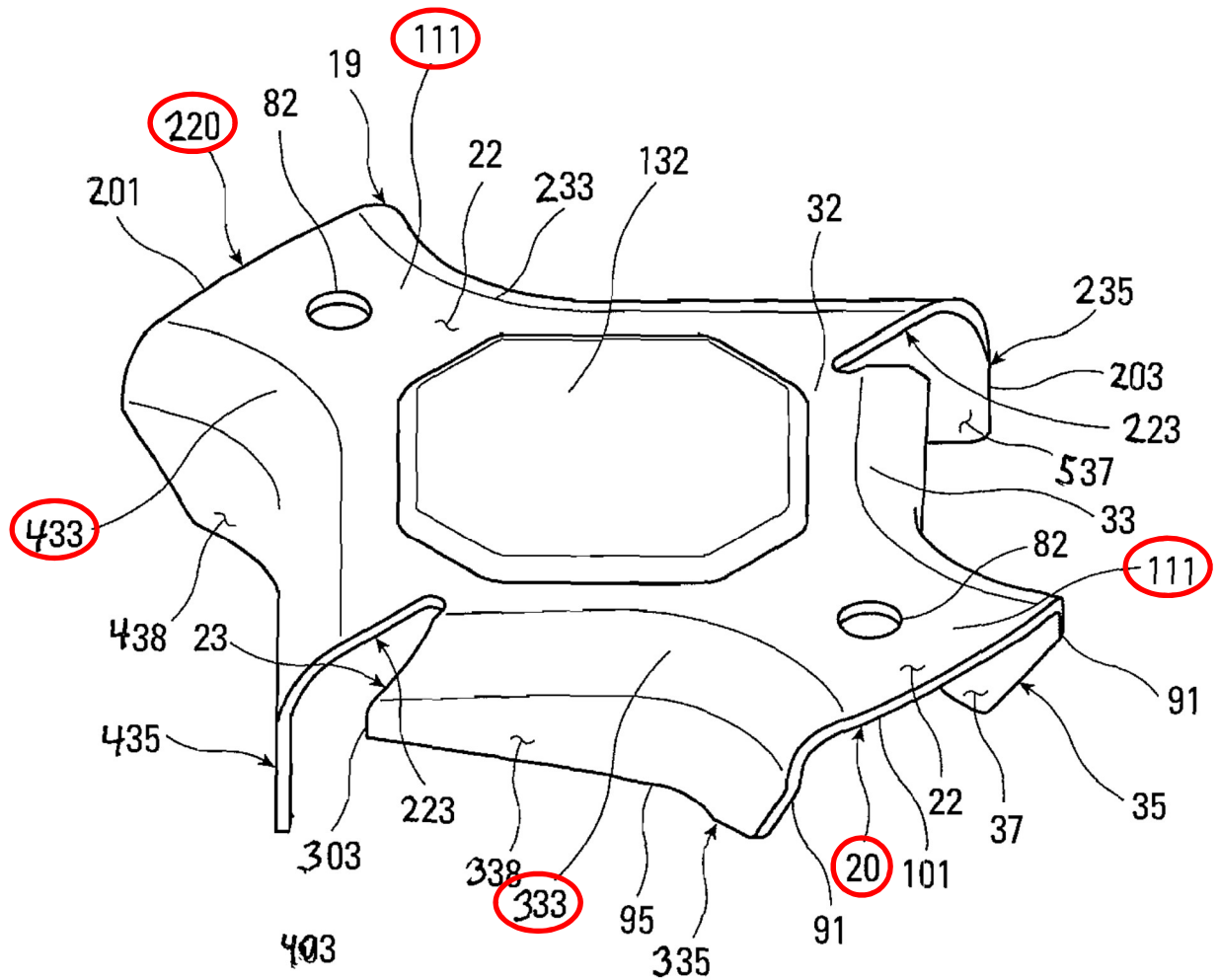


Fig. 7

EX2012: Fig. 7 (annotated).

Thus, the plain and ordinary meaning of “bounding” means to fully or partially limit, enclose, or confine, not just fully enclosed as argued by Simpson.

Inst. Dec. (“ID”): 24-25.

C. “Planar Extension Plates”

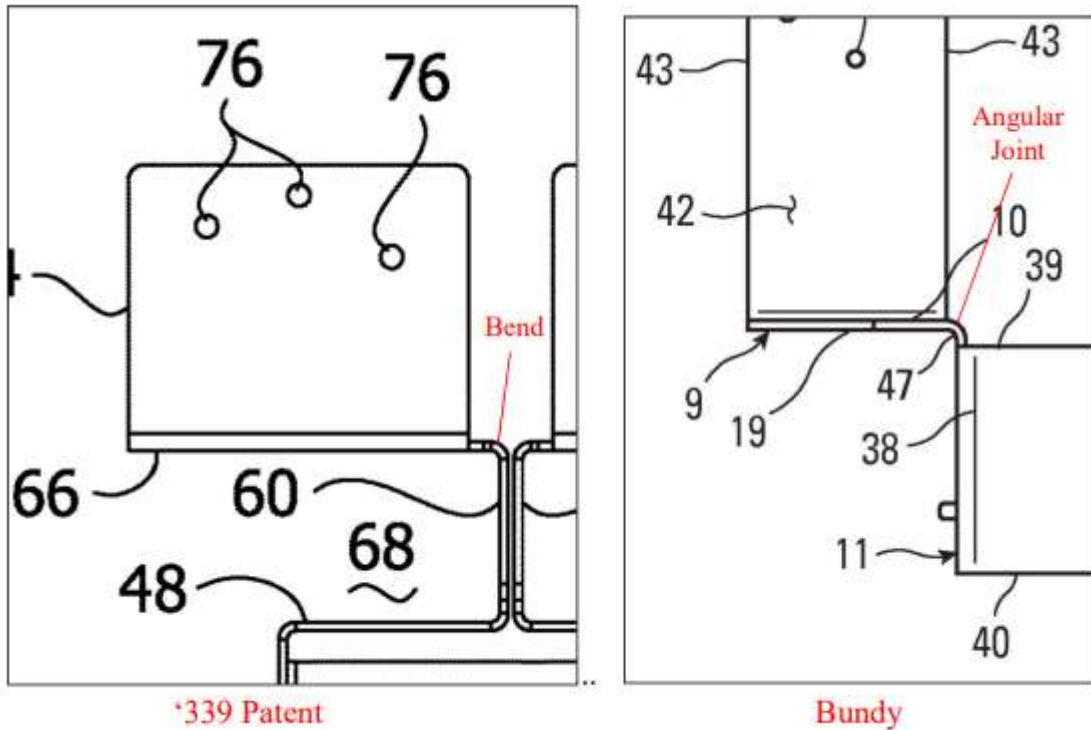
Bundy demonstrates Simpson considers a portion of a bend at the end of a “planar” plate to be part of the plate. EX2001: ¶124; EX2050: ¶21-27; *In re*

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.”).

Bundy identifies the back plate members (9) and side members (11) of the joist hanger (2) as “planar.” EX1005: 4:29-30, 4:54-55; EX2001: ¶125. As shown below in Fig. 7, the side members and back plate members meet at a bend (47) formed between the components. EX2001: ¶125. Despite the bend, Bundy describes the side members (11) as “connected to” back plate members (9) along an “angular joint 47 ... [where back edges of the side members 11] *meet* the first and second inner edges 20 of the ... back plate members 9.” EX1005: 4:13-16, 4:57-61; EX2001: ¶¶125-126. This “meet” statement demonstrates Simpson considers the bends connecting the “planar” back plate members (9) and “planar” side members (11) to be part of those members. EX2001: ¶127; EX2050: ¶25.



The Board discounts this description in Bundy because Bundy uses the term “angular joint” instead of “bend.” ID: 36. But as shown below, whether the term “angular joint” or “bend” is used, these terms refer to the same structure in both Bundy and the ‘339 Patent. EX2050: ¶¶26-27.



EX1001: Fig. 7 (enlarged, annotated); EX1005: Fig. 7 (enlarged, annotated).

And the only way for the above statement in Bundy to be true—i.e., “first and second back edges 29 [of the side members 11] ... *meet* the first and second inner edges 20 of the first and second back plate members 9”—is if the angular joint/bend is considered part of the side members (11) and the back plate members (9). Otherwise, if the angular joint/bend (49) is considered a distinct element between the side members (11) and the back plate members (9), the back edges (29) and the inner edges (20) would *not meet*. They would be spaced apart by the angular joint (49).

Thus, the proper construction of “planar extension plate” includes portions of *de minimis* bends at the ends of the plate connecting the plate to other elements. EX2001: ¶¶122-123, 144; EX2051: ¶98.

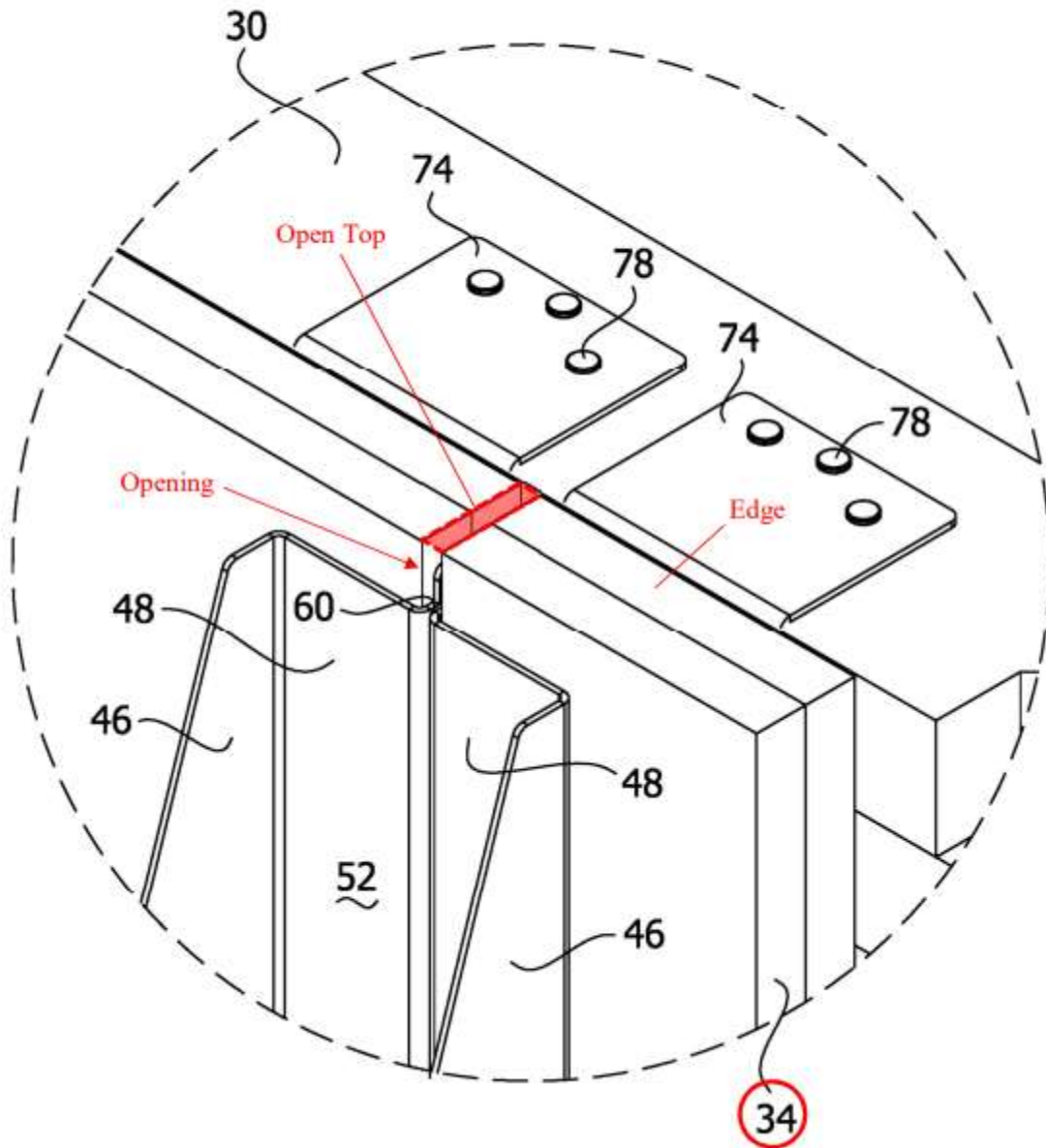
D. “An Open Top Opening Outwardly From the Edge of the Fire Retardant Sheathing”

This limitation from claim 27 describes the physical characteristics of the opening after the step of “cutting [the] opening into an edge of the fire retardant sheathing” is performed. EX2001: ¶189; EX2051: ¶81. The POSA would understand the limitation means the construction of the opening is such that the open top provides access to the outside for the opening from the edge of the fire-retardant sheathing. EX2050: ¶¶28-29; EX2051: ¶82-83.

This is consistent with the plain and ordinary meaning of the words “opening” and “outwardly.” EX2050: ¶30; EX2084: (definition of “open” as a verb is “give access to”); EX2085: (definition of “opening” as a verb is “to give access”); EX2024: 4 (definition of “outwardly” is “toward the outside”); EX2025: 4 (definition of “outward” is “toward the outside”); EX2001: ¶190.

This construction is also consistent with the ‘339 Patent. As shown in Fig. 10A below, the open top of the opening provides access to the outside for the opening from the edge of the fire-retardant sheathing (34). EX2050: ¶31; EX2051: ¶84.

FIG. 10A



EX1001: Fig. 10A (annotated).

This construction of “opening outwardly” is also consistent with how the phrase is used in the construction arts. EX2001: ¶¶191, 195. *In re Cortright*, 165 F.3d 1353, 1358 (Fed. Cir. 1999). *See also* U.S. Pat. Nos. 9,790,684 (EX2080: claim

22) and 3,885,363 (EX2078: claim 6), and U.S. Publication Nos. 2013/0047539 (EX2081: claims 49 and 68) and 2012/0285020 (EX2082: claim 8)—which are in the same general CPC Classification Field (E04B) as the ‘339 Patent. EX1001: (58); EX2050: ¶30; EX2051: ¶¶85-89.

U.S. Patent 11,560,707 (EX2027) an end cap (235) is described as “compris[ing] a receiving slot [241] formed in and *opening outwardly* from an exterior surface of the elongate web surface [237].” EX2027: claim 7; EX2001: ¶192. As shown below, the receiving slot (241) has access to the outside to receive sealing heads (234). EX2027: claim 7, 24:64-65; EX2050: ¶31; EX2051: ¶91.

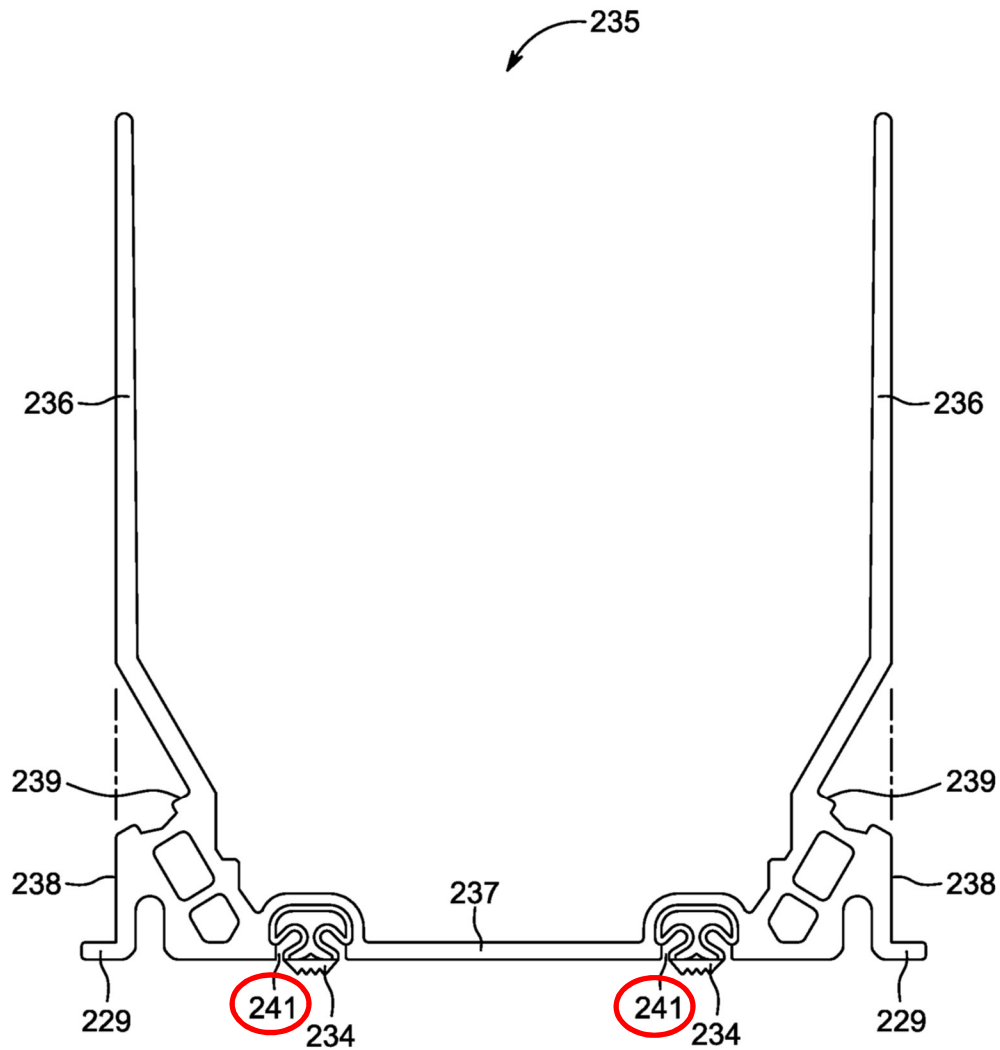
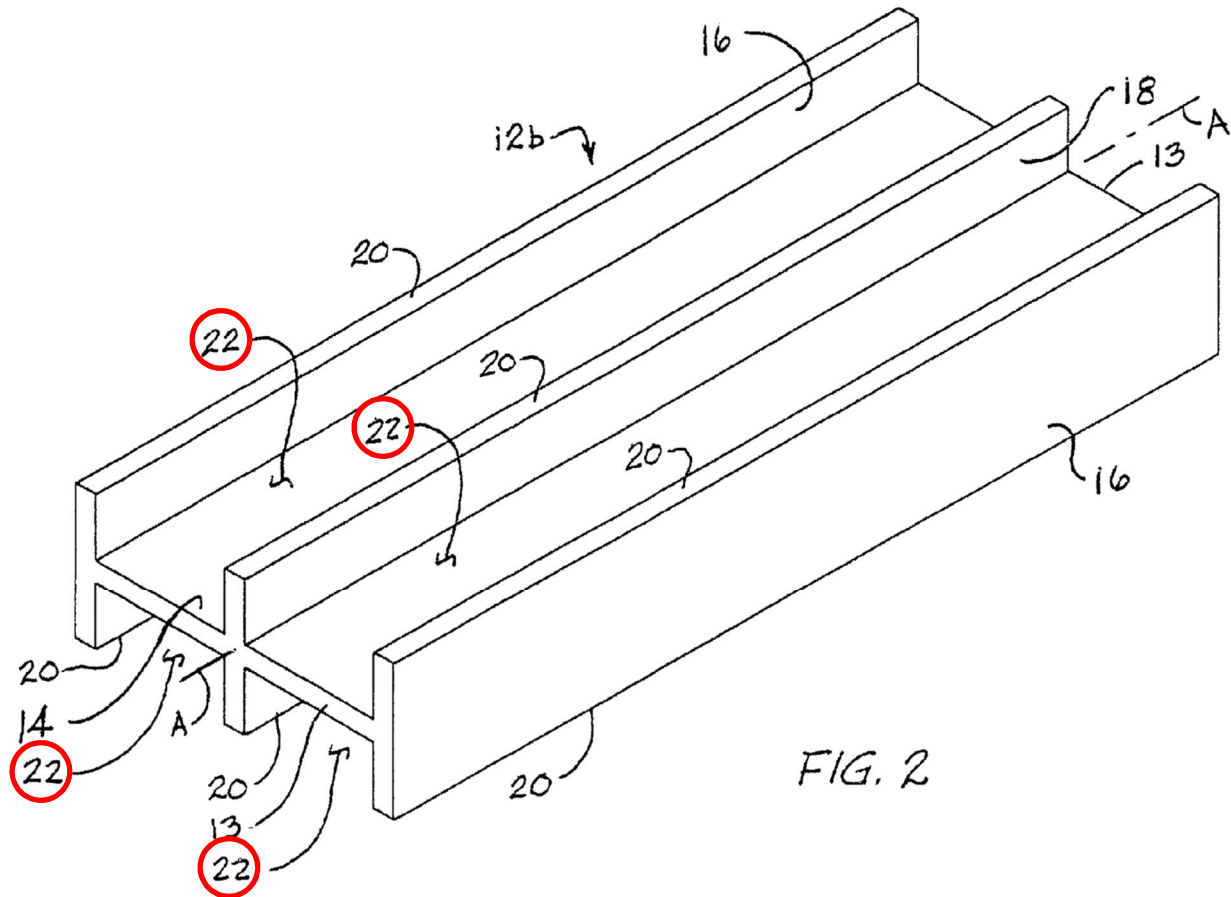


Figure 12

EX2027: Fig. 12 (annotated).

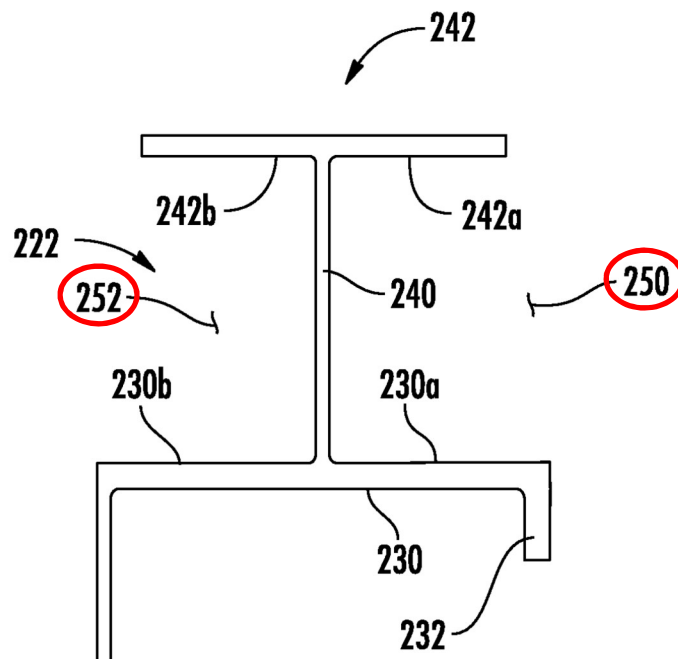
In U.S. Publication 2002/0148191 (EX2028), a pair of separated lateral pockets (22) are defined as “*open[ing] outwardly* through opposite sides of [a] stud 12b.” EX2028: ¶[0024], claim 16 (“a lateral pocket area *opening outwardly* through

one side of the stud member”); EX2001: ¶193. As shown below, the pockets (22) have access to the outside. EX2050: ¶30; EX2051: ¶92.



EX2028: Fig. 2 (annotated).

In U.S. Publication 2013/0133284 (EX2029) a longitudinally extending channel (252) is described as “*opening outwardly* in an opposed direction to channel 250.” EX2029: ¶[0035]; EX2001: ¶194. As shown below, the “252” channel has access to the outside in a direction that is opposite the “250” channel. EX2050: ¶30; EX2051: ¶93.



EX2029: Fig. 4 (cropped, annotated).

E. “The Opening ... Opening Outwardly From the Exterior Edge of the Fire Retardant Sheathing”

Claim 1 recites “the opening ... *opening outwardly* from the exterior edge of the fire retardant sheathing.”

This limitation is similar to the limitation of claim 27 and has a similar meaning, with the difference being that no specific part of the opening in claim 1 (e.g., the open top recited in claim 27) is required to provide the access to the outside.

EX2050: ¶¶35-36. Accordingly, here, the POSA would understand the limitation means the construction of the opening is such that the opening has access to the outside from the exterior edge of the fire-retardant sheathing. *Id.* This is consistent

with the specification, the dictionary definition, and the general usage in the art as noted above. *Id.*

F. “Close Conformance”

In the context of the claims 13 and 14, “close conformance” means the edge of the fire-retardant sheathing is within a short distance away and corresponding in form or shape to the exterior face of the extension portion. EX2001: ¶210; EX2051: ¶¶99-103. This is the plain and ordinary meaning of the phrase. EX2030: 4 (defining “close” as “in a close position or manner”); EX2031: 4 (defining “close” as “a short distance away [] in space”); EX2032: 4 (defining “conform” as “to give the same shape, outline, or contour to”); EX2033: 4 (defining “conformance” as “similarity in form or type; agreement in character”); EX2001: ¶210.

The specification supports this plain and ordinary meaning, by (1) explaining “the gap between the extension flanges 60 and the edge of the slot 72 is less than or equal to 1/8””, and (2) the figures showing the planar edge of the fire-retardant sheathing (34) matching the form of and being within a short distance of the planar exterior face of the extension portion (40). EX1001: 5:38-39; EX2001: ¶¶216-218.

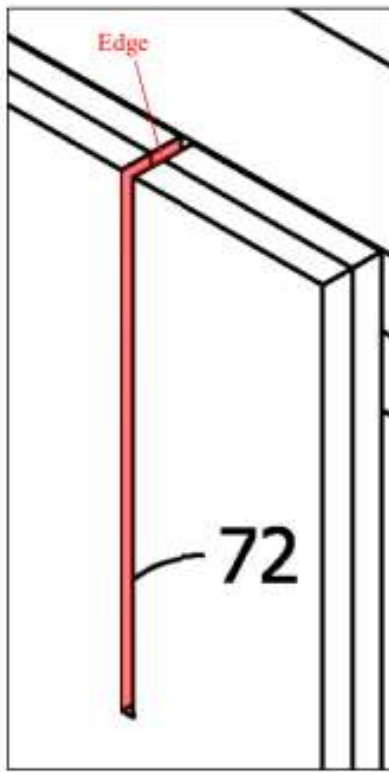
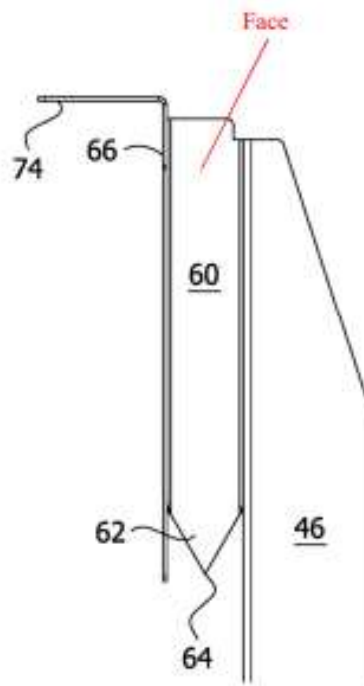
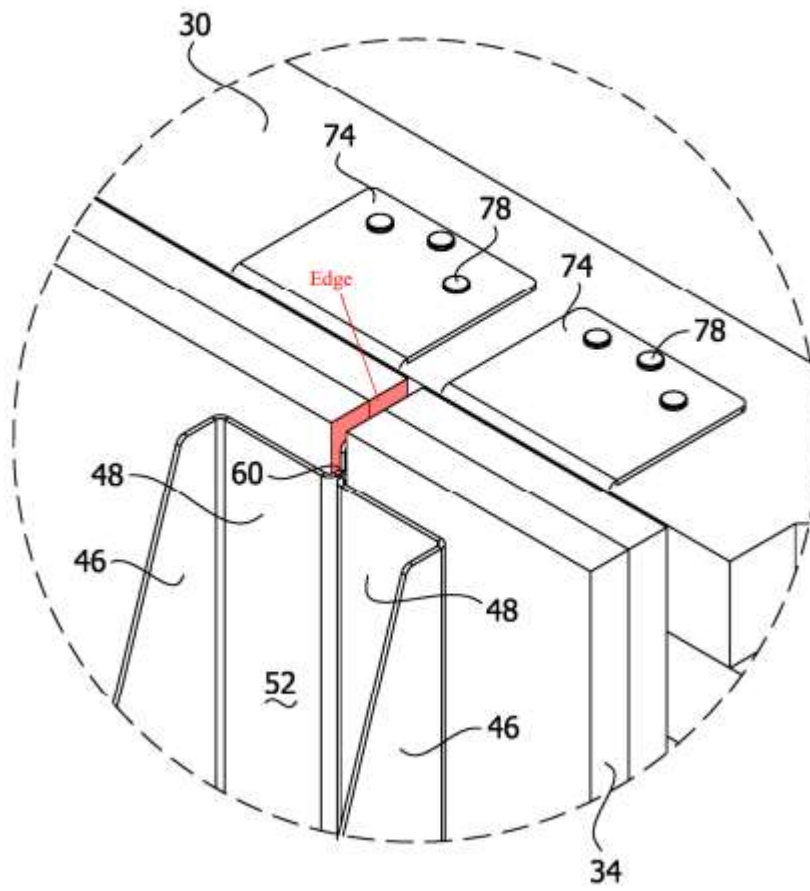


FIG. 5

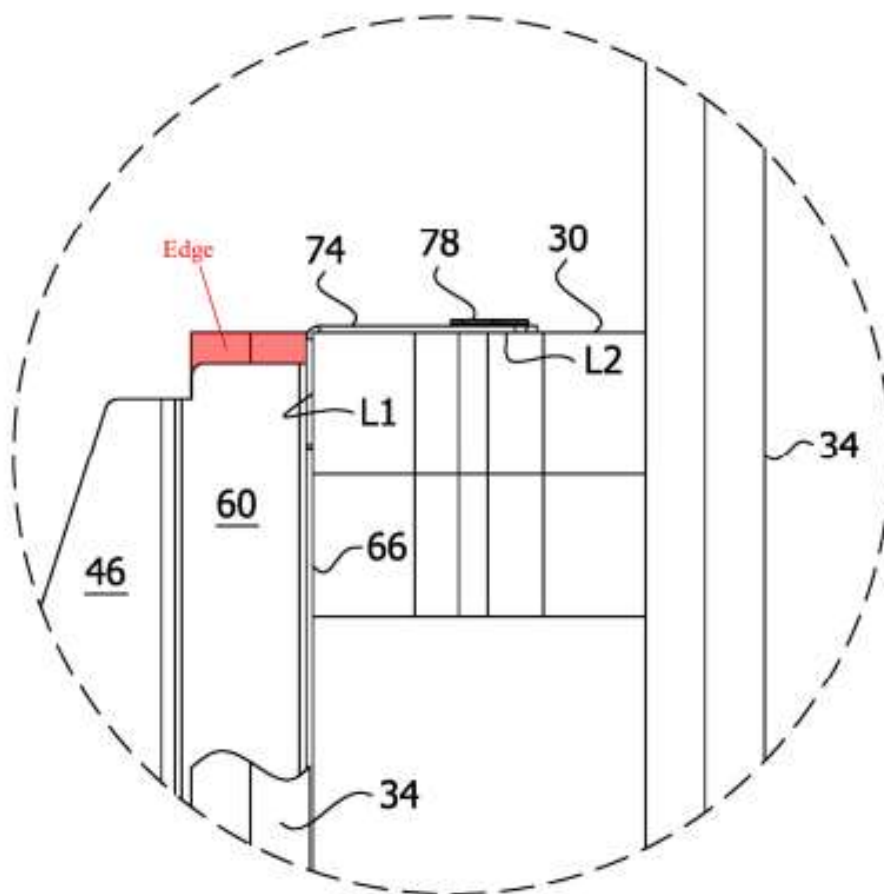


EX1001: Figs. 5 and 9 (enlarged, annotated).

