

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DUKE MANUFACTURING CO.,
Petitioner,

v.

LOW TEMP INDUSTRIES, INC.,
Patent Owner.

Case IPR2021-00414
U.S. Patent No. 8,661,970

PATENT OWNER'S NOTICE OF APPEAL

Pursuant to 37 C.F.R. § 90.2(a), Patent Owner Low Temp Industries, Inc. (“Patent Owner”) hereby appeals to the United States Court of Appeals for the Federal Circuit from the Patent Trial and Appeal Board’s Final Written Decision dated July 6, 2022 (Paper 59), and from all underlying findings, orders, decisions, rulings, and opinions that are adverse to Patent Owner. A copy of the Final Written Decision is attached to this Notice.

In accordance with 37 C.F.R. § 90.2(a)(3)(ii), Patent Owner further indicates that the issues on appeal include all issues decided adversely to Patent Owner in any orders, decisions, rulings, and opinions. This will likely include, but is not limited to:

1. Whether the Board erred in its determination that claims 1, 6, 7, 10, 12, 14, 16–20, and 22–26 of U.S. Patent No. 8,661,970 (“the ’970 Patent) are unpatentable under 35 U.S.C. § 102 in view of *Finegan*, and any finding or determination (factual or legal) supporting that determination;

2. Whether the Board erred in its determination that claims 1, 2, and 6–26 of the ’970 Patent are unpatentable under 35 U.S.C. § 103(a) in view of *Finegan*, *Safyan*, and *Hansen*, and any finding or determination (factual or legal) supporting that determination;

3. Whether the Board erred in its determination that claims 3–5 of the ’970 Patent are unpatentable under 35 U.S.C. § 103(a) in view of *Finegan* and

Tipton, and any finding or determination (factual or legal) supporting that determination;

4. Whether the Board erred in its claim constructions;

5. Whether the Board erred by considering obviousness theories not presented in the petition;

6. Whether the Board erred in its consideration of objective indicia of nonobviousness, including without limitation its determination of insufficient nexus between the challenged claims and Patent Owner's evidence of secondary considerations; and

7. Whether the Board erred in any finding or determination supporting or relating to the above-referenced issues and any other issues decided adversely to Patent Owner in any orders, decisions, rulings, or opinions of the Board.

Pursuant to 37 C.F.R. §§ 90.2(a)(1) and 104.2, this Notice of Appeal is being filed on the date below with the United States Patent and Trademark Office by way of hand delivery to the Office of the General Counsel:

Office of the General Counsel
United States Patent and Trademark Office
Madison Building East, Room 10B20
600 Dulany Street
Alexandria, Virginia 22314

This Notice of Appeal also is being filed on the date below with the Director of the United States Patent and Trademark Office by way of first class mail to the Office of the General Counsel:

Office of the General Counsel
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, Virginia 22313-1450

Pursuant to 37 C.F.R. § 90.2(a)(2) and Federal Circuit Rule 15, this Notice of Appeal is being filed electronically on the date below with the United States Court of Appeals for the Federal Circuit along with the required docketing fees, and one paper copy of the Notice of Appeal is being provided to the Clerk's Office:

Clerk of Court
United States Court of Appeals for the Federal Circuit
717 Madison Place, NW, Room 401
Washington, DC 20439

Dated: September 6, 2022

Respectfully submitted,

/ David A. Reed /

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CERTIFICATE OF SERVICE

Pursuant to 37 C.F.R. § 42.6(e), the undersigned certifies that on the date below a copy of the foregoing **PATENT OWNER’S NOTICE OF APPEAL** was served by email upon the following:

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DUKE MANUFACTURING CO.,
Petitioner,

v.

LOW TEMP INDUSTRIES, INC.,
Patent Owner.

IPR2021-00414
Patent 8,661,970 B2

Before MICHELLE N. ANKENBRAND, KRISTINA M. KALAN, and
WESLEY B. DERRICK, *Administrative Patent Judges*.

KALAN, *Administrative Patent Judge*.

