

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

WEATHER SHIELD MFG., INC.,
Petitioner,

v.

QUAKER WINDOW PRODUCTS CO.,
Patent Owner.

IPR2022-01166
Patent 10,107,027 B1

Before BENJAMIN D. M. WOOD, BARRY L. GROSSMAN, and
ERIC C. JESCHKE, *Administrative Patent Judges*.

WOOD, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. *Background*

Weather Shield Mfg., Inc. (“Petitioner”) filed a Petition (Paper 1, “Pet.”) requesting *inter partes* review of claims 1–16 of U.S. Patent No. 10,107,027 B1 (Ex. 1001, “the ’027 patent”). Quaker Window Products Co. (“Patent Owner”) filed a Preliminary Response (Paper 6, “Prelim. Resp.”).

We have authority under 35 U.S.C. § 314, which provides that an *inter partes* review may not be instituted “unless . . . there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Upon considering the Petition, we determine that Petitioner has shown a reasonable likelihood that it would prevail in showing the unpatentability of at least one of the challenged claims. Accordingly, we grant the Petition for *inter partes* review.

B. *Related Proceedings*

Petitioner states that the ’027 patent “has not been the subject of any prior post-grant proceedings and has not been asserted in any litigations.” Pet. 91. Patent Owner states that the status of a pending patent application that claims priority to the ’027 patent may be affected by the outcome of this proceeding. Paper 3, 1.

C. *The ’027 Patent*

The ’027 patent issued October 23, 2018 from an application filed October 24, 2017, and is titled “Thermally Enhanced Multi-Component Window.” Ex. 1001, codes (45), (22), (54). Figures 1 and 8 of the ’027 patent depict an embodiment of the invention and are reproduced below:

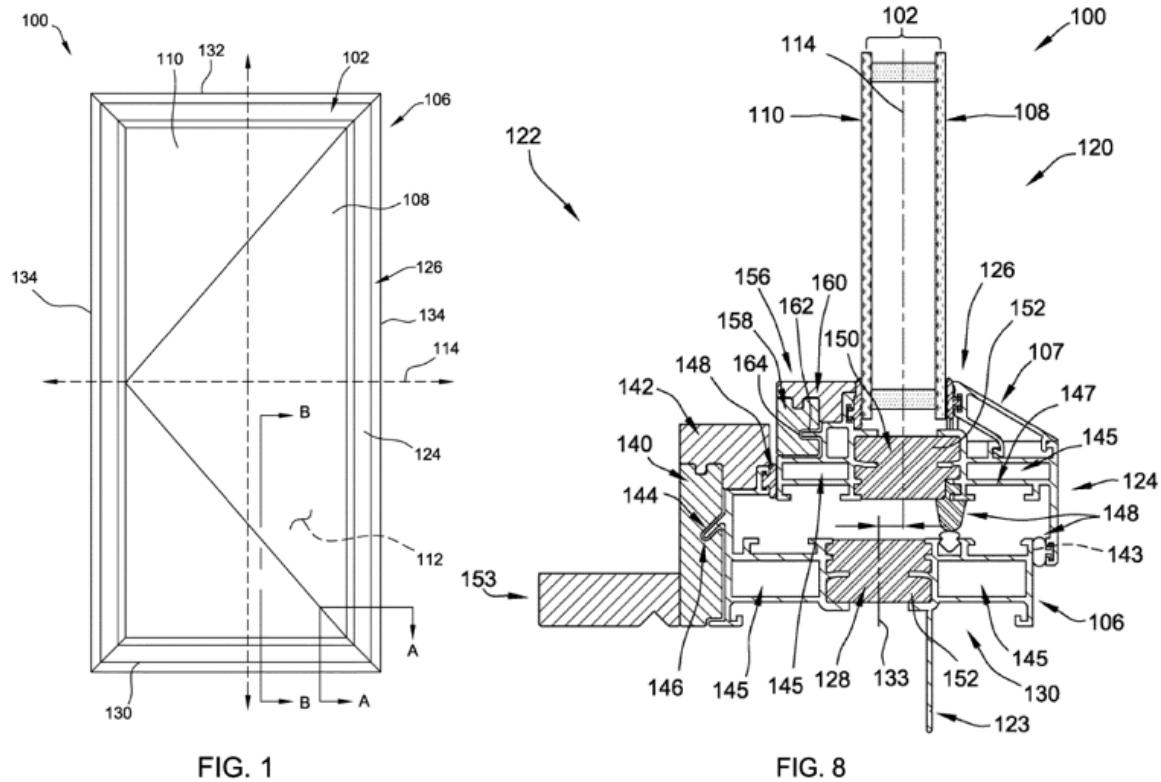


Figure 1 is an elevation view of window 100, and Figure 8 is a sectional view of a portion of window 100 taken along section line B-B shown in Figure 1. Ex. 1001, 2:14, 2:32–33. Window 100 comprises insulated glass unit 102 having first pane 108 and second pane 110 separated by pocket 112, which may be filled with an insulating material such as argon gas. *Id.* at 2:50–58. First pane 108 faces first side 120—in this embodiment, the outside of the structure in which the window is installed—and second pane 110 faces second side 122—here, the inside of the structure. *Id.* 4:64–5:6. Insulated glass unit 102 is secured in sash frame 124 by glazing stop 107 to form sash 126. *Id.* at 2:65–3:3. Sash 126 is, in turn, circumscribed by and positionable relative to frame 106, which includes sill 130, header 132, and jambs 134. *Id.* at 3:3–9, 3:17–25, Figs. 2, 4, 5, 8.

