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 PRELIMINARY RESPONSE TO THE PETITION FOR POST GRANT REVIEW

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EXHIBIT LIST

Exhibit No.	Description
2001	Declaration of Richard Kaczkowski
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
2027	U.S. Patent No. 11,560,707
2028	U.S. Publication No. 2002/0148191
2029	U.S. Publication No. 2013/0133284
2030	Merriam-Webster's Collegiate Dictionary – Definition of Close
2031	New Oxford American Dictionary – Definition of Close
2032	Merriam-Webster's Collegiate Dictionary – Definition of Conform

2033	New Oxford American Dictionary – Definition of Conformance
2034	U.S. Patent No. 9,938,709
2035	U.S. Patent No. 5,237,613
2036	U.S. Patent No. 6,135,687
2037	Transcript of the May 25, 2022 Deposition of Mr. Fennel
2038	2012 International Building Code – Table 721.1(2)
2039	Fire Ratings of Masonry Walls
2040	Fire and Concrete Structures
2041	Fire Protection Safety with Concrete
2042	2012 International Building Code: Definition of "Fire Wall"
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

Emphasis Added Throughout Unless Indicated Otherwise

I. INTRODUCTION

Patent Owner Columbia Insurance Company ("Columbia") respectfully requests the Board deny Simpson Strong-Tie Company Inc.'s ("Simpson") Petition and decline to institute a post grant review of U.S. Patent No. 11,920,339 ("the '339 Patent").

While the '339 Patent is the fourth patent in its family to come before the Board, the '339 Patent's claims are different than the claims addressed in the prior PGRs. The present claims are method claims positively reciting the frame wall, the fire retardant sheathing, and the firewall hanger along with the steps of first mounting the hanger on the frame wall, followed by the installation of fire retardant sheathing.

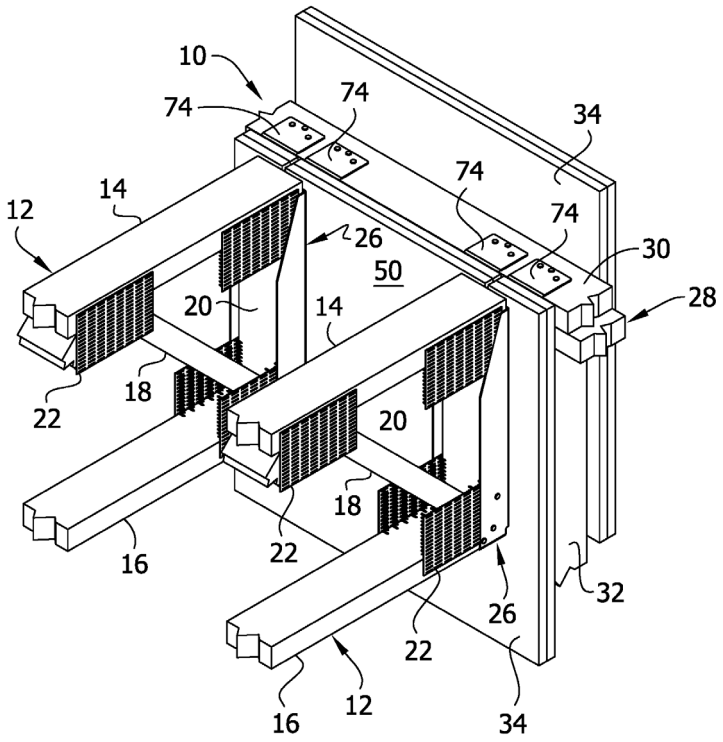
Therefore, it is no longer adequate for prior art hangers to have features making them arguably compatible with the sheathing and frame wall. Simpson must demonstrate the *method itself* is also obvious. Simpson is unable to point to ***any prior art*** where the specific method steps (and sequence thereof) recited by the '339 Patent's claims are taught. Lacking necessary prior art evidence, Simpson resorts to gap-filling from its expert that still fails to overcome the deficiencies in its obviousness arguments. Thus, Simpson fails to establish *prima facie* obviousness, instead relying on expert testimony to fill in entirely missing method steps. The Petition is fatally flawed on these bases.

Simpson also challenges the claims with written description and indefiniteness grounds. These grounds fail because Simpson takes an improperly narrow view of what the specification of the '339 patent discloses and an inaccurate understanding of the plain and ordinary meaning of terms as would be understood by a person having ordinary skill in the art ("POSA").

None of the grounds demonstrate Simpson is "more likely than not" to prevail in invalidating any of the claims at trial. 35 U.S.C. §324(a). Therefore, Columbia respectfully requests the Board decline to institute Simpson's Petition.

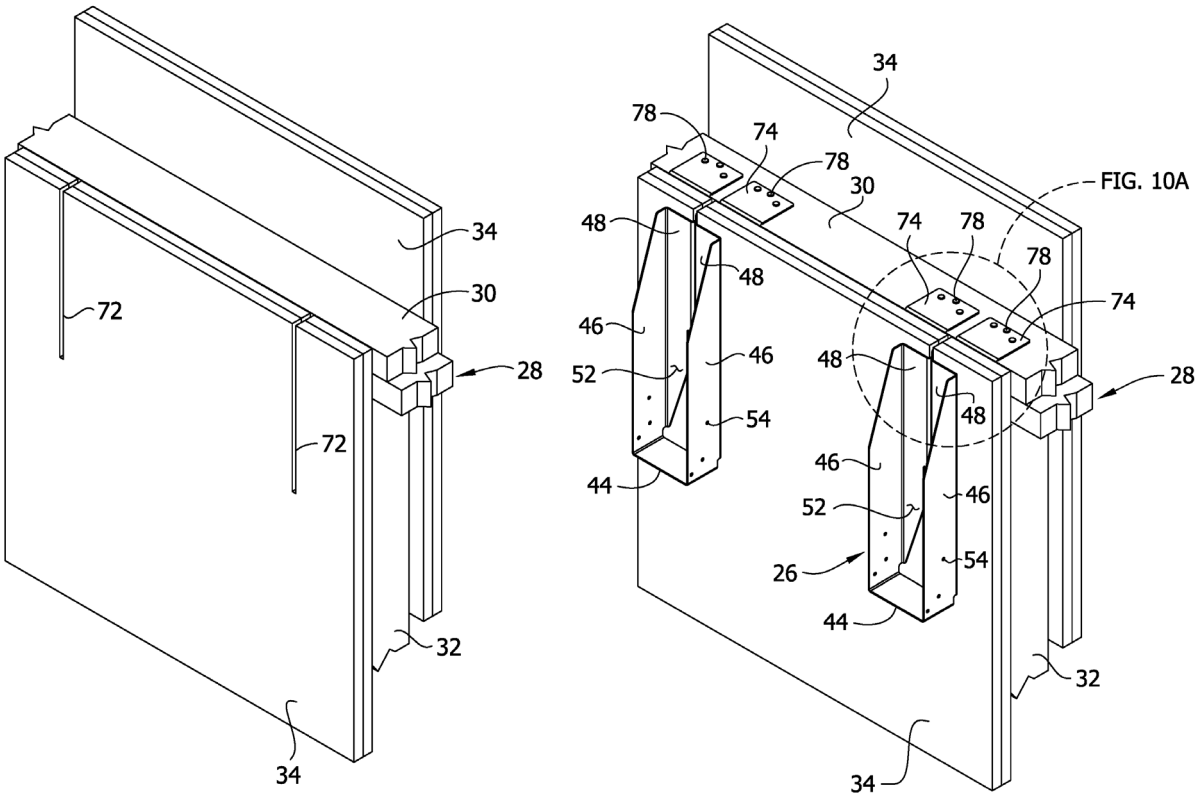
II. THE '339 PATENT

The '339 Patent's claims are fundamentally different from the claims in this patent family previously considered by this Board. Unlike the claims directed to the hanger *per se* (i.e., the hanger structure alone) in the 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, the claims also *recite a specific sequence of certain steps to form the fire-resistive wall assembly*. EX1001: claim 1.



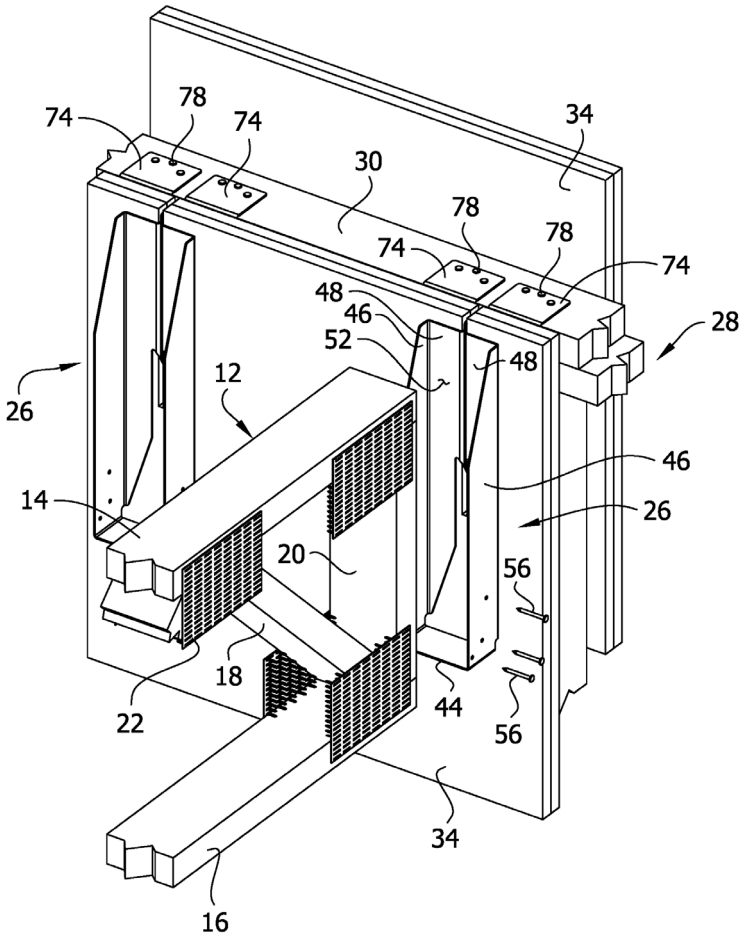
EX1001: Fig. 1

Specifically, independent claims 1 and 27 recites 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 and 27. 7:26-27; EX2001: ¶¶22-23, 26.



EX1001: Figs. 9 and 10.

The method then recites a specific construction sequence—the fire retardant sheathing being installed ***after*** the fire wall hanger has already been mounted on the frame wall. EX1001: claim 1; EX2001: ¶24. This installing step has two sub-parts: (1) "inserting the fire retardant sheathing between the channel-shaped portion [38] of the fire wall hanger and the frame wall," and (2) "moving the fire retardant sheathing … so that … the fire wall hanger extends through the opening in the fire retardant sheathing." EX1001: claim 1.



EX1001: Fig. 12.

As the '339 Patent explains, this assembly sequence "***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: 7:67-8:5; EX2001: ¶¶25, 27-28. Thus, the sequence of these specific steps is central to the invention.

III. SIMPSON'S PRIOR ART REFERENCES

A. Bundy

Filed only weeks before Columbia's priority date, Bundy represents Simpson's own contemporaneous attempt to develop a fire wall hanger. EX1005; EX2001: ¶¶29-30.

Bundy teaches a joist hanger (2) installed over "one or more generally vertical drywall panels [6]." EX1005: Abstract. Bundy's hanger is installed on a top plate (4) of a wood framed wall having drywall panels already mounted thereon. EX1005: 2:20-25, 3:55-59, 6:1-5, Figs. 1 and 2; EX2001: ¶¶31-32.

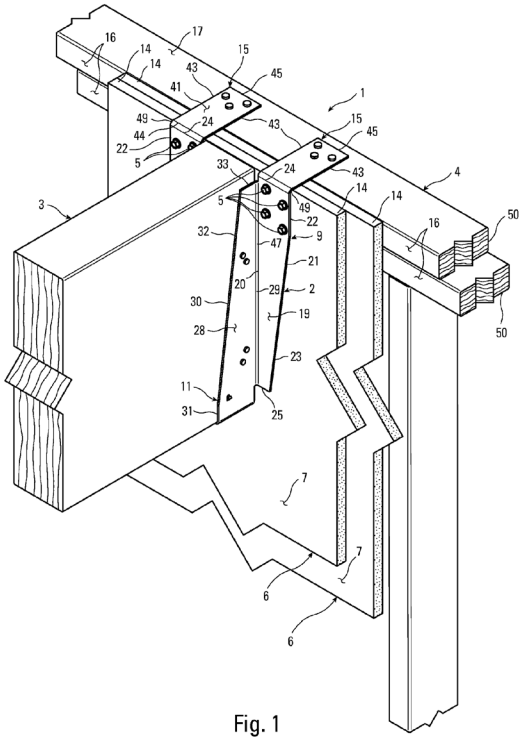


Fig. 1

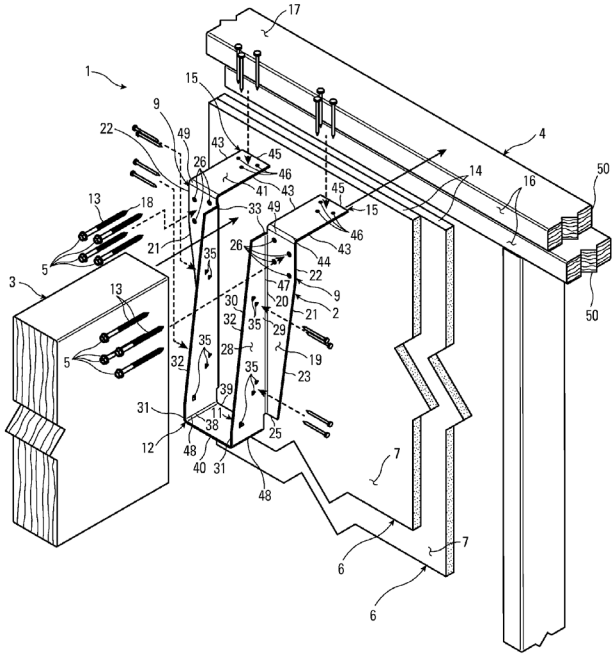


Fig. 2

The joist hanger includes top flanges (15) extending over the top of the drywall panels for attaching the joist hanger to the top plate of the wall. EX1005: 5:39-43; EX2001: ¶¶33-35.

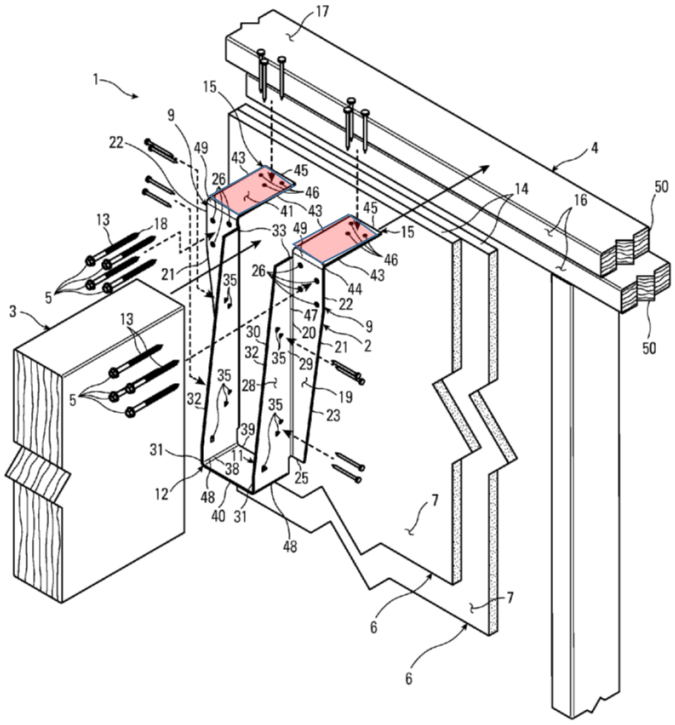


Fig. 2

EX1005: Fig. 2 (annotated).

Accordingly, Bundy discloses a different construction sequence than the '339 Patent's claims. EX2001: ¶36. In Bundy, the joist hanger (2) is mounted on the top plate (4) of the wall ***after*** the drywall panels (6) are installed on the wall. EX1005: Fig. 2, 2:20-25 ("[t]he drywall [is] applied … and the joist hanger can ***then*** be attached"); EX2001: ¶37. As shown below, the engagement of the back

plate members (9) with the drywall panels establishes position of the joist hanger relative to the wall. EX1005: Fig. 3, 6:14-17; EX2001: ¶38.

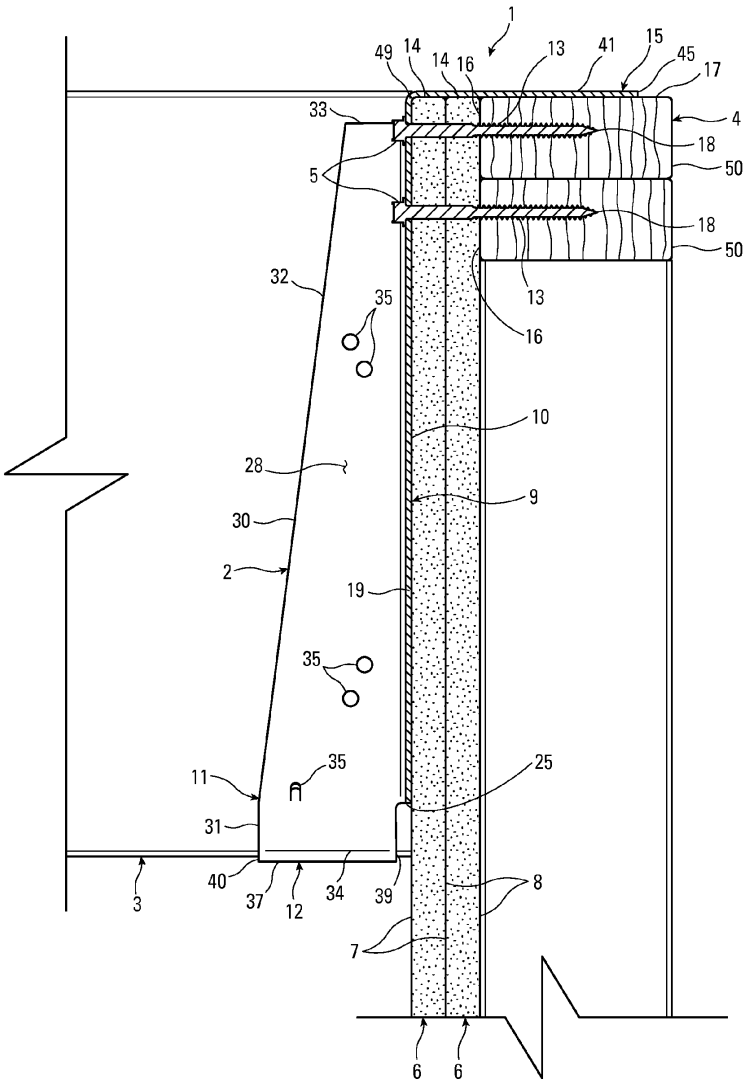


Fig. 3

EX1005: Fig. 3.

Bundy further explains this installation of extending the joist hanger over the drywall panels ***"[i]mportantly***, [] does not require any alteration of the drywall." EX1005: 2:18-19; EX2001: ¶39.

B. Cullen

Cullen discloses a bracket (10) for connecting a joist (96) to a sill (88). EX1004: 10:10-12, 16:23-28; EX2001: ¶40.

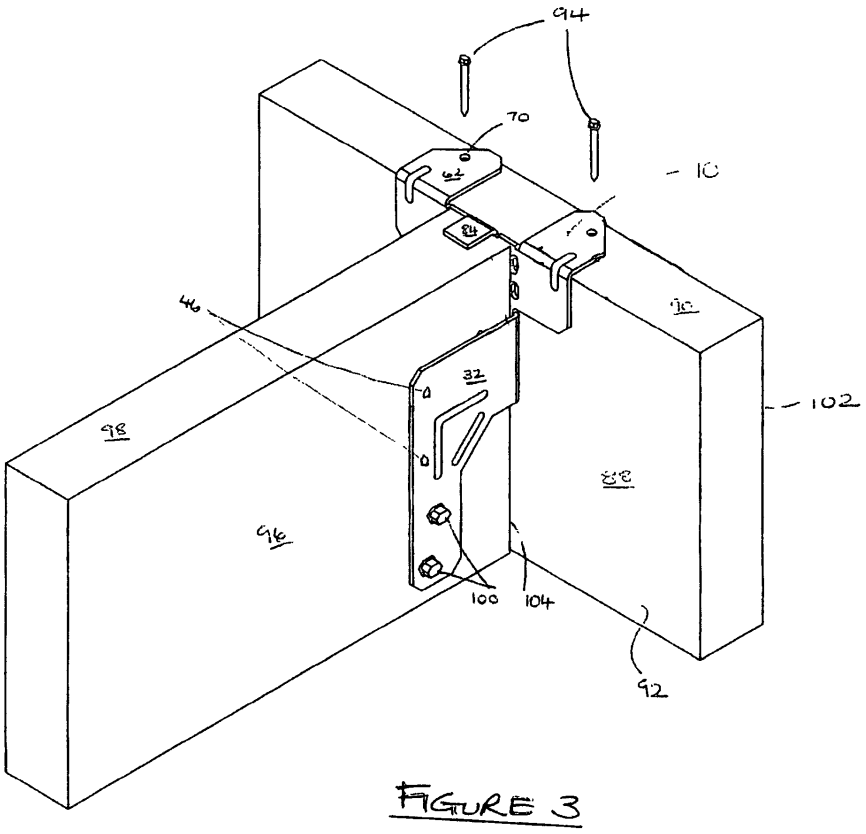


FIGURE 3

EX1004: Fig. 3.

Cullen's bracket seats the joist all the way against the back plate (12) engaged with the sill. EX1004: Fig. 3, 16:13-14. The bracket includes barbs (31, 33) which engage the joist to "prevent [the joist's] withdrawal" from the bracket and a location tab (84) which engages the joist to position the joist within the bracket. EX1004: Figs. 1 and 3, 4:8-12, 11:11-12,13:1-5; EX2001: ¶¶41-42.

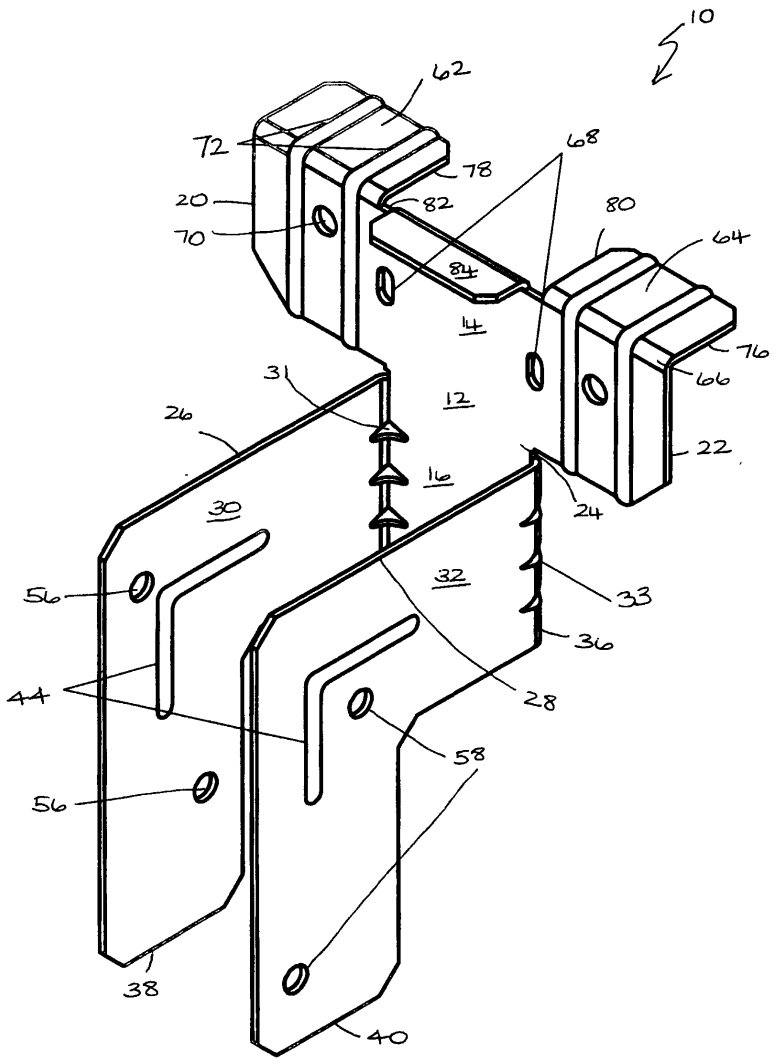


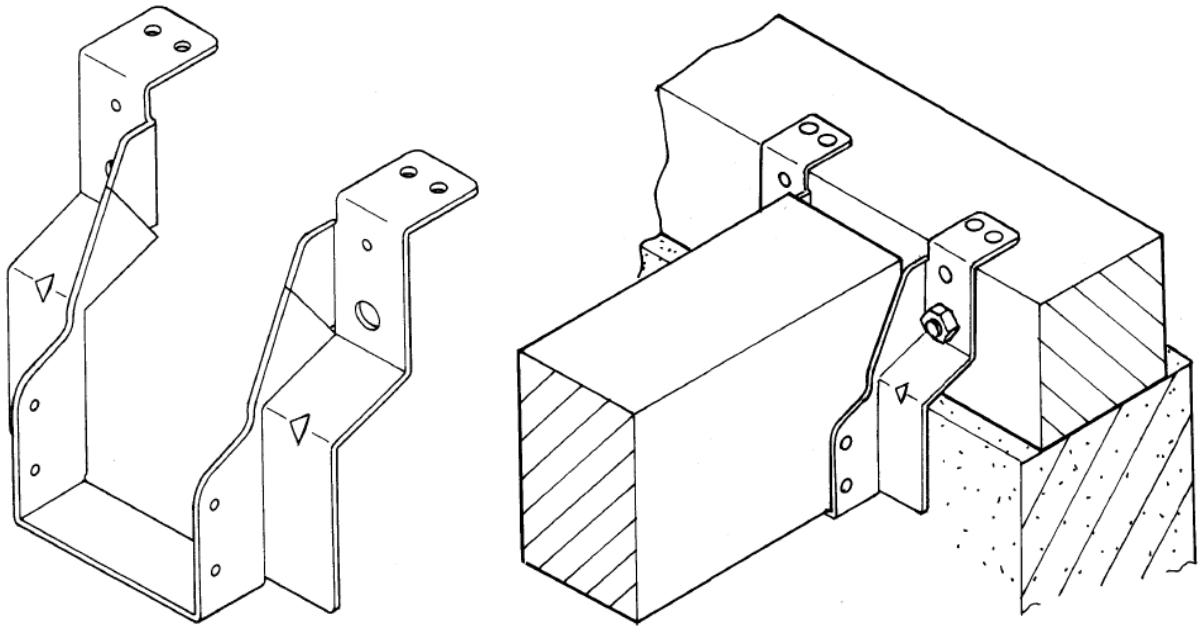
FIGURE 1

EX1004: Fig. 1.

Notably, Cullen makes no mention, nor suggestion, of constructing a firewall. EX1004; EX2001: ¶43.

C. Yamaguchi

Yamaguchi is a design patent for "a joist bracket that is attached to sills and bears a joist bridging the sills." EX1007: 1; EX2001: ¶44.



EX1007: 2, 5.

As shown above, Yamaguchi's joist bracket connects joists to a wooden sill sitting on a concrete wall thicker than the wooden sill. EX1007; EX2001: ¶45. Thus, the function and purpose of Yamaguchi is no different than the Tsukamoto reference (EX1008) used in prior PGRs. EX2001: ¶45.

Like Cullen, Yamaguchi makes no mention of constructing a firewall. EX1007; EX2001: ¶46.

D. Robinson

Robinson discloses "a joist hanger for affixing a timber joist to masonry." EX1011: Abstract. With reference to Fig. 2 (below), the joist hanger (100) defines a duct opening (126) for cables and pipes to extend through to eliminate "the need

to drill holes in a joist in order to run cables, pipes, and the like past the joist." EX1011: Abstract, 1:24-30, 2:20-21, 4:13-19, 5:12-13; EX2001: ¶47.

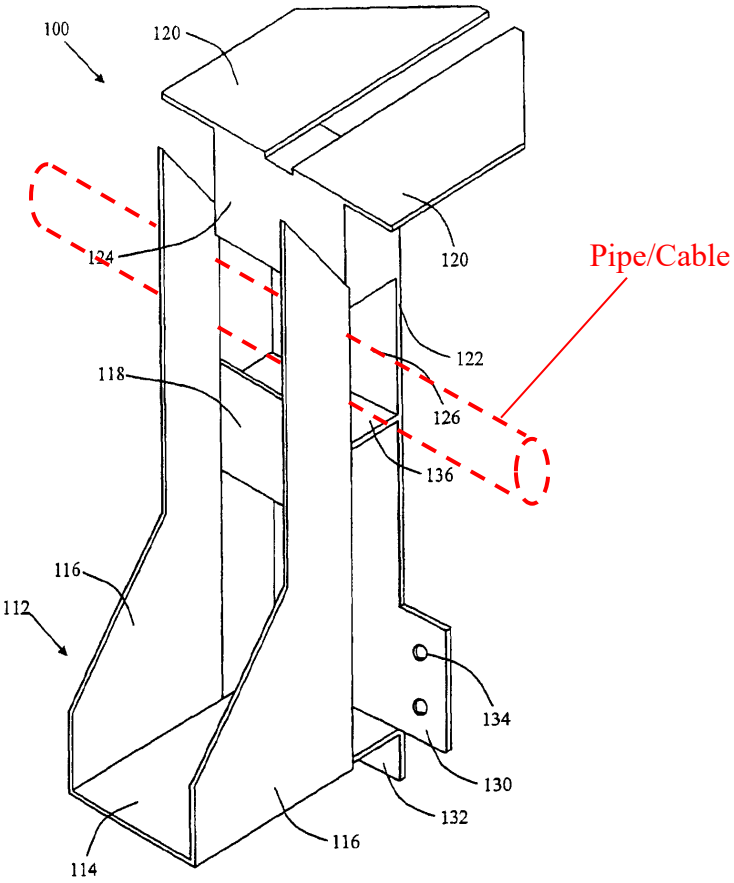


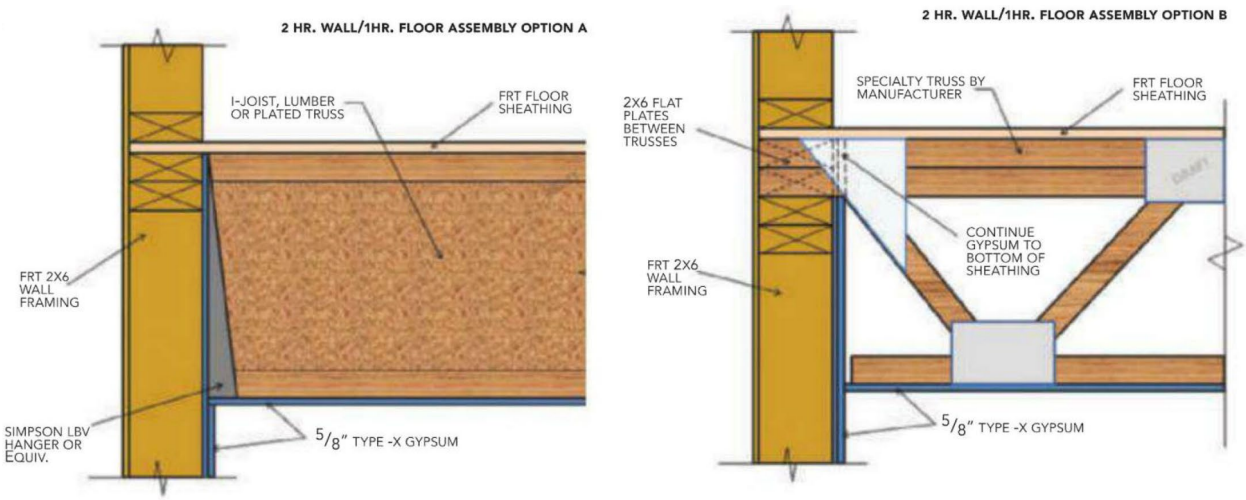
Figure 2

EX1011: Fig. 2 (annotated).

Like Cullen and Yamaguchi, Robinson makes no mention of constructing a firewall. EX1011; EX2001: ¶48.

E. ArchRecord

ArchRecord is an article discussing different types of wood frame construction. EX1031; EX2001: ¶49. Simpson refers only to the image below for the allegedly relevant disclosure:



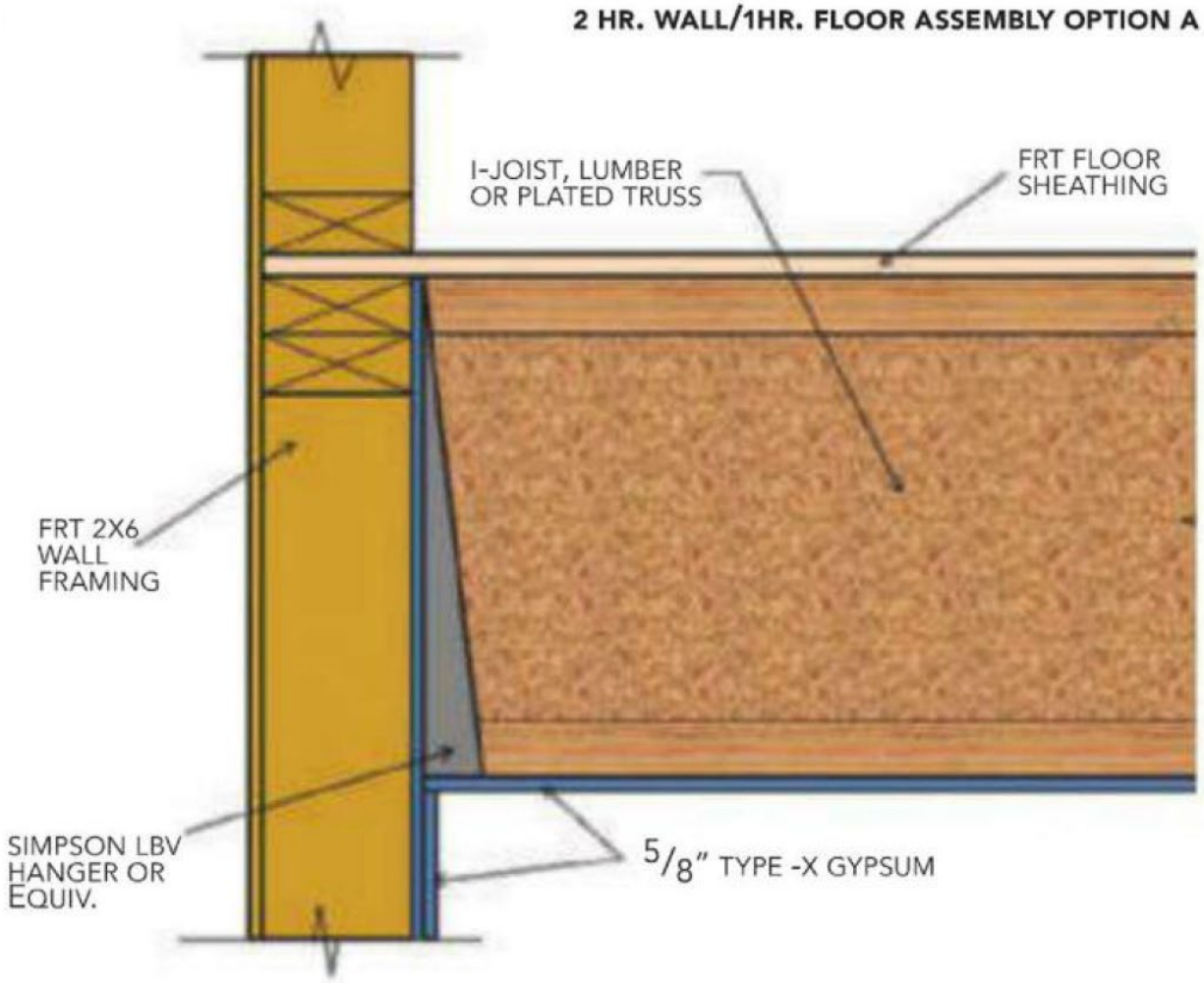
(LEFT) Semi-balloon framing is more common in buildings five stories and higher; (RIGHT) it is often used as an alternative to platform framing where fire requirements or shrinkage may be a challenge.

EX2008: 6.[1].

This image illustrates two different wood frame construction: framing with joist hangers (Option A – left) and framing without joist hangers (Option B – right). EX1031: 6; EX2001: ¶51.

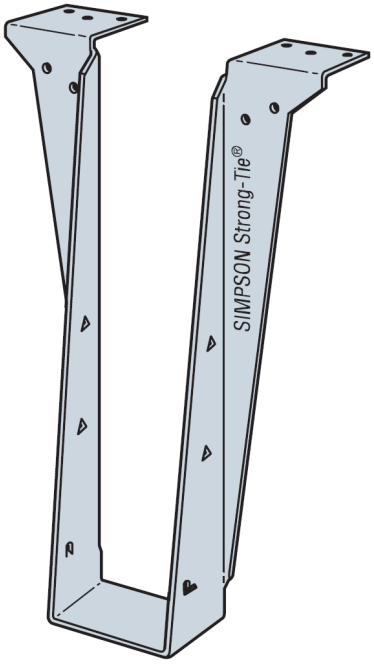
Option A is shown in greater detail below. EX2001: ¶52.

[1] EX2008 is an electronic version of ArchRecord (EX1031), which provides a better image resolution. EX2001: ¶50.

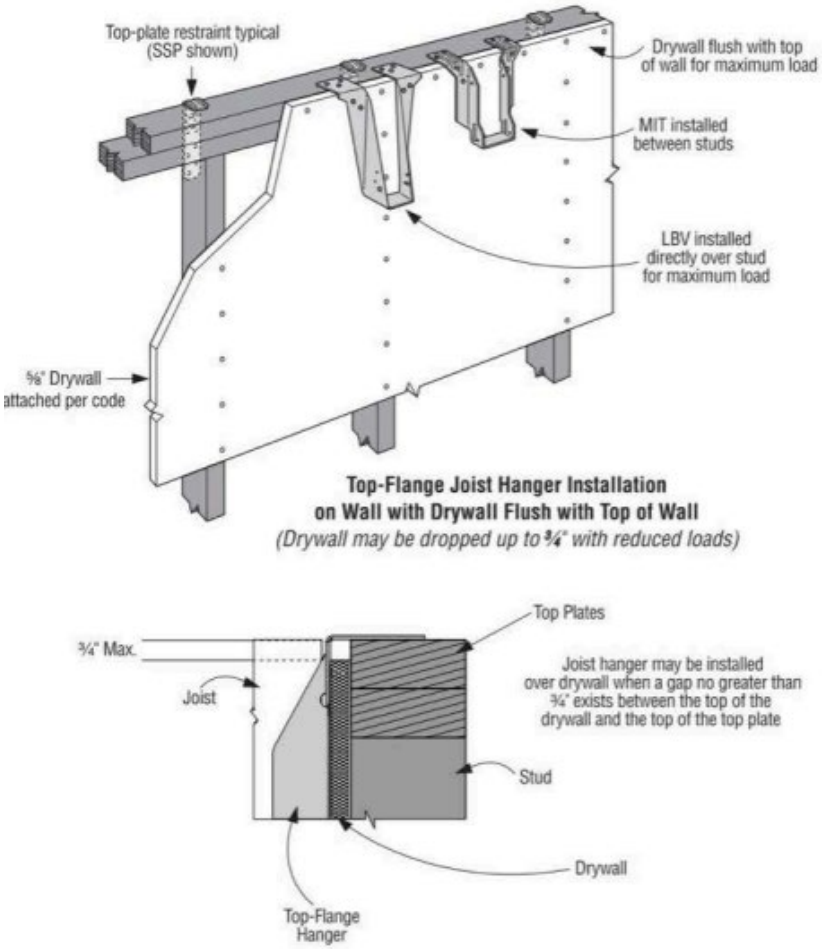


EX2008: 6.

Option A uses a hanger, namely Simpson's LBV hanger, to connect a joist to the frame wall. EX1031: 6; EX2001: ¶53. As shown above and explained in Simpson's technical bulletin (EX1012), the hanger is installed over the drywall panels. EX2001: ¶54. As a result, Option A is no different than Bundy. *Id*.

