

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 PGR2021-00109
Patent No. 11,021,867

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

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	BACKGROUND OF THE INVENTION CLAIMED IN THE ‘867 PATENT	1
	A. Conventional Hangers	1
	B. Firewalls	3
III.	THE INVENTION CLAIMED IN THE ‘867 PATENT	5
IV.	SIMPSON’S ASSERTED PRIOR ART REFERENCES	11
	A. U.S. Patent No. 4,422,792	11
	B. U.S. Publication No. 2005/0155307	13
	C. Japanese Patent No. 1991014482	17
	D. U.S. Patent No. 9,394,680	18
V.	CLAIM CONSTRUCTION	22
	A. The PHOSITA	23
	B. Constructions From Prior Proceedings	23
	C. “Each Extension Flange Lying in an Extension Flange Plane”	24
	D. “Configured to”	39
	E. “Extension Flanges Are Configured to Extend Through the Sheathing While Maintaining a 2 Hour Fire Resistance Rating”	43
	F. “[Each Extension Flange] / [the First and Second Extension Flanges] Being Configured to Extend Through [the Sheathing] / [an Opening in the Sheathing]”	45
	G. “The Connection Portion and Channel-Shaped Portion Being in a Fixed ... Relation Relative to One Another”	49
	H. “Planar”	51
VI.	GROUND 1: SIMPSON HAS FAILED TO CARRY ITS BURDEN TO PROVE THAT CLAIMS 1-23 OF THE ‘867 PATENT ARE INDEFINITE	57
	A. Simpson’s Argument that Claims 1-15 are Indefinite Fails to Account for a Claim Construction of “Each Extension Flange Lying in an Extension Flange Plane”	58
	B. Claims 16-23 are Sufficiently Definite	63

C.	Claims 5 and 17 are Sufficiently Definite.....	64
VII.	GROUND 2: SIMPSON’S LACK OF WRITTEN DESCRIPTION ARGUMENT FOR CLAIMS 5 AND 17 HAS NO MERIT.....	68
VIII.	GROUND 3: CLAIMS 1-12, 15-17, AND 21-23 WOULD NOT HAVE BEEN OBVIOUS OVER GILB’792 IN VIEW OF BUNDY	71
A.	Neither Gilb ‘792, Nor Bundy Discloses an “Extension Flange Being Configured to Extend Through the Sheathing”	71
B.	The “Back Flange” of Gilb ‘792 Is Not “Configured for Engaging a Vertical Face of the Upper Plate of the Frame Wall” [Claim 16]	78
C.	Gilb ‘792 Does Not Disclose an “Extension Portion ... Extending from the Channel Shaped Portion to the Connection Portion” [Claim 1] or “First and Second Extension Flanges Interconnecting the Connection Portion and the Channel-Shaped Portion” [Claim 16].....	80
IX.	GROUNDS 4 AND 5: THE CLAIMS OF THE ‘867 PATENT ARE NEITHER ANTICIPATED BY TIMONY NOR RENDERED OBVIOUS	84
A.	Timony Does Not Disclose “the Connection Portion and Channel- Shaped Portion Being in a Fixed, Spaced Apart Relation Relative to One Another”	84
B.	Timony Does Not Disclose “Each Extension Flange Being Configured to Extend Through the Sheathing”.....	87
C.	Timony Does Not Disclose “the Back Flange Is Located on an Opposite Side of the Sheathing [From the Channel-Shaped Portion]”	92
X.	GROUND 6: CLAIMS 1-12, 15-17, AND 21-23 WOULD NOT HAVE BEEN OBVIOUS OVER TSUKAMOTO IN VIEW OF BUNDY	93
A.	Tsukamoto Does Not Teach “an Extension Portion Including First and Second Extension Flanges Extending from the Channel-Shaped Portion to the Connection Portion” wherein “Each Extension Flange Lying in an Extension Flange Plane, the Extension Flange Planes Being Generally Perpendicular to the Base Plane”	94
B.	The “Flange” of Tsukamoto Relied on by Simpson Is Not “Planar” [Claim 2].....	98
C.	Neither Tsukamoto, Nor Bundy Discloses an “Extension Flange Being Configured to Extend Through the Sheathing”	99

D.	Tsukamoto Does Not Disclose Extension Flanges that Include an “Upper Free Edge” [Claim 4].....	101
XI.	GROUNDS 3, 5, AND 6: A PHOSITA WOULD NOT HAVE BEEN MOTIVATED TO MODIFY GILB ‘792, TIMONY, OR TSUKAMOTO IN VIEW OF BUNDY	102
A.	Simpson’s Purported “Optimal Wall Integrity” Motivation Falls Apart.....	104
B.	Timony Is Not Designed For Use With Drywall	112
C.	Claims 7 and 21: Simpson’s Modification of Gilb ‘792, Timony, and Tsukamoto to have a “Stop” is Hindsight	113
1.	Gilb ‘792 and Tsukamoto	113
2.	Timony	120
XII.	CONCLUSION.....	123

TABLE OF AUTHORITIES

Cases	Page(s)
<i>Abiomed, Inc. v. Maquet Cardiovascular, LLC</i> , IPR2017-01204, Paper 8 (PTAB Oct. 23, 2017)	121
<i>Acclarent, Inc. v. Ford Albritton, IV</i> , IPR2017-00498, Paper 40 (P.T.A.B. July 9, 2018)	<i>passim</i>
<i>Apple Inc. v. Voip-pal.com, LLC.</i> , IPR 2016-01201	111
<i>Application of Cormany</i> , 476 F.2d , 998 (C.C.P.A 1973).....	69
<i>Ariad Pharms., Inc. v. Eli Lilly & Co.</i> , 598 F.3d 1336 (Fed. Cir. 2010).....	68
<i>Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.</i> , 672 F.3d. 1335 (Fed. Cir. 2012).....	40, 42
<i>ATD Corp. v. Lydall, Inc.</i> , 159 F.3d 534 (Fed. Cir. 1998).....	103, 116, 123
<i>Bicon, Inc. v. Straumann Co.</i> , 441 F.3d 945 (Fed. Cir. 2006).....	48
<i>Bose Corp. v. JBL, Inc.</i> , 274 F.3d 1354 (Fed. Cir. 2001).....	64
<i>Cox Commc'ns, Inc. v. Sprint Commc'n Co. LP</i> , 838 F.3d 1224 (Fed. Cir. 2016).....	62, 65
<i>In re Cortright</i> , 165 F.3d 1353 (Fed. Cir. 1999).....	38, 57
<i>Dropworks, Inc. v. Bio-Rad Laboratories, Inc.</i> , IPR2021-00212, Paper 7 (PTAB June 1, 2021).....	114, 120
<i>Edwards Lifesciences Corp. v. Evalve, Inc.</i> , IPR2019-01285, Paper 19 (P.T.A.B. Jan. 9, 2020).....	44
<i>Energizer Holdings v. ITC</i> , 435 F.3d 1366 (Fed. Cir. 2006).....	64
<i>In re Fine</i> , 837 F.2d 1071 (Fed. Cir. 1988).....	77

<i>In re Fritch</i> , 972 F.2d 1260 (Fed. Cir. 1992).....	103, 117, 123
<i>In re Giannelli</i> , 739 F.3d 1375 (Fed. Cir. 2014).....	40, 41, 42
<i>Insite Vision, Inc. v. Sandoz, Inc.</i> , 783 F.3d 853 (Fed. Cir. 2015).....	112
<i>InTouch Techs., Inc. v. VGo Communs., Inc.</i> , 751 F.3d 1327 (Fed. Cir. 2014).....	117, 123
<i>ipDataTel, LLC v. ICN Acquisition, LLC</i> , IPR2018-01822, Paper 19 (P.T.A.B. April 22, 2019).....	43
<i>K-2 Corp. v. Salomon S.A.</i> , 191 F.3d 1356 (Fed. Cir. 1999).....	40
<i>KSR Int’l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007).....	106
<i>Leoutsakos v. Coll’s Hosp. Pharm., Inc.</i> , 98 Fed. Appx. 835 (Fed. Cir. 2004).....	51
<i>Microprocessor Enhancement Corp. v. Tex. Instruments Inc.</i> , 520 F.3d 1367 (Fed. Cir. 2008).....	63
<i>Nautilus, Inc. v. Biosig Instruments, Inc.</i> , 572 U.S. 898 (2014).....	57
<i>Net MoneyIn, Inc. v. VeriSign, Inc.</i> , 545 F.3d 1359 (Fed. Cir. 2008).....	121
<i>Orthokinetics, Inc. v. Safety Travel Chairs</i> , 806 F.2d 1565 (Fed. Cir. 1986).....	48
<i>Otsuka Pharm. Co., Ltd. v. Sandoz, Inc.</i> , 678 F.3d 1280 (Fed. Cir. 2012).....	112
<i>Panduit Corp. v. Dennison Mfg. Co.</i> , 810 F. 2d 1561 (Fed. Cir. 1987).....	77
<i>Parsons Xtreme Golf, LLC v. Taylor Made Golf Company, Inc.</i> , IPR2018-00657, Paper 14 (P.T.A.B. Aug. 14, 2018).....	44
<i>Phillips v. AWH Corp.</i> , 415 F.3d 1303 (Fed. Cir. 2005).....	22, 23

<i>Plas-Pak Indus., Inc. v. Sulzer Mixpac AG</i> , 600 Fed. Appx. 755 (Fed. Cir. 2015).....	76, 80
<i>Rengo Co. v. Molins Mach. Co.</i> , 657 F.2d 535 (3d Cir. 1981).....	69
<i>In re Schreiber</i> , 128 F.3d 1473 (Fed. Cir. 1997).....	66
<i>South-Tek Systems, LLC, v. Engineered Corrosion Solutions, LLC</i> , 748 Fed. Appx. 1003 (Fed. Cir. 2018).....	105
<i>In re Stencel</i> , 828 F.2d 751 (Fed.Cir.1987).....	66
<i>In re Stepan Co.</i> , 868 F.3d 1342 (Fed. Cir. 2017).....	121
<i>Vas-Cath Inc. v. Mahurkar</i> , 935 F.2d 1555 (Fed. Cir. 1991).....	68
<i>Ex parte Vetesnik</i> , Appeal No. 2008-3965 (PTAB Feb. 5, 2009).....	106
<i>Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.</i> , 520 U.S. 17 (1997).....	48, 49
<i>WL Gore & Associates, Inc. v. Garlock, Inc.</i> , 721 F. 2d 1540 (Fed. Cir. 1983).....	103, 116, 123
Statutes	
15 U.S.C. § 206.....	73
35 U.S.C. § 112.....	1, 2, 65
35 U.S.C. § 112(a)	68, 69
35 U.S.C. § 112(b)	58, 69
Other Authorities	
37 C.F.R. § 42.200(b)	22

EXHIBIT LIST

Exhibit No.	Description
2001	Dr. Serrette Declaration
2002	Curriculum Vitae of Dr. Serrette
2003	Request for Certificate of Correction
2004	‘510 PGR Petition
2005	‘510 PGR Institution Decision
2006	‘510 PGR Final Written Decision
2007	U.S. Patent No. 537,504
2008	1994 Timber Construction Manual
2009	2012 International Building Code
2010	2000 International Building Code
2011	ASTM E119
2012	ASTM E814
2013	MiTek FWH Spec. Sheet
2014	DU/DHU/DHUTF Drywall Hangers
2015	WO2008035098
2016	US2005/0120669
2017	U.S. Patent No. 10,214,897
2018	International Patent App. No. WO 01/06068
2019	IE 56802
2020	U.S. Pat. Appl. No. 2015/0167291

2021	‘510 Litigation Doc. 24
2022	Fennell ‘510 Litigation Declaration (‘510 Litigation Doc. 25)
2023	‘510 Litigation Doc. 27-5 (Tsukamoto + Bundy)
2024	‘510 Litigation Doc. 27-7 (Gilb ‘792 + Bundy),
2025	‘510 Litigation Doc 27-8 (Timony + Bundy)
2026	Fennell ‘510 PGR Declaration
2027	Fennell ‘510 PGR Supplemental Declaration
2028	Fennell ‘510 PGR Declaration in Support of Petitioner’s Reply and Opposition to Patent Owner’s Contingent Motion to Amend
2029	Fennell ‘510 PGR Declaration in Support of Petitioner’s Reply and Opposition to Patent Owner’s Revised Contingent Motion to Amend
2030	Cooperative Patent Classification
2031	Response for Certificate of Correction
2032	Certificate of Correction for U.S. Patent No. 11,021,867
2033	Connections in Tilt-Up Buildings
2034	Multifamily, Mid-Rise Building Using Wood Construction
2035	Review of Structural Materials and Methods for Home Building in the United States: 1900 to 2000
2036	Strategies And Trends For Mid-Rise Construction In Wood
2037	Fastening Systems Technical Guide
2038	Graphic Guide to Frame Construction
2039	Sheet Metal Stamping 101 Parts I-V
2040	U.S. Pub. No. 2007/0294979

2041	U.S. Pat. No. 5,836,131
2042	U.S. Pat. No. 9,290,926
2043	Fire Ratings of Masonry Walls
2044	Fire and Concrete Structures
2045	Comprehensive Fire Protection and Safety with Concrete
2046	U.S. Pat. No. 8,387,333
2047	U.S. Pat. No. 5,564,248
2048	U.S. Pat. No. 9,228,338
2049	U.S. Pub. No. 2009/0056268
2050	Prosecution History of U.S. Pat. No. 10,316,510
2051	Prosecution History of U.S. Pat. No. 10,184,242
2052	Prosecution History of U.S. Pat. No. 10,024,049
2053	Prosecution History of U.S. Provisional App. No. 61/922,531
2054	Structural Design for Fire Safety
2055	Transcript of the May 25, 2022 Deposition of Mr. Fennell
2056	Transcript of the May 14, 2020 Deposition of Mr. Fennell from PGR2019-00063
2057	Supplemental Declaration of Dr. Reynaud Serrette

I. INTRODUCTION

Simpson's Petition raise two sets of insufficient arguments.

First, Simpson argues that certain claim limitations fail the 35 U.S.C. § 112 requirements for definiteness and written description support. In making these arguments, Simpson intentionally bypassed making any attempt to construe the claim limitations at issue. Yet, Simpson's own prior art patents and the testimony of its own expert—Mr. Fennell—betray that the PHOSITA would have understood the meaning of the claim terms in a manner that contradicts the premise of its § 112 arguments. Further, a Certificate of Correction has since been granted, thus mooting Simpson's arguments as to two of the three claim limitations the Petition addressed.

Second, Simpson presents prior art based grounds in an attempt to demonstrate that the '867 Patent was obvious and/or anticipated. Notably, each of Simpson's prior art grounds fail to demonstrate that each claim limitation was disclosed in the prior art. More critically, Simpson's obviousness combinations were unabashedly the result of improper hindsight aided reconstructions.

Simpson has failed to demonstrate that any of the '867 Patent's claims are invalid.

II. BACKGROUND OF THE INVENTION CLAIMED IN THE '867 PATENT

A. Conventional Hangers

The '867 Patent pertains to hangers for connecting structural components (*e.g.*, joists) to wall framing, and more specifically to firewall hangers that connect such structural components to fire separation walls. EX2001: ¶20; EX1001: Abstract.

The construction industry has used hangers for connecting trusses, joists, and beams to wall structures for over a century. EX2001: ¶21; EX2007. There have been numerous advancements, improvements, and modifications to these hangers. EX2001: ¶22. For example, the '867 Patent alone cites over 100 prior art patents and patent applications, the majority of which are directed to advancements in hanger technology. *Id.*; EX1001: References Cited. Notably, a considerable number of these prior art references originated from Simpson. EX2001: ¶23.

As depicted below, prior art hanger designs include a channel supporting the structural component (*e.g.*, a beam or joist) and a part attaching the hanger to a wall. *Id.*: ¶24; EX2008: 16.

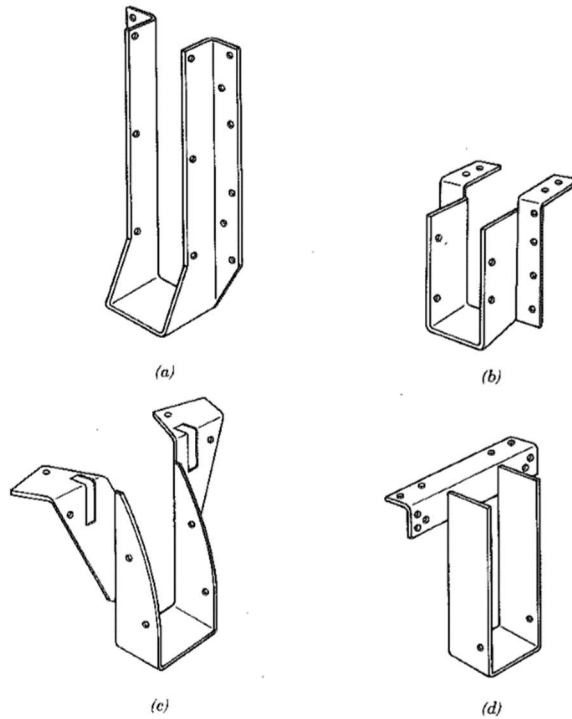


FIGURE 7.29 Typical joist and purlin hanger types. (a) Joist hanger; (b) joist hanger; (c) joist and purlin hanger; (d) joist and beam hanger.

B. Firewalls

Firewalls are special types of walls designed to retard a fire within a structure from spreading to other parts of the structure. *Id.*: ¶30. For instance, section 706.4 of the 2012 International Building Code specifies that the walls separating units of hotels, motels, apartment housing, and timeshare properties must meet a two-hour fire rating. EX2001: ¶30; EX2009: 118. Building codes have required a fire resistance duration rating of two-hours between separate units within these types of structures since at least 2000. EX2001: ¶¶34; EX2010: 98.

A typical method of achieving a two-hour fire rating for wood stud light framed walls is to use a double layer of 5/8-inch thick Type-X Gypsum wallboard¹ on both sides of the wood framed wall. EX2001: ¶39; EX2009: 153; EX2010: 126-127; EX1003: ¶43; *see also* EX1001: 11:45-51. As evidenced by the 2000 International Building Code, the use of double layers of 5/8-inch thick Type-X Gypsum wallboard to achieve a two-hour fire rating dates back to at least 2000. EX2001: ¶39; EX2010: 126-127.

For standard walls not requiring a two-hour fire rating, a single layer of drywall is typically installed on the wall framing from the floor up to the bottom of the trusses or joists above the space being finished. EX2001: ¶40. A ceiling is typically installed either on or below the trusses or joists to finish the space. *Id.* Thus, for standard walls, such as those found in single family residences, the drywall installed on the wall framing stops below the location of the hanger. *Id.* Thus, there is no interaction between the hanger and the drywall.

Section 706.6 of the 2012 International Building Code, on the other hand, specifies that the fire resistant partitions must have vertical continuity extending from the foundation to the roof of the structure. EX2001: ¶41; EX2009: 119-120.

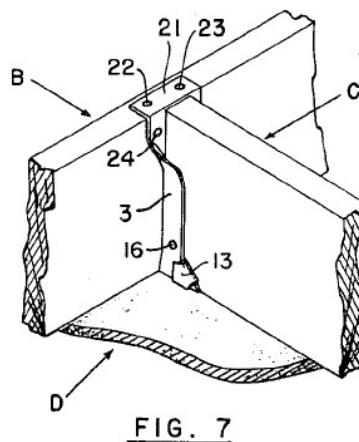
¹ Wallboard is also commonly referred to as gypsum board or drywall. EX2001: ¶39.

Accordingly, for fire separation walls, the double layer of 5/8-inch thick Type-X Gypsum wallboard is installed on a wood framed wall from the floor to either the next level's subfloor or, for the top level of a structure, to the structure's roof. EX2001: ¶41; EX2009: 119-120.

Notably, ASTM E814 and ASTM E119—both of which are explicitly referenced in the '867 Patent's specification—are recognized and accepted standards for testing whether a fire wall assembly meets the two-hour fire rating. EX2001: ¶42; EX1001: 11:45-60; EX2011; EX2012; EX2055: 86:22-88:10, 89:15-91:6.

III. THE INVENTION CLAIMED IN THE '867 PATENT

In using traditional hangers for connecting joists to wall framing or a supporting member, the joists butt directly up against the wall framing or a supporting member. EX2001: ¶49. An exemplary installation of a floor joist using a traditional hanger is depicted below, with a drywall ceiling installed below the joist. *Id.*; EX1024 at Fig. 7.



In using a traditional hanger on a fire-separation wall, a cutout is required in the fire-resistant sheathing for the entire cross-section of the joist where the joist butts up directly against the wall framing. EX2001: ¶51. In fact, the cutout must be larger than the cross section of the joist to accommodate the hanger. *Id.* These cutouts for the joists create large discontinuities in the fire-resistant sheathing, thus decreasing the wall's resistance to fire. *Id.*

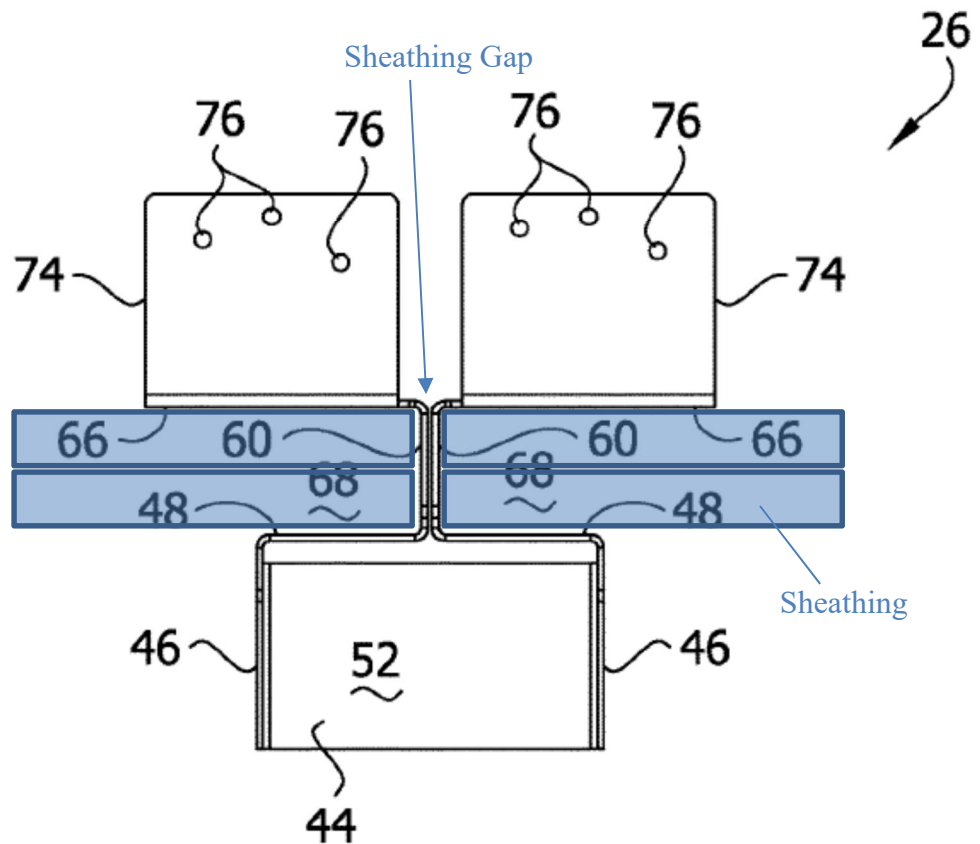
Since at least 2000, a PHOSITA would have been strongly biased against cutting holes in the gypsum board to accommodate a hanger. *Id.*: ¶52. Still, there were no known hangers constructed to avoid cutting out the entire cross sections of the joists from the fire-resistant sheathing prior to December 2013. *Id.*

The '867 Patent pertains to an improvement in hangers for connecting trusses and joists to firewalls, whereby the truss hanger includes (1) a channel-shaped portion configured to receive the structural component (item (52) in Figs. 2 and 4, below), (2) an extension portion extending from channel-shaped portion and configured to extend through the sheathing (items (40) and (60)), and (3) a connection portion configured for attachment to the top plate of a wood stud light framed wall (collectively, items (66) and (74)). EX1001: Abstract; EX2001: ¶¶53-54.

A perspective view of a second embodiment of a multi-layered rectangular assembly. The assembly consists of two main vertical rectangular sections joined at their top edges by a horizontal connecting member. The left vertical section has a front face labeled 46, side faces labeled 54, and a bottom edge labeled 44. The right vertical section also has a front face labeled 46, side faces labeled 54, and a bottom edge labeled 54. The top connecting member is shown from above, revealing its internal structure which includes a central channel or slot labeled 60. Various other components are labeled with reference numerals: 38 points to the top surface of the left section; 40, 42, 48, 66, 74, 76, and 78 point to various surfaces and features of the top connecting member and its internal parts.

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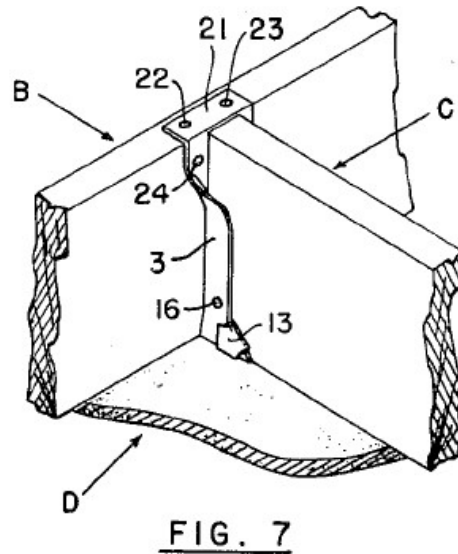
FIG. 7



The close conformance also renders it unnecessary to apply fire resistant caulking between the hanger and the fire barrier. EX2057: ¶18. This provides enormous savings in time and material in construction projects like multi-family dwellings requiring two-hour fire ratings, where hundreds or more hangers are used. *Id.*

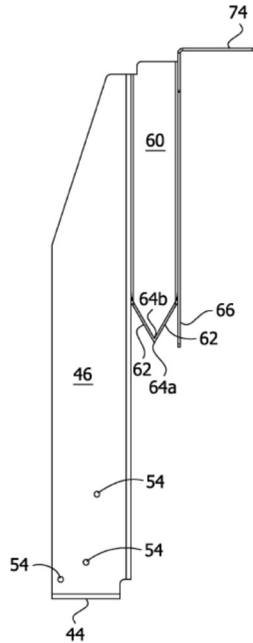
For any hanger, the load from the joist will urge the hanger to pivot about its attachment to the wall (*e.g.*, at (22) and (23) in the figure below). But as traditional

hangers directly engage the framing along the full height of the hanger, the pivoting action is directly resisted. EX2001: ¶¶49-50.



Spacing the joist away from the wall—as with the hanger claimed by the ‘867 Patent—increases the moment arm between the center of bearing for the joist and the point of attachment to the wall. *Id.*: ¶58. The increased moment arm creates additional moment resulting in a tendency for the hanger to pivot counter-clockwise (as oriented in Fig. 4 below) about the top flange (74). *Id.*: ¶58.

FIG. 4



As claimed, the extension portion is configured to extend through sheathing, thus transferring the load from the joist to the back flange at a location substantially below the top flange of the hanger. EX1001: claims 1, 16; EX2001: ¶59. This construction braces the moment arm of the load tending to urge the bottom of the channel-shaped portion to pivot. EX1001: 6:58-7:14; EX2001: ¶¶61-62. As such, far higher loads can be carried by the claimed hanger with the extension portion as claimed by the '867 Patent. *Id.* ¶63; *compare* EX2013: 2 (commercial embodiment of the claimed hanger) and EX2014: 1 (lacking an extension portion configured to extend through the sheathing).

Further, because the claimed hanger itself defines a fixed spacing between the channel-shaped portion and the back flange for receiving the sheathing, the hanger

may be installed prior to mounting sheathing on the wall. EX1001: 7:62-18; EX2001: ¶65. This allows the building to be completely framed and roofed prior to installation of the sheathing, as opposed to waiting to mount the hanger and continue framing the building until after the unprotected sheathing is mounted. EX1001: 7:64-66; EX2001: ¶65.

IV. SIMPSON'S ASSERTED PRIOR ART REFERENCES

A. U.S. Patent No. 4,422,792

U.S. Patent No. 4,422,792 (Gilb '792) discloses a hanger for attaching structural beam members to concrete or masonry walls using a metal ledger. EX1035: Abstract, 1:5-63; EX2001: ¶66.

As described in the Gilb '792 background section, it was known to attach metal ledgers to the interior perimeter of walls and then attach a hanger to the ledger. EX1035: 1:5-51; EX2001: ¶¶67-69. Metal ledgers have been used for masonry walls or tilt-up concrete walls. EX2057: ¶21; EX2033. Notably, while *wood* ledgers were once commonly used in balloon style wood framing, other framing methods that do not require ledgers have been predominant for decades. EX2057: ¶24; EX2034: 5; EX2035: 10-13; EX2036: 12-16. Wood ledgers, but not metal ledgers, are still used to attach decks to wood framed walls. EX2057: ¶¶23, 30; EX2037: 45-51; EX2038: 52, 55.