Cladding 136, comprising cladding face 140, cladding cap 142, and extension jamb 153, is attached to the inward-facing side of frame 106 by engaging the cladding's keyway 146 to the frame's key 144. Ex. 1001, 3:39–41, 3:49–51. “[T]he key 144 and the keyway 146 allow the cladding 136 to move relative to the sill 130, the header 132 and the jamb 134,” enabling the cladding “to be a different material” than the frame. *Id.* at 3:51–54. In this embodiment, frame 106 is made of aluminum and cladding 136 is made of wood. *Id.* at 4:49–52.

Window 100 also includes cavity 147 extending from first side 120 to second side 122 “and structurally separating the external frame 106 and the interior cladding 136.” Ex. 1001, 4:21–23. Openings in sill 130 allow moisture to exit cavity 147 and, with seals 148, inhibit moisture from contacting cladding 136. *Id.* at 4:23–32.

Frame 106 further includes thermal cavity 128 between first side 120 and second side 122. Ex. 1001, 5:15–17. Thermal cavity 128 is filled with insulating material 152 to reduce heat transfer through the window, and is aligned with pocket 112 such that central plane 114, which bisects pocket 112, extends through thermal cavity 128. Thermal cavity 128 and pocket 112 thus “provide a substantially continuous thermal break extending through the window to reduce the transfer of heat through the window.” *Id.* at 5:25–28; Fig. 10. Sash frame 124 includes a similar thermal cavity 150 that, when the sash is closed, also aligns with pocket 112. *Id.* at 5:31–35.

D. The Challenged Claims

Petitioner challenges claims 1–16 of the '027 patent. Pet. 1. Claims 1 and 14 are independent. Ex. 1001, Claims 1, 14. Claim 1 is reproduced

below (reformatted slightly and including Petitioner's limitation designations):

1. [1preamble] A window comprising:

[1.1] an insulated glass unit including: a first glass pane; and a second glass pane spaced from the first glass pane,

[1.2] the first glass pane and the second glass pane defining a pocket therebetween, wherein a central plane extends through the pocket and is spaced equal distances from the first glass pane and the second glass pane;

[1.3] a frame supporting the insulated glass unit,

[1.4] the frame including a first material, wherein the first material is visible on a first side of the window;

[1.5] cladding connected to the frame,

[1.6] the cladding including a second material, wherein the second material is visible on a second side of the window,

[1.7] wherein the frame defines a cavity that extends between the first side and the second side and is configured to inhibit moisture from the first side contacting the second material;

[1.8] a thermal cavity defined by a middle portion of the frame intermediate the first side and the second side

[1.9] and circumscribing the insulated glass unit,

[1.10] the middle portion of the frame supporting the insulated glass unit,

[1.11] wherein the thermal cavity is aligned with the pocket such that the central plane extends through a middle portion of the thermal cavity,

[1.12] the thermal cavity and the pocket defining a continuous thermal break extending through the window; and

[1.13] an insulating material within the thermal cavity.

Ex. 1001, Claim 1. Independent claim 14 includes similar limitations and adds limitations directed to a sash frame and sash thermal cavity. *Id.* at Claim 14.

E. Asserted Grounds of Unpatentability

Petitioner contends that the challenged claims are unpatentable based on the following specific grounds (Pet. 2):

No.	Claims Challenged	35 U.S.C. §	Reference(s)/Basis
1	1–16	§ 103	Varlonga, ¹ Erikanders, ² Anhehrn, ³ Haas, ⁴ Wausau, ⁵ Paulsen ⁶
2	1–16	§ 103	Anhehrn, Wuest, ⁷ Haas, Wausau, Erikanders, Paulsen

Petitioner also relies on the Declaration of Ken Bettger (Ex. 1002) to support its proposed grounds.

¹ US 4,115,972 (Sept. 26, 1978) (Ex. 1005).

² WO 91/19877 (Dec. 26, 1991) (Ex. 1006).

³ CH 706561 (Nov. 29, 2013) (Ex. 1007).

⁴ US 2,877,515 (Mar. 17, 1959) (Ex. 1010).

⁵ Invent.Plus Webpage (Sept. 5, 2015) (Ex. 1011).

⁶ DE 3242909 (May 24, 1984) (Ex. 1008).

⁷ US 2011/0011006 A1 (Jan. 20, 2011) (Ex. 1009).

II. ANALYSIS

A. *Level of Ordinary Skill in the Art*

Petitioner asserts that one of ordinary skill in the art at the time of the invention “would have had a Bachelor’s degree in mechanical engineering or a similar field, and 1–2 years of experience in the design, development, testing or manufacture of windows,” but “[a]dditional educational background could substitute for professional experience and vice versa.” Pet. 9–10 (citing Ex. 1002 ¶¶ 11–16). Patent Owner does not address this assertion or provide its own definition of the level of ordinary skill.