FIG. 10A

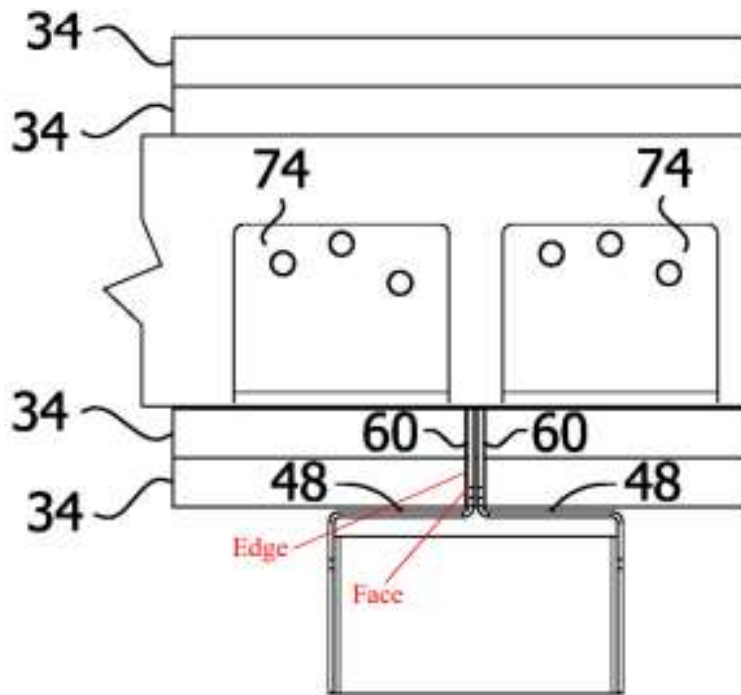


EX1001: Fig. 10A (annotated)



EX1001: Fig. 13A (annotated)

FIG. 11



EX1001: Fig. 11 (enlarged, annotated)

This plain and ordinary meaning is also consistent with how Simpson has used the phrase (or equivalent language) in their own patents. *See* EX2034 (U.S. Patent 9,938,709): 1:67-2:3, claim 14, Fig. 5; EX2035 (U.S. Patent 5,237,613): 4:3-5, Fig. 2; EX2036 (U.S. Patent No. 6,135,687): 16:10-13, Figs. 27 and 29; EX2001: ¶¶211-214.

IV. SIMPSON'S PRIOR ART GROUNDS ALL FAIL

Whereas the prior proceedings concerned apparatus claims that could be met by a hanger sitting on the shelf regardless of the application of the hanger, the present patent claims a method for constructing a fire-resistant wall assembly.

Contrary to the Institution Decision's statement that "the use of fire wall hangers themselves is obvious, as already decided by the Board and affirmed by the Federal Circuit" (ID: 62), the Board and Federal Circuit emphatically excluded considerations of application or environment from the obviousness evaluation of the apparatus claims. The first of the prior decisions established the criteria for the obviousness evaluation by finding Columbia's arguments pertaining to the applications of the hangers were "not commensurate in scope with the independent claims" as the claims were "directed only to a hanger, not to a hanger in combination with sheathing (or drywall, fire walls, or fire barriers), and ***not to a method of installing a hanger*** to minimize gaps in sheathing." '510 PGR Paper 52 at 58-59 (emphasis added). In other words, the Board found that the claimed *configuration* of the previously claimed hangers was obvious.

The method steps make the '339 Patent's claims different than those addressed in the prior PGRs. The method claims positively recite the steps of first mounting a hanger, followed by cutting an opening into fire-retardant sheathing and inserting the fire-retardant sheathing between the channel-shaped portion of the fire

wall hanger and the frame wall such that the extension portion of the hanger extends through the opening in the fire-retardant sheathing. EX2001: ¶27. Accordingly, the ‘339 Patent is entitled to a distinct evaluation. *TorPharm, Inc. v. Ranbaxy Pharms., Inc.*, 336 F.3d 1322, 1329 (Fed. Cir. 2003) (a finding that a “product is not in fact patentable over the prior art ... does not lead to the conclusion that the process is not patentable [as] [t]he process may (or may not) be patentable for other reasons”).

The various grounds of obviousness asserted by Simpson—though not specifically articulated as such—fall into two categories of combinations:

- Grounds 3-8 (the “Bundy Combinations”) start with the fire wall assembly of Bundy—i.e. fire rated sheathing between the channel shaped portion of a joist hanger and the frame wall—and substitute one of three prior art hangers, along with the Allan references to demonstrate a structural connector extending through sheathing
- Grounds 9-11 (the “ArchRecord Combinations”) start with conglomerated fire wall assembly of the two disparate ArchRecord options and substitute a prior art hanger from Cullen, along with the Commins reference demonstrating a structural connector extending through sheathing.

Notwithstanding Simpson's post-hoc arguments, the POSA would not have recognized or been motivated to combine the prior art in the way required by the claims of the '339 patent. Moreover, the combinations fail to demonstrate the presence of the elements of the claims in the prior art and instead improperly rely on an expert to fill in the missing elements with supposition. Lastly there is overwhelming objective evidence of non-obviousness—which Simpson intentionally ignores—demonstrating that Simpson's arguments are distorted by hindsight. *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966).

A. The POSA Would Not Have Been Motivated to Make Simpson's Bundy Combinations (Grounds 3-8)

1. The POSA Would Not Have Been Motivated or Held a Reasonable Expectation of Success to Modify Bundy's Method of Constructing the Fire Wall by Installing the Hanger First or Penetrating the Fire-retardant Sheathing

While Simpson and its expert starts each of its arguments for Grounds 3-8 discussing prior art hangers that were designed for unrelated applications, the claims of the '339 Patent are actually directed to a method of constructing a fire-resistive wall assembly. EX2051: ¶124. Rather than treating the obvious analysis as an apparatus in want of a new problem to solve, Columbia submits that the appropriate starting point is the problem in want of a solution.

By starting with the hangers, Simpson and its expert encourage this Board to start with the false premise that it would have already been known to use specific

hangers to practice the method claimed by the ‘339 Patent. But none of Cullen, Yamaguchi, or Robinson suggest building a wall with sheathing, let alone a fire wall with sheathing that must retain its ability to block the passage of fire through the wall. EX2051: ¶125.

Accordingly, each combination in Grounds 3-8 relies on Bundy’s teaching regarding the construction of fire walls employing joist hangers. EX2051: ¶125. Specifically, Bundy—one of Simpson’s patents—teaches installing the hanger over the fire-rated sheathing—without “alteration” of the sheathing—after the sheathing had already been mounted. EX1005: 2:18-25, 4:17-20, 5:14-25, 5:42-57, 6:14-17, Fig. 2; EX2001: ¶¶236-237; EX2051: ¶¶126.

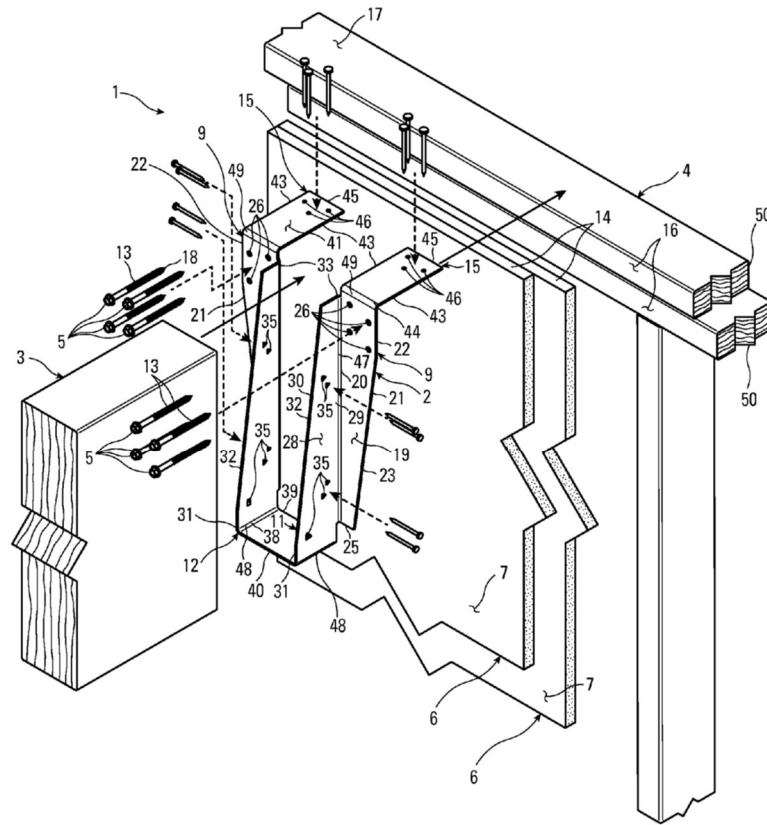


Fig. 2

EX1005: Fig. 2.

The POSA would not have expected to be successful at installing the fire-retardant sheathing after the hanger. There is a reason Bundy taught installing the hanger after the sheathing. Simpson attempted and failed to design the hanger of Bundy to install prior to the sheathing. Despite the petition's insistence that the order of installation was a matter of "choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success" (Pet: 27; *see also* Pet: 40, 71, 109, 124, 153); Simpson could not figure out how to maintain a space

to receive the sheathing once a real world load was added to the hanger.¹ EX2086:

SST0105115 (

); EX2050: ¶¶78-81, 108-112; EX2051: ¶¶127, 153, 160, 164, 171.

EX2086: SST0105127 (

¹ Simpson's proffered motivation to combine was to allow the framing to be completed prior to installing the drywall. Further dependent claim 8 specifically requires the joist ("structural component") to be installed on the channel-shaped portion before installing the fire-retardant sheathing.

[REDACTED]

[REDACTED].

[REDACTED]

EX2086: SST0105129 ([REDACTED])

[REDACTED]

[REDACTED]

[REDACTED]). Notably,

Simpson's expert—Mr. Fennell—assumed his proffered combinations would be functional and was oblivious to Simpson's failed attempts to develop a top-flange hanger capable of being installed first with the drywall being installed later.

EX2061: 88:5-89:5; 139:6-23.

Nor was this failure surprising, as the POSA understood that cantilevering the joist away from the top plate of a wood framed wall *in the absence of previously installed sheathing* would fail—[REDACTED].

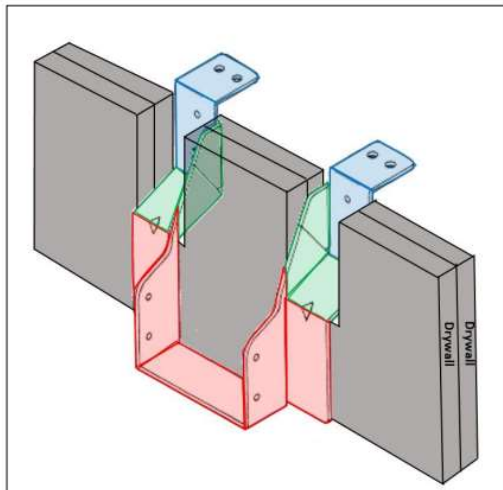
EX2050: ¶¶113-14; EX2051: ¶128. Failure to resist bending and rotation of the

lower end of the hanger toward the frame wall makes later installation of the sheathing impossible as the gap between the hanger and the frame wall is not maintained. EX2051: ¶¶154-156, 164-165. Therefore, Simpson made the Bundy hanger reliant on having a “sufficiently large, flat surface” resting on the “surface of the [previously installed] exterior drywall sheet in order to stabilize the connection.” EX1005: 2:28-32; EX2050: ¶77; EX2051: ¶129. As will be discussed in greater detail below, the POSA would have been skeptical that Simpson’s proposed combinations would have fared any better than Simpson’s failed attempts.

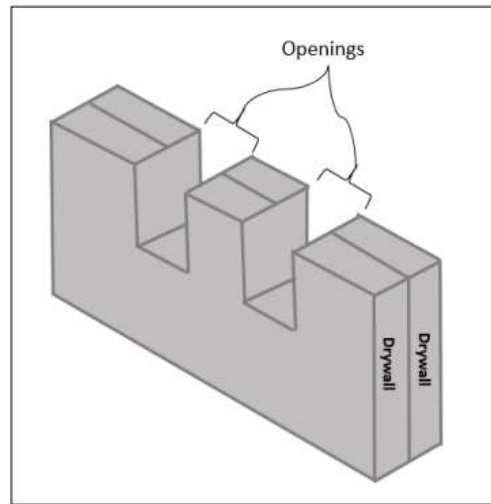
Further, each of the Bundy Combinations as proposed by Simpson would require extending a portion of the hanger—ostensibly modified versions of the Cullen, Yamaguchi, or Robinson hangers—through the fire rated sheathing. According to the proffered combinations, this would require cutting openings in the fire rated sheathing. But the POSA would not have had a reasonable expectation of success in maintaining the fire-resistance of the fire wall after cutting openings in the fire-retardant sheathing. EX2050: ¶¶85-92, 115-120, 129-134; EX2051: ¶¶131-136; EX2052: ¶¶34-35; EX2053: ¶16

As shown below with Simpson’s own renderings, for the Yamaguchi and Robinson Grounds, the POSA would recognize that the cutouts would need to be substantial in size. EX2050: ¶¶116, 130; EX2051: ¶131. Further, due to the

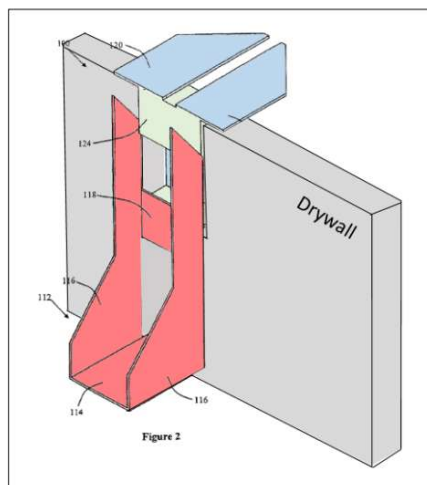
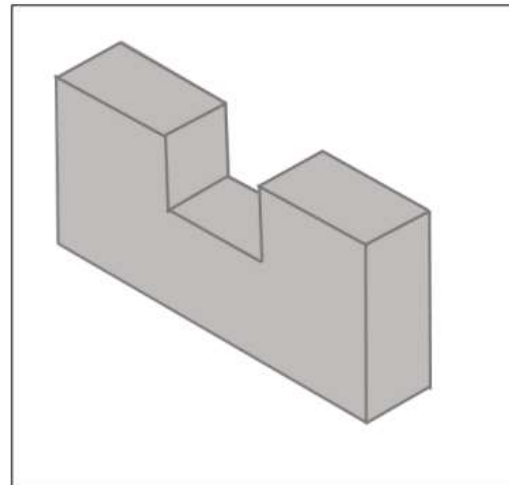
configuration of the Yamaguchi and Robinson hangers, the openings in the sheathing could not be readably filled by non-combustible materials, thus providing pathways for fire to penetrate into the wall cavity. EX2050: ¶¶117-118, 129-131; EX2051: ¶¶132-134.



EX1007, Perspective View.



Petition at 69, 70.



Petition at 106, 107.

In contrast, Bundy explains its installation “[i]mportantly, [] does not require any alteration of the drywall,” such as cutting an opening therein. EX1005: 2:18-19; EX2001: ¶238; EX2050: ¶120, 133; EX2051: ¶138.² The Bundy

² Columbia maintains that the quoted language of Bundy expressly teaches away from creating cutouts in the fire-retardant sheathing for the hanger to extend through. EX2001: ¶240; EX2050: ¶133; *Polaris Indus. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1069 (Fed. Cir. 2018) (“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant”). Even to the extent that the quote does not rise to an explicit teaching away, “prior art need not explicitly ‘teach away’ to be relevant to the obviousness determination.” *Arctic Cat v. Bombardier Recreational Products*, 876 F. 3d 1350, 1360 (Fed. Cir. 2017). “[A] prior patent must be considered in its entirety, i.e., as a whole, including portions that would lead away from the invention in suit.” *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1568 (Fed. Cir. 1987). Moreover, the evidence provided in this section further establishes that the meaning of the quoted language was to teach away from the use of cutouts in fire-retardant sheathing for joist hangers. EX2001: ¶240; EX2050: ¶133.

Petitioner's combinations likewise fly in the face of the conventional wisdom within the art—as recognized contemporaneously by its own engineers—that counsel against rupturing the sheathing. EX2050: ¶¶90, 119, 132; EX2051: ¶¶135, 143; EX2087: SST0077466 ([REDACTED]); EX2088: SST0087824 ([REDACTED]); EX2089: SST0087749 ([REDACTED]); EX2092: SST0087800 ([REDACTED]); EX2065: at 168:23-170:13 ([REDACTED]); EX2065: 107:20-108:23 (“our position was to stay away from making any kind of alterations to the fire wall assembly”); *see also* EX2090 (documenting skepticism from an engineering firm that that there were “some jurisdictions that [the engineering firm] fe[lt] won't accept it because of the slit made in the drywall.”).

For each of Grounds 3-8, Simpson argues that because Bundy spaces the channel-shaped portion from the wall frame, it would be obvious to modify either Cullen, Yamaguchi, or Robinson to hold the joist in a position spaced from the wall frame so as to receive fire-retardant sheathing behind the channel shaped

portion. This modification requires logical leaps not suggested by the prior art or the POSA's knowledge.

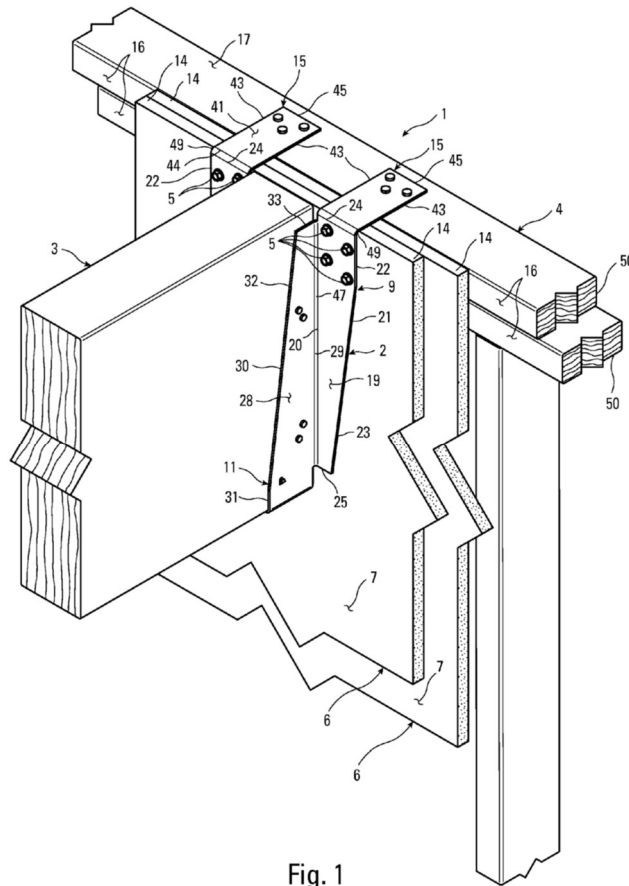
Again none of Cullen, Yamaguchi, or Robinson show or suggest building a wall with sheathing, let alone a fire wall with sheathing that must retain its ability to block the passage of fire through the wall. Rather, it is Bundy alone that provides the teaching regarding the construction of fire walls employing joist hangers.

The use of fire-retardant sheathing to construct fire walls was known in the art. Bundy's contribution to the art was:

- 1) configuring the disclosed hanger to extend over—not through the fire-retardant sheathing—by lengthening the top flanges (EX1005: 4:17-20, 5:42-62, 6:14-17); and
- 2) increasing the surface of the hanger resting on the exterior drywall sheet to resist the rotational forces caused by cantilevering the joist away from the wall as discussed above.

EX1005: 2:28-32.

EX2001: ¶237; EX2050: ¶¶94, 124.



A POSA would not have been motivated by Bundy to adapt the application of the Cullen, Yamaguchi, or Robinson hangers as suggested by Simpson.

EX2001: ¶¶ 237-241, 257-258, 268-272; EX2051: ¶¶139-142. Rather, Bundy teaches extending the top flanges of those hangers—as in Bundy—to extend over the top edges of the sheathing while installing the hanger on the exterior face of the sheathing. EX2001: ¶¶95, 125; EX2051: ¶¶144. The modified hangers would be capable of maintaining their designed load path as outer surface of the fire rated sheathing will be available to resist any rotational forces from the joist and hanger.

EX2001: ¶¶96, 126. Additionally, this application would not require cutting openings in the sheathing, against conventional wisdom. EX2001: ¶¶96, 126.

Accordingly, a POSA would not have had a reasonable expectation of success and therefore not have been motivated to modify the Bundy fire wall assembly as suggested by Simpson. EX2051: ¶145.³

2. The POSA Would Not Have Selected Any of the Cullen, Yamaguchi, and Robinson Hangers to Perform the Claimed Method

The selection of the Cullen, Yamaguchi, and Robinson to perform the claimed method of constructing a fire wall from the hundreds—if not thousands—of prior art hangers is the antithesis of a choice amongst a finite number of solutions. *Ortho-McNeil Pharm. Inc. v. Mylan Labs., Inc.*, 520 F.3d, 1358, 1364 (Fed. Cir. 2008)

³ Although not raised in the Petition, the Institution Decision credits Mr. Fennell’s assertion of motivations that the Bundy Combinations would improve aesthetic appeal, insulation, or soundproofing. ID: 79 (quoting EX1003: ¶¶241–242). Moreover, Mr. Fennell fails to provide any basis for these assertions. *See* EX1001: ¶137; *Q Delta, LLC v. Cisco Systems, Inc.*, 942 F. 3d 1352, 1359-60 (Fed. Cir. 2019) (“Conclusory expert testimony does not qualify as substantial evidence.”).

(finding the finite solution rational did not apply where selections were made from several alternatives at earlier steps of a method).

Because the claims recite steps of using the specially configured hanger to construct a fire wall, it is no longer the case that “prior disclosure of the structure of such a hanger (alone) may ... render obvious [the] claim[s].” PGR2021-00109 Final Written Decision (the ‘109 PGR FWD) 36-37. Notably, none of Cullen, Yamaguchi, or Robinson show or suggest using the disclosed hangers to extend through sheathing, let alone the fire-retardant sheathing of a fire wall.

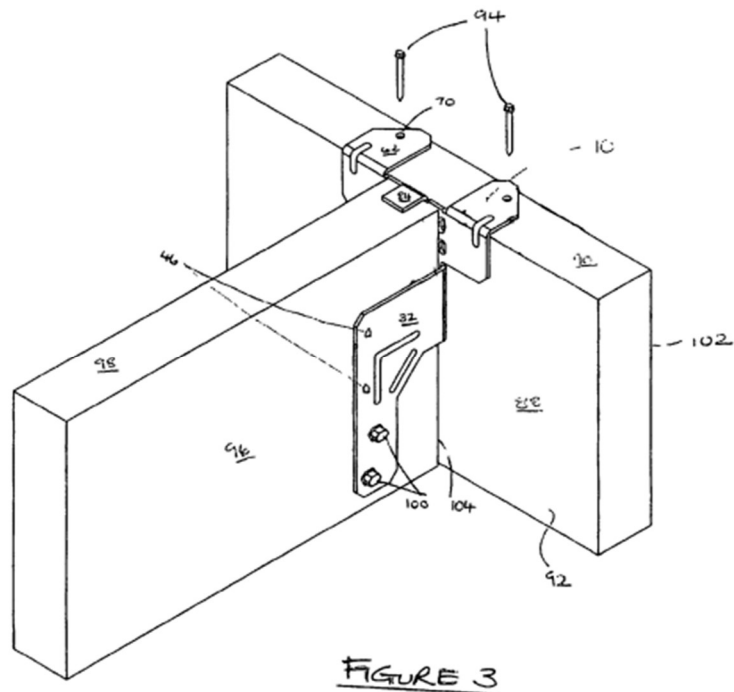
Rather, Simpson’s selection of these hangers to combine with the Bundy’s fire wall is based on nothing more than selecting prior art hangers having a structure that Simpson could argue meets the extension portion claim requirement. But it is not enough for these references to have components that could arguably act as a separate “channel shaped portion” to hold the joist and “extension portion” to extend through sheathing if used according to the claimed method. *Nautilus Hyosung Inc. v. Diebold, Inc.*, IPR2016-00633, Paper 9 at 21 (P.T.A.B. Aug. 22, 2016) (“[a]n assertion that something *could* be done does not articulate a reason why something *would* be done [and] raises a specter of impermissible hindsight bias”) (emphasis in original).

This is a prime example of selectively “cull[ing] from the prior art to fit the parameters of the patented invention.” *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 546

(Fed. Cir. 1998); *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988) (“[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art”). Starting from the point of finding prior art hangers having structures capable of being repurposed as an “extension portion” and then working backwards to justify why the hanger would be used with a fire-resistive wood frame wall assembly having a fire barrier—*i.e.*, the fire-resistive sheathing—is textbook hindsight.

a. The POSA Would Not Have Considered Using the Cullen Hanger to Create a Space to Receive Sheathing After the Framing was Completed

Cullen’s hanger is not designed to be installed before the sheathing so as to define a space between its back plate (12)—or the wall frame to which the back plate attaches—and a channel-shaped portion. EX2001: ¶¶227-228; EX2051: ¶¶146-148. Rather, Cullen’s principle of operation relies on the joist (96) **abutting** the back plate (12). EX1004: Figs. 1 and 3, 16:13-14 (“joist 96 ... is guided and aligned against the back plate 12.”), 4:8-12 (discussing use of barbs along the back plate “to allow insertion of a joist into the bracket, but prevent its withdrawal”); 13:1-5 (discussing tab 84 at the top of the back plate for the top surface of a joist to locate against); EX2001: ¶¶229-232; EX2051: ¶¶149-152. This is demonstrated in Figure 3 (below).

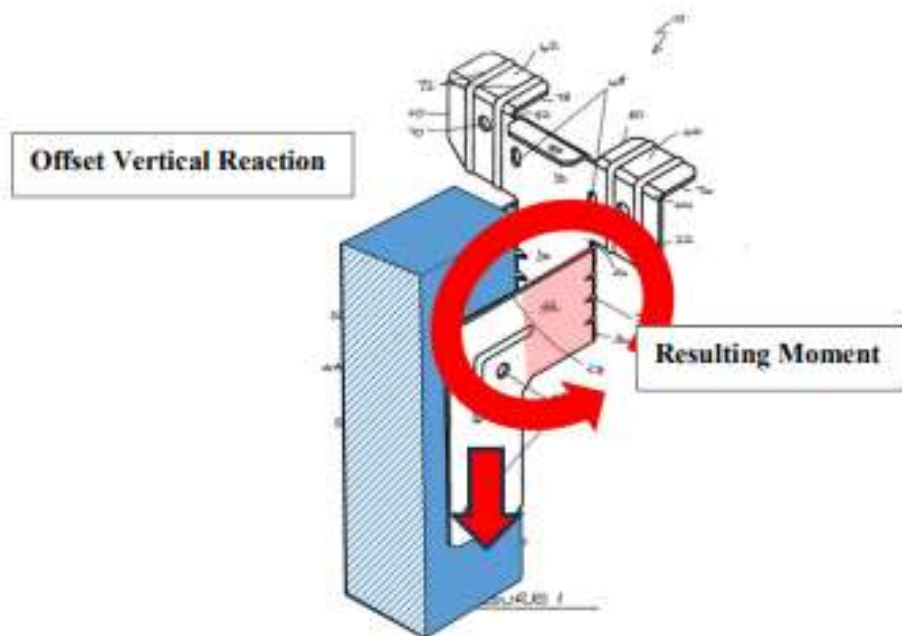


EX1004: Fig. 3.

By spacing the joist away from the wood wall, the downward force the hanger supports also becomes spaced from the wall. EX2001: ¶234; EX2051: ¶152. This force, in the absence of any sheathing to directly transfer the force to the frame wall, creates a moment arm subjecting the proposed extension portion of the hanger to substantially larger forces than when the joist is abutted against the back plate. *Id.*; EX2050: ¶¶62-70; EX2051: ¶152; EX2091. And because the joist would be spaced away from the back plate, the back plate would no longer provide sufficient bearing support to resist the resulting rotational forces—as Simpson

experienced with its own testing of similar designs that damaged the top plate.

EX2050: ¶¶65-67; EX2051: ¶153.



EX1004: Fig. 1 (annotated); EX2050: ¶64.

Accordingly, Simpson's proposed modification to the load path by which the hanger would need to support the load and thus change the basic principle of operation of the Cullen hanger. *In re Ratti*, 270 F.2d 810, 813 (C.C.P.A. 1959) (rejecting an obviousness combination requiring "a change in the basic principles under which [prior art] was designed to operate").

A POSA would not have presumed that the Cullen hanger would have been a reasonably viable option to maintain a space the joist from the wall in real world applications. EX2050: ¶¶65-68; EX2051: ¶¶154-155. [REDACTED]

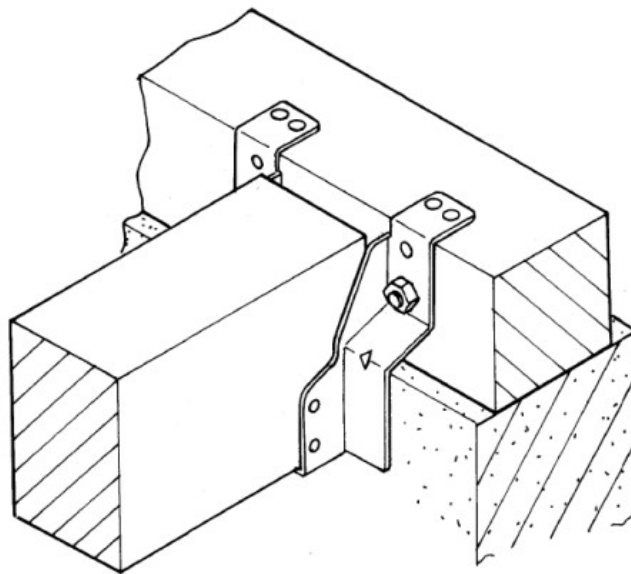
██████████ a POSA would have been concerned that sidewalls (30, 32) of the Cullen hanger would buckle ██████████

██████████ EX2092: SST0087797; *see also* EX2088: SST0087752

██████████; EX2050: ¶¶71-72.