JUDGMENT

Final Written Decision

Determining All Challenged Claims Unpatentable

35 U.S.C. § 318(a)

Dismissing Petitioner's Motion to Exclude (Paper 45)

37 C.F.R. § 42.64(c)

Denying Patent Owner's Motion to Exclude (Paper 46)

37 C.F.R. § 42.64(c)

INTRODUCTION

Duke Manufacturing Co. (“Petitioner”) filed a Petition (Paper 2, “Pet.”) requesting *inter partes* review of claims 1–26 of U.S. Patent No. 8,661,970 B2 (Ex. 1101, “the ’970 patent”). Low Temp Industries, Inc. (“Patent Owner”) filed a Preliminary Response to the Petition (Paper 6). Pursuant to the Board’s Order (Paper 7), Petitioner filed a Reply (Paper 9) and Patent Owner filed a Sur-Reply (Paper 10).

We instituted an *inter partes* review of claims 1–26 of the ’970 patent on the grounds of unpatentability alleged in the Petition. Paper 12 (“Dec.”). After institution of trial, Patent Owner filed a Patent Owner Response. Paper 32 (“PO Resp.”). Petitioner filed a Reply. Paper 34 (“Reply”). Patent Owner filed a Sur-Reply. Paper 43 (“Sur-Reply”).

Petitioner filed a Motion to Exclude (Paper 45, “Pet. Mot. Excl.”); Patent Owner filed an Opposition to Petitioner’s Motion to Exclude (Paper 50); and Petitioner filed a Reply to Patent Owner’s Opposition (Paper 52).

Patent Owner filed a Motion to Exclude (Paper 46, “PO Mot. Excl.”); Petitioner filed an Opposition to Patent Owner’s Motion to Exclude (Paper 49, “Opp. PO Mot. Excl.”); and Patent Owner filed a Reply to Petitioner’s Opposition (Paper 53, “Reply PO Mot. Excl.”).

With Board authorization, Petitioner filed an Identification of New Argument in Patent Owner’s Sur-Reply (Paper 47) and Patent Owner filed a Response to Petitioner’s filing (Paper 51).¹

¹ Petitioner identifies portions of Patent Owner’s Sur-Reply that Petitioner believes constitute new argument. Paper 47, 1. Even considering the

We held an oral hearing on April 7, 2022, and a transcript of the hearing is included in the record. Paper 58 (“Tr.”).

This Final Written Decision is issued pursuant to 35 U.S.C. § 318(a). For the reasons that follow, we determine that Petitioner has shown by a preponderance of the evidence that claims 1–26 of the ’970 patent are unpatentable.

A. Related Proceedings

The parties state that the ’970 patent is at issue in *Low Temp Ind. v. Duke Mfg. Co.*, No. 4:20-cv-00686-MTS (E.D. Mo.) (the “District Court proceeding”). Pet. 113; Paper 4, 2.

Petitioner filed two additional petitions for *inter partes* review on related patents, challenging claims of U.S. Patent No. 8,307,761 B1 (“the ’761 patent”) in IPR2021-00413, and claims of U.S. Patent No. 9,795,253 B2 (“the ’253 patent”) in IPR2021-00415. IPR2021-00413, Paper 2; IPR2021-00415, Paper 2. The ’970 patent is a continuation of application No. 12/139,629, which issued as the ’761 patent. IPR2021-00414, Ex. 1101, codes (10), (63). The ’253 patent is a continuation of application No. 13/654,449, which issued as the ’970 patent. IPR2021-00415, Ex. 1201, codes (10), (63).

B. The ’970 Patent

The ’970 patent, titled “Multi-well Food Presentation Modules,” is directed to food presentation modules in which each well may be controllable thermally independent of other wells and may alternately be

allegedly new arguments, the outcome of this Decision is not adverse to Petitioner, and we find the issue moot.

refrigerated or heated. Ex. 1101, code (54), 1:13–17. The '970 patent explains that each well is “isolated thermally from adjacent wells and has an independently-controlled heating and cooling system.” *Id.* at 2:39–40. Exemplary food presentation module 10 is depicted in Figure 2, reproduced below.