We discern no reason, at this stage of the proceeding, to question Petitioner’s proposed level of ordinary skill, which is supported by the prior art. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

B. *Claim Construction*

We construe the claims “using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. [§] 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” 37 C.F.R. § 42.100(b); *see Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc). Any special definitions for claim terms must be set forth in the Specification with reasonable clarity, deliberateness, and precision. *See In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994).

Petitioner contends that “[n]o claim term requires construction, because the prior art meets the claims terms under any reasonable interpretation.” Pet. 9. Patent Owner does not address whether any claim term requires construction.

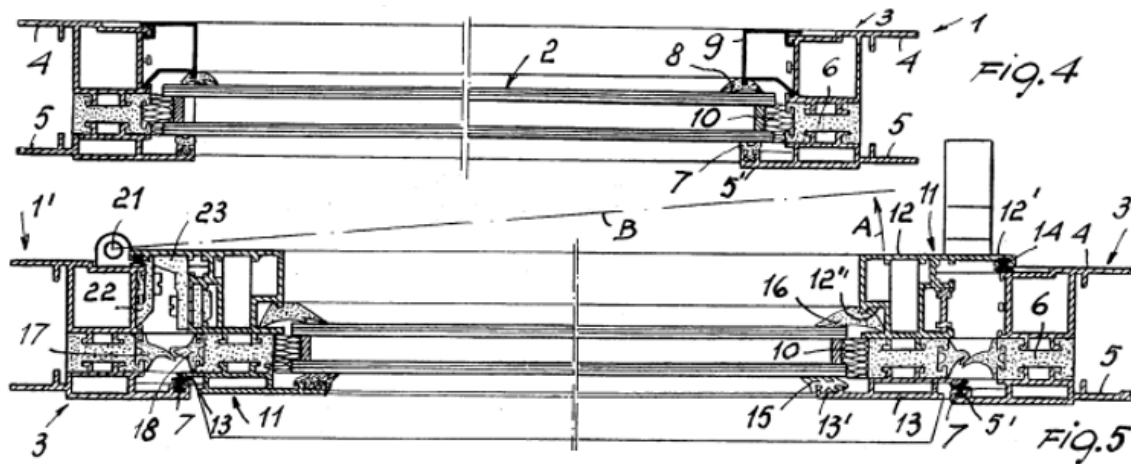
At this stage of the proceeding, we do not perceive the need to expressly construe any claim term, as the threshold question of institution can be decided without doing so. *See Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (approving Board decision not to construe claim language where the construction is not material to the dispute).

C. Ground 1: Claims 1–16—Obvious over Varlonga, Anhehrn, Erikanders, Haas, Wausau, and Paulsen

Petitioner alleges that claims 1–16 would have been obvious over Varlonga, Erikanders, Anhehrn, Haas, Wausau, and Paulsen. Pet. 10–51. Patent Owner opposes. Prelim. Resp. 5–8.

1. Varlonga

Varlonga describes frame fixture assemblies for doors and windows. Ex. 1005, Abstract. Figures 4 and 5 are reproduced below:



Figures 4 and 5 depict, respectively, sectional views of a fixed window 1 and a single-wing hung window 1'. Ex. 1005, 2:23–30. Each window comprises chamber glazing 2—two panes enclosing a gap—and frame member 3 supporting the chamber glazing. *Id.* at 2:39–52, 3:10–20.

Frame member 3 “is composed of two metal frames 4 and 5 driven into the wall and forming an integral body through the interposition of a double joint connection 6 therebetween.” *Id.* at 2:52–56. Frame 4 faces inwardly with respect to the building on which the window is installed, and frame 5 faces the outside of the building. *Id.* at 2:56–61. “The coupling or seam 6 is approximately coplanar with the double pane 2, wherefrom it is separated by an insulating cord 10, . . . and the combination including the pane, cord and coupling forms a continuous thermal shield or break from thermal conductive paths therethrough.” *Id.* at 3:1–9. Window 1’ shown in Figure 5 additionally comprises movable frame member 11 formed by inwardly facing metal frame 12 and outwardly facing metal frame 13 joined together by double joint connection 6’. *Id.* at 3:23–47.

2. *Erikanders*

Erikanders⁸ describes a frame for a window comprising a metal structure adapted to receive a wood lining. Ex. 1006, Abstract. According to Erikanders, while “[i]t has long been known to make doors and windows with a supporting structure of metal, in particular aluminium,” the “aluminium surfaces are not really aesthetically attractive,” the “possibilities of varying the appearance are comparatively restricted,” and an “all-metal surface on a window or door construction may feel unpleasantly cold.” *Id.* at 1:10–16. To overcome these disadvantages, Erikanders’ window “is adapted to receive, on its inner side, a lining which can be rapidly and

⁸ Citations are to the original page numbers of Erikanders rather than to those added by Appellant.

expediently secured on, as well as be released from, the frame.” *Id.* at 2:24–28.