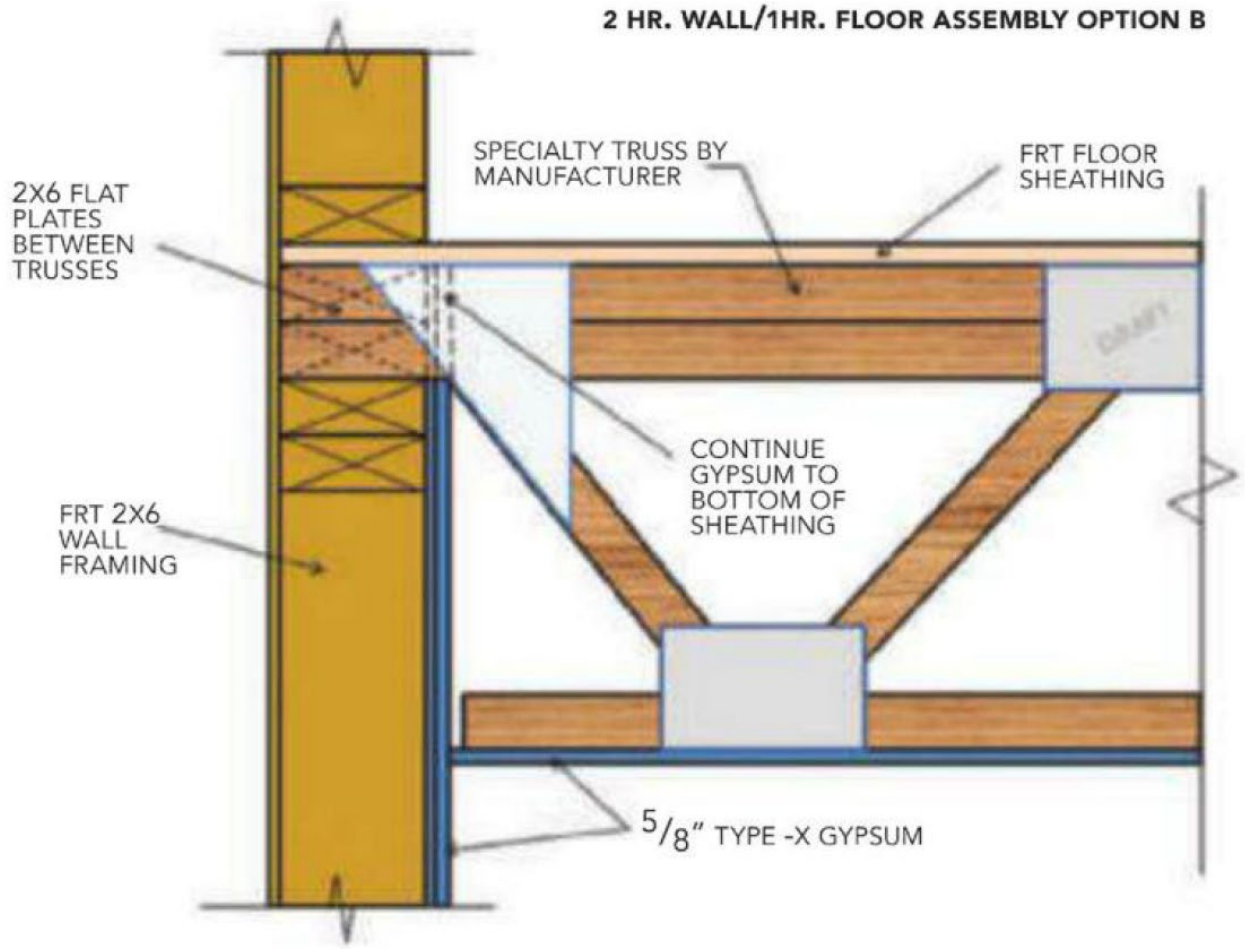


EX2009.



EX1012: 2.

Option B framing is shown in greater detail below. No hanger is used. EX2001: ¶55. Instead, the top chord of the truss is longer than the bottom chord, and extends onto a top plate of the wall. EX2001: ¶55. The triangular white/gray member is a nailing plate connecting the top chord to a web member extending down at an angle from the top chord. *Id*.

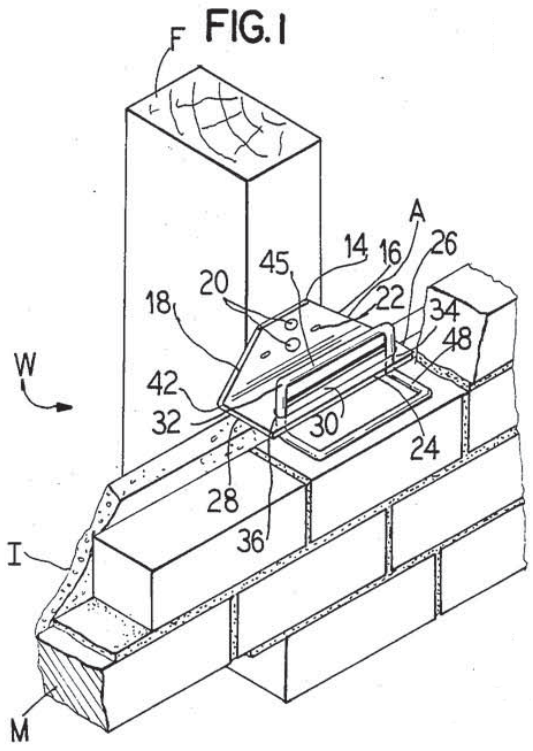


EX2008: 6.

F. Allan

Allan is directed to a wall anchor (A) used to tie masonry veneer walls (M) to building frame members (F) of a wall structure (W). EX1006: Fig. 1, Abstract, 3:12-20; EX2001: ¶¶56-57. The wall anchor is an angle iron. EX1006: 3:21-26; EX2001: 57. The wall structure includes an insulation layer (I) disposed between the masonry veneer wall and the building frame member. EX1006: 3:12-20; EX2001: ¶57. One leg (10) of the 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) which is embedded into the masonry veneer wall, thereby tying the masonry veneer wall to the building frame member. EX1006: Fig. 1, 3:28-33, 4:15-18; EX2001: ¶57-58.



EX1006: Fig. 1.

Allan does not concern methods for constructing firewalls. EX1006; EX2001: ¶59. Nor does Allan make any reference to or suggestion of fire resistance or protection. *Id*.

G. Commins

Commins is directed to a hurricane tie "used to connect wood bottom chord trusses to top plates on the inside wall without requiring notching of the wall board." EX1032: Abstract, 1:63-68; EX2001: ¶60.

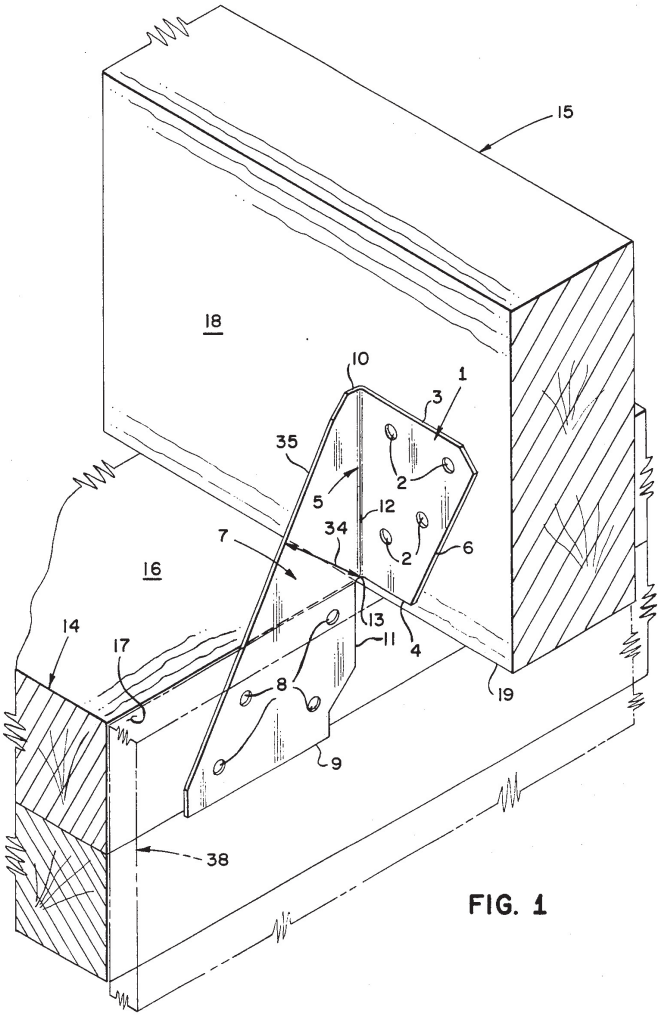
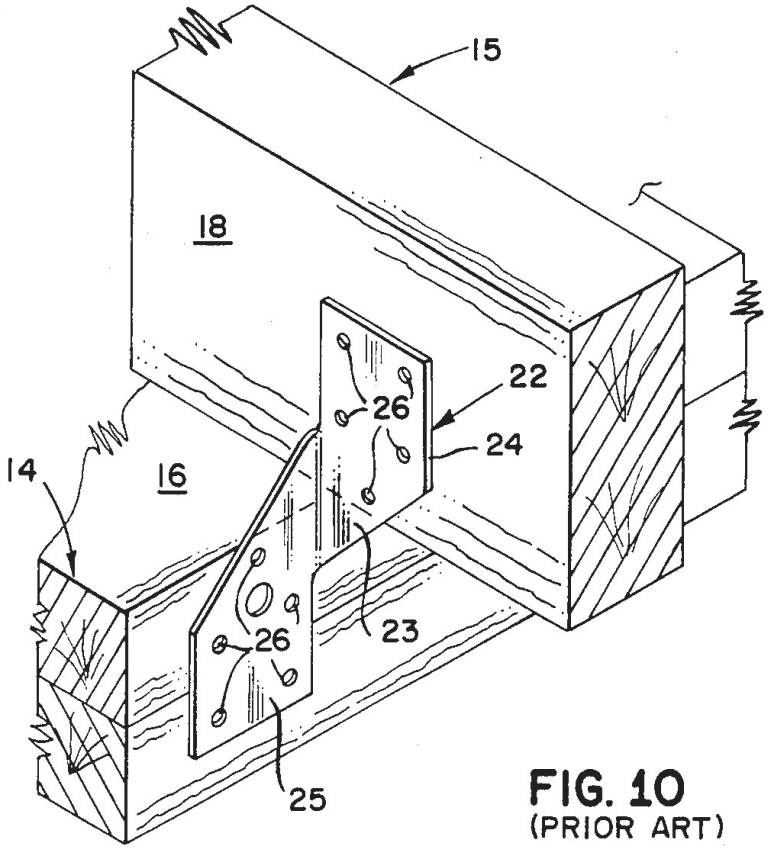


FIG. 1

EX1032: Fig. 1.

Commins explains "a notch would have to be made in the gypsum board around extension 23" where prior art hurricane ties (Fig. 10 below) were used with sheet rock. EX1032: 4:32-35; EX2001: ¶¶61-62.



EX1032: Fig. 10.

Like Allan, Commins does not concern methods of constructing firewalls. EX1032; EX2001: ¶63. Also like Allan, Commins makes no reference to or suggestion of fire resistance or protection. *Id*.

IV. CLAIM CONSTRUCTION

A. The POSA

The level of ordinary skill in the art is a person that at the time of the earliest priority date of the '339 Patent would have acquired a body of knowledge gained through formal education, or practical experience providing an equivalent to, a

Bachelor of Science in Mechanical Engineering, Civil/Structural Engineering, or a related/equivalent field, and at least four years of work experience in: (1) construction connector design, development, or use, (2) drywall construction practices/sequencing, and (3) performance requirements related to fire-rated drywall construction. EX2001: ¶¶1-6, 21; EX2002.

B. Disputed Terms

Claim constructions for terms and phrases disputed by the parties, such as "planar extension plate" and "bounding," are addressed in the grounds in which they appear below.[2] EX2001: ¶¶64-66, 68.

V. SIMPSON'S PRIOR ART GROUNDS ALL FAIL

This Board previously addressed apparatus claims directed solely to the structure of the claimed hanger with respect to the '339 Patent's family. Columbia listened to the Board's conclusions regarding obviousness in relation to the hanger *per se*. Columbia has, accordingly, sought and received the '339 Patent for features of the invention positively directed to fire wall construction. While the claims still recite specific structural features with respect to the hanger, the addition of the method steps makes the '339 Patent's claims *different than any of*

[2] Construction of "lie in [] vertical planes" is not needed at this time. EX2001: ¶67.

those addressed in the prior PGRs. The present method claims positively recite the steps of first mounting the hanger on the frame wall, followed by installing fire retardant sheathing by inserting the fire retardant sheathing between the channel-shaped portion of the fire wall hanger and the frame wall. EX2001: ¶27.

Therefore, it is not the case that a "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. Nor may the recited steps for installing the fire retardant sheathing be disregarded as "mere peripheral issues where conclusions of a party or the Board may substitute for core factual findings based on evidence ***that the limitation is met by the prior art***." *Medtronic, Inc. v. Avanos Medical Sales, LLC*, IPR2020-00895, Paper 49 at 31 (P.T.A.B. Aug. 27, 2021) (citing *K/S Himpp v. Hear-Wear Technologies, LLC*, 751 F.3d 1362, 1365 (Fed. Cir. 2014)). Rather the obviousness analysis requires "a searching comparison of the claimed invention—including ***all its limitations***—with the teachings of the prior art." *Medtronic,* IPR2020-00895, Paper 49 at 31 (emphasis in original) (quoting *In re Ochiai*, 71 F.3d 1565, 1572 (Fed. Cir. 1995)).

Columbia has significantly altered the substance of the claims in the '339 Patent compared to the prior apparatus claims. In the Petition, Simpson fails to meaningfully respond to these changes and presents grounds overlooking multiple

limitations of the '339 Patent. For the reasons stated below, Simpson's grounds fail, and institution should not be granted.

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

Within Simpson's limitation-by-limitation obviousness analysis, Simpson *repeatedly* fails to identify or provide *any citation* to where claim limitations are taught within the asserted prior art. EX2001: ¶299. Specifically, the Petition never states the prior art basis for the following independent claim limitations pertaining to installing the fire retardant sheathing:

- [1.E]/[27.E][3] – 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

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

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.

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

Bundy and ArchRecord are the only references teaching mounting fire retardant sheathing on a frame wall. EX2001: ¶301. But Bundy teaches mounting the sheathing ***before*** mounting the fire wall hanger on the frame wall. EX1005: Fig. 2, 2:20-25 ("[t]he drywall [is] applied …, and the joist hanger can ***then*** be attached"), 5:14-20; EX2001: ¶302. Specifically, as shown below, 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.

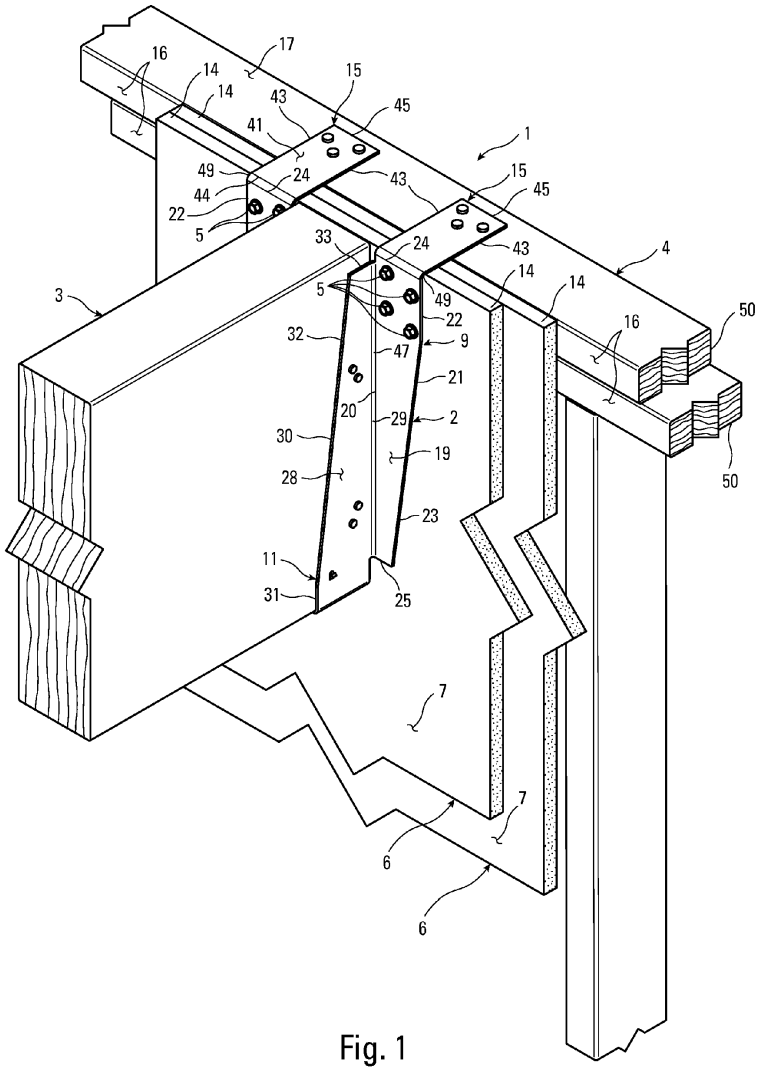
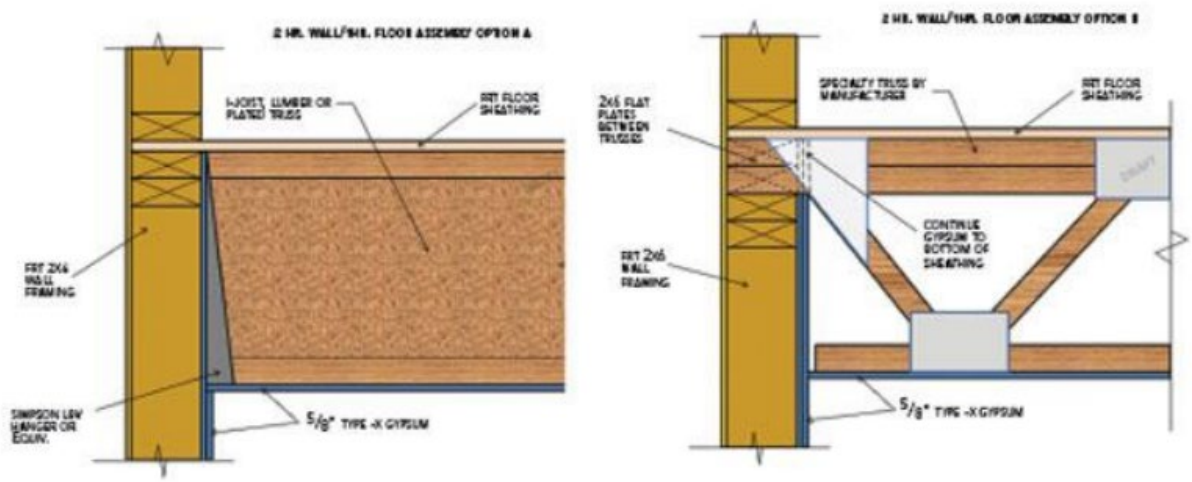


Fig. 1

EX1005: Fig. 1.

ArchRecord likewise suggests installing the sheathing only ***before*** mounting a fire wall hanger on the frame wall. EX2001: ¶303. Simpson relies on the following image from ArchRecord, which discloses two wood framing options: (1) Option A (left) and (2) Option B (right). EX2001: ¶304.

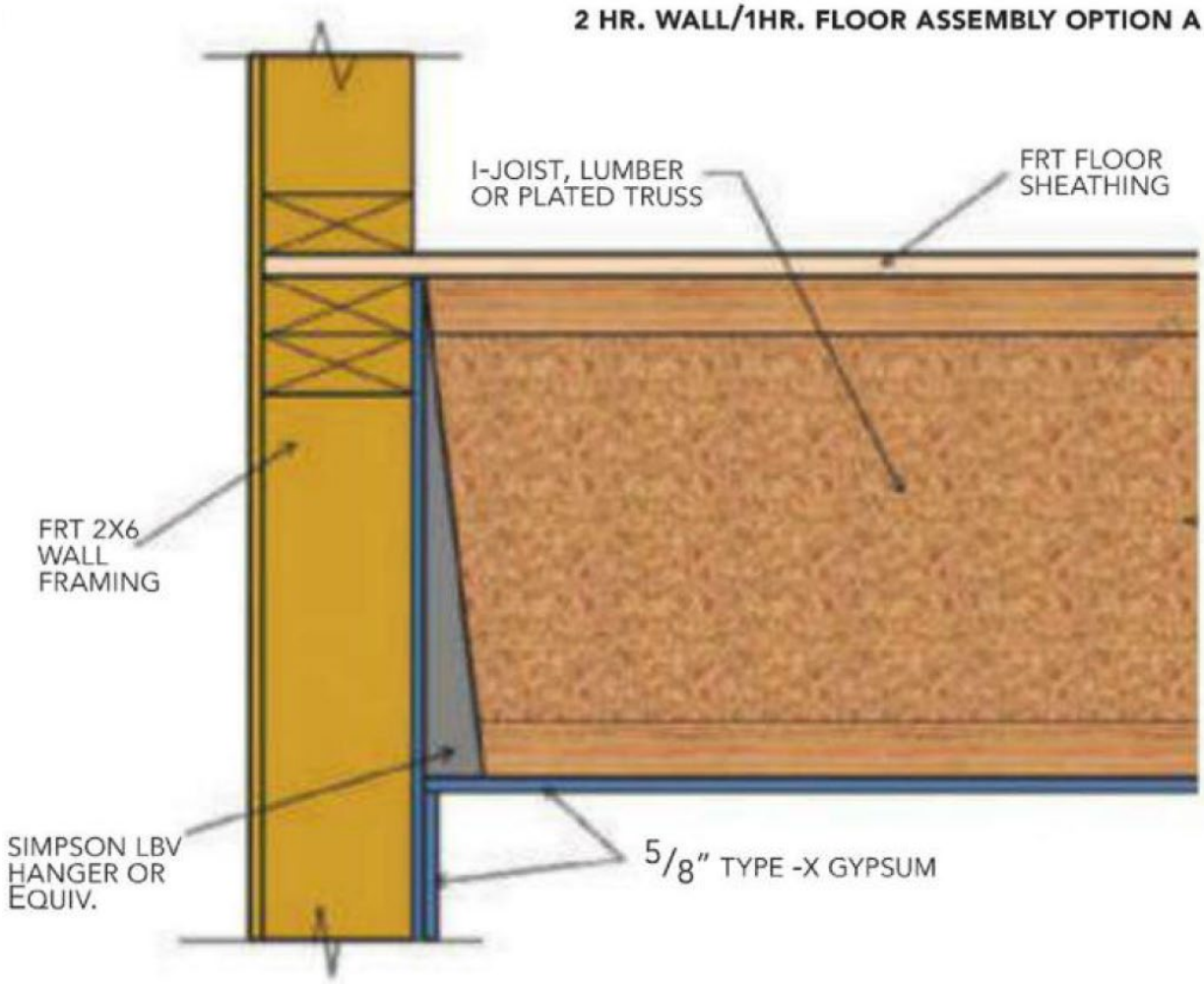


(Left) Semi-balloon framing is more common in buildings five stories and higher; (Right) it is often used as an alternative to platform framing where fire requirements or shrinkage may be a challenge.

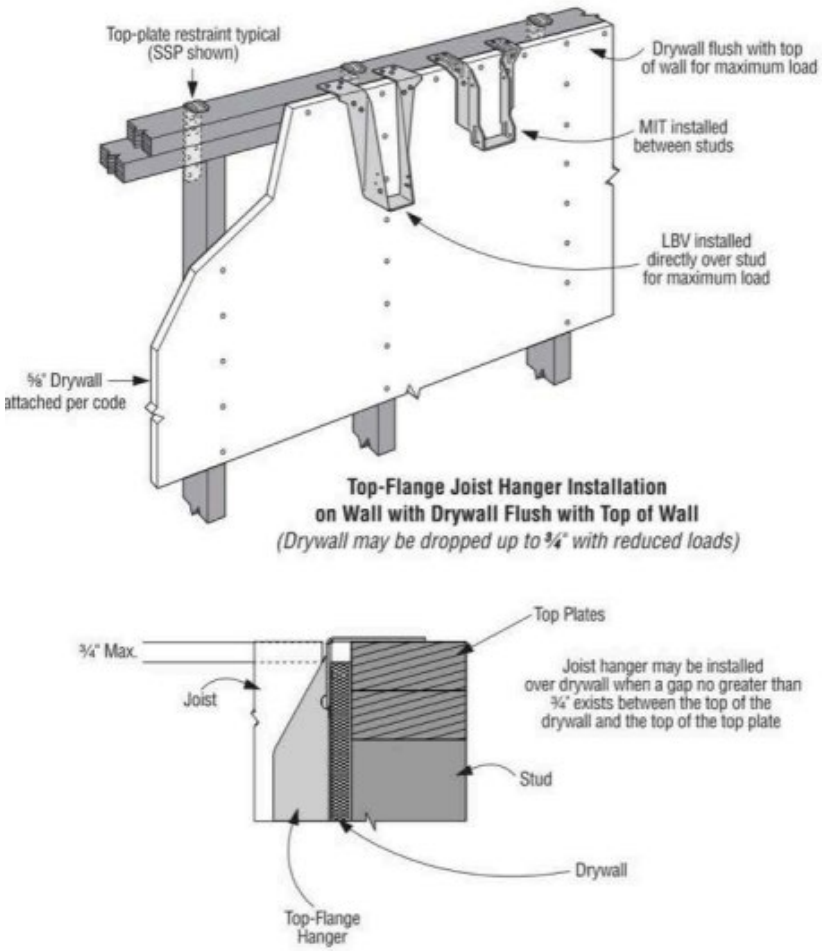
EX2008: 6.

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. Only Option A uses a hanger. EX2001: ¶305 But Option A is just like Bundy as 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):[4]

[4] Notably, in Option A, ArchRecord does not show any broken or hidden lines for the gypsum that would indicate the gypsum is cutout around the hanger. EX2001: ¶305.


2 HR. WALL/1HR. FLOOR ASSEMBLY OPTION A
I-JOIST, LUMBER OR PLATED TRUSS
FRT FLOOR SHEATHING
FRT 2X6 WALL FRAMING
SIMPSON LBV HANGER OR EQUIV.
5/8" TYPE -X GYPSUM

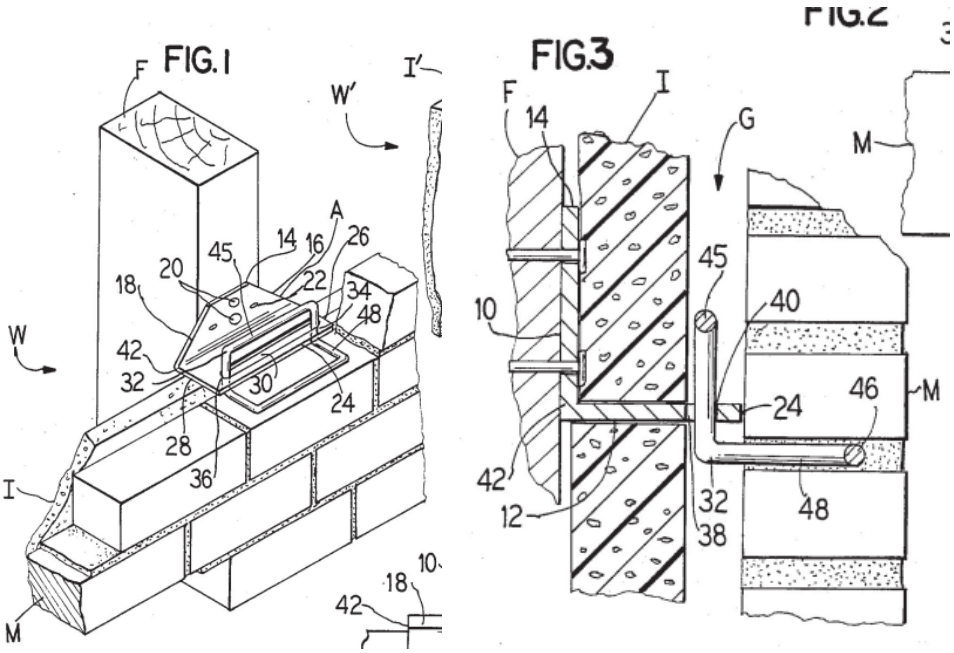
EX2008: 6.



EX1012: 2.

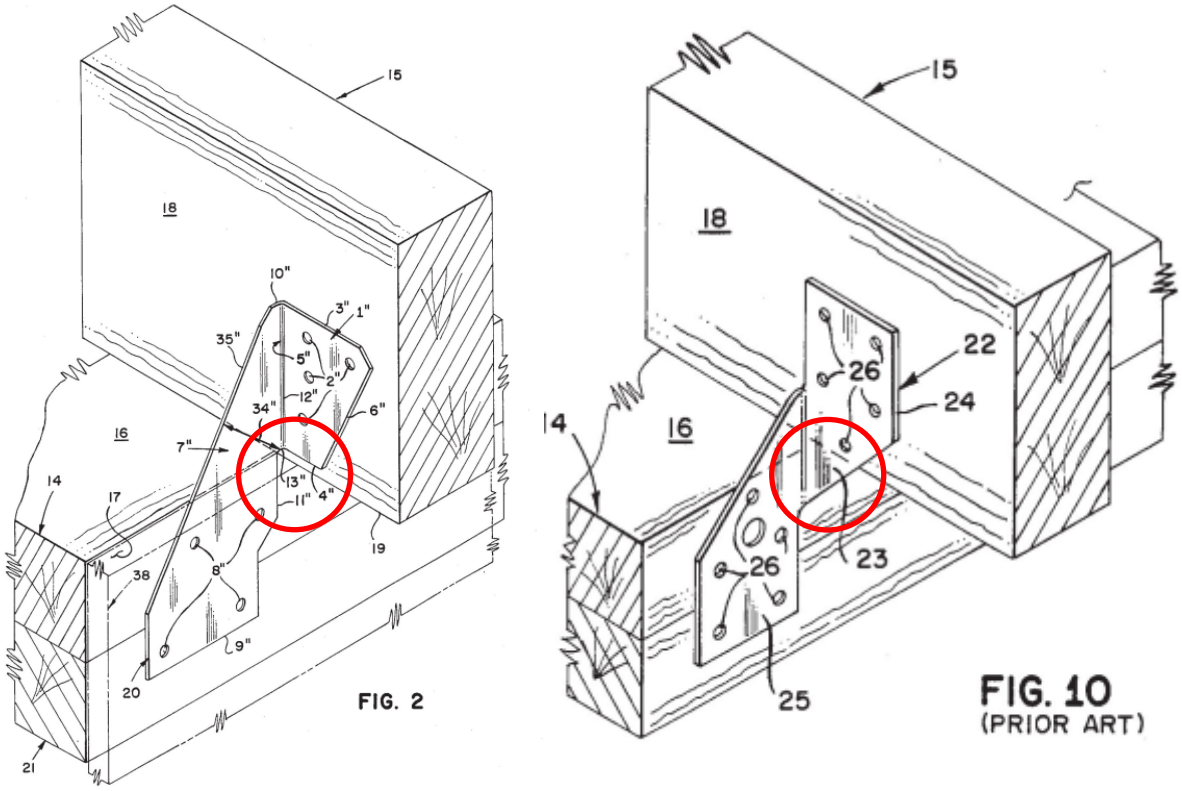
Allan discloses wall sheathing in the form of insulation I, but does not disclose the steps to install it. EX2001: ¶¶306-307. In Allan, the insulation layer is installed around the outstanding leg (12) of an L-shaped bar. EX2001: ¶307. Only ***after*** the insulation layer is installed around the outstanding 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. 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. 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.



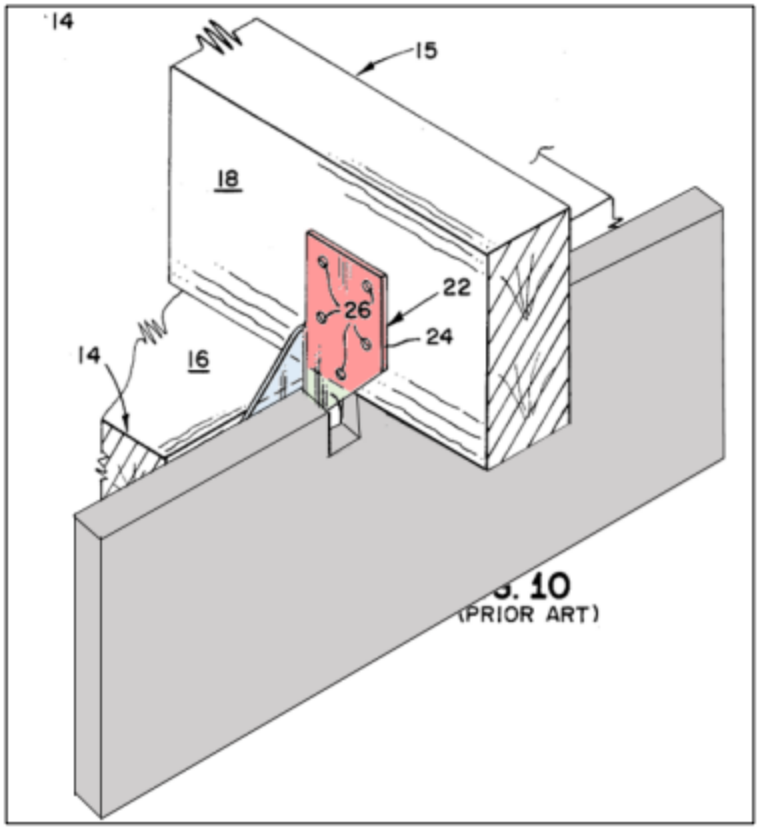
EX1006: Fig. 1 and 3.

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.



EX1032: Fig. 2, 10 (annotated).

Even with the disclosed prior art hurricane tie, the sheathing would still simply 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.



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," this step including "inserting the fire retardant sheathing between the channel-shaped portion of the fire wall hanger and the frame wall." *K/S Himpp*, 751 F.3d at 1366 (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.

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

This argument also improperly treats the missing limitations as mere peripheral issues filled in by the POSA's common sense.

Although 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). In fact, using common sense to supply a missing limitation is generally 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. This step is not merely 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. *Id*. 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.

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.

Simpson has failed to meet its fundamental obligation to establish a *prima facie* case of obviousness for any of its obviousness grounds because Simpson has failed to demonstrate 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.

B. All of Simpson's Obviousness Grounds are Predicated on Impermissible Hindsight Recreations

As distinguished from the patents in the prior PGRs, the '339 Patent's claims positively claim the frame wall, the fire retardant sheathing, and the installation steps for mounting the hanger and installing sheathing. Accordingly, it is not enough for Cullen, Yamaguchi, or Robinson have components that could arguably act as a separate "channel shaped portion" to hold the joist and "extension portion" to extend through sheathing if used according to the claimed method. *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); *Costco Wholesale Corp. v. Robert Bosch LLC***,** IPR2016-00035, Paper 23 at 8 (P.T.A.B. Aug. 12, 2016) (explaining "an

understanding that something could be applied to the problem at hand does not establish" the challenged claims are obvious) (internal quotation omitted). Simpson must establish it would have been obvious for a POSA to make such distinctions and use the prior art hangers as such without using the '339 Patent's disclosure as a roadmap. *In re Fine*, 837 F.2d 1071, 1075 (Fed. Cir. 1988) ("One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention."); *ATD Corp. v. Lydall, Inc.*, 159 F.3d 534, 546 (Fed. Cir. 1998) ("Determination of obviousness cannot be based on the hindsight combination of components selectively culled from the prior art to fit the parameters of the patented invention."); *In re Fritch*, 972 F.2d 1260, 1266 (Fed. Cir. 1992) ("It is impermissible to use the claimed invention as an instruction manual or 'template' to piece together the teachings of the prior art so that the claimed invention is rendered obvious."). *Apple Inc. v. Voip-Pal.com, Inc., LLC*, IPR 2016-01201, Paper 53 at 23 (Nov. 20, 2017) ("Petitioner's position in that regard is not grounded in what a skilled artisan would have gleaned from the teachings of the prior art, and is instead an impermissible exercise of hindsight with the claims … serving as a guide.").

Simpson's use of Cullen, Yamaguchi, and Robinson is based on nothing more than selecting prior art hangers that could conceivably fit the parameters of the claimed invention. Simpson's expert has previously confirmed his analysis

was based on nothing more than impermissible hindsight using the disclosures within the '339 Patent's family as a guide. Simpson's expert admitted he selected prior art references because of the purported presence of an extension portion created an "opportunity to use these hangers in the presence of sheathing." EX2037: 92:13-93:1 ("Well, all of these hangers–you know, generalizing, there's there's three parts to them. There's the connection portion, there's the extension portion, and then the channel bucket portion. And I find these features in each of the cited artwork. And so, what else I found attractive and obvious to me was that plenty of opportunity to use these hangers in the presence of sheathing as well, that I can get my two layers of sheathing Bundy style threaded through the extension portion."). Simpson's expert further explained once he identified a reference theoretically useable with sheathing, he "work[ed] backwards." EX2037:115:3-5.

Starting from the point of finding prior art hangers having structures recastable as a potential "extension portion" and then working backwards to justify why the hanger reference would be used with a wood frame wall having a fire barrier—*i.e.*, two layers of 5/8-inch thick sheathing—is textbook hindsight. More egregious still, the Petition fails to identify a single prior art reference teaching or suggesting the method steps of inserting fire retardant between stationary components of a structural connector and the frame wall after the structural connector is already installed. Instead, Simpson merely jumps to the conclusion

the POSA would have recognized Cullen, Yamaguchi, or Robinson have components which would make such a solution feasible. As the Federal Circuit has explained, attempts to "defin[e] the problem in terms of its solution reveal[s] improper hindsight in the selection of the prior art relevant to obviousness." *See Insite Vision Inc. v. Sandoz, Inc*., 783 F.3d 853, 859 (Fed. Cir. 2015); *Otsuka Pharm. Co., Ltd. v. Sandoz, Inc.*, 678 F.3d 1280, 1296 (Fed. Cir. 2012) ("The inventor's own path itself never leads to a conclusion of obviousness; that is hindsight.").

Simpson's impermissible hindsight based combinations are highlighted by both Bundy and ArchRecord—the two references Simpson applies for mounting a hanger on a frame wall with fire retardant sheathing—already disclosing hangers and constructions suitable for use in fire wall assemblies. EX1005: 5:18-20; EX1031: 6. Only Simpson's hindsight reconstruction justifies modifying the fire wall assemblies of Bundy and ArchRecord (and their methods of construction) to include the hangers discloses in Cullen, Yamaguchi, and Robinson when Bundy and ArchRecord already have hangers for their fire wall assemblies.

Further evidence of Simpson's hindsight reconstruction is provided in Simpson's motivations to combine. Simpson articulates the same motivation to combine for each ground: "enable the drywall to shield the frame wall from fire." Pet: 22, 67, 103-104, and 150.

But there is ***no need*** to make these combinations when Bundy and ArchRecord already teach fire wall assemblies with drywall shielding the frame wall from fire. *Square, Inc. v. Cooper*, IPR2014-00158, Paper 10 at 30 (P.T.A.B. May 15, 2014) (an obviousness challenge was dismissed where the references already had the capabilities the additional reference provided with its added disclosures: "we agree with Patent Owner that [the references] already allow credit card users to avoid having to carry multiple credit card … [and] already provide access to credit cards for purposes of making telephone calls or purchases over the phone"); *Ex parte Rinkevich*, Appeal No. 2007-1317, 2007 WL 1552288 pg. 4, (B.P.A.I. 2007) ("a person of ordinary skill in the art having common sense at the time of the invention would not have reasonably looked to [one reference] to solve a problem already solved by [the existing reference]."); *Ex parte Tan, et al.*, Appeal No. 2013-007870, pg. 4 (P.T.A.B. Dec. 30, 2015) (explaining "[t]he Examiner's articulated reason ... in support of the proposed modification of [the base reference] lacks rational underpinnings" when the base reference is already capable of performing the function the secondary reference provides).

In other words, a POSA when presented with these references would not look to combine them in the manner asserted by Simpson to "enable the drywall to shield the frame wall from fire" because Bundy and ArchRecord already do this by themselves. The POSA would simply go straight to Bundy and ArchRecord.

Thus, only hindsight justifies Simpson's combinations, not any "articulated reasoning with [] rational underpinning." *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007). The Board should reject each of Simpson's obviousness grounds as being nothing more than an impermissible exercise of hindsight reconstruction using the '339 Patent's claims as a guide.

C. Simpson's Motivation to Combine Cullen and Bundy Fails

Contrary to the Petition's representation, Cullen's hanger is not designed or intended 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. Rather as shown in Figure 3, Cullen's principle of operation is for the joist to abut the back plate. EX1004: Fig. 3, 16:13-14 ("joist 96 … is guided and aligned against the back plate 12."); EX2001: ¶229.