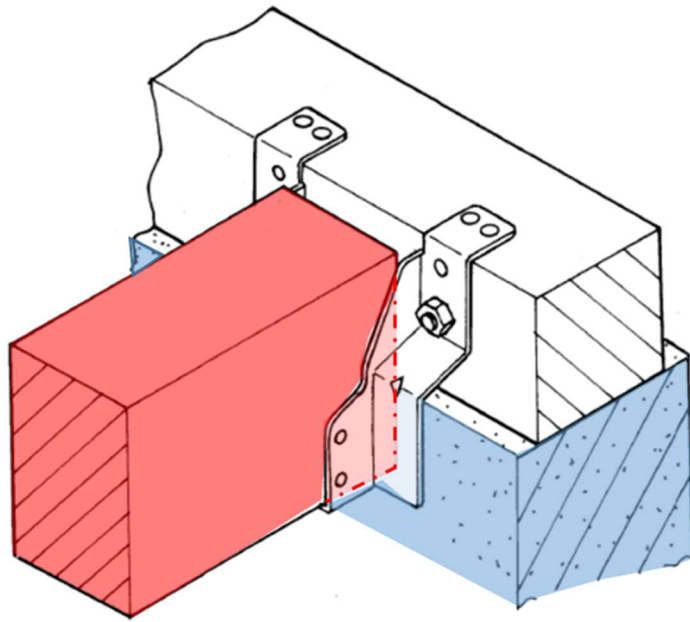
b. The POSA Would Not Have Considered Using the Yamaguchi Hanger to Create a Space to Receive Sheathing After the Framing was Completed

As with Cullen, Yamaguchi has no disclosure or suggestion for building a wall with sheathing, or building a fire wall. Rather, a POSA would recognize that Yamaguchi discloses a hanger specially constructed for an unrelated application—attaching a joist to the sill of a foundation. EX1007; EX2001: ¶246; EX2050: ¶99; EX2051: ¶¶157-159.



EX1007: 5.

Nor would a POSA presume that a method of constructing a fire wall in which a joist hanger is installed before the fire-retardant sheathing using Yamaguchi's hanger would have a reasonable probability of success. EX2050: ¶¶100-114; EX2051: ¶¶160-163. The Usage State Diagram shows the joist abutting the foundation wall.



EX1007: 5 (annotated); EX2050: ¶100.

The POSA would understand that by abutting the end of the joist against the foundation wall, the foundation wall was providing bearing support preventing rotation of the hanger. EX1007: Reference Diagram Illustrating Usage State; *see* EX1029: 42, 64; EX2001: ¶¶250-251; EX2050: ¶101.

As discussed with respect to Cullen, applying the hanger prior to installation of the drywall results in spacing a joist away from the wall that would result in a

moment reaction in which rotational forces would urge the bottom of channel shaped portion and joist toward the wall. EX2050: ¶¶101-102. Accordingly, Simpson's proposed application is not suggested by Bundy or Cullen and would present a modification to the load path by which the hanger would need to support the load and thus change the basic principle of operation of the Yamaguchi hanger. *In re Ratti*, 270 F.2d at 813.

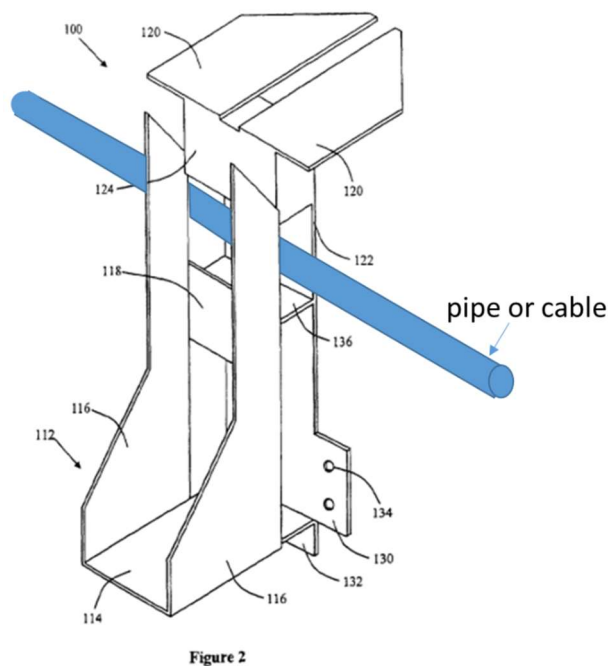
c. Simpson's Motivation to Combine Robinson and Bundy Fails

Robinson, like Cullen and Yamaguchi does not show or suggest providing a wall with sheathing or constructing a fire wall by mounting the hanger prior to the sheathing on the wall. Like the Cullen/Bundy and Yamaguchi/Bundy combinations, Simpson's argument and its expert inexplicably fail to consider the effects of installing the hanger prior to installation of the fire-retardant sheathing on the purported combination. The arguments made above in IV(A)(1) & (2)(a) apply equally to the Robinson/Bundy combination proposed by Simpson.

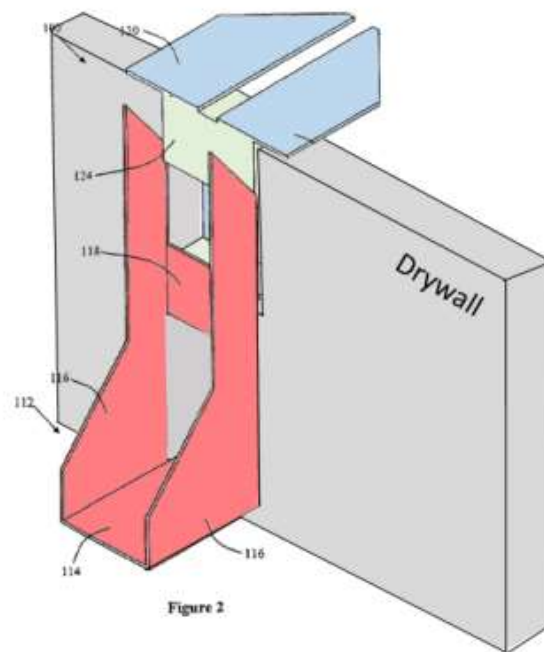
Moreover, Simpson ignores that the Robinson hanger was designed for an entirely different wall construction than Bundy's fire wall assembly. EX2001: ¶260; EX2051: ¶¶167-169. Even applying Robinson in other applications, Robinson's key feature is incompatible with Simpson's proposed combination of Robinson and Bundy. EX2001: ¶262; EX2051: ¶170. Robinson was intended to allow cables and pipes or a ventilation duct to pass through an opening (126, 226)

between the end of the joist and masonry (or other supporting structure). EX1011: 2:1-6, 2:20-24, 3:11-15, 4:13-19, 5:12-13; EX2001: ¶263; EX2051: ¶169.

Contrary to this principle of operation, Simpson's combination would block the access to the cavity/duct opening, making it inaccessible for cables, pipes, and ventilation ducts. EX2001: ¶264; EX2051: ¶170.



Intended Application
EX1011: Fig. 2 (annotated)



Simpson's Combination
Pet: 106.

It is legitimate to argue that the proposed combination “change[s] the basic principles under which the prior art was designed to operate, or ... render[s] the prior art inoperable for its intended purpose.” *Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 Fed. App’x 755, 758 (Fed. Cir. 2015) (citations and quotation

marks omitted); *DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1326 (Fed. Cir. 2009) (claims are not obvious when the prior art indicates that the invention “would not have worked for its intended purpose”). This argument is not ignoring the combination of Robinson and Bundy, but rather requires a discussion of the purpose of the base reference (Robinson) in the context of the analyzing whether a POSA would have considered the combination of Robinson and Bundy obvious.

In contrast to the reasoning provided by Mr. Kazckowski and Mr. Tucker, Mr. Fennell states in conclusory fashion that the “POSA would have understood the gap [i.e. space created for the cavity and/or duct opening (126, 226)] could also be used to accommodate other building materials such as drywall, *as taught by Bundy*.” EX1003: ¶335 (emphasis added). Mr. Fennell goes on to say: “A POSA would have sought to optimize the size of the gap ... to accommodate one or more layers of drywall as described by Bundy for optimal fire protection and integrity” *Id.* By Mr. Fennell's own explicitly stated criteria, the reasonableness of his conclusions must be evaluated according to the teachings of Bundy. But cutting substantial cutouts in the fire-retardant sheathing of Bundy would diminish—rather than optimize—the walls fire protection and integrity.

3. Allan Fails to Support a Motivation or Reasonable Expectation of Success to Modify Bundy's Method of Constructing the Fire Wall

Petitioner was unable to cite a single prior art reference disclosing one of these hangers extending through sheathing, such as drywall in the construction of a fire wall. EX2077; EX2050: ¶¶139-140; EX2051: ¶¶175-176. Instead, for this purported teaching in Grounds 3-8, Petitioner relies on a reference directed to a wall anchor (A) used to tie a masonry veneer wall (M) to a building frame member (F) of a wall structure (W). EX2001: ¶¶273-274; EX1006: Fig. 1, Abstract, 3:12-20; EX2001: ¶274; EX2051: ¶177.

As shown below in Fig. 1, one leg (10) of Allan's wall anchor is secured to the building frame member and the other leg (12) extends through the insulation layer and connects to a tie (32) embedded in the masonry veneer wall. EX1006: Fig. 1, 3:28-33, 4:15-18; EX2001: ¶275.

Petitioner's contemporaneous internal documents demonstrate this distinction. Specifically, as discussed in Section IV(A)(1) above, the conventional wisdom within the art—[REDACTED]
[REDACTED]—was to avoid disruptions in the fire-resistant sheathing of fire-resistant wall assemblies. EX2050: ¶145; EX2051: ¶180; EX2087: SST0077466; EX2088: SST0087824 ; EX2088: SST0087749; EX2092: SST0087800; EX2065: 168:23-170:13; EX2065: 107:20-108:23; *see also* EX2090. This is why Bundy discourages “alteration of the drywall.” EX1005: 2:18-19; EX2001: ¶281.

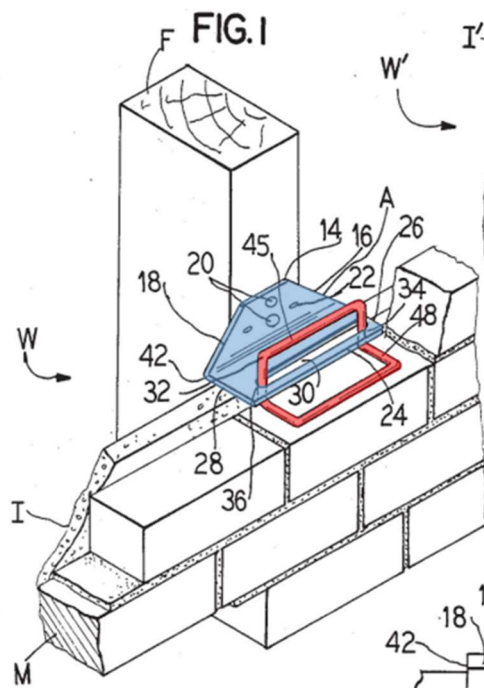
Allan does not teach that a POSA would overlook the conventional wisdom to avoid disruptions in the *fire-retardant sheathing* for a hanger to passing through the sheathing. EX2050: ¶146; EX2051: ¶181. Allan notes that forming an opening to permit passage of the thin, flat leg 12 of the anchor through the insulation sheet permits that "minimal energy losing air gaps may be achieved." EX1006: 4:12-14. To extrapolate this narrow acknowledgement into a suggestion that a POSA would make large cutouts in a fire barrier for passage of components of Cullen, Yamaguchi or Robinson for mounting the hangers is not supported by Allan or the general understanding of a POSA. EX2050: ¶¶142-146; EX2051: ¶181.

Nor does the method of installing the insulation over the Allan wall anchor disclose or suggest the claimed method of the '339 Patent. EX2001: ¶282;

EX2050: ¶¶147-150; EX2051: ¶182. The installation step of the fire-retardant sheathing as claimed in the '339 Patent specifically requires both (1) inserting the sheathing between the wall frame and channel-shaped portion of the already mounted fire wall hanger *and* (2) moving/arranging the sheathing relative to hanger so a portion of the hanger extends through an opening in the sheathing.

EX1001: 12:48-56; 16:26-34; EX2001: ¶283.

In Allan, the cut out in the insulation layer is lined up with the outstanding leg (12) of an L-shaped bar (blue in the figures below) so that as the insulation, the leg will inserted into cutout. Only after the insulation is installed is the wall anchor is then further assembled by adding a tie (32) (red in the figures below) through an exposed (30) slot in the leg (12). EX1006: 4:1-40; EX2001: ¶¶282-284.



Thus, in Allan only a part of the anchor is installed prior to installation of the sheathing.

- the selection of hangers having a preexisting gap capable of receiving sheathing;
- the recognition—despite conventional wisdom—to cut the fire-resistant sheathing around the extension portion; and

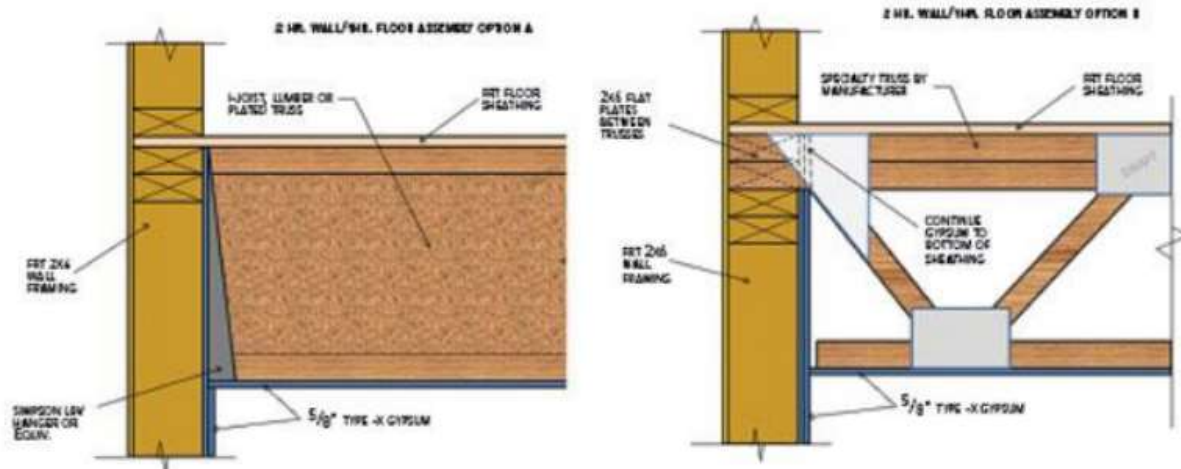
- recognition to align and slide the sheathing so that the sheathing would fit behind the channel shapes portion and the extension portion would slide into the cutouts.

EX2050: ¶150; EX2051: ¶185; EX2065. Further, because Allan's anchor never supports a vertical load, it does not address the problem of maintaining a gap to receive sheathing when the hanger is loaded. EX2050: ¶141; EX2051: ¶60.

Accordingly, a POSA would not have been motivated to combine Cullen-Bundy-Allan, Yamaguchi-Bundy-Allan, or Robinson-Bund-Allan as suggested by Simpson. EX2001: ¶¶273-284; EX2050: ¶¶137-150; EX2051: ¶186; EX2053: ¶12.

B. Simpson's Motivation to Combine ArchRecord, Commins, and Cullen Fails

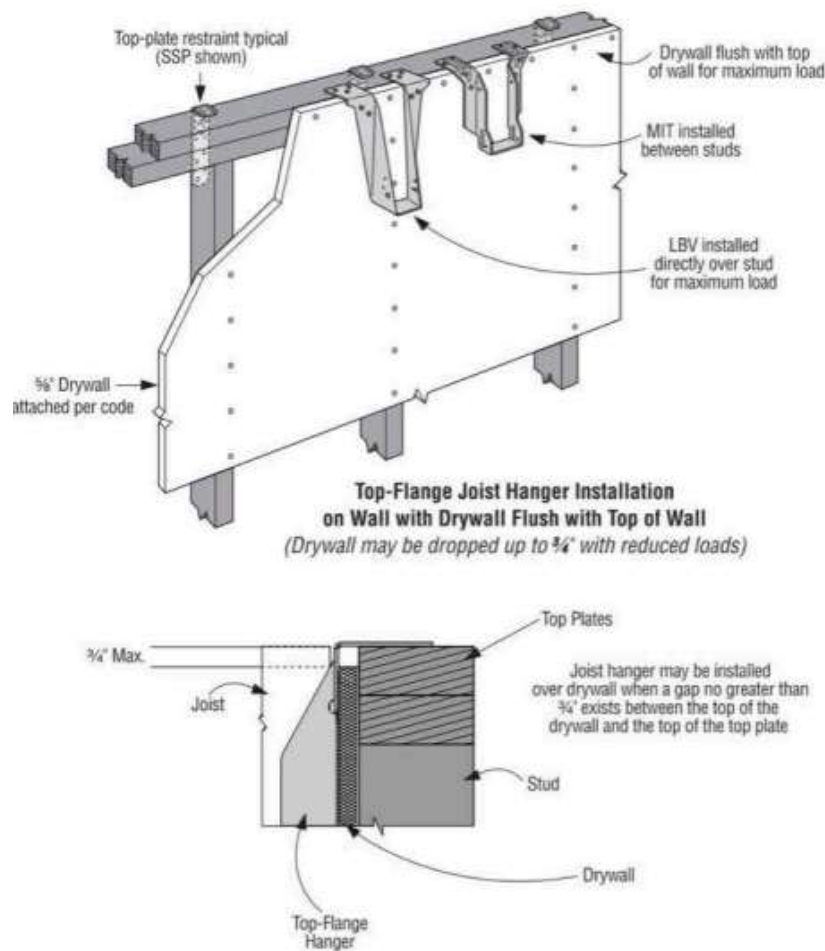
ArchRecord provides basic descriptions of balloon, platform, and semi-balloon wood framing methods with scant disclosure regarding the hanging of floor joists. EX2001: ¶285. In fact, Petitioner focuses exclusively on the following figure:



(Left) Semi-balloon framing is more common in buildings five stories and higher; (Right) it is often used as an alternative to platform framing where fire requirements or shrinkage may be a challenge.

EX2008: 6.

Of Option A (left) and Option B (right) of ArchRecord, only Option A discloses the use of a hanger, but the hanger is installed over—*i.e.*, after—the sheathing, just like Bundy. EX1031: 6; EX1012 (showing Simpson’s LBV hanger of Option A is installed over the sheathing); EX2001: ¶¶287; EX2051: ¶¶187-188. As with Bundy, this installation relies on resting the back of the channel shaped portion on the surface of the drywall to resist the rotation of the hanger. EX2050: ¶¶154-156; EX2051: ¶188.



EX1012: 2.

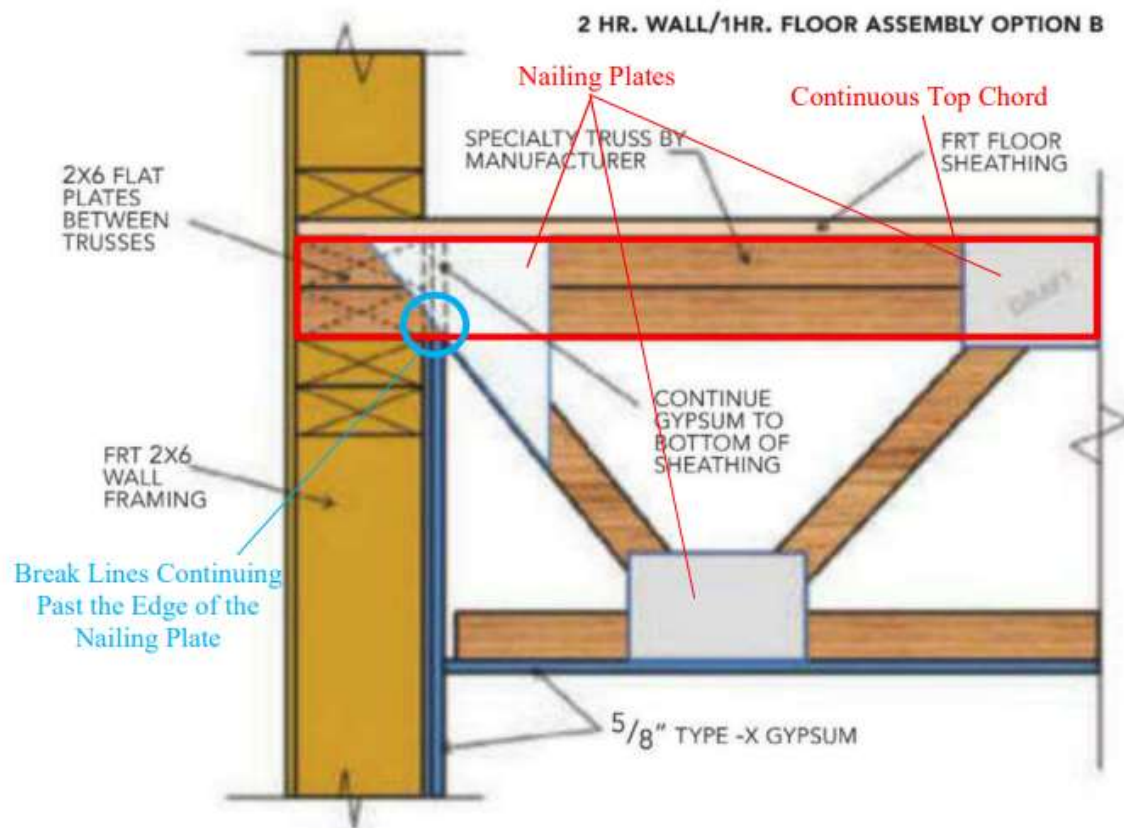
Option B similarly does not teach mounting the joist on the frame wall prior to installation of the drywall.⁴ Moreover, Option B ***does not use a hanger*** or any

⁴ Columbia notes that the Institution Decision referenced additional arguments that were raised in Mr. Fennell's declaration and incorporated by reference in the Petition. *See. e.g.*, ID: 60 (crediting Mr. Fennell's discussion of Russo and Leathe where the references were not even cited in the Petition); *contra* 7 CFR §

other structural connector for coupling the truss to the frame wall. EX2001: ¶289; EX2051: ¶189. Instead, the top chord of the truss is elongated compared to the bottom chord, such that the top chord is stacked on top of the wall's top plate. EX2001: ¶290; EX2051: ¶189. What Simpson and its expert identify as a structural connector, is a triangular-shaped nailing plate on the side of the truss holding the top chord and truss web together (similar to other square nailing plates shown). EX2001: ¶291; EX2051: ¶190. Contrary to Mr. Fennell's characterization, the nailing plate does nothing to couple the truss to the wall assembly. *Compare* EX1003: ¶418; EX2001: ¶292; EX2051: ¶190. Nor is the drywall notched around the plate, but rather around the top chord's entire cross-section. *Compare* EX1003: ¶419; EX2001: ¶292; EX2051: ¶191. Accordingly, the plate only extends through

42.6(a)(3) (“[a]rguments must not be incorporated by reference from one document into another document”). The Board referenced Russo in regard to the order of installation. ID: 60. Russo's spacing brackets carry no vertical load and would not have been considered by a POSA trying to maintain spacing for receiving drywall behind hangers that do carry a load. EX2050: ¶83. Leathe shows a bracket for a ledger board. The bracket is butted up against the building (2:45-46) so that any bending moment is directly resisted by the bracket against the wall. EX2050: ¶84. Leathe provides no teaching for installing sheathing after installation of the hanger.

the sheathing in the sense the top chord it is attached to also extends through the sheathing. EX2001: ¶292; EX2051: ¶191. Although not explicitly stated in the article, the Option B construction would have required the use of fire-retardant treated wood due to the top chord penetrating the sheathing. EX2050: ¶¶167-169; EX2051: ¶¶192-194; EX2093: MiTek00012755 (caulking would be required for each notch). EX2056: ¶9.



EX2008: 6 (annotated).

While Petitioner attempts to piece together disparate teachings for ArchRecord Option A and B, Commins, and Cullen, the proposed combination would not have been made by a POSA. EX2050: ¶¶163-169; EX2051: ¶195.

ArchRecord Option A only shows mounting the fire wall hanger after installing the fire-retardant sheathing on a frame wall. EX2050: ¶164; EX2051: ¶196. Option B does not even use joist hangers and does not describe any of the steps—or order in which they are performed—for constructing the wall. EX2050: ¶165; EX2051: ¶197.

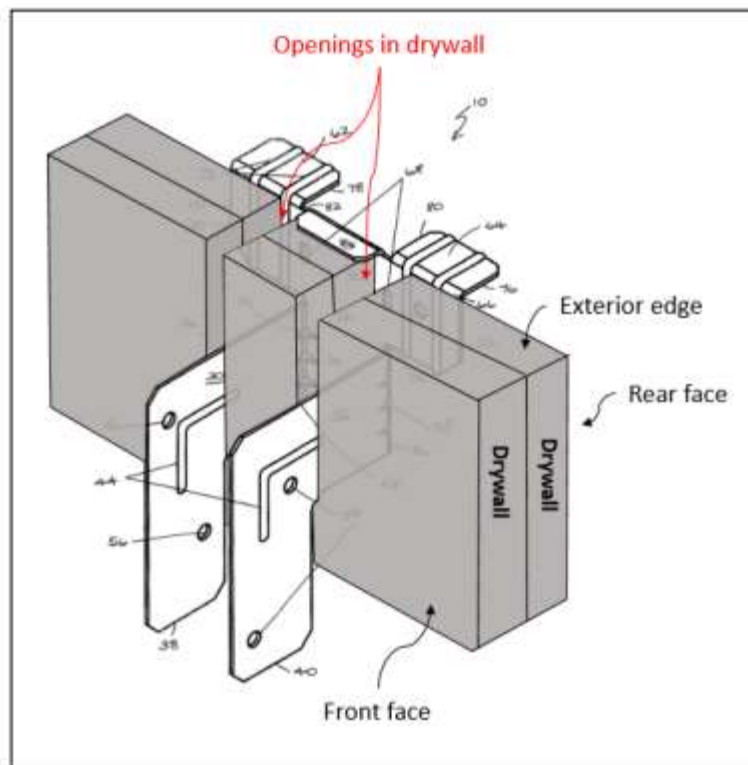
Cullen does not remedy the deficiencies of ArchRecord. As explained in section IV(A)1) above, a POSA would not have considered using the Cullen hanger to cantilever the joist away from the back plate as they would have been concerned that doing so would lead to structural failure of the hanger itself and/or the top plate of the wall when supporting real world vertical loads. EX2050: ¶¶154-156; EX2051: ¶¶198-199; EX2092: SST0087797; EX2086: SST0105127, SST0105129.

Nor does Commins—which is a hurricane tie that does not support a downward vertical load and does not provide any indication that its use would be deemed acceptable with respect to fire-resistive walls assemblies—glue the desperate teachings of Arch Record and Cullen together to arrive at the claimed method. EX2050: ¶¶157-158; EX2051: ¶¶200-204; EX2053: ¶ 12.

None of the asserted references teach installing a hanger first, and subsequently inserting sheathing between an already installed hanger and the wall assembly. EX2050: ¶¶154-156; EX2051: ¶205. Additionally, Petitioner's

proposed solution for combining the elements would result in openings in the drywall that would remain unfilled by any fire-resistive material. EX2050: ¶¶167-169; EX2051: ¶205.

To conclude that the claimed method is obvious because there are only two options to install the fire-retardant sheathing—before or after the hangers—is to ignore the evidence that the art does not show or describe installing drywall after the hangers are installed and that there were enormous problems associated with modifying the hanger art to produce such a method.



EX1004, FIG. 1 (annotated).

The reduction of the obviousness of the claimed method of constructing a fire wall to a binary choice of installing the sheathing before or after the hanger

does not comport with the experience of the POSA and is erroneous. There are many ways of constructing the fire wall. Simpson's expert admits the IBC has an entire table (Table 721) describing ways to build a 2-hour fire-rated barrier.

EX2061: 25:1-10. There are many possible variations as substitutes for gypsum board. EX2061: 29:16-30:11 (fire-treated wood), 33:20-35:8 (intumescent paint), 35:11-36:6 (stucco), 36:8-37:10 (proprietary spray-on substances), 37:12-38:2 (mineral wool), 38:4-22 (stone wool insulation). Moreover, Simpson's expert acknowledged all of these methods could be used with a joist hanger for mounting joists in a firewall. EX2061: 41:2-42:17.

Accordingly, a POSA would not have been motivated to combine ArchRecord, Commins, and Cullen as suggested by Simpson. EX2050: ¶¶151-169; EX2051: ¶206.

C. The Petition Fails to Establish That Multiple Steps of the Method Recited in the Independent Claims Are Obvious

It remains Simpson's burden, as the petitioner, to prove obviousness even after institution of the PGR. *In re Magnum Oil Tools International, Ltd.*, 829 F.3d 1375-77 (Fed. Cir. 2016). Within Simpson's limitation-by-limitation obviousness analysis, Simpson *repeatedly* fails to identify or provide *any citation* to where claim limitations are actually taught within the asserted prior art. EX2001: ¶299; EX2051: ¶207. Specifically, the Petition never cites to any particular teaching

within the prior for the following independent claim limitations pertaining to installing the fire-retardant sheathing:

- [1.E]/[27.E]⁵ – installing the fire retardant sheathing “*after* mounting the fire wall hanger on the frame wall and after cutting the opening into the exterior edge of the fire retardant sheathing” (Pet. at 32, 80, 115-116, 158-159);
- [1.F]/[27.F] – “inserting the fire retardant sheathing between the channel-shaped portion of the fire wall hanger and the frame wall” as part of the step of installing the fire retardant sheathing “after mounting the fire wall hanger on the frame wall” (Pet. at 32-33, 80-81, 116-117, 159);
- [1.G] – “moving the fire retardant sheathing relative to the fire wall hanger mounted on the frame wall so that an edge of the fire retardant sheathing bounding the opening moves alongside the extension portion and the fire wall hanger extends through the opening in the fire retardant sheathing” (Pet. at 33-34, 81-82, 118-119, 159-160); and
- [27.G] – “arranging the fire retardant sheathing relative to the fire wall hanger so that the fire wall hanger extends through the opening in the fire retardant sheathing and part of the extension portion of the fire wall hanger is received in the opening.” (Pet. at 63, 101, 143, 177)

Simpson fails to provide prior art citations for these steps because each step is entirely absent from the references. *See* EX4079: 54:1-21, 54:23-55:25, 59:6-17, 69:21-70:10, 71:22-72:9, 73:12-24, 74:11-13, 75:1-11, 76:5-8, 76:16-78:7,

⁵ Rather than address elements [27.P]-[27.F] of claim 27 separately, Simpson relies on the reasons provided for elements [1.P]-[1.F] of claim 1. Pet. 63, 100, 143, 177.