Figures 1 and 2 of Erikanders are reproduced below:

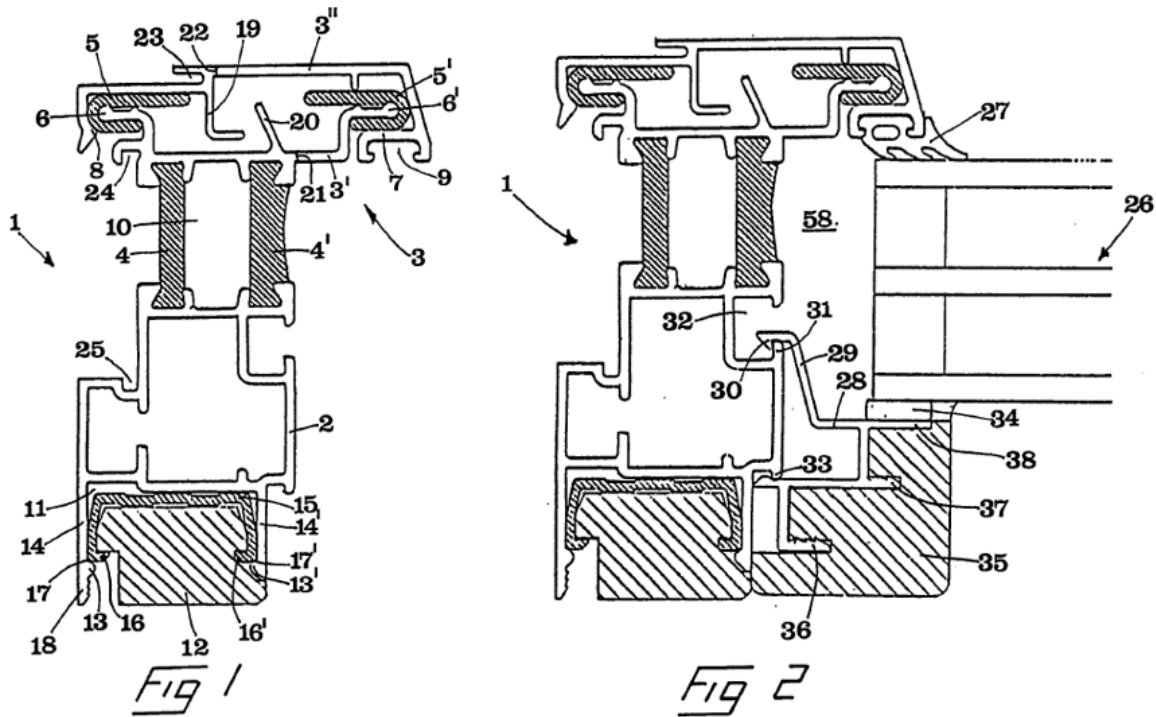


Figure 1 is a cross-sectional view of frame 1 according to Erikanders’ invention; Figure 2 depicts triple-glazed pane 26 mounted in frame 1. Ex. 1006, 3:21–25. Frame 1 includes main structure 2 and “covering section 3 intended to form the outside of the door or window construction of which the frame is a part.” *Id.* at 3:36–4:2. The “part of the main section 2 which is intended to face inwards in the building is formed with a groove 11 adapted to receive an inner lining 12, suitably a wood fillet.” *Id.* at 5:8–11. The inner lining can be mounted after the window is installed in the building, allowing “every customer [to] choose the inner lining he requires.” *Id.* at 5:34–6:2.

3. *Anhehrn*

Anhehrn describes a window sash frame. Ex. 1007, Abstract. Figures 7 and 8 of Anhehrn are reproduced below:

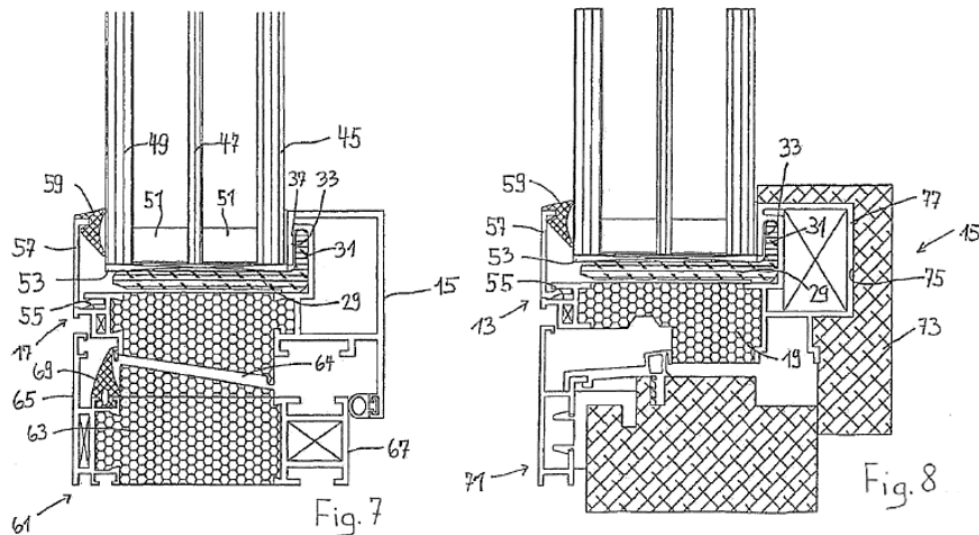


Figure 7 depicts a sectional view of window made of metal; Figure 8 shows a window made of metal and wood. *Id.* ¶¶ 32, 35. The windows comprise triple glazing—three panes of glass separated by spacer blocks—resting against inner aluminum profile 15. *Id.* ¶ 32. Inner aluminum profile 15 is connected to outer aluminum profile 17 by means of thermal insulation, such as insulating plastic body 79 shown in Figures 2 and 3. *Id.* ¶ 26. Window frame 61, which connects to the wall of the building and serves as a stop for the window, comprises inner profile 67 and outer profile 65 connected together by plastic core 63. *Id.* ¶ 34. In the embodiment shown in Figure 8, “window frame 61 and the inner shell are partially made of wood on the room side.” *Id.* ¶ 35.

4. *Haas*

Haas describes a heat-insulated metal-framed window. Ex. 1010, 1:14–15. The frame of Haas’ window has external and internal units of

hollow sheet metal that are heat-insulated from each other, and held together, by insulating members. *Id.* at 1:18–22. Petitioner relies on Haas to teach the limitation in dependent claim 2 requiring “a distance between a central plane of the thermal cavity and the central plane of the pocket [to be] in a range of up to about 0.5 inches.” Pet. 30–33 (citing Ex. 1010, 2:26–46, Fig. 1).

5. *Wausau*

Wausau is composed of screen shots from a website titled “Wausauwindow.com,” dated September 5, 2015, listing various window products available for sale. Ex. 1011, 1–5. Petitioner specifically relies on the description and depiction of the “Invent.Plus” product to teach the limitation in dependent claim 3 of a thermal cavity having a width “in a range of about 1 inches to about 2 inches.” Pet. 33–34 (citing Ex. 1011, 7).

6. *Paulsen*

Paulsen teaches a window frame composed of metal profiles connected together by profile core made of rigid plastic foam. Ex. 1008, 2:3–5, 3:1–4, Fig. Petitioner relies on Paulsen to teach the limitation in dependent claim 12 reciting “wherein the thermal cavity has a width greater than a width of the pocket and the first glass pane and the second glass pane are located within the extents of the thermal cavity.” Pet. 42–43.

7. *Principles of Law*

“A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in [35 U.S.C. § 102], if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a

person having ordinary skill in the art to which the claimed invention pertains.” 35 U.S.C. § 103. Obviousness is a question of law based on underlying findings of fact. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). The underlying factual considerations “include the scope and content of the prior art, the differences between the prior art and the claimed invention, the level of ordinary skill in the art, and any relevant secondary considerations” of non-obviousness, including commercial success of the patented product or method, a long-felt but unmet need for the functionality of the patented invention, and the failure of others who have unsuccessfully attempted to accomplish what the patentee has achieved. *Id.* at 17–18. The obviousness analysis should not be conducted “in a narrow, rigid manner,” but should instead focus on whether a claimed invention is merely “the result[] of ordinary innovation,” which is not entitled to patent protection. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007).

8. *Discussion*

a. Independent Claim 1

Petitioner contends that Varlonga teaches limitations [1.Preamble], [1.2], [1.3], [1.4], [1.7], [1.8], [1.9], [1.10], [1.11], [1.12], and [1.13]. Pet. 15–20, 23–30. For limitation [1.1], which requires the insulated glass unit to include two panes made of glass, Petitioner contends that Varlonga discloses “twin panes enclosing a gap therebetween,” which one of ordinary skill in the art would have understood to be made of glass “as glass panes were typically used on residential structures, like those disclosed in *Varlonga*.” Pet. 16 (citing Ex. 1005, 2:46–49, 3:27–32, Fig. 4; Ex. 1002 ¶ 42). Petitioner also notes that Anhehrn “expressly discloses that its panes are made of glass.” *Id.* (citing Ex. 1007, 1; Ex. 1002 ¶ 43). For limitations [1.5]

and [1.6], which relate to cladding connected to the frame and visible on a second side of the window, Petitioner contends that they are taught by Erikanders. *Id.* at 20–23 (citing Ex. 1006, 3:35–4:2, 5:8–19, 6:27–36). Petitioner supports the above contentions with annotated Figures from the cited references and specific citations to the record, as well as with Mr. Bettger’s testimony (Ex. 1002). At this stage of the proceeding, Patent Owner does not dispute any of Petitioner’s contentions regarding the teachings of Varlonga, Anhehrn, and Erikanders. *See generally* Prelim. Resp.

Petitioner further asserts that it would have been obvious to one of ordinary skill in the art to add wood cladding, such as that taught in Erikanders, to Varlonga’s window “to accommodate consumers who desired a particular aesthetic appeal, for example, on the inside frame.” Pet. 12 (citing Ex. 1002 ¶ 34). Patent Owner disagrees. Patent Owner notes Varlonga’s teaching that “[m]odern building techniques ha[d] developed in this field a distinct trend towards metal frame fixtures” Prelim. Resp. 6 (emphasis and alterations added by Patent Owner; internal quotation marks omitted) (citing Ex. 1005, 1:14–15). According to Patent Owner, this disclosure “teaches away from the purported ‘design choice’ that Petitioner relies on as the motivation to combine the prior art,” because “[a] POSA would not have been motivated to use the wood fillet of Erikanders in light of [this teaching].” *Id.* (quoting Pet. 11).