Although the leg of the ledger projecting from the wall separates the portion of the hanger supporting the joist from the wall, this separation is merely an incidental result of the need to create a structure on which to mount the hanger. EX2001: ¶70. The Gilb '792 hanger improved this style metal ledger system by incorporating gusset members (15/22) to reinforce the outstanding leg of the angle iron ledger against bending under load. EX1035: 2:41-47, 2:59-64, Figs. 1 and 5 (below); EX2001: ¶69.

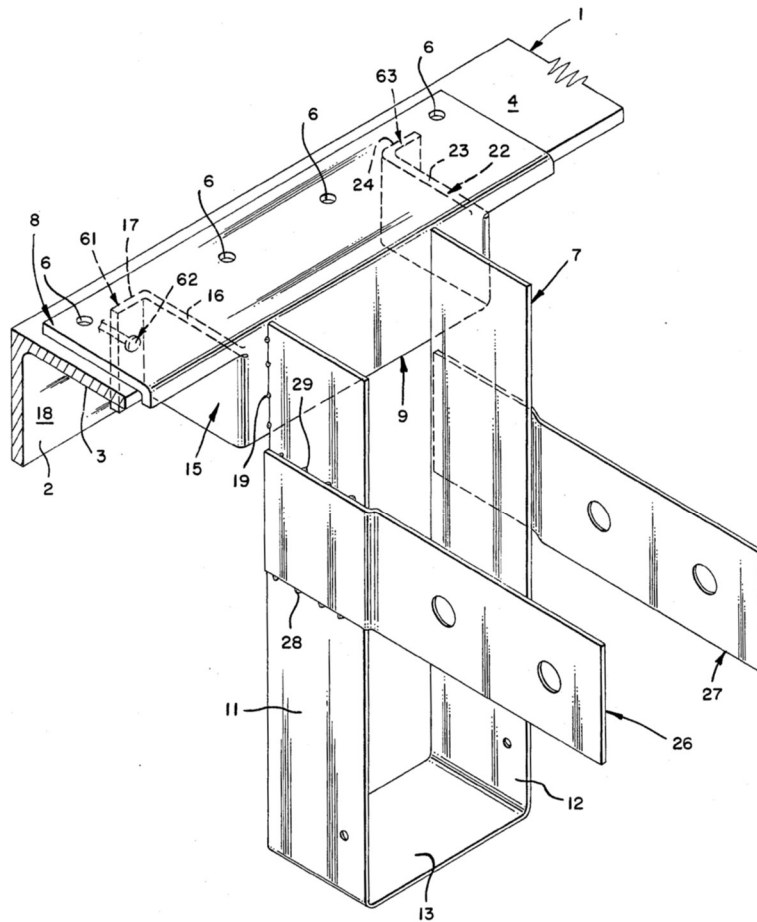


FIG. 1

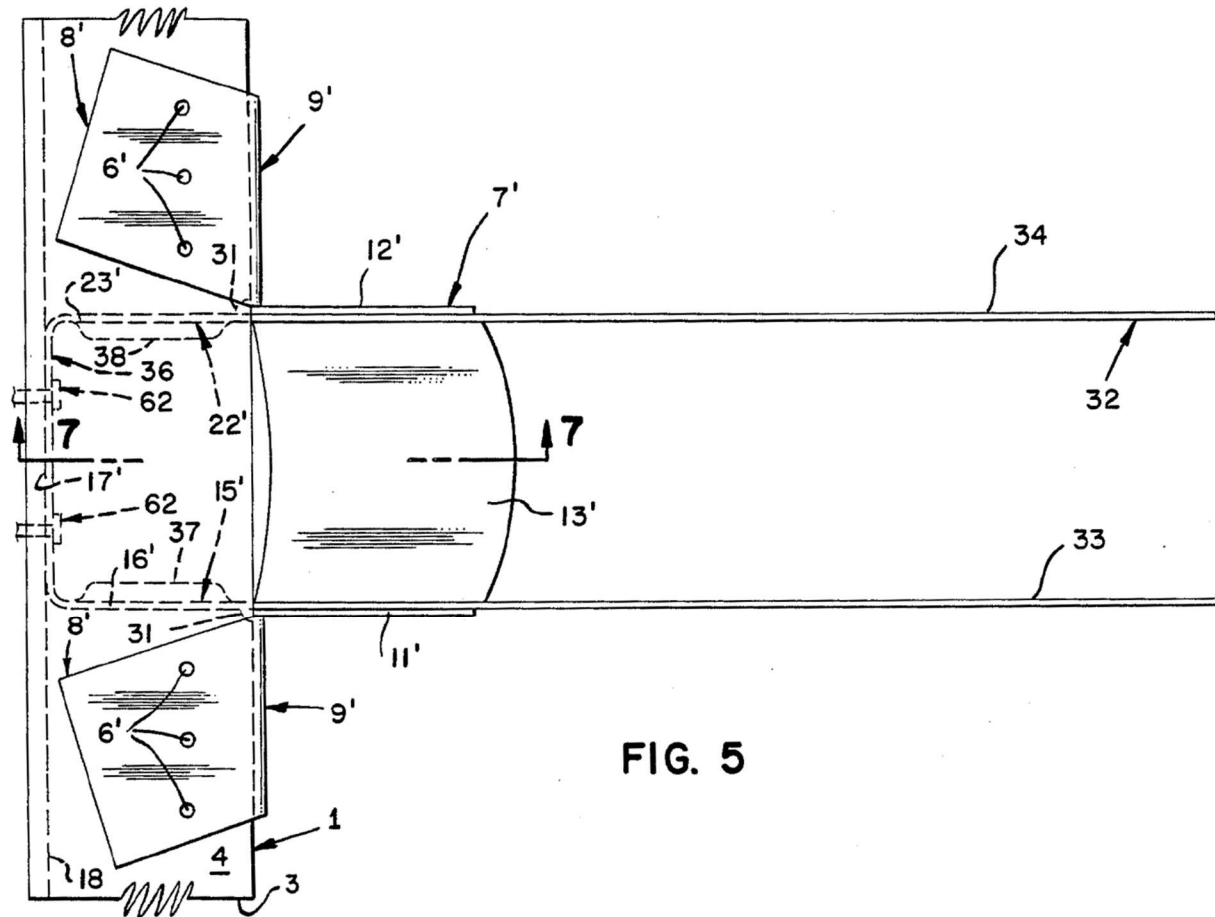


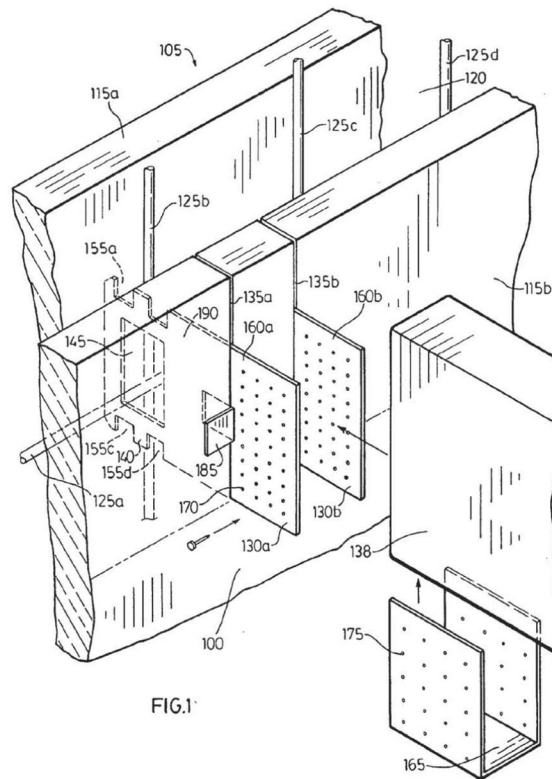
FIG. 5

B. U.S. Publication No. 2005/0155307

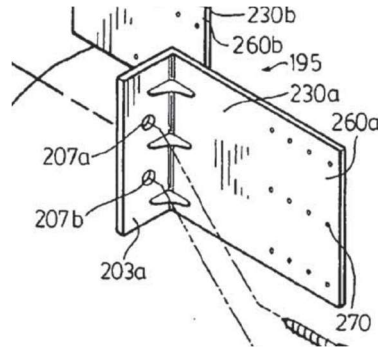
U.S. Publication No. 2005/0155307 (“Timony”) discloses a hanger system for insulated concrete form walls. EX1008; EX2001: ¶72. Insulated concrete form walls are composite walls constructed using a pair of outer walls formed of rigid foam. EX1008; EX2001: ¶73. The outer rigid foam walls form a cavity, which is then filled by pouring concrete. EX1008: ¶[0032]; EX2001: ¶73.

Timony discloses two distinct embodiments. In the first embodiment (hereinafter the “New Construction Embodiment”), a pair of plates (130a, 130b) the rigid foam walls (115a, 115b) prior to pouring concrete. EX1008: ¶¶[0014]-[0017],

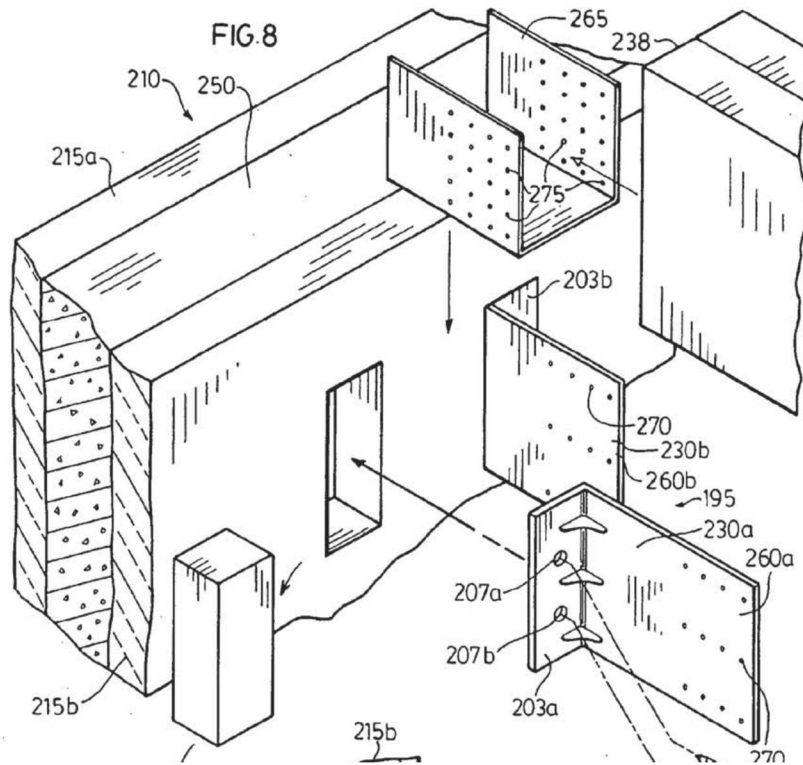
Fig. 1 (below); EX2001: ¶¶75-76. A U-shaped bracket (165) and the member being supported by the hanger can then be secured between the plates after the concrete is poured and allowed to cure. EX1008: ¶[0038]; EX2001: ¶75.



Timony's other embodiment (hereinafter the "Retrofit Embodiment") is designed for retrofit applications in pre-existing insulated concrete form system walls. EX1008: ¶[0046]; EX2001: ¶77. This embodiment uses retrofit plates (230a, 230b). EX1008: ¶[0047]; EX2001: ¶78. The retrofit plates are L-shaped with one leg of the L creating a retaining portion (203a, 203b) and the other leg of the L creating a hanging portion (260a, 260b). EX1008: ¶[0047]; EX2001: ¶78.



To install the retrofit hanger, portions of the outer foam wall (215b) are cut away at the desired hanging position. EX1008: ¶[0049]; EX2001: ¶79. The retaining portions are inserted into the foam wall and fastened to the concrete core. EX1008: ¶[0049]; EX2001: ¶79. A U-shaped bracket (265) and member being supported by the hanger can then be attached to the retrofit plates. EX1008: ¶[0050]; EX2001: ¶79. Timony's Figure 8 depicts the retrofit hanger disclosed in this embodiment. EX1008: Fig. 8; EX2001: ¶79.



Notably, for either version of Timony, the disclosed hanger's components are not fixed with respect to each other. EX2001: ¶¶211-218. Off the shelf, the hanger consists of three separate components that are secured in the field to the wall, the member being supported, and each other. EX2057: ¶216-217.

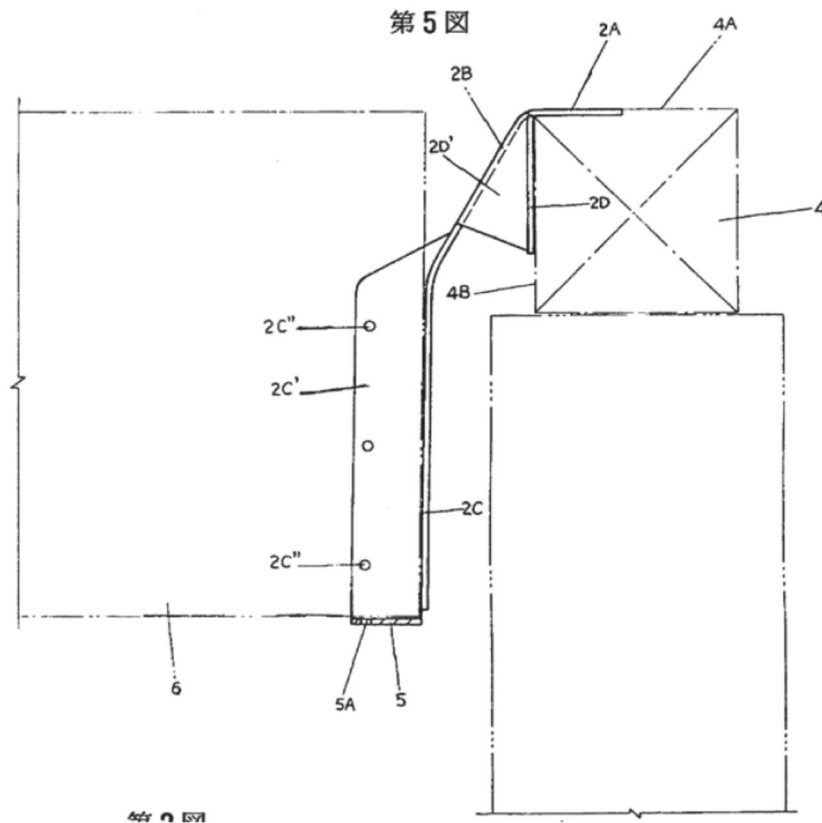
As explained by Timony in the context of the Retrofit Embodiment, but equally applicable to the New Construction Embodiment, the separate components “permit the height of object 238 to be adjusted post fastening the of retrofit plates 230a and 230b to the composite wall 210.” EX1008: ¶[0048]; EX2001: 217. Thus, the Timony bracket, as sold, does not have fixation of the U-shaped bracket to the remainder of the bracket. *Id.*

C. Japanese Patent No. 1991014482

Japanese Patent No. 1991014482 (“Tsukamoto”) discloses a hanger for attaching beams to a foundation. EX1009: 2, 3, Fig. 5; EX2001: ¶83. Tsukamoto attempts to solve problems specific to using conventional beam hangers on masonry or concrete foundation walls. EX1009: 2; EX2001: ¶¶84-86.

As shown in Figure 5 below, Tsukamoto solved these problems by developing a hanger specifically configured to attach to a base member (4) on top of a foundation while holding the beam (6) at a distance away from the base member to accommodate foundation walls of different thicknesses. EX1009: 2, 5, Fig. 5; EX2001: ¶86.

FIG. 5



D. U.S. Patent No. 9,394,680

U.S. Patent No. 9,394,680 (“Bundy”) is a patent assigned to Simpson.
EX1007; EX2001: ¶90.

While Bundy is technically a prior art reference to the ‘867 Patent, its December 14, 2013 filing date predates the ‘867 Patent’s December 31, 2013 priority date by less than three weeks. EX1001; EX1007; *see also* EX2001: ¶¶91. By virtue of having been filed less than three weeks prior to the ‘867 Patent’s priority date, Bundy represents a contemporaneous attempt by Simpson to develop a firewall hanger. EX2001: ¶¶92. While Bundy’s and the ‘867 Patent’s inventors both sought

to invent a hanger that achieved significantly improved fire ratings over traditional hangers, they took very different approaches. *Id.*

Bundy teaches a joist hanger that is capable of being installed over “one or more generally vertical drywall panels [6].” EX1007: Abstract; EX2001: ¶93. As shown below in Figs. 1 and 2, the Bundy hanger is installed on a top plate (4) of a wall having one or more drywall panels (6) already mounted thereon. EX1007: 4:60-61, 6:1-5; EX2001: ¶94.

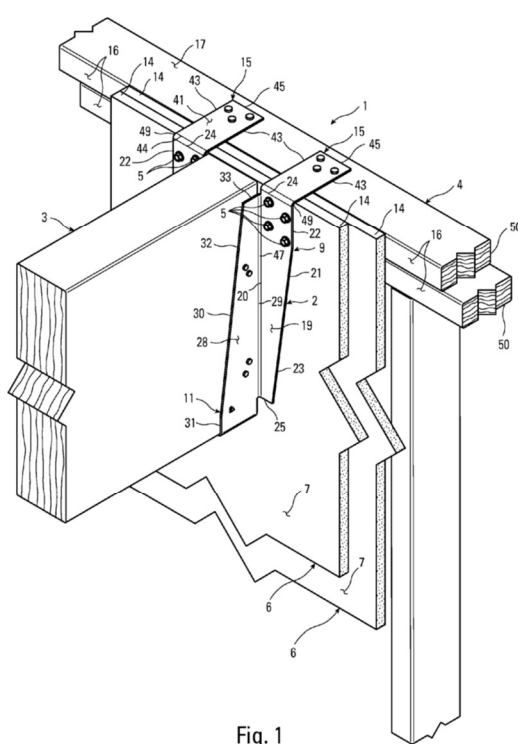


Fig. 1

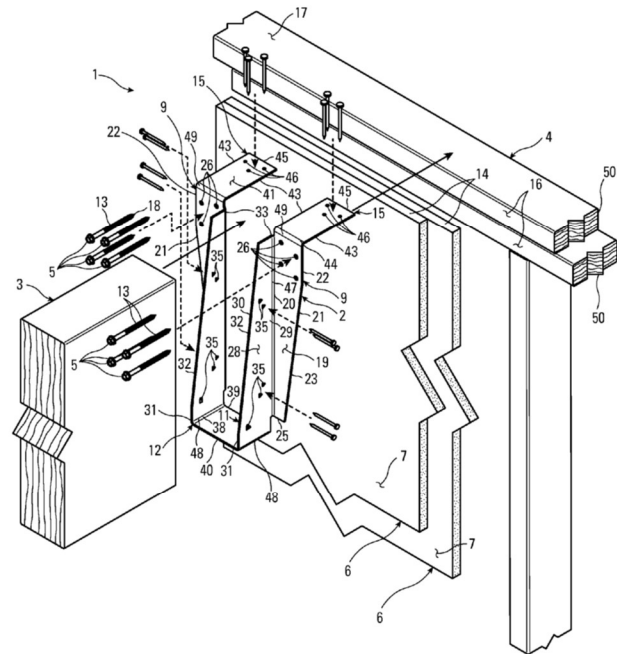


Fig. 2

The joist hanger of Bundy includes a channel shaped-portion for receiving the joist. EX1007: 5:23-26 Fig. 2; EX2001: ¶95.

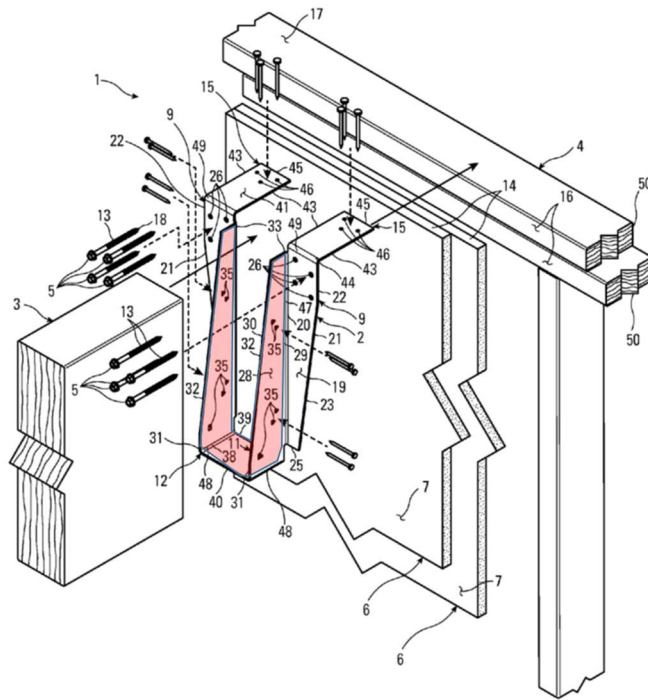


Fig. 2

The joist hanger further includes first and second back plate members (9) extending outward from the channel-shaped portion's respective side members (11).

EX1007: 4:5-16, Fig. 2; EX2001: ¶96.

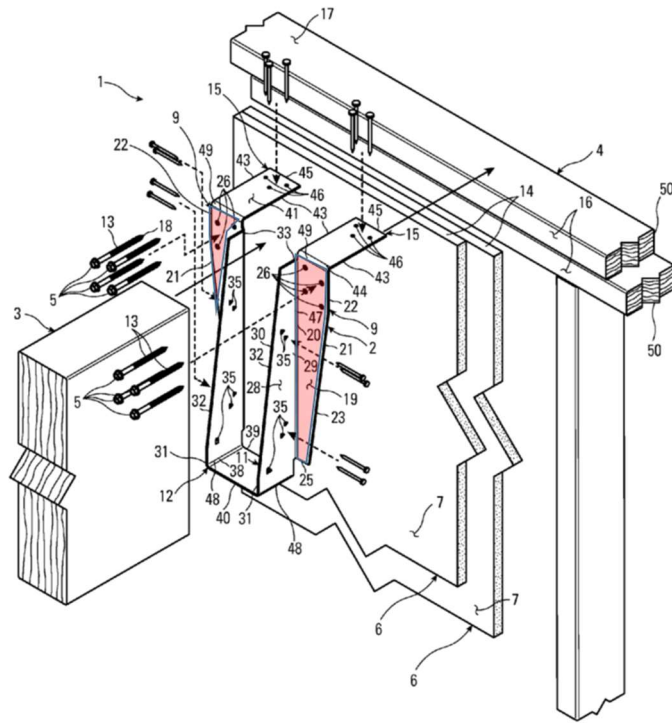


Fig. 2

The joist hanger also includes top flanges (15) extending rearward from the respective back plate members (9) for attaching the joist hanger to the top surface of the top plate of a wall. EX1007: 5:39-42, Fig. 2; EX2001: ¶97.

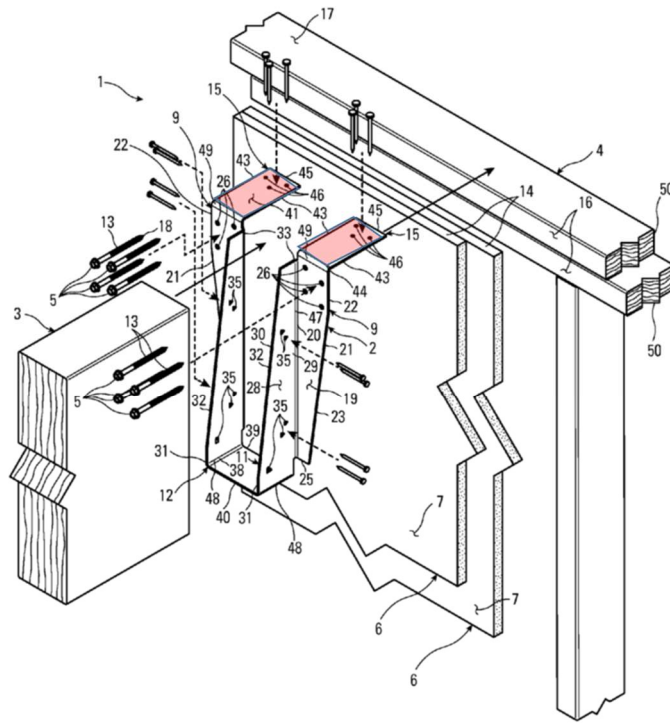


Fig. 2

The joist hanger (1) is mounted on the top plate (4) of the wall after the one or more drywall panels (6) are installed on the wall. EX1007: Figs. 1-2; EX2014: 1; EX2001: ¶¶98-100.

V. CLAIM CONSTRUCTION

In a PGR, the Board gives claim terms their plain meaning as understood by a PHOSITA. *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-13 (Fed. Cir. 2005); 37 C.F.R. § 42.200(b). In construing terms, “the person of ordinary skill in the art is deemed to read the claim term not only in the context of the particular claim in which

the disputed term appears, but in the context of the entire patent, including the specification.” *Id.* at 1313.

A. The PHOSITA

The level of ordinary skill in the art is a person that at the time of the earliest filing date of the ‘867 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 construction connector design/development.

B. Constructions From Prior Proceedings

Simpson applies the constructions for the following terms, which Simpson identifies as taking from PGR2019-00063:

- “extend through”: “we construe ‘extend through,’ in the context of element A ‘extend[ing] through’ element B, to mean ‘element A extends into one side and out the other side of element B.’” Pet: 13-14; EX2006: 45.
- “configured to extend through” the sheathing: “extending into one side and out of the other side of the sheathing.” Pet: 13-14; EX2006: 51.
- “extending from”: “in the context of element B extending from element A, the beginning of element B’s extension is on element A.” Pet: 14; EX2006: 110.
- “rigidly fixed”: “components are connected such that they do not move freely with respect to one another.” Pet: 14; EX2006: 98.

For the purposes of this Preliminary Response, Columbia does not dispute Simpson's constructions of "extend through," or "extending from."

Columbia, further, does not dispute that to "extend through [the sheathing]", would require "extending into one side and out of the other side of the sheathing," but Simpson's proposed construction of "configured to extend through" is incomplete. Rather, as addressed further below, the claimed phrase "configured to" (*i.e.*, a structure configured to perform a function) should be construed to require the claimed structure be specifically "meant to" or "design to" perform the function.

C. "Each Extension Flange Lying in an Extension Flange Plane"

The phrase "each extension flange lying in an extension flange plane" appears in claim 1 as follows:

"an extension portion including first and second extension flanges extending from the channel-shaped portion to the connection portion, each extension flange being configured to extend through the sheathing, *each extension flange lying in an extension flange plane*, the extension flange planes being generally perpendicular to the base plane"

Simpson does not advance a proposed construction of this limitation, but instead argues the limitation is indefinite. Pet: 13-20. Simpson's argument is based on an erroneous assertion the phrase is ambiguous, unless "lying in an extension flange plane" describes a specific two dimensional surface of the claimed object.

Contrary to Simpson's arguments, a PHOSITA would not consider the phrase "lying in a plane" to only apply to the two dimensional surfaces of an object.

EX2001: ¶¶112-113. Rather, “lying in a plane” is commonly used in the mechanical arts, including joist hangers, to describe the shape and arrangement of three-dimensional objects. *Id.*: ¶114; EX2057: ¶114.

A PHOSITA would recognize that when the phrase “lying in a ... plane” is used in reference to a three dimensional object—in this case an extension flange—the phrase is describing the object as being relatively thin and flat such that the full body of the object is substantially coplanar with the plane. EX2057: ¶39. In this common usage, the full end-to-end extension of the object is thus being effectively described as lying in the plane. EX2001: ¶119.

Further, a PHOSITA would recognize that the limitation “each extension flange lying in an extension flange plane” is being used to establish the orientation and arrangement of the extension flange. EX2001: ¶¶115-118; EX1001: 12:32-38. Claim 1 defines the plane in which the edgewise end-to-end extension is arranged as an “extension flange plane.” EX2001: ¶119. Claim 1 further provides the starting point (“extending from the channel shaped portion”) and ending point (“to the connection portion”) of the extent of each of the extension flanges. *Id.* ¶120. Finally, claim 1 provides the orientation of the extension flange plane as being “generally perpendicular to the base plane,” thus establishing the orientation of the extension flange relative to the base plane. *Id.* ¶121.

Thus, within the context of claim 1, the PHOSITA would understand the claim limitation “each extension flange lying in an extension flange plane” to mean that “for each extension flange an extension flange plane is within the extent of the extension flange from the channel-shaped portion to the connection portion.” *Id.* ¶120. This construction represents the plain and ordinary meaning in the art of “each extension flange lying in an extension flange plane” as would be understood by a PHOSITA in view of its context in claim 1, the specification, and knowledge possessed by the PHOSITA. *Id.* ¶¶115-121.