(Simpson's expert agreeing the prior art fails to teach the inserting step); 60:8-61:3, 61:22-63:16, 64:11-64:25, 71:10-21, 74:5-10, 75:13-16, 76:2-4, 78:9-79:6 (agreeing the prior art fails to teach the moving step); 67:10-68:9, 68:11-21, 68:22-69:3, 72:14-23, 74:14-16, 76:9-12, 78:8-15; 79:16-80:2 (agreeing the prior art fails to teach the arranging step); 80:20-81:4, 92:6-17, 94:4-10, 95:15-97:4 (agreeing ArchRecord does not disclose the inserting, arranging, or moving steps); 80:4-10 (acknowledging that when he says a step was "partially disclosed" it means he did not find the entirety of the step disclosed).

To wit: Of Simpson's asserted references, Yamaguchi, Cullen, and Robinson provide absolutely no disclosure regarding the installation of sheathing. EX1004; EX1007; EX1011; EX2001: ¶300; EX2051: ¶208.

Bundy and ArchRecord are the only references teaching mounting fire-retardant sheathing on a frame wall. EX2001: ¶301; EX2051: ¶209. But Bundy and ArchRecord Option A teach mounting the sheathing *before* mounting the fire wall hanger on the frame wall. EX1005: Fig. 2, 2:20-25 ("[t]he drywall [is] applied ..., and the joist hanger can *then* be attached"), 5:14-20; EX2001: ¶302; EX2051: ¶210. Bundy teaches extending the joist hanger (2) over the drywall panels (6) after the drywall panels are already installed on the wall (4). EX1005: 5:42-43; EX2001: ¶302; EX2051: ¶210.

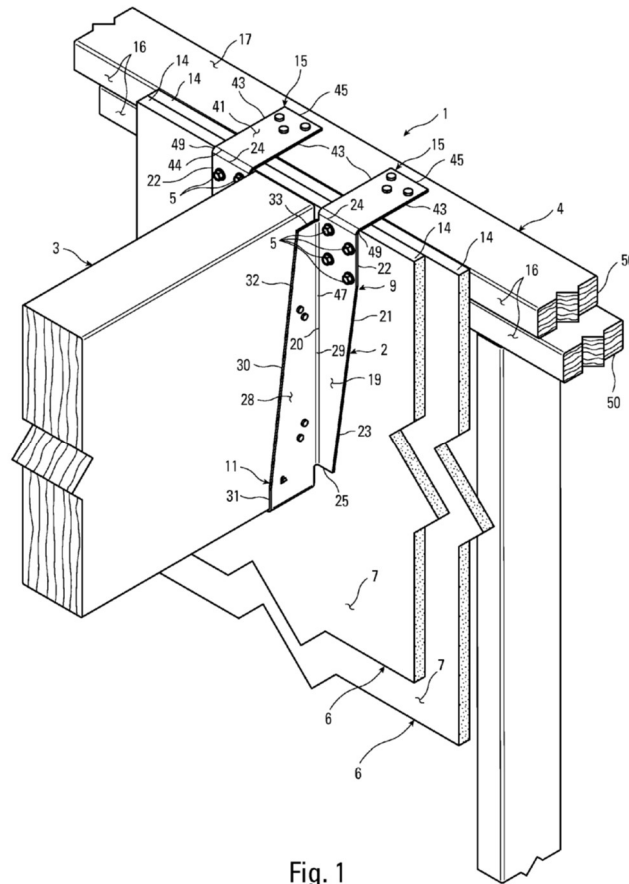
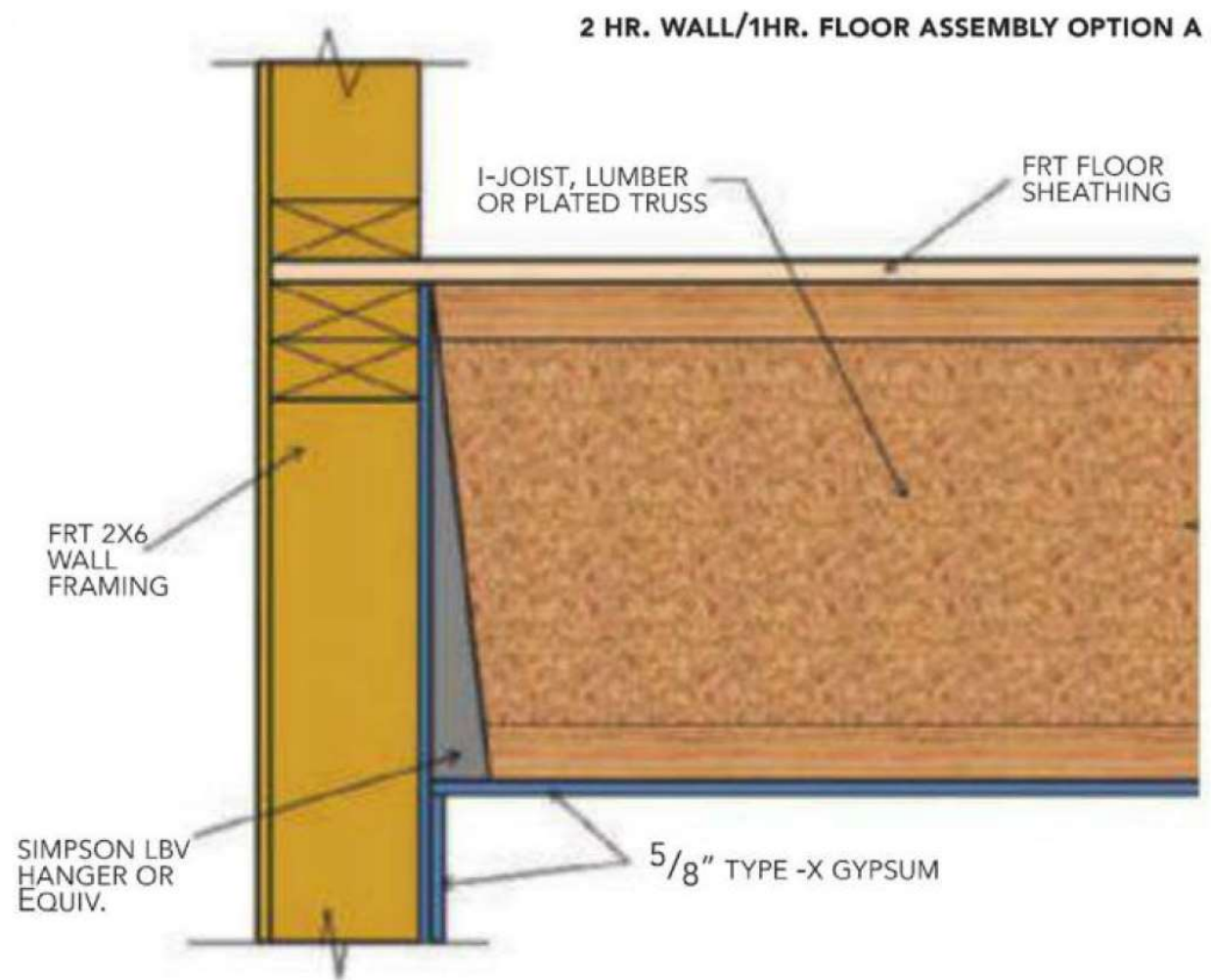


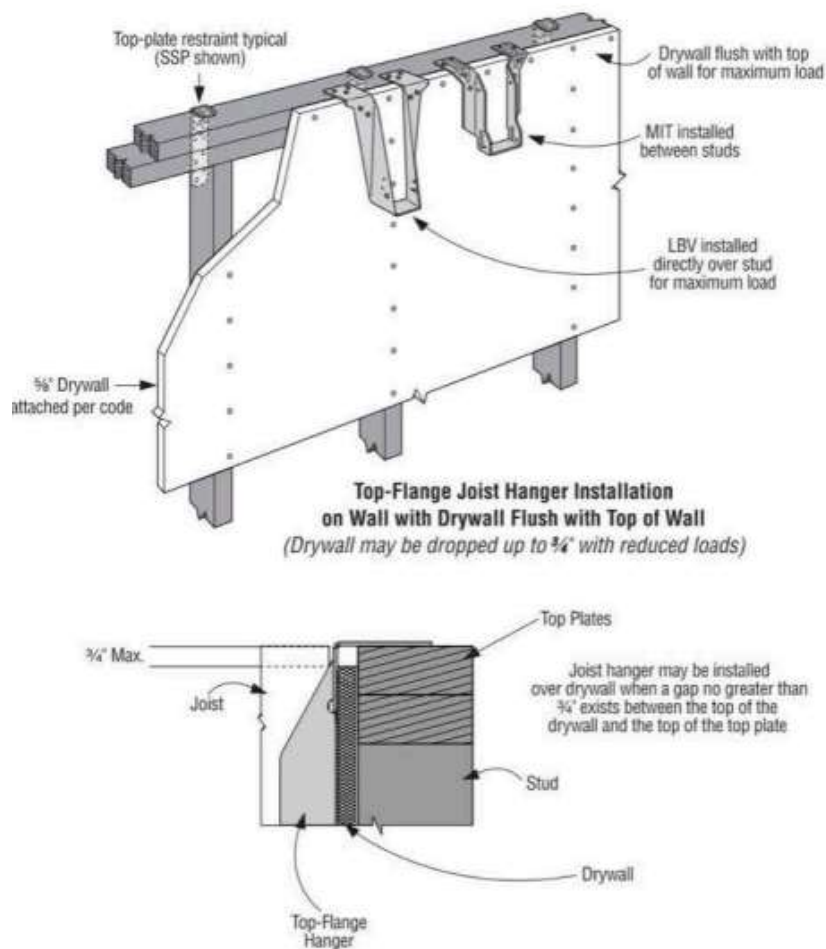
Fig. 1

EX1005: Fig. 1.

Option A is just like Bundy in that the LBV hanger is installed over the top of already installed sheathing, as shown below and consistent with Simpson's technical bulletin for the LBV hanger (EX1012; EX2001: ¶305; EX2051: ¶211):



EX2008: 6.

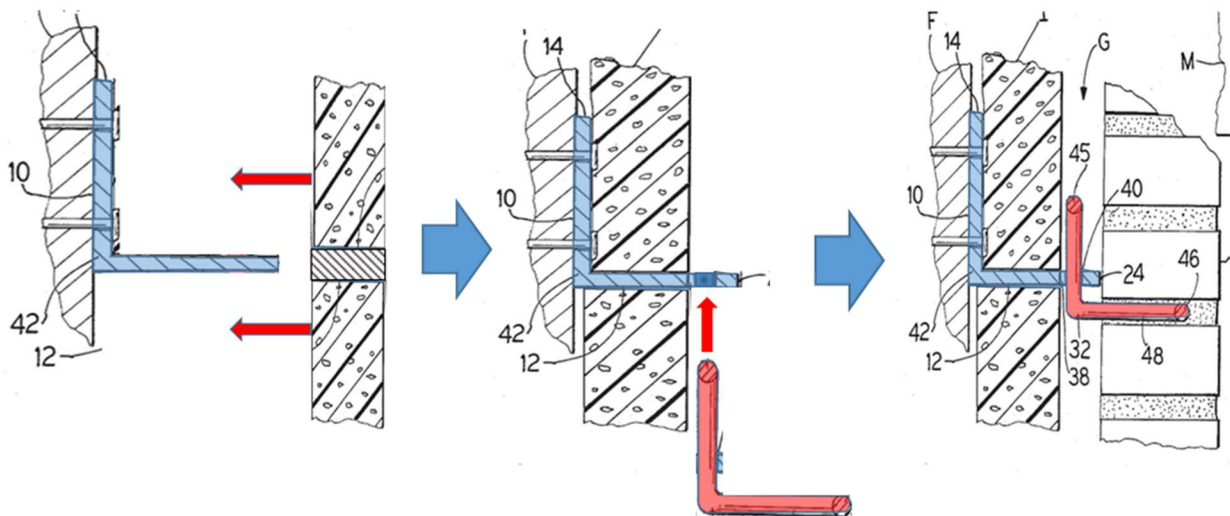


EX1012: 2.

ArchRecord Option B has no hanger. EX2001: ¶305. Instead, the top chord of the truss “bear[s] on the top plates” of the frame wall, similar to platform framing. EX1031: 6; EX2001: ¶305; EX2051: ¶212. Only Option A uses a hanger. EX2001: ¶305. Further, as Option B shows the finished profile of the fire wall, it is entirely silent as to the steps—and their order—to install the joist and sheathing. EX2051: ¶212. Notably while Option A and Option B are depicted side-by-side, the two solutions would be recognized by the POSA as incompatible

alternatives as they rely on completely different framing methods, where Option B is essentially utilizing platform framing and Option A is utilizing semi-balloon framing. EX2050: ¶161; EX2051: ¶213.

Allan discloses wall sheathing in the form of insulation, but discloses different steps to install it than are claimed in the '339 Patent. EX2001: ¶¶306-307; EX2051: ¶214. In Allan, the insulation layer is installed around the outstanding leg (12) of an L-shaped bar. EX2001: ¶307; EX2051: ¶214. Only **after** the insulation layer is installed around the outstanding leg is the wall anchor further assembled by adding a tie (32) (*i.e.*, the part of the wall anchor actually connected to the masonry veneer wall) through an exposed (30) slot in the outstanding leg. EX1006: 4:1-40; EX2001: ¶307; EX2050: ¶¶147-149; EX2051: ¶214.



EX2050: ¶149.

Accordingly, at the time the insulation layer of Allan is installed there is no space between the frame wall and any component of the wall anchor capable of accepting sheathing. EX2001: ¶307; EX2051: ¶215. As such, Allan fails to teach inserting the sheathing between the frame wall and a component of the wall anchor already mounted on the frame wall as required by the “inserting” step of [1.F]/[27.F]. EX2001: ¶307; EX2051: ¶215.

Commins references sheathing in the attempt to avoid the necessity of notching around the hurricane tie, as an improvement over the prior art hurricane tie by eliminating the portion identified as “23” as shown in Fig. 10. EX1032: 3:55-57; EX2001: ¶308; EX2051: ¶¶216-217.

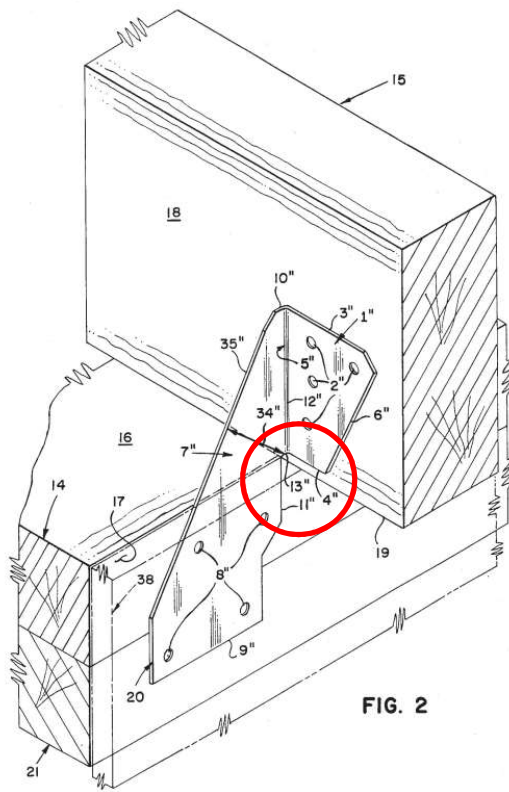


FIG. 2

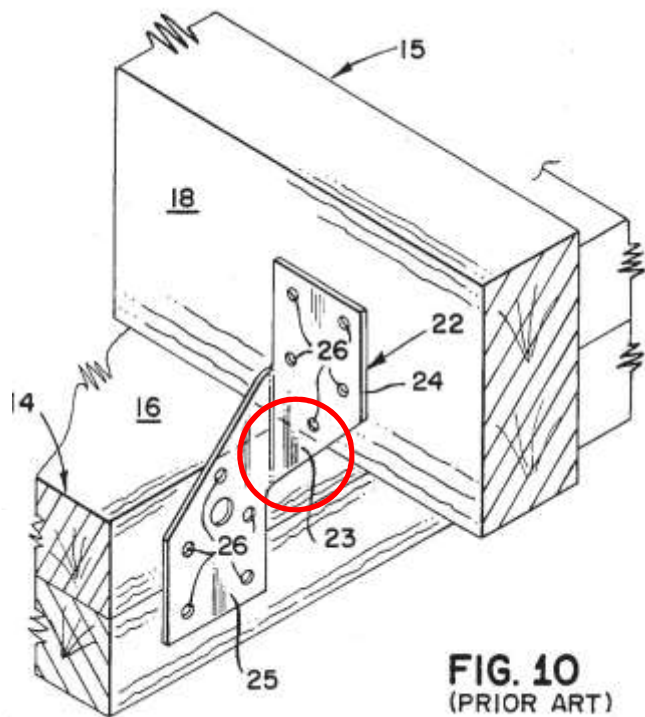
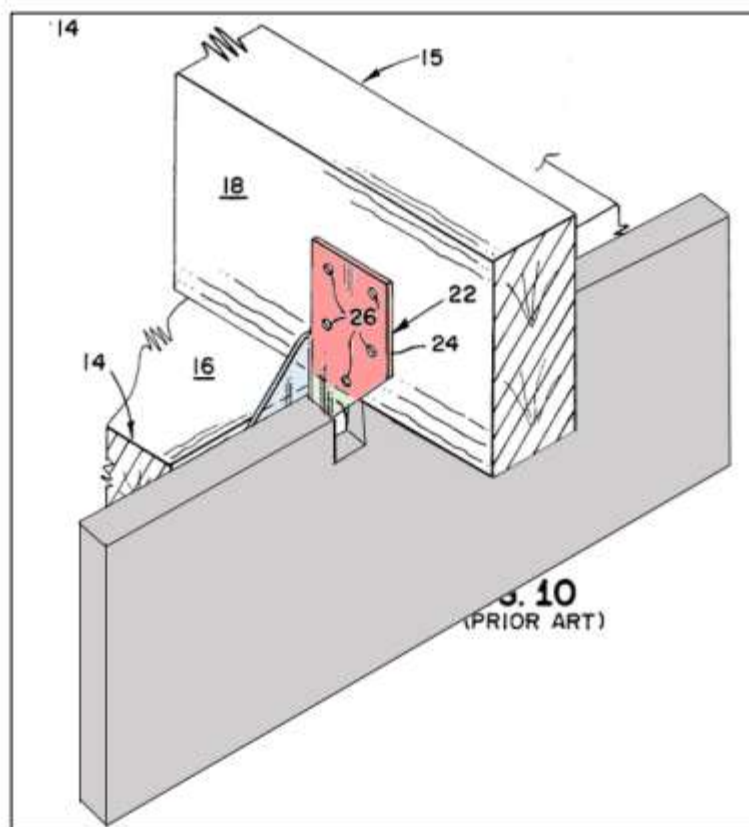


FIG. 10
(PRIOR ART)

EX1032: Fig. 2, 10 (annotated).

Even with the disclosed prior art hurricane tie, the sheathing would still be installed around the portion identified as 23 (shown in Simpson's annotation of Figure 10 below), and not inserted between any components of the hurricane tie and the wall framing. EX2001: ¶309; EX2051: ¶217.



EX1032, FIG. 10 (annotated).

EX1003: ¶422.

Accordingly, none of the asserted prior art references teach the step of installing the fire-retardant sheathing specifically “*after* mounting the fire wall hanger on the frame wall,” where in the step includes “inserting the fire retardant

sheathing between the channel-shaped portion of the fire wall hanger and the frame wall.” *K/S Himpp v. Hear-Wear Technologies, LLC*, 751 F.3d 1362, 1366 (Fed. Cir. 2014) (affirming the rejection of a petitioner’s obviousness contention where the petitioner “failed to cite any evidence on the record to support its contention that [the claim limitations] were known prior art elements.”); EX2001: ¶310; EX2051: ¶218.

For each prior art combination, Simpson relies on circular expert arguments to fill in these missing limitations. First, stating because it was “obvious” to receive sheathing between a channel-shaped portion and the wall frame, the POSA would have “understood” or found it “obvious” to mount the hanger prior to installing the sheathing as required in limitation 1.E/27.E. Pet: 32 (incorporating 23-27), 80 (incorporating 65-72), 115-116 (incorporating 102-109), 158-159 (incorporating 144-153). And then arguing because the hanger would have been installed prior to the sheathing, a POSA would have “known” to insert the sheathing between the channel-shaped portion and the frame wall as required in limitations 1.F/27.F. Pet: 32-34, 80-83, 116-119, 159-160.

This argument also improperly treats the missing limitations as mere peripheral issues filled in by the POSA’s common sense. Common sense or knowledge may inform the analysis of obviousness, such reasoning “is typically invoked to provide a known *motivation to combine*, **not** to supply a missing claim

limitation.” *Arendi S.A.R. v. Apple Inc.*, 832 F.3d 1355, 1361 (Fed. Cir. 2016) (emphasis partially in original). Using common sense to supply a missing limitation is improper. *K/S Himpp*, 751 F.3d at 1366 (“the Board cannot accept general conclusions about what is ‘basic knowledge’ or ‘common sense’ as a replacement for documentary evidence for core factual findings in a determination of patentability”); *Artsana USA, Inc. v. Kolcraft Enterprises, Inc.*, Appeal No. 2015-007617, Decision on Request for Rehearing, pg. 24 (P.T.A.B. Aug. 8, 2016) (common sense cannot “be a replacement for core factual findings required for a rejection. Instead, evidence to support an assertion that structural features of a claim *were known in the art is required.*”).

Critically, “common sense or general knowledge in the art **may not** provide a limitation missing from the prior art when the limitation at issue ‘plays a major role in the subject claimed.’” *Intel Corp. v. VLSI Tech. LLC*, IPR2019-01194, Paper 29 at 79 (P.T.A.B. Jan. 12, 2021); *see Arendi S.A.R. v. Apple Inc.*, 832 F.3d 1355, 1361, 1363 (Fed. Cir. 2016) (“In cases in which ‘common sense’ is used to supply a missing limitation ... resort[ing] to common sense must be searching. And, this is particularly true where the missing limitation goes to the heart of an invention.”); *see DSS Tech. Mgmt., Inc. v. Apple Inc.*, 885 F.3d 1367, 1375 (Fed. Cir. 2018) (declining to use common sense to supply a missing limitation because “[t]he missing limitation [] plays a major role in the subject matter claimed”);

Like in *Arendi*, the missing limitations in the present case “plays a major role in the subject matter claimed.” *Arendi S.A.R.L.*, 832 F.3d at 1361-62 (finding it improper to allow common sense to supply a missing step where the missing step provided the premise of the claimed invention). Specifically, the step of installing the fire-retardant sheathing specifically “**after** mounting the fire wall hanger on the frame wall” **wherein the step includes** “inserting the fire retardant sheathing between the channel-shaped portion of the fire wall hanger and the frame wall” [limitations 1.E/27.E and 1.F/27.F] is a **key** premise of the claimed method. EX2001: ¶311; EX2051: ¶219. This step is not peripheral as it goes to the heart of the **benefit** of the claimed inventive method—mounting the fire-retardant sheathing after the hanger is mounted to the frame wall. EX2001: ¶311; EX2051: ¶219. As ‘339 Patent explains, installing the fire-retardant sheathing after mounting the fire wall hanger “**simplifies construction** by allowing the building to be completely framed and roofed before requiring the sheathing 34 to be installed” and allows “[t]rade workers ... [to] have **complete access to the wall cavity** to install components without interference from the sheathing 34” EX1001: 7:67-8:21; EX2001: ¶¶28, 312; EX2051: ¶220.

Further, the step of installing the fire-retardant sheathing **after** mounting the fire wall hanger plays a major role because it drives a number of the other claim limitations, specifically:

- (1) the configuration of the hanger as the hanger itself is required to define a space for receiving sheathing [1.B/ 27.B],
- (2) the step of cutting an opening in the sheathing [1.D/ 27.D],
- (3) the moving of the sheathing relative to the hanger such that the edges of the fire retardant move alongside the extension portion [1.G], and
- (4) the arranging of the sheathing relative to the hanger such that the extension portion is received in the opening in the fire-retardant sheathing [27.G].

EX2001: ¶313; EX2051: ¶221.

Simpson fails to meet its fundamental obligation to establish a *prima facie* case of obviousness for any of its obviousness grounds because it has not demonstrated the steps recited in limitations [1.E]/[27.E], [1.F]/[27.F], and [1.G]/[27.G] of the independent claims were known in the prior art.

D. Claim 25

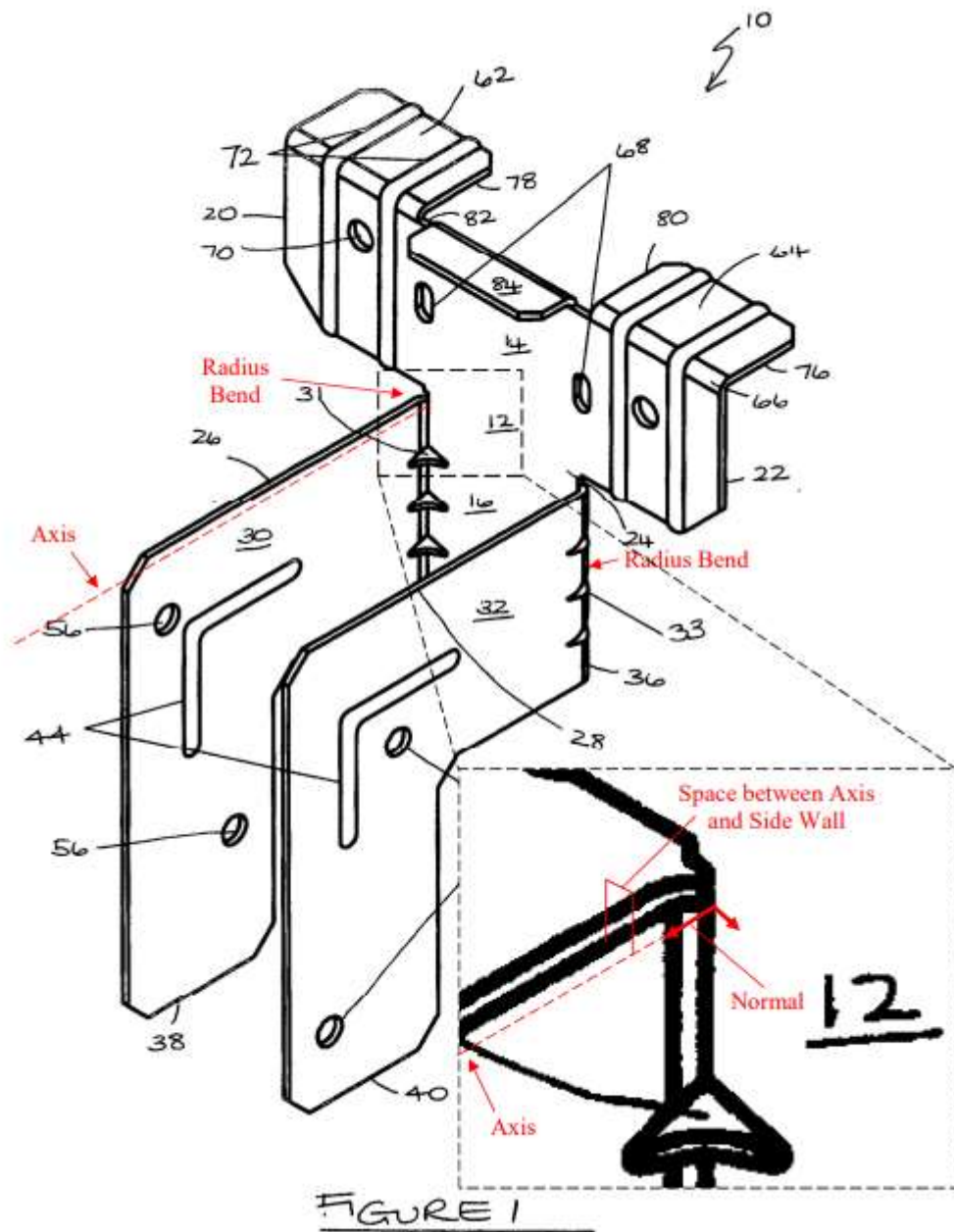
Simpson's obviousness challenges as to Claim 25 are limited to Grounds 3 and 9 (applying Cullen) and Ground 7 (applying Robinson).

1. Claim 25 is Valid over Cullen (Grounds 3 and 9)

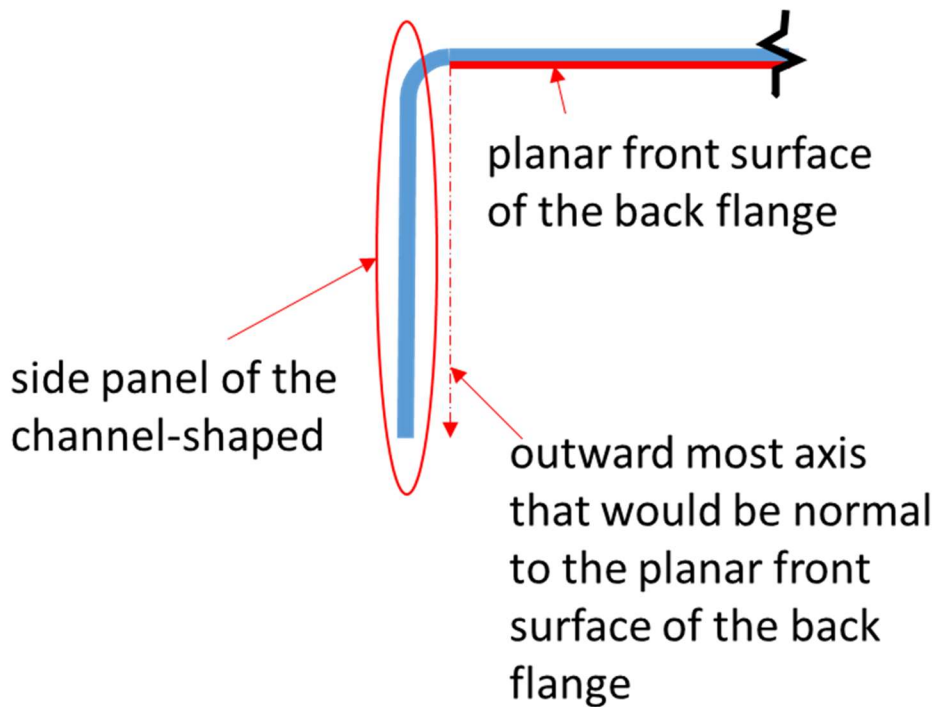
Claim 25 recites “an axis that is normal to the planar front surface of the back flange ..., the axis *intersecting the side panel* of the channel-shaped portion and the planar front surface of the back flange.”