On the current record, we are not persuaded that this statement in Varlonga teaches away from the combination of Varlonga and Erikanders. Patent Owner’s argument implies that the proposed combination would replace Varlonga’s metal frame with a wooden frame. This is incorrect. In

the proposed combination, one of ordinary skill in the art would have added Erikander's wood cladding to Varlonga's metal frame, not replaced the frame with the cladding. *See* Pet. 12 (because "some consumers preferred the aesthetic appearance of wood," it "would have been obvious to a POSA to add [Erikanders'] wood cladding to Varlonga.")

We also determine, on this record, that Petitioner's proposed reason to combine the prior art, including Varlonga and Erikanders, has a rational underpinning. *See In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."). Erikanders teaches, for example, that the surface of a metal window frame may not be "aesthetically attractive" and "may feel unpleasantly cold," and goes on to discuss a prior-art reference that adds wood lining to both sides of the metal frame. Ex. 1006, 1:10–21. This reasonably suggests that Erikander's wood lining, which is attached to the inner side of a metal-frame window, is intended to address the noted aesthetic and tactile deficiencies of a metal-frame window with an exposed metal surface.

In summary, having reviewed the current record, Petitioner's analysis, and Patent Owner's Preliminary Response, we determine that there is a

reasonable likelihood that Petitioner would prevail in showing claim 1 to be obvious under 35 U.S.C. § 103 over Varlonga, Anhehrn, and Erikanders.⁹

b. Independent Claim 14

Petitioner's analysis for the preamble and limitations [14.1] through [14.11] of claim 14 is essentially the same as that for the corresponding limitations of claim 1. *See* Pet. 46–48. For the remaining limitations in claim 14, [14.12] through [14.15], Petitioner relies on Varlonga. Pet. 38–39, 40–42, 48–49 (citing Ex. 1005, 3:1–7, 3:14–26, 4:55–56, Figs. 2, 3, 5–7; Ex. 1002 ¶¶ 72, 73, 93). Patent Owner does not, at this state of the proceeding, dispute Petitioner's contentions regarding Varlonga's teachings, and does not make any arguments beyond those made for claim 1, which we found unpersuasive, as discussed above.

Having reviewed the current record, Petitioner's analysis, and Patent Owner's Preliminary Response, we determine that there is a reasonable likelihood that Petitioner would prevail in showing claim 14 to be obvious under 35 U.S.C. § 103 over Varlonga, Anhehrn, and Erikanders.

c. Dependent Claims 2–13, 15, and 16

Claims 2–13, 15, and 16 depend directly or indirectly from claims 1 and 14. Petitioner provides a clause-by-clause analysis of where each element in each of these claims is disclosed in, or would have been obvious

⁹ Although Petitioner frames ground 1 as based on these references plus Haas, Wausau, and Paulsen, Petitioner relies only on Varlonga and Erikanders (and, to a limited extent, Anhehrn) in its analysis for independent claims 1 and 14.

over, Varlonga, Anhehrn, Erikanders, Haas, Wausau, and Paulsen; and supports its analysis with the testimony of Mr. Bettger. Pet. 30–46, 50–51.¹⁰

At this stage of the proceeding, Patent Owner does not challenge Petitioner’s contentions regarding the teaches of these references, but does dispute that one of ordinary skill in the art would have made the combinations proposed by Petitioner. Patent Owner asserts that Petitioner “makes no attempt to explain how or why a POSA would have been motivated to modify the hypothetical window created by the combination of Varlonga, Anhehrn, and Erikanders, with Haas” in its analysis of claim 2, or additionally with Wausau in its analysis of claim 3, or with Paulsen in its analysis of claim 12. Prelim. Resp. 7–8. Patent Owner has not raised any arguments directed specifically to the remaining dependent claims.

We have considered Petitioner’s arguments and evidence, and Patent Owner’s arguments to the contrary, but determine that Petitioner has provided sufficient analysis and evidentiary support, at this stage of the proceeding, to support institution as to each of the challenged dependent claims. For example, claim 2 depends from claim 1 and additionally recites that “a distance between a central plane of the thermal cavity and the central plane of the pocket is in a range of up to about 0.5 inches.” Ex. 1001, claim 2. Petitioner asserts that the additional dimensional limitation of claim 2 “is simply a matter of design choice,” relying in part on Mr. Bettger’s

¹⁰ Petitioner does not rely on all six of these references for each of the dependent claims. Instead, Petitioner relies on Haas to teach additional limitations in claims 2, 3, and 13; on Erikanders to teach additional limitations in claims 4 and 6; and on Anhehrn to teach additional limitations in claims 5, and 6. Pet. 30–38, 43–36. Petitioner relies only on Varlonga for the additional limitations of claims 7–11, 15, and 16. *Id.* at 38–42, 50–51.