This construction is further supported by the specification of the ‘867 Patent, which explains that “[e]ach flange 60 extends from one of the back panels 48” of the channel shaped portion (38) to the back flanges (66) of the connection portion (42). EX1001: 5:1-4, 5:19-20; EX2001: ¶¶122-123. As shown in Figs. 2 and 7 (annotated below), it is readily apparent that for each extension flange there is an extension flange plane within the extent of the extension flange from the channel-shaped portion.² *Id.*: ¶124.

² In the reproduced Figs. 2 and 7, only one extension flange plane is shown in each figure for clarity. EX2001: ¶125.

FIG. 2

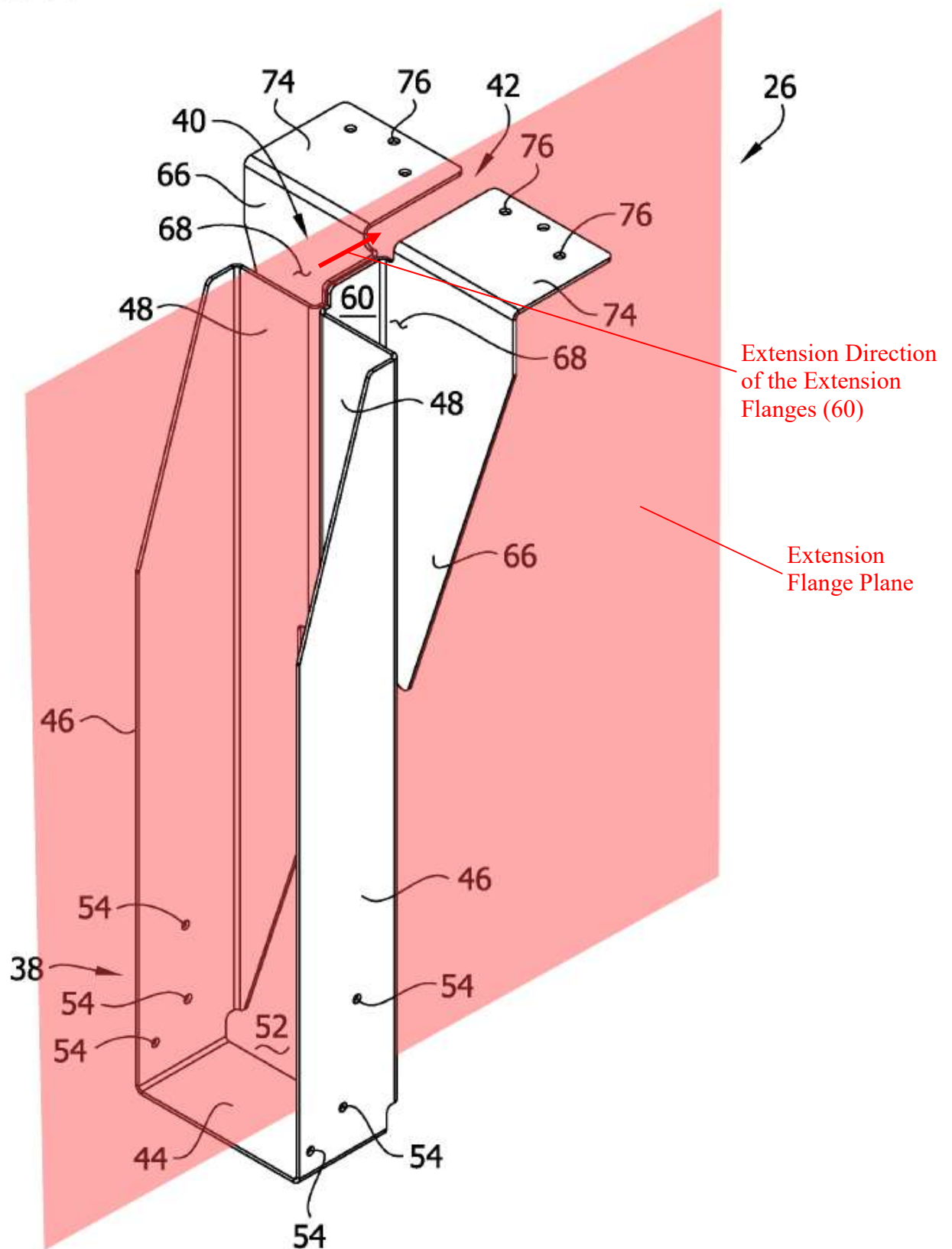
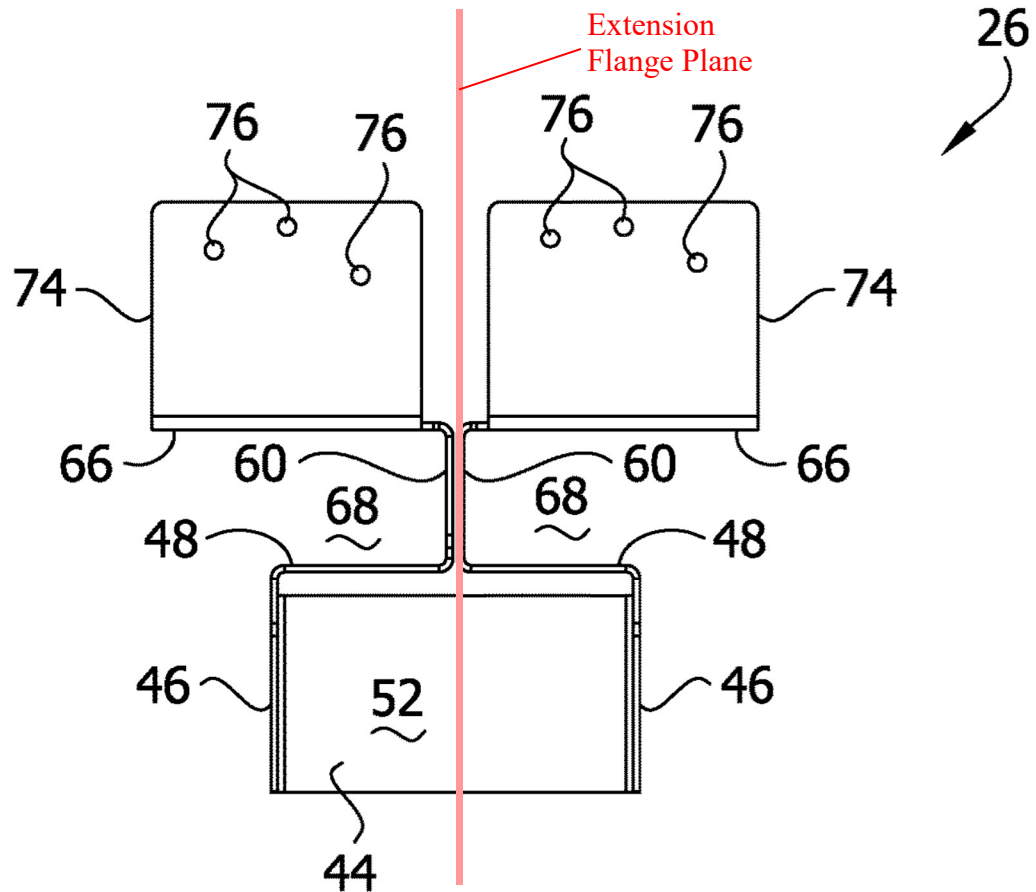


FIG. 7



EX1001: Figs 2 and 7 (annotated); EX2001: 124.

Simpson takes a nonsensical position that the extension flange would lie “in” a plane simply by intersecting the plane (for example where the plane was perpendicular to the direction of the extension flange’s extension). Pet: 18-19. To the contrary, a PHOSITA would understand that a flange “lying in” a plane refers to a plane that is aligned with the end-to-end extension of the flange, not a plane that simply crosses the flange. EX2001: ¶127.

As mentioned above, “lying in a plane” is commonly used in the art. Notably, Simpson has used a form of the phrase “lying in a plane” in at least two of its own patent applications—International Patent App. No. WO 08/035098 (EX2015) and U.S. Publication No. 2005/0120669³ (EX2016)—to refer to a thin, flat three-dimensional object that extends end-to-end so that it is generally arranged in a plane. EX2001: ¶129. EX2015: 9:23-24, 9:28-29; EX2016: ¶¶[0008], [0057]; EX2057: ¶¶41-44.

With reference to the first of two versions of annotated Fig. 13 below, International Patent App. No. WO 08/035098 explains: “The stiffening elements (25) *lie in a plane* substantially parallel with a plane including the side flanges (30, 40).” EX2015: 9:23-24 (emphasis added); EX2001: ¶130. Notably, the stiffening elements (25) are thin, flat three-dimensional objects. *Id.*; EX2057: ¶42.

³ The assignment of U.S. Publication No. 2005/0120669 to Simpson was recorded with the U.S. Patent Office at Reel: 016276, Frame: 0897.

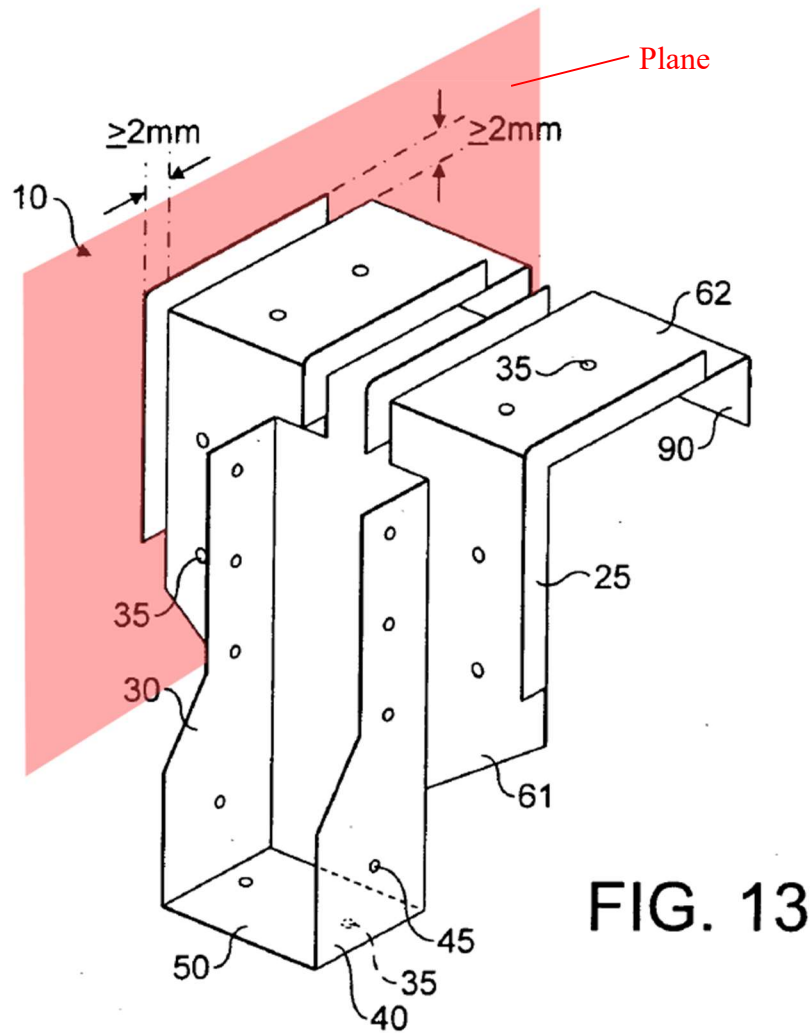
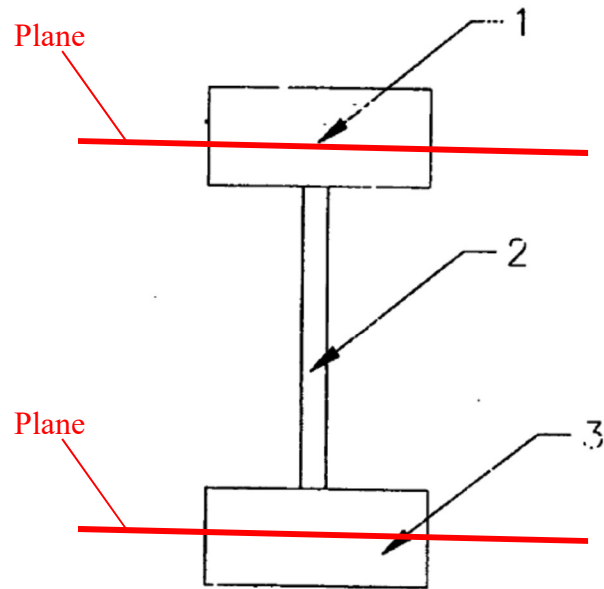


FIG. 13

Further, with reference to the version of annotated Fig. 13 below, International Patent App. No. WO 08/035098 explains: “The return leg(s) [90] *lie in a plane* approximately parallel to a plane including the back flange(s) [61].” EX2015: 9:28-29 (emphasis added); EX2001: ¶131. Again, the return legs (90) are thin, flat three-dimensional objects. *Id.*; EX2057: ¶43.

Figure 1



PRIOR ART

Similarly, U.S. Publication No. 2005/0120669 further explains with reference to Figs. 6A and 8A (annotated below): “In various embodiments, the *upper and/or lower return legs [90, 91] lie in a plane or planes approximately parallel to a plane including the back flange(s) [61].*” EX2016: ¶[0057] (emphasis added); EX2001: ¶134; EX2057: ¶44.

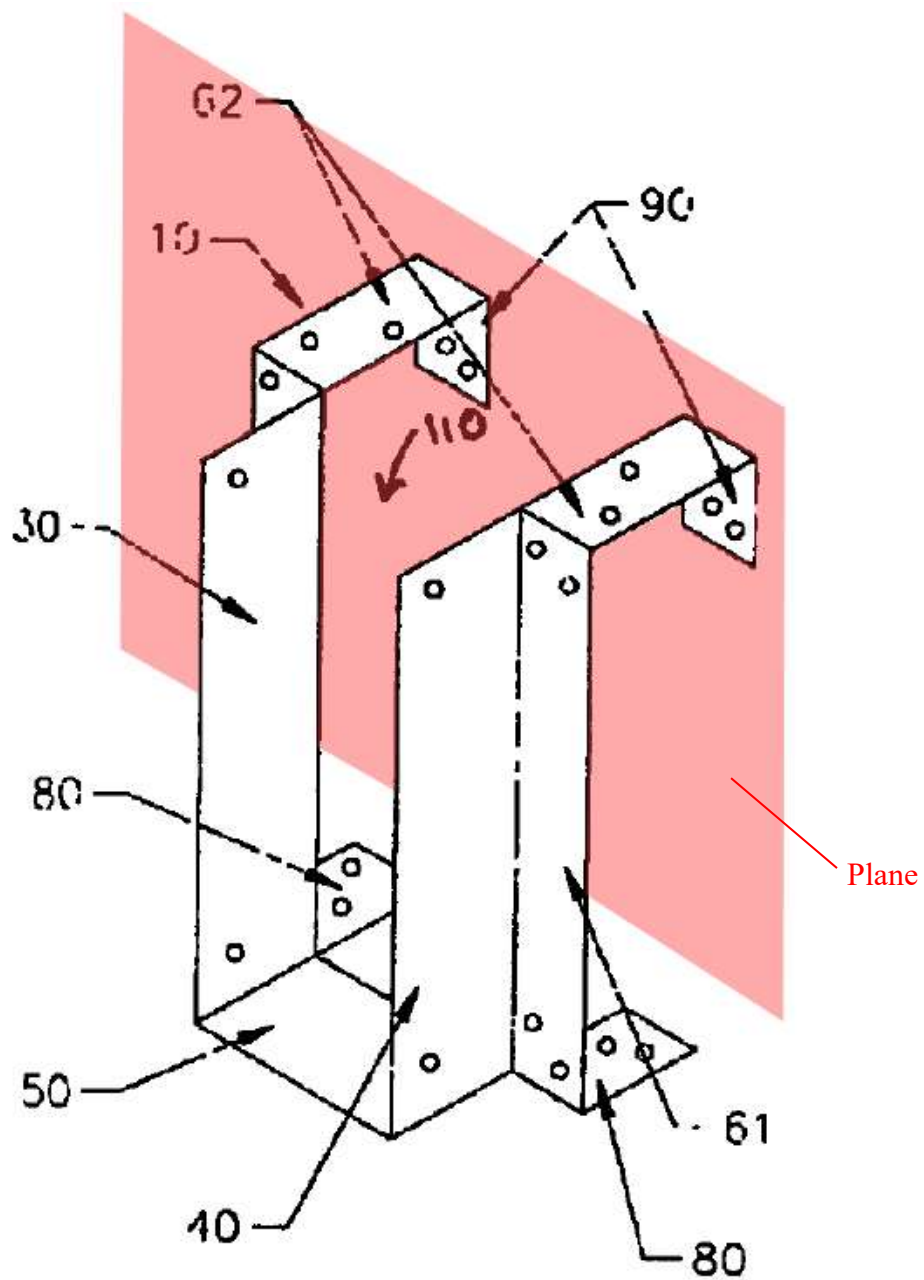


Figure 6A

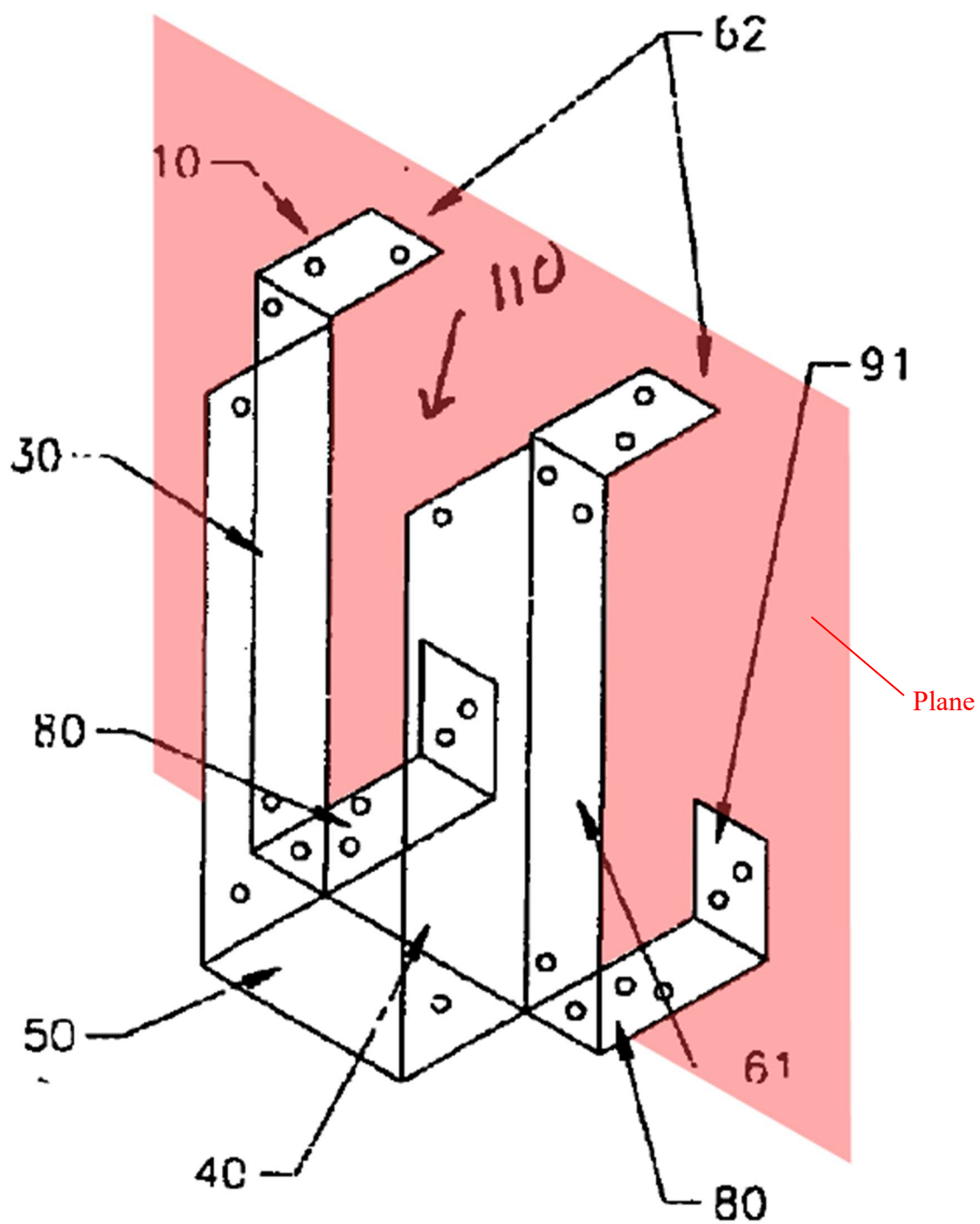


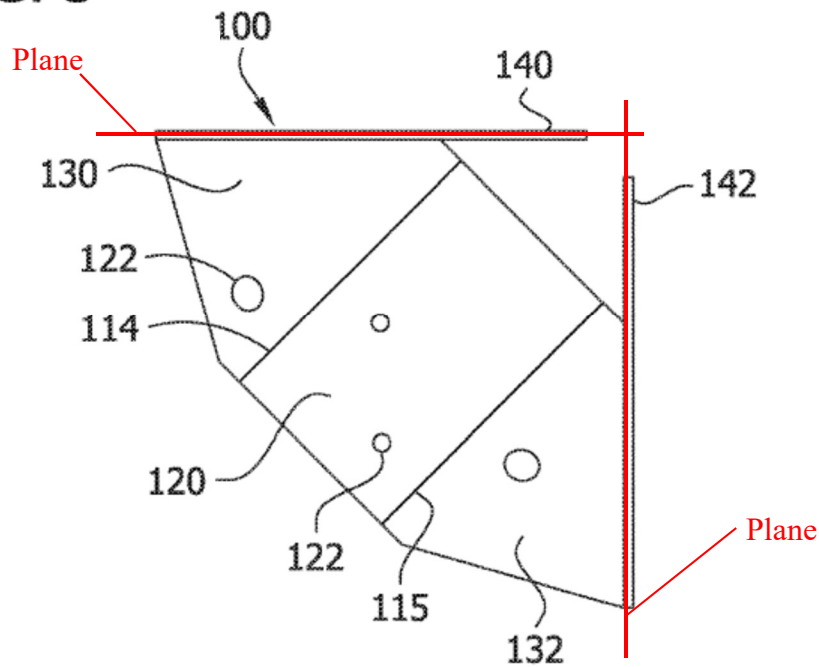
Figure 8A

Other joist hanger references also use a variation of the phrase “an object lying in a plane” to refer to a plane that is within the extent of the end-to-end extension of a thin, flat object.

For example, U.S. Pat. No. 10,214,897 (EX2017) identifies “spatial planes in which the fixing flanges [140, 142] lie ...,” a “first fixing flange lying in a first plane,” and a second planar fixing flange lying in a second plane. EX2017: 3:62-66, 8:21-27. EX2001: ¶138.

Figure 3 of U.S. Patent No. 10,214,897 as annotated below demonstrates the first planar fixing flange (140) “lying in” a first plane and the second planar fixing flange (142) “lying in” a second plane. *Id.*: ¶139. Notably, the fixing flanges (140, 142) are thin, flat three-dimensional objects. *Id.*; EX2057: ¶¶45-46.

FIG. 3



EX2017: Fig. 3 (annotated); EX2001: ¶139.

International Patent App. No. WO 01/06068 (EX2018) recites that the stiffening strips (26, 26A) are “lying in” planes. EX2018: 5:13-17, 9:10-12; EX2001: ¶140. Figure 3 of International Patent App. No. WO 01/06068 as annotated below demonstrates the stiffening strips (26, 26A) “lying in” planes that are parallel to the sides of the inverted, generally U-shaped part (12). EX2001: ¶141. Notably, the stiffening strips (26, 26A) are thin, flat three-dimensional objects. *Id.*; EX2057: ¶¶47-48.

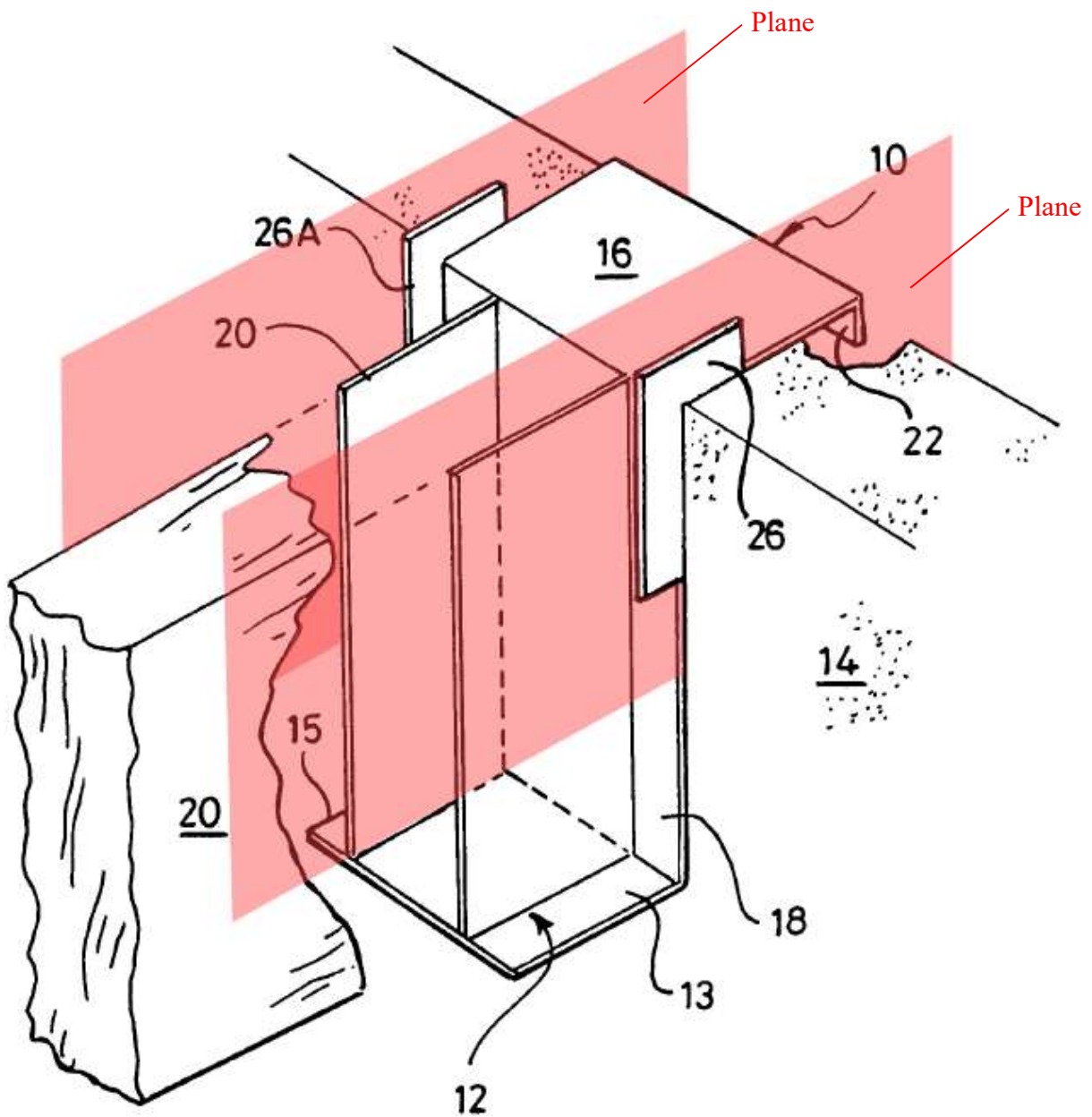
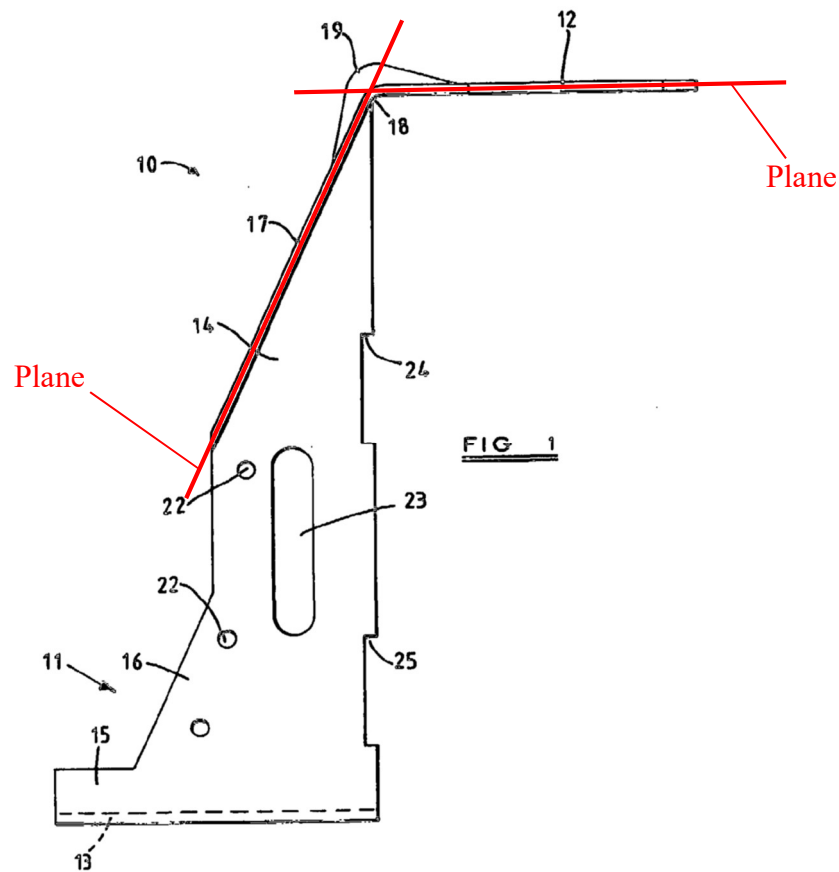


Fig. 3

EX2018: Fig. 3 (annotated); EX2001: ¶141.