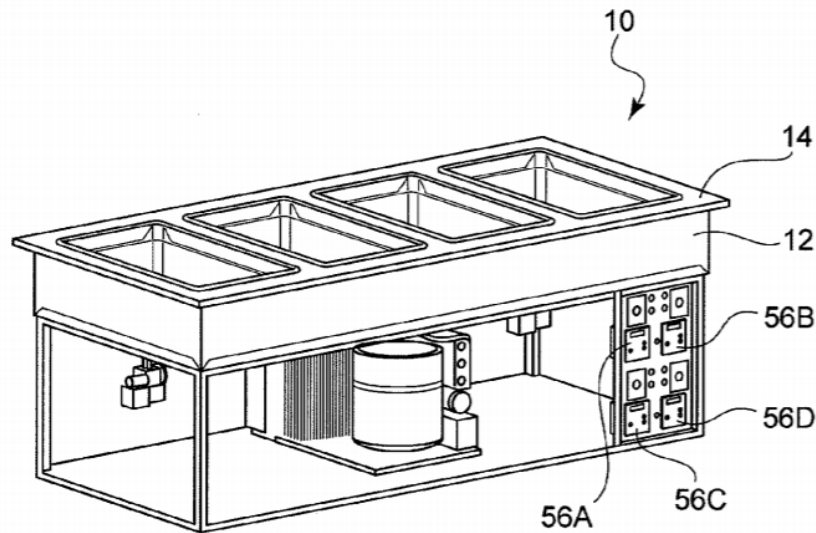


FIG. 2

Figure 2 is a perspective view of the front of module 10. *Id.* at 3:37–38. Module 10 “includes a frame 12 having generally planar upper surface 14 from which multiple wells 18 (see FIG. 6) depend.” *Id.* at 3:50–52. Module 10 also includes an interface plate for four controls 56A–56D, with one control present for each well. *Id.* at 4:46–48. Well 18 is depicted in Figure 6, reproduced below.

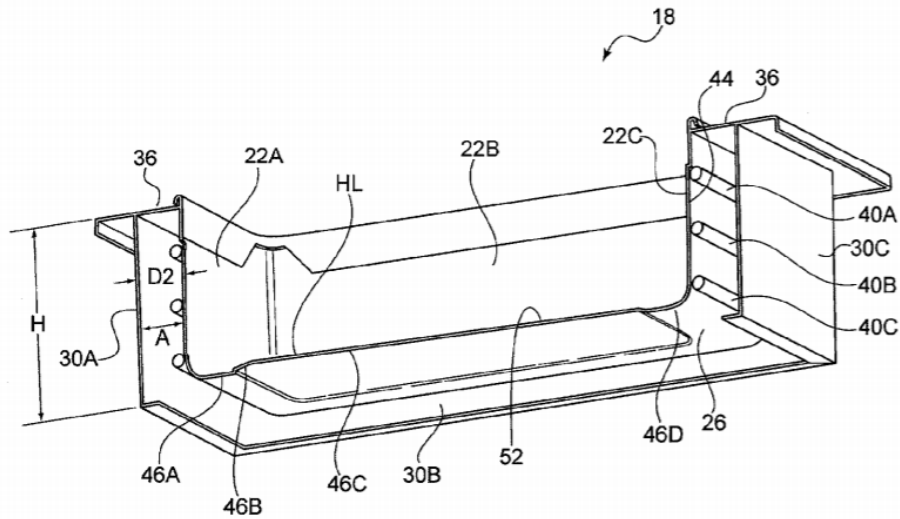


FIG. 6

Figure 6 is a perspective, cut-away view of well 18. *Id.* at 3:44–45. Well 18 has four generally vertically extending interior walls 22 and four exterior walls 30. *Id.* at 3:63–4:2. Each exterior wall 30 preferably is spaced distance D2 from its corresponding interior wall 22 to form insulative air gap A therebetween. *Id.* at 4:2–4. When a particular well of module 10 is to be heated, its associated control activates the heating element in floor 26 of the well. *Id.* at 4:49–52. Conversely, when the particular well is to be cooled, its associated control operates a condensing unit, which causes refrigerant to flow through pipes 40A–40C. *Id.* at 4:56–59. Each control 56A–56D can be independently operated so that heating and cooling of any well 18 may occur regardless of the thermal status of any other well 18 within module 10. *Id.* at 3:15–16, 4:43–44. For example, “each well 18 readily may maintain the foodstuff at 150°F. (for product needing to be heated) or at 41°F. (for product needing to be refrigerated).” *Id.* at 5:4–6.