As shown below, Cullen's side walls (30, 32) are connected to the back plate (12) by *radius bends*. EX1004: 10:22-23 (“side walls 30, 32 are created by folding

the lower portion of the back plate 12 along vertical fold lines”); EX2050: ¶¶176-177; EX2051: ¶¶388-394. This means the side walls (30, 32) are spaced outward from the “planar front surface” the back plate (12). EX2050: ¶¶177-178; EX2051: ¶394. As a result, it would be impossible for an axis that is normal to and intersecting the “planar front surface” of the back plate (12) to also intersect one of the side walls (30, 32) which are “perpendicular to the back plate.” EX1004: 10:25-26; EX2050: ¶¶178-179; EX2051: ¶395. Instead, any such axis that is normal to the planar front surface of the back flange would necessarily be spaced apart from and parallel to the side walls (30, 32) as shown below. EX2050: ¶¶178-179; EX2051: ¶¶295-296.



EX1004: Fig. 1 (annotated).



EX2050: ¶178.

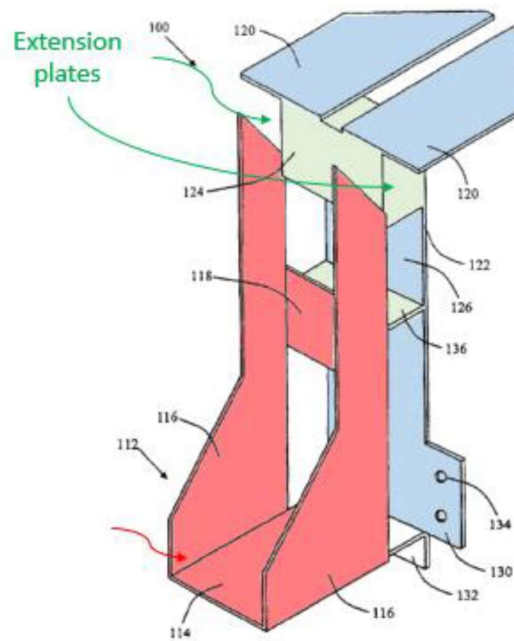
For this reason, claim 25 is valid over the Cullen grounds.

2. Claim 25 is Valid over Robinson (Ground 7)

In addition to the “axis that is normal” limitation discussed above, claim 25 also recites “the extension portion includes first and second planar extension plates.”

To meet this limitation, Simpson asserts that Robinson’s mount (124) has “side plates.” Pet: 139-140. But this is not the case. There is no illustration or description in Robinson about the internal construction of the mount (124).

EX2050: ¶¶181-183; EX2051: ¶¶400-403.



In fact, the figures of Robinson are at best inconsistent with each other.

Figure 2 shows the mount (124) as a block, with no indication of its interior construction. EX2050: ¶184; EX2051: ¶404. Figure 3 does not show the mount (124) at all. EX2050: ¶¶185-186; EX2051: ¶¶405-406.

Tellingly, Fig. 4 (a top plan view) shows the portions of the purported back flange (second surface (122)) obscured by the flanges (120) in broken lines to indicate a hidden element, but there are no such hidden lines in Fig. 4 for any purported side plates of the mount (124). EX2050: ¶187; EX2051: ¶407.

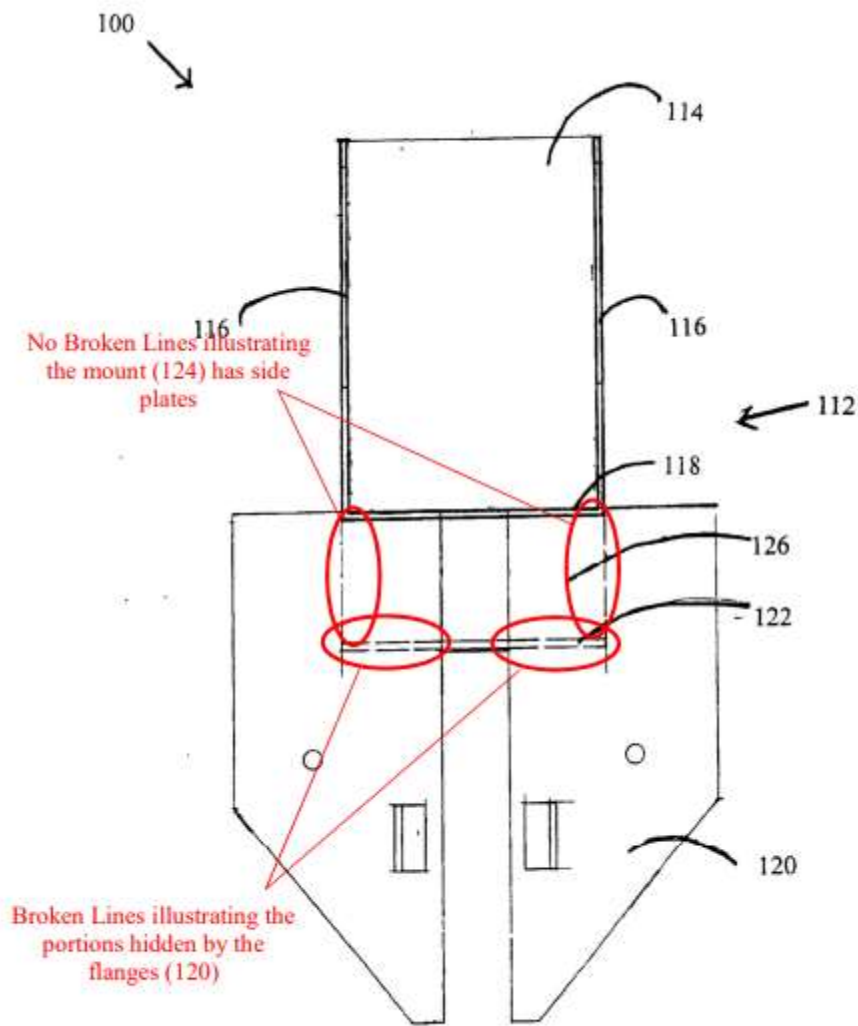


Figure 4

EX1011: Fig. 4 (annotated); EX2050: ¶187; EX2051: ¶407.

Moreover, claim 25 recites “the back flange *extending from* an edge of the top flange.” Robinson does not disclose this feature, as agreed by the Examiner in related U.S. Patent Application No. 18/492,460. EX2083: 32 (“Robinson (GB 2433522 A) is unclear as to whether the back flange extends from an edge of the top flange”); EX2050: ¶¶189-196; EX2051: ¶¶410-418.

For these reasons, claim 25 is valid over the Robinson ground.

E. Objective Indicia

For Simpson's part, its expert deliberately chose to ignore objective indicia of non-obviousness because he (1) assumed that they would be weighed less heavily than his prior art combinations, and (2) could not think of *any* objective evidence that would change his mind about his opinions. EX2061: 132:1-22, 133:13-134:18, 135:17-24. *See also id.* 139:6-23 (acknowledging not looking at Simpson documents for objective evidence despite having access and making no effort to obtain MiTek documents from Simpson's counsel); *accord* 140:15-142:18 (acknowledging he made no effort to analyze third party evidence or to conduct internet research). *See, e.g., WL Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d, 1540, 1555 (Fed. Cir. 1983) (holding that it was error for a court to ignore objective evidence even if it felt "no amount" of such evidence "can save it" from being obvious as such evidence is an "integral part of the analysis.").

However, objective evidence must be considered when determining obviousness as it is "crucial in avoiding the trap of hindsight when reviewing, what otherwise seems like, a combination of known elements." *Leo Pharm. Prods., Ltd. v. Rea*, 726 F.3d 1346, 1358 (Fed. Cir. 2013); *see also Volvo Penta of the Americas, LLC v. Brunswick Corp.*, 81 F.4th 1202, 1215 (Fed. Cir. 2023); *Cont'l Can Co. USA v. Monsanto Co.*, 948 F.2d 1264, 1273 (Fed. Cir. 1991) ("[t]he

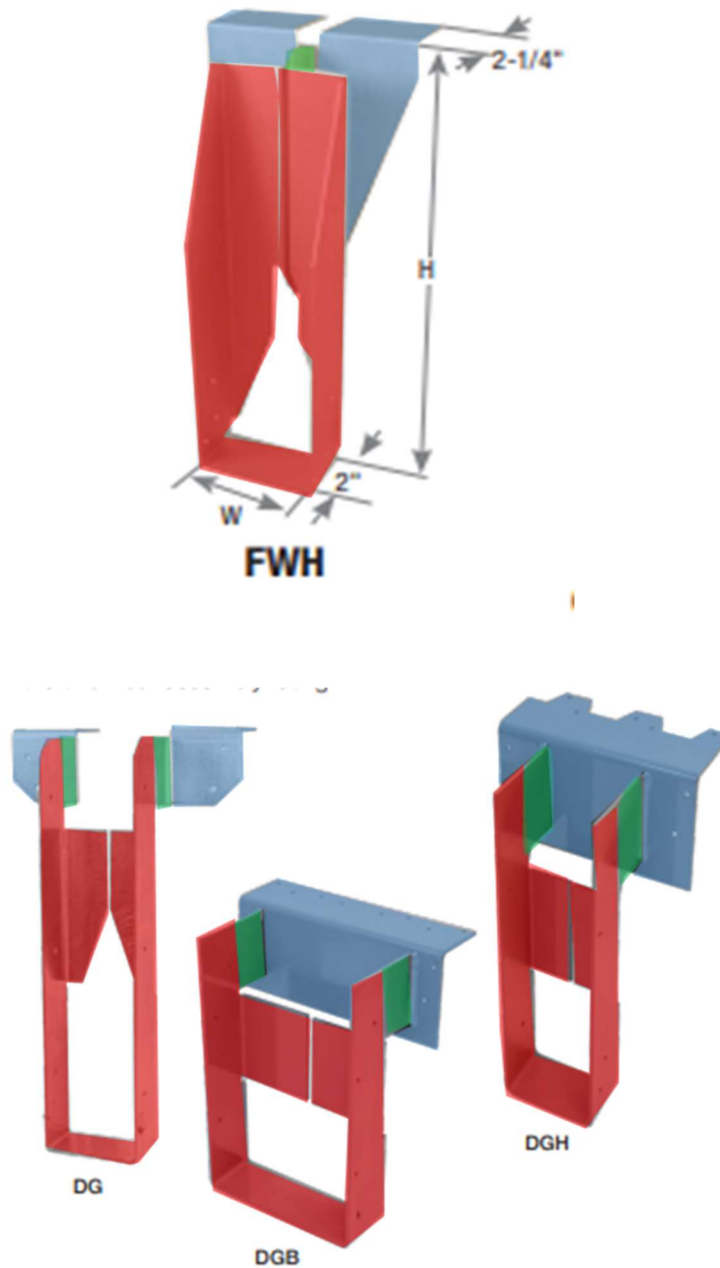
significance of a new structure is often better measured in the marketplace than in the courtroom”); *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1539 (Fed. Cir. 1983) (holding objective evidence must be considered with prior art combinations in all cases—not just in a “close case”). Had he bothered to look, and perform the appropriate analysis, Mr. Fennell would have discovered substantial objective evidence that counsels against his hindsight conclusions of obviousness.

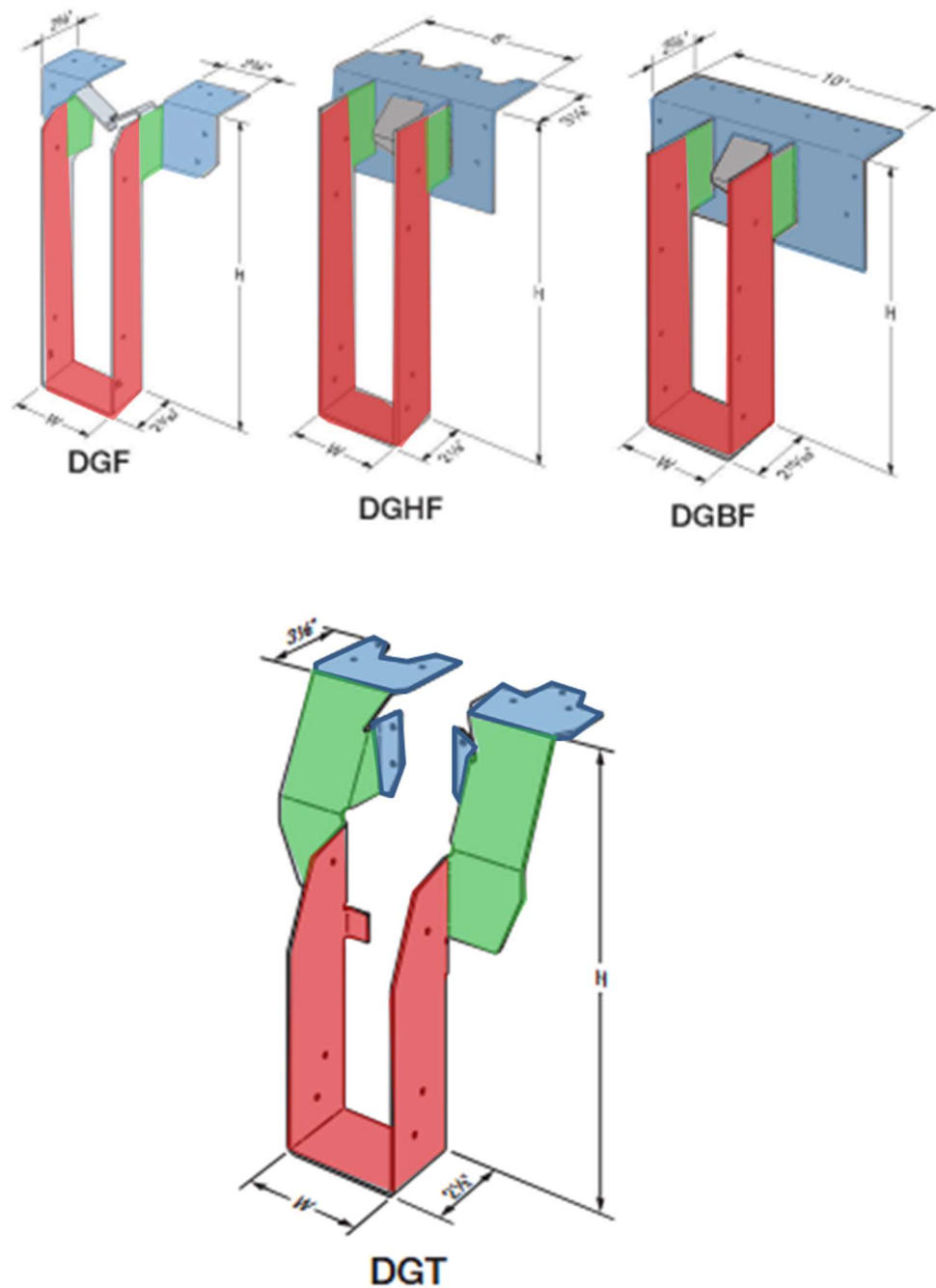
1. Commercial success

“When ‘a product attains a high degree of commercial success, there is a basis for inferring that [attempts to a solution] have been made and have failed.’” *WBIP, LLC v. Kohler Co.*, 829 F.3d 1317, 1330, 1337 (Fed. Cir. 2016). MiTek’s⁶ FWH and Simpson’s DG/DGB/DGH, DGF/DGBF/DGHF, and DGT each embody the invention claimed in at least claim 1 of the ‘339 Patent. EX2050: ¶¶200, 357-360, Appendix A-Appendix D; EX2051: ¶¶226-227, Appendix A-Appendix D. As highlighted in the figures below, each of the products are firewall hangers having the structural features (connection portion (blue), extension portion (green), and U-shaped portion (red)) recited in the Claim 1. EX2050: ¶358; EX2051: ¶374; EX2132; EX2133; EX2134; EX2135. The marketing materials explicitly (1) identifies that each of the products are intended to be installed on the top plate of a

⁶ MiTek is a real-party-in-interest. USP was a predecessor brand of MiTek.

wood frame wall and allow subsequent installation of two layers of 5/8" drywall and (2) provides instructions for how to cut the drywall to install around the hanger's extension portion. EX2050: ¶359; EX2051: ¶375; EX2132; EX2133; EX2134; EX2135.





Prior to the FWH, the only other firewall hanger available, for use in two-hour fire-resistive wall assemblies, was Simpson's DU/DHU/DHUTF—the commercial embodiments of Bundy—which could not be installed prior to drywall.

EX2059: ¶5; EX2050: ¶201; EX2051: ¶228; EX2075: 12-13, 23. Although

Simpson's DU/DHU/DHUTF slightly beat MiTek's FWH to market, Simpson's internal documents reflect that sales for the DU/DHU/DHUTF were minimal and the FWH immediately built a substantial market share upon its release, thus effectively establishing the market for firewall hangers. EX2050: ¶¶202-212;

EX2051: ¶¶229-236; EX2094 [REDACTED]

[REDACTED]; EX2095 [REDACTED]

[REDACTED] EX2096 [REDACTED]

[REDACTED] EX2097 [REDACTED]

[REDACTED] EX2098

[REDACTED] EX2099 [REDACTED]

[REDACTED] EX 2108 [REDACTED]

[REDACTED] *accord* EX 2159.

From 2014 to 2017, the only two products in the firewall market were the FWH and DU; and sales of the FWH (priced at a premium) increased at a much faster rate than the DU. EX2059: ¶3 (noting only MiTek and Simpson offer firewall hanger products); EX2055: ¶¶45-48 (analyzing sales trends of products

with and without patented method), ¶¶49-52 (analyzing MiTek’s increased market share of products sold allowing for the patented method and the price premium both MiTek and Simpson obtained for such products); *accord* EX2059: ¶16; EX2165. Once introduced in 2017, Simpson’s infringing products, combined with the FWH, enjoyed substantial sales success compared to the DU hanger that could not be installed before sheathing. EX2059: ¶¶9-11 (detailing revenue growth), ¶¶12-13 (detailing unit sales growth). As noted by Mr. Duncan, from 2014-2023, fire wall hangers that allowed for the patented method of installation achieved 88-86% product market share. EX2055: ¶49. The FWH, which allows for the patented installation method, became one of MiTek’s most profitable structural connector products (EX2059: ¶¶11, 15), is desired by customers because of its ability to be installed prior to dry wall (*id.* at ¶7), and allows MiTek to price it at a premium compared to other comparable hangers (*id.* at ¶16). *Accord* EX2055: ¶¶50-52. Fire wall hangers with the ability to be installed using the claimed method become the industry standard. *Transocean Offshore Deepwater Drilling, Inc. v. Maersk Drilling USA, Inc.*, 699 F.3d 1340 at 1350 (Fed. Cir. 2012).

Simpson’s engineering and sales team, and its economic expert, concede sales of the FWH have been much more robust than the DU. EX2075: 28-29; EX2050: ¶¶213-214; EX2051: ¶¶237-239; *see also* EX2100 [REDACTED]

[REDACTED]

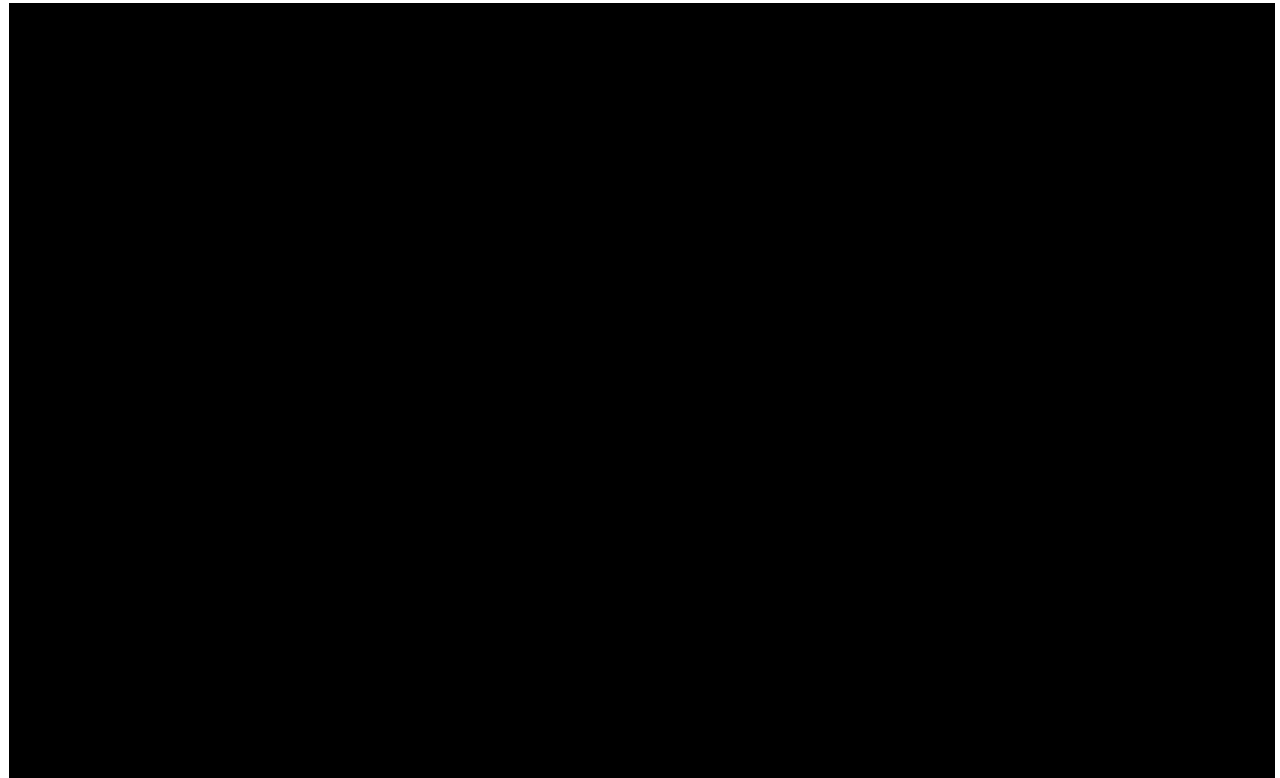
EX2068: 133:8-134:2 [REDACTED]

[REDACTED] But in 2017, Simpson came out with their versions of the FWH with the ability to be installed according to the claimed method. EX2117

[REDACTED] *Rolls-Royce, PLC v. United Techs. Corp.*, 603 F.3d 1325, 1340 (Fed. Cir. 2010) (“the rest of the industry quickly came out with similar versions... [demonstrates] *Rolls-Royce’s* design has been commercially successful”). Sales of Simpson’s infringing fire wall hangers increased significantly and quickly outperformed Simpson’s DU/DHU/DHUTF series.

EX2055: ¶¶45-48; EX2050: ¶¶215-219; EX2051: ¶¶240-246; EX2101 [REDACTED]

[REDACTED] EX2075: 28-29. Below is a chart created by Simpson’s expert showing sales for the FWH, DU, DG, DGF, and DGT:



EX2075: 29.

The FWH commanded a market premium over the DU because of its ability to be installed prior to drywall. EX2050: ¶¶220-221; EX2051: ¶¶247-248;

EX2094 ([REDACTED]

[REDACTED]

[REDACTED]; EX2068: 38:24-39:17; 43:19-44:8;

111:16-23; EX2165. Ryan Holmes, a customer of Mitek, has been willing to pay more for the FWH because of its ability to allow framing to be completed prior to introducing the drywall. EX2058: ¶¶9-15.

Other customers strongly desired the FWH, and its ability to be installed prior to drywall, and were urging Simpson to bring a similar product to market, as reflected in Simpson's internal documents and witness testimony. EX2050: ¶¶222-238; EX2051: ¶¶249-267; EX2068: 34:11-35:4; 35:18-36:11; 69:4-21; 91:3-24; EX2100 [REDACTED]

[REDACTED] EX2102 [REDACTED]

[REDACTED]

[REDACTED] EX2103: SST0050380

[REDACTED]

[REDACTED] EX2104: SST0021892 [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]; EX2066: 120:15-121:8 [REDACTED]

[REDACTED]; EX2065: 45:14-23; 56:15-

57:3; 162:17-164:17. Many customers expressly demanded a firewall hanger that

could be installed prior to drywall. EX2136: SST0077501 [REDACTED]

[REDACTED]

EX2100: SST0080098

EX2105: SST0021195

EX2075: 31, 40.

Simpson's expert concedes that the FWH's

EX2075: 31, 40; EX2151: 38:14-25. The fact that demand for the FWH (and accused products) is driven by the patented method of installation is further confirmed by an open-ended survey conducted by Mr. Mike Alley. Mr. Alley's results revealed that the ability to install the hanger prior to dry wall installation was the primary factor in making a purchasing decision (roughly 85%) and roughly 87% of respondents said they would be willing to pay more for a hanger with this feature. EX2054: ¶¶23-26, 91-96. Likewise, after considering the evidence, Mr. Duncan, an economist, concluded that the invention claimed in the '339 Patent represents a primary driver of the economic demand for products incorporating the invention claimed in the '339 Patent. EX2055: ¶11.

Plainly, commercial success of products embodying MiTek's claimed FWH demonstrate non-obviousness.

2. Copying

"The fact that a competitor copied the patentee's invention, rather than one within the public domain, is probative of non-obviousness because it suggests the

competitor saw value in the invention that he could not achieve without copying.”
Medtronic, Inc. v. Teleflex Innovations S.a.r.l., 70 F.4th 1331, 1339 (Fed. Cir.
2023).

Simpson’s internal documents and witness testimony demonstrate that it became aware of and closely studied the FWH upon its release. EX2068: 41:3-10; EX2106; EX2065: 146:25-154:16; EX2050: ¶¶244-246; EX2051: ¶¶268-270. Simpson documents reveal that the FWH hanger—and its ability to be installed prior to drywall according to the claimed method of the ‘339 Patent—was strongly preferred over its own DU series products that could only be installed after the drywall. EX2106; EX2104; EX2050: ¶¶247-248; EX2051: ¶¶271-272; EX2165; EX2159. Within a year of the FWH being released, Simpson was pressured [REDACTED] [REDACTED] to develop a product that could be installed before the drywall to compete with MiTek’s FWH. EX2064: 45:14-23; *see also* 162:17-164:17; EX2107; EX2096; EX2136; EX2099; EX2108; EX2094; EX2100; EX2050: ¶¶249-257; EX2051: ¶¶273-283. Simpson acted on this pressure in developing and releasing its own hangers. EX 2055: ¶¶ 27-36; EX2109:

SST0068521 [REDACTED]
[REDACTED]
[REDACTED]; EX2112: SST0044960 [REDACTED]
[REDACTED]

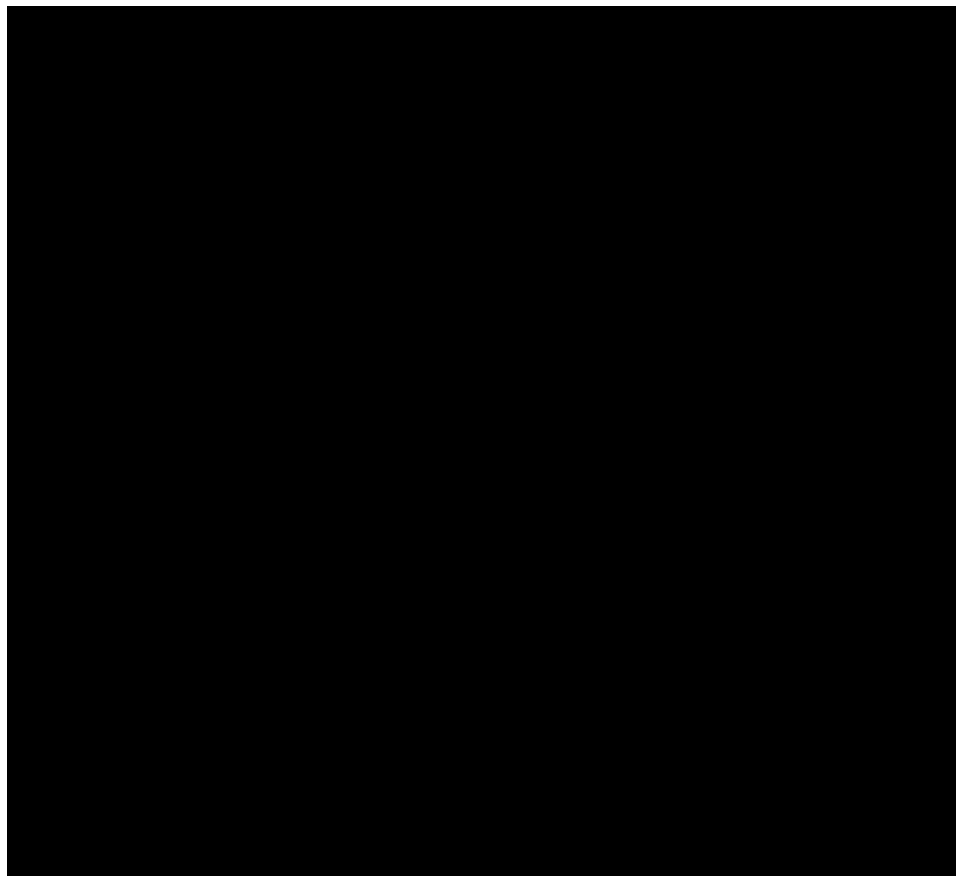
[REDACTED] EX2050: ¶¶258-262;

EX2051: ¶¶284-288. [REDACTED]

[REDACTED]

EX2111; EX2065: 70:15-74:22; EX2112; *see also* EX2065: 199:16-201:25;

EX2050: ¶¶263-264; EX2051: ¶¶289-290.



EX2113: SST045546 (showing Simpson's concept (left) and MiTek's FWH (right)).