IE 56802 (EX2019) recites wing portion (17) “lying in” a plane and an extension (12) “lying in” a different plane. EX2019: 3:19-24, 6:12-17; EX2001:

¶142. Figure 1 of IE 56802 as annotated below demonstrates wing portion (17) “lying in” a plane and an extension (12) “lying in” a different plane. *Id.*: ¶143. Notably, the wing portion (17) and extension (12) are thin, flat three-dimensional objects. *Id.*; EX2057: ¶¶49-50.



EX2019: Fig. 1 (annotated); EX2001: ¶143.

These prior art references all show that Columbia’s proposed claim construction for this limitation is consistent with its ordinary usage in the art. *Id.* ¶¶128-144; *see also 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)).

Accordingly, the limitation “each extension flange lying in an extension flange plane” should be construed to require that the extension flanges are thin and relatively flat such that the entire extension flange is substantially coplanar with the plane. EX2057: ¶51. Further, the PHOSITA would recognize the limitation as meaning that “for each extension flange an extension flange plane is within the extent of the extension flange from the channel-shaped portion to the connection portion.” EX2001: ¶145.

D. “Configured to”

Numerous claims in the ‘867 Patent recite the phrase “configured to.” EX1001: Claims 1, 5, 7, 8, 13, 16-18, 21, 22. Its usage in claim 1—“a channel-shaped portion configured to receive the structural component” and “each extension flange being configured to extend through the sheathing”—is representative of the usage of the phrase throughout the claims.

While Simpson advances a construction for the phrase “configured to extend through sheathing,” Simpson does not advance a construction of the phrase “configured to” itself. Pet: 13.

Although not specifically raised by Simpson in this PGR, the parties disputed the meaning of “configured to” as part of the ‘510 PGR. There, Simpson took the

position that a structure “configured to” perform a function merely needs to be “capable of” performing the function. As done here, Columbia argued that “configured to” means “designed to” or “meant to.” Although subject to an appeal, the Board agreed with Columbia that “configured to” means “designed to.” EX2006: 44.

Federal Circuit precedent makes clear that when a claim expresses a functional limitation, the prior art attempting to establish invalidity is evaluated based on if it discloses the claimed function. *K-2 Corp. v. Salomon S.A.*, 191 F.3d 1356, 1363 (Fed. Cir. 1999) (analyzing functional language as an additional limitation to an apparatus claim for an in-line skate); *In re Giannelli*, 739 F.3d 1375, 1380 (Fed. Cir. 2014) (analyzing functional language as an additional limitation to an apparatus claim for workout equipment). Controlling authority, has established that the claim language “configured to” (*i.e.*, a structure configured to perform a function) should be construed to require that the claimed structure is specifically “meant to” or “designed to” perform the claimed function. *Aspex Eyewear, Inc. v. Marchon Eyewear, Inc.*, 672 F.3d. 1335, 1349 (Fed. Cir. 2012) (finding that “adapted to” should be construed as “designed or *configured to* accomplish the specified objective”); *In re Giannelli*, 739 F.3d at 1379; *see also*, *Acclarent, Inc. v. Ford Albritton, IV*, IPR2017-00498, Paper 40 at 14, 16 (P.T.A.B. July 9, 2018) (“The precedent makes clear that the ‘configured to’ phrase itself connotes the narrower

meaning As such, we construe the term[] ‘configured to’ ... as requiring structure designed to ... accomplish the specified objective, not simply that [the structure] can be made to serve that purpose.”) (internal quotation omitted). Thus, when a functional limitation is expressed in terms of “configured to,” the prior art must be designed or made to perform the claimed function, not simply capable of performing the claimed function, in order to invalidate the functional limitation.

For example, in *In re Giannelli*, the Federal Circuit found that the functional limitation a “first handle portion adapted to be moved from a first position to a second position by a pulling force in a rowing motion” required the prior art reference to be “made to, designed to or configured to allow the user to perform a rowing exercise by pulling on the handles as claimed in the [patent] application.” *In re Giannelli*, 739 F.3d at 1379-80. Based on this construction, the Federal Circuit reversed a finding of obviousness where the Board “merely show[ed] that a rowing exercise *could* be performed on the machine disclosed in the [prior art reference].” *Id.* at 1380 (emphasis in original).

The Board in *Acclarent* also looked at the functions of a prior art reference to determine if it met the functional claim limitations. IPR2017-00498, Paper 40 at 19-21, 24-27. After summarizing the relevant Federal Circuit precedent, the Board in *Acclarent* concluded that the “configured to” and “adapted to” functional claim limitations required “structure designed to or configured to accomplish the specified

objective, not simply that they can be made to serve that purpose.” *Id.* at 11-17. After adopting this claim construction, the Board in *Acclarent* found that because “the Petition bases the grounds on either an ‘intended use’ or ‘capable of’ approach to claim construction, the Petition lacks sufficient argument and credible evidence to support a finding of unpatentability under the narrower construction we adopt here.” *Id.* at 20. In addressing one of the many prior art references relied upon in the IPR petition, the Board in *Acclarent* concluded:

We find that Petitioner’s arguments and evidence do not establish persuasively that [prior art reference’s] device discloses a handle structure “designed or configured to accomplish the specified objective”--here, permitting “the operator to position a thumb and index finger of the hand to manipulate the working device ... immediately adjacent to the handle opening.” Even in its Reply, Petitioner does not directly address how [the prior art reference’s] device meets this limitation if construed narrowly as Patent Owner suggests, rather than requiring a mere capability to perform the claimed function as Petitioner proposes. The parties dispute whether the videos allegedly showing the Goldfarb device in operation discloses the claimed singlehanded operation. Even if the videos showed the devices used in the claimed manner, that would only establish the mere capability of [the prior art reference’s] device to perform the claimed function. *Id.* at 24.

Accordingly, “configured to” should be construed as meaning “meant to” or “designed to” and any prior art evaluated based on if it has structure specifically “meant to” or “designed to” perform the claimed function(s). Notably, none of *Aspex Eyewear*, *In re Giannelli*, or *Acclarent* devolved into construing the claims to identify structural attributes required to perform the claimed functions as this Board

required in PGR2019-00063 and the Institution Decision. Rather, doing so is contrary to the *Acclarent*'s guidance that "configured to" requires more than the "mere capability to perform the claimed function." IPR2017-00498, Paper 40 at 24.

E. "Extension Flanges Are Configured to Extend Through the Sheathing While Maintaining a 2 Hour Fire Resistance Rating"

As issued, claims 5 and 17 both recite "wherein the first and second extension flanges are configured to extend through the sheathing while maintaining a 2 hour fire resistance rating of the sheathing." Simpson did not advance a proposed construction of this limitation, but instead argued that the limitation is indefinite.

The entire basis of Simpson's argument was that "the recited function of maintaining a 2 hour fire resistance rating of sheathing does not clarify what is required by the hanger, because the fire resistance rating is based on the entire wall assembly" Pet: 22-23. In drafting the claims 5 and 17, Columbia understood the claims to identify that the 2 hour fire resistance rating was for the entire wall assembly, but more specifically referred to the contribution of the sheathing (the only part of the wall assembly affected by the hanger) to that rating.

Columbia received a Certificate of Correction to explicitly recite that the fire resistance rating is for the entire wall assembly. EX2032. The '867 Patent should be evaluated based on the changes made in the Certificate of Correction. *See ipDataTel, LLC. v. ICN Acquisition, LLC*, IPR2018-01822, Paper 19 at 7, 14-16 (P.T.A.B. April 22, 2019) (evaluating the claims based on changes made by a

Certificate of Correction issued after the Petition); *Edwards Lifesciences Corp. v. Evalve, Inc.*, IPR2019-01285, Paper 19 at 6, 8 (P.T.A.B. Jan. 9, 2020) (applying the priority date as corrected by a Certificate of Correction filed after the Petition); *Parsons Xtreme Golf, LLC v. Taylor Made Golf Company, Inc.*, IPR2018-00657, Paper 14 at 3, 11 (P.T.A.B. Aug. 14, 2018) (same).

Notably, the requested correction merely conforms to how a PHOSITA would have interpret the claim limitation as originally issued. EX2001: ¶148. Within the specification, the 2 hour fire resistance rating is continually and repeatedly referred to as being a property of the wall assembly with sheathing,⁴ not the sheathing alone. EX1001: 1:38-39 (“the fire separation wall maintain a certain fire resistant rating.”), 4:26-29 (“a 2-hour fire-resistive wall assembly.”), 11:29-32 (“the truss hanger minimally disrupts the continuity of the sheathing and therefore does not reduce the fire resistive rating of a *fire rated assembly*”), 11:45-60; EX2001: ¶149. In view of the specification, a PHOSITA would have recognized the limitation was describing a 2 hour fire resistance rating of the entire wall assembly including the frame wall and the sheathing. *Id.*: ¶155; *see also* EX1003, ¶86 (“only when the final wall assembly is completed can the rating be determined and provided”).

⁴ The specification explains that the wall assembly includes the wall (*e.g.*, the stud frame wall) and the sheathing mounted thereon. EX1001: 4:15-20, 11:45-60.

The specification further provides an explicit description as to how test whether the configuration of the hanger successfully maintains the 2 hour fire resistance rating of the wall assembly, including by identifying the testing standards prescribed in ASTM E814 and ASTM E119. EX1001: 11:45-60; EX2057: ¶56.

Accordingly, in view of the description in the specification and the knowledge possessed by a PHOSITA, the PHOSITA would understand “maintaining a 2 hour fire resistance rating” limitation to add a functional requirement that in addition to the specifically recited physical attribute of the hanger identified in the independent claims. Specifically, the limitation adds the requirement that the hanger be configured so as to minimally disturb the fire barrier (*i.e.*, the sheathing) such that a wall assembly—including a frame wall and the sheathing—upon which the hanger is installed would pass a two-hour fire rating test performed according to the testing standards prescribed by ASTM E814 and ASTM E119. EX2057: ¶¶54, 57.

F. “[Each Extension Flange] / [the First and Second Extension Flanges] Being Configured to Extend Through [the Sheathing] / [an Opening in the Sheathing]”

As Simpson acknowledges, the phrase “configured to extend through [the sheathing] / [an opening in the sheathing]” should be construed to require “extending into one side and out of the other side of the sheathing.” Pet: 14. Instead, the Institution Decision relies on the construction “an extension portion extending from

the channel-shaped portion towards the connection portion and defining a space to receive sheathing” from PGR2019-00063. Institution Decision (“ID”): 21, 48.

Columbia is actively appealing the construction from PGR2019-00063 and respectfully requests the Board reconsider adopting this prior construction because it improperly eliminates the “extending through” portion of the limitation.

There is no longer any dispute that “extending through” sheathing means extending into one side and out of the other side of the sheathing. Pet. at 14; EX2006: 45. The construction from PGR2019-00063 identifies two general structural attributes (extending towards the connection portion and defining a space to receive sheathing) that are present when a hanger extends into one side and out the other side of the sheathing. Yet these two attributes alone are insufficient, as a portion of a hanger can both extend towards the connection portion and provide a space capable of receiving sheathing without being “designed to” or “made to” extend through the sheathing. EX2057: ¶59. For instance, the extension portion/flanges can extend towards the connection portion (one of the identified structural attributes) but then terminate at a location that is spaced apart from the connection portion or the connection portion can be disposed inside the sheathing, thereby terminating within the sheathing. EX2057: ¶60. Similarly, Bundy has a portion that *extends towards* a connection portion, but does so *by extending over* the top of the sheathing *without extending through* the sheathing. EX2057: ¶61.

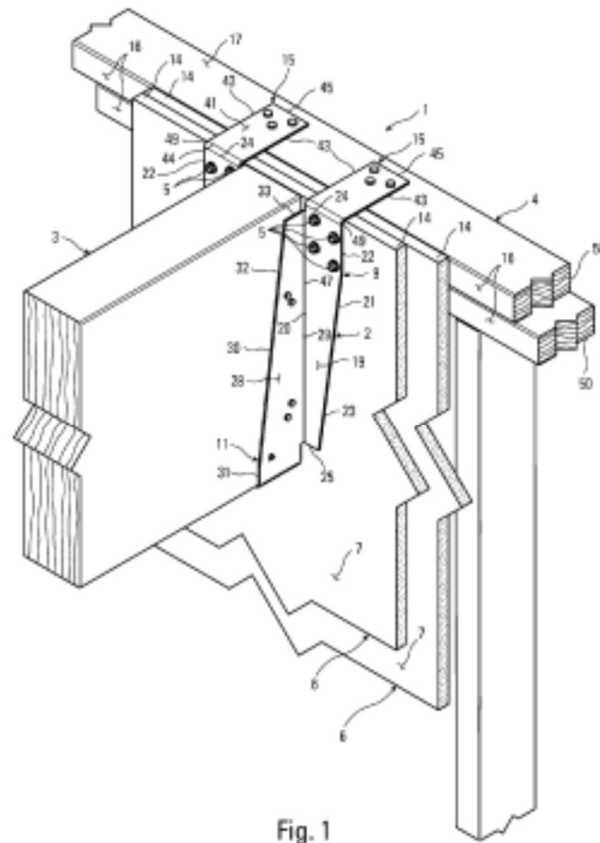


Fig. 1

At best, the construction from PGR2019-00063 merely identifies structural attributes of a hanger that could be made to serve the purpose of extending through sheathing. But just as in *Acclarent*, “the facts here fit comfortably within the precedent rejecting the ‘capable of’ construction in favor of the narrower construction.” IPR2017-00498, Paper 40 at 22 (“The precedent makes clear that the ‘configured to’ phrase itself connotes the narrower meaning”).

While the joist, wall, and sheathing are not themselves part of the claimed apparatus’s structure, the Federal Circuit has found that apparatus claims may define structural requirements in terms of unclaimed environmental features. *See e.g.*,

Orthokinetics, Inc. v. Safety Travel Chairs, Inc., 806 F.2d 1565, 1576 (Fed. Cir. 1986) (defining the dimensions of a portion of a claimed wheelchair according to the environment—an automobile—in which the wheelchair is designed to fit).

Moreover, whether the extension portion is “configured to extend through sheathing” is a separate requirement from whether it “define[s] a space to receive sheathing.” In fact, each of the claims already included a limitation regarding the extension portion’s ability to define a space to receive sheathing. *See Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950 (Fed. Cir. 2006) (“[C]laims are interpreted with an eye toward giving effect to all terms in the claim.”); *Warner-Jenkinson Co., Inc. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997) (“Each element contained in a patent claim is deemed material to defining the scope of the patented invention”).

The “[Each Extension Flange] / [the First and Second Extension Flanges] Being Configured to Extend Through [the Sheathing] / [an Opening in the Sheathing]” limitations as recited in Claims 1 and 16 should be construed to merely require an extension portion “meant to” or “designed to” perform the function of extending into one side and out the other side of the sheathing. To the extent additional structural attributes need to be identified, the extension flanges would need to (1) have sufficient length to extend into one side and out the other side of the sheathing, and (2) be constructed and arranged relative to the other components

of the hanger (particularly, the connection portion) such that they would actually do so when installed. EX2057: ¶62.

G. “The Connection Portion and Channel-Shaped Portion Being in a Fixed ... Relation Relative to One Another”

Claims 1 and 16 require “the connection portion and channel-shaped portion be[] in a fixed, spaced apart relation relative to one another.” Columbia agrees that components that are fixed would be connected such that they do not move freely with respect to one another. But the Institution Decision goes a step further by distinguishing hanger components that may be secured in place from those that are “permanently fixed.” ID: 63. Columbia disagrees that a PHOSITA would recognize any such distinction in view of the ‘867 Patent’s specification and prosecution history.

Claims 1 and 16 describe the hanger *per se* and not the installed combination of the hanger, joist, and wall. Therefore, from reading the claims, the PHOSITA would not conclude that the claims refer to hanger components that only assume a relative fixed position when the hanger is both attached to the wall and the joist. EX2057: ¶65. Rather, the PHOSITA would consider the limitation to require that the hanger components are fixed in their relative position at the time of manufacturing. EX2057: ¶66.

The specification and file history both support the hanger components are fixed in their relative position as a characteristic of the hanger itself, and not the

installed combination hanger, wall, and joist. EX2057: ¶66. For instance, the ‘867 Patent describes the hanger as being formed as “one piece of metal” stamped and bent from a sheet metal roll. EX1001: 7:15-20, Figs. 2 and 15; *See generally* EX2039; EX2057: ¶¶68-69. Such a hanger would be fixed from the moment of manufacture onward. EX2057: ¶73.

The specification also explains that the “connection portion is fixed in position relative to the channel-shaped portion such that that channel-shaped portion does not rotate relative to the connection portion.” EX1001: 2:15-18. It is clear that this sentence is distinguishing adjustable hangers. EX2057: ¶¶74-75. During prosecution of the ‘867 Patent, Columbia further expressly identified the “the connection portion and channel-shaped portion being in a fixed, spaced apart relation relative to one another” limitation as distinguishing Gilb ‘155, which disclosed an adjustable hanger. EX1002 at 354-356, 357; EX1010.

Joist hangers are used to construct stationary structures. As such, a PHOSITA would recognize that the components of adjustable hangers—such as the Gilb ‘155 hanger—would ultimately be secured in place during installation at a construction site as the result of the joist being supported being secured on the other end of its span and the force of the imposed load. EX2057: ¶76; EX1010 7:13-19 (“the structure of the present invention is not designed to rotate after load has been imposed”). Construing the “the connection portion and channel-shaped portion

being in a fixed, spaced apart relation relative to one another” limitation to apply to hanger components that are merely secured in place during installation at a construction site would render the limitation meaningless.

Accordingly, the PHOSITA would have understood “the connection portion and channel-shaped portion being in a fixed, spaced apart relation relative to one another” limitation requires that the components are fixed at the time of manufacturing.

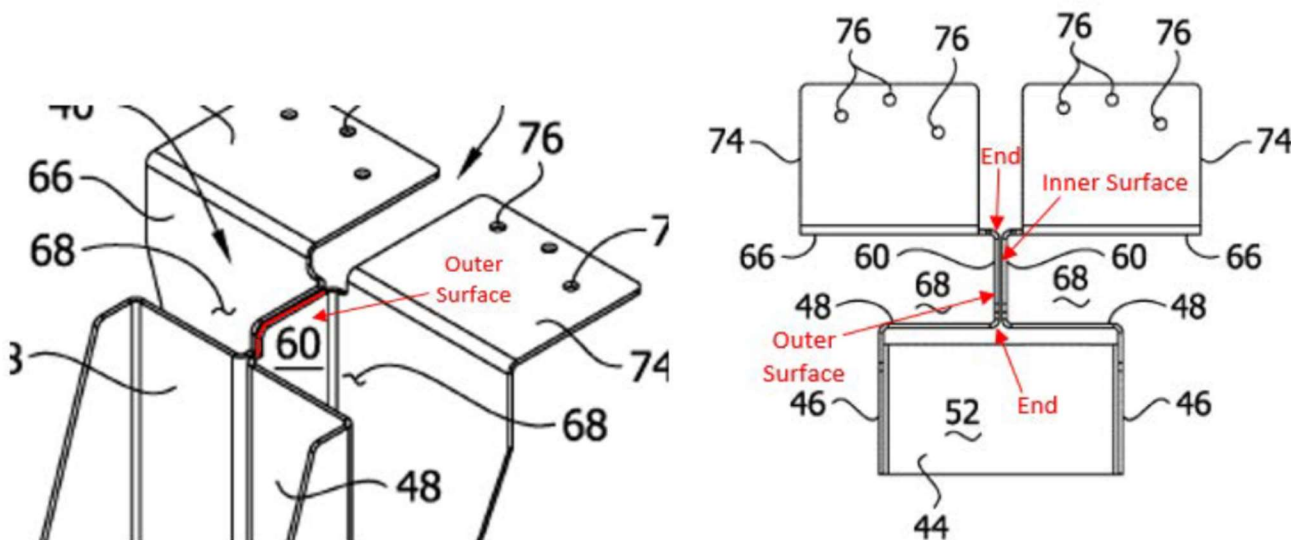
H. “Planar”

Simpson proposes the construction of the term “planar” as “having a surface coincident with a plane.” Pet: 14-15. While Columbia agrees that a planar object would have a surface that was coincident with a plane, this proposed definition is incomplete because it would categorize any three-dimensional object that includes a single flat surface as being planar. EX2055: 24:16-25:6 (a baseball cut in half would be planar).

A PHOSITA would understand that describing a three-dimensional object as being “planar”—as compared to only a surface of the object being planar—requires the entire object to have an essentially flat, thin profile with uniform thickness throughout. EX2057: ¶¶79-81; *see Leoutsakos v. Coll’s Hosp. Pharm., Inc.*, 98 Fed. Appx. 835, 839 (Fed. Cir. 2004) (construing “planar plate member as a planar member that is a perfectly flat sheet of a material of uniform thickness throughout.”)

(internal quotations omitted). Such an object is essentially “in the form of a plane” (EX1037: 6) as defined by opposite planar faces of the object.

This is consistent with the ‘867 Patent’s description of the extension flanges (60) as having a flat and thin profile. EX2057: ¶82; EX1001 2:20-21, Fig. 7; EX1003: 70 (annotated figure Figs. 1, 7).



EX1001, FIGS. 1, 7 (annotated).

This construction is also consistent with the use of the term “planar” in the mechanical arts, including joist hangers. EX2057: ¶83. Notably, Simpson has used the term “planar” in several of their own patent applications—Bundy (EX1007) and U.S. Patent Pub. No. 2007/0294979⁵ (EX2040)—to refer to a three-dimensional

⁵ The assignment of U.S. Publication No. 2007/0294979 to Simpson was recorded with the U.S. Patent Office at Reel: 018981, Frame: 0145.

object that has a flat and thin profile—like a plane. EX1007: Figs. 1 and 2, 4:29-30, 4:54-55, 5:53-54; EX2040: Fig. 1, ¶[0094]; EX2057: ¶¶83-87.

With reference to Figs. 1 and 2 below, Bundy states:

- “The first and second back plate members 9 preferably are *planar*”
- “The first and second side members 11 preferably are *planar* as well”
- “The first and second top flanges 15 preferably are *planar*”

EX1007: 4:29-30, 4:54, 5:53; EX2057: ¶¶84-85.

As shown in Figure 2 below, back plate members (9), side members (11), and top flanges (15) each have a flat thin profile. EX2057: ¶86.

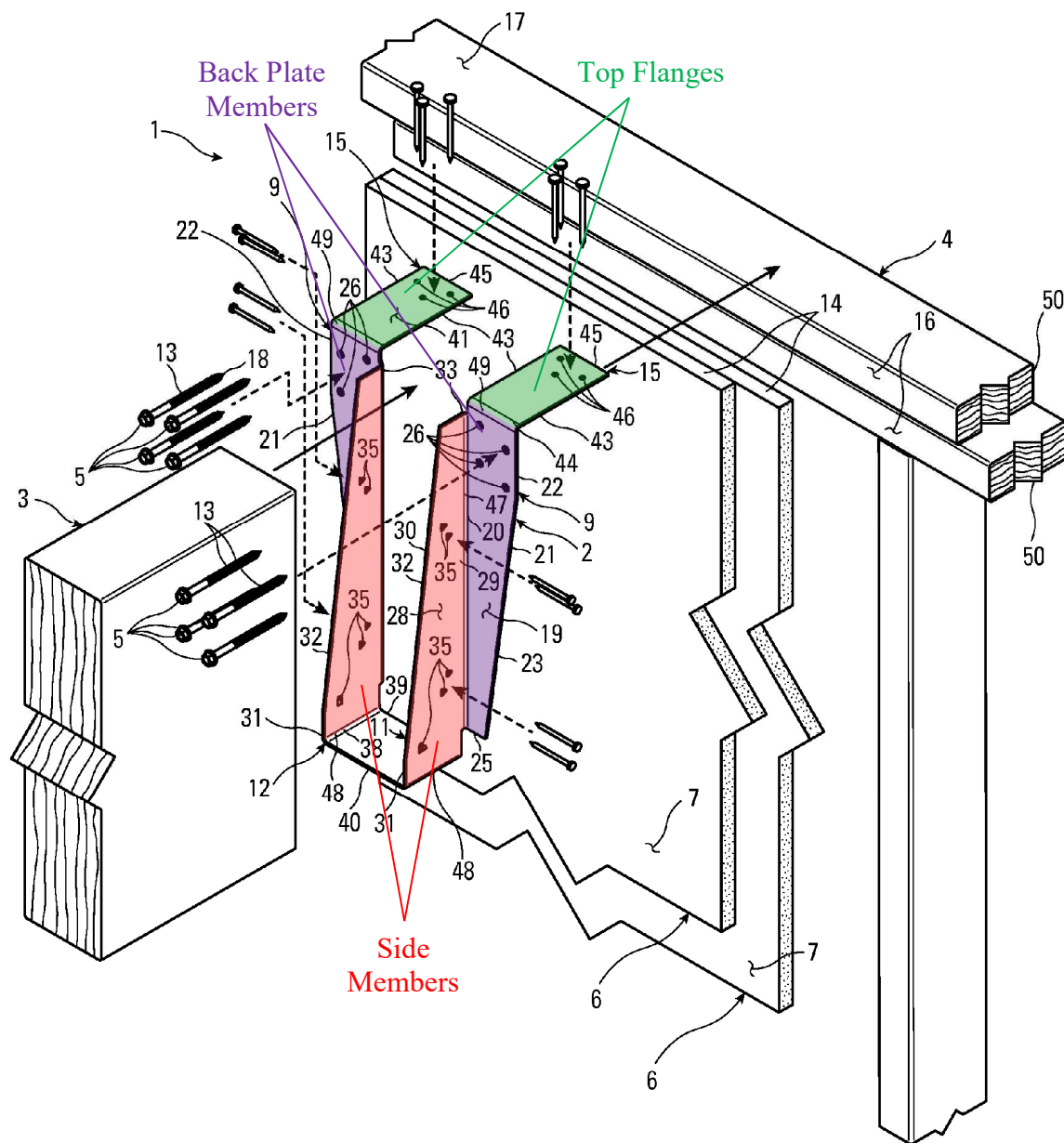
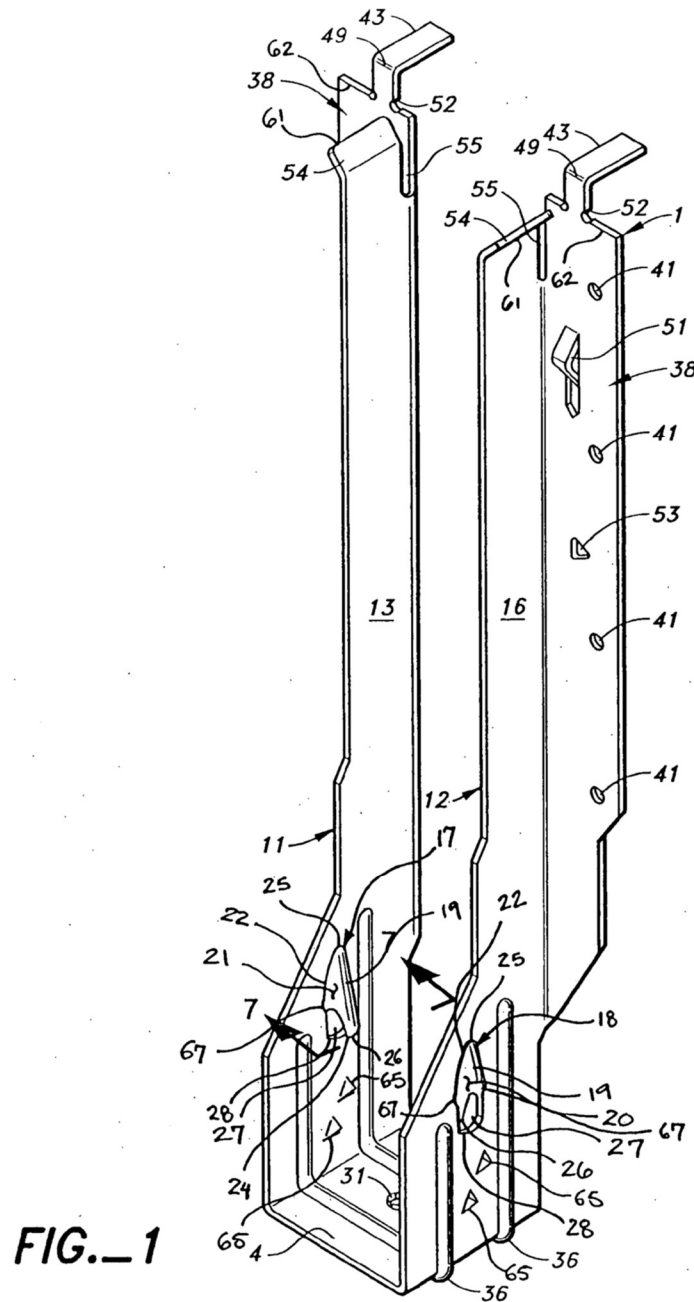


Fig. 2

EX1007: Fig. 2 (annotated).