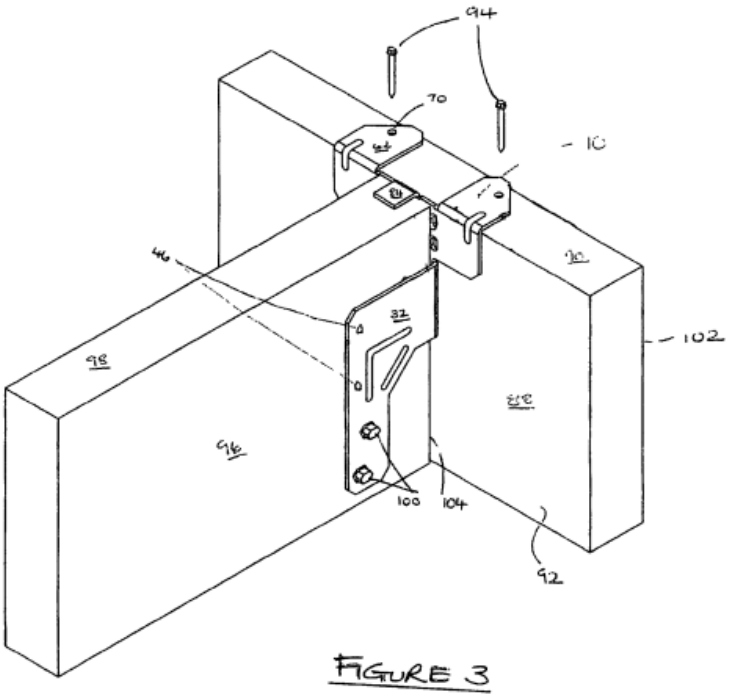


FIGURE 3

EX1004: Fig. 3.

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

Only by applying hindsight, does Simpson artificially distinguish a channel-shaped portion (which includes legs (38, 40)) and an extension portion (sidewalls (30, 32)) capable of extending through narrow openings in the drywall. Contrary to Simpson's artificial distinction, Cullen does not contemplate any spacing

between the joist and the back plate, much less the use of the side walls (30, 32) as extension portions for extending through sheathing. EX2001: ¶230.

Rather, Cullen's principle of operation relies on the joist (96) ***abutting*** the back plate (12). EX2001: ¶¶231-232; *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"). Specifically, Cullen's side walls (30, 32) are intended to engage the joist until the joist meets both the barbs (31, 33) present between the side walls and back flange and the location tab (84). EX1004: Figs. 1 and 3, 4:8-12 ("Preferably, the bracket includes one or more barbs … arranged to allow insertion of a joist into the bracket, but prevent its withdrawal"); 13:1-5 ("The tab 84 is arranged so that the top surface of a joist located against it … will align with the top surface of the sill or bearing member."); 16:13-14; EX2001: ¶232. In other words, Cullen teaches away from spacing the end of the joist from the wall to receive any sheathing there-between. EX2001: ¶233; *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").

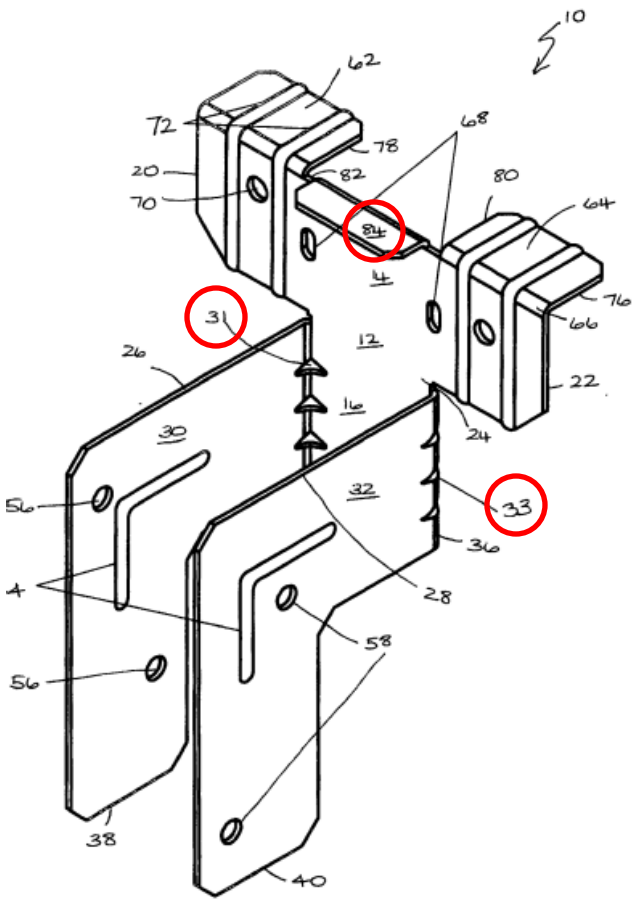


FIGURE 1

EX1004: Fig. 1 (annotated).

Further, by spacing the joist away from the wood wall—as suggested by Simpson's Cullen-Bundy combination—the downward force the hanger is supporting is also spaced from the wall. EX2001: ¶234. A POSA would not do this. *Id*. The force 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, reducing the load carrying capacity of the hanger. *Id*.

Nor does Bundy provide motivation to receive drywall between Cullen's back plate and legs after the hanger has already been mounted on the frame wall. EX2001: ¶235. As shown in Fig. 1, Bundy teaches installing the hanger over the drywall panels ***after*** the drywall panels are already installed on the wall. EX1005: Fig. 2, 2:20-25 ("[t]he drywall [is] applied …, and the joist hanger can ***then*** be attached"), 5:14-20; EX2001: ¶236.

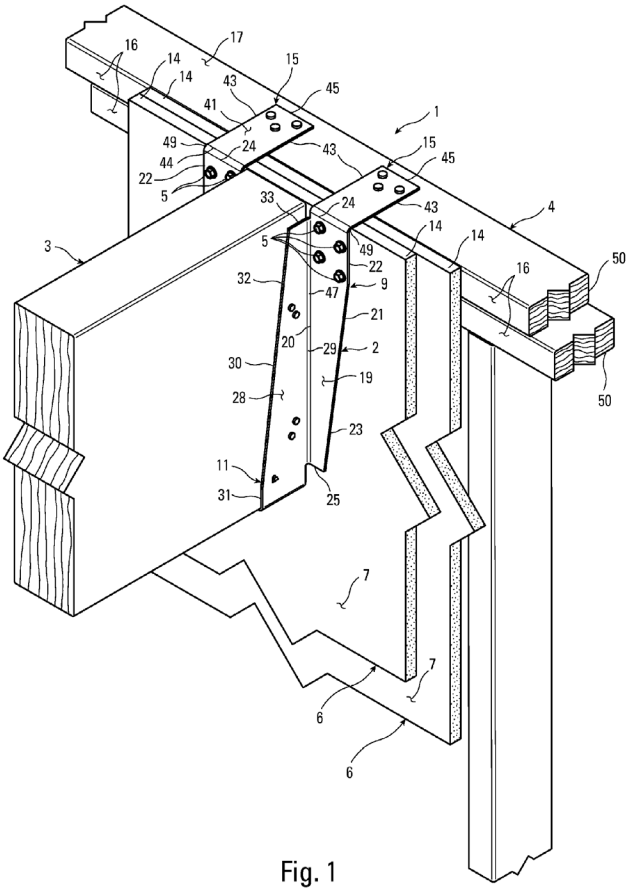


Fig. 1

EX1005: Fig. 1.

As shown in Fig. 2 (below), to install the Bundy hanger, the hanger is positioned so "[t]he first and second top flanges 15 ... ***extend over*** the top edge

faces 14 of the one or more panels 6." EX1005: 5:42-43; EX2001: ¶237. The hanger is moved over the drywall until the top flanges engage the top face (17) of the top plate (4) and the back plate members (9) engage the front face (7) of the outermost drywall panel. EX1005: 5:56-57, 6:14-17; EX2001: ¶237. Nails (5) are then inserted through the back plate members and into the drywall panels and top plate to secure the hanger to the wall. EX1005: 5:45-62, 4:17-20; EX2001: ¶237.

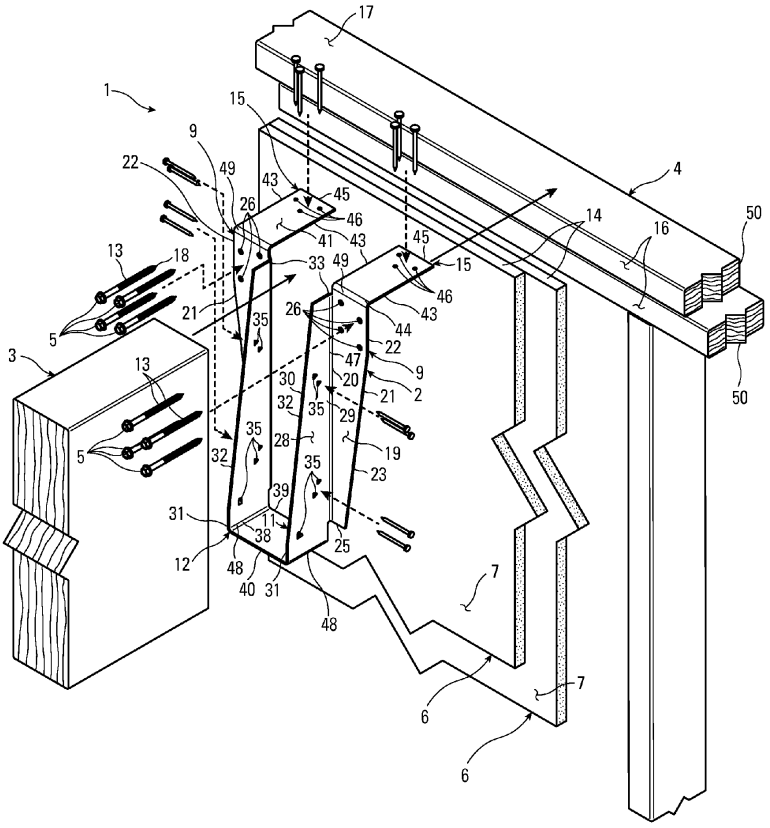


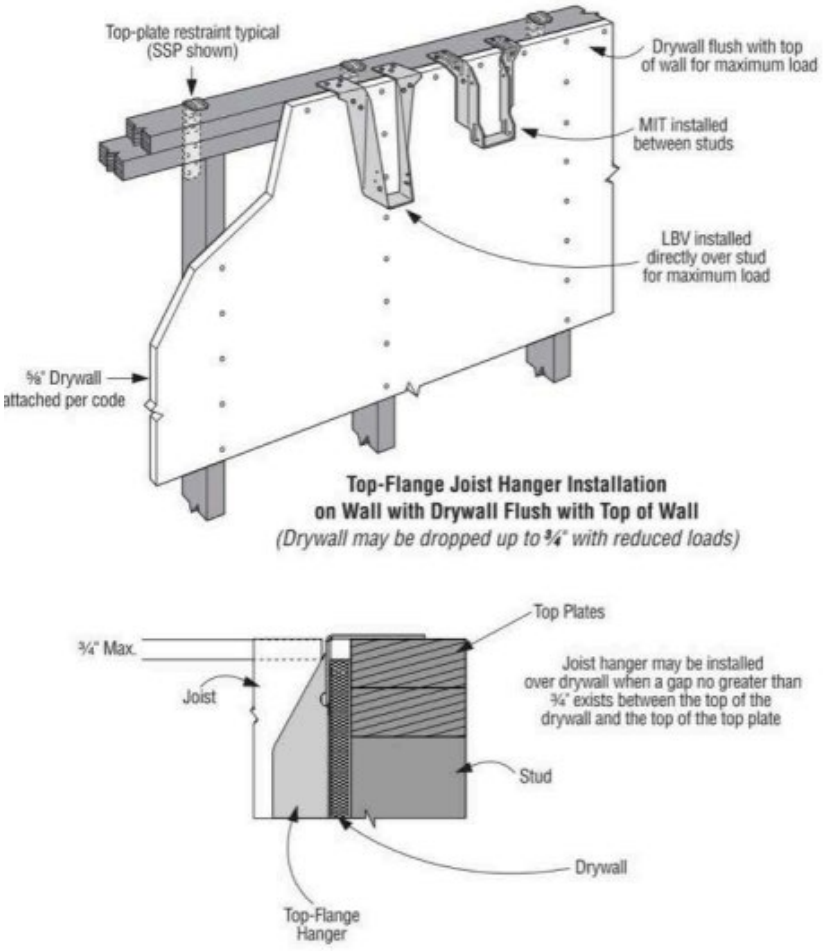
Fig. 2

EX1005: Fig. 2.

Bundy explains this installation "***[i]mportantly***, [] does not require any alteration of the drywall," such as cutting an opening therein. EX1005: 2:18-19; EX2001: ¶238.

Because Bundy requires installing the hanger ***over*** the drywall panels, Bundy explicitly teaches away from Simpson's proposed Cullen-Bundy combination—cutting an opening in the drywall panels which Cullen's hanger extends through. EX2001: ¶238. Bundy also expressly teaches away from a back flange engaging the wall, such as the one present in Cullen. EX1005: 5:26-28 ("Preferably, no part of the joist hanger 2 contacts the front face 16 of the structural support member 4."), 5:42-45 ("The first and second top flanges 15 preferably extend over the top edge faces 14 of the one or more panels 6 and are the only parts of the joist hanger that contact the structural support member 4."); EX2001: ¶239. As Bundy teaches away from both (1) cutting an opening in the drywall panels for a hanger, and (2) a back flange engaging the wall, the POSA was positively discouraged from combining Cullen and Bundy in the manner asserted by Simpson to meet the claims of the '339 Patent. EX2001: ¶240; *Polaris Indus.*, 882 F.3d at 1069 ("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").

Instead, if a POSA were to combine the teachings of Cullen and Bundy (which Columbia does not concede), the POSA would follow the teachings of Bundy and Cullen and mount the hanger after the drywall panels are mounted on the wall frame so Cullen's back plate (12) engages the face of the drywall panels and Cullen's bearing plates (62, 64) extend over the top edge of the drywall panels. EX2001: ¶241. In fact, this is how Simpson was instructing customers to install its LBV hangers over sheathing prior to Bundy. EX1012; EX2001: ¶¶242-243.



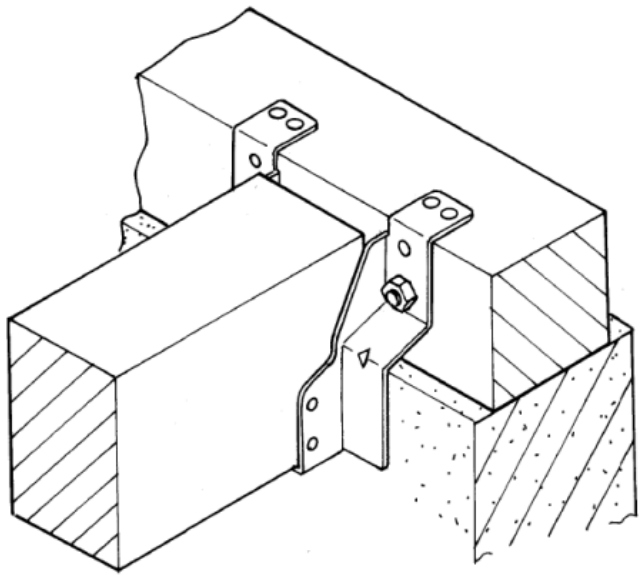
EX1012: 2.

Accordingly, a POSA would not have been motivated to combine Cullen and Bundy as suggested by Simpson. EX2001: ¶244.

D. Simpson's Motivation to Combine Yamaguchi and Bundy Fails

Simpson erroneously approaches this combination as though the claims were directed to a hanger *per se*. The only stated motivation to combine the teachings of Yamaguchi and Bundy is they are both "directed to joist hangers." Pet. 66. Simpson fails to address whether there is a motive to modify the method of constructing a wall disclosed by Yamaguchi according to the method of constructing a firewall disclosed by Bundy. EX2001: ¶245. Simpson's argument should be rejected on this basis alone.

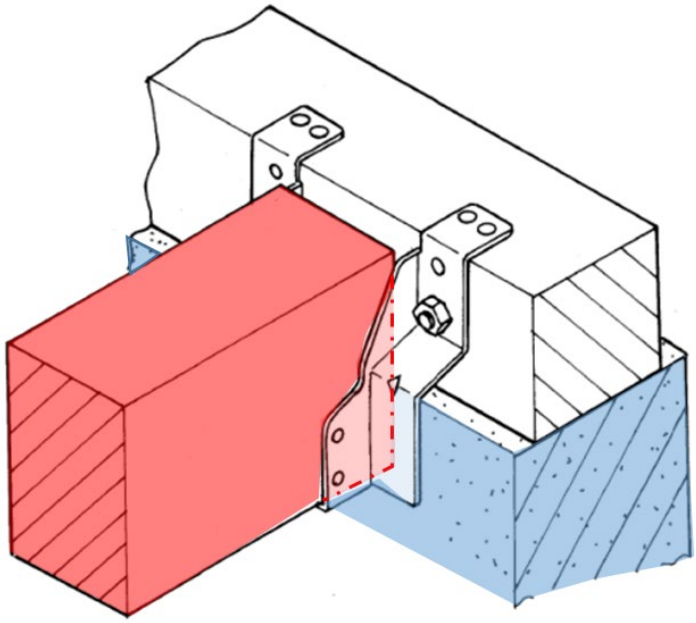
The POSA would recognize Yamaguchi's wall uses a hanger specially constructed for attaching to the sill of a foundation. EX1007; EX2001: ¶246.



EX1007: 5.

Nothing about Yamaguchi suggests a firewall assembly including a hanger to define a space for receiving drywall. EX2001: ¶¶247-248. The POSA recognizes foundation walls are typically made of either concrete or masonry, both of which are inherently fire-resistant. EX2038: Table 721.1(2); EX2039: 1; EX2040: 1; EX2041: 7; EX2001: ¶249. Because the foundation wall is already inherently fire-resistant, there would have been no reason to add fire-resistant sheathing—such as the drywall mentioned in Bundy (EX1005: 5:18-20)—to the foundation wall of Yamaguchi to make it fire-resistant. EX2001: ¶249.

Even to the extent a foundation wall was finished with sheathing, the POSA would not have considered the Yamaguchi's hanger to be designed to allow sheathing to be inserted between the end of the joist and the foundation wall. EX2001: ¶250. The POSA would understand to insert the joist as deep into the hanger as possible—abutting the end of the joist against the foundation wall so that the foundation wall itself providing the hard stop—in which case the installer would be required to either stop the sheathing below the joist or cut the sheathing around the joist and hanger. EX1007: Reference Diagram Illustrating Usage State; *see* EX1029: 42, 64; EX2001: ¶¶250-251.



EX1007: 5 (annotated).

Simpson recognizes the wall construction which Yamaguchi discloses is inapplicable to the claimed wall construction method claimed in the '339 Patent. Simpson argues "[g]iven that Yamaguchi's hanger is intended for securing a joist to a wall, a POSA would have sought to use Yamaguchi's hanger to secure a joist to a wooden frame wall, as taught by Bundy." Pet: 66; EX2001: ¶252. Simpson fails to explain the motivation for changing the construction of the firewall assembly of Bundy to use the re-sized Yamaguchi hanger. EX2001: ¶¶252-256. This would require cutting the sheathing to receive portions of the Yamaguchi hanger. EX2001: ¶256. However, Bundy teaches away from cutting openings in the firewall, as discussed above in regard to the Cullen-Bundy combination. EX2001: ¶¶257-258.

Accordingly, a POSA would not have been motivated to combine Yamaguchi and Bundy as suggested by Simpson. EX2001: ¶259.

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

Similar to the Yamaguchi/Bundy combination discussed above, Simpson's Robinson argument is premised on a leap of logic a POSA would simply use Robinson's hanger in the firewall application taught by Bundy. And also like the Yamaguchi/Bundy combination discussed above, Simpson's argument entirely skips over that the Robinson hanger was designed for an entirely different wall construction than Bundy's firewall assembly. EX2001: ¶260.

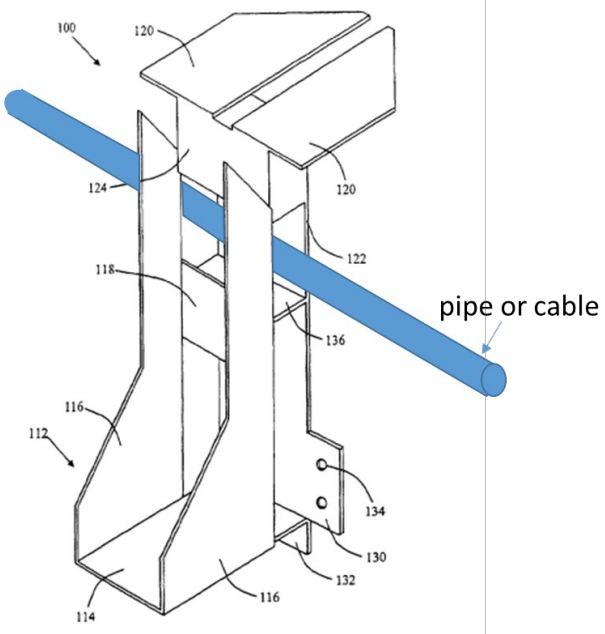
Robinson, by its own description, is intended for affixing joists to masonry. EX1011: Abstract, 1:2-3, 1:9-10, 1:28-30, 4:21-22; EX2001: ¶261. As discussed above with respect to Yamaguchi, masonry is inherently fire-resistant and as such there would have been no reason to add fire-resistant sheathing, such as the drywall mentioned in Bundy to make it fire-resistant. EX2038: Table 721.1(2); EX2039: 1; EX2040: 1; EX2041: 7; EX2001: ¶261.

While Robinson does acknowledge its disclosed hanger could be used in other applications, Robison's key feature is incompatible with Simpson's proposed combination of Robinson and Bundy. EX2001: ¶262. The principle of operation for Robinson is the inclusion of a cavity and/or duct opening (126, 226) between the end of the joist and masonry (or other supporting structure) to allow cables and

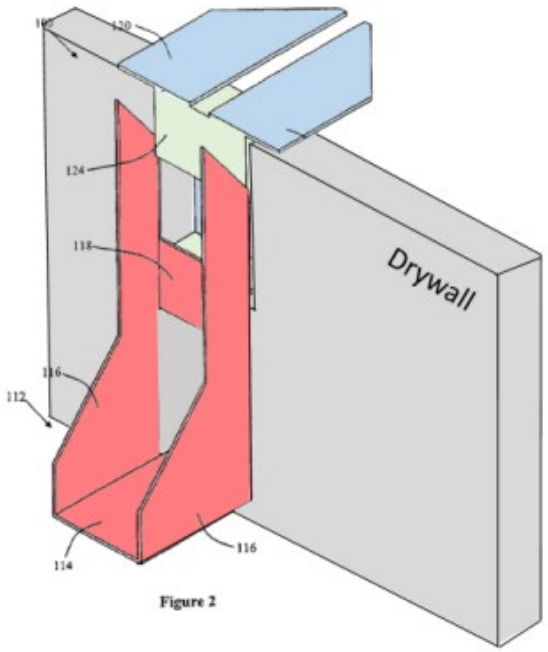
pipes or a ventilation duct to pass through the gap. EX1011: 2:1-6, 2:20-24, 3:11-15, 4:13-19, 5:12-13; EX2001: ¶263. Contrary to this principle of operation, Simpson's combination would block the access to the cavity/duct opening, making it inaccessible for cables, pipes, and ventilation ducts.[5] EX2001: ¶264.

Robinson's intended application and Simpson's proposed application are shown side by side demonstrating how Simpson is abandoning Robinson's principle of operation. EX2001: ¶264.

[5] In wood frame construction, pipes and cables are installed behind the drywall, within the wood framing. EX2047: 6 ("plumbing lines, heating ducts, and electrical wiring [is] concealed in the walls"); EX2001: ¶265.



Intended Application
EX1011: Fig. 2 (annotated)



Simpson's Combination
Pet: 106.

A substitution under *KSR* cannot "change the basic principles under which the prior art was designed to operate, or … render 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); *see In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984); *In re Ratti*, 270 F.2d at 813 (combination of prior art is not obvious if it would "change … the basic principles under which the [prior art] was designed to operate"); *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"). Further, Simpson's disregard of Robinson's purpose is additional proof the proposed combination of Robinson and Bundy is merely a hindsight aided reconstruction. *Oracle Corp. v. Crossroads Systems, Inc*., IPR2014-01209, Paper 77 at 26 (P.T.A.B. Jan. 29, 2016) ("[t]his type of reasoning—where relevant parts of the reference are disregarded for the proposed combination without sufficient explanation of why a person of ordinary skill would do so—is precisely the type of hindsight reasoning that must be rejected.").

Nor would Bundy provide motivation to terminate Robinson's platform (114) to create a gap to accommodate drywall between the side gussets (116) and the second surface (122). EX2001: ¶266. As argued above with respect to the Cullen-Bundy combination, Bundy teaches away from modifications to a hanger which would require cutting the drywall to perform the steps of constructing a firewall. EX2001: ¶¶267-268, 271. Moreover, neither Robinson nor Bundy suggest cutting drywall. EX2001: ¶269.

In addition, Bundy teaches installing the hanger over the drywall panels ***after*** the drywall panels are already installed on the wall. EX2001: ¶270. Because Bundy contemplated installing the hanger over the drywall panels, it explicitly taught away from having a back flange (such as the second surface (122) of Robinson in Simpson's proposed combination) engaging the wall behind the sheathing. EX1005: 5:26-28 ("Preferably, no part of the joint hanger 2 contacts the

front face 16 of the structural support member 4."), 5:42-45 ("The first and second top flanges 15 preferably extend over the top edge faces 14 of the one or more panels 6 and are the only parts of the joist hanger that contact the structural support member 4."); *Polaris Indus.*, 882 F.3d at 1069 ("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"); EX2001: ¶270-271.

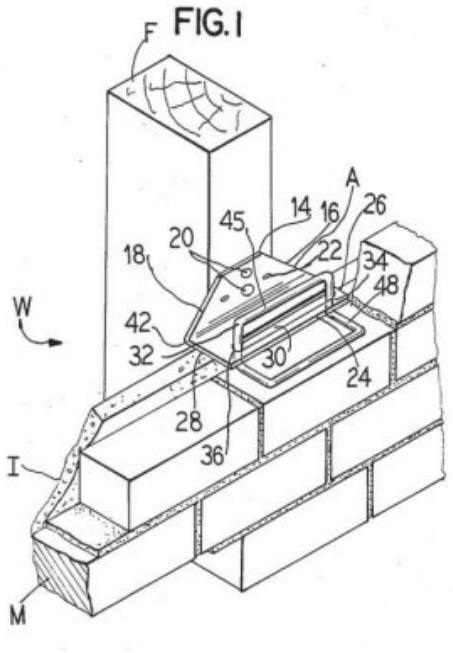
Accordingly, a POSA would not have been motivated to combine Robinson and Bundy as suggested by Simpson. EX2001: ¶272.

F. Simpson's Motivation to Combine Cullen-Bundy, Yamaguchi-Bundy, and Robinson-Bundy with Allan Fails

Because Simpson is unable to cite any prior art hangers extending through sheathing, such as drywall, Simpson instead relies on a wholly unrelated, non-analogous reference in Allan for this purported teaching in Grounds 3-8. EX2001: ¶¶273-274.

As shown below in Fig. 1, Allan is 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). EX1006: Fig. 1, Abstract, 3:12-20; EX2001: ¶274. The wall anchor is an angle iron having two legs (10, 12). EX1006: 3:21-25; EX2001: ¶275. The wall structure includes an insulation layer in the form of a plasterboard sheet (I) disposed

between the masonry veneer wall and the building frame member. EX1006: 3:12-20; EX2001: ¶275. One leg (10) of the 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) which is embedded into the masonry veneer wall, thereby tying the building frame member to the masonry veneer wall. EX1006: Fig. 1, 3:28-33, 4:15-18; EX2001: ¶275.



EX1006: Fig. 1.

While Allan explains slots may be cut into the ***insulation*** layer to permit the leg to extend through the insulation layer toward the masonry veneer wall, Bundy teaches away from having an opening cut in the drywall panels of its ***fire***wall assembly. EX2001: ¶281. *Polaris Indus.*, 882 F.3d at 1069 ("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"). As explained in Sections III(B) and V(C), Bundy's hanger is installed over the drywall panels. EX1005: 5:42-43; EX2001: ¶281. Bundy explains this installation "***[i]mportantly***, [] does not require any alteration of the drywall," such as cutting an opening therein. EX1005: 2:18-19.

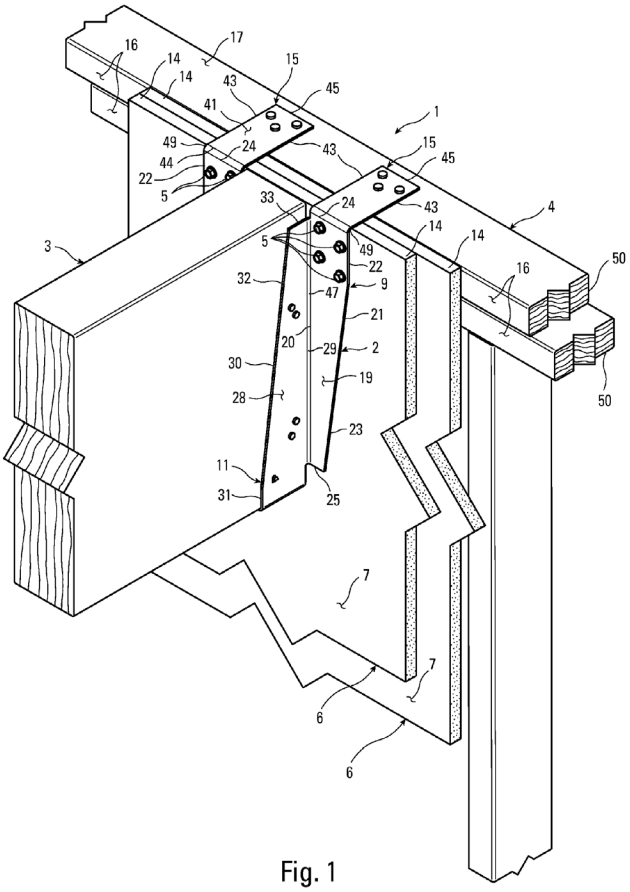


Fig. 1

EX1005: Fig. 1.

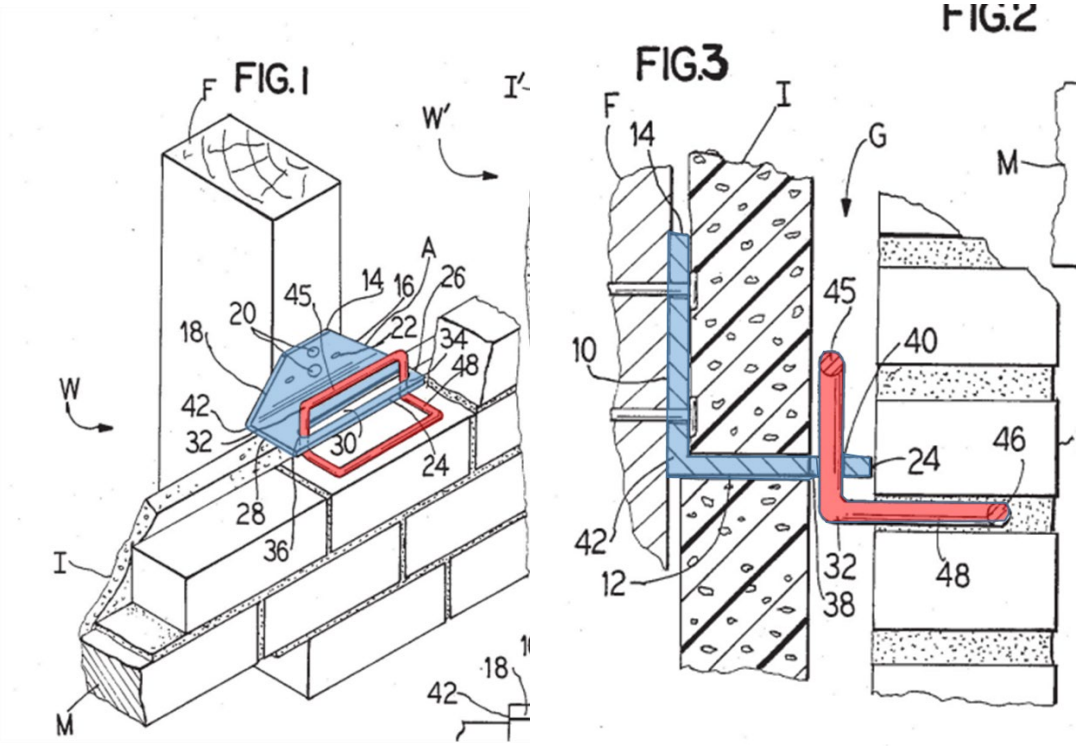
Simpson also provides no reason why a POSA would have considered Allan pertinent in the first place. EX2001: ¶276.

Allan is not a "structural hanger" or a joist hanger. Nor is Allan pertinent to any of the design issues a POSA would have considered in designing or modifying joist hangers, such as those disclosed in Cullen, Yamaguchi, Robinson, or Bundy. EX2001: ¶277. Hangers must be designed to support a vertical load. EX2001: ¶277. To this end, not only does the extension portion of the hanger in the '339 Patent's claims extend through fire-resistant sheathing, but it also transfers the vertical load from the joist to the back flange in a manner resisting the moment arm caused by the vertical load. EX1001: 6:61-7:13; EX2001: ¶277. But the wall anchor of Allan does not support any vertical load. EX2001: ¶278. Instead, wall anchors are merely used to prevent masonry veneer walls from moving or tipping away from a building frame member (i.e. a horizontal load). *Id*.

Moreover, Allan makes no reference to fire rating, resistance, or protection. EX1006; EX2001: ¶279. Instead, Allan relates to a wall anchor extending through insulation. EX2001: ¶279. There is a fundamental difference between cutting a hole in insulation and cutting a hole in a fire barrier. EX2001: ¶280. Where cutting a hole in insulation simply results in a lesser degree of insulation provided, cutting a hole in a fire barrier can result in the complete loss of the fire barrier's fire-resistance and rating. EX2043: 22-23 ("A severe fire will find any weakness in a separating barrier …. Care must be taken to ensure that poor quality workmanship or penetration for services and fittings do not compromise the

performance of fire-resisting walls"), 122 ("Penetrations through walls and floors can severely reduce the ability of these barriers to contain a fire"); EX2001: ¶280.

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. In Allan, the insulation layer is merely installed around the outstanding leg (12) of an L-shaped bar (blue in the figures below) (*i.e.*, the leg (12) is inserted into a notch or slot in the insulation), after which the wall anchor is 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.



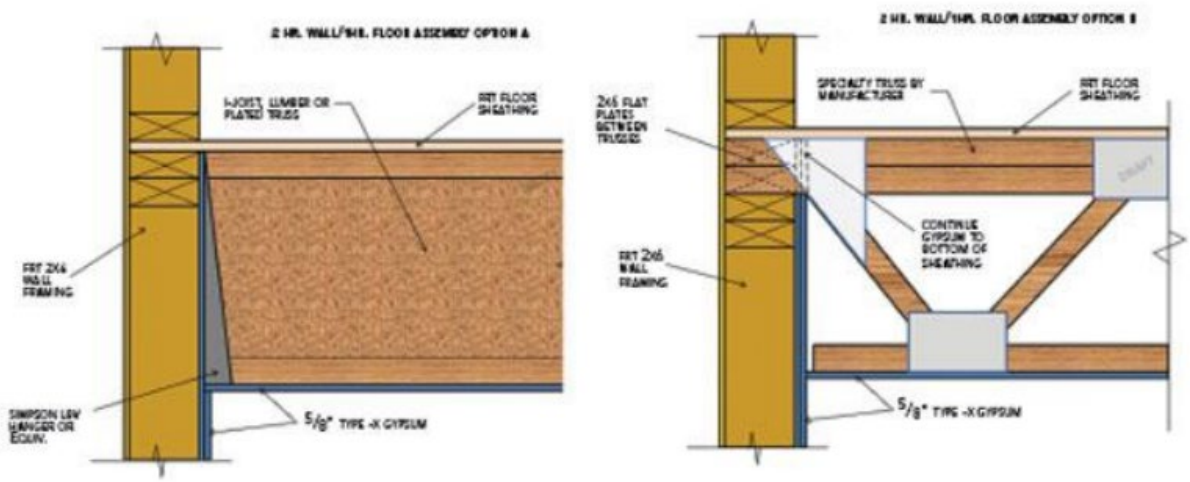
EX1006: Figs. 1 and 3 (annotated).

Rather than merely lining up a cutout in the fire retardant sheathing to allow the sheathing to be installed over the L-shaped bar, 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.

It is not enough that installing pre-cut drywall around already installed penetrations was known in the art. Neither Allan, nor any of the other asserted references, provided any hint of a suggestion to insert sheathing between existing components of an already complete firewall hanger while installing the sheathing. EX2001: ¶283.

G. 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, focuses exclusively on the following figure:



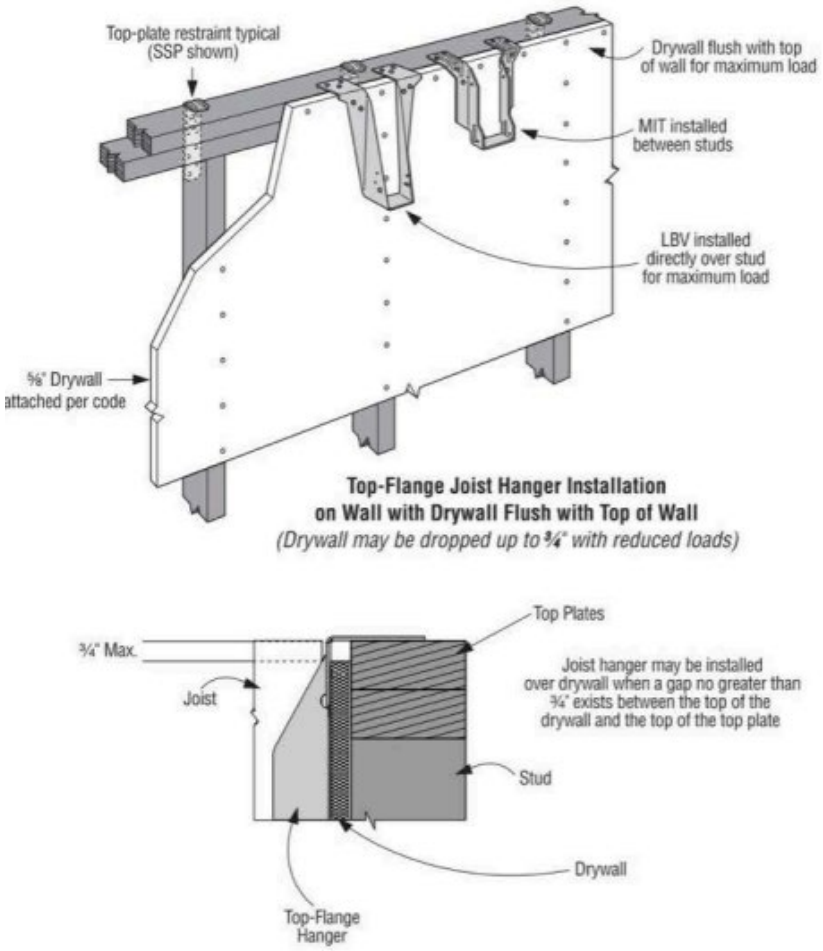
(Left) Semi-balloon framing is more common in buildings five stories and higher; (Right) it is often used as an alternative to platform framing where fire requirements or shrinkage may be a challenge.

EX2008: 6.

Of Option A (left) and Option B (right) of ArchRecord,[6] only Option A discloses the use of a hanger, but the hanger is installed over the top of the

[6] It is not clear which teaching of ArchRecord Simpson is suggesting to combine with Cullen. EX2001: ¶286. This alone is sufficient to deny institution of the ArchRecord grounds. 35 U.S.C. § 312(a)(3) (a petition "may be considered only if ... the petition identifies, in writing and with particularity, each claim challenged, the grounds on which the challenge to each claim is based, and the evidence that supports the grounds for the challenge to each claim"); 37 C.F.R. § 42.104(b)(4) (requiring the petition to "specify where each element of the claim is found in the prior art patents or printed publications relied upon"); *Eik Eng'g Sdn. Bhd. v. Wilco Marsh Buggies & Draglines, Inc.*, IPR2020-00344, Paper 7 at 14 (P.T.A.B. June

sheathing, just like Bundy. EX1031: 6; EX1012 (showing Simpson's LBV hanger of Option A is installed over the sheathing); EX2001: ¶287.



EX1012: 2.