testimony. Pet. 12 (citing, e.g., Ex. 1002 ¶ 35). Petitioner further asserts that Haas teaches this limitation for its sash frame, and “it would have been obvious to a POSA to apply [Haas’ teaching] with respect to [Varlonga’s] frame because: 1) such arrangement is simply a matter of design choice; and 2) Varlonga already teaches that the thermal cavities in its sash frame and frame are concentric and coplanar.” *Id.* at 12–13 (citing Ex. 1002 ¶ 35), 32 (citing Ex. 1010, 2:26–46; Ex. 1002 ¶ 62). Petitioner provides similar analysis for claim 3 (Wausau) and claim 12 (Paulsen). *Id.* at 13, 33–34, 42–43 (citing Ex. 1011, 7; Ex. 1008, 3:1–4; Ex. 1002 ¶¶ 63, 75). Thus, on this record, we determine that Petitioner has established a reasonable likelihood of prevailing with respect to dependent claims 2–13, 15, and 16.

D. Ground 2: Claims 1–16—Obvious over Anhehrn, Wuest, Haas, Wausau, Erikanders, and Paulsen

Petitioner contends that claim 1–16 would have been obvious over Anhehrn, Wuest, Haas, Wausau, Erikanders, and Paulsen. Pet. 56–91. Patent Owner opposes. Prelim. Resp. 8–11. Anhehrn, Haas, Wausau, Erikanders, and Paulsen are discussed above.

1. Wuest

Wuest teaches a window frame consisting of an insulated foam core. Ex. 1009 ¶ 10. Figures 2 and 3 of Wuest are reproduced below:

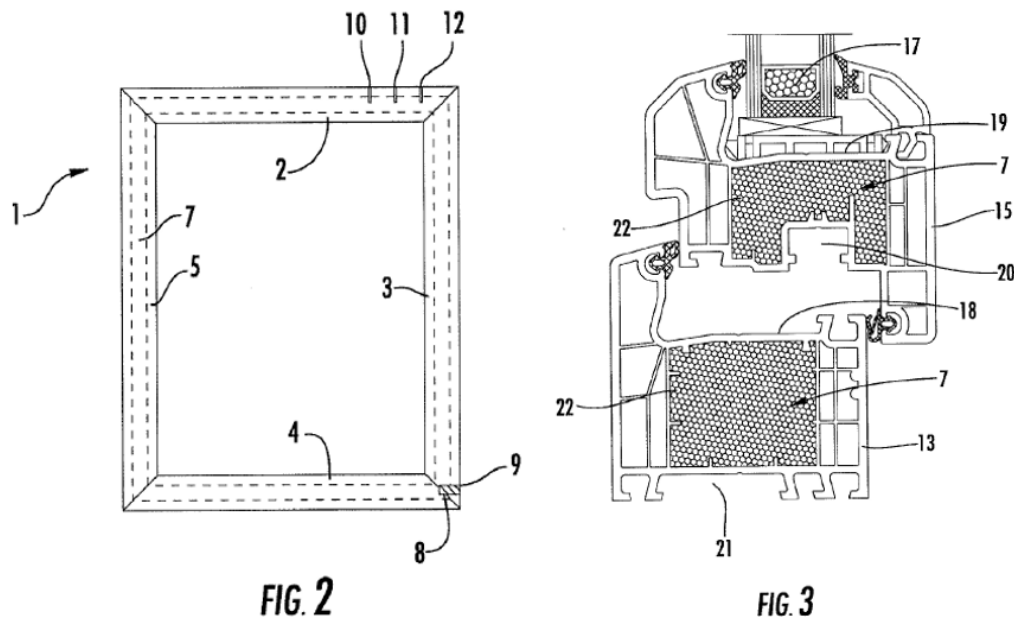


Figure 2 depicts frame 1 assembled from plastic hollow-profile elements 2–5. *Id.* ¶¶ 37–38. Continuous chamber 7, which runs through the interior of frame 1, is filled with foam-forming and then hardening fluid through borehole 8. *Id.* ¶ 46. Figure 3 depicts a cross-sectional view of a hollow-profile element with the resulting expanded insulating foam core 22 within chamber 7. *Id.* ¶ 38.

2. Discussion

a. Independent claim 1

Petitioner contends that Anhehrn teaches all but one of the limitations of claim 1. Pet. 56–71. Petitioner supports these contentions with annotated versions of Figures 7 and 8 of Anhehrn, specific citations to the record, and testimony from its declarant, Mr. Bettger. *Id.* (citing Ex. 1007 ¶¶ 10, 26, 32–35, Figs. 7, 8; Ex. 1002 ¶¶ 107–116, 118–121). At this stage of the proceeding, Patent Owner does not dispute these contentions.