Likewise, with reference to Fig. 1 below, U.S. 2007/0294979 explains “the opposed side walls 11 and 12 ... are substantially planar.” EX2040: ¶[0094]; EX2057: ¶87.



EX2040: Fig. 1.

Other joist hanger references also use the term “planar” to describe flat and thin objects. EX2057: ¶88. For example, with reference to Fig. 1 below, U.S. Patent No. 5,836,131 identifies “planar members 18 and 20,” “planar tab member 22,” and “planar tab 24.” EX2041: 2:51-56; EX2057: ¶89.

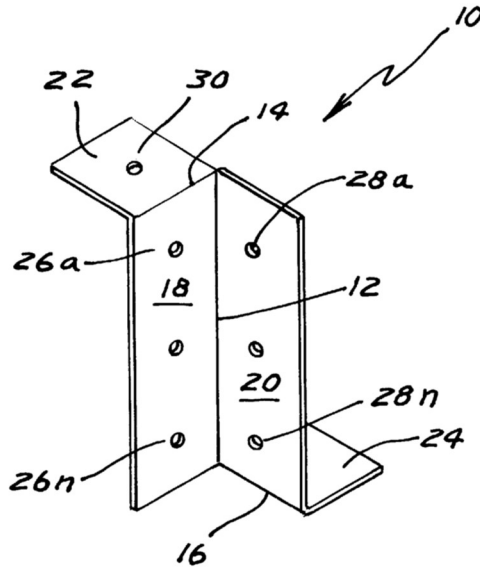


FIG. 1

EX2041: Fig. 1.

Similarly, with reference to Fig. 2, U.S. Patent No. 9,290,926 identifies “top planar portions 58.” EX2042: 3:65-66; EX2057: ¶90.

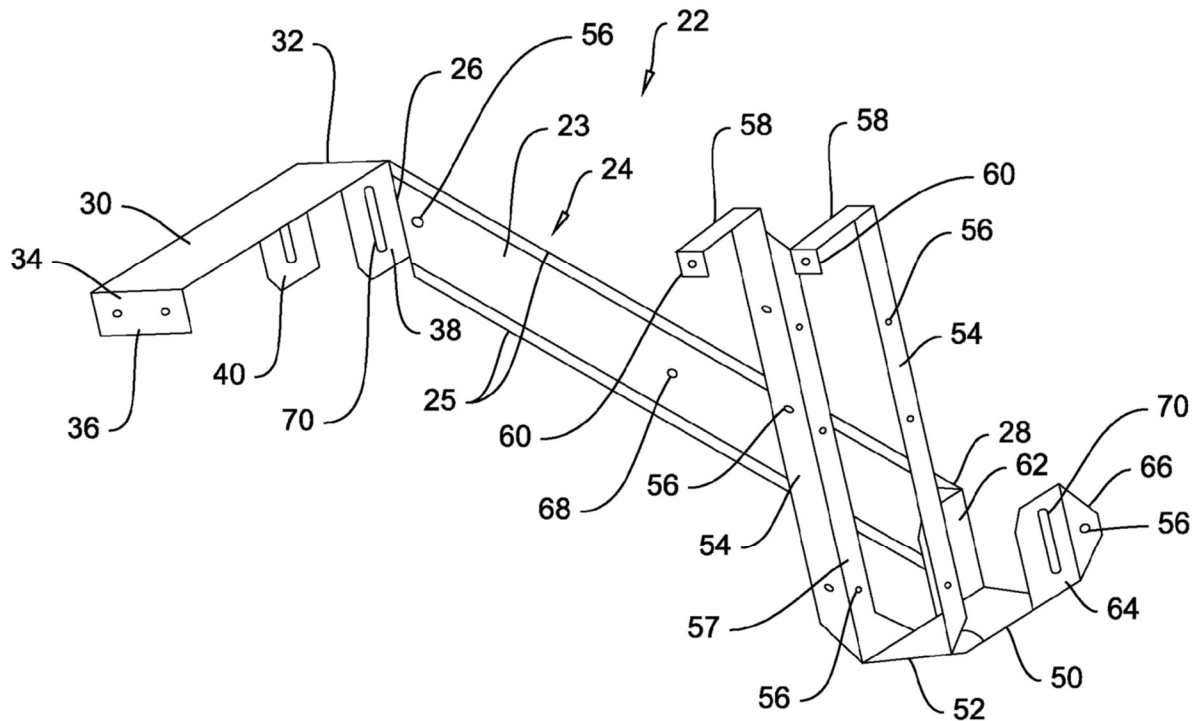


Fig.2

EX2042: Fig. 2.

These prior art references all show that Columbia's proposed claim construction for this limitation is consistent with its ordinary usage in the art.

EX2057: ¶91; *In re Cortright*, 165 F.3d at 1358.

VI. GROUND 1: SIMPSON HAS FAILED TO CARRY ITS BURDEN TO PROVE THAT CLAIMS 1-23 OF THE ‘867 PATENT 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.*

A. Simpson’s Argument that Claims 1-15 are Indefinite Fails to Account for a Claim Construction of “Each Extension Flange Lying in an Extension Flange Plane”

Simpson argues that claim 1 is invalid because the claim limitation “each extension flange lying in an extension flange plane” is allegedly indefinite under 35 U.S.C. § 112(b). In making its argument, Simpson fails to apply a proper construction of what is means to “lie in a plane.” Instead, Simpson erroneously asserts that this limitation requires the identification of a specific surface of the extension flange that lies in the extension flange plane, and that the limitation is indefinite because no specific surface of the extension flange is identified by claim 1. Pet: 15. However, this assertion by Simpson fails to consider how the PHOSITA would construe this limitation in the context in claim 1, the specification, and knowledge possessed by the PHOSITA. Under a proper construction of this limitation, claim 1 is definite and satisfies 35 U.S.C. § 112(b).

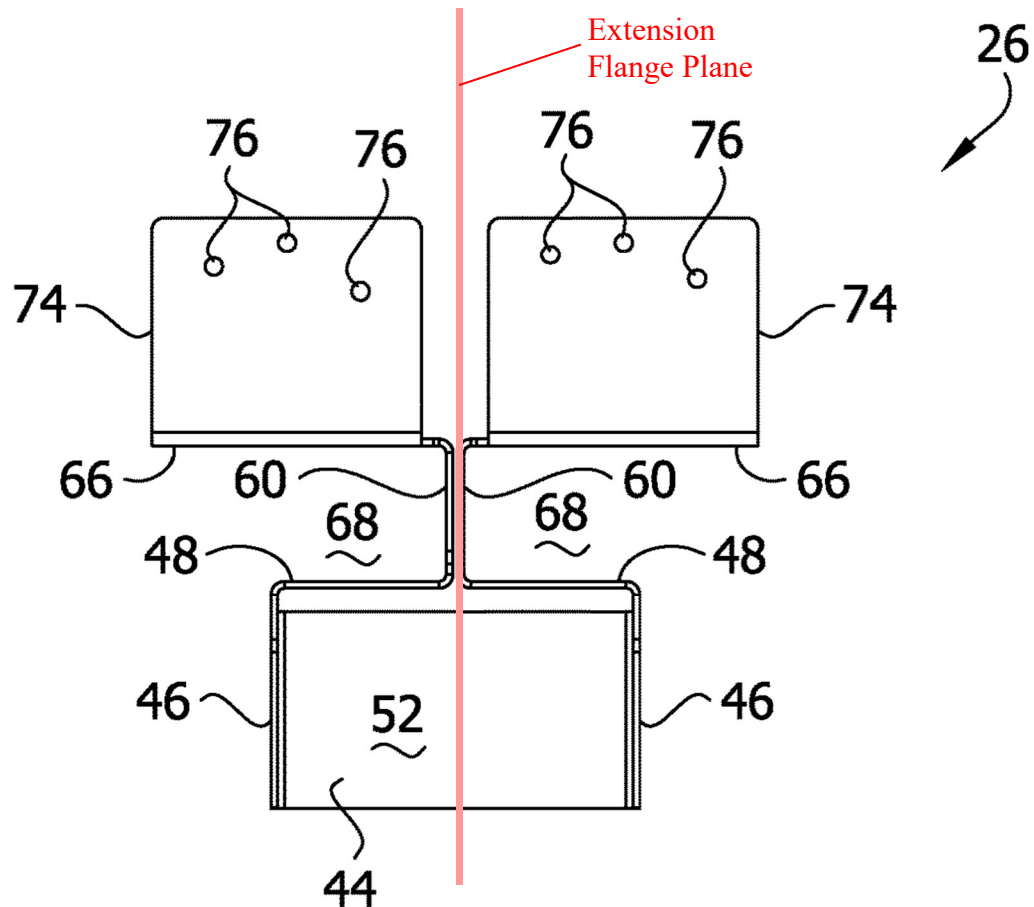
As explained in Section V(C), the phrase “each extension flange lying in an extension flange plane” means “for each extension flange an extension flange plane is within the extent of the extension flange from the channel-shaped portion to the connection portion.”

Applying this construction, the extension flange plane is a plane that is in the same arrangement as the extent of the extension flange from the channel-shaped portion to the connection portion. EX2001: ¶158. Given this understanding, the

PHOSITA is readily able to determine how the extension flange plane is arranged relative to the extension flange, as shown below in annotated Figs. 2 and 7:

EX1001: Fig. 2 (annotated); EX2001: ¶¶159-160.

FIG. 7



EX1001: Fig. 7 (annotated); EX2001: ¶¶159-¶160.

In view of how the PHOSITA would construe the limitation “each extension flange lying in an extension flange plane” in the context in claim 1, the specification, and knowledge possessed by the PHOSITA, the PHOSITA reading this limitation would understand what is being claimed with reasonable certainty. *Id.*: ¶161.

The claim further identifies that the extension flange plane is “generally perpendicular to the base plane.” Reading the claim as a whole, it is readily apparent

to a PHOSITA how the extension flange must be oriented. EX2001: ¶¶117-121; *see Cox Commc'ns, Inc. v. Sprint Commc'n Co. LP*, 838 F.3d 1224, 1232 (Fed. Cir. 2016) (clarifying that the indefiniteness inquiry is ultimately determined by the claims as a whole, not by isolated claim terms).

Simpson first argues this limitation is indefinite because the phrase fails to identify what surface of the extension flange “lies in the extension flange plane.” Pet: 15 (internal quotations omitted). But this argument fails because it incorrectly assumes that the phrase “extension flange lying in an extension flange plane” requires a specific surface of the extension flange that must be in the extension flange plane. EX2001: ¶¶163-164. As explained in Section V(C), “lying in a ... plane” would not be understood within the relevant art to only apply to the two dimensional surfaces of an object. Rather, “lying in a ... plane” is commonly used in the mechanical arts, including joist hangers, to describe the arrangement of a three dimensional object—particularly an object such as a flange that has a smaller thickness in relation to the dimensions of its major surfaces—relative to a plane. *Id.*: ¶164.

Simpson’s second argument asserts this limitation is indefinite because there is “an infinite number of planes that might satisfy the limitation” of an extension flange being “in” a plane, including planes that intersect the flanges at a 90° angle. Pet: 18-19. This argument fails because Simpson is only focusing on a single word—

“in”—instead of the full phrase —“*lying in* an extension flange plane.” EX2001: ¶¶165-166. As explained in Section V(C), “lying in a plane” would be readily understood by a PHOSITA. *Id.*: ¶166.

The PHOSITA is readily able to determine, with certainty, the arrangement of the extension flange planes and ultimately the orientation of the extension flanges. Accordingly, claim 1 and claims 2-15—which depend from claim 1—are definite. *Id.*: ¶167.

B. Claims 16-23 Are Sufficiently Definite

Simpson argues that claim 16 is indefinite because the term “the structural component” lacks antecedent basis. Pet: 21. Rather, the preamble of issued claim 16 recites “A hanger to connect *a joist* to a frame wall” while the body of issued claim 16 recites “the structural component.” Dependent claims 21 and 22 also recite “the structural component.”

A Certificate of Correction has been issued by the U.S. Patent and Trademark Office correcting claim 16 to recite: “A hanger to connect *a structural component* to a frame wall,” thereby providing antecedent basis for the term “the structural component.” EX2032.

Even prior to the issuance of the Certificate of Correction, claim 16 was not indefinite as a PHOSITA would have understood the term “a joist” provided antecedent basis for the term “the structural component.” *Microprocessor*

Enhancement Corp. v. Tex. Instruments Inc., 520 F.3d 1367, 1376 (Fed. Cir. 2008) (providing that it was a “well-settled rule that claims are not necessarily invalid for a lack of antecedent basis”); *Bose Corp. v. JBL, Inc.*, 274 F.3d 1354, 1359 (Fed. Cir. 2001) (“[T]he failure to provide explicit antecedent basis for terms does not always render a claim indefinite.”); *Energizer Holdings v. ITC*, 435 F.3d 1366, 1370 (Fed. Cir. 2006) (holding “that ‘anode gel’ is by implication the antecedent basis for ‘said zinc anode.’”).

The PHOSITA knows that joists are a type of structural component. EX2001: ¶¶172, 176-178; Pet: 21-22 (acknowledging that a joist is a specific type of structural member). Further, the specification of the ‘867 Patent used the terms “joists” and “trusses” interchangeably as types of structural components. EX2001: ¶173; *see e.g.* EX1001: 1:32-36 (“Floor *trusses or joists ... trusses or joists*”). Accordingly, a PHOSITA would have readily understood that the term “a joist” provided antecedent basis for the term “the structural component” based on the claim language, the specification, and the knowledge possessed by the PHOSITA. EX2001: ¶¶168-178.

Independent claim 16—both as originally issued and as corrected—and dependent claims 17-23 are definite. EX2001: ¶179.

C. Claims 5 and 17 are Sufficiently Definite

Simpson argued that claims 5 and 17 are allegedly indefinite because the claim limitation “maintaining a 2 hour fire resistance rating of the sheathing” fails to

inform a PHOSITA about the scope of the invention with reasonable certainty. Pet: 22-23. Simpson’s argument—which was prior to the issuance of the certificate of correction—was that there was a lack of clarity as “the fire resistance rating is based on the entire wall assembly, not just the conformance between the sheathing and the hanger.” Pet: 23.

Simpson’s arguments were effectively mooted by the Certificate of Correction, as claims 5 and 17 now recite that the 2 hour fire resistance rating is indeed “of [the] wall assembly including the wall [or frame wall] and the sheathing.” EX2003.

Even prior to the Certificate of Correction, claims 5 and 17 were not indefinite under a proper claim construction of what it means to “maintain[] a 2 hour fire resistance rating of the sheathing.” *See Cox. Communs., Inc.*, 838 F.3d at 1232 (“an indefiniteness analysis under 35 U.S.C. §112 is inextricably intertwined with claim construction.”) (internal quotations omitted). As explained in Section V(E), the PHOSITA would have understood that the 2 hour fire resistance rating was for the entire wall assembly including the frame wall and the sheathing. EX2001: ¶¶181-182.

Notably, the specification provides the standard for testing whether a wall assembly meets the 2 hour fire resistance rating:

The testing was performed per ASTM E814 which subjected the specimen to the time/temperature curve prescribed in ASTM E119 for

a period of two hours, followed by a hose stream test. EX1001: 11:45-60.

Serrette: ¶55; EX2055: 86:13-18.

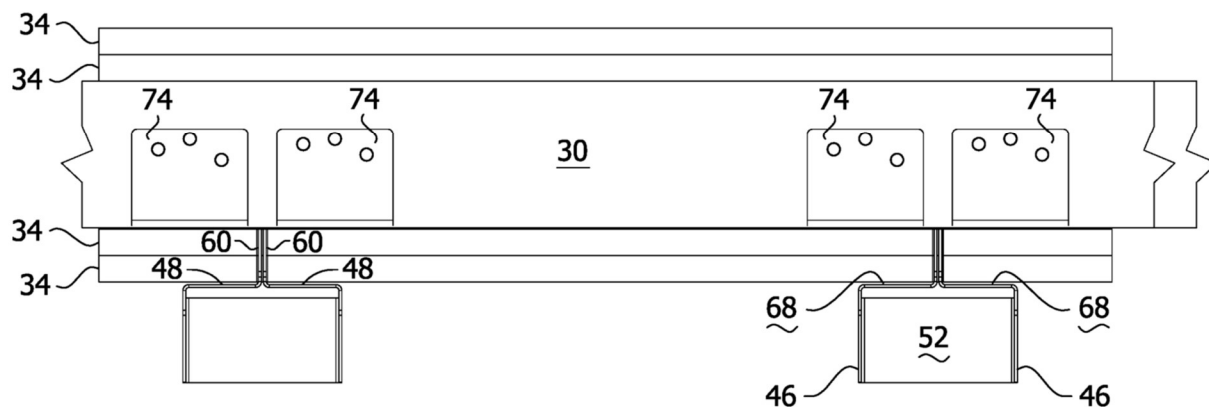
The Institution Decision faulted Patent Owner for failing to “identify[] what structural attributes *the claimed hanger* allegedly ‘requires’ to meet this 2-hour fire resistance” (ID: 32). This critique fails to recognize that “[a] patent application is free to recite features of an apparatus either structurally or functionally” and that “[t]here is nothing intrinsically wrong with defining something by what it does rather than what it is in drafting patent claims.” *In re Schreiber*, 128 F.3d 1473, 1478 (Fed. Cir. 1997) (quoting *In re Swinehart*, 439 F.2d 210, 212 (CCPA 1971)); *see also In re Stencel*, 828 F.2d 751, 754-55 (Fed.Cir.1987) (finding the function stated in claim distinguished it over the prior art).

Further, the ‘867 Patent actually does identify the structural attributes of the claimed hanger that allow it to be installed on a wall assembly having a 2 hour fire rating without compromising the fire rating. A person of skill in the art recognizes that a fire barrier is only as good as its weakest link, thus the continuity of fire resistant sheathing is critical to maintaining a wall’s fire rating. EX2057: ¶7; EX2054: 22-23, 122, 361. To this end, the ‘867 Patent repeatedly informs the PHOSITA that the extension portion of the claimed hanger is constructed to keep disruptions/interruptions of the fire barrier to a minimum. EX2057: ¶14; EX1001: 1:39-41, 7:10-14, 10:18-21, 11:27-29. For instance, the ‘867 Patent describes that

the gap between the extension portion and the edges of the sheathing/drywall should be “less than or equal to 1/8”.” EX1001: 5:34-36; 9:34-38; EX2057: ¶14.

It is the configuration of the extension flanges that achieves only a minimal gap (*e.g.*, 1/8") between the hanger and the exposed edges of the opening in the fire barrier, thus maintaining the integrity of the fire barrier without requiring supplemental treatment. EX2057: ¶18. The opening in the fire barrier will be generally rectangular with straight edges. EX2057: ¶12. To enable close conformance with the vertical side edges of the sheathing, the first and second extension flanges (60) have outwardly facing, uncovered exterior side faces, as shown in Fig. 11. EX1001: Fig. 11.

FIG. 11



Thus, the extension portions minimize the discontinuity in the fire barrier by being shaped and arranged to follow along the exposed edges of the opening in the

fire barrier such that only a very small gap in the fire barrier is exposed next to the hanger. EX2057: ¶16.; *see also*, EX1001: Fig. 11.

**VII. GROUND 2: SIMPSON’S LACK OF WRITTEN DESCRIPTION
ARGUMENT FOR CLAIMS 5 AND 17 HAS NO MERIT**

The “Written Description” requirement in patent law requires that “[t]he 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 or 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)). “The question raised ... is most often phrased as whether the application provides ‘adequate support’ for the claim(s) at issue” *Id.* at 1560. “[T]he test for sufficiency is whether the disclosure of the application relied upon reasonably conveys to those skilled in the art 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).

Simpson’s argument—which predated the Certificate of Correction—was that claims 5 and 17 lacked written description support because the specification does not “disclose that the sheathing alone has a 2 hour fire resistance rating.” Pet: 24. The Certificate of Correction mooted Simpson’s argument, as claims 5 and 17 now

recite “maintaining a 2 hour fire resistance rating of a wall assembly including the wall[/frame wall] and the sheathing,” EX1001; EX2032.

Even prior to the issuance of the Certificate of Correction, a PHOSITA would have understood “wherein the first and second extension flanges are configured to extend through the sheathing while maintaining a 2 hour fire resistance rating of the sheathing” within the context of the ‘867 Patent to mean “wherein the first and second extension flanges are configured to extend through the sheathing while maintaining a 2 hour fire resistance rating of *a wall assembly including the wall[/frame wall] and the sheathing.*” EX2001: ¶187; *supra* Section V(E).

The Institution Decision went a step further and determined claims 5 and 17 lack written description support “[f]or the same reasons [the Board] determined the subject limitation fails to inform with reasonable certainty how the limitation further limits the claimed hanger.” ID: 36. But Section 112(a)’s written description requirement and Section 112(b)’s definiteness requirement “are analytically distinct.” *Rengo Co. v. Molins Mach. Co.*, 657 F.2d 535, 550 (3d Cir. 1981); *see also 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 we shall therefore consider them separately....”) (internal citations omitted).

Regardless, claims 5 and 17 have written description support from the specification of the '867 Patent. EX1001: 4:26-29, 5:1-3, 11:29-32, 11:45-60. As acknowledged by Simpson's expert Mr. Fennell, a wall composed of two layers of 5/8" sheathing is a well-known standard for fire-rated construction. EX1003: ¶43. Section V(F) above, identifies the physical attributes of the extension flanges that enables them to extend through the sheathing while maintaining the 2 hour fire rating of the wall assembly.

Further, the specification identifies that Columbia had a wall assembly independently tested by an outside firm according to the procedures prescribed by STM E814 and ASTM E119 to confirm that the penetration of the claimed hanger's extension flange through the sheathing did not compromise the 2 hour fire rating of a wall assembly. EX1001: 11:45-60. The inclusion of the independent testing is proof positive that the inventor was in possession of a hanger with extension flanges that were "configured to extend through the sheathing while maintaining a 2 hour fire resistance rating of a wall assembly including the wall[/frame wall] and the sheathing."

Accordingly, the specification provides written description support for the "2 hour fire resistance rating of a wall assembly" limitation recited by claims 5 and 17.

VIII. GROUND 3: CLAIMS 1-12, 15-17, AND 21-23 WOULD NOT HAVE BEEN OBVIOUS OVER GILB’792 IN VIEW OF BUNDY

Simpson argues that “Gilb’792 discloses each and every structural element” listed in the independent claims of the ‘867 Patent, with the exception that it does not “explicitly disclose that the space between its hanger’s channel-shaped portion and back flange is sized and shaped to receive sheathing therein.” For this missing element, Simpson relies on Bundy. But contrary to Simpson’s argument, the Gilb ‘792/Bundy combination fails to disclose a number of the claim limitations of the ‘867 Patent.

A. Neither Gilb ‘792, Nor Bundy Discloses an “Extension Flange Being Configured to Extend Through the Sheathing”

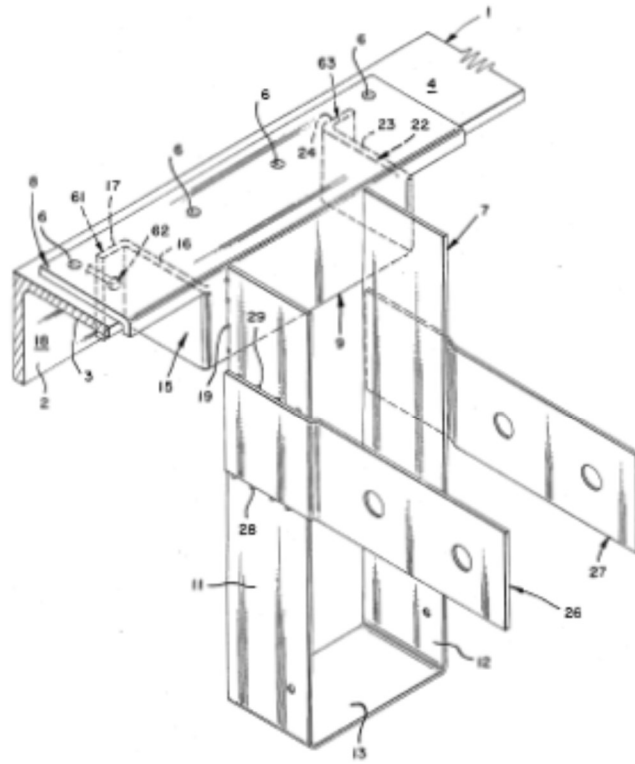
Both claims 1 and 16—the two independent claims—require an “extension flange being configured to extend through the sheathing.”

As addressed in Section V(D) above, the limitation should be construed to require the extension flanges be specifically “meant to” or “designed to” extend into one side and out of the other side of the sheathing. Gilb ‘792 is entirely silent as to the use of the disclosed hanger with sheathing. EX2001: ¶196. And while Bundy does disclose the use of its hanger with sheathing, Bundy’s extension flanges extend *over* the sheathing, not *through* it. EX1007: 4:60-61, 6:1-5, Figs. 1-2; EX2001: ¶207. Neither Gilb ‘792, nor Bundy discloses a hanger with an extension flange that is “designed to” or “meant to” extend through sheathing. *Id.*: ¶¶195, 207-208.

As Simpson acknowledges, the phrase “configured to extend through” should at the very least be construed to require “extending into one side and out of the other side of the sheathing.” Pet: 14. Simpson acknowledges that “Gilb ’792 does not explicitly disclose extending gusset members 15’/22’ through sheathing.” Instead, Simpson argues that certain features of the Gilb ’792’s gusset members (15’/22’)—that they are flat and constructed from sheet metal—make them “configured to extend into one side of sheathing and out of the other side of sheathing, when sheathing is installed between base 36 and stirrup members.” But Simpson’s analysis is incomplete.

Simpson does not provide any isometric drawings to demonstrate how exactly the sheathing would be installed such that the Gilb ’792 hanger’s gusset members 15’/22’ would actually extend through the sheathing.

The Gilb ’792 hanger is intended to attach to a metal ledger (“typified by 3X3X¼ inch up through 3X6X¼ inch angled sections” (EX1035: 1:22-25) that is in turn secured to a concrete or masonry wall. EX2001: ¶¶198-199; EX1035: 1:5-63, 2:29-47, Fig. 1 (below).