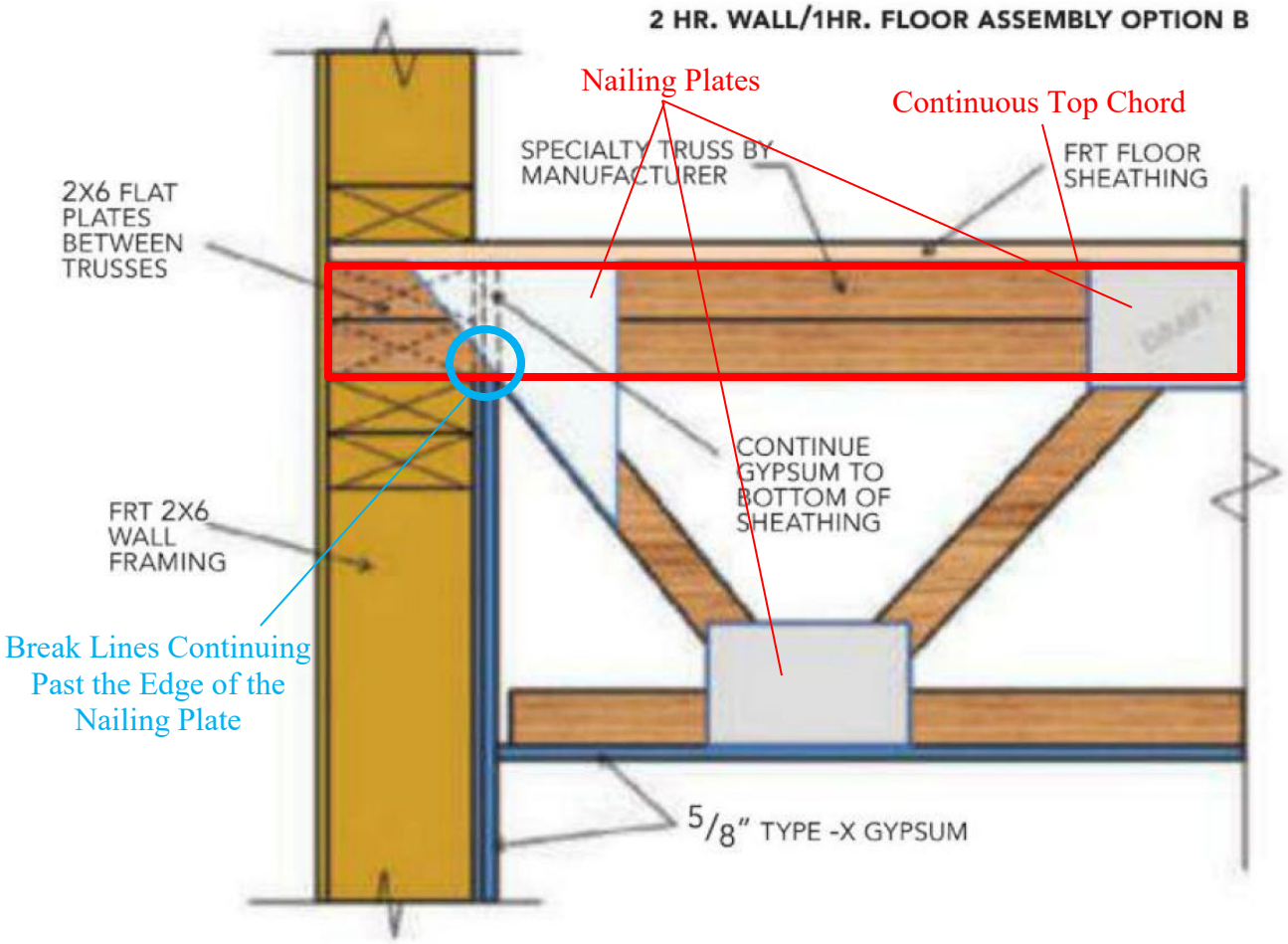
23, 2020) ("[t]he Petition fails to identify with particularity what disclosure is relied on from each of the references"). The POSA would not conflate Options A and B, as they are distinct framing methods, with Option A employing a hanger, and Option B not requiring a hanger. EX1031: 6; EX2001: ¶286.

Option A does not teach or suggest (1) installing fire retardant sheathing after mounting the fire wall hanger on a frame wall, (2) inserting the fire retardant sheathing between the fire wall hanger the frame wall, (3) moving the fire retardant sheathing relative to the fire wall hanger mounted on the frame wall so the edge of the fire retardant sheathing bounding an opening moves alongside the extension portion, nor (4) extending the fire wall hanger through an opening in the fire retardant sheathing. EX2001: ¶288. Thus, even if the combination with Cullen were otherwise proper, the combination would not yield all of the elements require to invalidate the claims.

To the extent Simpson's arguments are construed to suggest using the Cullen hanger in conjunction with the framing method of Option A of ArchRecord, there would have been no reason to deviate from the Option A method of installation (i.e. installing the hanger on top of the sheathing in the same way as Bundy). EX2001: ¶295; *Microsoft Corp. v. Parallel Networks Licensing, LLC*, IPR2015-00483, Paper 80 at 22-23 (P.T.A.B. Aug. 11, 2016) (finding the petitioner failed to provide sufficiently persuasive evidence the proposed modification provides any advantage not already present in the existing references, "other than it would meet the limitations of the claims of the [challenged patent]").

Option B ***does not use a hanger*** or any other structural connector for coupling the truss to the frame wall. EX2001: ¶289. Instead, the top chord of the

truss is elongated compared to the bottom chord, such that the top chord is simply stacked on top of the wall's top plate. *See* figure below (note the grain of wood indicating continuation of the top chord of the truss and the 2X6 flat plates are identified as being installed "between trusses"); EX2001: ¶290. What Simpson identifies as a structural connector, is simply a triangular-shaped nailing plate on the side of the truss holding the top chord and truss web together (similar to the other square nailing plates shown). EX2001: ¶291. This plate is part of the truss and does ***nothing*** to couple the truss to the wall assembly. EX2001: ¶292. Further, the cross-section does not indicate a notch around the plate, but rather the break lines continue below the edge of the plate—demonstrating a cutout around the top chord's entire cross-section. EX2001: ¶292. Accordingly, the plate only extends through the sheathing in the sense the top chord it is attached to also extends through the sheathing. EX2001: ¶292.



EX2008: 6 (annotated).

Option B lacks any disclosure regarding how or when the sheathing is put into place on the wall framing. EX2001: ¶293. As a result, any combination with Option B cannot make a *prima facie* case of obviousness.

Option B further fails to demonstrate it was known to cut or notch the gypsum around a structural connector so the structural connector extends through the gypsum sheathing on its own. EX2001: ¶293.

As the "structural connector" of ArchRecord Option B is simply a flat nailing-plate laying flush along the side of the top chord of the truss, there is no

logical motivation to incorporate Commins's teaching to notch the sheathing around the structural connector as proposed by Simpson. EX2001: ¶294. Nor would a POSA consider using the Cullen hanger in conjunction with the framing method disclosed in Option B of ArchRecord, as the Option B framing method does not use a hanger. *Id*.

None of the asserted references provided any hint of a suggestion to insert sheathing between an already installed hanger and the wall assembly. EX2001: ¶296. As discussed above, Cullen's hanger is not designed or intended to define a space between its back plate (12) and a channel-shaped portion, much less the use of the side walls (30, 32) as extension portions for extending through sheathing. EX2001: ¶297. To the contrary, Cullen's principle of operation relies on the joist abutting the back plate. *Id*.; *In re Ratti*, 270 F.2d at 813 (rejecting an obviousness combination requiring "a change in the basic principles under which [prior art] was designed to operate").

Accordingly, a POSA would not have been motivated to combine ArchRecord, Commins, and Cullen as suggested by Simpson. EX2001: ¶298.

H. Simpson's Obviousness Arguments Are Belied by Its Own Patent Portfolio

Despite Simpson's arguments in the Petition, Simpson's actions in front of the U.S. Patent and Trademark Office shows Simpson believes the subject matter of the '339 Patent is novel and nonobvious.

Since 2017—multiple years after the '339 Patent's priority date—Simpson has obtained patent protection and continues to pursue patent protection on the subject matter of the '339 Patent—namely, firewall hangers for mounting on frame walls with two-layers of drywall thereon. EX2003; EX2004; EX2005; EX2006.

Simpson has obtained two U.S. patents—11,142,902 and 11,225,787—directed to "a joist hanger (2) to hang a joist (3) from a structural support member (4) in cooperation with … one or more generally vertical drywall panels (6)." EX2003: claim 1; EX2004: claim 1.

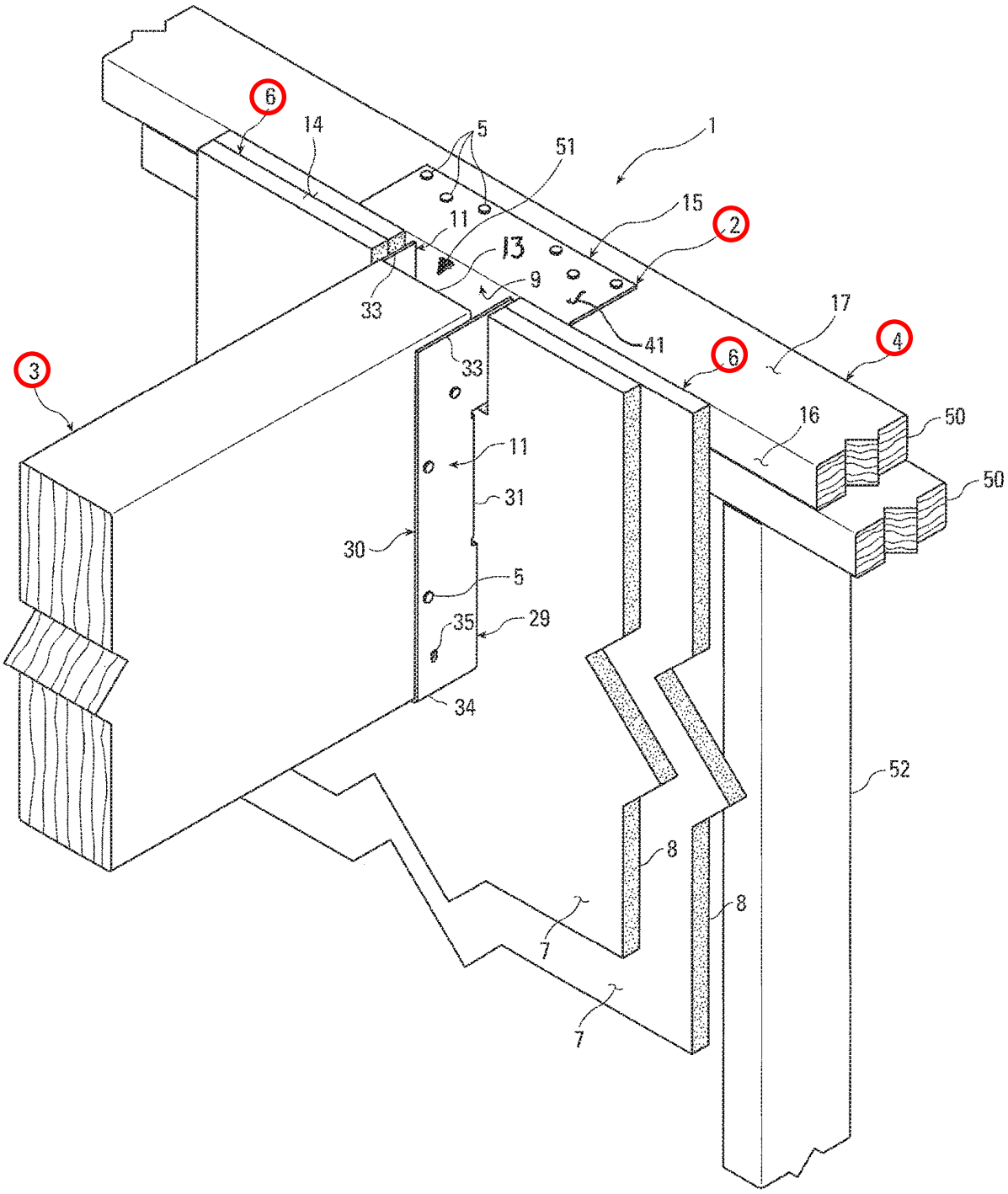


Fig. 1

EX2003: Fig. 1 (annotated).

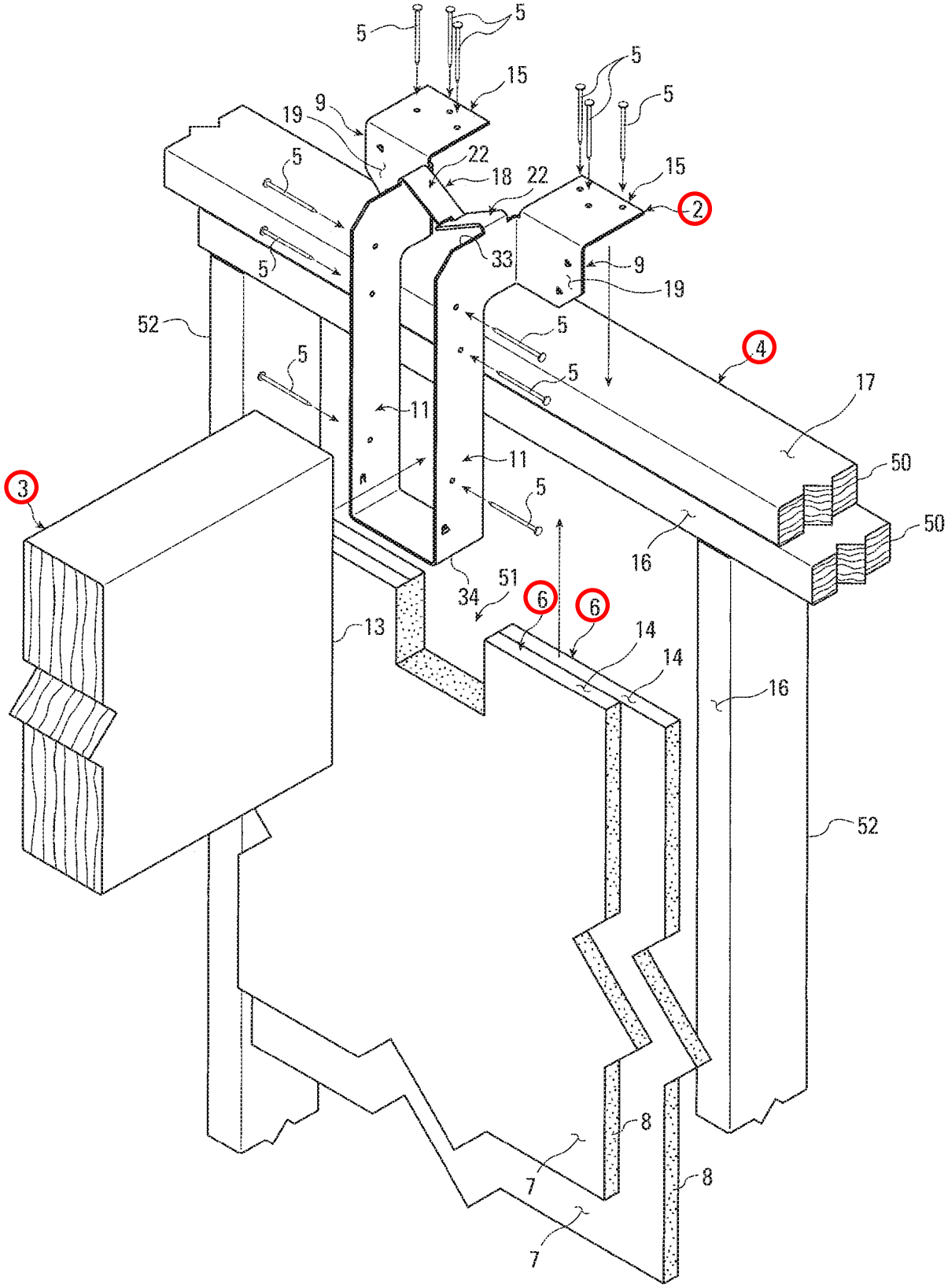

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Fig. 2

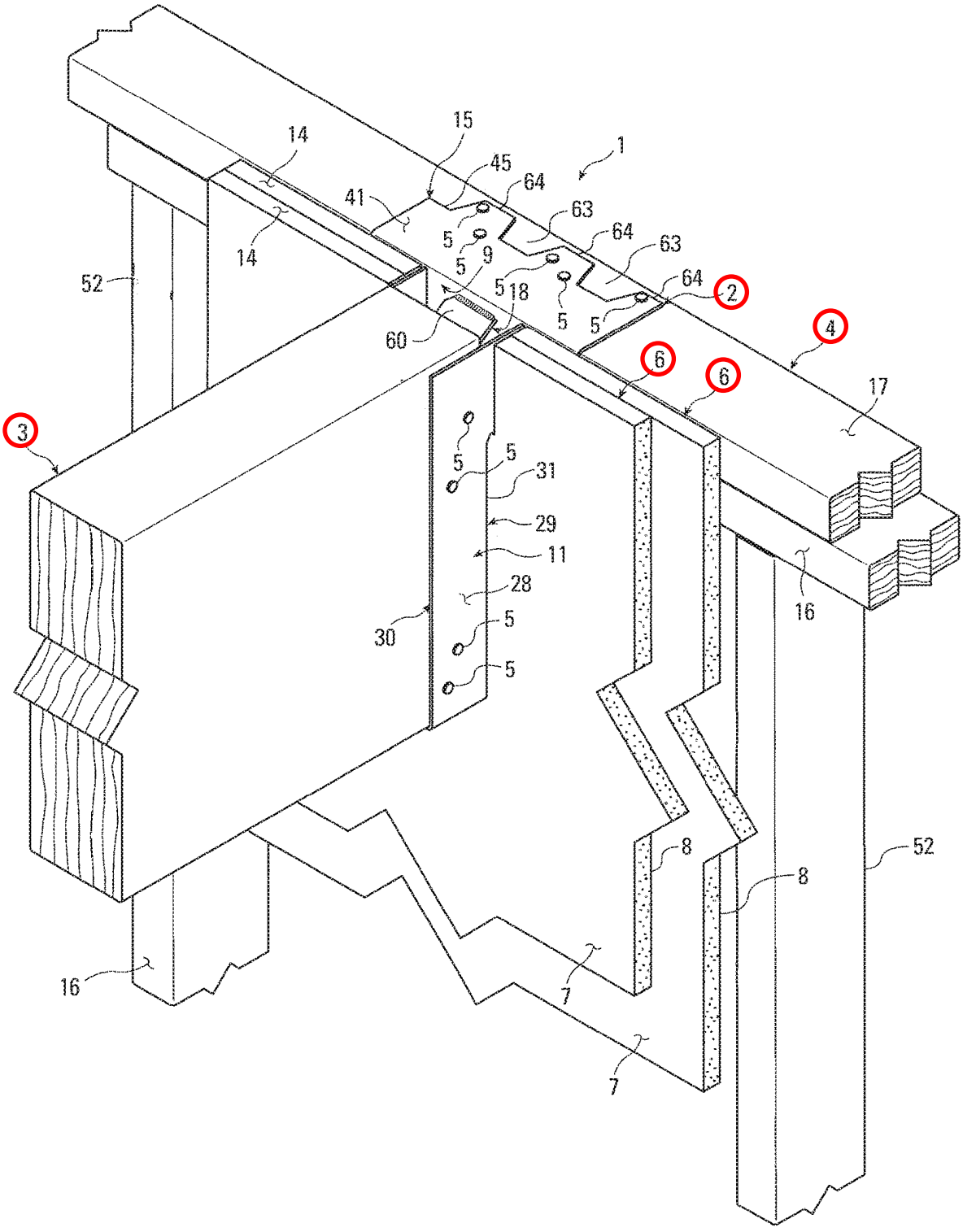
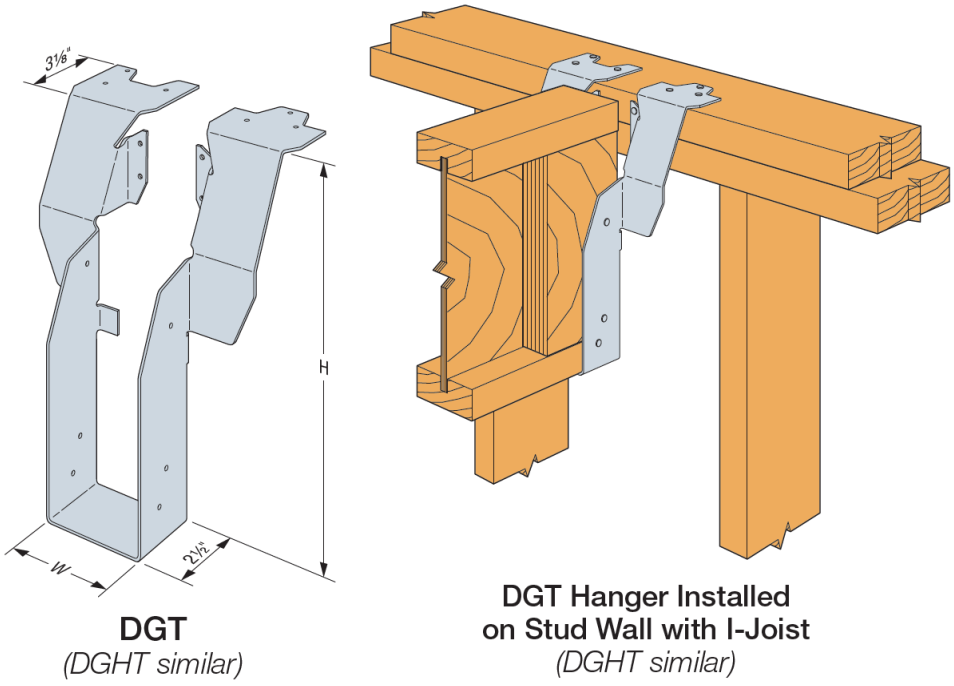


Fig. 10

EX2004: Figs. 2 and 10 (annotated).

Simpson also continues to pursue patent protection on this same subject matter in two currently pending child U.S. applications—2021/0396000 and 2022/0243455. EX2005: claim 1; EX2006: claim 1. Simpson also has at least one pending patent application[7] directed to their DGT and DGHT hangers shown below:

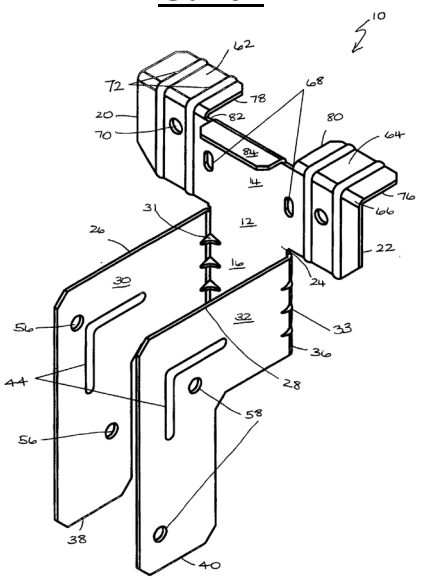
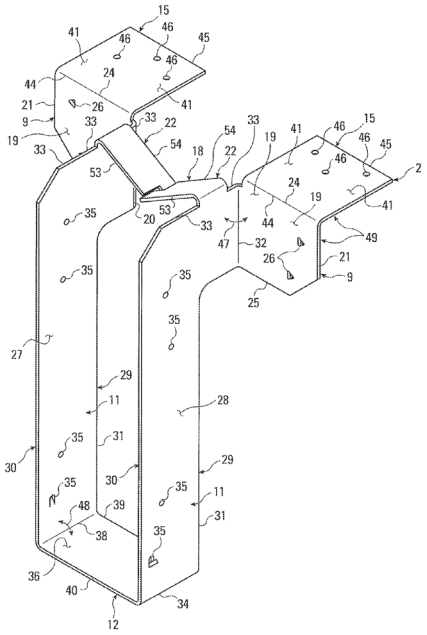


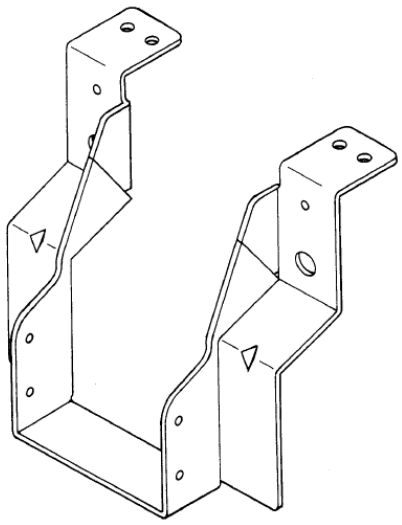
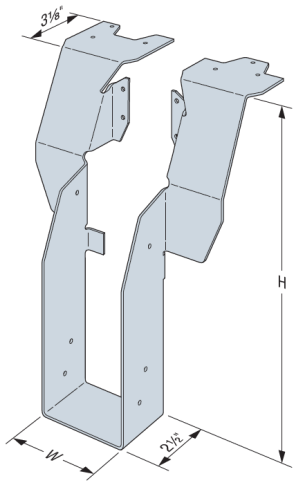
EX2007: 1 ("patent-pending DGT and DGHT hangers").

As demonstrated in the images below, Simpson's hangers and assert prior art being applied in Simpson's Petition are structurally similar as they each have

[7] Simpson's DGT and DGHT hangers marked as "patent-pending." 35 U.S.C. §292(a).

components—at least according to Simpson's own arguments—acting as a channel-shaped portion, a connection portion, and an extension portion.

Cullen	**Simpson's Own Patented/Patent Pending Hanger**
 FIGURE 1 EX1004: Fig. 1	 Fig. 4 EX2004: Fig. 4

Yamaguchi	**Simpson's Own Patented/Patent Pending Hangers**
 EX1007: 2	 **DGT** *(DGHT similar)* EX2007: 1

Given the structural similarities of these hangers to the prior art, Simpson (as an entity representative of those having skill in the art) agrees by its own actions the use of hangers—having a channel-shaped portion, a connection portion, and an extension portion—*on a fire wall with one or more layers of drywall* was novel and nonobvious. Notably, '339 Patent (with an earlier priority date) is even more novel over these Simpson's patents and applications by prescribing a specific construction sequence—*i.e.*, the drywall being mounted to the frame wall *after* the hanger is mounted. EX1001: claim 1.

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

"The specification shall contain a written description of the invention." 35 U.S.C. §112(a). "Although [the applicant] does not have to describe exactly the subject matter claimed, ... the description must clearly allow persons of ordinary skill in the art to recognize that [he/she] invented what is claimed." *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563 (Fed. Cir. 1991) (quoting *In re Gosteli*, 872 F.2d 1008, 1012 (Fed. Cir. 1989)). "[T]he test for sufficiency is whether the disclosure of the application relied upon 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.

A. <u>Claims 1-31:</u> 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 both (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.

Based on "a presumption that elements listed separately … are distinct," Simpson argues these "inserting" and "moving/arranging" sub-steps lack written

description support. Pet: 10-11; EX2001: ¶73.[8] Even Simpson acknowledges this is only a "presumption" (Pet: 10), not a rule, and Simpson provides no analysis why such a presumption applies here. EX2001: ¶74.

Simpson's "presumption" argument is inherently flawed. The case Simpson relies on—*Kyocera Senco Industrial Tools Inc. v. ITC*—stands for the proposition separately recited "apparatus components" are distinct, not method steps. 22 F.4th 1369, 1382 (Fed. Cir. 2022) (holding a "'safety contact element' and [an] 'exit end of the mechanism' are distinct components"). 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) ("we construe the claims as allowing the 'setting' step to occur at any time"). Accordingly, steps in a method claim can occur simultaneously *or* sequentially. *Moba v. Diamond Automation*, 325 F.3d 1306, 1314 (Fed. Cir. 2003) (holding method steps can be performed simultaneously where "[n]owhere does the plain language of [the claim] require

[8] Simpson paints its argument in terms of "new matter" (Pet: 10), but has not adequately raised a "new matter" issue as Simpson does not challenge the December 2013 priority date.

separate and consecutive performance of the various [method] steps"); *Niazi Licensing Corp. v. St. Jude Med. S.C., Inc.*, 30 F.4th 1339, 1352 (Fed. Cir. 2022) ("the claims broadly encompass both simultaneously and sequentially inserting or withdrawing the inner and outer catheters").

In this case, Simpson overlooks that the "inserting" and "moving/arranging" steps are both sub-steps or parts of an overall "installing" step of the fire retardant sheathing. EX2001: ¶75. These sub-steps detail what it takes to perform the "installing" step of the fire retardant sheathing. *Id*.

Turning to the specification, it is clear Columbia was in possession of an "installing" step for the fire retardant sheathing including both the "inserting" step and the "moving/arranging" step (these steps being performed generally simultaneously). EX2001: ¶76.

The specification describes three different ways of constructing a fire-resistive wall assembly: (1) mounting the fire retardant sheathing having a pre-formed opening on the frame wall before mounting the hanger on the frame wall (EX1001: 7:26-53); (2) mounting the fire retardant sheathing without a pre-formed opening on the frame wall before mounting the hanger on the frame wall (EX1001: 7:54-64; and (3) mounting the hanger on the frame wall ***before*** mounting the fire retardant sheathing (EX1001: 7:65-8:21). EX2001: ¶77. The '339 Patent's claims cover this last method. *Id*.

Regarding mounting the hanger to the frame wall ***before*** mounting the fire retardant sheathing, the specification explains:

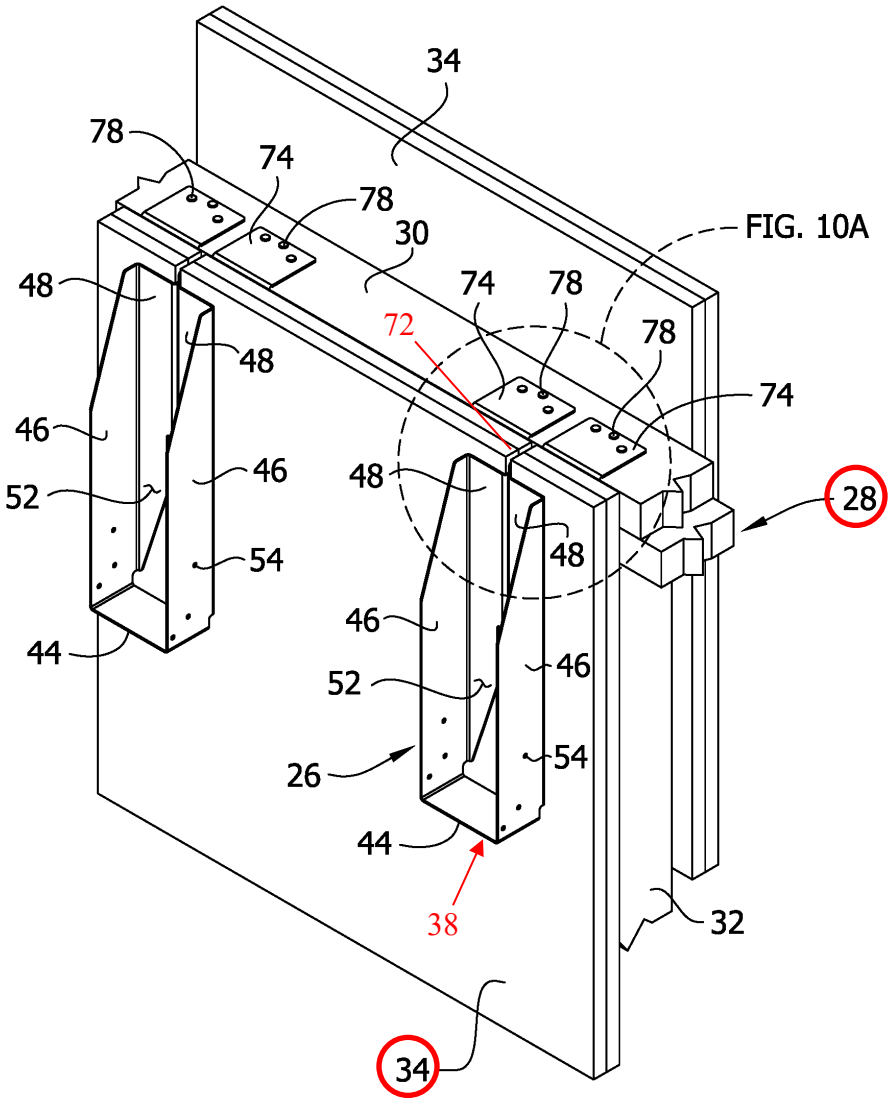
> "In still another embodiment, the truss hangers 26 can be installed on the wall 28 before the sheathing 34 is mounted on the wall. … ***Subsequently, the sheathing 34 can be mounted on the wall 28 by moving the sheathing upward into place so that the extension flanges 60 of the hanger 26 extend through the slot 72 of the sheathing and the sheathing is positioned in the sheathing channels 68 between the back flanges 66 and the back panels 48***." EX1001: 7:65-8:21; EX2001: ¶78.

The above identified mounting explanation includes statements correlating to (1) the "inserting" step—e.g., "the sheathing is positioned in the sheathing channels 68 between the back flanges 66 [which are attached to the face of the frame wall 28] and the back panels 48" (i.e., the channel-shaped portion)—and (2) the "moving/arranging" step—e.g., "moving the sheathing upward into place so that the extension flanges 60 of the hanger 26 extend through the slot 72 of the sheathing." EX1001: 8:17-21; 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), after the fire wall hanger (26) is mounted to the top plate (30) of the frame wall (28), the fire retardant sheathing (34) 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, these portions of the '339 Patent demonstrate Columbia was in possession of the "installing" step for the fire retardant sheathing including the

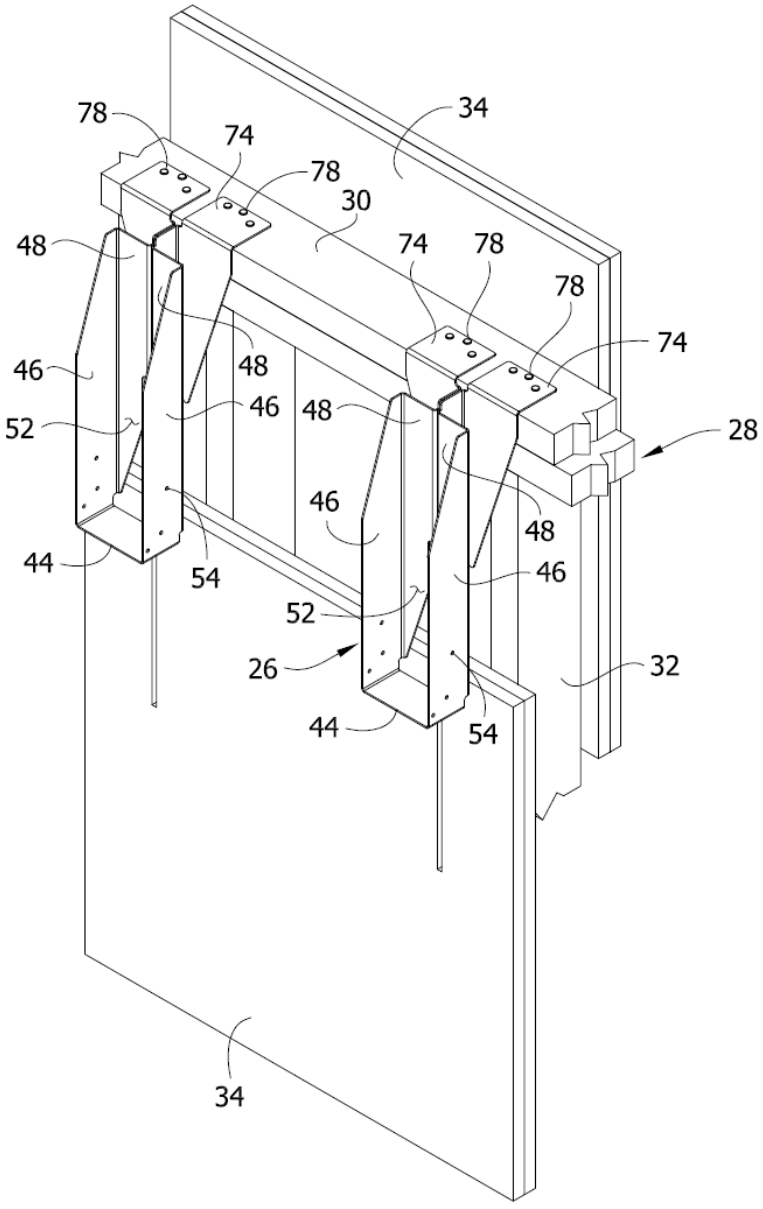
generally simultaneous performance of the "inserting" and "moving/arranging" sub-steps. EX2001: ¶82.

1. Even Under Simpson's Interpretation, the Claims Have Written Description Support

The '339 Patent demonstrates Columbia was in possession of this limitation even under Simpson's interpretation—e.g., the "inserting" step is distinct from the "moving/arranging." Pet: 10-11; EX2001: ¶83. As explained by the specification, the fire retardant sheathing (34) is "mounted on the wall 28 by ***moving the sheathing upward*** into place." EX1001: 8:17-18. This upward movement is due to the opening (72) extending vertically downward from a top edge of the fire retardant sheathing.[9] EX1001: Fig. 9; EX2001: ¶84. To perform this "upward" movement, the opening of the fire retardant sheathing and the extension flanges (60) of the fire wall hanger (26) ***must*** be vertically aligned by positioning the fire retardant sheathing below the extension flanges of the fire wall hanger, as shown below in modified Fig. 10. EX2001: ¶85. Note the lower portion of the channel-shaped portion (38) extends below the bottom of the extension flanges (e.g., the

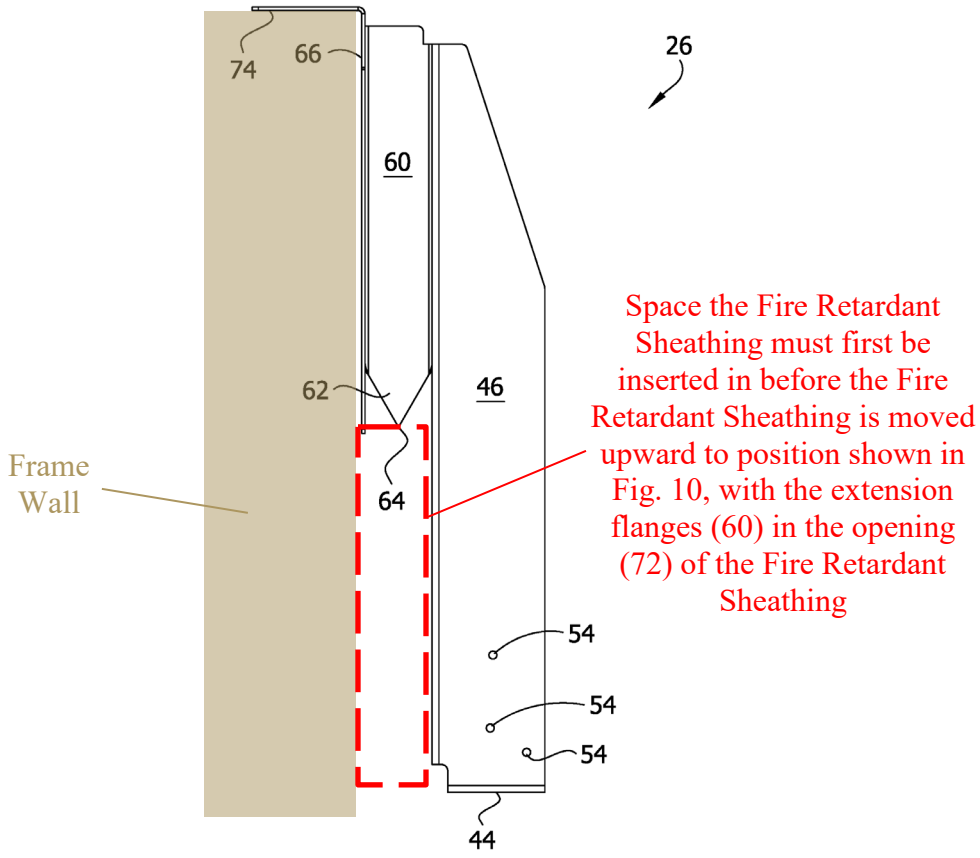
[9] The only way to position the extension flanges (60) in the opening (72) of the illustrated fire retardant sheathing in this method of construction, is by moving the fire retardant sheathing upward so the extension flanges enter the opening via the opening's open top. EX2001: ¶84.

driving points (62)). EX1001: Fig. 5; EX2001: ¶85. This necessarily results in the fire retardant sheathing ***first*** being inserted into the space between the lower portion of the channel-shaped portion and the frame wall (*see* annotated Fig. 5 and modified Fig. 10 below) ***before*** the fire retardant sheathing is then further moved/arranged to have "the fire wall hanger extend[] through the opening in the fire retardant sheathing" as recited by claims 1 and 27. EX2001: ¶¶85-86.



EX1001: Fig. 10 (modified—sheathing moved vertically downward).

FIG. 5



EX1001: Fig. 5 (annotated).

Accordingly, the specification provides written description support for claims 1 and 27, and rebuts the basis for institution. EX2001: ¶87.