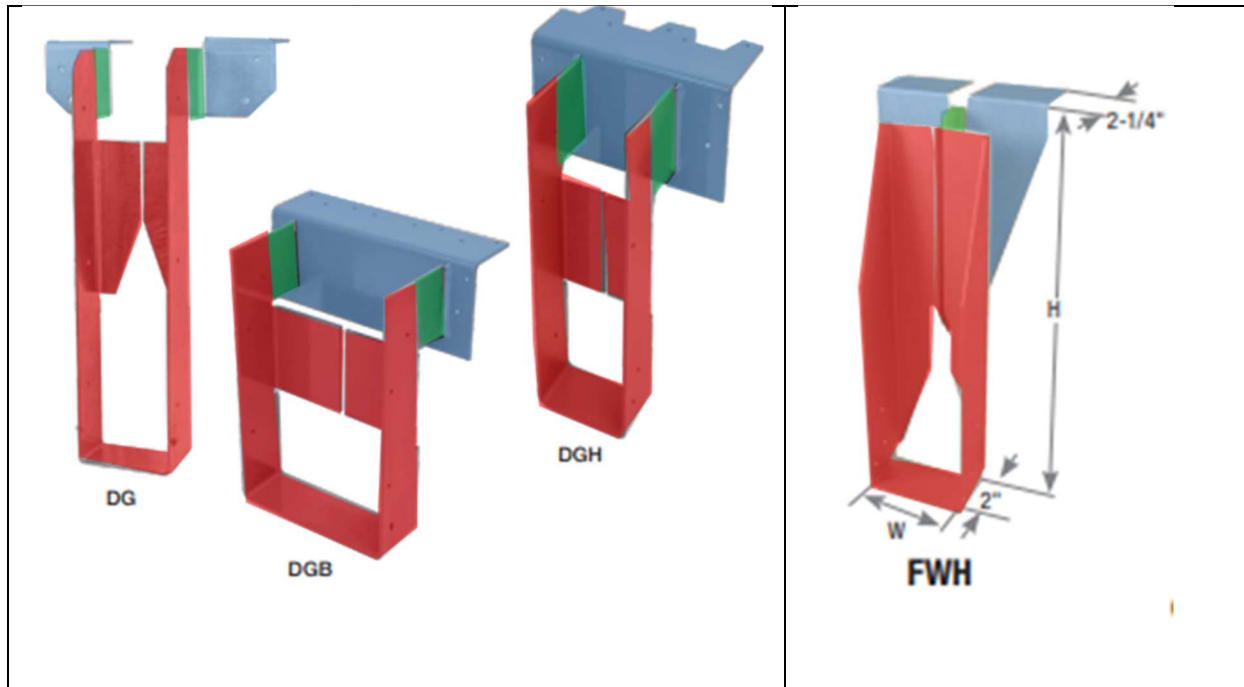
The DG Series hangers that Simpson ultimately released designed around an earlier MiTek patent application by avoiding a single limitation, while otherwise still copying the inventive aspects of the FWH that are required to practice the

method of constructing a firewall that is now claimed in the ‘339 Patent—namely the use of an extension portion configured to extend through the sheathing so as to create and successfully maintain space for drywall to be inserted after completion of the framing. EX2115, EX2116, EX2117, EX2133; EX2050: ¶¶269-276; EX2051: ¶¶291-301. This constitutes substantial evidence of copying. *Apple Inc. v. Samsung Elecs. Co.*, 839 F.3d 1034, 1054 (Fed. Cir. 2016); *Transocean*, 699 F.3d at 1352.

Copying can be shown by evidence of access and substantial similarity to a patented product. *Medtronic*, 70 F.4th at 1340. Here, the evidence is stronger than that deemed sufficient to find copying in *Medtronic* or *Transocean*. Prior to embarking on designing its own products, Simpson knew of and analyzed the FWH hanger and had the desire to emulate its beneficial ability to install the hanger prior to drywall. Simpson possessed and compared the FWH to its prototypes while developing its DG series product—and developed a product that was a [REDACTED] Like *Volvo Penta*, the FWH guided Simpson’s designs and the side-by-side comparisons of the hangers Simpson was developing to the FWH was “more akin to ‘copying’ than to a mere assessment of a competitor’s product.” 81 F.4th at 1213 (internal quotation omitted).

Substantially similarity considers the products “as a whole” and is not precluded by the presence of differences. *Medtronic*, 70 F.4th at 1340-41.

Simpson's DG series products are substantially similar to the FWH product. EX2050: ¶¶270-276; EX2051: ¶¶295-301. The hangers within the DG series incorporated the components of the FWH (a channel shaped portion (red in the figures below), an extension portion comprising two extension flanges (green in the figures below), and a connection portion comprising a top flange and a back flange extending from an edge of the top flange (blue in the figures below)) and their configuration (the extension flanges being configured to extend through drywall creating space to receive the drywall). EX2132; EX2133; EX2050: ¶¶270-275; EX2051: ¶¶295-301. Further, the differences between Simpson's DG Series and the FWH—primarily the extension flanges being spaced apart, without otherwise changing their function—were not so significant as to preclude substantial similarity. EX2050: ¶¶276-279; EX2051: ¶¶302-305; EX2133; EX2132.



EX2132; EX2133; EX2050: ¶270; EX2051: ¶296.

This constitutes “strong evidence of non-obviousness.” *Volvo Penta*, 81 F.4th at 1213; EX2050: ¶281; EX2051: ¶307.

3. Industry praise

“Evidence that the industry praised a claimed invention or a product that embodies the patent claims weighs against an assertion that the same claimed invention would have been obvious.” *Apple*, 839 F.3d at 1053. This is because “industry participants, especially competitors, are not likely to praise an obvious advance over the known art.” *Id.*

Contemporaneous e-mails and communications from Simpson and MiTek demonstrates a chorus of industry praise for the FWH from specifiers (i.e. engineers and architects) and installers (framers and general contractors). EX2050:

¶¶283-291; EX2051: ¶¶308-317; EX2118; EX2119; EX2120; EX2121; EX2122; EX2123; EX2102; EX2124. Notably, many of the specifiers and installers [REDACTED] specifically recognized the significance and value of the ‘339 Patent’s claimed installation method. EX2050: ¶¶292-300; EX2051: ¶¶318-326; EX2106; EX2104; EX2103; EX2125; EX2108; EX2094; EX2105; EX2126. Certain jurisdictions even began requiring the FWH or similar hangers that could be installed prior to the drywall. EX2050: ¶301; EX2051: ¶327; EX2068: 132:8-23; EX2103; EX2159; EX2089.

Further, MiTek’s customers attest to the many benefits of the FWH’s claimed method of installing the unique hanger prior to drywall. EX2056: ¶¶9-15; EX2057: ¶¶8-13; EX2058: ¶¶6-14; *In re Nat. Alternatives, LLC*, 659 F. App’x 608, 614–15 (Fed. Cir. 2016) (considering such declarations as “real world evidence”).

There is substantial evidence of industry praise of the FWH and the claimed installation method. EX2050: ¶305.

4. Industry skepticism and teaching away

“A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *Allergan, Inc. v. Sandoz Inc.*, 796 F.3d 1293, 1305 (Fed. Cir. 2015) (*quoting In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994)). Bundy

explains its installation “[i]mportantly, [] does not require any alteration of the drywall,” thereby discrediting and discouraging solutions in which the hanger would be require alterations to the drywall. EX2050: ¶¶348-353; EX2051: ¶¶374-380; EX1005: 2:18-19. In other words, Bundy taught away from cutting cutouts into the fire-resistant sheathing as required by the claims of the ‘339 Patent.

In addition to the express teaching away by Bundy, the parties’ contemporaneous documents demonstrate that industry participants—including Simpson’s own skilled artisans—expressed skepticism of the FWH upon its initial release. “If industry participants or skilled artisans are skeptical about whether or how a problem could be solved or the workability of the claimed solution, it favors non-obviousness.” *WBIP*, 829 F.3d at 1335.

By extending through the sheathing, the FWH went against the conventional wisdom in the art to avoid interruptions to the fire barrier. EX2052: ¶¶32-35; EX2053: ¶16. Accordingly, there was skepticism as to whether the FWH complied with fire codes or would be approved by building officials. EX2050: ¶¶332-334; EX2051: ¶¶358-373; EX2087: SST0077466; EX2088: SST0087749; EX2090. Simpson’s engineers were skeptical that the extension portion of the FWH could sufficiently withstand live loads so as to maintain a space for drywall. EX2050: ¶¶335-339; EX2092: SST0087797; EX2088: SST0087749; EX2089 at 3 (Simpson engineer detailing skepticism of FWH product and installation method); *see also*

EX2121. Testimony and contemporaneous documents further demonstrates that there was skepticism as to whether the benefits of the claimed hanger would justify the additional manufacturing cost. EX2050: ¶¶340-344; EX2071: 116:5-117:16; EX2070: 70:6-71:25, 86:25-87:19; EX2139.

5. Unresolved need and Failure of Others

Although often related, long-felt but unresolved need and failure of others are commonly considered as separate indicia of non-obviousness. *See e.g., Volvo Penta*, 81 F.4th at 1213.

Although building trends may have brought it to the forefront in the late 2000s, the need for the firewall solution presented by the ‘339 Patent had been long present. EX2052: ¶¶36, 44; EX2053: ¶¶17-22. The use of wood framing in structures dates back over a century. EX2052: ¶¶13-20. Similarly, the use of a double layer of dry wall to provide a two-hour fire rating has been known since at least the 1960s. EX2052: ¶27. By the 1970s the use of hangers was predominant in wood framed construction. EX2052: ¶28. Although present in earlier model building codes, the fire-resistance requirements applicable today have generally remained unchanged since the original International Building Code was released in 2000. EX2050: ¶¶307-309; EX2052: ¶¶24-26; EX2065: 25:1-30:15.

By the late 2000s, the need for a firewall solution was vocalized. *See e.g.,* EX2056: ¶11; EX2069: 27:17-28:18 (learning of the problem in 2009); EX2127

(2011 requests); EX2128 (email string with requests dating back to 2011); EX2050: ¶¶310-311; EX2051: ¶¶332-337; X EX2052: ¶¶36, 44; EX2053: ¶¶17-22. Prior to the release of the FWH hanger there was a patch work of flawed workarounds and imperfect solutions by which floor or roof members were connected to wall members requiring a two-hour fire rating. EX2067: 41:1-44:11; EX2076: ¶40; EX2093; EX2070: 19:13-22:20; EX2056: ¶¶9-10; EX2050: ¶¶160, 312; EX2051: ¶ 338; EX2052: ¶¶37-42, 46, 48. The acceptance of these solutions was not universal, but rather depended on the interpretations of building inspectors. EX2050: ¶¶161, 313; EX2051: ¶ 339; EX2052: ¶¶37-42, 46, 48; EX2056: ¶9; EX2070: 19:13-22:20.

Included in the imperfect solutions—though slightly beating the FWH to market—was the DU series representing Simpson’s contemporaneous attempt to solve the need for a firewall solution. As discussed above, when designing the DU series, Simpson recognized that [REDACTED]

[REDACTED]

[REDACTED] and made a number of attempts to design its hanger accordingly. EX2086: SST0105115, SST0105129; EX2050: ¶¶315-320; EX2051: ¶¶ 340-357; *WBIP*, 829 F.3d at 1332 (taking notice that the patent challenger was aware of a problem and making efforts to address the problem). Each of these attempts failed to maintain the space to receive the sheathing and

thus were deemed failures. EX2086: SST0105129; *Apple*, 839 F.3d at 1057 (“Apple's fiercest competitor, was unsuccessfully trying to solve the same problem”). Notably, ██████ expressed criticism of DU hangers due to their inability to be installed prior to the drywall. EX2050: ¶¶321-329; EX2118; EX2104; EX2103; EX2108; EX2094.

As acknowledged by *Volvo Penta*, failure by others to solve the problem—along with copying— “may often be the most probative and cogent evidence of non-obviousness.” *Volvo Penta*, 81 F.4th at 1213 (internal citation omitted). Such is the case here. EX2050: ¶330; EX2051: ¶¶ 340-357; 268-307. There was a long felt unresolved need and the FWH solved that need. EX2052: ¶¶36-48; EX2053: ¶¶17-25.

6. A Strong Nexus Exists Between the Objective Evidence and the Claimed Invention

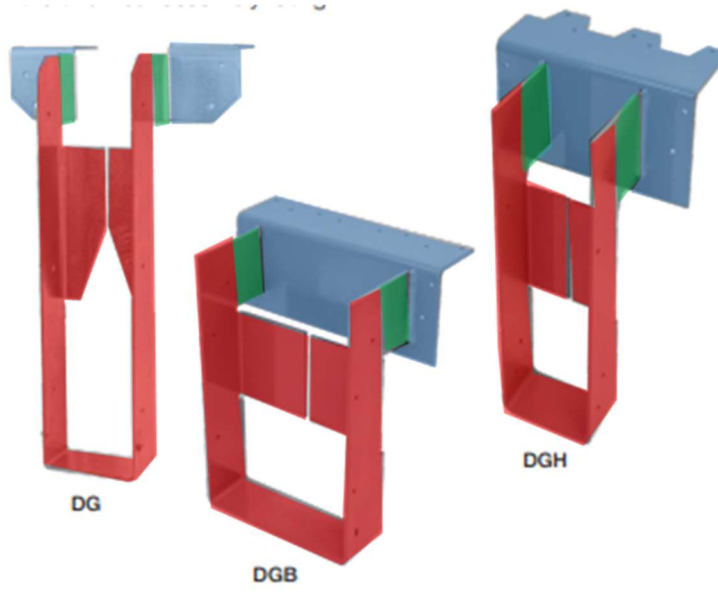
A nexus is required “between the merits of the claimed invention and the objective evidence” of secondary considerations. *Volvo Penta*, 81 F.4th at 1210. “A showing of nexus can be made in two ways: (1) via a presumption of nexus, or (2) via a showing that the evidence is a direct result of the unique characteristics of the claimed invention.” *Id.*

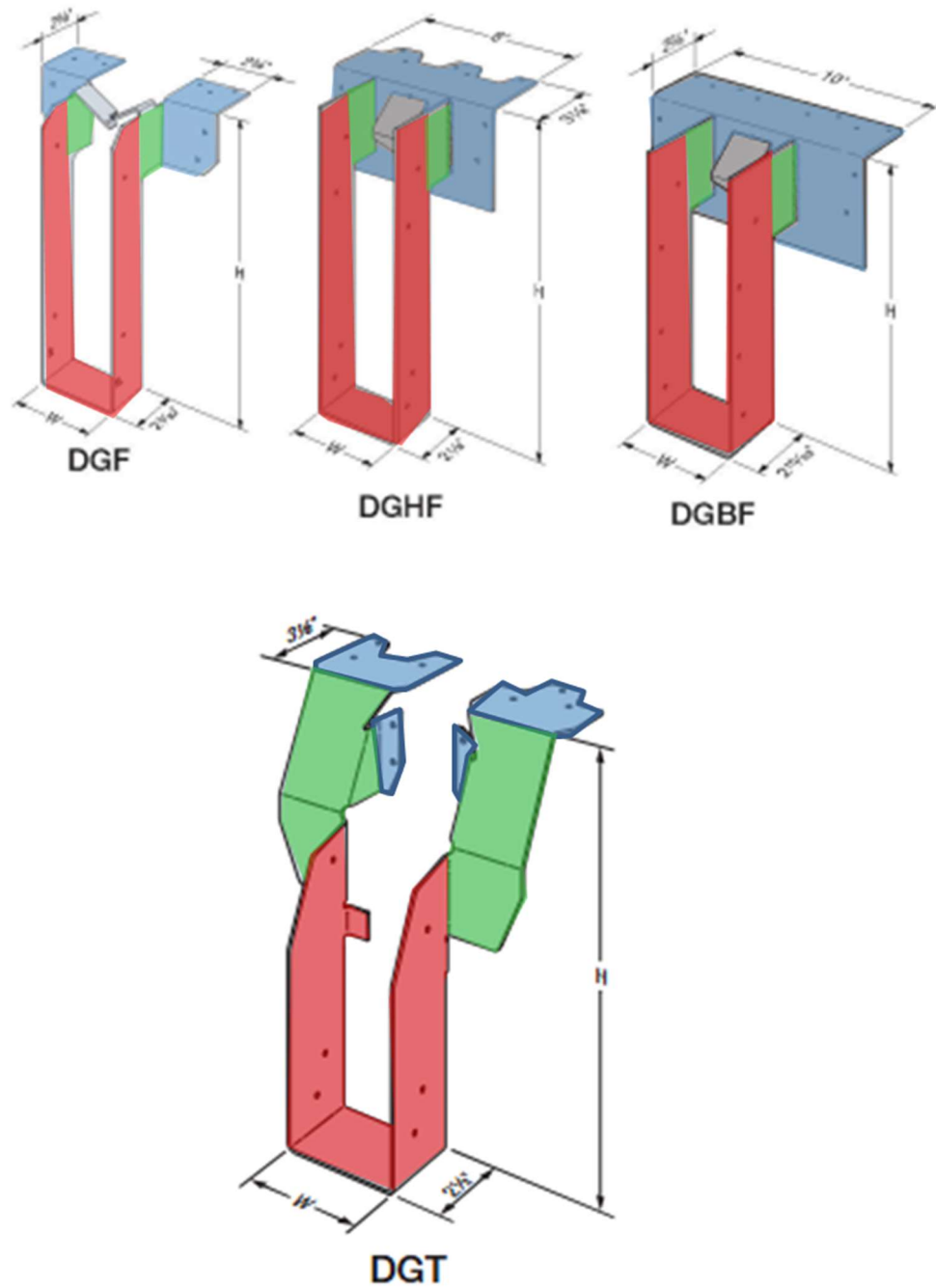
a. There is a Presumption of Nexus

“A patent owner is entitled to a presumption of nexus when it shows that the asserted objective evidence is tied to a specific product that ‘embodies the claimed

features, and is coextensive with them.” *Volvo Penta*, 81 F.4th at 1210. As set forth above, all of the objective evidence relates to the FWH, DG/DGB/DGH, DGF/DGHF/DGBF, and DGT and/or the claimed method of installing the unique fire wall hanger prior to the drywall. EX2050: ¶¶277-280, 302-304, 364-368; EX2051: ¶ 372.

Expert testimony, providing a detailed mapping of claim 1 to the product literature describing installation of the FWH, DG/DGB/DGH, DGF/DGHF/DGBF, and DGT, establishes that these products embody the full scope of the claimed invention and are coextensive with the claimed features. EX2050: ¶¶200, 357-360, Appendix A-Appendix D; EX2051: ¶¶ 373-376. *See also Quanergy Sys., Inc. v. Velodyne Lidar USA, Inc.*, 24 F.4th 1406, 1418 (Fed. Cir. 2022). As shown below, the FWH, DG/DGB/DGH, DGF/DGHF/DGBF, and DGT, as recited in claim 1 of the ‘339 Patent, contain a channel-shaped portion shaped to receive a structural component (red in the figures below), a connection portion for attaching to a wall frame (blue in the figures below), and an extension portion interconnecting them (green in the figures below)) and their configuration (the extension portion being configured to extend through drywall that is inserted between the channel shaped portion and the frame wall). EX2050: ¶358; EX2051: ¶ 374; EX2132; EX2133; EX2134; EX2135.





Further, brochures for these products instruct that they are installed according to the '339 Patent's method. EX2050: ¶359; EX2051: ¶ 375; EX2132; EX2133; EX2134; EX2135.

Thus, the FWH, DG/DGB/DGH, DGF/DGHF/DGBF, and DGT are commercial embodiments of the invention disclosed and claimed in the ‘339 Patent, these products practice the limitations of claim 1, the objective evidence is tied to these products, and the presumption of nexus applies. *See, e.g., Hamilton Beach Brands, Inc. v. F'real Foods, LLC*, No. IPR2016-01107, 2017 WL 6513981, at *8-9 (P.T.A.B. Dec. 19, 2017) (finding presumption of nexus applied for product practicing method claim); EX2051: ¶ 376.

b. Nexus in Fact is Shown as the Evidence of Secondary Considerations is the Direct Result of the Unique Characteristics of Claimed Invention

Even absent a presumption, nexus can be proven by showing that the evidence of secondary considerations is the “direct result of the unique characteristics of the claimed invention.” *Volvo Penta*, 81 F.4th at 1210, 1212 (finding nexus). The inventive configuration of the claimed fire wall hanger, as a whole, provides the ability to be installed according to the claimed method, including, first, “mounting a fire hanger on a frame wall,” and then “installing the fire retardant sheathing” “after mounting the fire wall hanger on the frame wall.” EX2050: ¶363; EX2051: ¶ 378. The benefit of the claimed method drove success of MiTek’s FWH, was copied by Simpson in its DG/DGB/DGH, DGF/DGHF/DGBF, and DGT, was praised in the industry, and was not achieved by other fire wall hangers in the prior art. EX2050: ¶¶277-280, 302-304, 364-368;

EX2051: ¶¶ 379-387. Just as in *Volvo Penta*, evidence in this case demonstrates the connection between the claim elements and the objective evidence. *Volvo Penta*, 81 F.4th at 1212.

Simpson's expert, Kenneth Serwin, acknowledged that [REDACTED]

[REDACTED]

[REDACTED] to customer demand,

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] EX2075: 31, 40.

MiTek's economic expert agrees. EX4055: ¶¶ 11, 46-53. Customer testimony confirms the product was purchased due the claimed feature of being able to be installed prior to the drywall. EX2056: ¶¶ 9-15; EX2057: ¶¶ 8-13; EX2058: ¶¶ 6-14

Likewise, Simpson documents show customer demand for the FWH, show customer requests for, and acknowledge the need for, a product comparable to the FWH that can be installed according to the claimed method, and indicate that the FWH guided Simpson to design its infringing products. *Volvo Penta*, 81 F.4th at 1212. For example, a third-party email to Simpson states: [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] EX2102; *see also* EX2100; EX2096; EX2094; EX2103; EX2104; EX2105; EX2106; EX2129; EX2066: 120:15-121:8; EX2065: 45:14-23, 162:17-164:17; EX2130; EX2165; EX2159. Another Simpson email notes [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] EX2136: SST0077501; *see also* EX2099; EX2113; EX2108; EX2065: 146:25-154:16; EX2109; EX2116. Simpson internal documents show its goal with its competing products, such as the DG, was to

[REDACTED]

[REDACTED] EX2115: SST0032688; *see also* EX2110; EX2116; EX2117; EX2094; EX2109.

Testimony from MiTek shows that the primary reason customers purchased the FWH products was because the hanger could be installed prior to drywall. EX2068: 34:11-35:4; 35:18-36:11; 69:4-21; 91:3-24. As noted above, survey evidence shows the primary reason customers buy the FWH is due to the preferred installation method—a fact confirmed by both parties’ economists—and 87% of those respondents said they would pay more for a hanger with this patented

feature. EX2054: ¶¶ 23-26, 91-96. *Cf. Apple*, 839 F.3d at 1055. EX2054; EX2055.

Both MiTek's and Simpson's marketing departments elected to emphasize the claimed method, which shows its importance. *Apple*, 839 F.3d at 1055. For example, EX2132 is a FWH technical bulletin showing new FWH hangers, including announcing that "The advanced design allows you to install the hangers before the drywall is attached, allowing your project to be completely framed-up and weather-tight when the drywall sheathing shows up on site." *See also* EX2072: 39:18-40:19 (testifying that MiTek's marketing communications highlighted the FWH series hanger's ability to be installed before drywall). EX2133 is a Simpson brochure for the DG, DGB, and DGH that states: "Engineered Design Makes it Easy to Install Before the Drywall The DG fire wall hanger is the next generation in the drywall hanger series from Simpson Strong-Tie... The hangers feature enough space for two layers of 5/8" gypsum board (drywall) to be slipped into place after the framing is complete."

This is not a situation where the FWH's market-defining success was due to MiTek's pre-existing position in the market Simpson was market dominant.

EX2064 68:8-22 [REDACTED]

[REDACTED] On the contrary, the FWH was MiTek's first foray into the fire wall market. EX2059: ¶5. Despite being a newcomer, MiTek

effectively created and captured the market, sold the FWH at a premium and achieved great commercial success marketing the patented installation method. EX2059: ¶¶4, 7, 9-16 (detailing revenue growth, unit sale growth, and MiTek’s pricing premium for the FWH). MiTek’s lack of previous experience in the relevant market combined with its high sales of the patented FWH product “provide[s] an inference of a nexus between its commercial success and the patented invention.” *Pro-Mold & Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1574 (Fed. Cir. 1996). The “lack of market power in this field would seem to suggest that it was the features of the patented invention that led to the commercial success.” *Id.* Such is the case here.

V. SIMPSON HAS FAILED TO PROVE CLAIMS 1-31 LACK WRITTEN DESCRIPTION SUPPORT

“[T]he test for [written description] is whether the disclosure ... reasonably conveys to [a POSA] that the inventor had possession of the claimed subject matter as of the filing date.” *Ariad Pharms., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1351 (Fed. Cir. 2010). EX2001: ¶¶14, 69-70.

The Board correctly determined the order of installation claimed by the ‘339 Patent have support from the earliest filed parent non-provisional application (U.S. App. No. 14/555,049), making Simpson’s new matter from the provisional argument immaterial. ID: 29; Pet: 10.

A. Claims 1-31: Simpson’s Written Description Argument is Flawed as Method Steps can be Performed Simultaneously *or* Sequentially

Independent claims 1 and 27 have an “installing” step for the fire-retardant sheathing including (1) “*inserting* the fire retardant sheathing between the channel-shaped portion ... and the frame wall” and (2) “*moving/[arranging]* the fire retardant sheathing” so the fire wall hanger extends through the opening in the fire-retardant sheathing. EX2001: ¶¶71-72.

Simpson’s argument these “inserting” and “moving/arranging” sub-steps must be distinct is based on an incorrect interpretation of *Kyocera Senco Industrial Tools Inc. v. ITC*, which stands for the proposition separately recited “apparatus components” are distinct, not method steps. 22 F.4th 1369, 1382 (Fed. Cir. 2022).

In contrast, the Federal Circuit has stated for method claims “[u]nless the steps of a method actually recite an order, the steps are not ordinarily construed to require one.” *Interactive Gift Express, Inc. v. CompuServe Inc.*, 256 F.3d 1323, 1342 (Fed. Cir. 2001); *Altiris, Inc. v. Symantec Corp.*, 318 F.3d 1363, 1371 (Fed. Cir. 2003). Accordingly, steps in a method claim can occur simultaneously *or* sequentially. *Moba v. Diamond Automation*, 325 F.3d 1306, 1314 (Fed. Cir. 2003); *Niazi Licensing Corp. v. St. Jude Med. S.C., Inc.*, 30 F.4th 1339, 1352 (Fed. Cir. 2022).

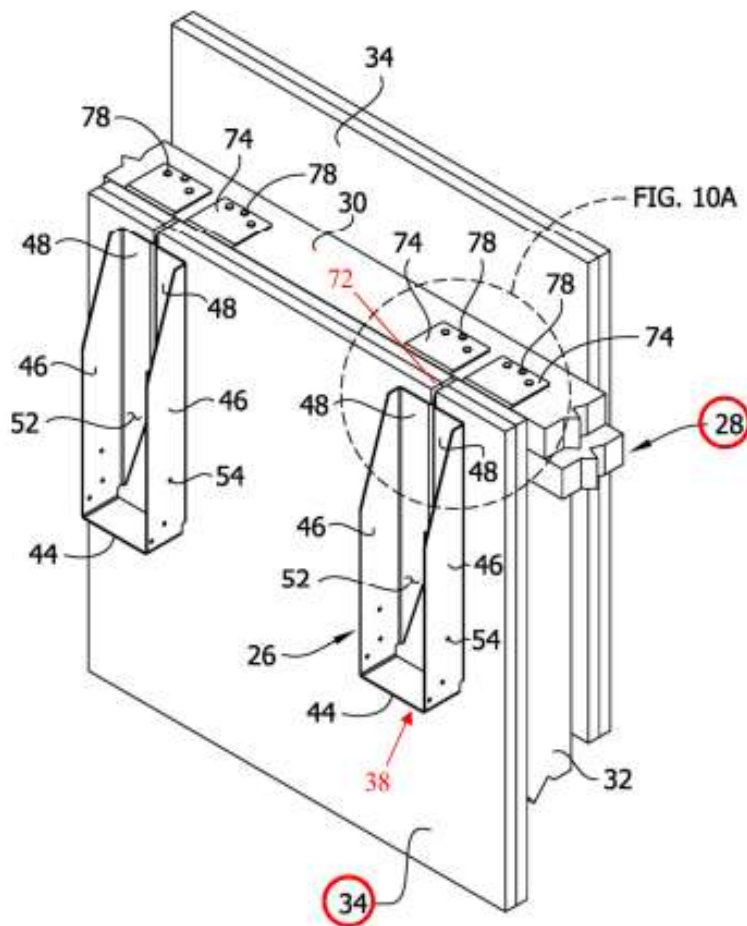
Columbia was in possession of a fire-retardant sheathing “installing” step including “inserting” and “moving/arranging” sub-steps (these sub-steps being performed generally simultaneously). EX2001: ¶76. The specification describes three different ways of constructing a fire-resistive wall assembly including mounting the hanger on the frame wall *before* mounting the fire-retardant sheathing (EX1001: 7:65-8:21). EX1001:7:26-8:21; EX2001: ¶77. The ‘339 Patent’s claims cover this last method. *Id.*

The specification explains “the truss hangers 26 can be installed on the wall 28 *before* the sheathing 34 is mounted on the wall.” EX1001: 7:65-67; EX2001: ¶78. This explanation states “the sheathing is positioned in the sheathing channels 68 between the back flanges 66 [attached to the frame wall 28] and the back panels 48” (i.e., the channel-shaped portion), which correlates to the “inserting” sub-step. EX1001: 8:19-21; EX2001: ¶¶79-80. This explanation also states “moving the sheathing upward into place so that the extension flanges 60 of the hanger 26 extend through the slot 72 of the sheathing,” which correlates to the “moving/arranging” sub-step. EX1001: 8:17-19; EX2001: ¶¶79-80.

And with reference to Fig. 10 below, it is apparent when the fire-retardant sheathing (34) is “mounted on the wall 28 by *moving the sheathing upward* into place” (EX1001: 8:17-18), the fire-retardant sheathing is both (1) inserted between the channel-shaped portion (38) and the frame wall (28), and (2) moved/arranged

so the fire wall hanger extends through the opening (72) in the fire-retardant sheathing. EX2001: ¶81; *Vas-Cath*, 935 F.2d at 1564 (“drawings alone *may* be sufficient to provide the ‘written description of the invention’ required by § 112”).

FIG. 10



EX1001: Fig. 10 (annotated).

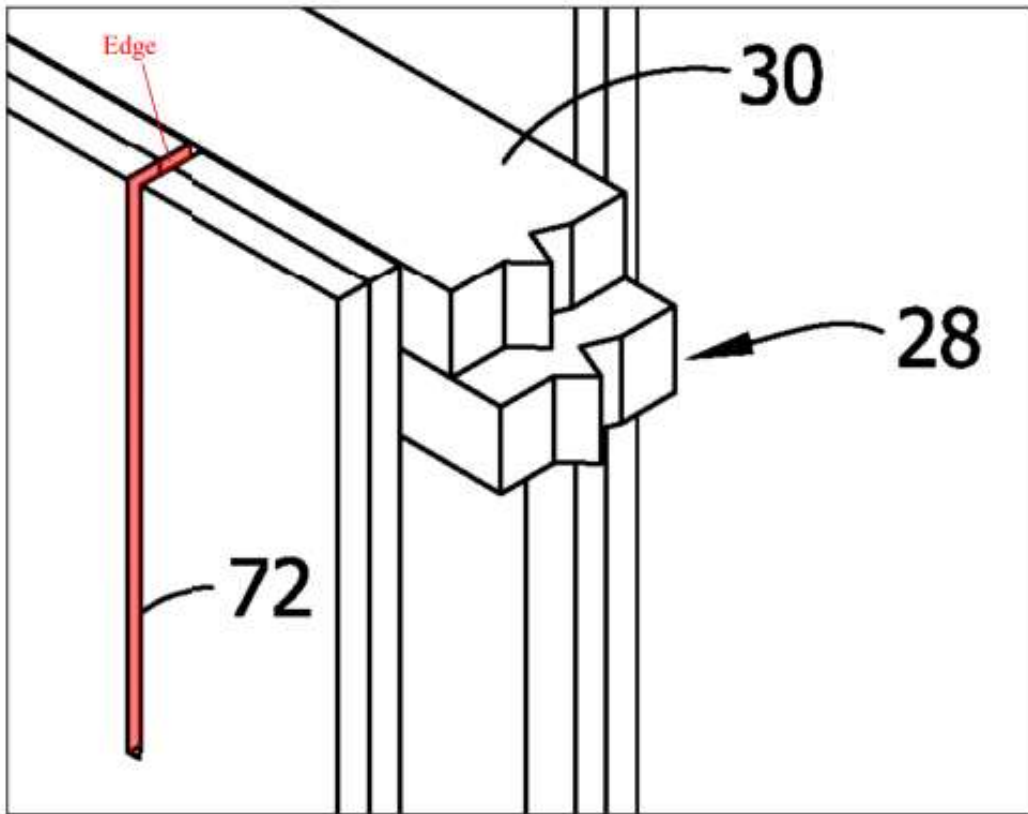
Accordingly, Columbia was in possession of the generally simultaneous performance of the “inserting” and “moving/arranging” sub-steps. EX2001: ¶82.