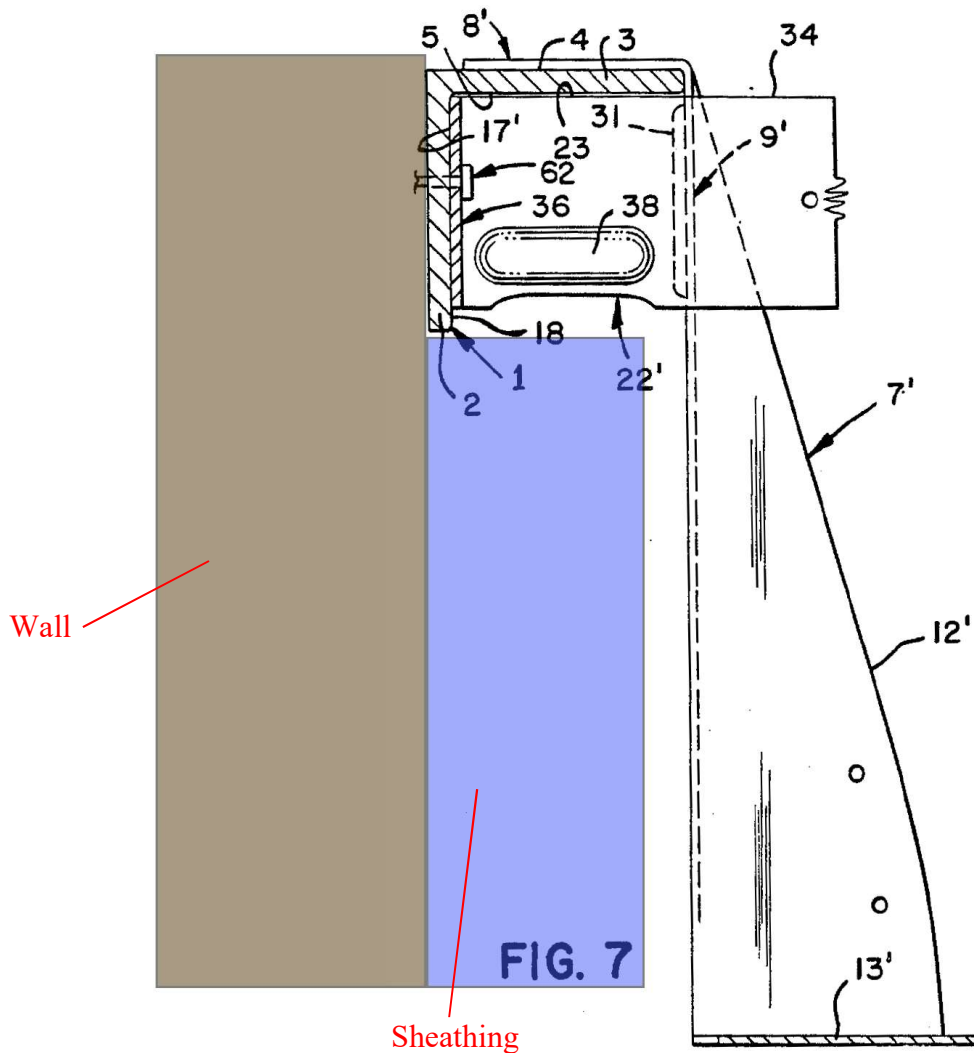
Further annotating EX1035, FIG. 7 as annotated at page 41 of the Petition demonstrates the installation were sheathing installed overlapping the ledger and base 36 (described as being 7-gauge⁶ at EX1035 Col. 2, Lines 49-52) of the hanger such that the gusset members (15'/22') would extend through the sheathing.

EX2001: ¶200.

⁶ Approximately 3/16 inches thick. 15 U.S.C. § 206.

extend through it.⁷ Moreover, one of skill in the art would recognize that the installation of sheathing (to the extent that sheathing would be installed at all) would be stopped below the ledger and gusset members (15'/22') of the Gilb '792 hanger. *Id.*: ¶205.

⁷ Framed in terms of structural attributes, the gusset members do not possess a sufficient length to extend out the other side of the sheathing and/or are not arranged relative to Gilb '792's "connection portion" such that they would actually do so when installed. Section V(F); EX2001 ¶¶202-203.



EX1035: Fig. 7 (annotated).

Moreover, it would require a significant modification of the Gilb ‘792 hanger (e.g., omitting the metal ledger) to make the hanger compatible with installing sheathing up to and around the gusset members (15’/22’). *Id.*: ¶206; see also *Plas-Pak Indus., Inc. v. Sulzer Mixpac AG*, 600 Fed. Appx. 755, 758 (Fed. Cir. 2015) (finding that a substitution cannot “change the basic principles under which the prior art was designed to operate, or ... render the prior art inoperable for its intended purpose”) (internal quotation and citation omitted).

The Institution Decision identifies a number of potential solutions to address the gap between the sheath space and the wall (ID: 53), but these solutions were not raised by the Petition. For example, the Institution Decision identifies that “an initial ½” sheathing [could be applied] to the wall up to the ledger [prior to] applying sheathing in Petitioner’s designated ‘sheathing space’.” ID: 53. However, the Institution Decision does not identify any motivation why a PHOSITA would have considered doing so. This solution or any other solution to the nearly half-an-inch gap between the wall and purported sheath space is mere “speculat[ion] on a ‘problem’ of how prior devices might be reconstructed to match the claimed structure.” *Panduit Corp. v. Dennison Mfg. Co.*, 810 F. 2d 1561, 1574 (Fed. Cir. 1987). The Institution Decision’s “readily apparent resolutions” are *ad hoc* rationalizations for sanctioning Simpson’s hindsight aided reconstructions. *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.”).

It is more reasonable to conclude that one of skill in the art would apply sheathing to the bottom of the ledger and use the ledger as a fire barrier (as is shown above in annotated Fig. 7). This would avoid the difficult requirement of configuring any part of the hanger to extend through sheathing. Indeed, extending

the Gilb ‘792 hanger’s gusset members (15’/22’) over the sheathing is the same solution actually taught by Bundy.

As neither Gilb ‘792, nor Bundy discloses an “extension flange being configured to extend through the sheathing”—a limitation required by every claim of the ‘867 Patent—the combination of Gilb ‘792 and Brady would not have rendered any of the challenged claims obvious. EX2001: ¶¶209-210.

B. The “Back Flange” of Gilb ‘792 Is Not “Configured for Engaging a Vertical Face of the Upper Plate of the Frame Wall” [Claim 16]

Independent Claim 16 requires a “back flange configured for engaging a vertical face of the upper plate of the frame wall.” Simpson equates base (36) of the Gilb ‘792 hanger to the back flange recited in claim 16 of the ‘867 Patent. Pet: 56.

Rather than attaching the Gilb ‘792 hanger directly to the upper plate of the frame wall, the Gilb ‘792 hanger is specifically configured to attach to a metal ledger. EX1035: 1:5-63, 2:29-47; EX2057: ¶¶92-94. By attaching the Gilb ‘792 hanger to the ledger, the base (36) would be in face-to-face contact with the lower leg (2) of the ledger. EX2057: ¶95; EX1035: Figs. 5-7. In other words, the base (36) is configured to engage the lower leg (2) of the ledger, not a vertical face of the upper plate of the frame wall. EX2057: ¶96.

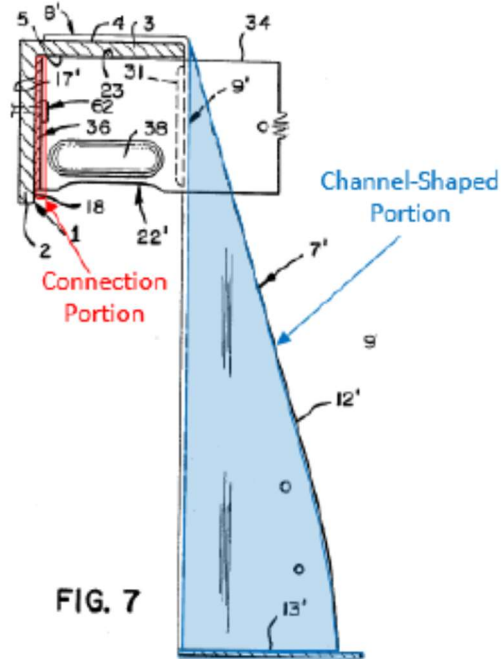
EX2055: 45:13-46:16. The load path of Gilb ‘792 is reliant on the connection of the top flange (8) to the outstanding ledger leg (3) to provide vertical support for the imposed load. EX2057: ¶¶98-100; EX2055: 45:13-48:1. Further, modifying the Gilb ‘792 hanger to eliminate its reliance on the ledger to provide vertical support would impermissibly “change the basic principles under which [it] was designed to operate.” *Plas-Pak Indus., Inc.*, 600 Fed. Appx. 755, 758.

C. Gilb ‘792 Does Not Disclose an “Extension Portion ... Extending from the Channel Shaped Portion to the Connection Portion” [Claim 1] or “First and Second Extension Flanges Interconnecting the Connection Portion and the Channel-Shaped Portion” [Claim 16]

Independent Claims 1 and 16 each require an extension portion and/or extension flanges that extend from the connection portion of the hanger to the channel-shaped portion of the hanger.

In attempting to match the components of Gilb ‘792⁸ to the ‘867 Patent claim limitations, Simpson identifies base (36) as the connection portion, stirrup members (11’/12’) as the channel-shaped portion, and gusset members (15’/22’) as the extension portion/extension flanges. Pet. 33, 36.

⁸ Simpson relies on Gilb ‘792’s Figures 5-7 embodiment.



EX1008, FIG. 7 (annotated). EX1003, ¶113.

Simpson’s labeling of the components of Gilb ‘792—especially the purported connection portion and extension portion/extension flanges—fails to account for how the Gilb ‘792 attaches to a wall, thus resulting in mislabeling the components of Gilb ‘792. EX2057: ¶¶102-103.

Gilb ‘792 is designed to attach to a metal ledger (“typified by 3X3X¼ inch up through 3X6X¼ inch angled sections” (EX1035: 1:22-25) that is in turn secured to a concrete or masonry wall. EX2001: ¶¶198-199; EX1035: 1:5-63; Fig. 5 (reproduced below); EX2057: ¶104.

Specifically, the “top flange 8’ is adapted for connection to the upper face 4 of the outstanding ledger leg 3.” EX1035: 3:25-27; EX2057: ¶105. Further, the

respective top edges (16'/23') of the gusset members (15'/ 22') are “in registration with the lower face 5 of the outstanding leg 3 of the ledger and a side face 17' in close fitting relation to the outward face 18 of the lower leg 2 of the metal ledger.”

EX1035: Fig. 7 (below), 3:34-38; EX2057: ¶¶106-107.

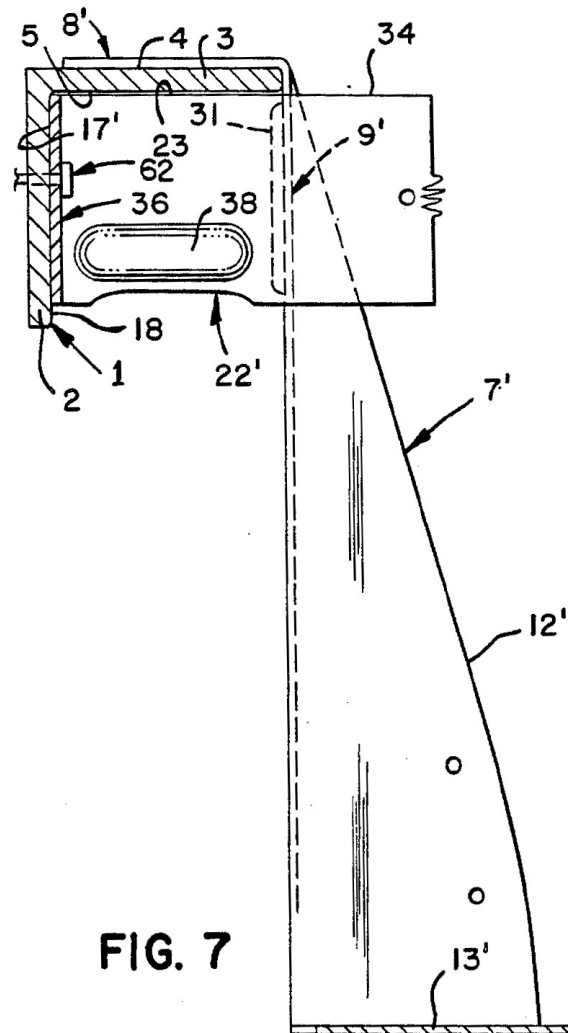
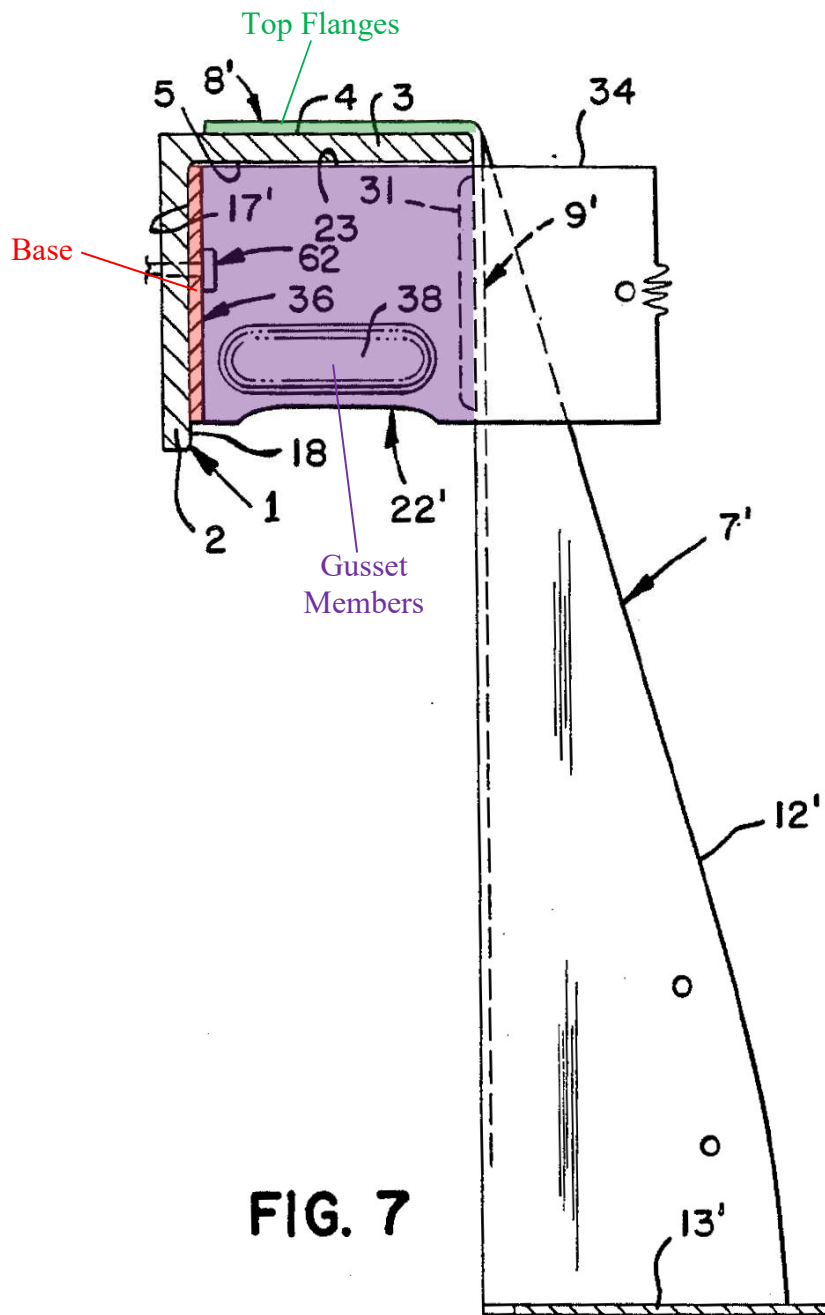


FIG. 7

Indeed, the entire purpose of the invention disclosed in Gilb '792 was to attach the hanger to the outstanding leg (3) of the ledger with the gusset members (15'/22') reinforcing the outstanding leg of the ledger to prevent deflection. EX2057: ¶108; EX1035: 1:31-40.

In other words, the connection portion of Gilb '792 is not limited to just base (36). Rather, the connection portion of Gilb'792 includes the top flange (8') and the gusset members (15'/22') (which Simpson incorrectly identifies as extension portion/extension flanges). EX2057: ¶109.



EX1035: Fig. 7 (annotated).

As the gusset members (15'/22') are themselves part of the connection portion, they do not extend from the connection portion of the hanger to channel-shaped portion of the hanger. EX2057: ¶110. Gilb '792 does not disclose an extension portion as recited in the claims of the '867 Patent. EX2057: ¶111.

IX. GROUNDS 4 AND 5: THE CLAIMS OF THE '867 PATENT ARE NEITHER ANTICIPATED BY TIMONY NOR RENDERED OBVIOUS

A. Timony Does Not Disclose “the Connection Portion and Channel-Shaped Portion Being in a Fixed, Spaced Apart Relation Relative to One Another”

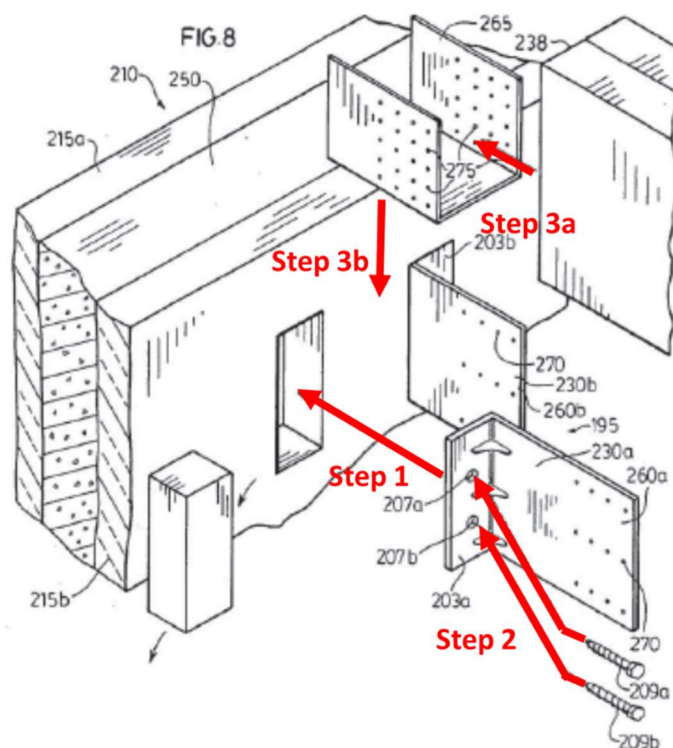
For both its Timony anticipation ground and its obviousness ground based on the combination of Timony and Bundy, Simpson relies on the teachings of Timony for the claim limitation “the connection portion and channel-shaped portion being in a fixed, spaced apart relation relative to one another” as recited in independent claims 1 and 16. Pet: 64-65, 87.

On the shelf or as delivered to the job site, the connection portion (retrofit plate (230)) and channel-shaped portion (support (265)) of the Timony hanger are separate parts, and require securing the support to the retrofit plate “by inserting screws or nails through aligned apertures 270, 275 so that support 265 does not move freely.” Pet: 65; EX2001: ¶212. Timony describes the method of installing the retrofit hanger according to the following steps:

- 1) Cutting away a portion of the foam wall (*i.e.* sheathing) to accommodate the retaining portion of the retrofit plate (230); (EX1008: ¶[0049])
- 2) Fastening the retaining portions (203) (*i.e.* the back flange) of the retrofit plate (230) to the concrete core (*i.e.* the wall); (EX1008: ¶[0049])
- 3) Positioning the support (265) (channel shaped portion) and object (238) (the structural member being supported) between the hanging ends of the retrofit plate (230) such that one or more apertures (270) of the retrofit plate align with apertures of the support (265); (EX1008: ¶[0050]) and
- 4) Inserting a securing means (280) (*e.g.*, screws or nails) through apertures, preferably further forcing the securing means (280) into the object (238) (the structural member being supported). (EX1008: ¶[0050])

EX2001: ¶213.

Steps 1-3 are illustrated in the annotated Fig. 8 below:



Ex 1008: Fig. 8; EX2001: ¶214.

As explained in Section V(G) above, the PHOSITA would have understood “the connection portion and channel-shaped portion being in a fixed, spaced apart relation relative to one another” limitation requires that the components are fixed at the time of manufacturing. Contrary to this understanding of the claim limitation, the components of the Timony retrofit hanger (especially the support (265)) may be moved freely prior to securing the hanger components and the object (238) together during installation. *Id.*: ¶215. As explained by Timony, the separate components and multiple apertures “permit the height of object 238 to be adjusted post fastening the of retrofit plates 230a and 230b to the composite wall 210.”

EX1008: ¶[0048]; EX2001: ¶216. Further, even after the support (265) is secured to the retrofit plate (230), the components still are not permanently fixed together as the nails or screws could later be removed allowing further movement of the components with respect to each other. *Id.*: ¶217.

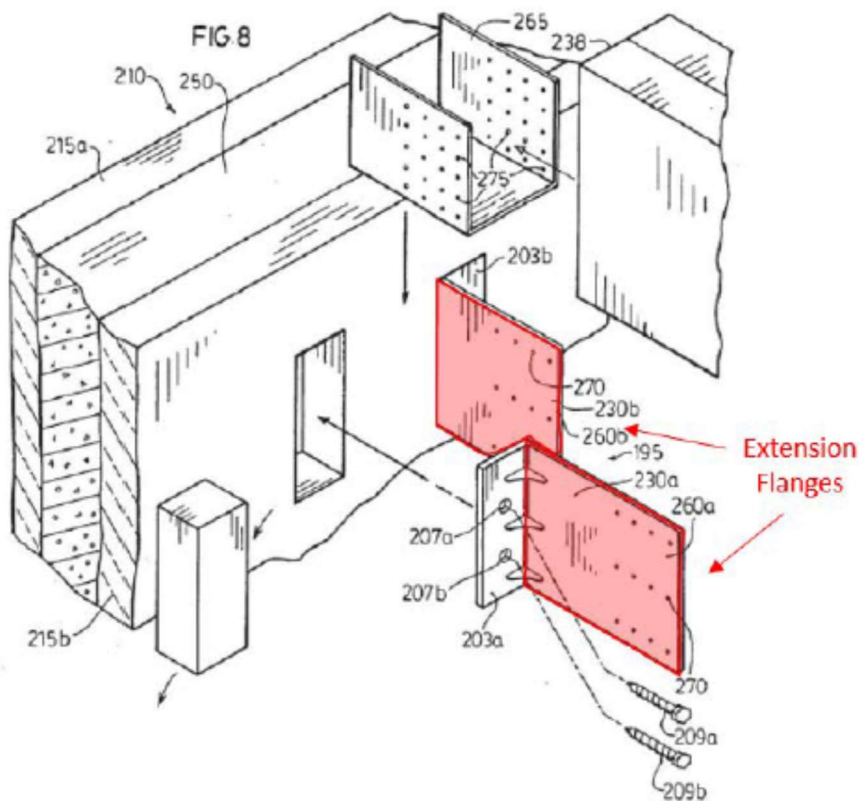
As Timony does not disclose “the connection portion and channel-shaped portion being in a fixed, spaced apart relation relative to one another”—a limitation required by every claim of the ‘867 Patent—neither Timony alone, nor Timony in combination with Bundy, would have rendered any of the challenged claims obvious. *Id.*: ¶¶218-219; EX2057: ¶¶135-137.

B. Timony Does Not Disclose “Each Extension Flange Being Configured to Extend Through the Sheathing”

Simpson further relies on the teachings of Timony for the claim limitations “each extension flange being configured to extend through the sheathing” (claim 1) and “the first and second extension flanges being configured to extend through an opening in the sheathing to the wall frame” (Claim 16) for both its Timony anticipation ground and its obviousness ground based on the combination of Timony and Bundy. Pet: 67-68, 87.

Despite acknowledging that the phrase “configured to extend through” should be construed to require “extending into one side and out of the other side of the sheathing” (Pet: 14), Simpson fails to demonstrate that any extension flanges of Timony meet this claim construction.

According to Simpson, the retrofit plates (230a/230b) of Timony comprise both the connection portion (retaining portion (203)) and the extension flange (hanging portions (260a/260b)) in the context of the claims of the '867 Patent. Pet: 66-67.



EX1008, FIG. 8 (annotated). EX1003, ¶188.

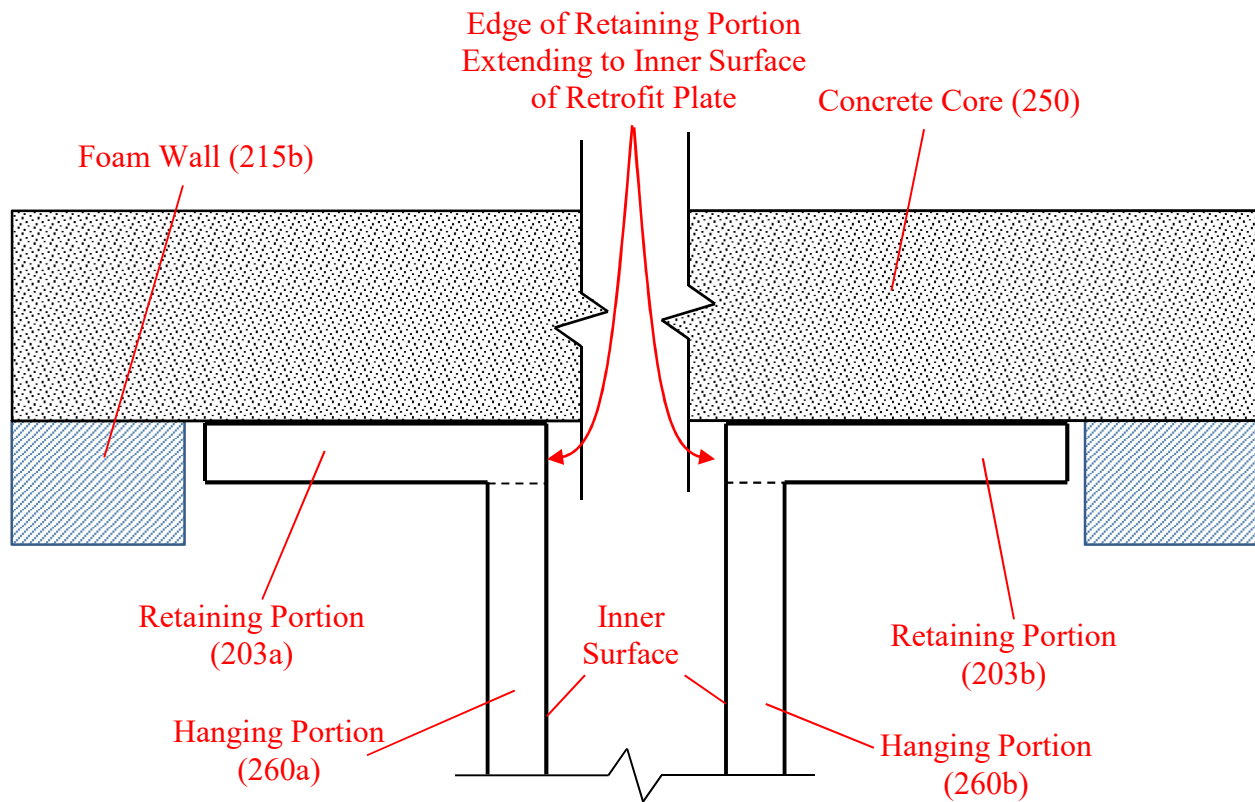
Pet: 67.

Because the front face of retaining portion (203) of the retrofit plates (230a/230b) and the back side of the “sheathing” (the foam panel (215b)) are flush with the surface of the concrete core, the Simpson’s entire argument relies on the extension flange (hanging portions (260a/260b)) extending to the surface of the

concrete wall. But even then, the extension flange (hanging portions (260a/260b)) only extend into one side, but not out of the other side, of the sheathing. EX2057: ¶142.