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

Simpson's written description argument regarding the term "bounding" is based on a mischaracterization of this Board's holding in the Final Written Decision issued in PGR2021-00109 (the '109 PGR FWD). Pet: 11-12; EX2001:

¶¶88-89. Simpson asserts "the Board determined that 'bounding' as applied to the hanger vis-à-vis the sheathing opening was unsupported by the specification." Pet: 11-12. But the Board made no such statement. '109 PGR FWD: 147-148; EX2001: ¶90.

In PGR2021-00109, Columbia argued the claim term "defining" was synonymous with "bounding" when arguing the prior art did not disclose a claim limitation. '109 PGR FWD: 147. The Board "disagree[d], and [found] no basis in the '867 patent … to restrictively redefine 'defining' to mean 'bounding.'" '109 PGR FWD: 148. This is the limited extent to which the Board addressed the term "bounding" and the '109 PGR FWD never held "bounding" lacked written description.

Contrary to Simpson's arguments, the plain and ordinary meaning of "bounding" is not co-extensive with "enclose" or "confine" as advanced by Simpson. Pet: 12; EX1035: 5; EX2010: 4; EX2001: ¶¶91-92. Rather, the term "bounding" has its plain and ordinary meaning: "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. Notwithstanding the unsupported declaratory statement by Simpson's Expert (EX1003: ¶98), the term "bounding" ***does*** allow for a single-edge to bound an opening—per a dictionary example: "the ground was bounded by a main road on one side and a meadow on the other." EX2011: 4;

EX2001: ¶¶92, 95-96. Even Simpson uses "bounding" to describe the boundary of only one side of an element, not the entire boundary, in the claims of one of its own patents:

- "a third boundary bend (333) ***bounding*** the central portion (111) of the first body part (20)." EX2012: claims 5, 10, 22; EX2001: ¶93.
- "the second body part (220) of the bridging connector (19) additionally comprises a fourth boundary bend (433) ***bounding*** the central portion (111) of the second body part (220)." EX2012: claims 10 and 25; EX2001: ¶94.

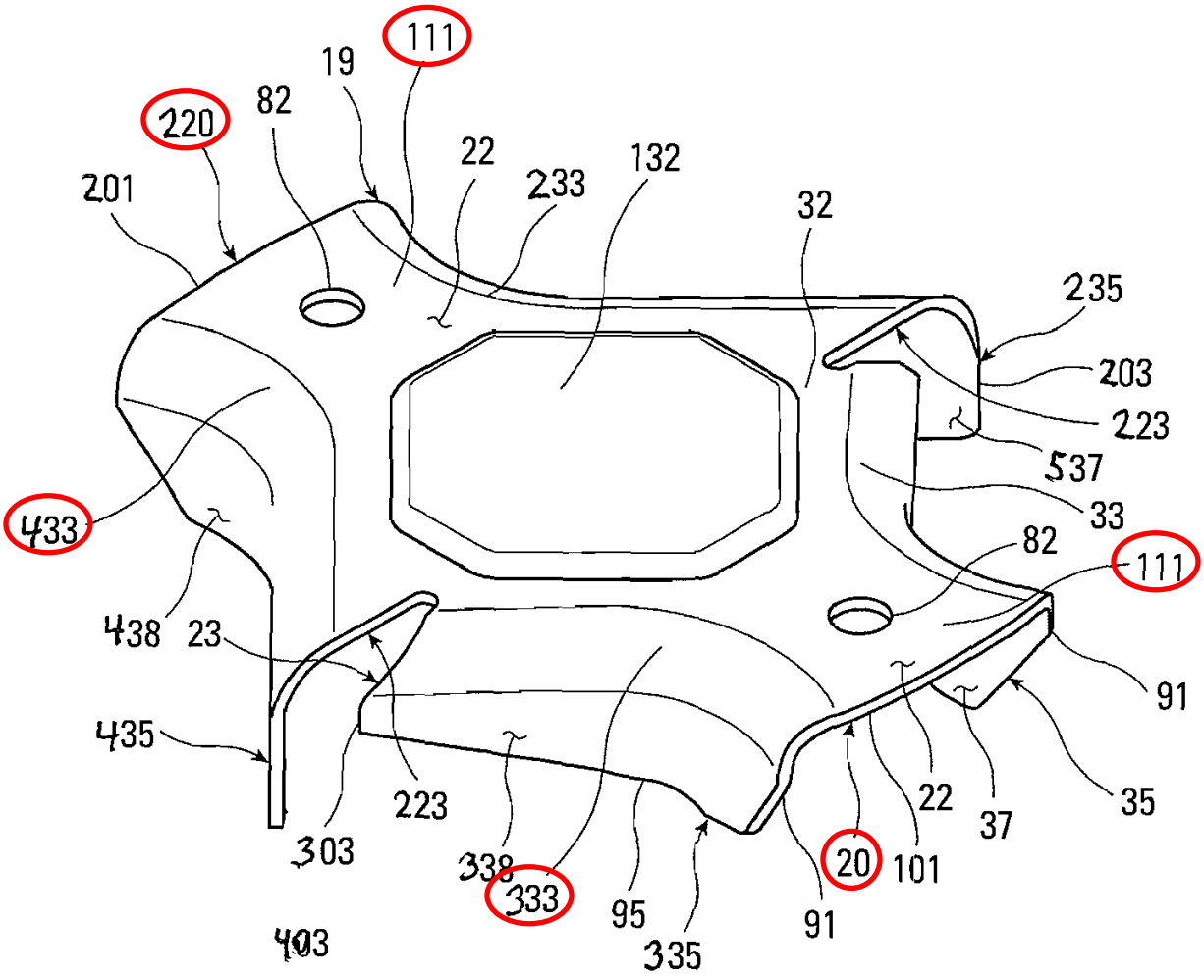
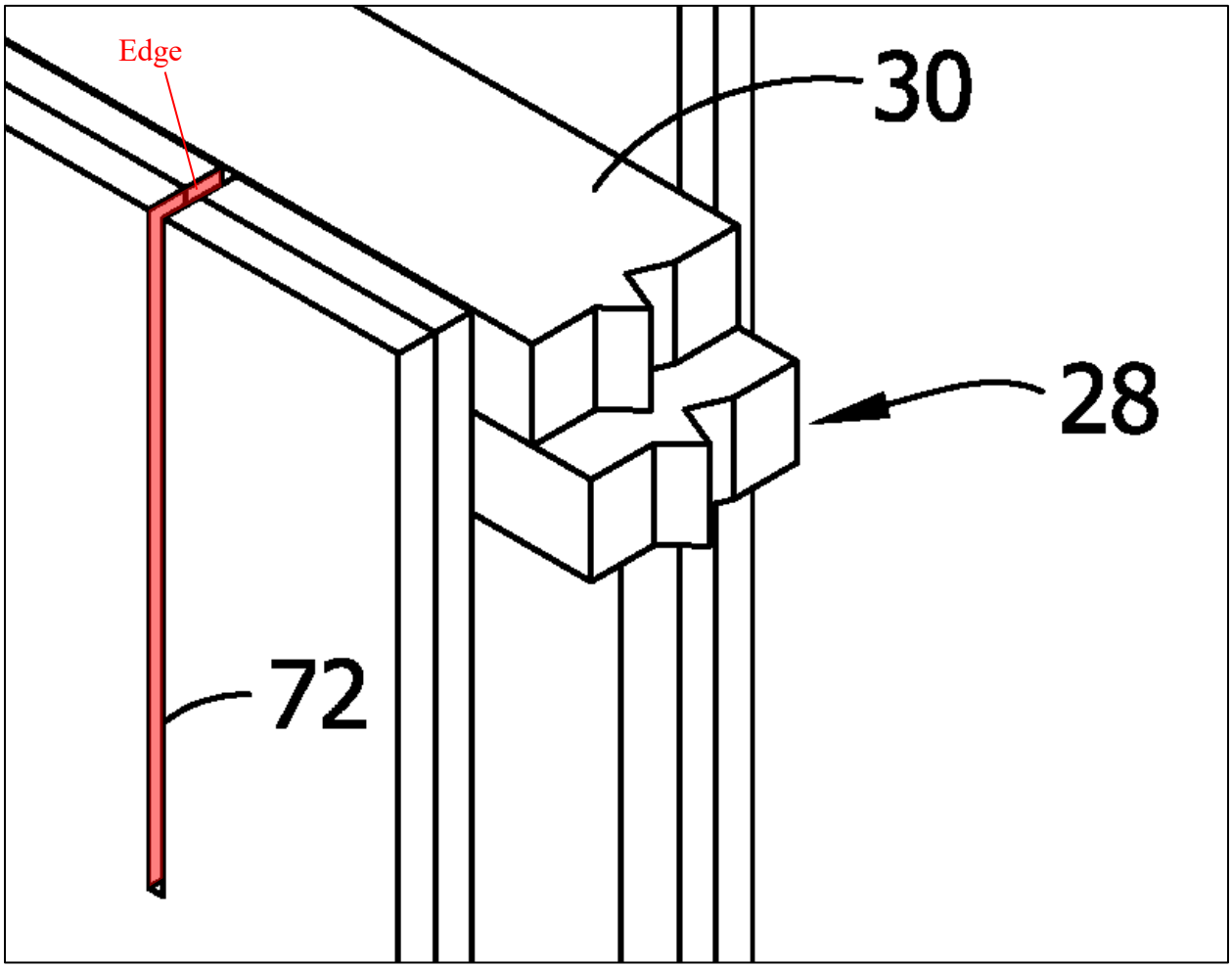


Fig. 7

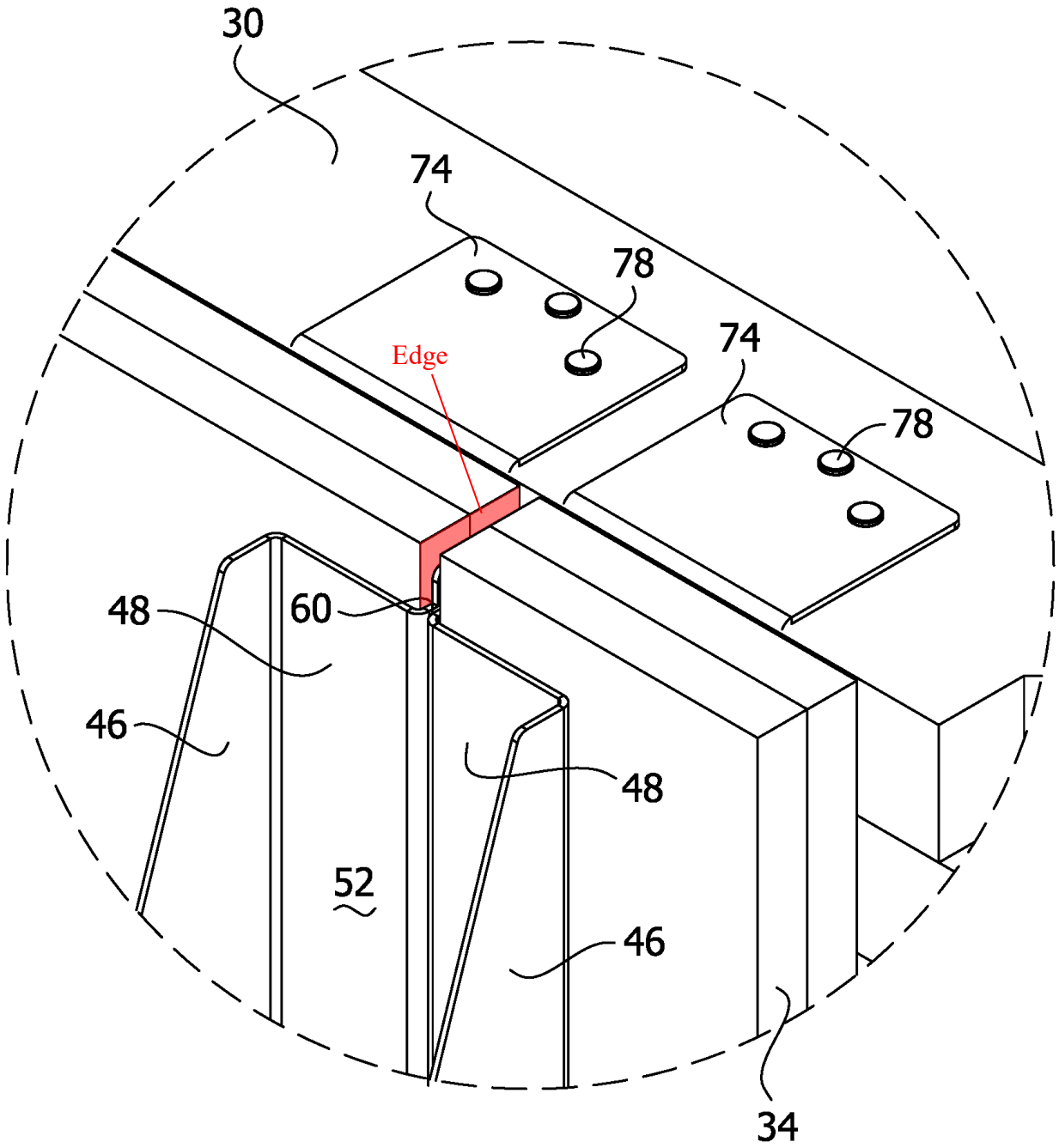
EX2012: Fig. 7 (annotated).

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



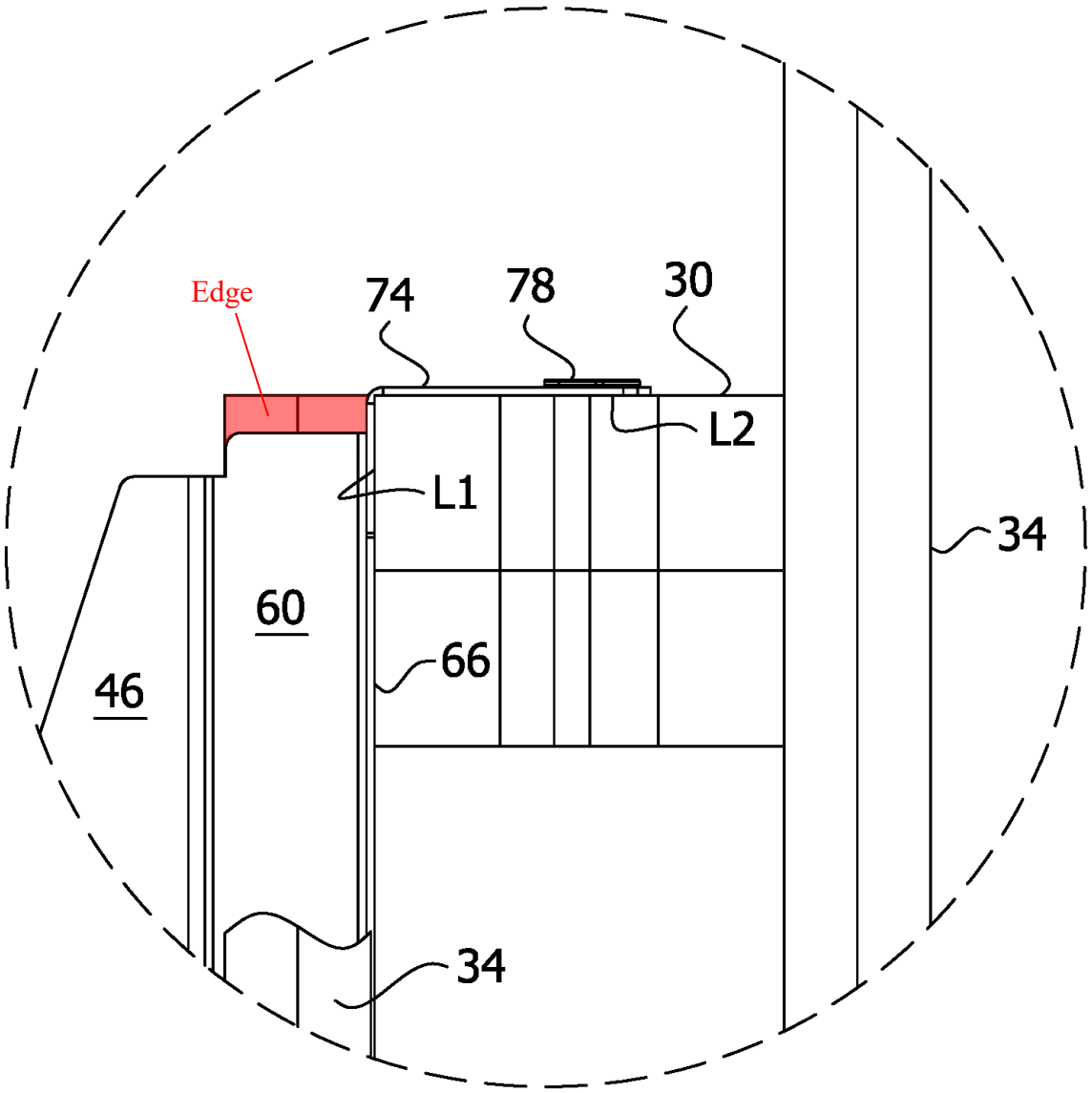
EX1001: Fig. 9 (enlarged, annotated).

FIG. 10A



EX1001: Fig. 10A (annotated)

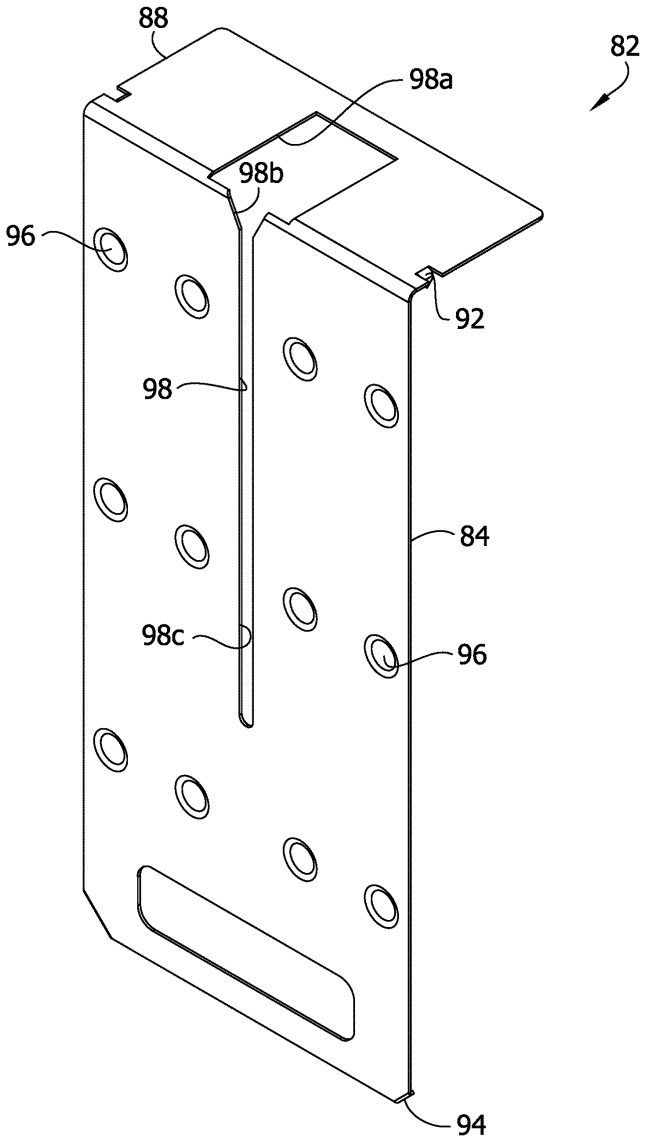
FIG. 13A



EX1001: Fig. 13A (annotated)

Such an edge is the necessary result of moving a "spiral bit … to cut the slot 72" along the narrow portion (98c) of the slot (98) of the template (82), as explained by the specification. EX1001: 6:14-17, 6:31-36; EX2001: ¶99.

FIG. 16



EX1001: Fig. 16.

Accordingly, the specification provides written description support for claim 1, and undermines the basis for institution. EX2001: ¶100.

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

Claims 9-11,[10] in general, recite relative proportions of the opening in the fire retardant sheathing relative to the structural component and to the channel-shaped portion of the fire wall hanger. EX2001: ¶¶101-104. Written description support for these relative proportions is found in the figures. EX2001: ¶104.

While Simpson cites to *Hockerson-Halberstadt* to argue figures cannot be relied upon to show relative dimensions, Simpson forgets this rule is limited to instances in which the "specification is completely silent on the issue." 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 can be relied upon to 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

[10] Simpson makes no argument claim 11's relative proportions lack written description. Pet: 12-13. Nevertheless, Figs. 9 and 12 show the width of the opening is less than the width of the channel-shaped portion. EX2001: ¶113.

controlled by *Hockerson-Halberstadt*" as the reference "provides some scale information.").

Here, the figures can be relied upon for the claimed proportions because '339 Patent's specification provides scale information:

> "***As illustrated***, the top plate 30 is formed by two ***2×4's*** in stacked relation. Fire retardant sheathing 34 is mounted on both sides of the wall 28, as illustrated. In one embodiment, the fire retardant sheathing is gypsum board, such as ***two layers of ⅝" gypsum board*** mounted on each side of the wall 28 ***as illustrated***." EX1001: 4:20-25; EX2001: ¶¶105-106.

"2x4"[11] 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 of the [application and patent] could be dimensioned by a person having ordinary skill in the art based on statements in the written description"). The specification also provides a disclosure regarding the size of the opening (72) in the fire retardant sheathing (34), stating the opening "has an area less than or equal to 6 square inches" and "is about 10 inches long." 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 of [the prior art reference] expressly states … the angle …

[11] "2x4" is a nominal dimension, equating to 1.5-inches by 3.5-inches. EX2001: ¶107.

could be between 5 and 85 degrees …. Hence, the specification is not silent but, rather, specifically informs an ordinary artisan" of the dimensions).

Even without such statements in the specification, the '339 Patent's figures should be credited as providing written description support for what they clearly show. *In re Marz*, 455 F.2d 1069, 1072 (CCPA 1972) (although "'[p]atent drawings are not working drawings' … we did not mean that things patent drawings show clearly are to be disregarded"); *Ex parte Brilliant*, Appeal No. 2022-004539, pages 8-9 (P.T.A.B. May 22, 2023) ("drawings can be relied on for what they reasonably disclose and suggest to [a POSA]"); *Ex parte Trouilly*, Appeal No. 2010-012036, page 7 (P.T.A.B. Jan. 18, 2013) ("even when patent drawings are not drawn to scale, they may nevertheless be used to establish relative sizes and relationships between the various components which are clearly depicted in those drawings"); *Ex parte Sato*, Appeal No. 2012-001276, page 6 (P.T.A.B. Mar. 24, 2014) ("things patent drawings show clearly are not to be disregarded"); *Cummins-Allison Corp. v. SBM Co.*, 484 Fed. Appx. 499, 507 (Fed. Cir. 2012) ("As long as a [POSA] could derive the claimed dimension from the patent's disclosure, there is no additional requirement that the specification must explicitly disclose the precise proportions or particular sizes."); EX2001: ¶¶109-110.

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 "it may appear that the sheathing's opening has an area less than the area of the structural component's end"); EX2001: ¶111. Thus, these figures demonstrate Columbia was in possession of "the opening [having] an area less than an area of an end of the structural component" from claim 9. EX2001: ¶110.

FIG. 12

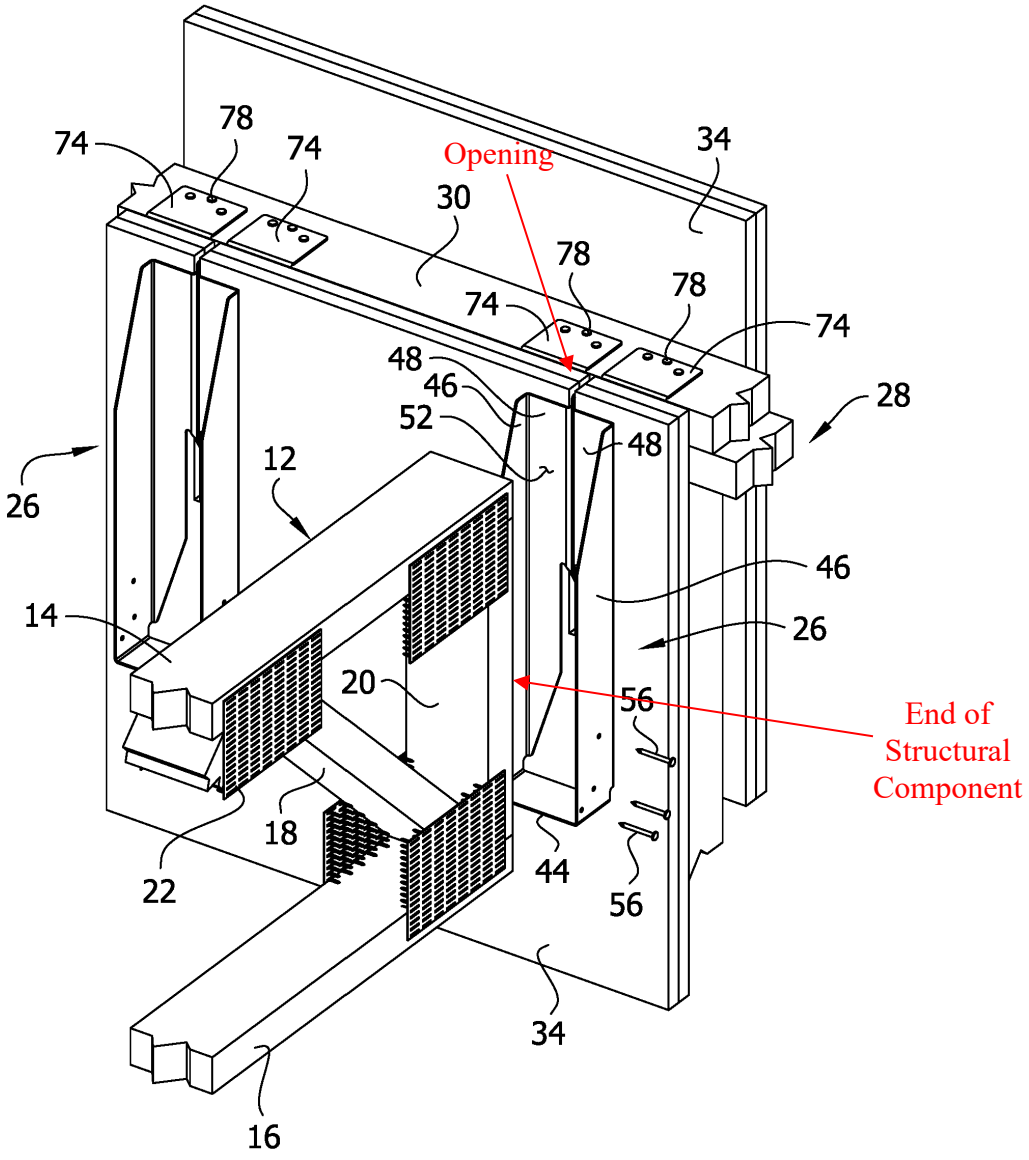


FIG. 9

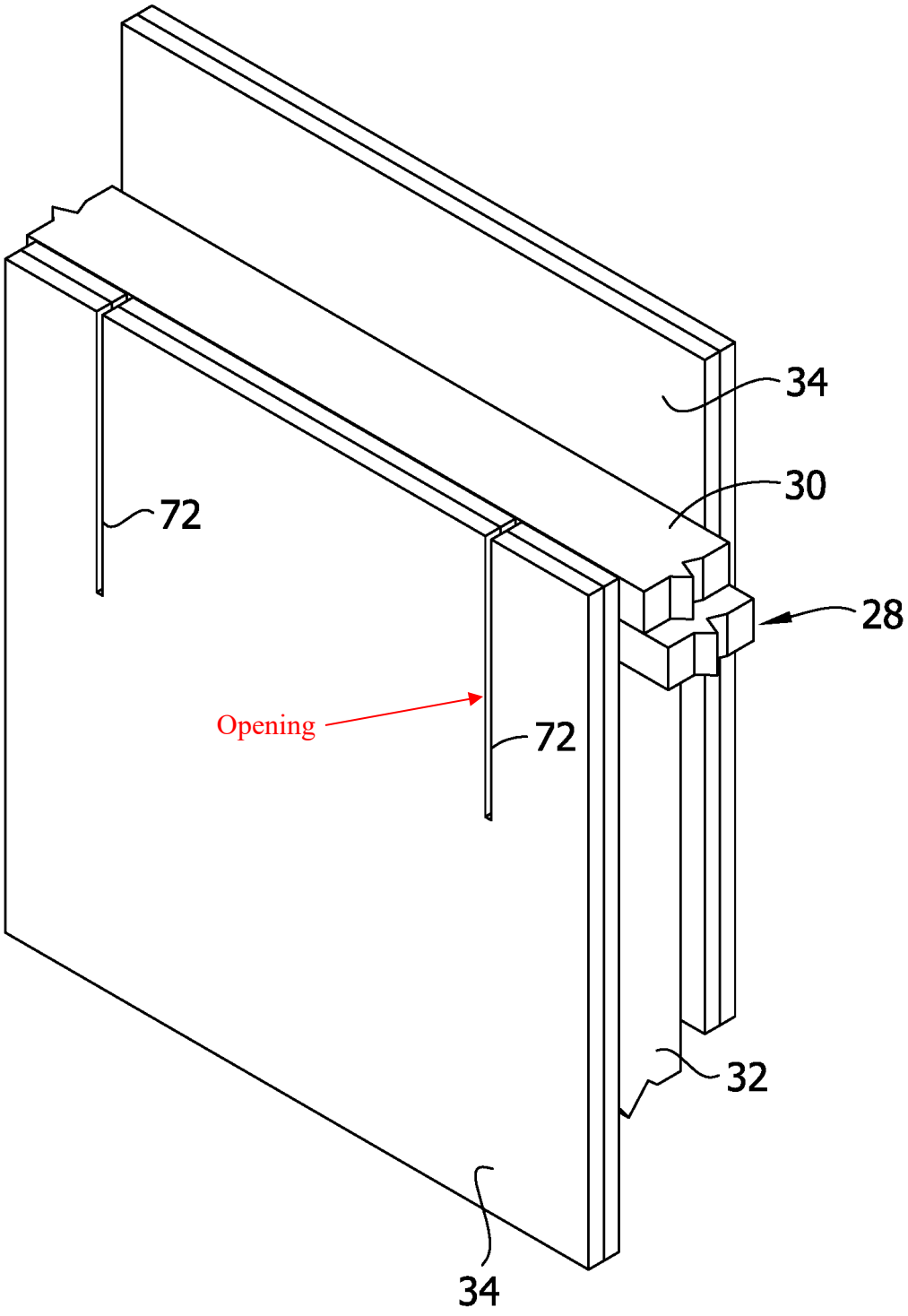
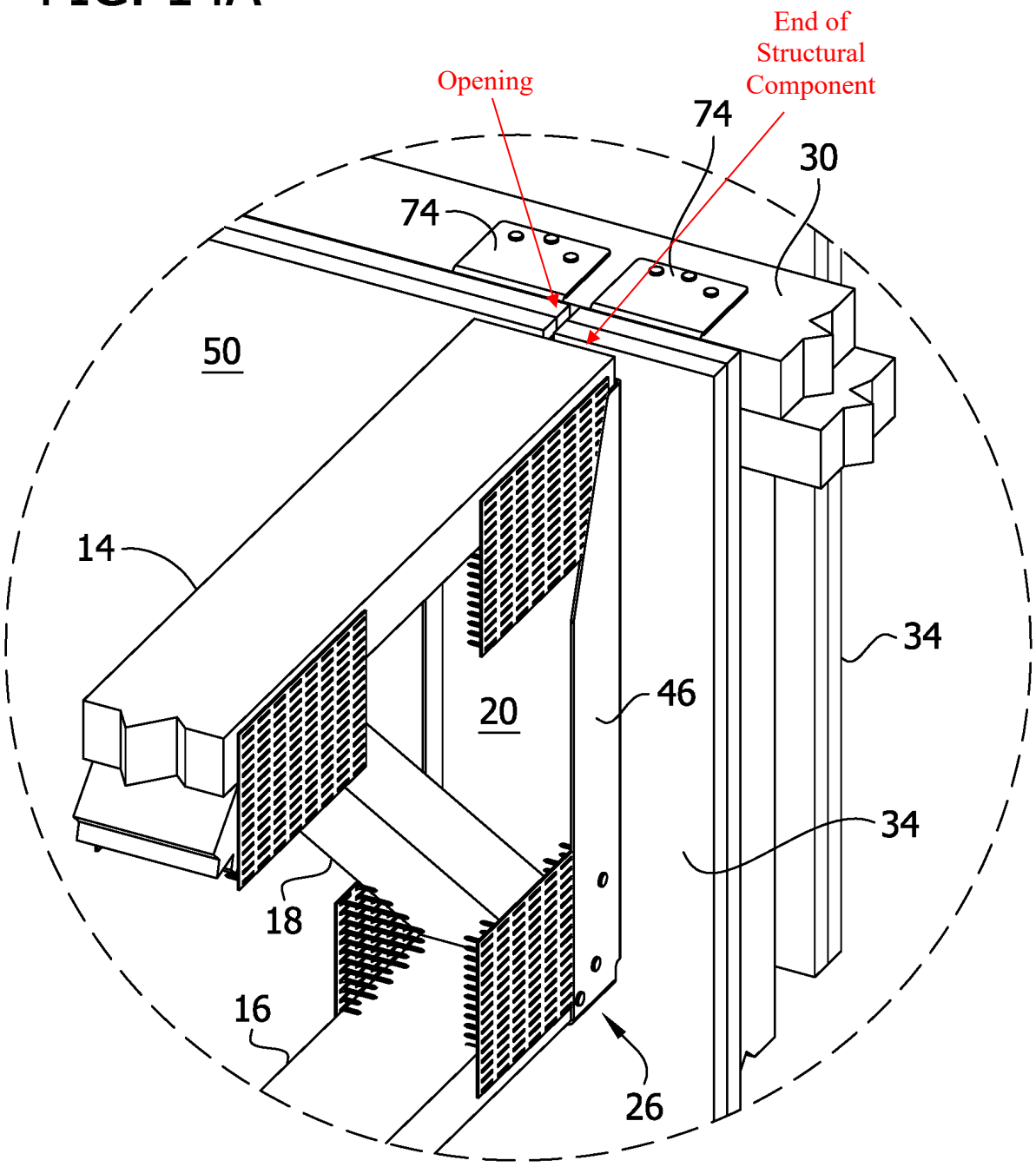


FIG. 14A



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

Regarding claim 10, Figs. 9 and 12 likewise demonstrate Columbia was in possession of "the opening [having] a height less than a height of the channel-

shaped portion." EX2001: ¶112. As illustrated, the height of the opening (72) is clearly less than the height of the channel-shaped portion (38). EX2001: ¶112.

FIG. 12

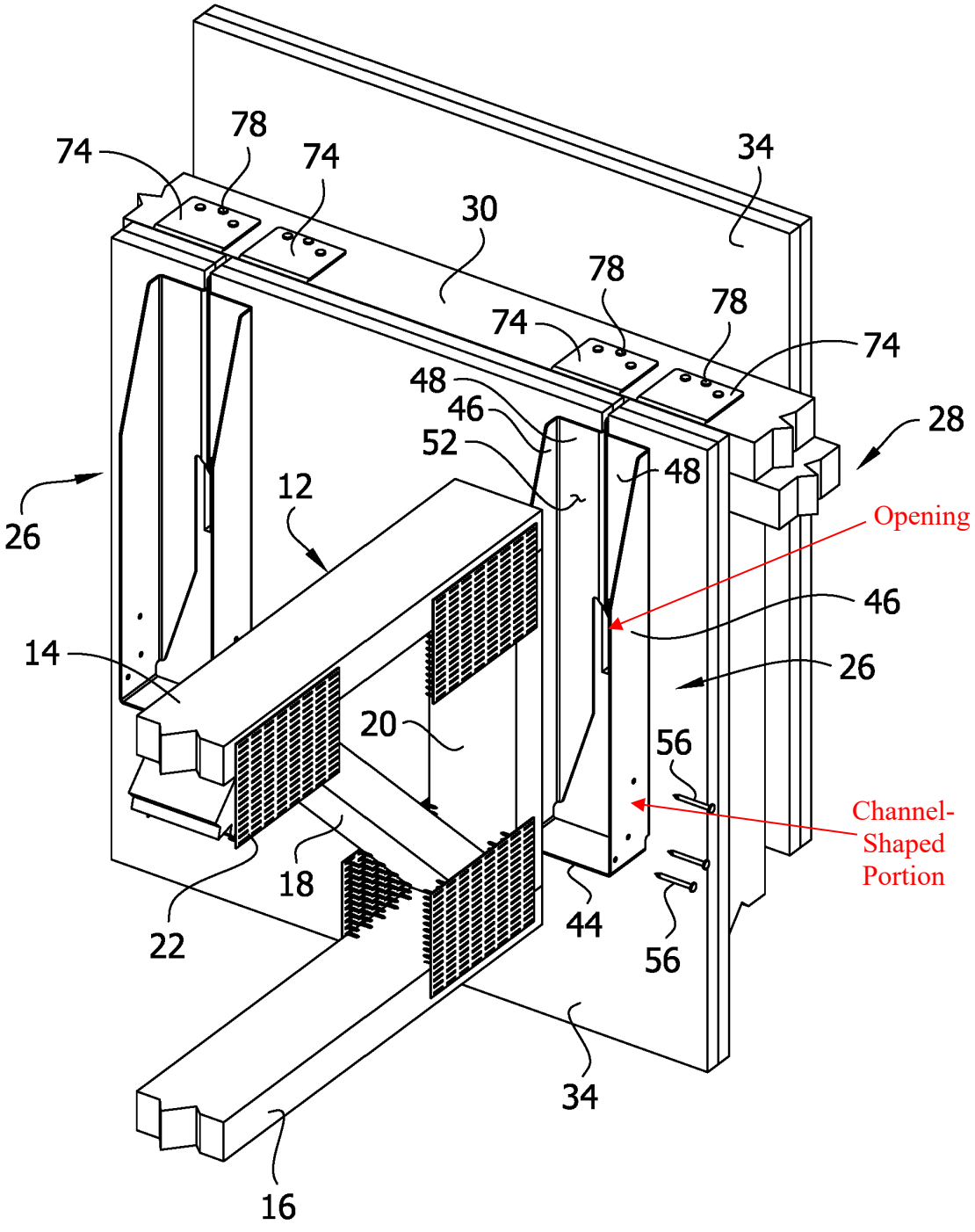
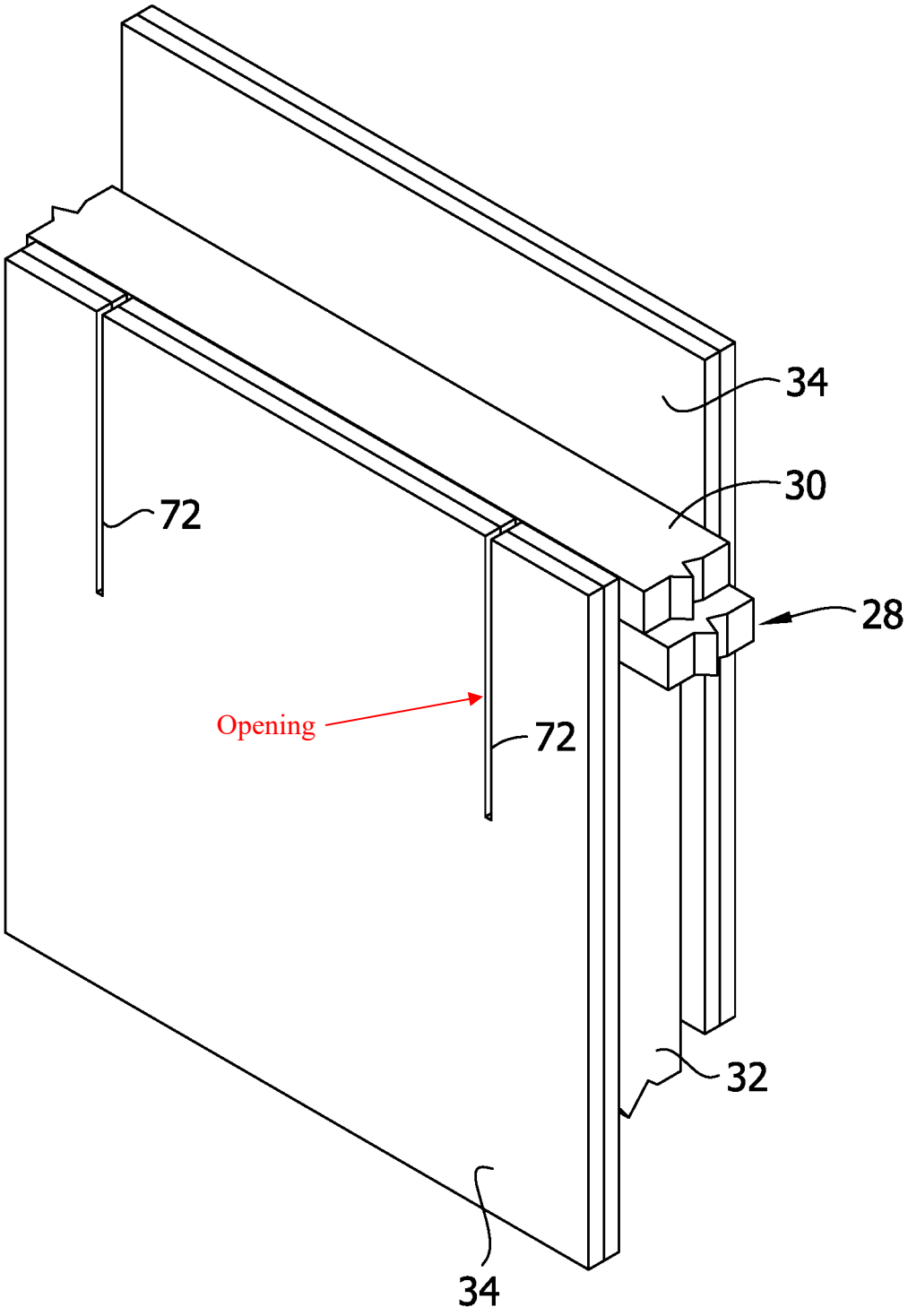


FIG. 9



EX1001: Figs. 9 and 12 (annotated).