Accordingly, claims 1 and 27 have written description support. EX2001: ¶87.

B. Claims 1-26: Simpson’s Written Description Argument Relies on a Misstatement of the Construction of “Bounding”

Applying the plain and ordinary meaning of “bounding” as “to set the limits or bounds to,” “to form the boundary of,” and which includes situations in which an area is only partially enclosed by the feature forming the boundary (Section III(B)), it is clear Columbia was in possession of “an edge of the fire retardant sheathing bounding the opening.” EX2001: ¶97.

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



EX1001: Fig. 9 (enlarged, annotated)

FIG. 10A

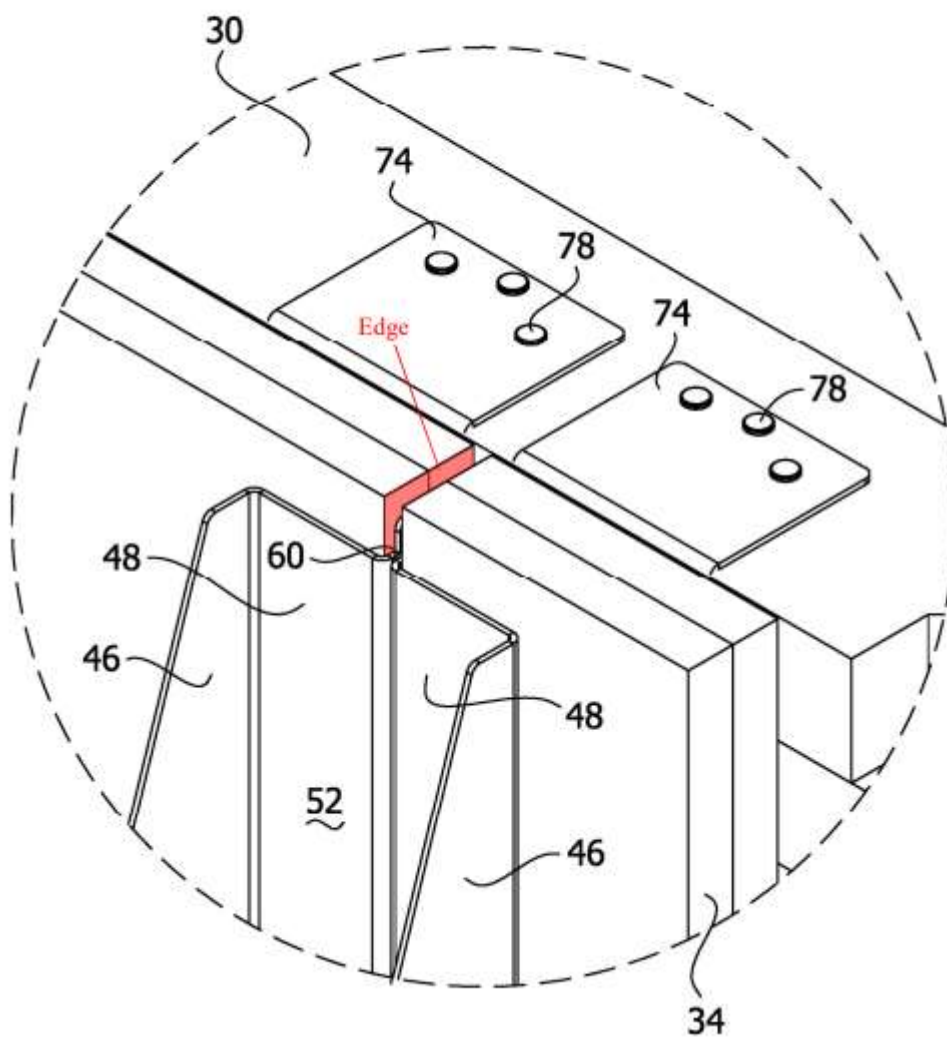
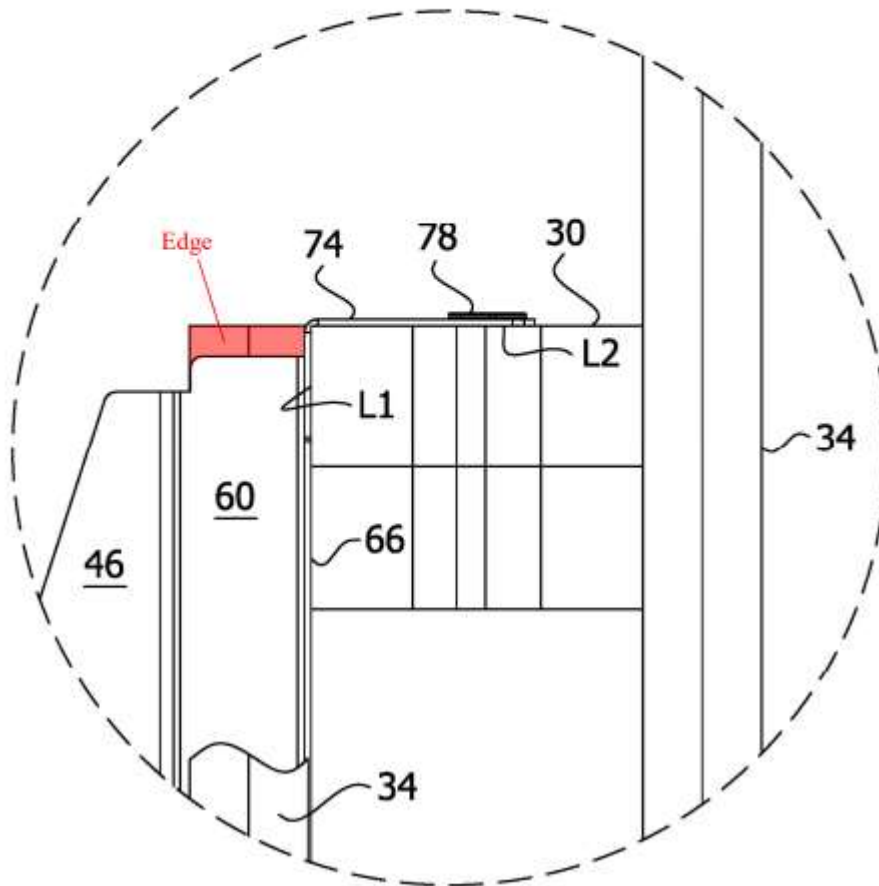


FIG. 13A



EX1001: Figs. 10A and 13A (annotated)

And Simpson’s other arguments are based on an incorrect interpretation of the ‘109 PGR FWD. The Board found “no basis in the ‘867 patent ... to restrictively redefine ‘defining’ to mean ‘bounding.’” (‘109 PGR FWD: 148), not that “bounding” lacked written description. EX2001: ¶¶88-90.

Accordingly, claim 1 has written description support. EX2001: ¶100.

C. Claims 9-11: Claims 9-11 Find Written Description Support in the ‘339 Patent’s To-Scale Drawings

Claims 9-11 recite relative proportions of the components. EX2001: ¶¶101-104. The figures provide written description support for these relative proportions. EX2001: ¶104.

Simpson neglects the rule of *Hockerson-Halberstad* is limited to instances in which the “specification is completely silent on the [drawing’s scale].” Pet: 12-13; *Hockerson-Halberstadt, Inc. v. Avia Grp. Int’l*, 222 F.3d 951, 956 (Fed. Cir. 2000); *Collabo Innovations, Inc. v. Sony Corp.*, 778 Fed. Appx. 954, 960 (Fed. Cir. 2019) (figures show relative proportions because “the references are not ‘completely silent’ on the relative dimensions of the openings”); *Paice LLC v. Ford Motor Co.*, 722 Fed. Appx. 1015, 1022 (Fed. Cir. 2018) (“This case is not controlled by *Hockerson-Halberstadt*” as the reference “provides some scale information.”).

Here, the figures can be relied upon for the claimed proportions because the specification provides scale information:

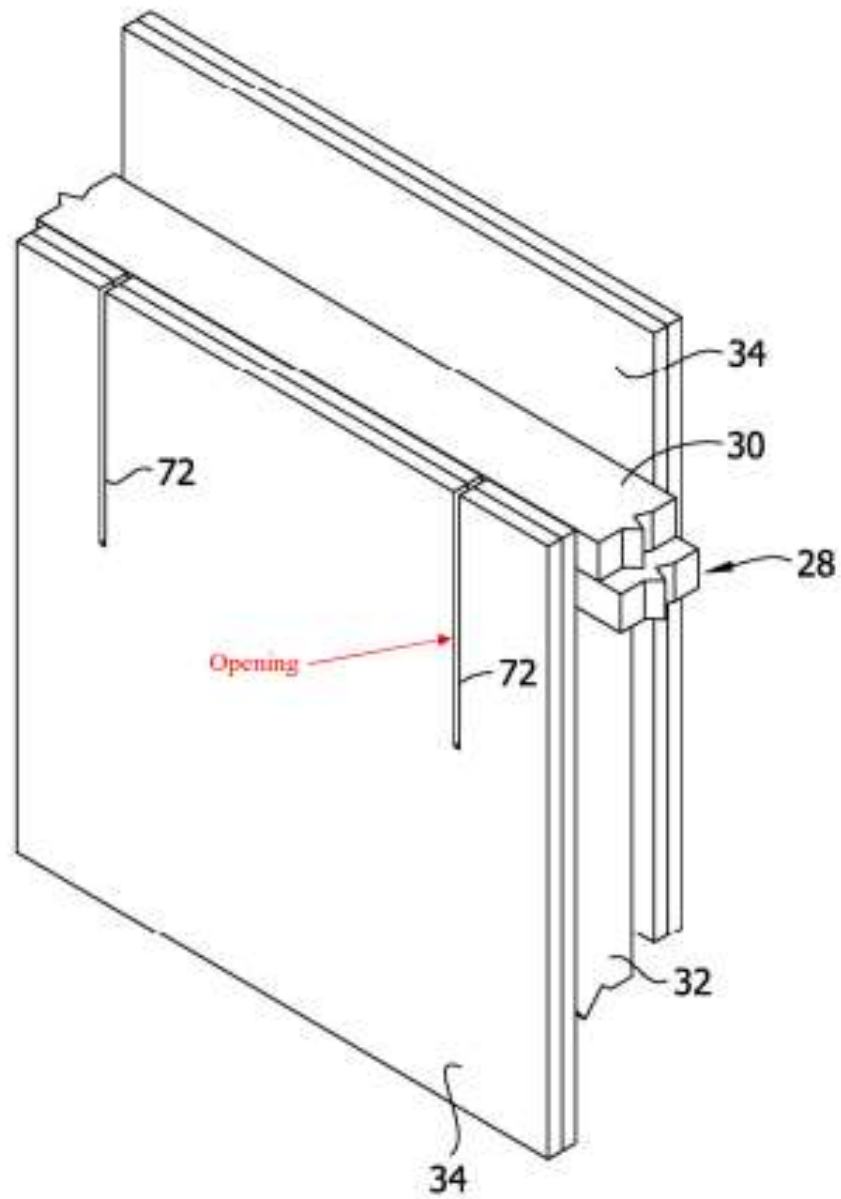
“As illustrated, the top plate 30 is formed by two **2×4’s** in stacked relation. ... the fire retardant sheathing is gypsum board, such as **two layers of 5/8" gypsum board** mounted on each side of the wall 28 **as illustrated**.” EX1001: 4:20-25; EX2001: ¶¶105-106.

“2x4” and “5/8-inch” connote dimensions which the specification identifies as being “illustrated” in the figures. EX2001: ¶107; *Cummins-Allison Corp. v. SBM Co.*, 484 Fed. Appx. 499, 507 (Fed. Cir. 2012) (“The figures ... could be

dimensioned by a [POSA] based on statements in the written description”). The specification also states the opening “has an area less than or equal to 6 square inches” and “is about 10 inches long.” EX1001: 5:37-38, 7:34; EX2001: ¶108; *see e.g., In re Gatabi*, No. 2022-1580, 2023 WL 3477285, at *26 (Fed. Cir. May 16, 2023) (“Paragraph 33 ... expressly states ... the angle Hence, the specification is not silent but, rather, specifically informs an ordinary artisan” of the dimensions).

Regarding claim 9, Figs. 9, 12, and 14A show the height and width of the end of the structural component is clearly and indisputably greater than the corresponding height and width of the opening (72). Pet: 12 (conceding “the sheathing’s opening has an area less than the area of the structural component’s end”); EX2001: ¶111. Because area is function of height x width, the figures show the area of the opening is less than the area of the structural component’s end. EX2001: ¶111.

FIG. 9



EX1001: Figs. 9, 12, and 14A (annotated).

Regarding claim 10, Figs. 9 and 12 illustrate the height of the opening (72) is clearly less than the height of the channel-shaped portion (38). EX2001: ¶112.

FIG. 12

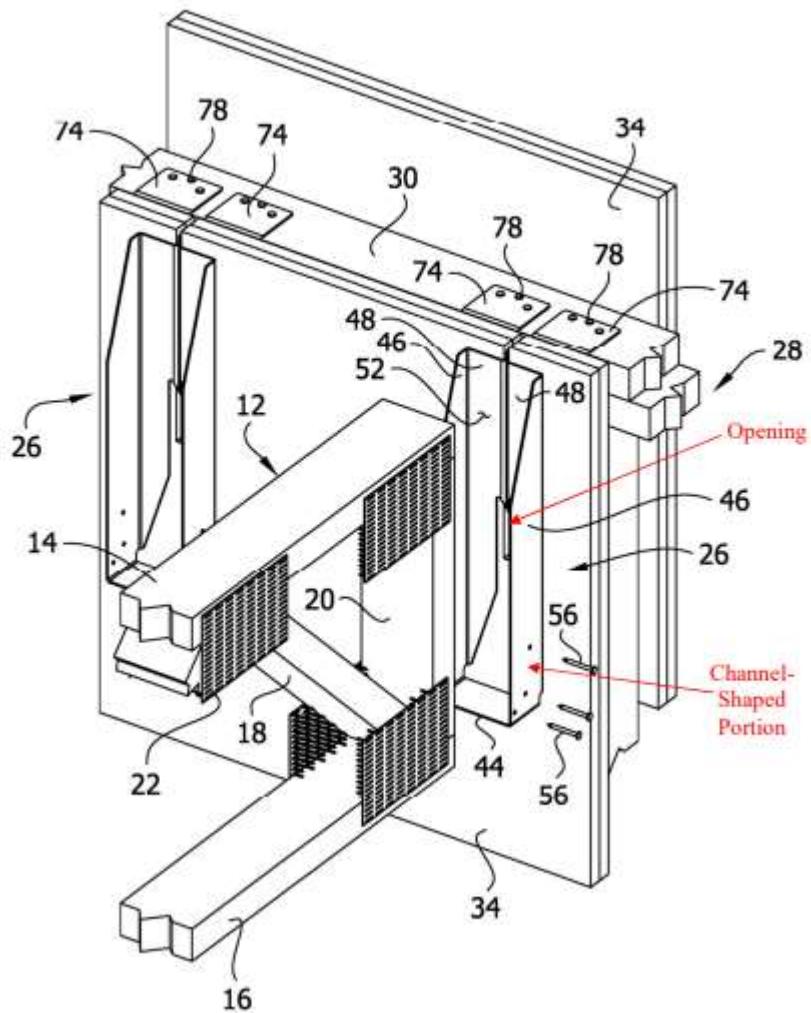
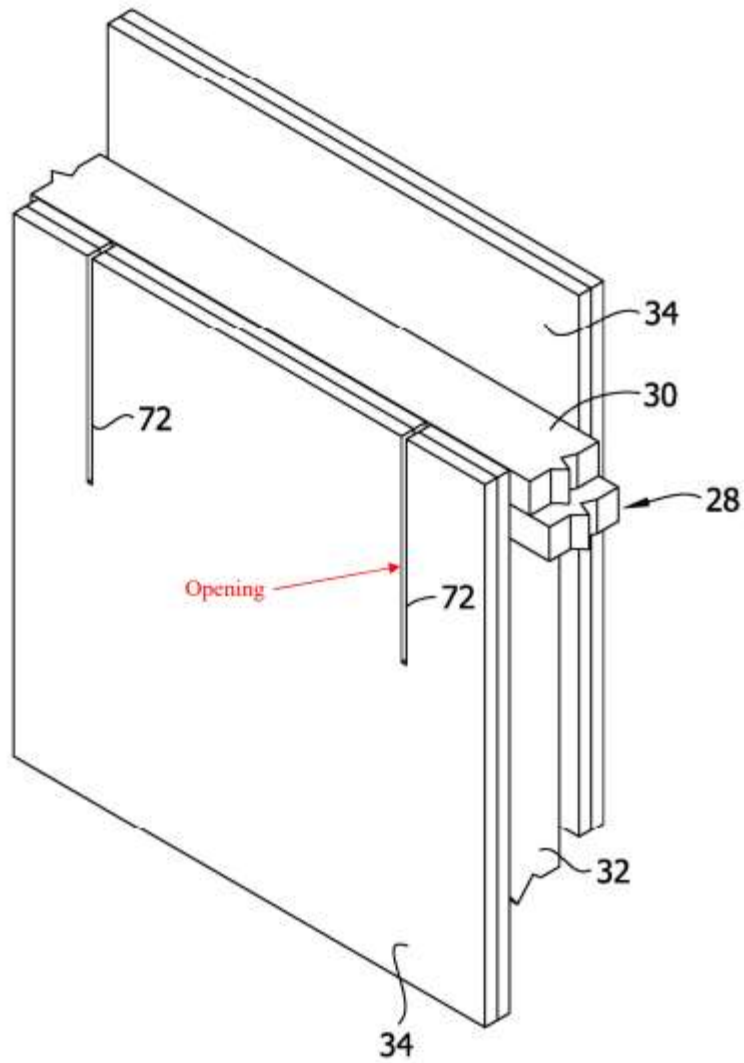


FIG. 9



EX1001: Figs. 9 and 12 (annotated).

Accordingly, claims 9-11 have written description support. EX2001: ¶114.

D. Claims 20-23: Simpson’s Written Description Argument Relies on an Improper Claim Construction of “Planar Extension Plates”

Under a construction of “planar extension plate” includes portions of bends at the ends of the plate (Section III(C)), Columbia was in possession of “planar extension plates” that “extend through the opening in the fire retardant sheathing,” as recited by claim 20. EX2001: ¶¶117, 145-146.

E. Claims 20-23 and 26: Simpson’s Relies on an Incorrect Legal Interpretation

Simpson suggests the only way a negative limitation can be supported is if there is an “express disclaimer.” Pet: 14. This is not the case.

The Federal Circuit has declined to “create a heightened standard for negative claim limitations.” *Novartis Pharms. Corp. v. Accord Healthcare, Inc.*, 38 F.4th 1013, 1020 (Fed. Cir. 2022); *Inphi Corp. v. Netlist, Inc.*, 805 F.3d 1350, 1357 (Fed. Cir. 2015). The “disclosure need not rise to the level of disclaimer. Nor must it use the same words as the claims.” *Novartis*, 38 F.4th at 1020 (internal citations and quotations omitted). “Rather, as with positive limitations, the disclosure must only reasonably convey to [a POSA] the inventor had possession of the claimed subject matter.” *Novartis*, 38 F.4th at 1020 (internal quotations omitted); EX2001: ¶150.

1. Claims 20-23: “Only” the Extension Plates Extending Through the Fire-retardant Sheathing Has Written Description Support

Figs. 11, 13A, and 36 (reproduced below) show only the planar extension plates extending through the opening in the fire-retardant sheathing. EX2001: ¶153.

FIG. 11

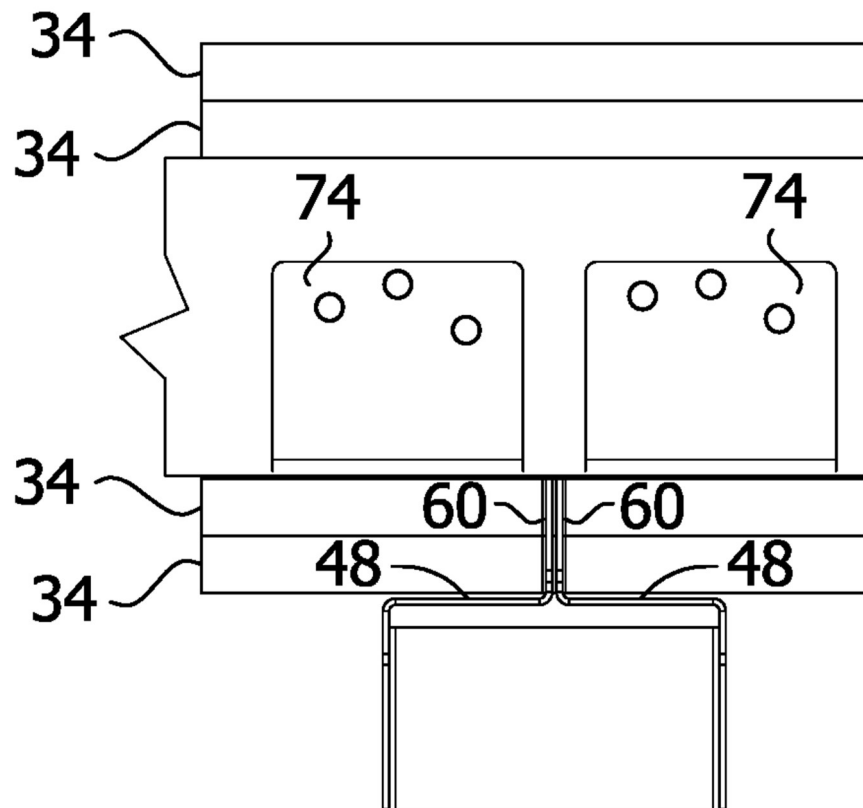


FIG. 13A

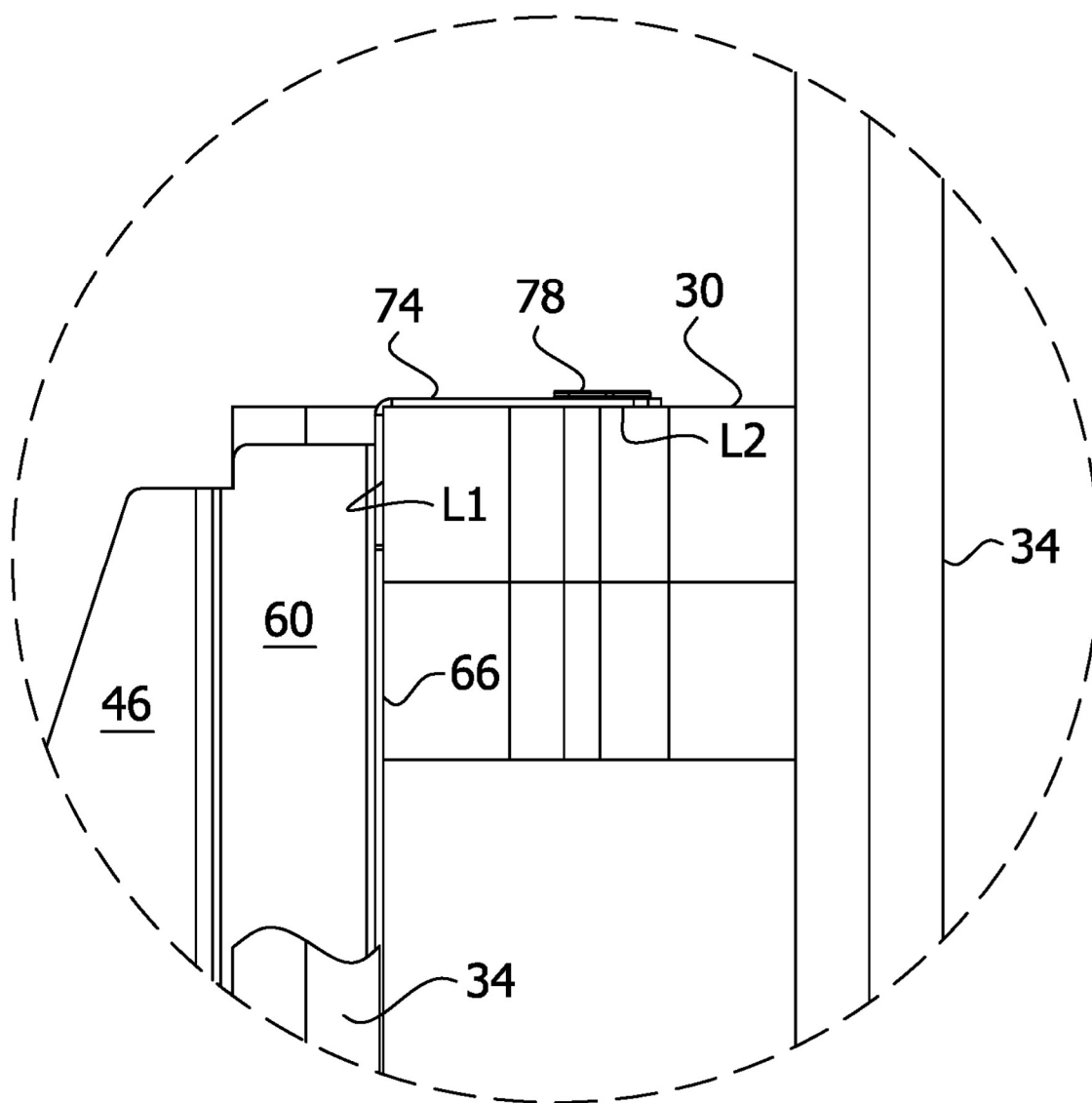
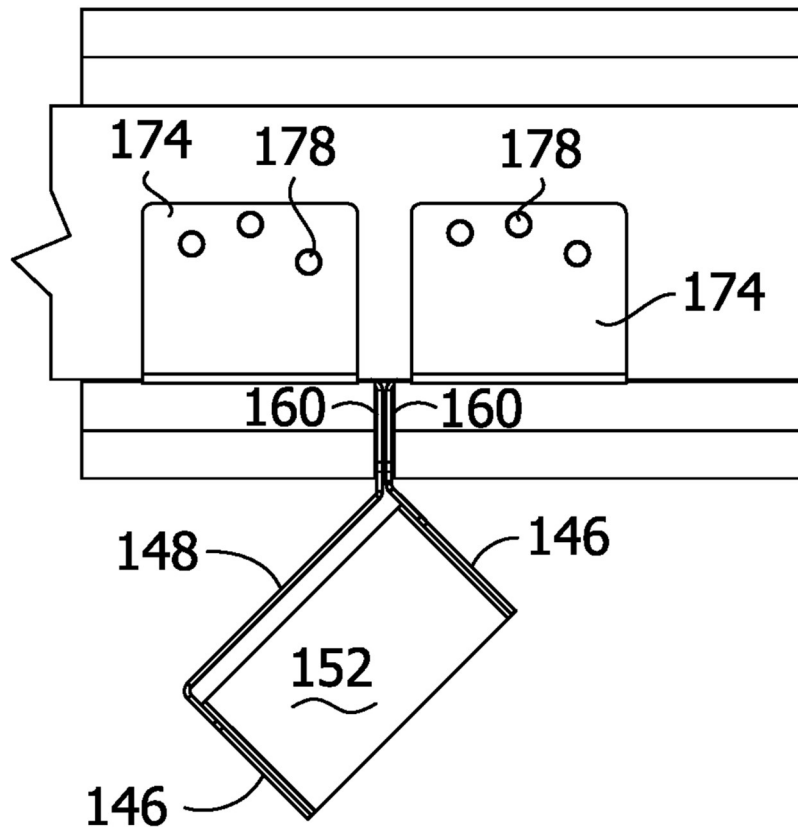


FIG. 36



EX1001: Figs. 11 (enlarged), 13A, and 36 (enlarged).

Further, the ‘339 Patent provides a reason to have only the planar extension plates extend through the fire-retardant sheathing:

- “The truss hangers 26 extend through a narrow slot in the fire retardant sheathing 34 to ***maintain the integrity and fire retardant characteristics*** of the fire separation wall.” EX1001: 4:34-36.

Accordingly, claims 20-23 have written description support. EX2001: ¶156.

2. Claim 26: “Entirely” is a Positive Limitation and Has Written Description Support

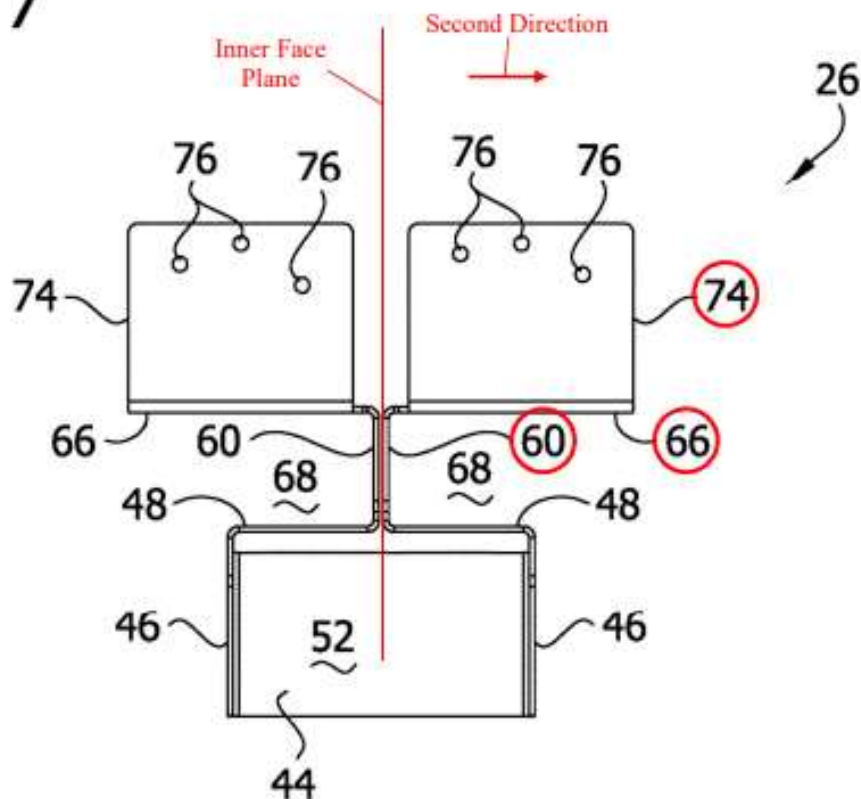
Simpson has no support for categorizing the term “entirely” as a negative claim limitation. Pet: 14; EX2001: ¶¶157-158.