Simpson attempts to conflate the ends of the extension portion being flush with the surface of the sheathing with the extending out of the sheathing. For this reason, Simpson's expert—Mr. Fennell—has taken the position that he considers the extension flange and the connection portion of each retrofit plate to meet along an imaginary miter-angle. EX2055: 110:10-111:16. Notably, this new found position is in contrast to his prior declaration statement that “[t]he edge of retaining portion 203 *extends to the inner surface of plate 230.*”⁹ EX2003: ¶201 (emphasis added). A schematic illustration of what Simpson's original position would look like is provided below:

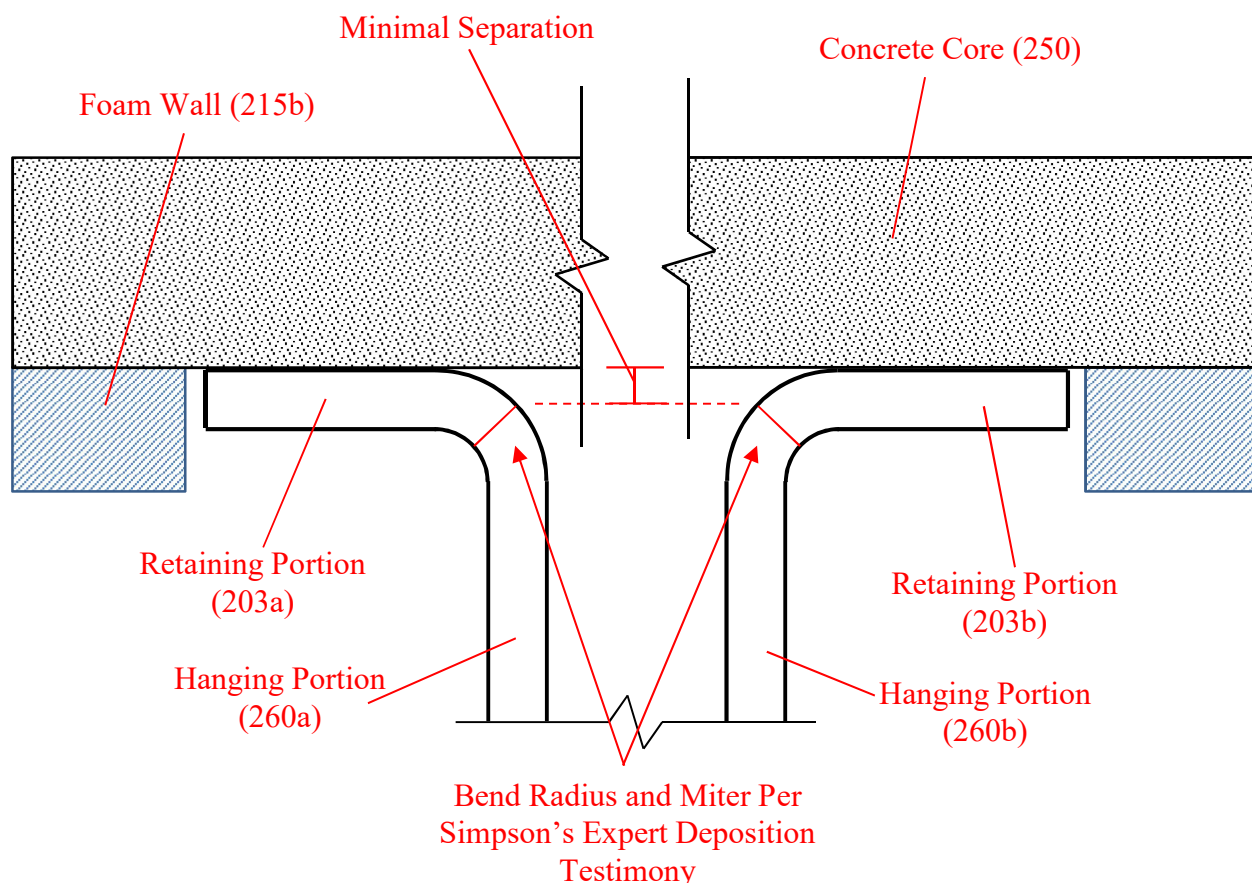
⁹ By explaining the edge of the retaining portion (203) to extends all the way to the inner surface of the plate (230), Simpson necessarily acknowledged that the hanging portion (260) stops at the front face of the retaining portion (203) and does not extend all the way to the concrete core.



EX2057: ¶141.

On a superficial level Mr. Fennell’s explanation would appear to elevate the contradictory identification of the extent of the “connection portion” and “extension flanges” as recognized by the Institution Decision. *See* ID: 65-67. But Mr. Fennell also admitted that the retrofit plates (230a/230b) were bent pieces of metal having at least some radius as the “extension flange transitions” to the “connection portion.” EX2055: 111:7-16. As shown in the schematic illustration below, even with the “extension flange” and the “connection portion” meeting along an imaginary miter-angle, the radius would still result in at least a minimal separation between the

surface of the concrete core and closest point of the imaginary miter where extension flange and the connection portion purportedly intersect. EX2057: ¶¶143-144.



Under either interpretation, the extension flanges (hanging portions (260a/260b)) do not extend out of the other side of the sheathing. EX2057: ¶¶145-146. The retrofit plates do not possess a sufficient length to extend out the other side of the sheathing and/or are not arranged relative to Timony’s “connection portion” such that they would actually do so when installed. Section V(F); EX2057: ¶147.

As Timony does not disclose an extension flange being “configured to extend through the sheathing”—a limitation required by every claim of the ‘867 Patent—

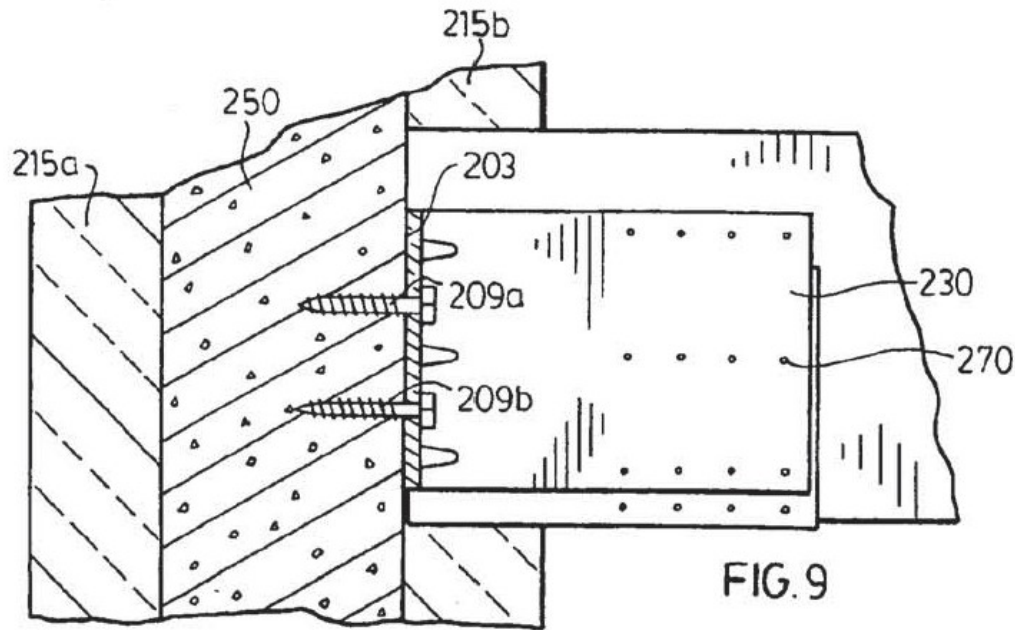
neither Timony alone, nor Timony in combination with Bundy, would have rendered any of the challenged claims anticipated or obvious. EX2057: ¶148.

C. Timony Does Not Disclose “the Back Flange Is Located on an Opposite Side of the Sheathing [From the Channel-Shaped Portion]”

For both its Timony anticipation and obviousness grounds, Simpson also relies on the teachings of Timony for the claim limitation “the channel-shaped portion is located on one side of the sheathing and the back flange is located on an opposite side of the sheathing” as recited in independent claims 1 and 16. Pet: 69, 88.

As described above the method of installing the retrofit hanger version of the Timony hanger requires cutting away a portion of the foam wall (*i.e.*, sheathing) to receive the retaining portion (*i.e.*, the back flange) of the retrofit plate (230). EX1008: ¶[0049]. The retaining portions (203) (*i.e.*, the back flange) of the retrofit plate (230) is then attached flush to the outer face of the concrete core (*i.e.*, the wall). EX1008: ¶[0049].

The foam panel (215b) is also flush to the outer face of the concrete core. EX1008: Fig. 9 (below); EX2057: ¶¶152-153.



Thus, Timony's back flange is not located on either side of the sheathing, but rather is located within the sheathing. EX2057: ¶153. Neither Timony alone, nor Timony in combination with Bundy, would have rendered any of the challenged claims anticipated or obvious. EX2057: ¶151-153.

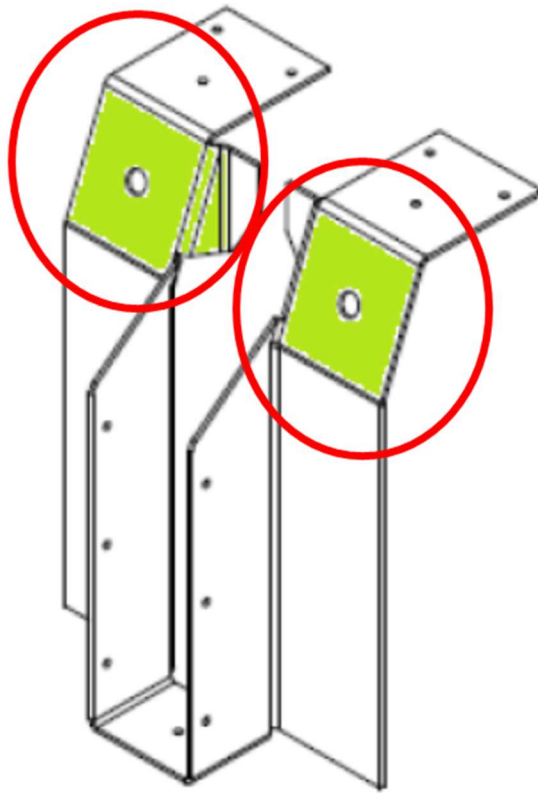
X. GROUND 6: CLAIMS 1-12, 15-17, AND 21-23 WOULD NOT HAVE BEEN OBVIOUS OVER TSUKAMOTO IN VIEW OF BUNDY

Like the Gilb '792/Bundy combination above, Simpson argues that "Tsukamoto discloses every structural component" listed in the independent claims of the '867 Patent, with the exception that it "does not explicitly disclose that its spacing is 'sized and shaped to receive the sheathing therein.'" Pet: 89. But contrary to Simpson's argument, the Tsukamoto/Bundy combination fails to disclose each claim limitation of the '867 Patent.

A. Tsukamoto Does Not Teach “an Extension Portion Including First and Second Extension Flanges Extending from the Channel-Shaped Portion to the Connection Portion” wherein “Each Extension Flange Lying in an Extension Flange Plane, the Extension Flange Planes Being Generally Perpendicular to the Base Plane”

Claim 1 requires that the hanger comprise two extension flanges, wherein each of the extension flanges “lying in” respective extension planes. As explained in Section V(C), the limitation “each extension flange lying in an extension flange plane” should be construed to require that the extension flanges are thin and relatively flat such that the entire extension flange is substantially coplanar with the plane. Further, the PHOSITA would recognize the limitation as meaning that “for each extension flange an extension flange plane is within the edgewise extent of the extension flange from the channel-shaped portion to the connection portion.”

Simpson identifies Tsukamoto’s inclined portions (2B/3B) in combination with the respective connection plates (2D’/3D’) as the extension flange in the context of the claims of the ‘867 Patent. EX2001: ¶241; EX2055: 126:2-127:5. In making this argument, Simpson is treating each set of the inclined portion and its respective connection plate as a single flange. EX2001: ¶¶241-242.



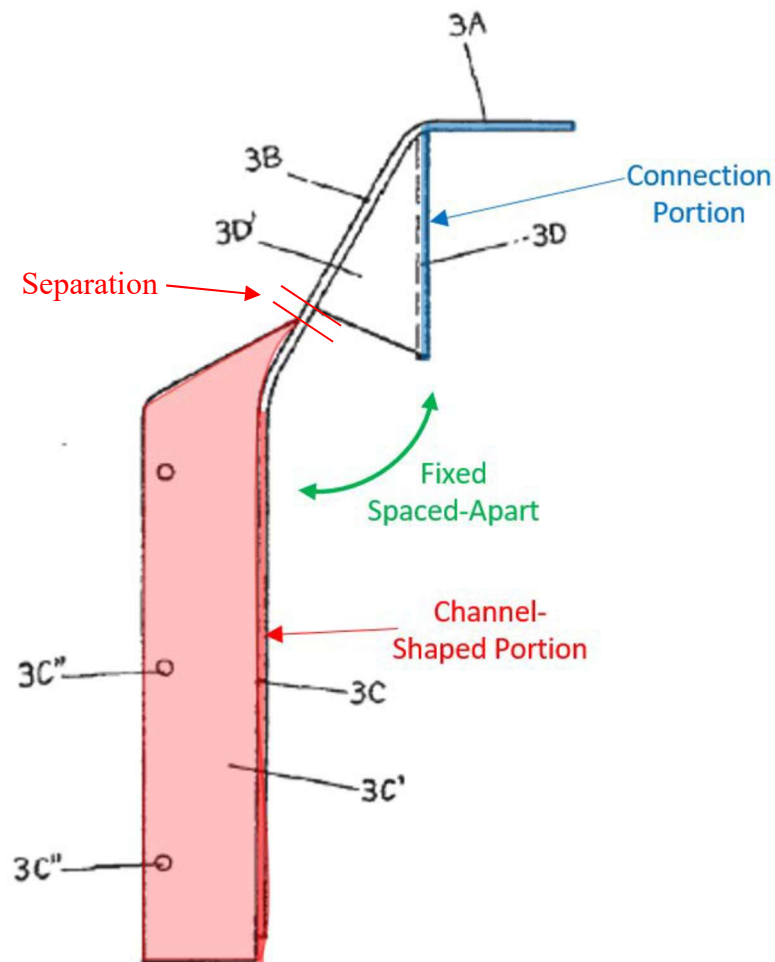
EX2004 (‘510 Petition) at 46 (further annotated); EX2001: ¶241.

Notably, (2B) and (2D’) are perpendicular plates joined together by a 90° bend. EX2055: 126:20-127:5 (Q: “that 2B and 2D prime would be one flange,” A: “Correct. And *that bend out of plane* [] gives us quite a bit of stiffness”) (emphasis added). EX2057: ¶176. As such, a PHOSITA would not consider the combination of (2B) and (2D’) as collectively being a flat object “lying in [a] ... plane.” *Id.* The same goes for (3B) and (3D’). *Id.*

Simpson focuses on the planes in which the connection plate (2D’/3D’) lie as purportedly being the extension flange planes that also meet the requirement of being

perpendicular to the base plane. Simpson's argument fails, as the connection plate (2D'/3D') is spaced apart from what Simpson identifies as the channel-shaped portion and cannot extend from the channel-shaped portion as required by claim 1.

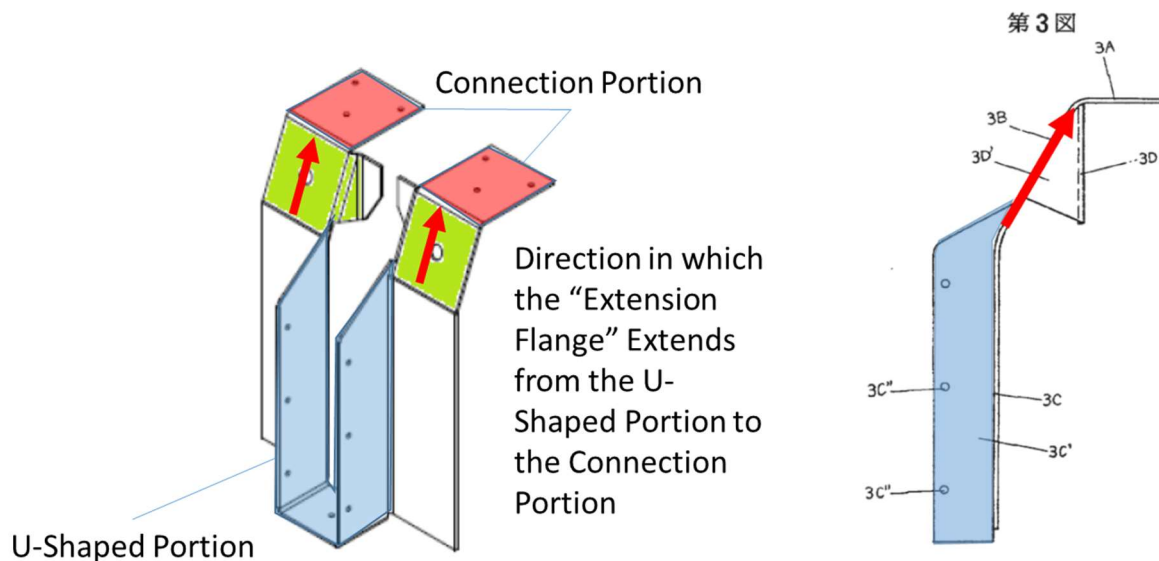
EX2057: ¶¶177-180; EX1007: Fig. 3.



Pet: 99 (annotated by Simpson) (further annotated).

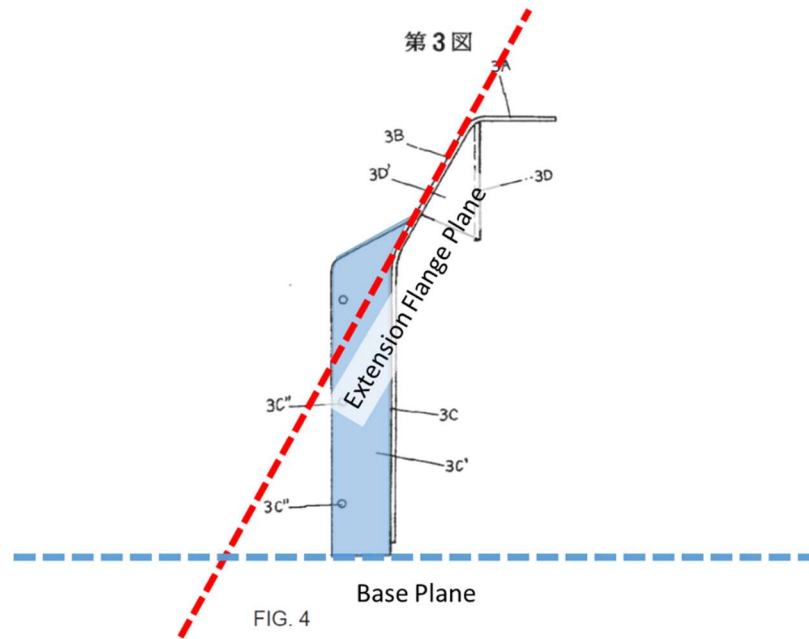
Rather, to the extent each set of the inclined portion (2B/3B) and connection plate (2D'/3D') could be considered a single flange lying in a plane, the planar extension of this flange as it extends from the channel-shaped portion to the

connection portion would be between the edge where (3C) and (3B) intersect to the edge where (3B) and (3A) intersect. EX2001: ¶243. The extension flange planes would thus be co-incidental to the inclined portion (2B/3B). EX2001: ¶¶243-244.



Id.; EX2004 at 46 (further annotated); EX1009: Fig. 4 (annotated).

But as demonstrated in the annotated Fig. 4 of Tsukamoto below, the resulting extension flange planes would not be perpendicular to the “base plane.” EX2001: ¶244; EX1009: Fig. 4.



EX2001: ¶244; EX1009: Fig. 4 (annotated).

Tsukamoto does not teach “an extension portion including first and second extension flanges extending from the channel-shaped portion to the connection portion” wherein “each extension flange lying in an extension flange plane, the extension flange planes being generally perpendicular to the base plane.” EX2001: ¶245. Nor, does Simpson suggest that this claim limitation is met by Bundy. *Id.*: ¶246. Accordingly, Tsukamoto in combination with Bundy would not have rendered Claim 1, or any claim which depends from Claim 1, obvious. *Id.*: ¶247. 238.

B. The “Flange” of Tsukamoto Relied on by Simpson Is Not “Planar” [Claim 2]

Claims 2 recites that “each of the first and second extension flanges are planar.” As explained in Section V(H) above, a PHOSITA would understand that “planar” as used in the limitation to describe the extension flanges—*i.e.*, three-

dimensional objects—requires the entire object to have an essentially flat, thin profile with uniform thickness throughout.

Simpson’s identified “first and second flanges” (the combination of 2B and 2D’ and the combination of 3B and 3D’) are both perpendicular plates joined together by a 90° bend. EX2057: ¶183; EX2055: 126:20-127:5. Because of the bend, Simpson’s identified “first and second flanges” of Tsukamoto have an L-shape and do not lie in a plane. EX2057: ¶184. The combination of Tsukamoto and Bundy would not have rendered claim 2 or any claim depending from claim 2 obvious.

C. Neither Tsukamoto, Nor Bundy Discloses an “Extension Flange Being Configured to Extend Through the Sheathing”

Both claims 1 and 16—the two independent claims—require an “extension flange being configured to extend through the sheathing.”

As addressed in Section V(D) above, the limitation should be construed to require the extension flanges be specifically “meant to” or “designed to” extend into one side and out of the other side of the sheathing. Tsukamoto is entirely silent as to how the disclosed hanger is designed to extend through sheathing. EX2001: ¶¶232, 235. And while Bundy does disclose the use of its hanger with sheathing, Bundy’s extension flanges extend *over* the sheathing, not *through* it. EX1007: 4:60-61, 6:1-5, Figs. 1-2; EX2001: ¶236. Neither Tsukamoto, nor Bundy discloses a hanger with an extension flange that is “designed to” or “meant to” extend through sheathing. EX2001: ¶237.

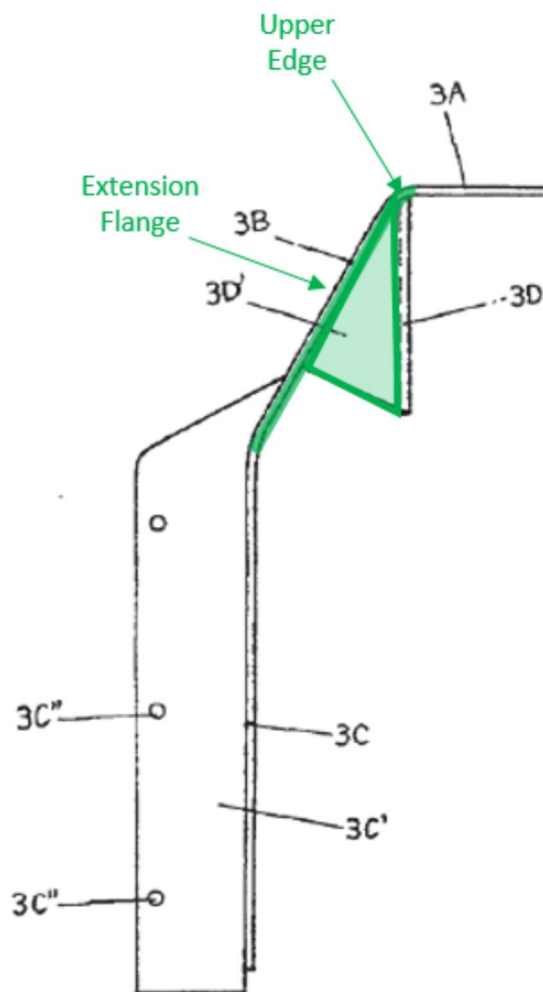
Simpson acknowledges that “Tsukamoto does not appear to explicitly disclose receiving sheathing” Pet: 90; EX2001: ¶232. In the absence of any explicit disclosure of a component of Tsukamoto extending into one side and out of the other side of the sheathing, Simpson conjured up potential uses of the Tsukamoto hanger. Despite that “Tsukamoto describes securing a hanger to a base 4 on a foundation 8,” Simpson argues that “Tsukamoto’s hanger *can be* used in the wood frame/drywall setting.” Pet: 91. As an alternative argument, Simpson argues “sheathing *can be* attached to [foundation walls] because drywall is commonly attached to foundation walls, even in basements” Pet: 92.

But these arguments merely suggest modifying the Tsukamoto hanger such that it would be *capable of* extending through sheathing. EX2001: ¶¶233-234. Regardless of Simpson’s hindsight influence applications of the Tsukamoto hanger, there is no evidence that Tsukamoto was “designed to” or “meant to” extend through sheathing. EX2001: ¶¶235-236.

As neither Tsukamoto, nor Bundy discloses an “extension flange being configured to extend through the sheathing”—a limitation required by every claim of the ‘867 Patent—the combination of Tsukamoto and Brady would not have rendered any of the challenged claims obvious. EX2001: ¶¶237-238.

D. Tsukamoto Does Not Disclose Extension Flanges that Include an “Upper Free Edge” [Claim 4]

Claim 4 of the ‘867 Patent depends from claim 2 and adds the limitation “the first and second extension flanges each include an upper free edge.” As depicted at page 107 of the Petition, the upper end of Tsukamoto’s inclined portions 2B/3B is the edge along which portions 2A and 2B (or 3A and 3B) intersect.



Pet: 100 (annotated by Simpson).

A free edge is an edge that is free of direct attachment to another component. EX2057: ¶186; *see e.g.*, EX2046: Fig. 2, 5:48-50 (“free edge 144”); EX2048: Fig. 1, 5:6-8 (“free edge 51,” “free edge 52”); EX2047: Fig. 4, ¶[0033] (“free edge 66”); EX2049: at ¶[0025] (free side edge 32), ¶[0027] (free side edge 40), ¶[0028] (free side edge 42), ¶[0029] (free side edge 48), Fig. 2. As (2A) and (2B) (or (3A) and (3B)) intersect along this edge, the edge is not a “free edge.” EX2057: ¶¶187-188.

XI. GROUNDS 3, 5, AND 6: A PHOSITA WOULD NOT HAVE BEEN MOTIVATED TO MODIFY GILB ‘792, TIMONY, OR TSUKAMOTO IN VIEW OF BUNDY

Notably, the invention claimed in the ‘867 Patent—and its related family of patents and applications—was the first time that anyone had considered constructing a hanger to have an extension portion that extended through a fire barrier—*i.e.*, two layers of 5/8 inch thick drywall of a 2 hour fire rated assembly. None of Gilb ‘792, Timony, Tsukamoto, or Bundy show or describe any portion of their respective hangers as extending through a fire barrier. None of these references suggest configuring any portion of the hanger—much less an extension portion comprising extension flanges—to extend through a fire barrier. In fact, Bundy—the only reference that describes a constructed for use with a fire barrier—teaches extending over the fire barrier, not through the fire barrier. EX1007: Fig. 1, 5:42-45.

Despite that none of the applied prior art references show a hanger constructed to extend through a fire barrier, Simpson supplements the teachings Gilb ‘792, Timony, and Tsukamoto to have this feature. Pet: 28-29, 75-77, 90-92. In other words, Simpson and its expert are imbuing the PHOSITA with the knowledge of the inventive features claimed by the ‘867 Patent as the motivation to combine each of Gilb ‘792, Timony, and Tsukamoto with Bundy. This is the epitome of an impermissible hindsight reconstruction. *WL Gore & Associates, Inc. v. Garlock, Inc.*, 721 F. 2d 1540, 1553 (Fed. Cir. 1983) (“To imbue one of ordinary skill in the art with knowledge of the invention in suit, when no prior art reference or references of record convey or suggest that knowledge, is to fall victim to the insidious effect of a hindsight syndrome wherein that which only the inventor taught is used against its teacher.”); *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. There must be a teaching or suggestion within the prior art, or within the general knowledge of a person of ordinary skill in the field of the invention, to look to particular sources of information, to select particular elements, and to combine them in a way they were combined by the inventor.”); *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.”).

A. Simpson’s Purported “Optimal Wall Integrity” Motivation Falls Apart

Simpson provides the same motivation for modifying each of Gilb ‘792, Timony, and Tsukamoto in view of Bundy—to provide “optimal wall integrity” as taught by Bundy. Pet: 29, 76, 90. But “optimal wall integrity” is a vague, indeterminate phrase not recited by Bundy. EX1007. Instead, Bundy explains two layers of 5/8-inch thick drywall is for fire protection. EX1007: 5:17-20. This is why during his deposition, Simpson’s Expert explicitly clarified that the motivations for modifying each of Gilb ‘792, Timony, and Tsukamoto with Bundy was to adapt the disclosed hangers for use with two-hour fire rated walls.¹⁰ EX2055: 97:8-16 (Q: “And so the purpose of optimizing that spacing is to meet fire rating requirements” A: “Yes”); 118:13-19 (Q: “what would be the motivation for wanting to use two 5/8-

¹⁰ Notably, claims 5, 8, 12, 17, and 22 recite specific fire barrier limitations. Claims 5 and 12 call out “a two hour fire resistance rating of a wall[/frame wall] assembly.” Claims 8, 12, and 22 specify “two layers of 5/8 inch thick sheathing,” which is a configuration specifically for fire barriers of wood frame walls. EX1018: Table 721.1(2) item numbers: 14-1.6, 15-1.5, 15-1.6, 15.1.16, 15-2.2, 15-2.4); EX1003: ¶43; EX2010: 119-122; EX2056: 27:20-28:6.

inch pieces of sheathing” A: “Again, that’s to achieve a two-hour fire rating”). Thus, the motivation for making the prior art combinations proffered by Simpson is to make the modified base reference hangers useful for a firewall application.

None of the walls for which the Gilb ‘792, Timony, and Tsukamoto hangers were expressly designed need a fire barrier. The Gilb ‘792’s hanger is attached to a metal ledger which is then attached to a concrete or masonry wall, such as tilt up concrete walls. EX1035: 1:5-11, 2:29-32; EX2057: ¶120; EX2055: 36:5-11. Simpson’s expert also stated metal ledgers may be used in metal buildings (*e.g.*, warehouses). EX2055: 38:16-39:2. Timony’s hanger is attached to a concrete wall (*e.g.*, concrete core (250)). EX1008: ¶[0049]. Similarly, Tsukamoto’s hanger expressly designed for use on foundation wall (*i.e.*, concrete or masonry). EX1009: 2, 3; Pet: 91; EX2055: 59:7-62:5.