Accordingly, the specification provides written description support for claims 9-11 and undermines the basis for instituting Simpson's Petition. EX2001: ¶114.

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

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

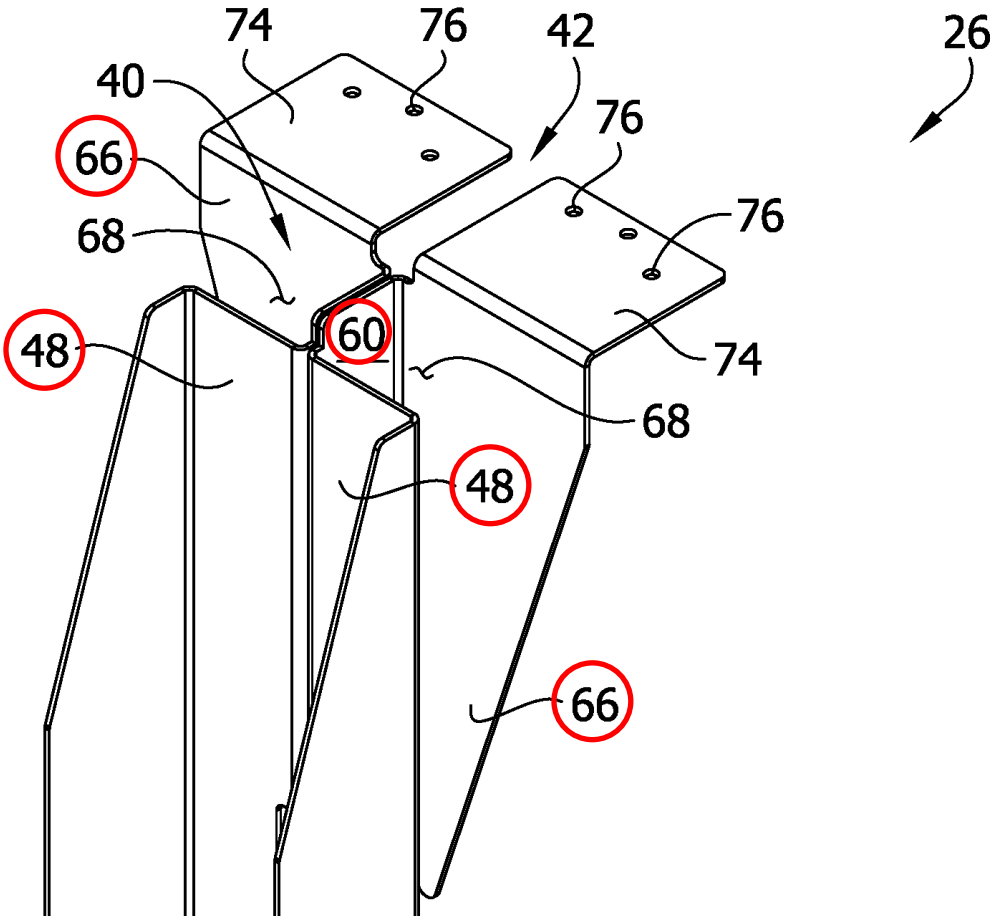
The '339 Patent's claims support this interpretation as they state "the first end of the first planar extension plate [is] ***connected to*** the channel-shaped portion ***by a first bend***" and "the second end of the first planar extension plate [is] ***connected to*** the connection portion by ***a second bend***." EX1001: claim 23; EX2001: ¶118. In view of claim 23, the POSA understands by virtue of the "connected to" language the planar extension plates are required to *connect directly to* the channel-shaped portion/connection portion and thus each of the

recited bends is merely part of the respective components forming the recited bends. EX2001: ¶119.

The specification likewise reinforces the bends are part of the elements forming the bends by explaining "[e]ach flange 60 ***extends from*** one of the back panels 48," and "[a] back flange 66 ***extends from*** each of the extension flanges 60" even though these elements are connected to one another via a bend. EX1001: 5:6-7, 5:22-23, Fig. 2; EX2001: ¶120. Given the Board's construction of "extending from" in the prior PGRs[12], which Simpson has adopted, it is clear each of the bends is being treated as a part of the elements which form the bend. PGR2019-00063 Final Written Decision (the '063 PGR FWD): 106-110; Pet: 8; EX2001: ¶121.

[12] "[W]e reaffirm and construe 'extending from' to mean 'in the context of element B extending from element A, the beginning of element B's extension is on element A." '063 PGR FWD: 110.

FIG. 2



EX1001: Fig. 2 (cropped, annotated).

Notably, Simpson's own patents demonstrate they consider a portion of a bend at the end of a "planar" plate to be part of the plate. EX2001: ¶124. For example, Bundy (an applied prior art reference) identifies the back plate members (9) and side members (11) of the joist hanger (2) as being "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 being "connected to" back plate members (9) along an "angular joint 47 ... [where back edges of the side members 11] ***meet*** the first and second inner edges 20 of the ... back plate members 9." EX1005: 4:13-16, 4:57-61; EX2001: ¶¶125-126. This "meet" statement demonstrates Simpson considers the bends connecting the "planar" back plate members (9) and "planar" side members (11) to be part of those members. EX2001: ¶127.

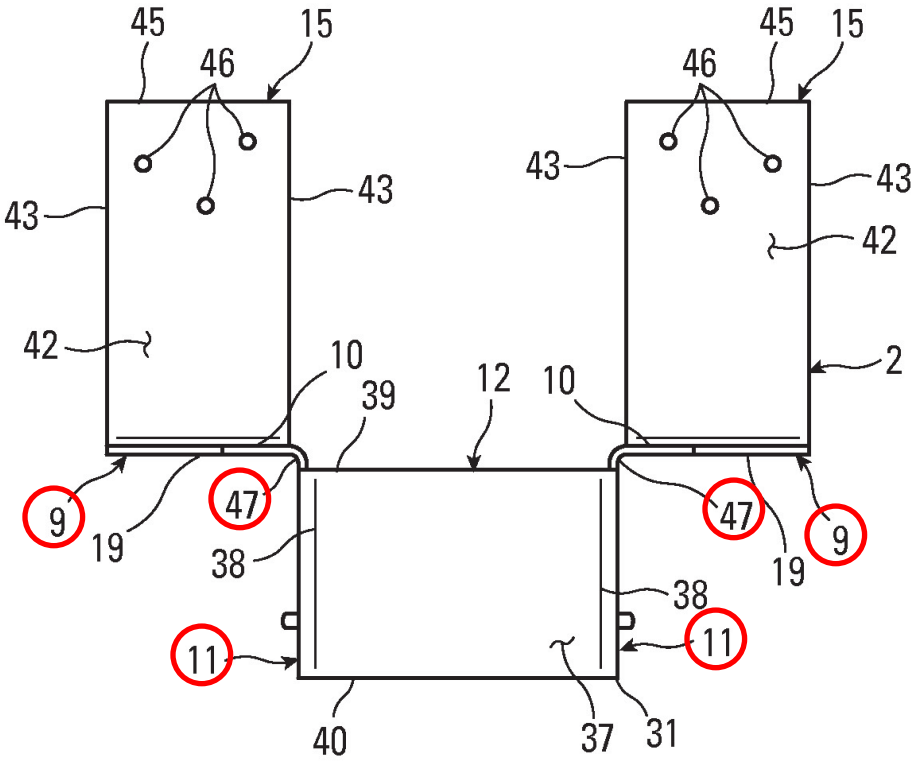


Fig. 7

EX1005: Fig. 7 (annotated).

In another example with reference to Bundy's Fig. 8 (below), a bend (49) is formed between the planar back plate members (9) and the top flanges (15). EX2001: ¶128. Bundy again states the top flanges (15) "are planar." Bundy at 5:53; EX2001: ¶128. And again, despite the presence of a bend, Bundy describes the "first top flange 15 [as being] connected to the first back plate member 9," along "an angular joint 49 ... where [the front edges 44 of the top flanges 15] ***meet*** the first and second top edges 24 of the ... back plate members 9." Bundy at 5:39-42, 5:60-63; EX2001: ¶¶128-129. Again, this use of "meet" demonstrates Simpson considers the bends connecting the "planar" back plate members (9) and "planar" top flanges (15) to be part of those members/flanges. EX2001: ¶130.

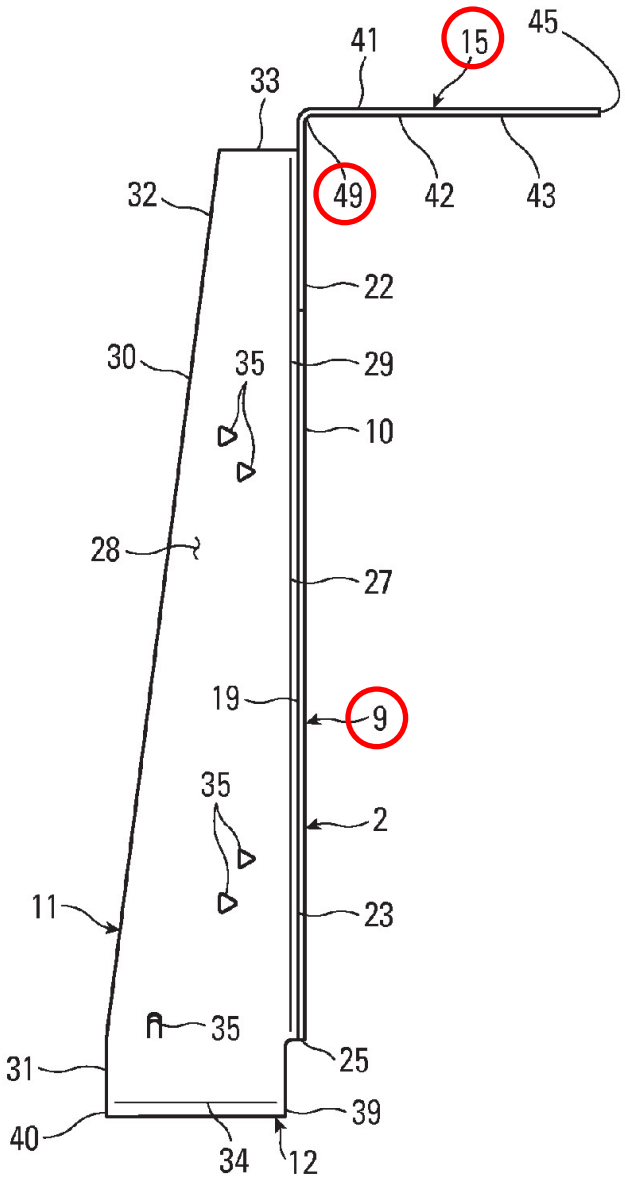


Fig. 8

EX1005: Fig. 8 (annotated).

Several other Simpson patents and applications, shown below, further confirm Simpson considers a portion of a bend at the end of a "planar" plate to be part of the plate. *In re Cortright*, 165 F.3d 1353, 1358 (Fed. Cir. 1999) ("Prior art references may be 'indicative of what all those skilled in the art generally believe a

certain term means … [and] can often help to demonstrate how a disputed term is used by those skilled in the art.'") (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1584 (Fed. Cir. 1996)).

In U.S. Publication 2021/0396000 (EX2005), Simpson identifies side members (11) of a hanger as being "planar." EX2005: ¶[0039]; EX2001: ¶131. As shown in Figs. 3, 4, and 7 (annotated below), the seat member (12) and the side members (11) "interconnect[ ]" along "an angular joint 48 [i.e. a bend], where [the edges of the seat member] ***meet*** the first and second bottom edges 34 of the first and second side members 11." EX2005: ¶¶[0045]-[0046]; EX2001: ¶¶131-132. This statement the edges of the side members "meet" the seat member again shows Simpson considers the bends to be part of the "planar" side members. EX2001: ¶133.

In another example from this publication, the back plate members (9) and top flanges (15) are likewise described as being "planar." EX2005: ¶¶[0037], [0048]; EX2001: ¶134. The top flanges are described as being "connected" to the back plate members along "an angular joint 49 ... where [the edges of the top flanges] ***meet*** the one or more top edges 24 of the ... back plate members 9"). EX2005: ¶¶[0047]-[0048]; EX2001: ¶¶134-135. Yet again, this "meet" statement demonstrates Simpson considers the bends connecting the "planar" back plate

members (9) and “planar” top flanges (15) to be part of those members/flanges. EX2001: ¶136.

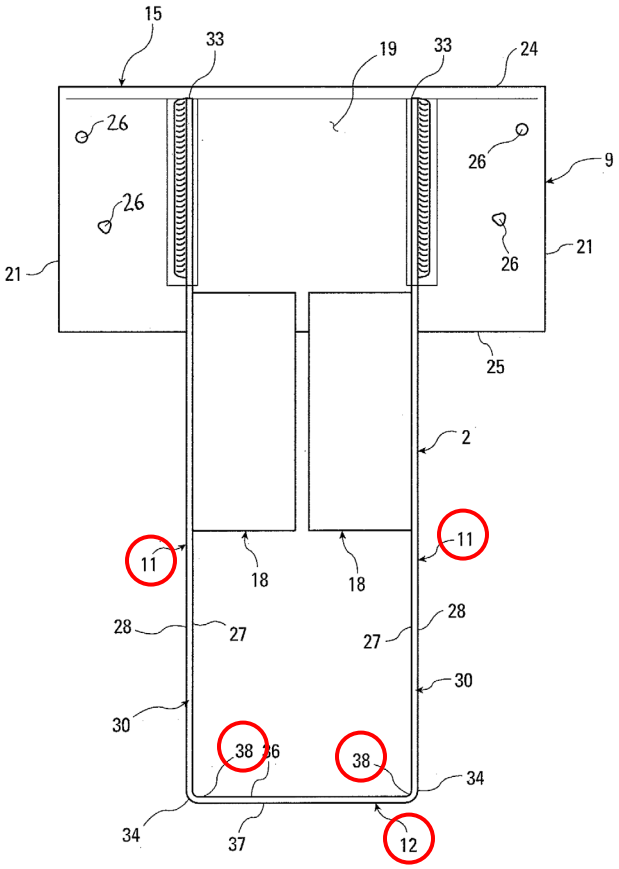


Fig. 3

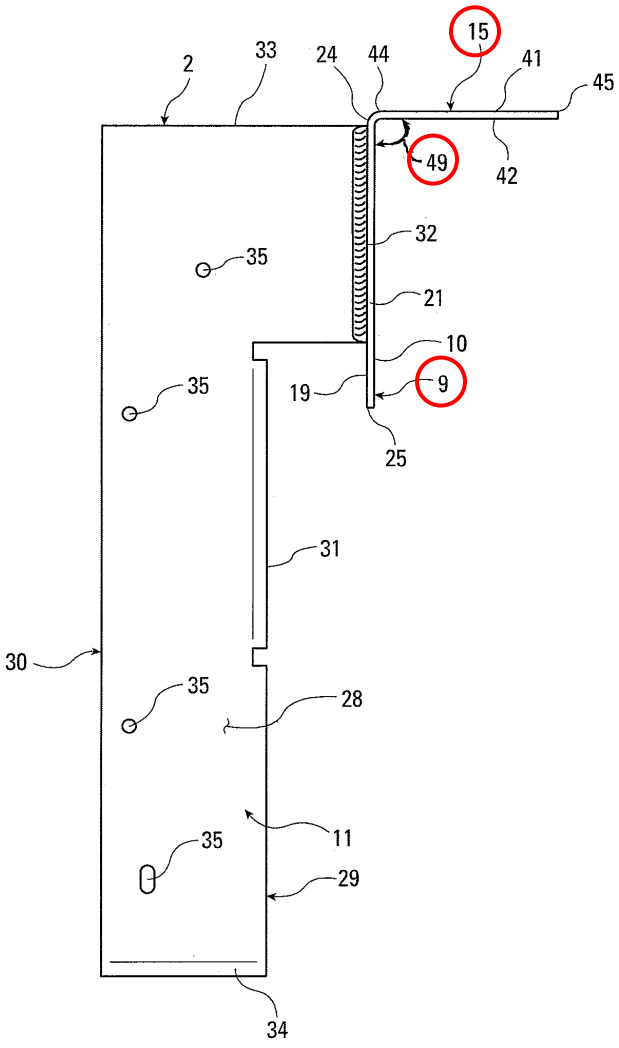


Fig. 4

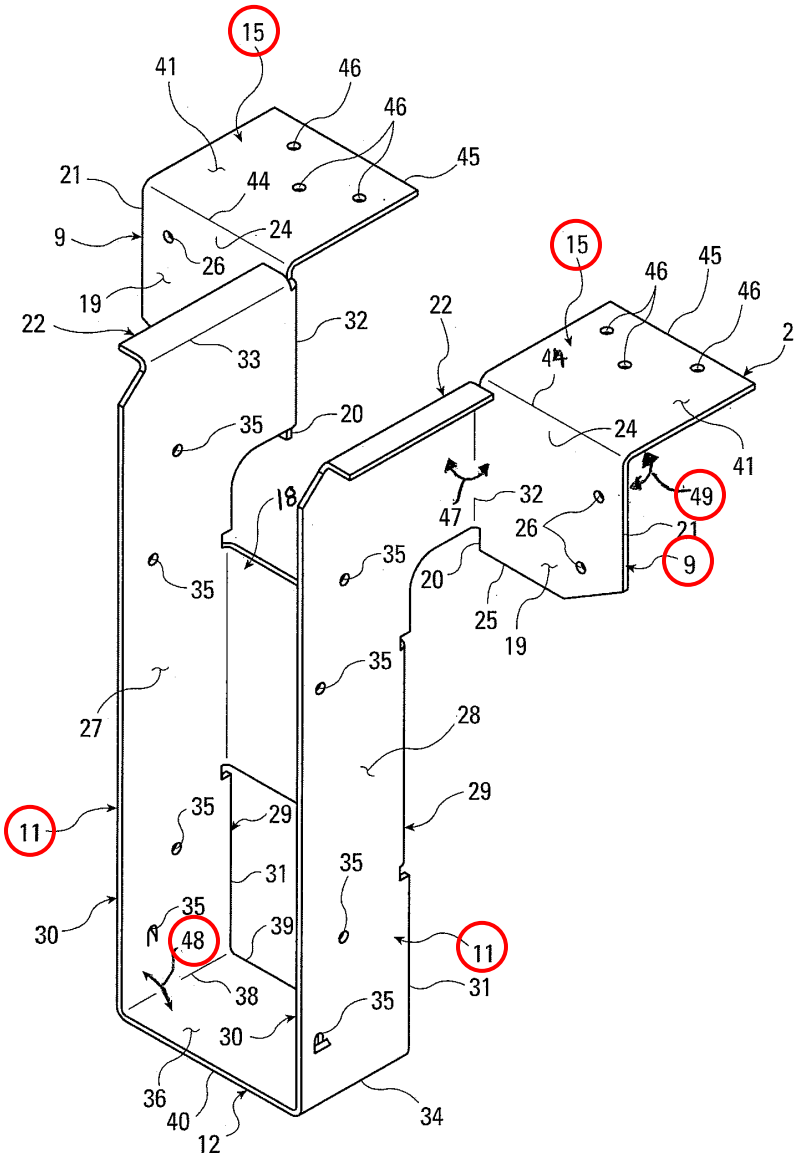


Fig. 7

EX2005: Figs. 3, 4, and 7 (annotated).

In yet another hanger patent—U.S. Patent 11,225,787 (EX2004)—, Simpson identifies side members (11) and back plate members (9) as being "planar." EX2004: 4:38-39, 4:23-26; EX2001: ¶137. As shown in Fig. 8 (below), Simpson

describes the planar side members as being "connected" to the planar back plate members along "an angular joint 47 [i.e. a bend] ... where [the back edges 29 of the side members11] ***meet*** the first and second inner edges 20 of the first and second back plate members 9." EX2004: 4:23-26, 4:60-64; EX2001: ¶¶137-138. The "meet" statement once again demonstrates Simpson considers the bends connecting the "planar" back plate members (9) and "planar" side member (11) to be part of those members. EX2001: ¶139.

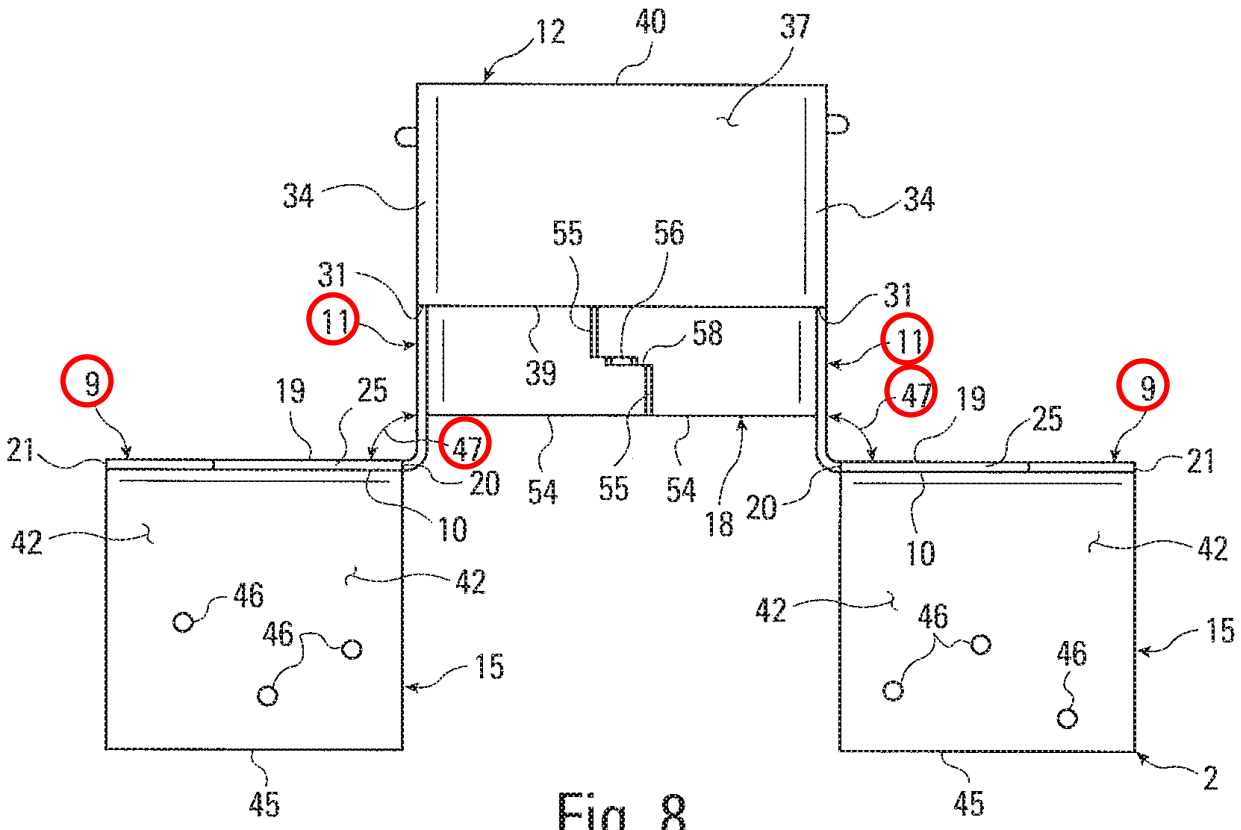


Fig. 8

EX2004: Fig. 8 (annotated).

In U.S. Publication 2019/0136520 (EX2013), Simpson describes "[t]he first and second ***plates*** [16, 17] are ***joined to each other at a bend***." EX2013: ¶[0021];

claim 13 ("the second plate is ***attached to*** the first plate at an orthogonal bend"), Fig. 7 (annotated below); EX2001: ¶¶140-141.

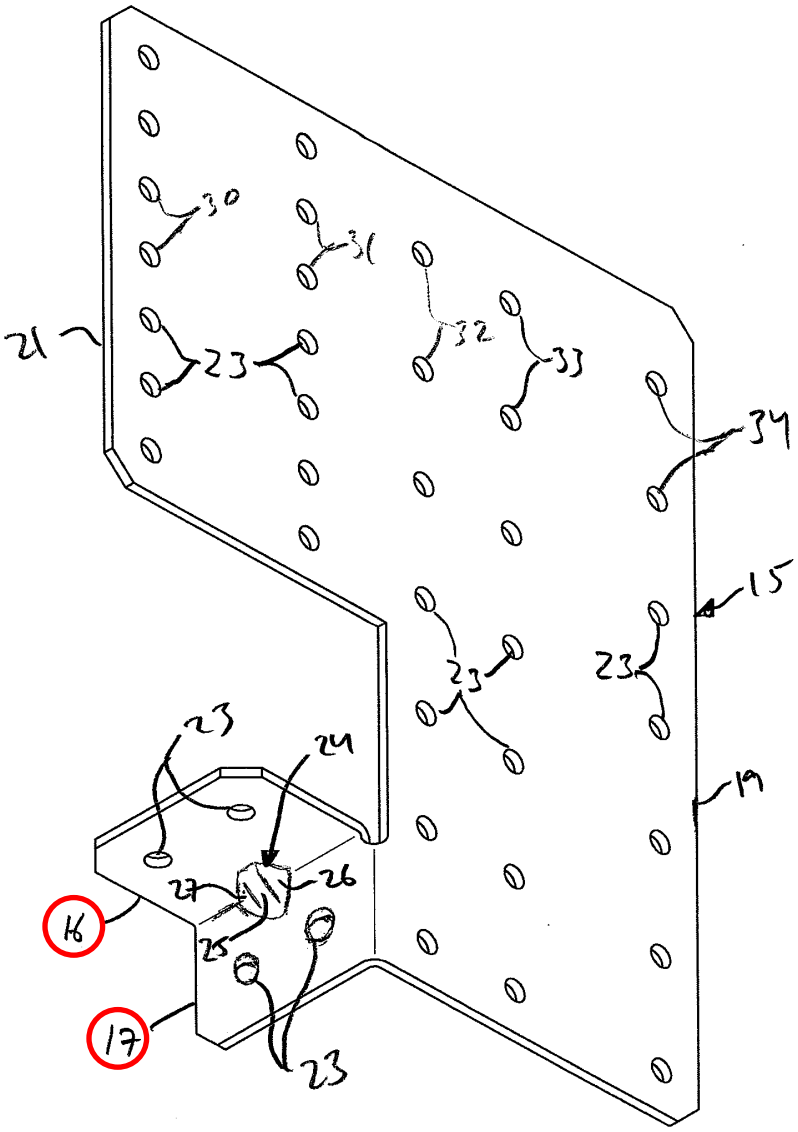


Fig. 7

EX2013: Fig. 7 (annotated).

In U.S. Patent 4,560,301 (EX2014), Simpson describes "a seat base 27 ***integrally connected to*** an end 28 of back ***plate*** 23 ***along a seat bend line 29***." EX2014: 5:33-36; EX2001: ¶142.

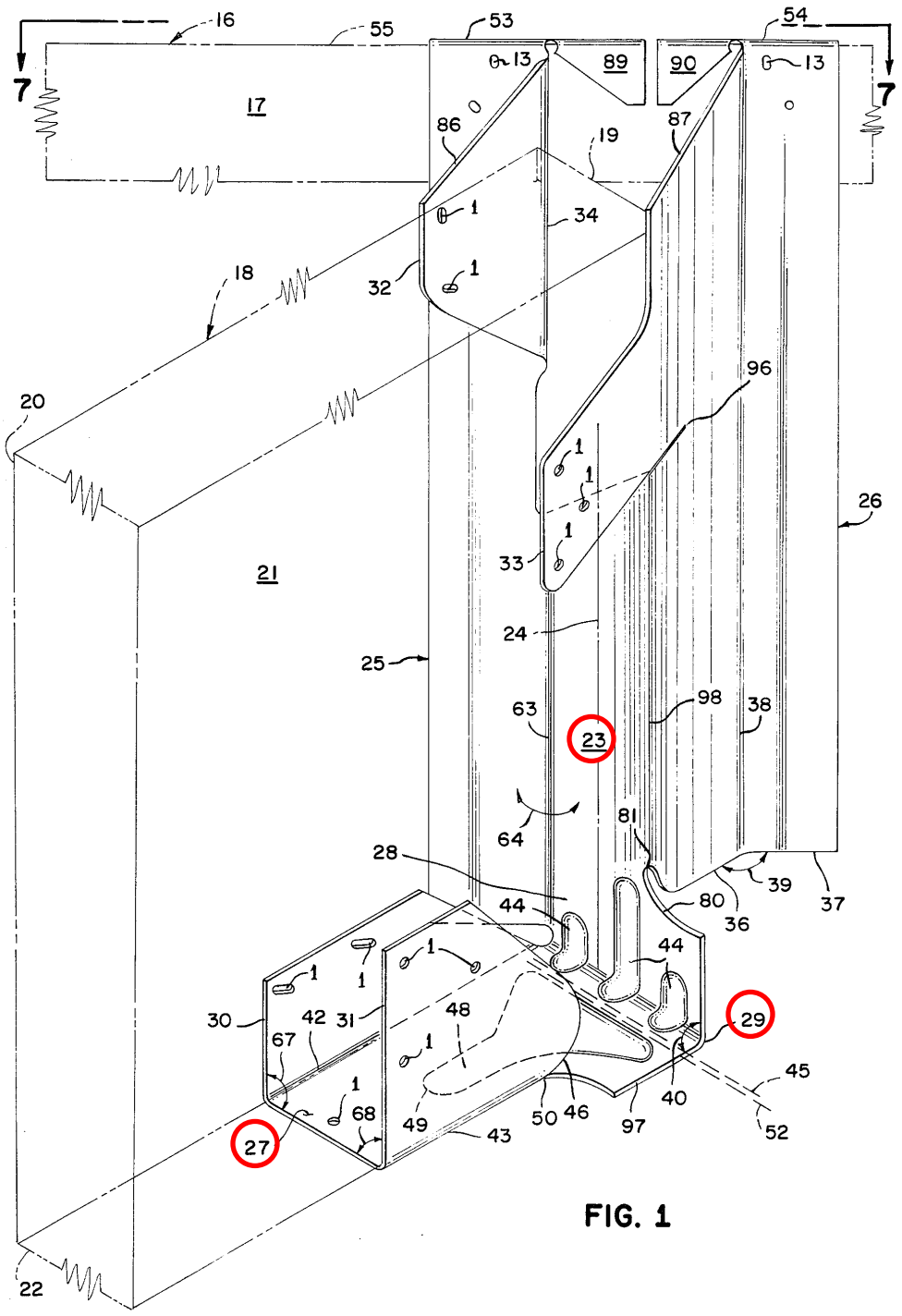


FIG. 1

EX2014: Fig. 1 (annotated).

In U.S. Patent 6,112,495 (EX2015), Simpson describes "[t]he first side member 5 is then ***bent*** at back bend line 52 to form first back ***plate*** 38 which is ***integrally connected to*** the first side member 5. The second side member [6] is then ***bent*** at back bend line 53 to form second back ***plate*** 39 which is ***integrally connected to*** the second side member 6." EX2015: 6:15-20; EX2001: ¶143.

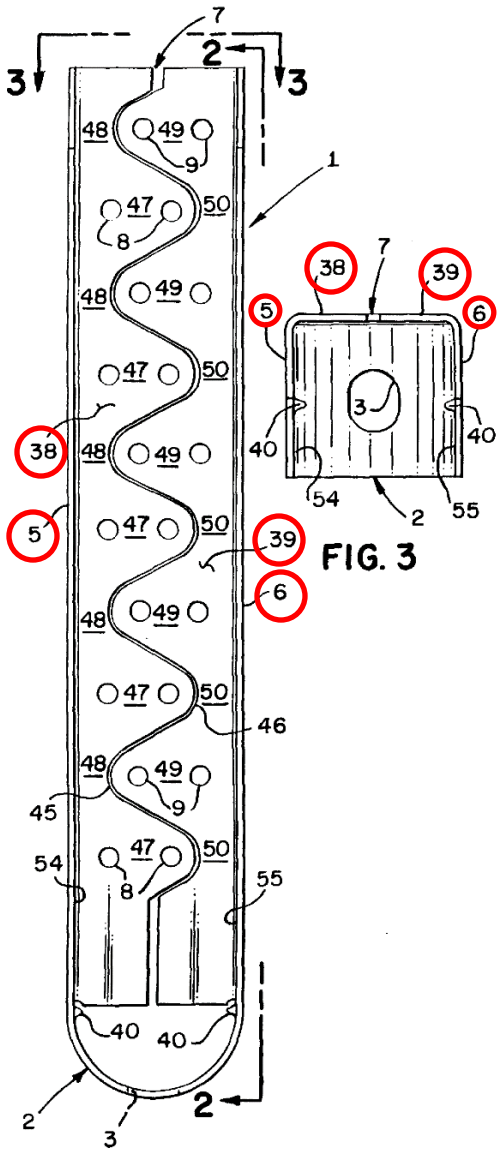


FIG. 3

FIG. 1

EX2015: Figs. 1 and 3 (annotated).

Thus, as Simpson's own statements demonstrate—and are consistent with the understanding of a POSA—the proper construction of "planar extension plate" includes portions of *de minimis* bends at the ends of the plate connecting the plate to other elements. EX2001: ¶¶122-123, 144.

With this proper construction in mind, it is clear Columbia was in possession of "planar extension plates" that "extend through the opening in the fire retardant sheathing," as recited by claim 20. EX2001: ¶¶145-146. The '339 Patent states the "two extension flanges 60 [] extend through the fire retardant sheathing 34" and "the extension flanges 60 extend through a slot 72 in the fire retardant sheathing 34." EX1001: 5:5-6, 5:35-36. Further, Figs. 11 and 36 (reproduced below) show the planar extension plates (60, 160), with portions of the bends at the front and rear ends thereof, extend through the opening in the fire retardant sheathing.[13] EX2001: ¶147.

[13] In Fig. 11, the bends of the planar extension plates (60) are depicted as starting as the planar extension plates exit the slot (72) and thus provide written description support even under Simpson's improper claim construction. EX2001: ¶148.

FIG. 11

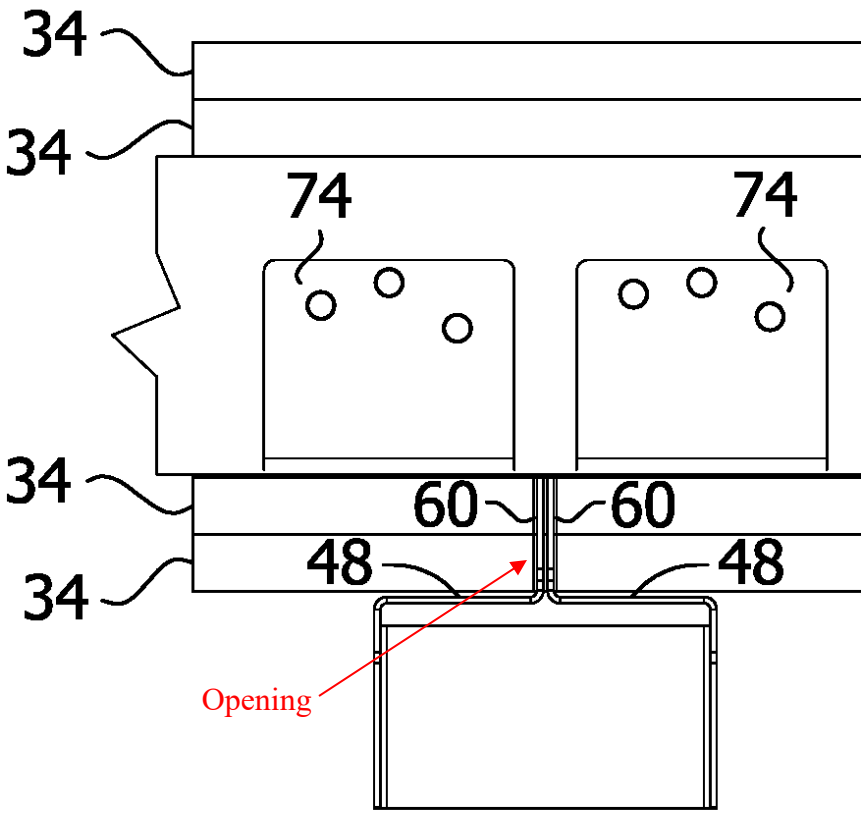
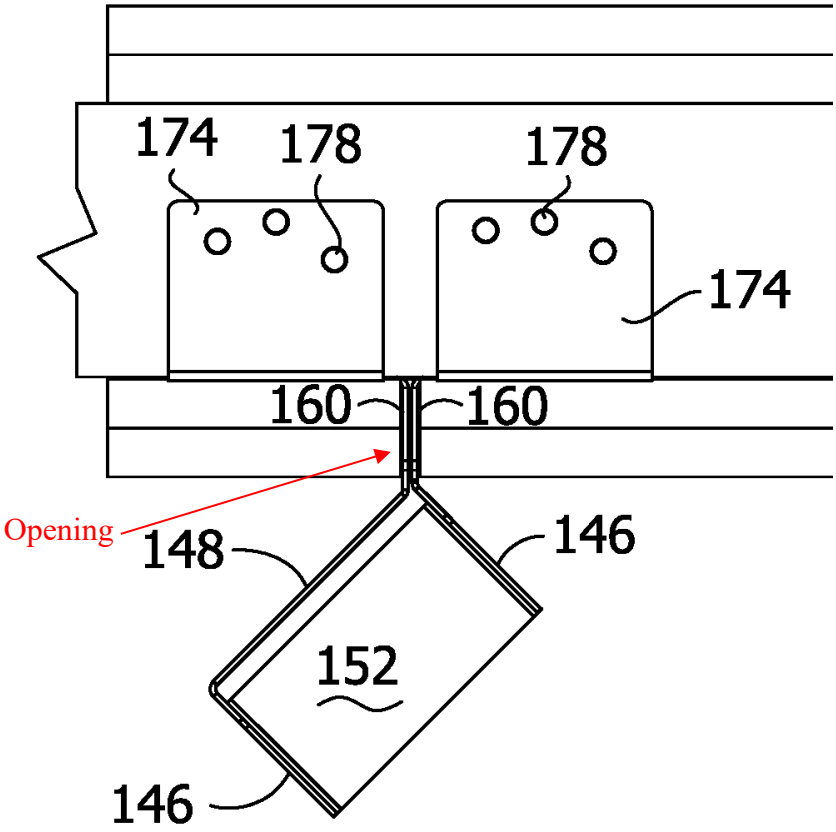


FIG. 36



EX1001: Figs. 11 and 36 (enlarged, annotated).

Accordingly, the specification provides written description support for claims 20-23 and undermines the basis for institution. EX2001: ¶149.

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.[14] This is not the case.

The Federal Circuit has expressly 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 Federal Circuit "did not create a heightened written description standard for negative claim limitations"). 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 as of the filing date." *Novartis Pharms. Corp. v. Accord Healthcare, Inc.*, 38 F.4th 1013, 1020 (Fed. Cir. 2022) (internal quotations omitted); EX2001: ¶150.

[14] *Omega Eng'g, Inc. v. RaytekCorp.*, cited by Simpson, never states the only way for a negative limitation to be supported is by an express disclaimer. 334 F.3d 1314, 1323 (Fed. Cir. 2003). Instead, the Federal Circuit was admonishing the trial court for importing a negative limitation into a claim without any "anchor in the explicit claim language" through claim construction. *Id*. at 1322.