Petitioner acknowledges that while Anhehrn discloses a thermal cavity, it does not expressly teach limitation [1.9], which requires the

thermal cavity to “circumscrib[e] the insulated glass unit.” Pet. 65–66. Petitioner asserts, however, that Wuest teaches a window having frame 13 defining inner chamber 7 filled by an insulating foam core 22, the filled chamber 7 circumscribing the glass unit of Wuest’s window. *Id.* (citing Ex. 1009 ¶¶ 41, 46, 48, 50, Figs. 2, 3). Petitioner asserts that “to the extent Anhehrn does not explicitly teach its thermal cavity circumscribing the glass panes 45, 49, it would have been obvious to a POSA to modify the plastic core 63 to circumscribe the glass panes 45, 49, based on the teachings of Wuest.” *Id.* at 66 (citing Ex. 1002 ¶ 117). Petitioner further explains:

The purpose of the thermal cavities is to inhibit, for example, the air temperature on the outside of the window from impacting the air temperature on the inside of the window. A POSA would have been motivated to extend the thermal cavity around the frame to minimize any effect that air from the outside could have on the temperature of air on the inside. Further, at the time of the alleged invention of the ’027 Patent, it was common to have frames that utilized extruded parts, which were symmetrical throughout. Therefore, thermal cavities therein would extend throughout the part.

Id. at 52–53 (citing Ex. 1002 ¶ 98).

Patent Owner responds that Petitioner does not adequately explain why one of ordinary skill in the art would have been motivated to replace Anhehrn’s plastic core 63, which has sealing gap 69, with Wuest’s insulating foam core 22, which “fill[s] up the entire frame.” Prelim. Resp. 10–11. The premise underlying this argument is incorrect: Petitioner does not suggest that one of ordinary skill in the art would have *replaced* Anhehrn’s plastic core 63 with Wuest’s foam core 22. Instead Petitioner contends that one of ordinary skill in the art would have *modified* plastic core 63 so that it circumscribes glass panes 45, 49 based on Wuest’s teaching that its foam

core circumscribes its window frame. Pet. 66. Further, on this record, Petitioner’s reason why one of ordinary skill in the art would have modified Anhehrn’s plastic core 63 in this way is supported by a rational underpinning: to reduce heat transfer through the window. *Id.* at 52–53.

In summary, having reviewed the current record, Petitioner’s analysis, and Patent Owner’s Preliminary Response, we determine that there is a reasonable likelihood that Petitioner would prevail in showing claim 1 to be obvious under 35 U.S.C. § 103 over Anhehrn and Wuest.¹¹

b. Independent Claim 14

Petitioner’s analysis for the preamble and limitations [14.1] through [14.11] of claim 14 is essentially the same as that for the corresponding limitations of claim 1. *See* Pet. 86–88. For limitations [14.13] and [14.14],¹² Petitioner relies on Anhehrn, and for limitation [14.12], Petitioner relies on Anhehrn and Wuest. Pet. 88–89 (citing Ex. 1007, 3:1–7, 3:14–26, 4:55–56, Figs. 2, 3, 5–7; Ex. 1002 ¶¶ 72, 73, 93). Patent Owner does not, at this state of the proceeding, dispute Petitioner’s contentions regarding Varlonga’s teachings, and does not make any arguments beyond those made for claim 1, which we found unpersuasive.

Having reviewed the current record, Petitioner’s analysis, and Patent Owner’s Preliminary Response, we determine that there is a reasonable

¹¹ Although Petitioner frames ground 2 as based on these references plus Haas, Wausau, Erikanders, and Paulsen, Petitioner relies only on Anhehrn and Wuest in its analysis for independent claims 1 and 14.

¹² Petitioner designates the limitations of claim 14 somewhat differently in its Ground-2 analysis as compared with its Ground-1 analysis, in that limitation [14.14] is combined with limitation [14.13], and limitation [14.15] is re-designated limitation [14.14]. *Compare* Pet. 48, *with id.* at 88–89.

likelihood that Petitioner would prevail in showing claim 14 to be obvious under 35 U.S.C. § 103 over Anhehrn and Wuest.

c. Dependent Claims 2–13, 15, and 16

Petitioner provides a clause-by-clause analysis of where each element in each of the dependent claims is disclosed in, or would have been obvious over, Anhehrn, Wuest, Haas, Wausau, Erikanders, and/or Paulsen. Pet. 71–85, 89–91. Patent Owner does not present additional arguments with respect to the dependent claims beyond those raised in opposing Petitioner’s ground 1. We find Petitioner’s analysis and evidence in support thereof sufficient at this stage of the proceeding. Accordingly, we determine, for purposes of this Decision, that Petitioner has established a reasonable likelihood of prevailing with respect to claims 2–13, 15, and 16.

3. *Statutory and Regulatory Requirement Relating to Foreign-Language Documents*

Patent Owner argues that institution should not be granted because Petitioner failed to include and provide to Patent Owner the required original untranslated versions of the German language Anhehrn and Paulsen references as required by sections 312(a)(3)(A) and 312(a)(5). Prelim. Resp. 12. By order dated [], we granted Petitioner’s unopposed motion to substitute complete versions of Anhehrn and Paulsen, which include the original foreign-language versions of these references, for those originally filed with the Petition. Paper []. Accordingly, this argument is moot.

III. CONCLUSION

For the foregoing reasons, we determine that Petitioner has shown that there is a reasonable likelihood that it would prevail with regard to at least

one of the claims challenged in the Petition. Accordingly, we institute *inter partes* review of claims 1–16 of the '027 patent on all asserted grounds.

IV. ORDER

For the reasons given, it is

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1–16 of the '027 patent on all asserted grounds is *instituted*; and

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), notice is hereby given of the institution of trial, which will commence on the entry date of this Decision.

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