Concrete, masonry, and metal walls are each inherently fire resistant. EX2057: ¶¶122, 166, 197; EX1018: Table 721.1(2), EX2009: 142-143 (Section 718.2.6); EX2043: 1; EX2044: 1; EX2045: 7. A fire barrier next to a concrete, masonry, or corrugate steel wall is simply unnecessary. EX2057: ¶¶122, 166, 197. Because such walls are already inherently fire resistant, the adaption of the hangers of Gilb ‘792, Timony, and Tsukamoto for use with two-hour fire rated walls would have been superfluous. EX2057: ¶122, 166, 197; *see South-Tek Systems, LLC, v. Engineered Corrosion Solutions, LLC*, 748 Fed. Appx. 1003, 1006-07 (Fed. Cir.

2018) (affirming the Board's non-obviousness determination because “given the redundant functions of [base reference's element] and [the secondary reference's element], the Board found a person of ordinary skill would not have been motivated to add [the secondary reference’s element] to [the base reference]”).

Realizing there is no reason to modify the hangers of Gilb ‘792, Timony, and Tsukamoto that are mounted on concrete, masonry, and/or metal walls to receive a type of fire barrier that is specific to wood stud light frame walls, Simpson asserts the hangers of Gilb ‘792, Timony, and Tsukamoto are each applicable to wood frame walls. Pet: 30, 77, 91.

Simpson provides no reason—other than its desire to combine the references with Bundy—as to why a PHOSITA would use Gilb ‘792, Timony, or Tsukamoto on wood frame walls. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) (obviousness must include “some articulated reasoning with some rational underpinning to support the legal conclusion”).

The issue of accommodating a fire barrier does not exist in Gilb ‘792, Timony, and Tsukamoto. In what is nothing more than circular reasoning, the justification for using Gilb ‘792, Timony, or Tsukamoto on wood frame walls is to solve the very problem that is created by doing so. *See Ex parte Vetesnik*, Appeal No. 2008-3965 at 6-7 (PTAB Feb. 5, 2009) (finding nonobviousness because “[t]he Examiner has specifically created a problem, *i.e.*, by changing the square tubes of Baziuk to the

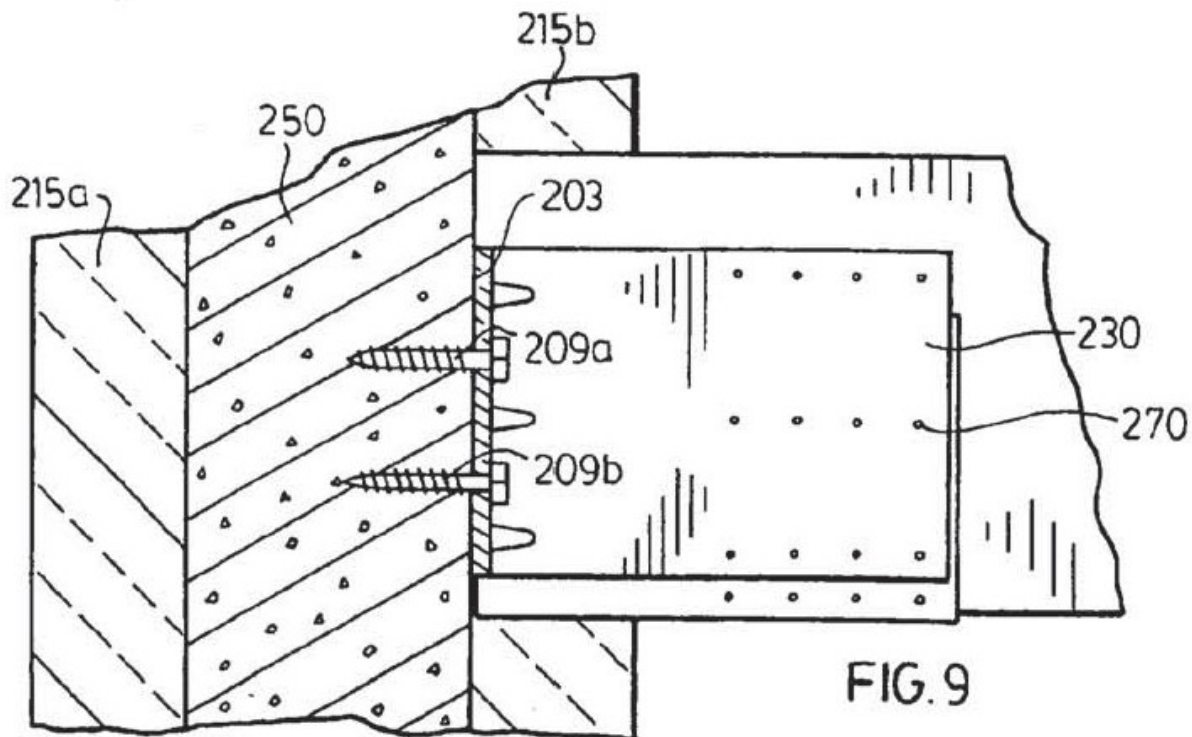
cylindrical tubes of Murten, in order to solve it with the groove and projecting element of Tobako.”).

Not only has Simpson failed to identify a non-hindsight reconstruction reasoning for using the Gilb ‘792, Timony, or Tsukamoto hangers on wood frame walls, a PHOSTIA affirmatively would not have used them in such applications.

Gilb ‘792: A PHOSITA would not use Gilb ‘792’s metal ledger and metal ledger hanger in wood frame construction at the time of invention of the ‘867 Patent. EX2057: ¶133. The type of wood frame construction at the time of the invention of ‘867 Patent (and what is still done today) is platform framing, which constructs the wood frame of a building story by story. EX2035: 13; EX2057: ¶133. This type of wood frame construction does not need metal ledgers because conventional hangers are instead installed on the top plate of each single-story wall. EX2035: 13-14; EX2038:65-67; EX2057: ¶133.

Moreover, a PHOSITA would recognize that Gilb ‘792 is incompatible for installation directly to a top plate of a wood framed wall. EX2057: ¶134. The Gilb ‘792’s metal ledger hanger requires the metal ledger in order to be mounted to the wall. EX1035: Figs. 5-7, 3:25-27, 3:34-38. As explained above in Section VIII(B) and by Simpson’s expert, the load path of Gilb ‘792 is reliant on the connection of the top flange (8) to the outstanding ledger leg (3) of the metal ledger to provide vertical support for the imposed load. EX2057: ¶98; EX2055: 45:13-48:1.

Timony: A PHOSITA would not use Timony's hanger in wood frame construction either. Notably, Simpson does not explain how Timony would be installed on a wood framed wall. *See* Pet: 77. Whether Timony's hanger is attached to the top of a wall or somewhere along the wall heights, each retrofit bracket (230) requires a framing member behind it. EX2057: ¶¶168-169; EX2055: 117:22-118:7.



EX1008: Fig. 9.

Also as testified to by Simpson's Expert, the retrofit brackets (230) would need to be spaced apart with at least an inch and a half between them so as to fit the joist between them. EX2055: 108:10-109:3; EX2057: ¶170. As such, both of the retrofit brackets (230) of the bracket (195) would require separate wood studs behind them. EX2057: ¶170. Adding additional wood studs to support Timony's retrofit

brackets based on the thickness of a joist would be a substantial and unnecessarily costly modification to the wood frame wall construction. *Id.*

Simpson grossly mischaracterizes a statement by Timony to argue that “Timony’s bracket 195 can be used in a wood frame wall construction.” Pet: 77; *compare* EX1003: ¶237 (“Timony indicates that its hanger is suitable for composite walls in general”) with EX2056: 71:19-24 (Q: “in the context of Timony, is this a composite wall with a concrete core?” A: “Yes”). Timony states the “[h]anger 100 is also suitable for other purposes including...fastening an exterior or interior applied framed partition wall *to a composite wall*,¹¹ hanging an exterior or interior applied roof truss *to a composite wall*.” EX1008: ¶[0034] (emphasis added). This statement by Timony in no way suggests that Timony’s hangers would be mounted on wood frame walls instead of concrete core walls, as suggested by Simpson. Pet: 77. Instead, this statement merely confirms that Timony’s hangers would still be mounted on a concrete core, but that the object received by the hangers can be a partition wall or a truss.

¹¹ Timony is very explicit in identifying the “composite wall” discussed throughout its specification as being walls that have “exterior foam panels and an interior cement core.” EX1008: ¶[0004]; EX2055: 49:16-54:10.

Tsukamoto: A PHOSITA would not use Tsukamoto's hanger in wood frame construction. The hanger in Tsukamoto is designed for use with foundation walls¹² having a width greater than the width of the header disposed at the top of the foundation wall on which the hanger is mounted. EX1009: 2-3, Figs. 5-6; EX2057: ¶196. The spacing provided by Tsukamoto is to compensate for the difference in widths between the header and the foundation wall. EX1009: 2-3; Figs. 5-6; EX2057: ¶196. However, wood frame walls do not have a difference in width between the top plate and the underlying wall supporting the top plate. EX2057: ¶2001. Simpson does not explain, nor could it, why a PHOSITA would have been motivated to modify Tsukamoto for use with wood frame walls where hangers

¹² Simpson's argument that "a POSITA would have understood that sheathing ... drywall is commonly attached to foundation walls" (Pet: 92) is a red herring. While it is known to finish foundation walls, any finishing is done with one layer of drywall, not the two layers of 5/8-inch thick drywall Simpson's modification is based on. Pet: 90; EX2057: ¶198. There is simply no reason a PHOSITA would finish a concrete foundation wall with two layers of 5/8-inch thick sheathing because it is unnecessary (*e.g.*, not need for fire protection purposes) and would therefore unnecessarily increase building material and construction costs. *Id.*

mounted on wood frame walls do not have to compensate for any width differences in the wall. *Id.*

Given that there is no legitimate reason why a PHOSITA would have modified Gilb '792, Timony, and Tsukamoto in view of Bundy, the real reason Simpson modifies these references in view of Bundy is to follow the '867 Patent and have a hanger extendable through a fire barrier. This is nothing more than impermissible hindsight. *Apple Inc. v. Voip-pal.com, LLC.*, IPR 2016-01201, Paper 54 at p. 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 of the ’815 patent serving as a guide.”).

Simpson’s Expert confirmed that Simpson’s analysis was based on nothing more than impermissible hindsight, by using the '867 Patent as a guide. Simpson’s Expert admitted he selected Gilb '792, Timony, and Tsukamoto because the purported presence of an extension portion created an “opportunity to use these hangers in the presence of sheathing.” EX2055: 92:13-93:1 (“Well, all of these hangers when – I’m 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 I also 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.”); EX2055: 66:17-20 (“[Tsukamoto] has the same extension portion features that I found attractive that make it readily adaptable for sheathing”). Simpson’s Expert further explained that once he identified a reference the could be used with sheathing, he “work[ed] backwards, [] adapt[ing] the sheathing space to be the two layers of 5/8ths disclosed and taught by Bundy.” EX2055: 115:3-5.

Starting from the point of finding prior art hanger references that have “an 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. *See Insite Vision, Inc. v. Sandoz, Inc.*, 783 F.3d 853, 859 (Fed. Cir. 2015) (“[d]efining the problem in terms of its solution reveal improper hindsight in the selection of the prior art relevant to obviousness”); *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.”).

B. Timony Is Not Designed For Use With Drywall

As an alternative argument, the Petition also suggests that it would have been “obvious to receive fire retardant sheathing, *rather than a foam panel*, between Timony’s support 265 and retaining portion 203, based on Bundy’s teaching to

receive sheathing between a channel-shaped portion of a hanger and the wall.” Pet: 76 (emphasis added). But it is impossible to replace the Timony’s foam panel with drywall (the fire retardant sheathing identified by Simpson and by Bundy). Pet: 75-76; EX1007: 5:10; EX2057: ¶¶171-172. Drywall does not possess the necessary strength to support and hold back the weight of wet concrete before it cures. EX2057: ¶172. Drywall is a brittle material and would only get weaker when exposed to the wet concrete because the drywall would soak up moisture from the wet concrete. EX1007: 5:20-21 (“gypsum is friable and has little or no dowel bearing strength”).

C. Claims 7 and 21: Simpson’s Modification of Gilb ‘792, Timony, and Tsukamoto to have a “Stop” is Hindsight

Dependent claims 7 and 21 add the limitation “wherein the hanger further comprises a stop configured to engage the end of the structural component to space the end of the structural component from the back flange plane by a distance sized large enough to permit the sheathing to be received between the end of the structural component and the back flange plane.”

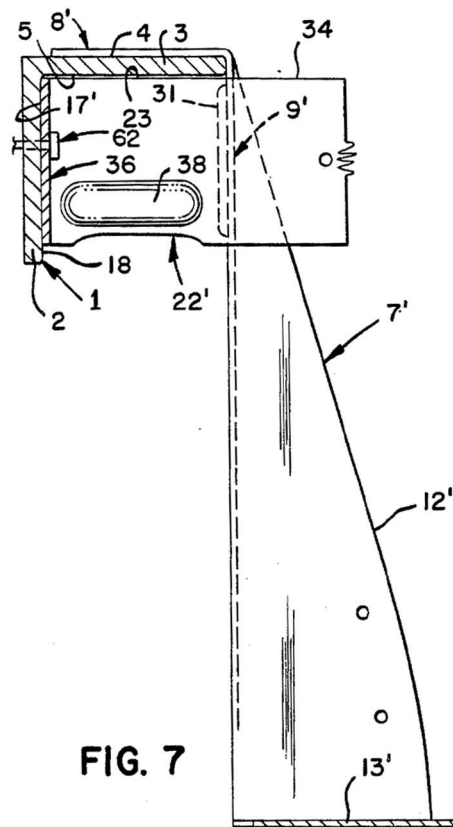
1. Gilb ‘792 and Tsukamoto

Simpson acknowledges that Gilb’792 and Tsukamoto do not disclose a stop, but argues it would have been obvious to add one in view of Bundy. Pet: 47-48, 109-110.

Because none of the prior art reference provide a reason to include a stop, Simpson—applying pure hindsight reconstruction—searched the prior art for components that could act as a stop. *Dropworks, Inc. v. Bio-Rad Laboratories, Inc.*, IPR2021-00212, Paper 7 at 12-14 (PTAB June 1, 2021) (“A 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.”) [] “The invention must be viewed not after the blueprint has been drawn by the inventor, but as it would have been perceived in the state of the art that existed at the time the invention was made.” [] “Only after review of the ’310 patent disclosure does a reason to combine become clear and the use of hindsight become apparent.”) (cleaned up).

Specifically, Simpson points to Bundy’s disclosure that the first and second back plate members (9) “could both be bent inward to face each other between the first and second side members 11” as meeting the claimed stop. Pet: 47, 109. Notably though, Bundy does not identify these back plate members as being a stop. EX1007; EX2057: ¶¶114, 191. Nor would a PHOSITA have considered a stop to be necessary in Bundy, as Bundy’s hanger was designed for installation after the drywall was already installed. EX1007: 2:20-25, Fig. 2; EX2055: 64:8-18 (Bundy’s “drywall needs to be installed first”); EX2057: ¶¶114-115, 191-192.

Rather, Bundy describes the back plate members as “appl[ying] a sufficiently large, flat surface to the exterior drywall sheet in order to stabilize the connection without crushing the drywall either during installation (when the screws might otherwise be overdriven) or after.” EX1007: 2:28-32; 6:20-29; EX2057: ¶¶116, 193. Of course, this would not be any reason to modify either Gilb ‘792 and Tsukamoto. EX2057: ¶¶117-118, 194. In contrast to Bundy, Gilb ‘792’s and Tsukamoto’s load transfer does not require placing any load on any sheathing covering the wall. *Id.* In Gilb ‘792, the load is transferred directly to the metal ledger (1) via the base (36), the gusset members (15’/22’), and the top flanges (8’). EX1035: Fig. 7, 2:41-47, 3:25-27, 3:34-38, 3:42-44.



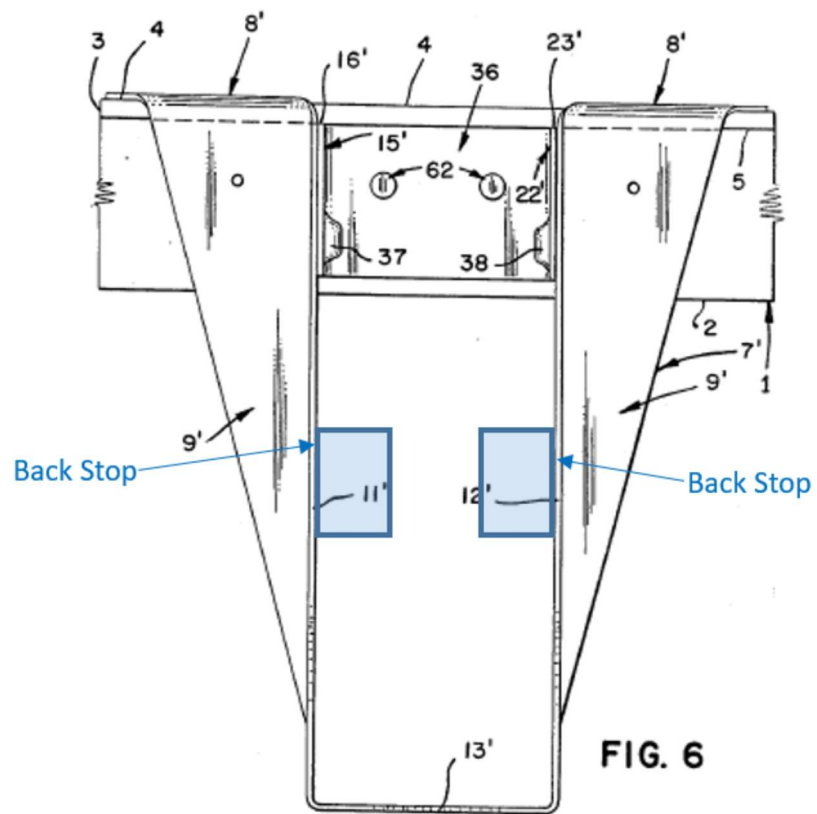
第5図

Figure 5 is a technical drawing showing a cross-section of a structure. It includes a large rectangular block on the left, a smaller rectangular block on the right, and a curved structure connecting them. Labels include 2A, 2B, 2C, 2C', 2C'', 2D, 2D', 2E, 4, 4A, 4B, 5, 5A, and 6.

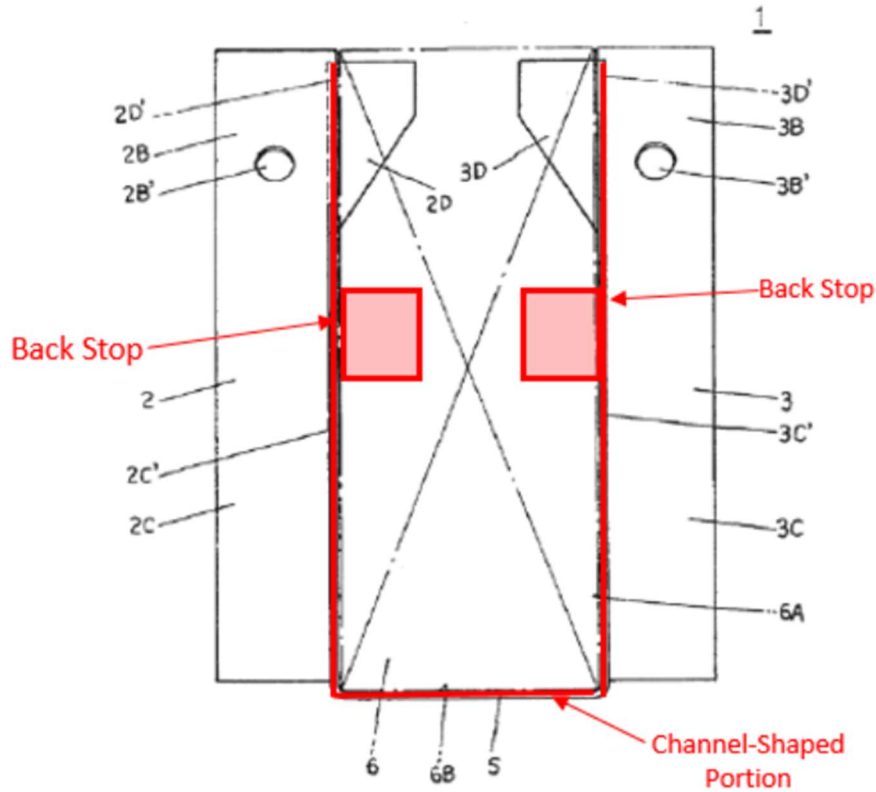
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Simpson's hindsight reconstruction is exemplified by the fact that Simpson's purported motivation to add a stop to Gilb '792 and Tsukamoto closely mirrors the language recited in claims 7 and 21. Pet: 48, 110; *InTouch Techs., Inc. v. VGo Communs., Inc.*, 751 F.3d 1327, 1351 (Fed. Cir. 2014) (finding hindsight because the expert "relied on the [] patent itself as her roadmap for putting what she referred to as pieces of a 'jigsaw puzzle' together"). This is not surprising as only the '867 Patent, not Gilb '792, Tsukamoto, nor Bundy, describes its respective channel-shaped portion requiring a stop to space the end of the structural component from the wall. EX1001: 4:51-53, 5:25-31, 7:62-8:18; EX2057: ¶¶114, 191.

Moreover, Simpson's description for how Gilb '792 and Tsukamoto would be modified to include a stop is further evidence of Simpson's hindsight driven reconstruction. Simpson provides the following illustrations showing how Gilb '792's and Tsukamoto's hangers would be modified to have a stop:



Pet: 48 (Gilb '792's Fig. 6 annotated by Simpson).



Pet: 110 (Tsukamoto's Fig. 1 annotated by Simpson)

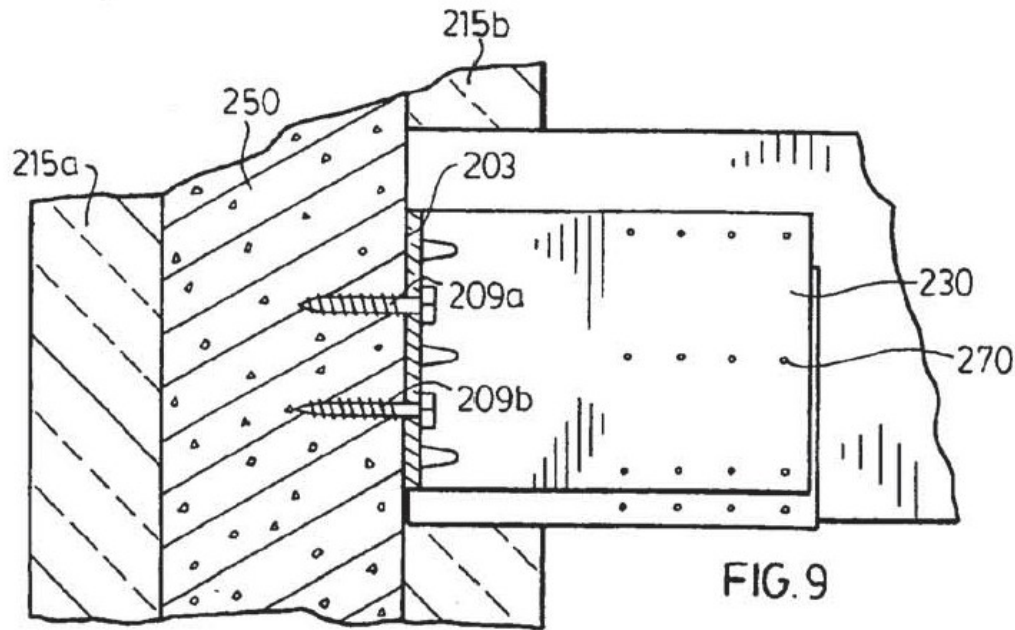
As shown above, Simpson's proposed modifications involve bending only a portion of each of Gilb '792's depending flanges (9') or Tsukamoto's vertical portions (2C/3C) to form the stop. In contrast, Bundy only describes bending the entire back plate members one way or the other. EX1007: 4:41-46; EX2057: ¶¶114, 191. That Simpson now pulls bending only a portion of Gilb '792's depending flanges and Tsukamoto's vertical portions out of thin air exemplifies that Simpson is using the claims of the '867 Patent as a roadmap to invalidate claims 7 and 21.

2. Timony

Simpson acknowledges that Timony's Retrofit Embodiment does not disclose a stop, but argues it would have been obvious to add one in view of Timony's New Construction Embodiment and Bundy. Pet: 78-80.

Because none of the prior art reference provide a reason to include a stop, Simpson—applying pure hindsight reconstruction—again searched the prior art for components that could act as a stop. *Dropworks, Inc.*, IPR2021-00212, Paper 7 at 12-14.

Specifically, as discussed above in Section XI(C)(1), Bundy does not identify the back plate members as being a stop. Nor would a PHOSITA have considered a stop to be necessary in Bundy. Section XI(C)(1). Rather, as described above, Bundy describes the back plate members as providing load distribution over the drywall. EX1007: 2:28-32; 6:20-29; EX2057: ¶¶156-157. Of course, this would not have provided any motivation to modify Timony. EX2057: ¶¶159-161. Like Gilb '792 and Tsukamoto, Timony's load transfer does not require placing any load on any sheathing covering the wall. EX2057: ¶157. In Timony, the load is transferred directly to the concrete core (250) via the retaining portions (203). EX1008: Fig. 9, ¶[0049].



Simpson further points to the projections (185) of Timony's New Construction Embodiment, as bent inward per Bundy, could meet the claimed stop. Pet: 79-80. But the projections (185) are part of Timony's New Construction Embodiment, not Timony's Retrofit Embodiment forming the basis of Simpson's invalidity contentions. *Abiomed, Inc. v. Maquet Cardiovascular, LLC*, IPR2017-01204, Paper 8 at 8-11 (PTAB Oct. 23, 2017) (explaining it is improper to simply treat "various embodiments" from a reference as "interchangeable"); *Net MoneyIn, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1371 (Fed. Cir. 2008) ("the prior art reference must clearly and unequivocally ... direct those skilled in the art to the invention without any need for picking, choosing, and combining various disclosures not directly related to each other") (internal quote omitted); *In re Stepan Co.*, 868 F.3d 1342, 1346 n.1 (Fed. Cir. 2017) ("Whether a rejection is based on ... combining

multiple embodiments from a single reference ... there must be a motivation to make the combination”).

Moreover, Timony does not indicate these projections (185) as being a stop for an object (238). EX1008. Nor would a PHOSITA have considered a stop to be necessary for the Timony New Construction Embodiment, as the object (138) butts up against the foam panel as depicted in Timony’s figures. EX1008: Figs. 3-5; EX2055: 120:13-19.

Rather, Timony describes the projections (185) as “guides to help set the depth of the embedment plate” in the concrete. EX2055: 120:7-19; EX2057: ¶159; EX1008: ¶[0045]. This is because in the New Construction Embodiment, each plate (130) is slides into slits (135) in the foam wall (115) before the concrete is poured. EX1008: ¶¶[0041], [0045]; EX2057: ¶159. In contrast to the New Construction Embodiment, the Retrofit Embodiment is used with existing walls where the concrete core (250) is already poured, such that the retaining portions (203) engage the front face of the concrete core. EX1008: ¶[0049]; EX2057: ¶160. As all of the components of the composite wall are already in place, there would be no need for guides to help set the depth of the retaining portions (203) of the Retrofit Embodiment. EX2057: ¶161.

Simpson’s identification of “bend[ing] Timony’s projections 185 inwards ... to space the end of object 238 from retaining portion 203” (Pet: 80) is simply an

impermissible hindsight reconstruction. *WL Gore & Associates*, 721 F. 2d at 1553; *ATD Corp.*, 159 F.3d at 546; *In re Fritch*, 972 F.2d at 1266.

Again Simpson's hindsight reconstruction is exemplified by the fact that Simpson's purported motivation to add a stop to Timony closely mirrors the language recited in claims 7 and 21. Pet: 80; *InTouch Techs.*, 751 F.3d at 1351. This is not surprising as only the '867 Patent, describes the channel-shaped portion as requiring a stop to space the end of the structural component from the wall. EX1001: 4:51-53, 5:25-31, 7:62-8:18; EX2057: ¶¶159, 162.

XII. CONCLUSION

Simpson has failed to demonstrate that any of the '867 Patent's claims are invalid.

Dated: June 9, 2022

Respectfully submitted,

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CERTIFICATE OF SERVICE

Under 37 C.F.R. § 42.6(e), the undersigned certifies that on June 9, 2022, a copy of the foregoing PATENT OWNER'S RESPONSE, along with the Exhibits 2033-2057, 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)(2) because it contains 18,453 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: June 9, 2022

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