1. Claims 20-23: "Only" the Extension Plates Extending Through the Fire Retardant Sheathing Has Written Description Support

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

FIG. 11

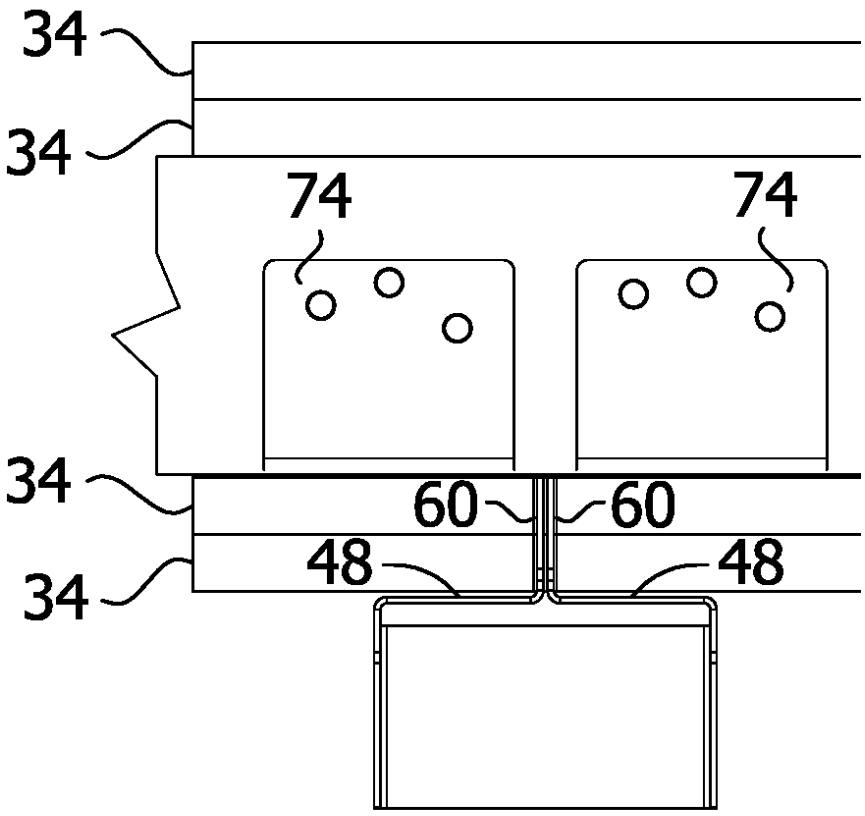


FIG. 13A

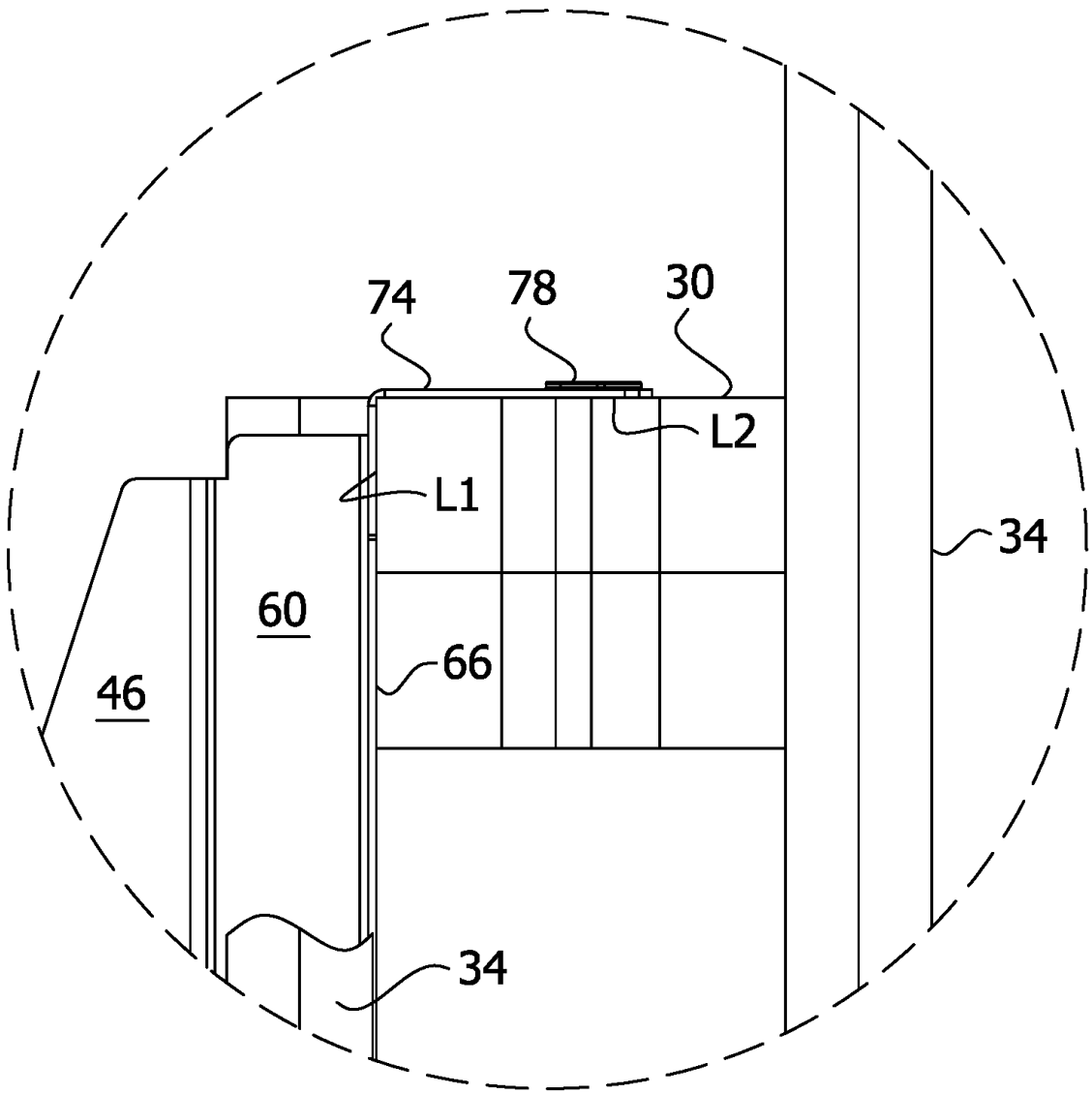
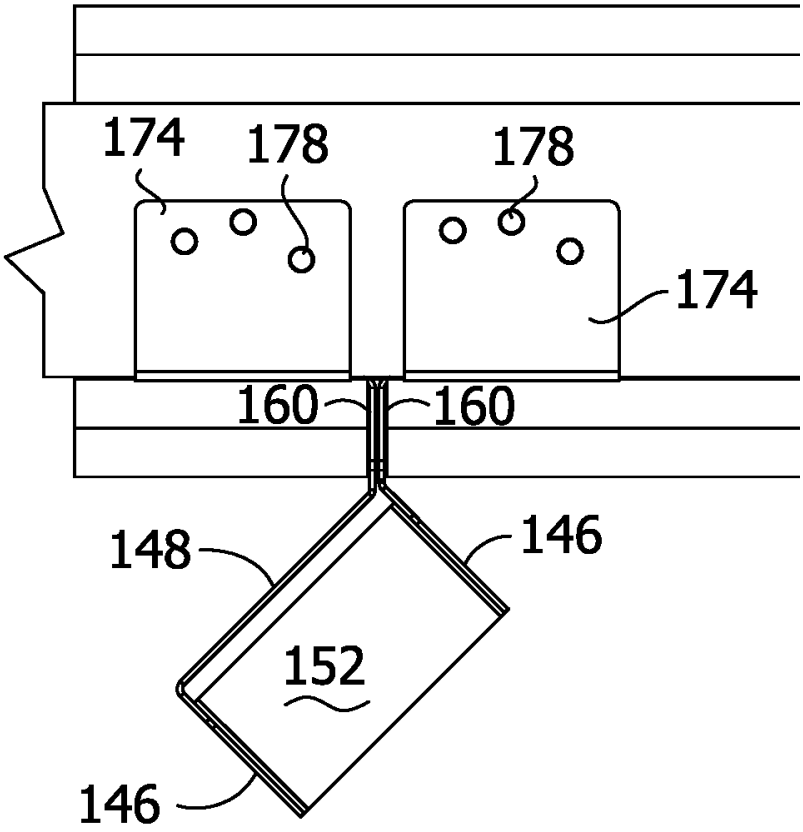


FIG. 36



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

Further, the '339 Patent does provide a reason to have only the planar extension plates to extend through the fire retardant sheathing when explaining:

- "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.

- "the integrity of the fire retardant sheathing should be maintained and ***interruptions of the sheathing kept to a minimum***." EX1001: 1:44-46.

- "The truss hanger 26, 126 permits a floor truss 12 to be secured to a wall 28 through fire retardant sheathing 34 with ***minimal interruption to the sheathing***. Installation of the truss hanger minimally disrupts the continuity of the sheathing and therefore ***does not reduce the fire resistive rating of a fire rated assembly***. The extension flanges 60, 160 ***extend through*** the fire retardant sheathing 34 so that ***the sheathing is interrupted only by the slot 72 required to receive the flanges***." EX1001: 11:33-41; EX2001: ¶154.

The POSA understands extending additional components of the hanger (beyond only the planar extension plates) through the opening in the fire retardant sheathing would require a larger opening, counter to the '339 patent's goal of keeping "interruptions of the sheathing [] to a minimum" to maintain the integrity and fire retardant characteristics of the sheathing. EX2001: ¶155; *Santarus, Inc. v. Par Pharmaceutical, Inc*., 694 F.3d 1344, 1351 (Fed. Cir. 2012) ("a person of ordinary skill in this field would have known the properties and effects of sucralfate, and would have understood from the specification that disadvantages of sucralfate may be avoided by the Phillips formulation").

Accordingly, the specification provides written description support for claims 20-23. EX2001: ¶156.

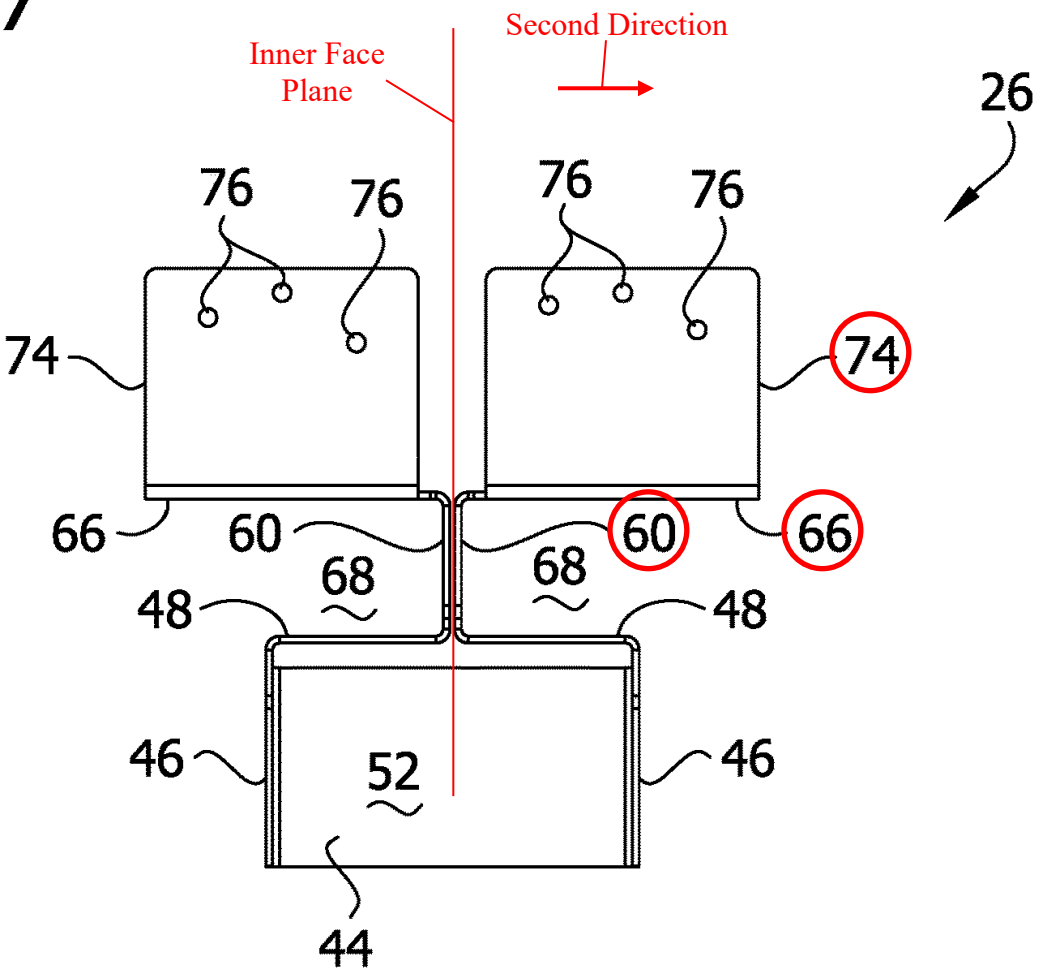
2. Claim 26: "Entirely" is a Positive Limitation and Has Written Description Support

Turning to claim 26, Simpson tries to categorize the term "entirely" as a negative claim limitation. Pet: 14; EX2001: ¶¶157-158. Simpson offers no support for this interpretation. Pet: 14. Contrary to Simpson assertion, 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 as recited by claim 26—i.e., "the back flange and the top flange [are] ***entirely*** disposed outward, in the second direction, of the inner face plane[15]." EX1001: claim 26; EX2001: ¶159.

The '339 Patent demonstrates Columbia was in possession of this limitation of claim 26. EX2001: ¶160. The specification explains "[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: ¶161. Further, Fig. 7 shows this arrangement as well. *Id*.

[15] 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, the specification provides written description support for claim 26, and undermines the basis for institution. EX2001: ¶162.

VII. 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). "[I]n assessing definiteness, claims are to be read in light of the patent's specification and prosecution history." *Id*.; 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: claim 1 and 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) (holding "vivid colored appearance" is definite because "the language of the claim itself confirms that the lens's 'vivid colored appearance' results directly from the 'differential effect'" and "the claim itself defines the lens's structural attributes that produce the 'differential effect'"); *Exmark Mfg. Co. v. Briggs & Stratton Power Prods. Grp, LLC*, 879 F.3D 1332, 1345-46 (Fed. Cir. 2018) (finding no indefiniteness when the claims themselves define the scope of the terms and "[t]he function of the [term] provides further guidance regarding the scope of the claim language"); *Niazi Licensing Corp.*, 30 F.4th at 1349 (holding terms are definite because "[t]he claim language itself provides guidance on what this term means"). Thus, the independent claims themselves provide the "objective boundaries by which a skilled artisan could determine the scope of the claims." *Id.*; EX2001: ¶175.

The specification confirms this understanding of what a fire wall hanger is, saying:

- "***hanger 26, 126*** permits a floor truss 12 to be secured to a wall 28 through ***fire retardant sheathing*** 34 with minimal interruption to the sheathing. Installation of the truss hanger minimally disrupts the continuity of the sheathing and therefore does not reduce the fire resistive rating of a ***fire rated assembly***." EX1001: 11:33-38.
- "hangers 26 can be used with … ***fire-rated wall assembly***, such as a ***2-hour fire-resistive wall assembly***. … 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***…. hanger 26 ***includes*** a ***channel-shaped portion*** 38, an ***extension portion*** 40, and a ***connection portion*** 42." EX1001: 4:30-39; EX2001: ¶176.

While the exact term "fire wall hanger" may not have been used in these excerpts, 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) ("word-for-word alignment of disclosed embodiments (such as the extraction tanks depicted in Figure 1) with claim language is unnecessary when the meaning of a claim term can be ascertained from the intrinsic record."); *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1571 (Fed. Cir. 1996) ("As the Board recognized, however, *ipsis verbis* disclosure is not necessary to satisfy the written description requirement of section 112. Instead, the disclosure need only reasonably convey to persons skilled in the art that the inventor had possession of the subject matter in question.");

Messagephone, Inc. v. Svi Sys., Nos. 99-1471, 99-1478, 2000 U.S. App. Lexis 19976 at 16-17 (Fed. Cir. 2000) ("exact terms employed in the claims need not appear verbatim in the specification"); *ICN Photonics, Ltd. v. Cynosure, Inc.*, 73 Fed. Appx. 425, 429 (Fed. Cir. 2003) ("That support may be a verbatim statement in the specification, but it need not be. Indeed, different language that expresses the same meaning found in the originally-filed specification may be sufficient."); *In re Lukach*, 442 F.2d 967, 969 (C.C.P.A. 1971) ("the invention claimed does not have to be described in *ipsis verbis* in order to satisfy the description requirement of § 112."); EX2001: ¶177.

"Fire wall" is a well-recognized term in the art. EX2042: 21 (defining "fire wall" as a "fire-resistance-rated wall having protected openings, which restricts the spread of fire"); EX2001: ¶178. Even Simpson uses the term "fire wall hanger" in their own product literature, demonstrating they (and a POSA) understand what the term means. EX2007: 1 ("Fire Wall Hangers"); EX2016: 1 ("Fire Wall Hanger"); EX2017: 1 ("Fire Wall Hanger"); EX2018: 1 ("Fire Wall Hanger"); EX2019: 1 ("Fire Wall Hanger"); EX2020: 1 ("Fire Wall Hanger"); EX2021: 1 ("fire wall hangers"); EX2022: 1 ("Fire Wall Hanger"); EX2023: 1 ("Fire Wall Hangers"); EX2001: ¶¶179-180. While these uses by Simpson started in 2017, the term's use did not change from the time of the '339 Patent's priority date (December, 2013). EX2001: ¶181. In fact, MiTek was using the term "fire wall hanger" as the name

for the hanger illustrated in the '339 Patent no less than 7-months after the priority date. EX2044: 8 ("Fire Wall Hanger"); EX2045: 1 ("Fire Wall Hanger"); EX2046: 1 ("Fire Wall Hanger"); EX2001: ¶181.

Thus, the POSA understands a fire wall hanger is a hanger having a channel-shaped portion, an extension portion, and a connection portion. EX2001: ¶182. Accordingly, the term "fire wall hanger" is definite and fails to provide a basis for institution. EX2001: ¶183.

B. Claims 1-31: "Opening Outwardly" is Definite

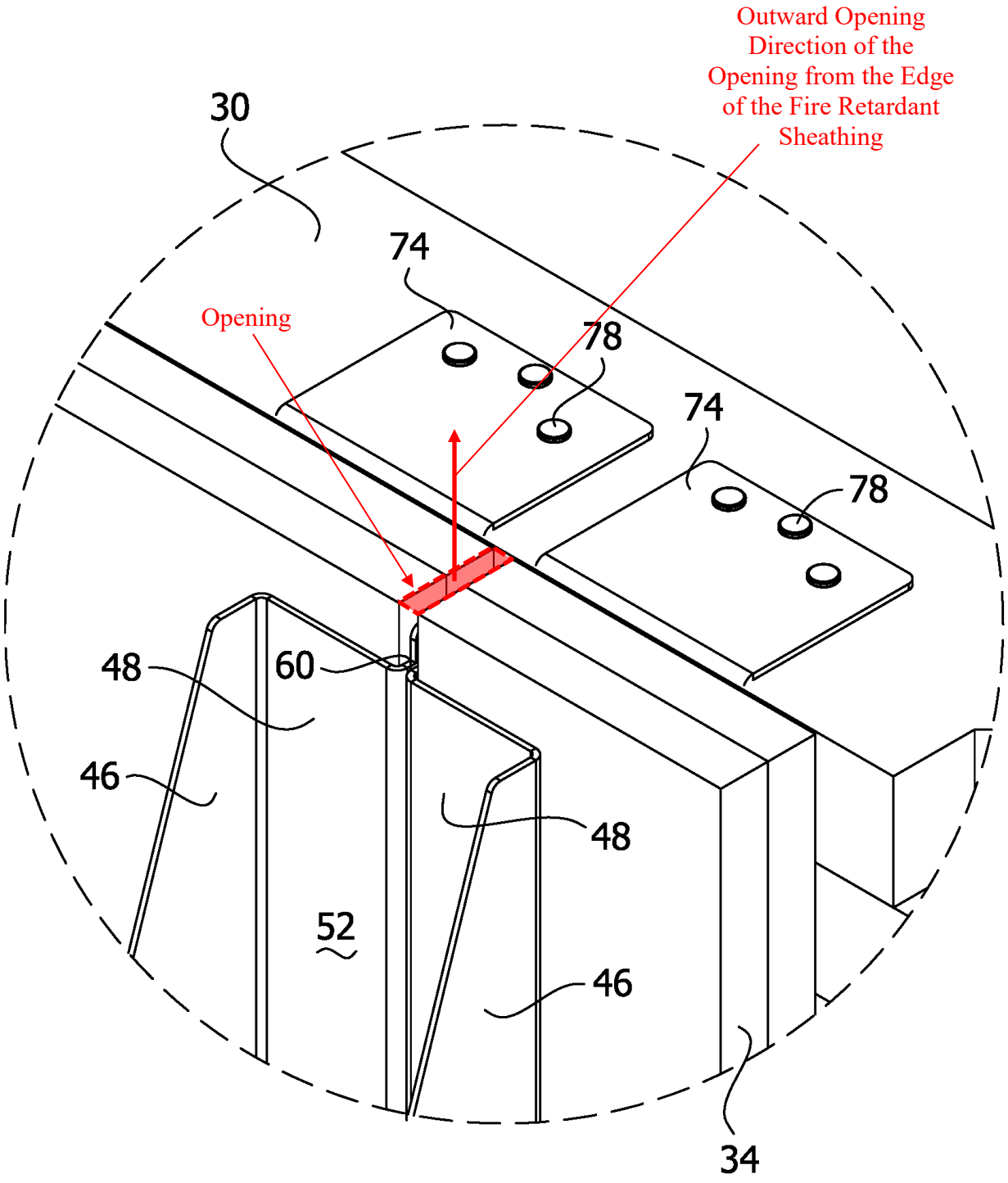
Simpson's argument is conclusory, providing no clear reason why an "opening … [having an open top][16] ***opening outwardly*** from the exterior edge of the fire retardant sheathing" is indefinite. Pet: 16; EX2001: ¶¶184-185. Instead, Simpson's argument merely points out "outwardly" is different than "inwardly." Pet: 16. At best, Simpson misreads the claim limitation by conflating the "cutting" step in which the cut is made "inwardly" from the top edge of the fire retardant sheathing with the resultant description of the opening formed by the cutting. EX2001: ¶¶186-187.

In view of the claim language itself and the specification, this limitation is abundantly definite. EX2001: ¶188. This claim limitation describes the physical

[16] Recited by claim 27.

characteristics of the "opening" after it has been formed by the "cutting" step—that the opening (72) opens outwardly of the edge of the fire retardant sheathing (34), as shown below. EX2001: ¶189.

FIG. 10A



EX1001: Fig. 10A (annotated)

In other words, the opening (e.g., the open top thereof) at the edge of the fire retardant sheathing faces outward from the edge of the fire retardant sheathing. EX2001: ¶190. This is consistent with the plain and ordinary meaning of the term. EX2024: 4 (definition of "outwardly" is "toward the outside"); EX2025: 4 (definition of "outward" is "toward the outside"); EX2001: ¶190.

This is also consistent with how the term has been used in the construction arts. EX2001: ¶¶191, 195. For example, in U.S. Publication No. 2002/0104279 (EX2026) a plurality of flared recesses (42) in the front face (40) are described as "***opening outwardly*** and upwardly from bottom (36) to the top (34)." EX2026: ¶[0041]; EX2001: ¶191.

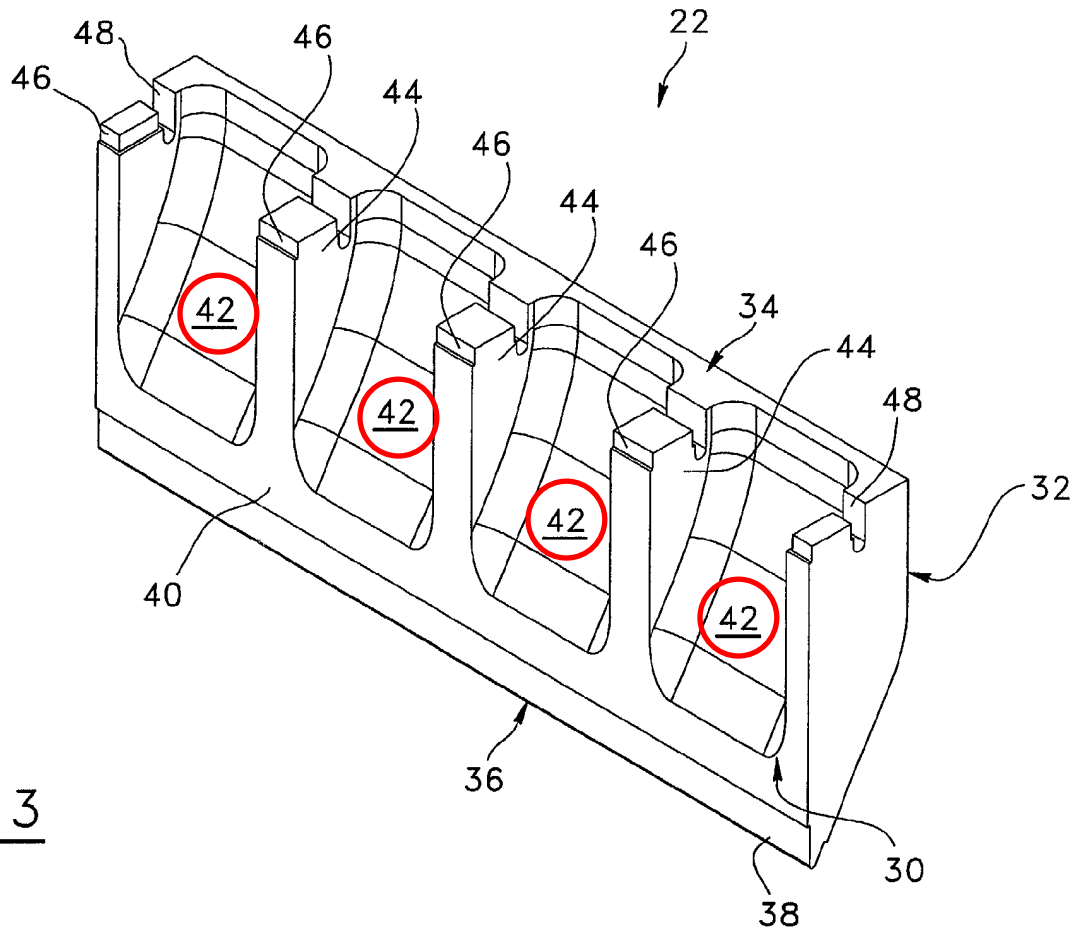


FIG. 3

EX2026: Fig. 3 (annotated).

Similarly, in 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.

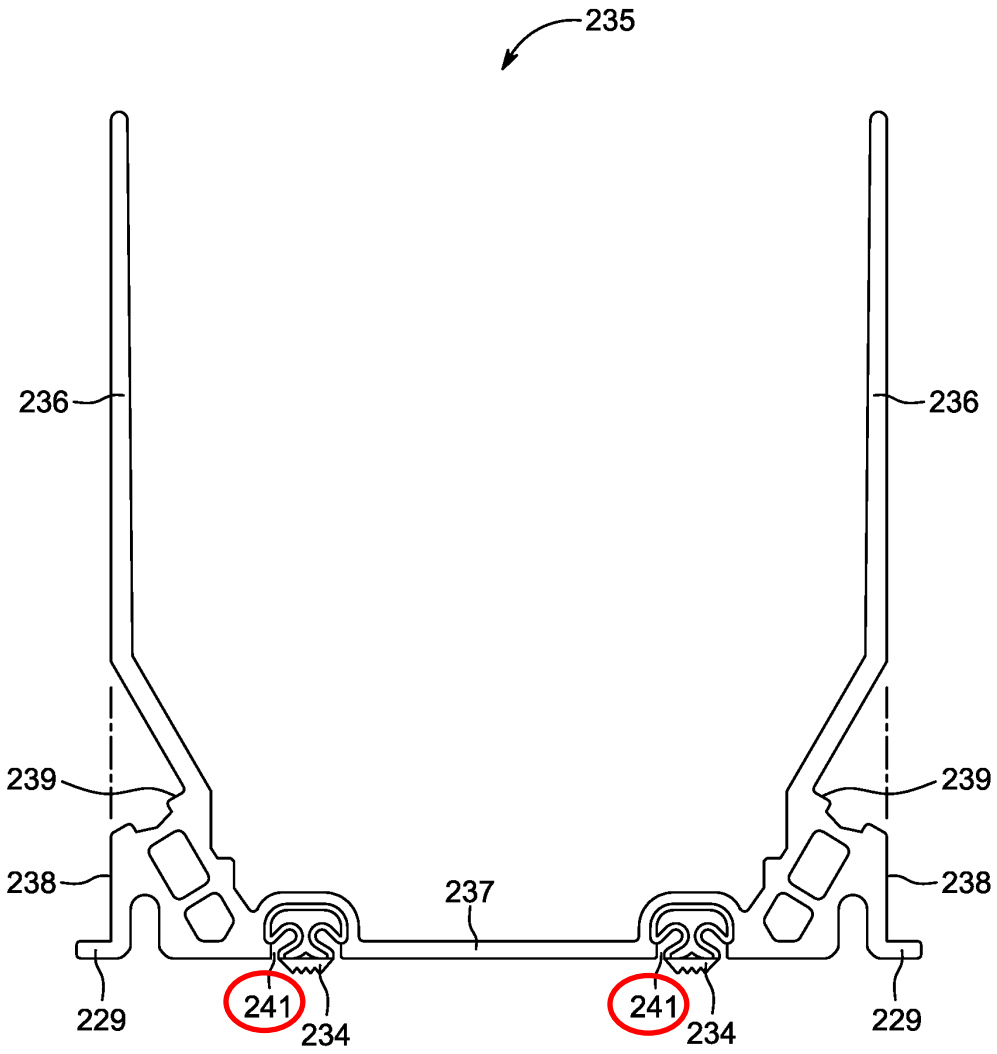
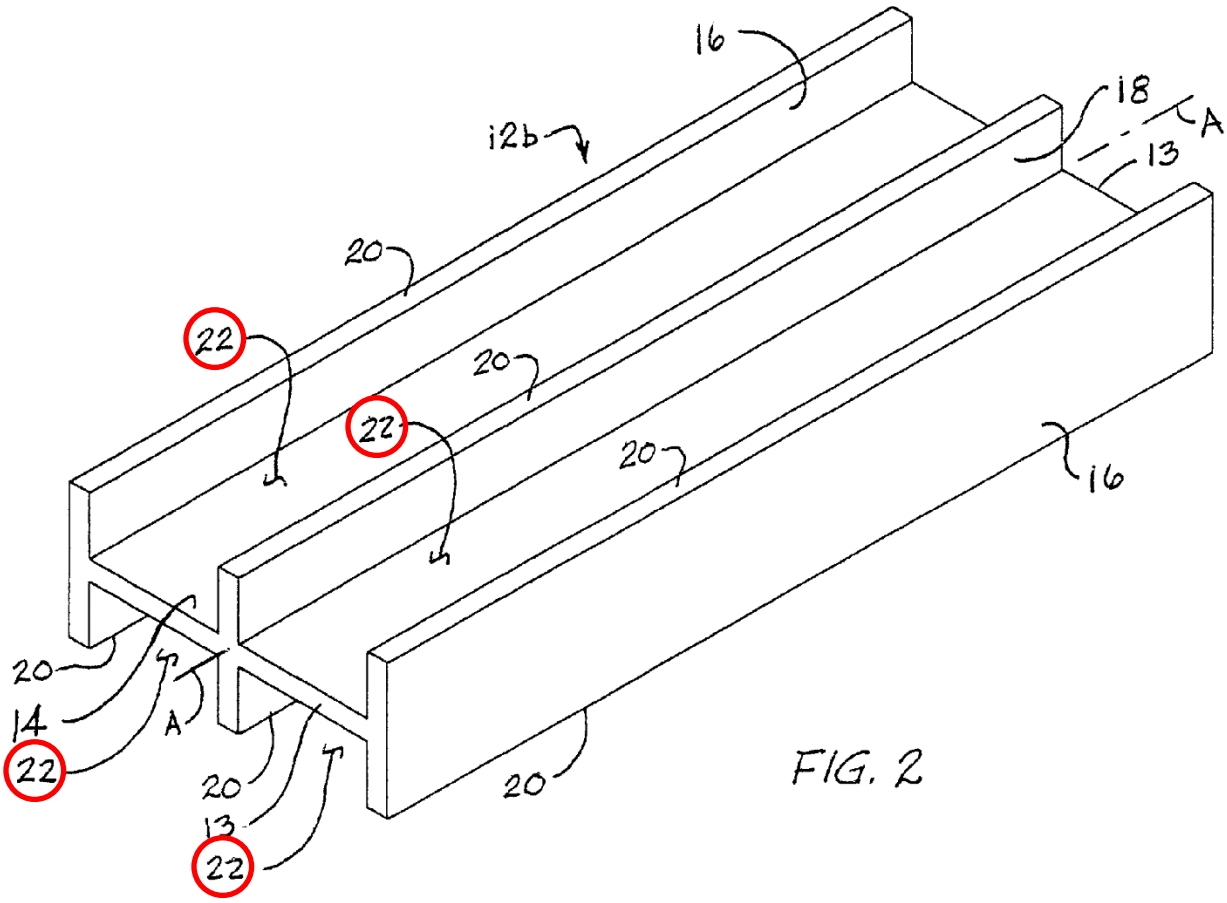


Figure 12

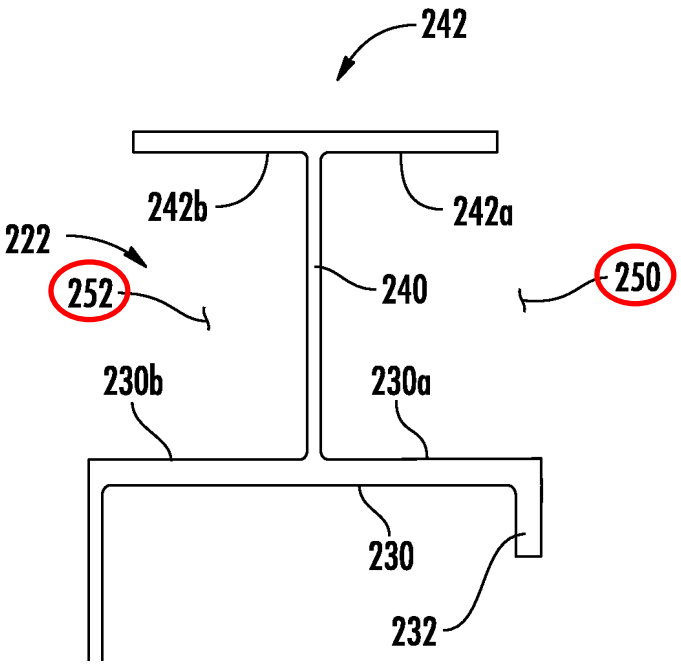
EX2027: Fig. 12 (annotated).

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.



EX2028: Fig. 2 (annotated).

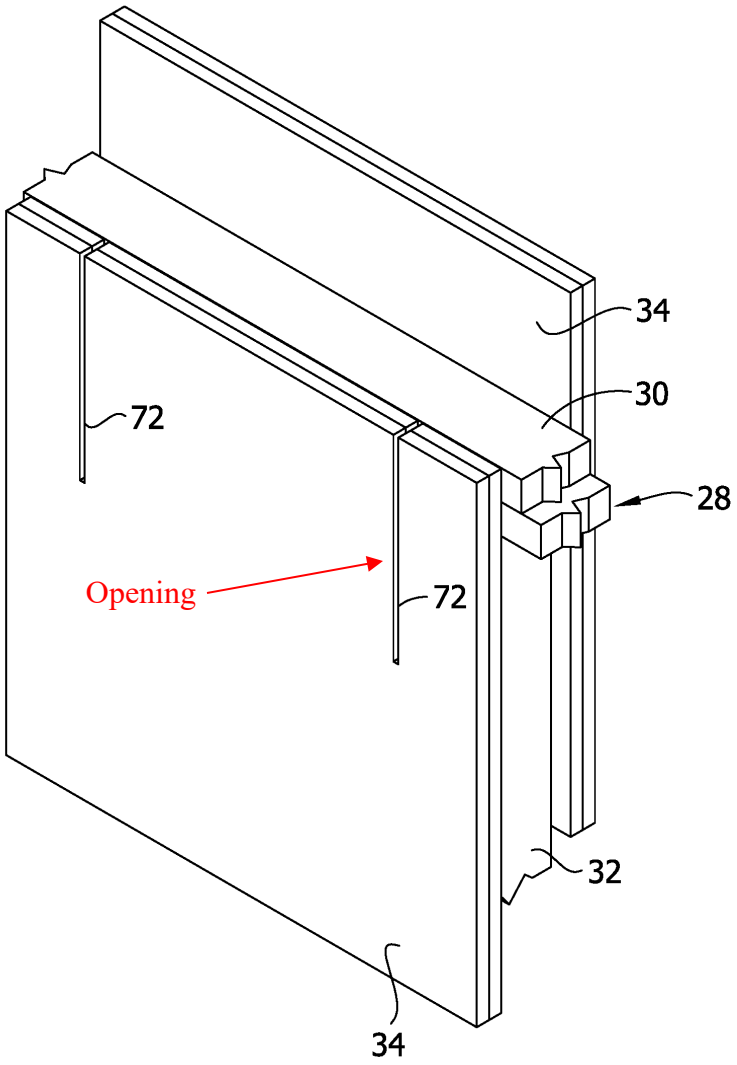
In U.S. Publication 2013/0133284 (EX2029) a longitudinally extending channel (252) is described as "***opening outwardly*** in an opposed direction to channel 250." EX2029: ¶[0035]; EX2001: ¶194.



EX2029: Fig. 4 (cropped, annotated).

Returning to the '339 Patent, the outward directionality of the opening (72) at the edge of the fire retardant sheathing (34) is the natural result of "a cutting tool (e.g., a drywall cutout tool) [being] 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," the result of which is shown in Fig. 9. EX1001: 6:32-34; EX2001: ¶196.

FIG. 9



EX1001: Fig. 9 (annotated).

Opening "outwardly" (e.g., having an open top) is what allows the fire retardant sheathing to be mounted to the frame wall *around* the fire wall hanger, after the fire wall hanger is mounted to the wall as recited by the claims and described in the '339 Patent, by allowing the extension flanges to move into the

opening via the open top as the fire retardant sheathing is moved upward. EX1001: claim 1, 8:16-21; EX2001: ¶197.

The claim language's use of "outwardly" and cutting "into"—"cutting an opening ***into*** an exterior edge of fire retardant sheathing, the opening … opening ***outwardly*** from the exterior edge of the fire retardant sheathing"—further informs the POSA that "outwardly" provides a directionally opposite "into" the fire retardant sheathing. EX2001: ¶198. Even Simpson agrees with this point. Pet: 16 ("the term 'outwardly" … is meant to be different from … 'inwardly'").

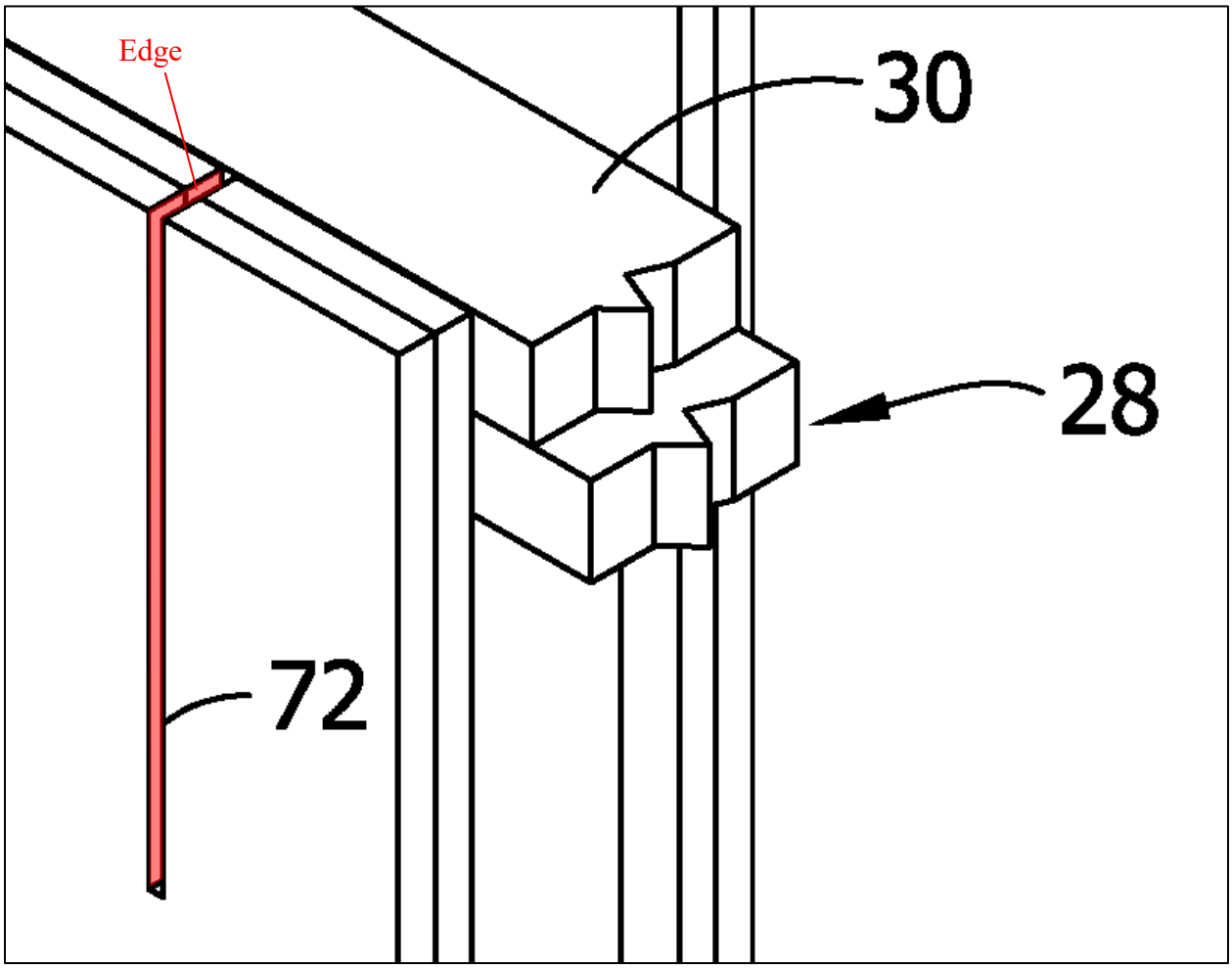
In view of the '339 Patent's specification and the knowledge of a POSA, the POSA understands what an opening "opening outwardly" from the exterior edge of the fire retardant sheathing means. EX2001: ¶199. Accordingly, this limitation is definite and fails to provide a basis for institution.