The term “entirely” is a positive structural limitation used to positively state the position of elements (e.g., back and top flange) relative to other elements—i.e., “the back flange and the top flange [are] *entirely* disposed outward, in the second direction, of the inner face plane⁷.” EX1001: claim 26; EX2001: ¶159.

The specification demonstrates possession of the limitation when explaining “[e]ach back flange 66 extends generally perpendicular from the extension flange 60” and “[e]ach connector tab 74 extends generally perpendicular from one of the back flanges.” EX1001: 5:23-24, 6:42-43. This geometry results in the back and top flanges (66, 74) being disposed entirely outward of the inner face plane of one of the extension plates (60). EX2001: ¶¶160-161. Fig. 7 shows this arrangement as well. *Id.*

⁷ The “inner face plane” is defined by the inner face of the extension plate from which the back flange extends. EX1001: claim 26.

FIG. 7



EX1001: Fig. 7 (annotated).

Accordingly, claim 26 has written description support. EX2001: ¶162.

VI. SIMPSON HAS FAILED TO PROVE CLAIMS 1-31 ARE INDEFINITE

“[D]efiniteness is to be evaluated from the perspective of someone skilled in the relevant art.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 908 (2014). EX2001: ¶¶15, 169-170.

A. Claims 1-31: “Fire Wall Hanger” is Defined by the Claims

The term “fire wall hanger” is not indefinite because the claims recite the elements forming the fire wall hanger—“a channel-shaped portion,” “a connection

portion,” and “an extension portion.” EX1001: claims 1, 27; EX2001: ¶¶171-174.

Terms which are defined by the claims are definite. *Oakley, Inc. v. Sunglass Hut Int’l*, 316 F.3d 1331, 1340-41 (Fed. Cir. 2003); *Exmark Mfg. Co. v. Briggs & Stratton Power Prods. Grp, LLC*, 879 F.3D 1332, 1345-46 (Fed. Cir. 2018); *Niazi Licensing Corp.*, 30 F.4th at 1349.

While the exact term “fire wall hanger” may not appear in the specification, controlling authority has made it clear there is no requirement for claim terms match “word-for-word” or “*ipsis verbis*” with the specification. *Kaneka Corp. v. Xiamen Kingdomway Group Co.*, 790 F.3d 1298, 1305 (Fed. Cir. 2015); *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1571 (Fed. Cir. 1996); EX2001: ¶177.

Accordingly, the term “fire wall hanger” is definite. EX2001: ¶183.

B. Claims 1-31: “Opening Outwardly” is Definite

Simpson’s argument is confusing and conclusory, providing no clear reason why an “opening ... [having an open top]⁸ *opening outwardly* from the [exterior]⁹ edge of the fire retardant sheathing” is indefinite. Pet: 16; EX2001: ¶¶184-185; EX2051: ¶¶109-112. This is in part because Simpson does not even try to construe the limitations. Pet: 16.

⁸ Recited by claim 27.

⁹ Recited by claim 1.

Applying the construction of the limitations in which the “opening outwardly” phrase appears, these limitations are definite. The “opening outwardly” limitation of claim 27 means the construction of the opening is such that the open top provides access to the outside for the opening from the edge of the fire-retardant sheathing. Section III(D). The “opening outwardly” limitation of claim 1 means the construction of the opening is such that the opening has access to the outside from the exterior edge of the fire-retardant sheathing. Section III(E).

Simpson’s argument misreads the claim limitation by conflating the “cutting” step in which the cut is made “into” the top exterior edge of the fire-retardant sheathing with the resultant description of the opening formed by the cutting. EX2001: ¶¶186-187. And the constructions of these limitations provide the general directionality (e.g., to the outside) that addresses Simpson’s apparent reason for why the limitations are indefinite. Pet: 16. Notably, Simpson’s argument is based on the distinction between “inwardly” and “outwardly,” but the term “inwardly” does not appear in any of the claims. EX1001.

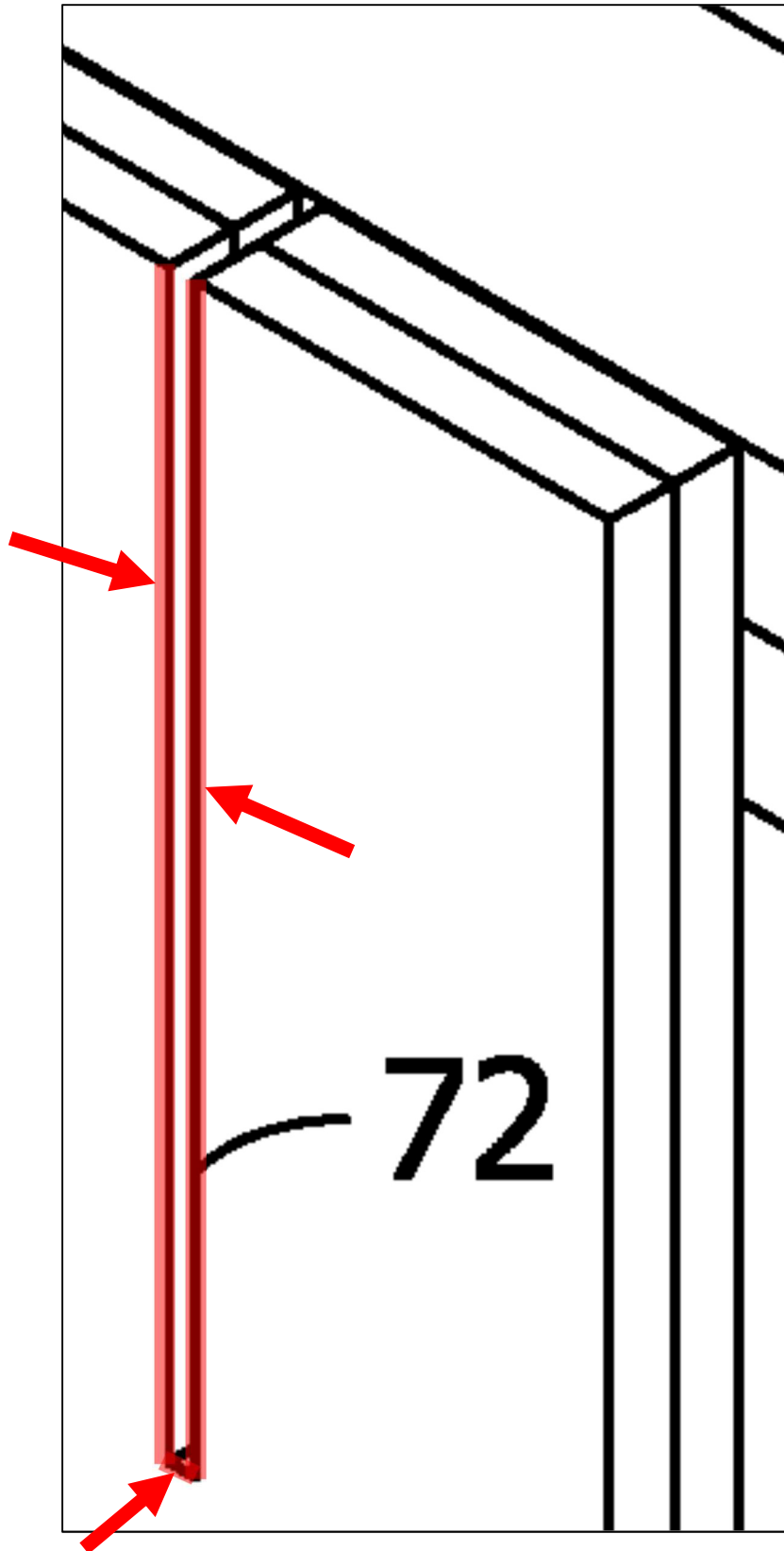
The Institution Decision preliminarily determined the “opening outwardly” limitations are indefinite because it unclear from which edge of the fire-retardant sheathing the opening is “opening outwardly.” ID: 42. The Institution Decision does not adequately consider the claim as a whole and apply the rules of antecedent basis. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1314 (Fed. Cir. 2005).

The “opening outwardly” limitations do **not** introduce the “[exterior]¹⁰ edge of the fire retardant sheathing” into the claim—e.g., these limitations do not recite “opening outwardly from an [exterior] edge of the fire retardant sheathing.” Instead, the “opening outwardly” limitations state “from the [exterior] edge of the fire retardant sheathing,” thereby referring to the specific “[exterior] edge” previously introduced in each claim. *Wi-LAN, Inc. v. Apple Inc.*, 811 F.3d 455, 462 (Fed. Cir. 2016) (“[s]ubsequent use of the definite articles ‘the’ or ‘said’ in a claim refers back to the same term recited earlier in the claim”).

Before the “opening outwardly” limitations, claims 1 and 27 each recite “cutting an opening into **an** [exterior] edge of fire retardant sheathing,” thereby introducing the “[exterior] edge” of the fire-retardant sheathing that the opening opens outwardly from. In other words, the “[exterior] edge” of the fire-retardant sheathing the opening is “opening outwardly” from **is the same** “[exterior] edge” of the fire-retardant sheathing that was cut “into” to form the opening. EX2051: ¶¶113-116.

¹⁰ Claim 1 recites an “exterior edge” to differentiate from a different “edge” of the fire-retardant sheathing introduced later in claim 1 that bounds the opening. Claim 27 just recites “edge,” as claim 27 does not introduce another edge of the fire-retardant sheathing.

Thus, the “[exterior] edge” of the fire-retardant sheathing in the “opening outwardly” limitations is not just any edge, but the edge of the fire-retardant sheathing the opening was cut into. EX2051: ¶¶115-117. The Institution Decision points to the “edges” of the front face annotated below in Fig. 9 as possible edges the opening (72) is “opening outwardly” from (ID: 42), but these “edges” are formed by the cutting. Thus, these “edges” identified by the Institution Decision do not exist prior to the step of “cutting an opening into an [exterior] edge of the fire retardant sheathing.” Therefore this “edge” cannot be the “[exterior] edge” the opening is cut “into,” and as a result cannot be the “[exterior] edge” that the opening of claim 1 and the open top of claim 27 “open[s] outwardly” from.



EX1001: Fig. 9 (annotated, enlarged).

The specification supports this understanding. A template (82) for forming the opening (72) is shown in Fig. 16. The specification explains “a cutting tool (e.g., a drywall cutout tool) is inserted into the guide slot 98 [of the template 82] to cut a slot 72 in the sheathing at the location of the guide slot.” EX1001: 6:32-34. Modified Fig. 9 below shows the position of the template (82) on the fire-retardant sheathing (34) to form the illustrated opening (72). The specification explains “the guide slot 98 includes a wide, rectangular portion 98a in the horizontal panel 88 to ease *insertion* of a cutting tool into the guide slot.” EX1001: 6:8-10. As illustrated, the open top of the opening (72) that is “opening outwardly” is *at* the same “[exterior] edge” of the fire-retardant sheathing (34) the spiral bit (EX1001: 6:35) of the cutting tool cuts “into” when the cutting tool enters the rectangular portion 98a of the slot 98 to cut the opening (72).

C. Claims 1-26: “Bounding” is Definite

Simpson’s argument the term “bounding” is indefinite relies completely on their incorrect interpretation of the term. Pet: 16-18; EX2001: ¶¶200-201.

As discussed in Section III(B), the plain and ordinary meaning of “bounding” allows for a single-edge of the sheathing to bound an opening. With this correct understanding, the term “bounding” is definite. EX2001: ¶205; EX2051: ¶119.

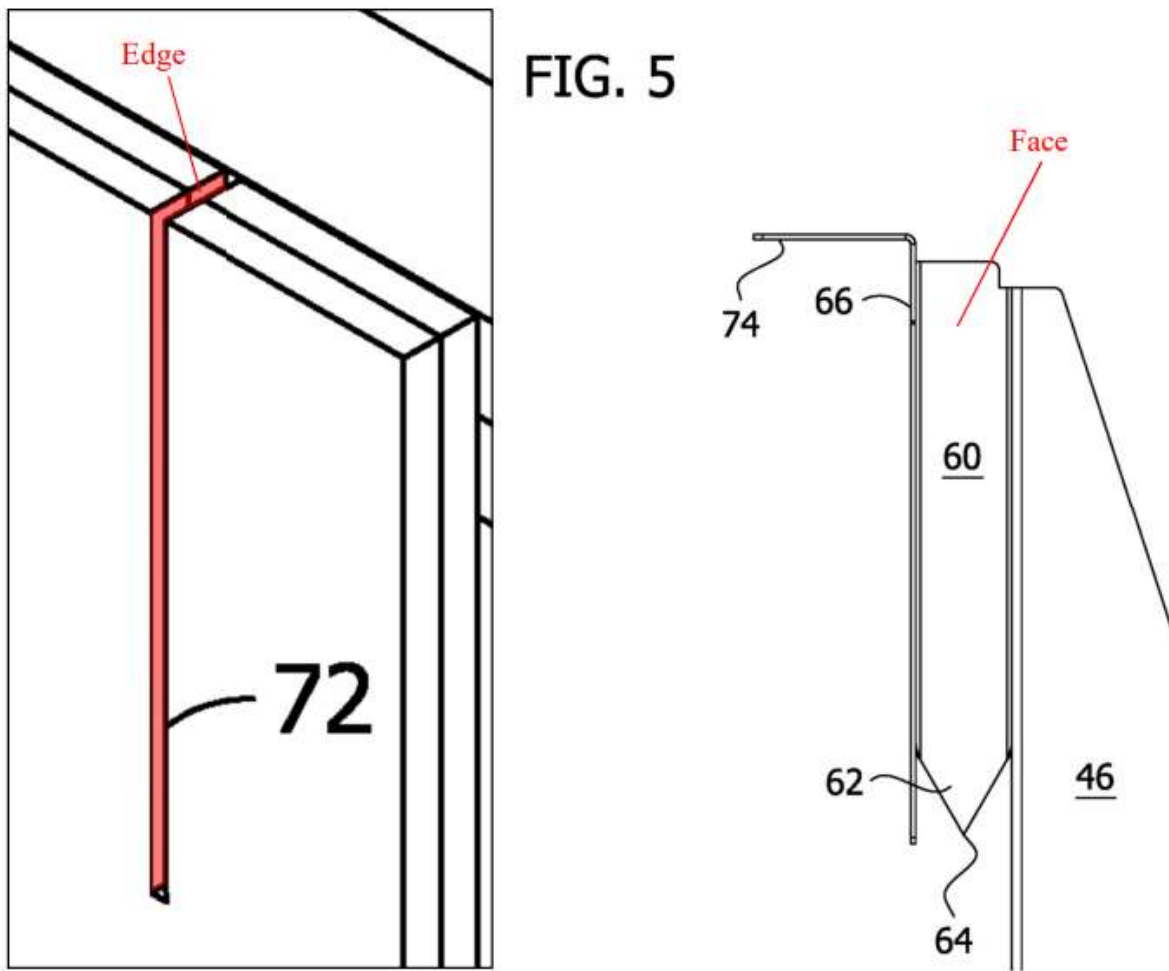
D. Claims 13 and 14: The ‘339 Patent Provides “Object Boundaries” for “Close Conformance”

As explained in Section III(F), in the context of the claims 13 and 14, “close conformance” means the edge of the fire-retardant sheathing is within a short distance away and corresponding in form or shape to the exterior face of the extension portion. EX2001: ¶210; EX2051: ¶121.

The ‘339 Patent’s figures and specification provide clear “objective boundaries” for “close conformance.” EX2001: ¶215; *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1382-83 (Fed. Cir. 2015). The specification states “the gap between the extension flanges 60 and the edge of the slot 72 is *less than or equal to 1/8”*.” EX1001: 5:38-39; EX2001: ¶216. This provides a clear objective boundary regarding the short distance between the edge of the fire-retardant sheathing and the exterior face of the extension portion. EX2001: ¶217; *Grace Instrument Indus., LLC v. Chandler Instruments Co., LLC*, 57 F.4th 1001,

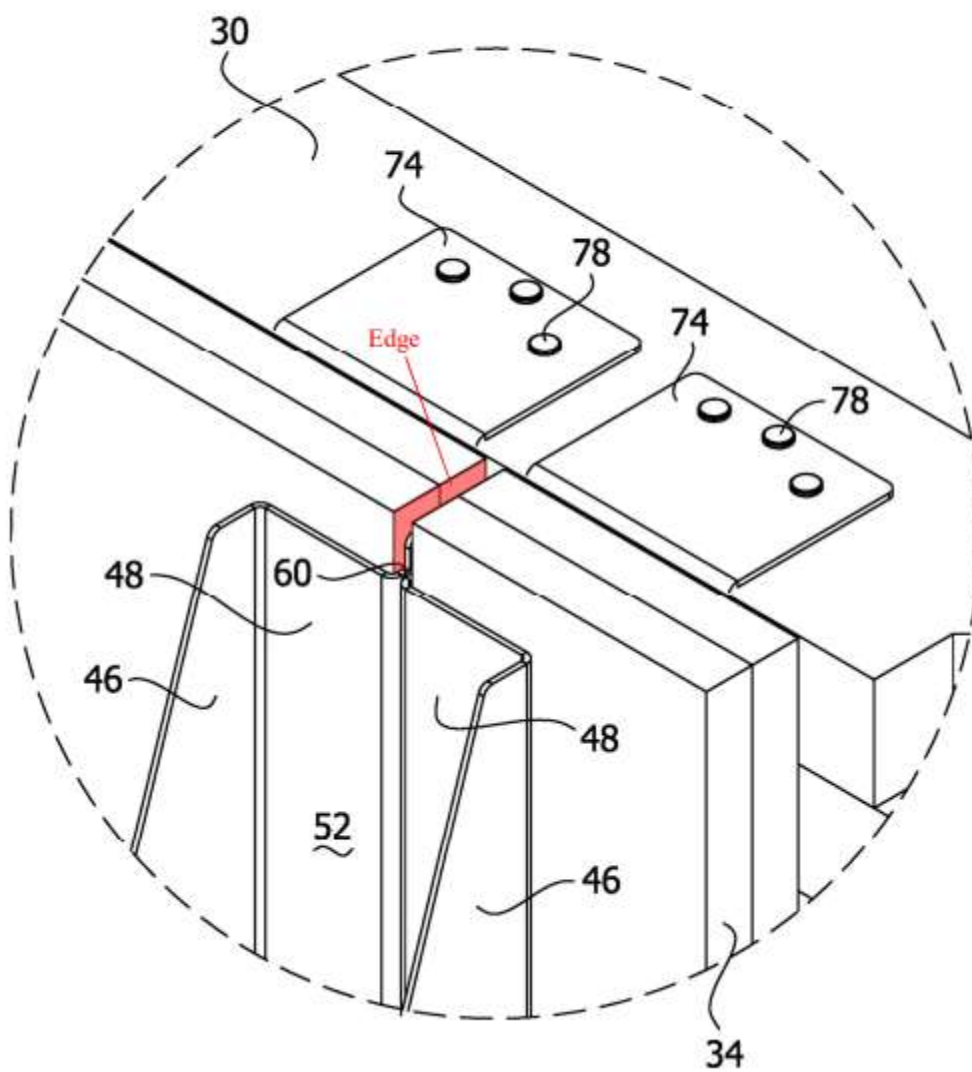
1010 (Fed. Cir. 2023) (“the intrinsic record sufficiently guides a skilled artisan to the meaning of that term as used in the [] patent”).

The ‘339 Patent’s figures provide a clear example of the planar edge of the fire-retardant sheathing (34) matching the form of and being within a short distance of the planar exterior face of the extension portion (40). EX2001: ¶218.



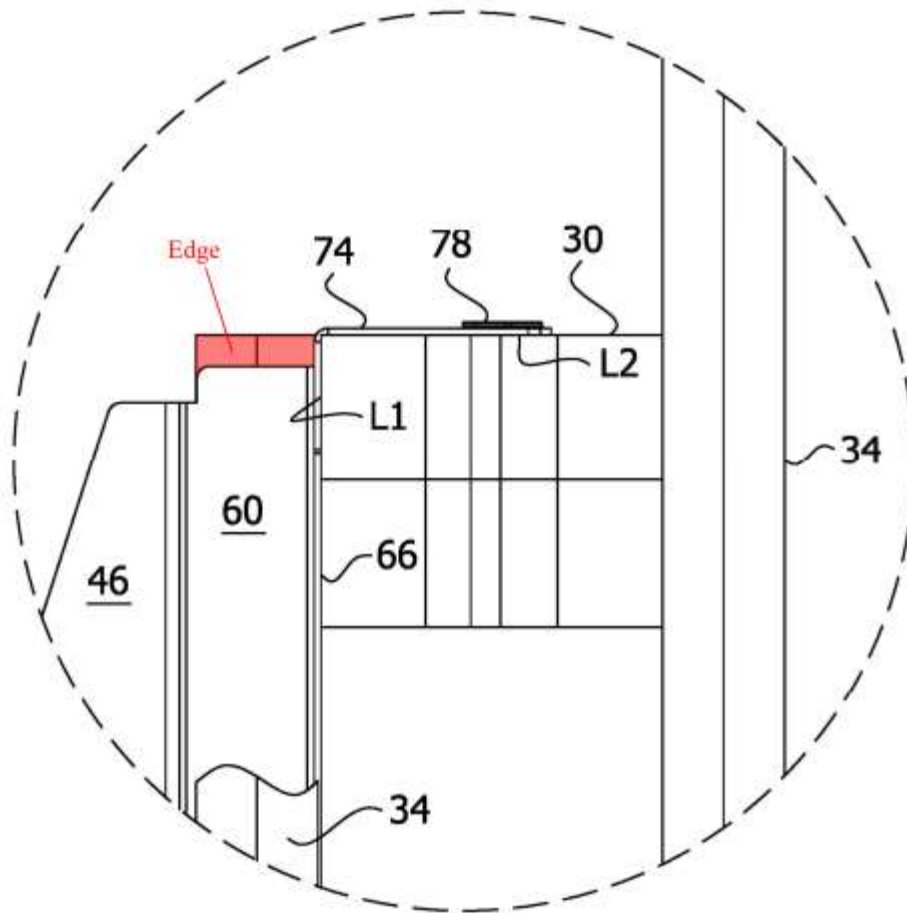
EX1001: Figs. 5 and 9 (enlarged, annotated).

FIG. 10A



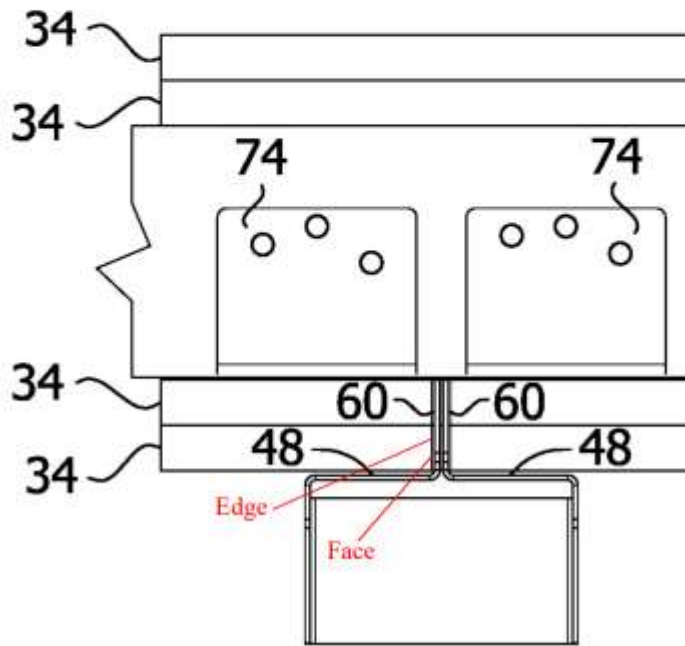
EX1001: Fig. 10A (annotated)

FIG. 13A



EX1001: Fig. 13A (annotated)

FIG. 11



EX1001: Fig. 11 (enlarged, annotated).

Per the request by the Board (ID: 45), edges of the fire-retardant sheathing bounding the opening spaced *greater* than 1/8-inch from the exterior faces of the extension portion of the fire wall hanger would *not* be in “close conformance,” per the specification. EX1001: 5:38-39.

Accordingly, claims 13 and 14 are definite.

VII. SIMPSON’S ARGUMENTS FOR CLAIMS 16, 17, AND 20-23 ARE INADEQUATE

A. Claims 16 and 17: Simpson Does Not Make a Clear Argument

Simpson argues claim 16 lacks written description support and then makes the conclusory statement—without support—this lack of written description support makes claims 16 and 17 indefinite. Pet: 19-20. Simpson is once again confusing written description support under 35 U.S.C. §112(a) and indefiniteness under 35 U.S.C. §112(b). *See* ‘063 PGR FWD: 25-26; *Rengo Co. v. Molins Mach. Co.*, 657 F.2d 535, 550 (3d Cir. 1981); *Application of Cormany*, 476 F.2d 998, 999-1000 (C.C.P.A 1973); M.P.E.P § 2174 (“The requirements of 35 U.S.C. § 112(a) and (b) ... are separate and distinct.”).

Simpson provides no specific reason why claims 16 and 17 are indefinite, thus failing to meet their burden of proof. 35 U.S.C. §326(e) (“petitioner shall have the burden of proving [] unpatentability”). Simpson makes the following single conclusory statement: “the limitation ‘extends through the fire retardant sheathing’ is unclear and fails to inform a POSA about the scope of the invention defined by claim 16.” Pet: 19. Simpson does not even provide an expert declaration cite at the end of this conclusory sentence. Pet: 19.

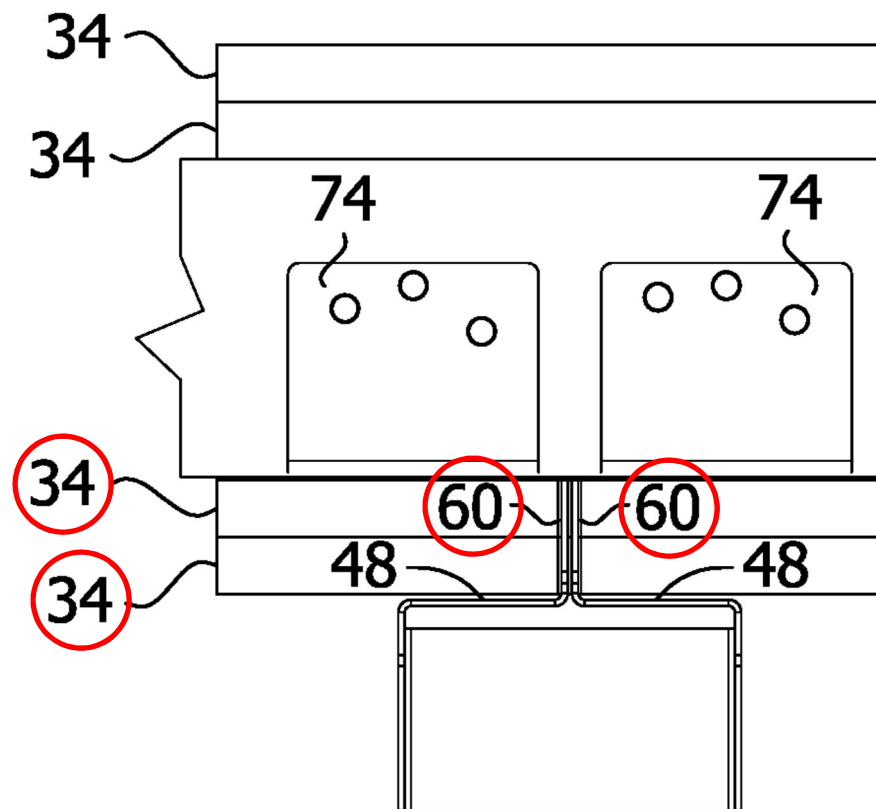
And Simpson’s lack of written description argument fails to address the actual language of claim 16—i.e., “extension flange of the extension portion of the fire wall hanger extends through the fire retardant sheathing.” EX2001: ¶¶163-

165. Columbia was clearly in possession of this limitation as shown and described by the '339 Patent:

- “the extension portion 40 includes two extension flanges 60 configured to extend through the fire retardant sheathing 34.” EX1001: 5:4-6.
- “the extension flanges 60 extend through a slot 72 in the fire retardant sheathing 34.” EX1001: 5:35-36

EX2001: ¶166.

FIG. 11



EX1001: Fig. 11 (enlarged, annotated); EX2001: ¶167.

B. Claims 20-23: Simpson’s Argument Ignores the Claim Language

Simpson provides no reason why claims 20-23 lack written description support, failing again to meet their burden of proof. 35 U.S.C. §326(e) (“petitioner

shall have the burden of proving [] unpatentability”). Again, Simpson makes a single conclusory statement, without even a cite to an expert declaration at the end of it. Pet: 20.

Regarding indefiniteness, Simpson states, “the difference between ‘extension flange’ and ‘planar extension plate’ is unclear” (Pet: 20), but the distinction is in the words of the claims. EX2001: ¶¶222-224. Claim 20 states the plates are “planar,” whereas claim 19 *does not require* the “flanges” to be planar. EX2001: ¶224. Thus, the difference in scope between claims 19 and 20 is clear based on the words in the claims, rebutting Simpson’s reasoning why claim 20 is indefinite. EX2001: ¶224.

And contrary to Simpson’s unsupported suggestion, claim terms do not need to be expressly defined by the patent to be definite. Pet: 20; *One-E-Way, Inc. v. Int’l Trade Comm’n*, 859 F.3d 1059, 1066 (Fed. Cir. 2017); EX2001: ¶225.

VIII. CONCLUSION

Simpson has failed to demonstrate the ‘339 Patent’s claims are invalid.

Dated: May 27, 2025

Respectfully submitted,

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CERTIFICATE OF SERVICE

Under 37 C.F.R. § 42.6(e), the undersigned certifies that on May 27, 2025, a copy of the foregoing PATENT OWNER'S RESPONSE, along with the supporting exhibits, were served via email on the following:

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**CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME
REQUIREMENTS UNDER 37 C.F.R. § 42.24**

Under 37 C.F.R. § 42.24(d), the undersigned certifies that this Patent Owner Response complies with the type-volume limitation of § 42.24(b)(2) because it contains 18,693 words, excluding the parts of the Response exempted by § 42.24(a).

This paper also complies with the typeface requirements of 37 C.F.R. § 42.6(a)(2)(ii) and the type style requirements of 37 C.F.R. § 42.6(a)(2)(iii) and (iv).

Dated: May 27, 2025

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