C. <u>Claims 1-26:</u> "Bounding" is Definite

Simpson's argument the term "bounding" is indefinite relies completely on their incorrect interpretation "bounding" means to ***fully or completely***[17] enclose or confine. Pet: 16-18; EX2001: ¶¶200-201. However, Simpson is interpreting

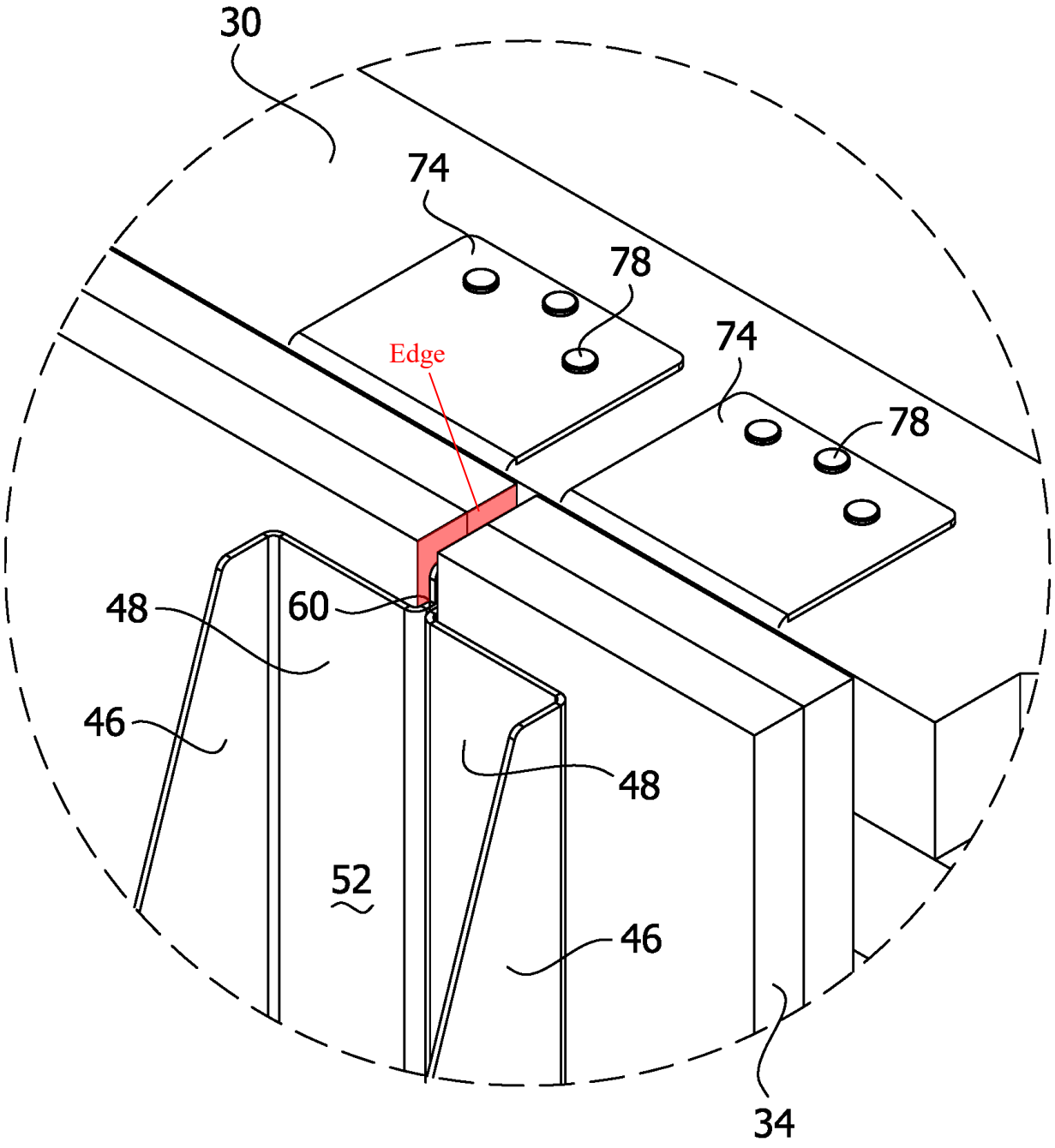
[17] Simpson obscures their "fully enclose or confine" interpretation but this interpretation is made clear by Simpson's example "[a] fence on only one side of a field does not 'bound' or confine the field." Pet: 17.

"bounding" in a vacuum to invalidate the claims, instead of interpreting the term "in light of the patent's specification" as instructed by the Supreme Court. *Nautilus, Inc.*, 572 U.S. at 908. In view of the '339 Patent's figures, it is clear "bounding" allows for a single-edge to bound an opening (72). EX2001: ¶204.



EX1001: Fig. 9 (enlarged, annotated).

FIG. 10A



EX1001: Fig. 10A (annotated)

As discussed in Section VI(B), the plain and ordinary meaning of "bounding" allows for a single-edge of the sheathing to bound an opening. *See e.g.*, EX2011: 4 (dictionary example: "the ground was bounded by a main road on one side and a meadow on the other"); EX2012: Fig. 7, claims 5, 10, 22, 25 (Simpson's own use of "bounding" to describe the boundary of only one side of an element); EX2001: ¶¶202-203. With this correct understanding, the term "bounding" is definite. EX2001: ¶205.

Accordingly, this ground fails to provide a basis for institution.

D. <u>Claims 13 and 14:</u> The '339 Patent Provides "Object Boundaries" for "Close Conformance"

"Claim language employing terms of degree has long been found definite where it provided enough certainty to one of skill in the art when read in the context of the invention." *Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1378 (Fed. Cir. 2014). Terms of degree are definite when the patent "provide[s] objective boundaries for those of skill in the art." *Guangdong Alison Hi-Tech Co. v. Int'l Trade Comm'n*, 936 F.3d 1353, 1360 (Fed. Cir. 2019); *Niazi Licensing Corp.*, 30 F.4th at 1349 ("patent claims with … terms of degree must provide objective boundaries for those of skill in the art in the context of the invention to be definite") (internal quotations omitted). "Intrinsic evidence—such as the claims, figures, [and] written description … of a patent—can provide the necessary

objective boundaries." *Guangdong Alison Hi-Tech Co.*, 936 F.3d at 1360; EX2001: ¶¶206-209.

In the context of the claims 13 and 14—"the edge of the fire retardant sheathing bounding the opening is in close conformance with a first exterior face of the extension portion of the fire wall hanger"—"close conformance" means the edge of the fire retardant sheathing is within a short distance away and corresponding in form or shape to the exterior face of the extension portion. EX2001: ¶210. This is the plain and ordinary meaning of the phrase. EX2030: 4 (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.

This plain and ordinary meaning is also consistent with how Simpson has used the phrase (or equivalent language) *in their own patents*:

U.S. Patent 9,938,709:

- "The stiffener [7] and the connection element [6] of the connector [1] are formed with ***closely*** or exactly ***conforming*** members and surfaces so that stretch of the connection element is minimized." EX2034: 1:67-2:3.
- "said base [21] and back member [9] of said connection element [6] are formed to ***substantially conform*** ... to the shape of said stiffener [7]." EX2034: claim 13; EX2001: ¶211.

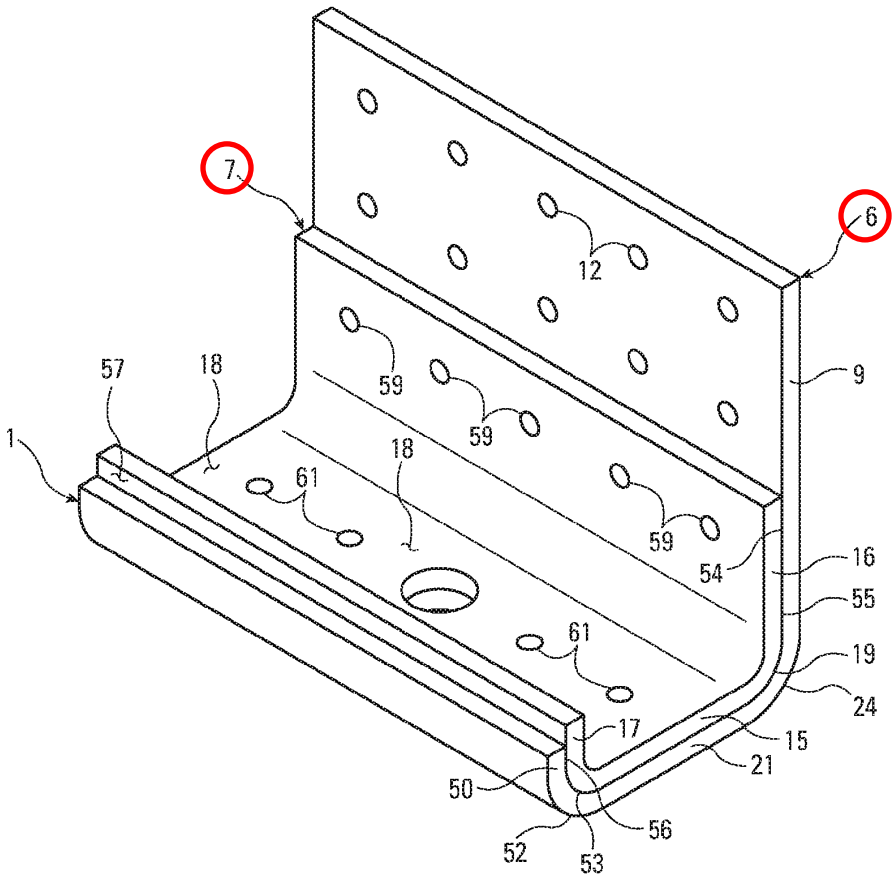


Fig. 5

EX2034: Fig. 5 (annotated).

U.S. Patent 5,237,613:

- "As seen in FIG. 2, the configuration of the guide interior 13 ***closely conforms*** to the cross-sectional shape of the chisel blade 36." EX2035: 4:3-5; EX2001: ¶212.

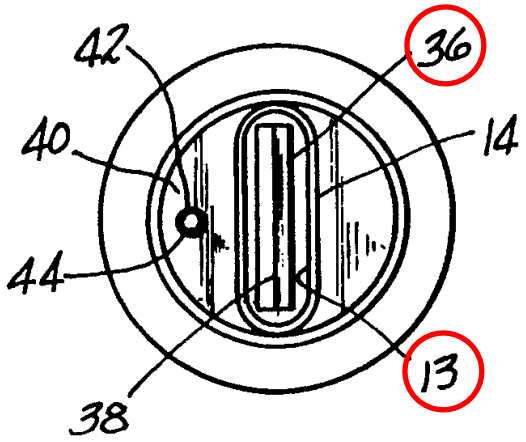
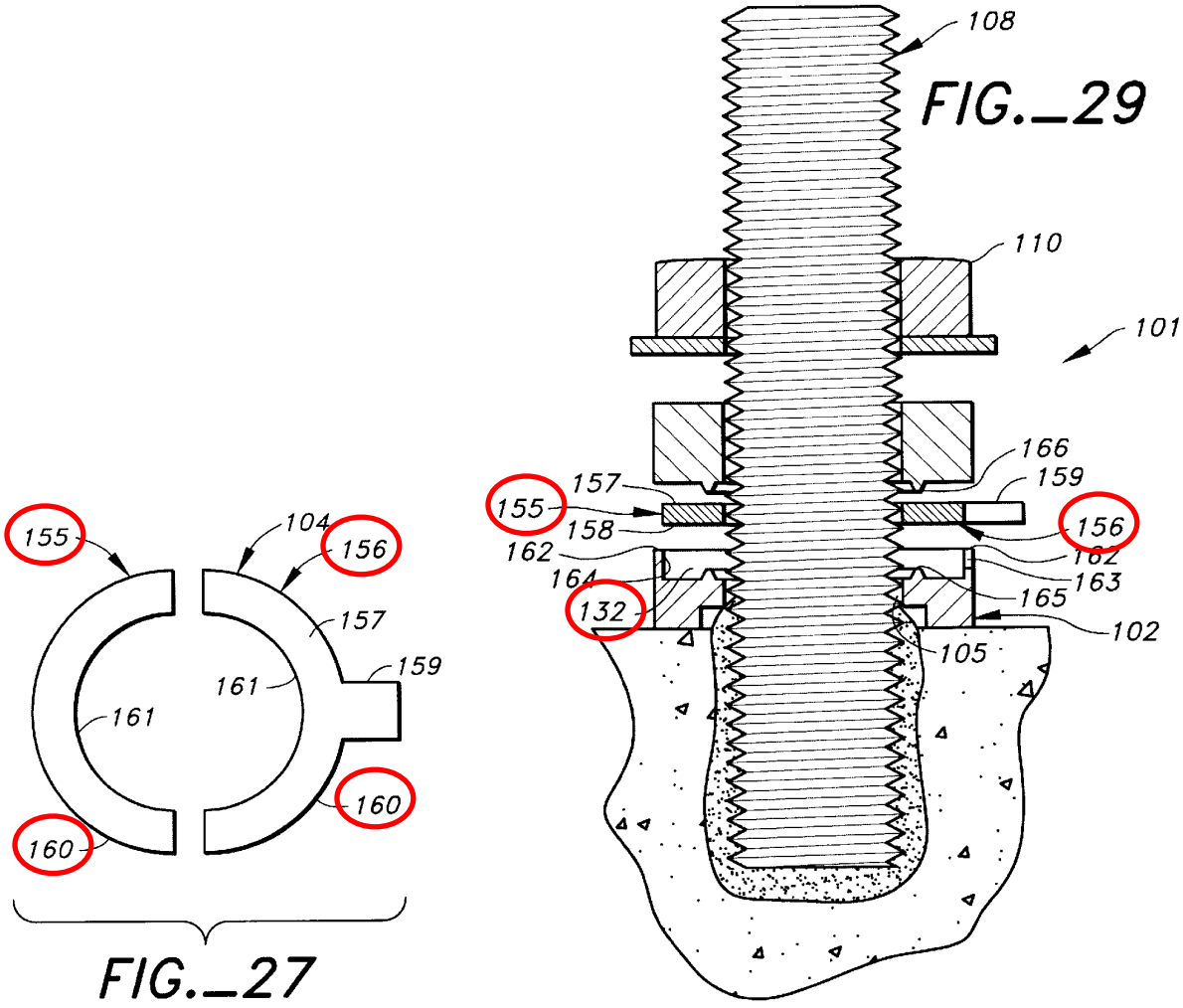


FIG-2

EX2035: Fig. 2 (annotated).

U.S. Patent No. 6,135,687:

- "The convex sides 160 of the c-shaped pieces 155 and 156 should ***conform*** to the shape of the main recess 132, such that there is a ***close fit*** between the c-shaped pieces 155 and 156 and the main recess 132." EX2036: 16:10-13; EX2001: ¶213.



EX2036: Figs. 27 and 29 (annotated).

In each case, Simpson uses "close conformance", or similar wording, to describe elements within a short distance away and corresponding in form or shape to one another. EX2001: ¶214. These uses by Simpson demonstrate Simpson (and the POSA) is familiar with the meaning and boundaries of "close conformance," even absent any guidelines from the specification, making it definite. EX2001: ¶214; *Guangdong Alison Hi-Tech Co.*, 936 F.3d at 1360 ("[e]xtrinsic evidence can also help identify objective boundaries").

Furthermore, the '339 Patent's figures and specification do provide clear "objective boundaries" for the phrase "close conformance." EX2001: ¶215; *Biosig Instruments, Inc. v. Nautilus, Inc.*, 783 F.3d 1374, 1382-83 (Fed. Cir. 2015) ("the [] patent's claim language, specification, and the figures illustrating the 'spaced relationship' … are telling and provide sufficient clarity to skilled artisans as to the bounds of this disputed term"). 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").

In addition, the '339 Patent's figures provide a clear example to a POSA of the planar edge of the fire retardant sheathing (34) matching the form of and being within a short distance of the planar exterior face of the extension portion (40). EX2001: ¶218; *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1335 (Fed. Cir. 2010) ("[b]ecause the intrinsic evidence [] provides a general guideline and examples sufficient to enable a [POSA] to determine the scope of the claims, the claims are not indefinite even though the construction of the term 'not interfering

substantially' defines the term without reference to a precise numerical measurement") (internal quotations and citation omitted).

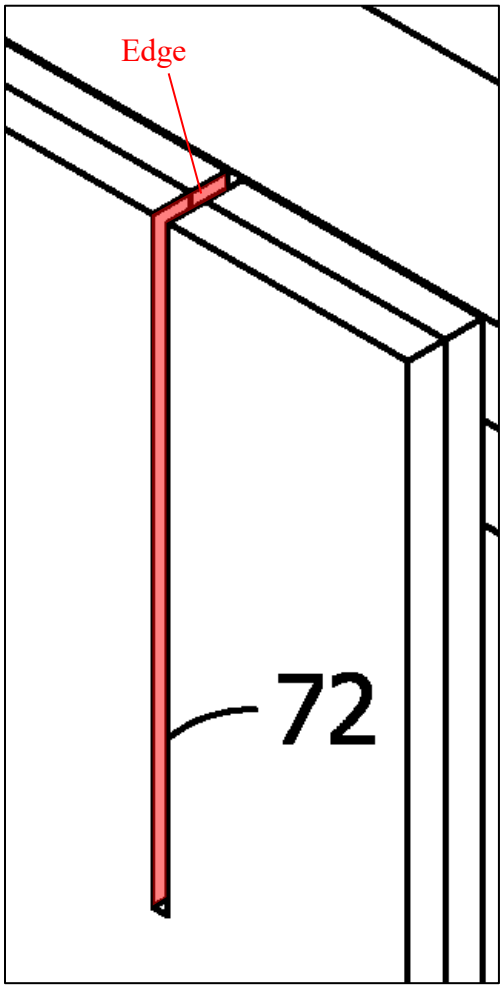
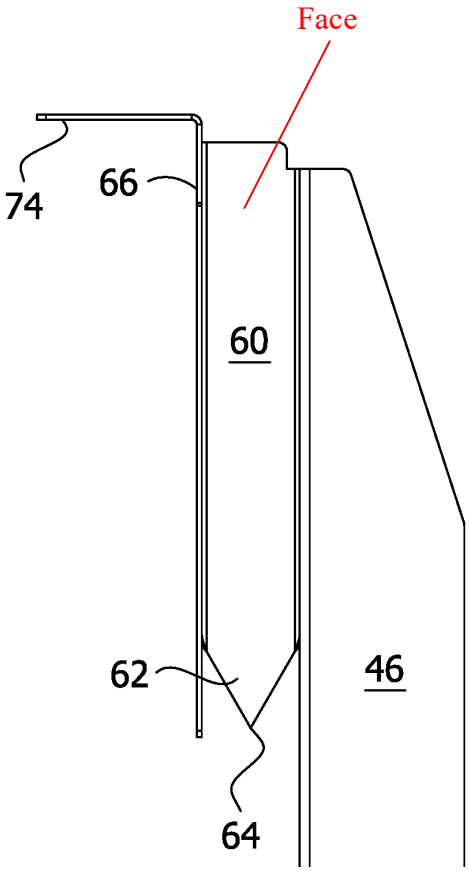
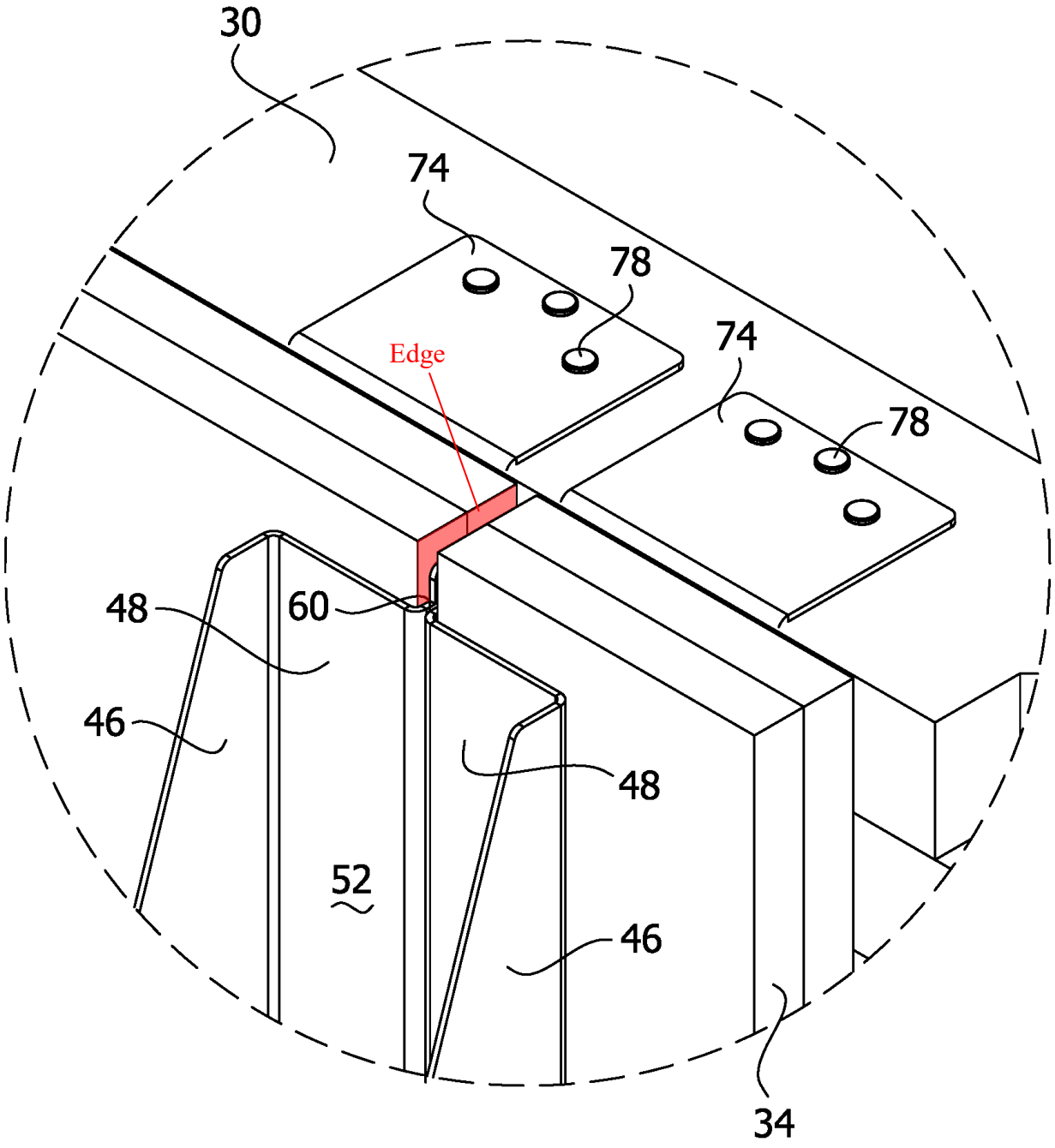


FIG. 5



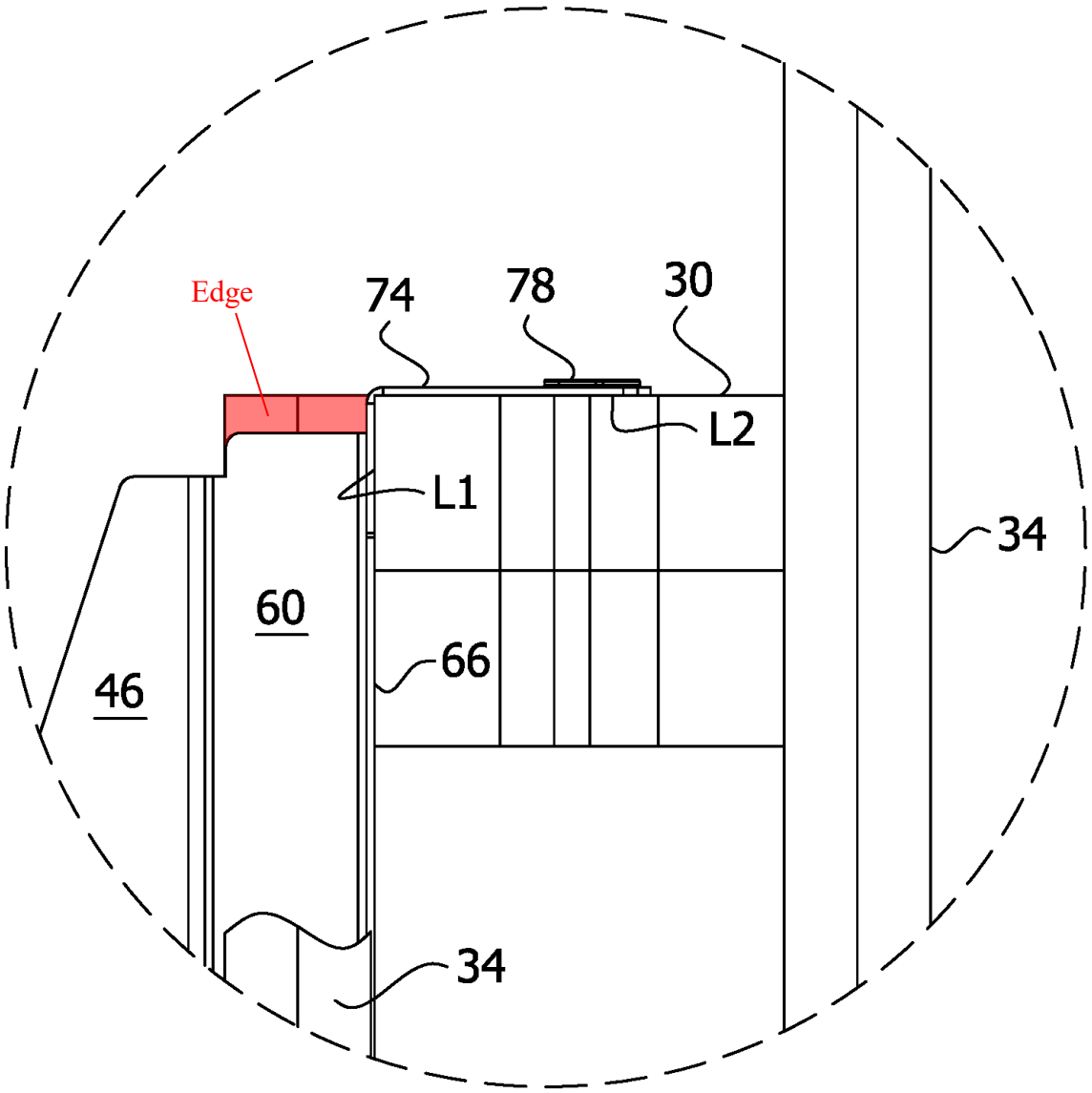
EX1001: Figs. 5 and 9 (enlarged, annotated).

FIG. 10A



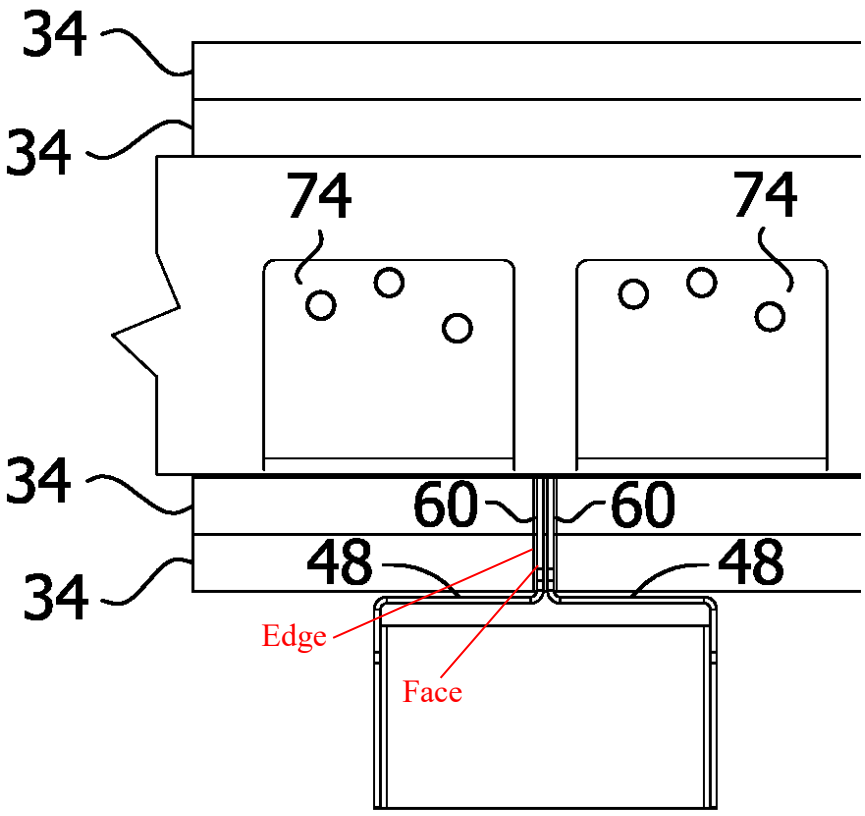
EX1001: Fig. 10A (annotated)

FIG. 13A



EX1001: Fig. 13A (annotated)

FIG. 11



EX1001: Fig. 11 (enlarged, annotated).

Further, the '339 Patent provides a reason for the close conformance, explaining:

- "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.

- "the integrity of the fire retardant sheathing should be maintained and ***interruptions of the sheathing kept to a minimum***." EX1001: 1:44-46.

- "The truss hanger 26, 126 permits a floor truss 12 to be secured to a wall 28 through fire retardant sheathing 34 with ***minimal interruption to the sheathing***. Installation of the truss hanger minimally disrupts the continuity of the sheathing and therefore ***does not reduce the fire resistive rating of a fire rated assembly***. The extension flanges 60, 160 ***extend through*** the fire retardant sheathing 34 so that ***the sheathing is interrupted <u>only</u> by the slot 72 required to receive the flanges***." EX1001: 11:33-41; EX2001: ¶219.

Such statements further inform the POSA on the meaning of "close conformance," to keep sheathing interruptions to a minimum to maintain the integrity and fire protection capabilities of the fire-resistive wall assembly. EX2001: ¶220; *Sonix Tech. Co. v. Publ'ns Int'l, Ltd.*, 844 F.3d 1370, 1379 (Fed. Cir. 2017) (finding definiteness because there "are statements that provide guidance on how to create visually-negligible indicators, and specific examples that provide points of comparison for the result").

Because the '339 Patent provides the POSA with "objective boundaries" for "close conformance", this phrase is definite. EX2001: ¶221. Accordingly, this ground fails to provide a basis for institution.

VIII. SIMPSON'S ARGUMENTS FOR CLAIMS 16, 17, AND 20-23 ARE INADEQUATE

A. <u>Claims 16 and 17:</u> 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) (section 112(a)'s written description requirement and Section 112(b)'s definiteness requirement "are analytically distinct"); *Application of Cormany*, 476 F.2d 998, 999-1000 (C.C.P.A 1973) ("We regard indefiniteness of claim language and inadequate support for it in the specification to be distinct questions, and … consider them separately"); M.P.E.P § 2174 ("The requirements of 35 U.S.C. § 112(a) and (b) ... are separate and distinct.").

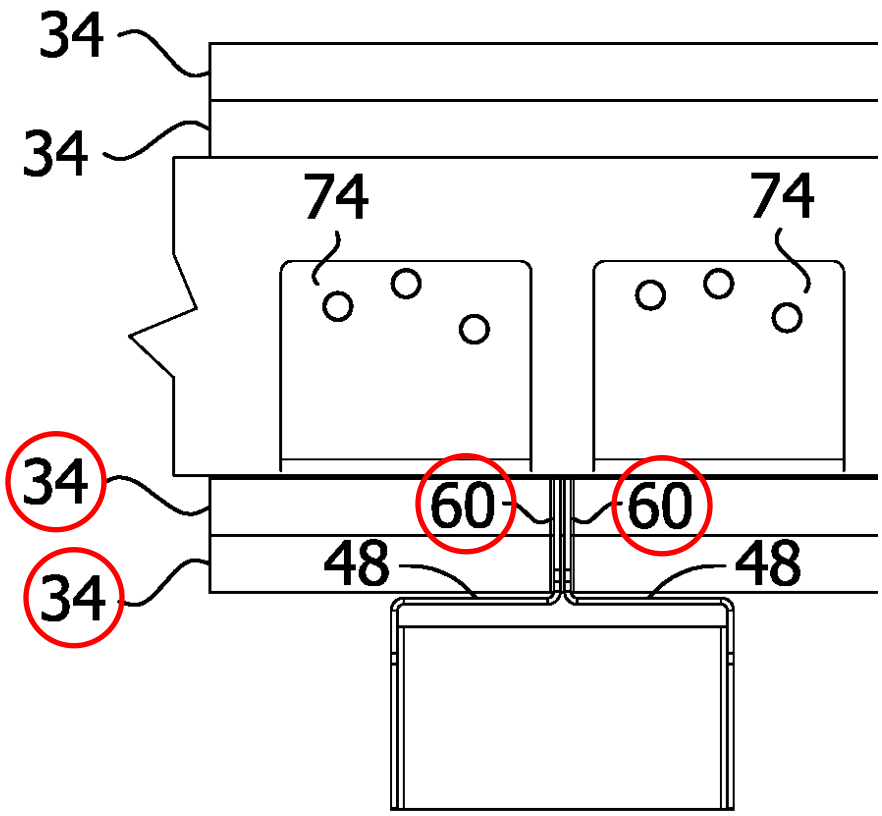
Simpson provides no specific reason why claims 16 and 17 are indefinite, thus failing to meet their burden of proof. 35 U.S.C. §326(e) ("petitioner shall have the burden of proving [] unpatentability"). Simpson only makes the following single conclusory statement: "the limitation 'extends through the 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.

Accordingly, this ground fails to provide a basis for institution. EX2001: ¶168.

B. <u>Claims 20-23:</u> 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 merely makes a single conclusory statement, again 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) ("the lack of a technical definition does not render the term indefinite"); EX2001: ¶225.

Accordingly, this ground fails to provide a basis for institution. EX2001: ¶226.

IX. THE BOARD SHOULD DISCRETIONARILY DENY INSTITUTING POST GRANT REVIEW ON THE BASIS OF SIMPSON'S GROUNDS 3-8 PURSUANT TO 35 U.S.C. § 325(d)

Grounds 3, 5, and 7 of Simpson's Petition rely on asserted prior art explicitly brought to the Examiner's attention along with a "good faith effort to describe the relevant characterizations of the prior art" during prosecution. EX1002: 10 (remarks), 14 (Robinson), 15-17 (Bundy, Allan), 342 (remarks), 346 (Robinson, Yamaguchi), 348 (Cullen), 351-353 (Bundy, Allan). Grounds 4, 6, and 8 likewise rely on these same references, but further add Rice. Thus to the extent Grounds 3, 5, and 7 fail, the corresponding Grounds 4, 6, and 8 also fail.

The Examiner specifically identified and distinguished Bundy, Robinson, Yamaguchi, and Cullen in one of its notices of allowability.[18] EX1002: 421.

> ***Bundy*** … does not teach, inter alia the specifics of the fire wall hanger, the fire retardant sheathing and the frame wall, as in [the] independent claims []. Further, Bundy does not teach method steps of cutting the fire retardant sheathing and moving the fire retardant sheathing relative to the fire wall hanger and the wall frame, as in

[18] Columbia submitted an amendment following the Notice of Allowability. EX1002: 497-507.

> independent claim 74. It would have been beyond the level of ordinary skill to combine or modify Bundy with any other cited reference to arrive at the position, orientation and arrangement of the fire wall hanger, the fire retardant sheathing and the frame wall as claimed.
>
> … none of … ***Robinson***, ***Yamaguchi***, … and ***Cullen*** teach or adequately disclose, inter alia fire retardant sheathing having an opening such that the fire retardant sheathing is mounted on a frame wall, and an extension portion of a fire wall hanger extends through the opening in the fire retardant sheathing, as in [the] independent claims []. It would have been beyond the level of ordinary skill to cut an opening in fire retardant sheathing and install the fire retardant sheathing relative to the fire wall hanger and the frame wall, as claimed.
> EX1002: 421.

A. Application of the *Advanced Bionics* Framework

To the extent the Board agrees Columbia has overcome Simpson's Grounds 1-2 and 9-11, the Board should exercise its discretion to deny institution of post grant review based on Grounds 3-8 under 35 U.S.C. § 325(d). *Advanced Bionics, LLC v. MED-EL Elektromedizinische Geräte GmbH*, IPR2019-01469, Paper 6 at 8 (P.T.A.B. Feb. 13, 2020) (precedential) sets forth a two-part framework for determine whether a discretionary denial of institution of review is appropriate under § 325(d):

> (1) first, whether the same art was presented to the Office; and
>
> (2) whether the petitioner has demonstrated the Office erred in a manner material to the patentability of challenged claims.

Becton, Dickinson & Co. v. B. Braun Melsungen AG, IPR2017-01586, Paper 8 at 17-18 (P.T.A.B. Dec. 15, 2017) (precedential) (discussing factors to consider).

Each prior art reference relied on in Ground 3-8 with respect to the independent claims 1 and 27 were previously presented and considered during prosecution of the '339 Patent. Accordingly, *Advanced Bionics'* first prong is met with respect to Grounds 3-8.

Turning to the second prong, Simpson essentially argues the Board erred in failing to credit Allan for curing the deficiencies of Bundy, Robinson, Yamaguchi, and Cullen. But Allan was presented to the Examiner with citations to the Simpson's similar arguments in the prior PGR briefing. EX1002: 17, 353. Notably, Allan was even used as a search term within the Examiner's search history. EX1002: 453, 454, 549, 550. The Examiner did not fail to consider Allan, but rather determined "[i]t would have been beyond the level of ordinary skill to":

- "combine or modify Bundy ***with any other cited reference*** to arrive at the position, orientation and arrangement of the fire wall hanger, the fire retardant sheathing and the frame wall as claimed," and
- "to cut an opening in fire retardant sheathing and install the fire retardant sheathing relative to the fire wall hanger and the frame wall, as claimed."

EX1002: 421.

These statements demonstrate the Examiner did not make a material error with regard to Allen but instead understood Bundy teaches away from cutting an opening in fire retardant sheathing (Sections III(A), V(C)-(F)) (for which Allan is

applied) and no reference—including Allan—discloses the claimed installation sequence.

X. CONCLUSION

Simpson's grounds fail to demonstrate a reasonable likelihood of prevailing. Accordingly, Columbia respectfully requests the Board deny institution on all grounds.

Dated: December 20, 2024

Respectfully submitted,

/Kurt F. James/
Kurt F. James, Reg. No. 33,716

Counsel for Columbia Insurance Company

CERTIFICATE OF SERVICE

Under 37 C.F.R. § 42.6(e), the undersigned certifies that on December 20, 2024, a copy of the foregoing PATENT OWNER'S PRELIMINARY 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 Preliminary Response complies with the type-volume limitation of § 42.24(b)(1) because it contains 18,660 words, excluding the parts of the Preliminary 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: December 20, 2024

Respectfully submitted,

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