C. Illustrative Claim

Petitioner challenges claims 1–26 of the '970 patent. Pet. 1. Claims 1, 10, 12, 14, 20, 23, and 24 are independent claims. Claim 1 is illustrative of the subject matter at issue and is reproduced below:

1. A food presentation module generally immobile in use, comprising:
 - a. a frame;
 - b. at least two wells for receiving containers of bulk food, the wells being uncovered in use so as to expose food received therein to the ambient environment, each well being thermally isolated from other wells; and
 - c. a system for controlling temperatures of the at least two wells independently, wherein temperatures of the wells may be switched between heating and refrigerating, regardless of the temperature of the other well such that food received in the first well may be refrigerated to a temperature substantially below ambient while food received in a the second well may be heated to a temperature substantially above ambient, food received in the first well may be heated to a temperature substantially above ambient while food received in the second well may be refrigerated to a temperature substantially below ambient, both wells may be heated, or both wells may be refrigerated.

Ex. 1101, 5:28–47.

D. Instituted Grounds of Unpatentability

We instituted *inter partes* review of claims 1–26 of the '970 patent on the following grounds:

References/Basis	35 U.S.C. §²	Claims Challenged
Finegan ³	102	1, 6, 7, 10, 12, 14, 16–20, 22–26
Finegan, Safyan, ⁴ Hansen ⁵	103	1, 2, 6–26
Finegan, Tipton ⁶	103	3–5
Finegan, Tipton, Safyan, Hansen	103	3–5
Richmond, ⁷ Finegan	103	1, 2, 6, 7, 9–26
Richmond, Finegan, Safyan, Hansen	103	1, 2, 6–26
Richmond, Finegan, Tipton	103	1–4, 6, 7, 9–26
Richmond, Finegan, Tipton, Safyan, Hansen	103	1–4, 6–26
Shackelford ⁸	102	10

Petitioner relies on the declaration testimony of Kelly O. Homan, Ph.D. (Ex. 1103; Ex. 1149) and James Bigott (Ex. 1144). Patent Owner relies on the declaration testimony of J. Rhett Mayor, Ph.D. (Ex. 2016; Ex. 2027) and Ben Casey (Ex. 2004).

² The Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284 (2011) (“AIA”), included revisions to 35 U.S.C. §§ 102 and 103 that became effective on March 16, 2013. Because the ’970 patent issued from an application filed before March 16, 2013, we apply the pre-AIA version of §§ 102 and 103.

³ PCT Application Publication No. WO 00/71950 A1, published Nov. 30, 2000 (Ex. 1105).

⁴ U.S. Patent No. 5,941,077, issued Aug. 24, 1999 (Ex. 1106).

⁵ U.S. Patent No. 5,961,866, issued Oct. 5, 1999 (Ex. 1108).

⁶ U.S. Patent No. 4,593,752, issued June 10, 1986 (Ex. 1109).

⁷ U.S. Patent No. 6,434,961 B2, issued Aug. 20, 2002 (Ex. 1110).

⁸ U.S. Patent No. 5,388,429, issued Feb. 14, 1995 (Ex. 1122).

II. ANALYSIS

A. *Legal Standards*

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros., Inc. v. Union Oil Co. of Cal.*, 814 F.2d 628, 631 (Fed. Cir. 1987). A “prior art reference—in order to anticipate under 35 U.S.C. § 102—must not only disclose all elements of the claim within the four corners of the document, but must also disclose those elements ‘arranged as in the claim.’” *Net MoneyIN, Inc. v. VeriSign, Inc.*, 545 F.3d 1359, 1369 (Fed. Cir. 2008) (quoting *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 1548 (Fed. Cir. 1983)).

A claim is unpatentable under 35 U.S.C. § 103(a) if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a person of ordinary skill in the art at the time the invention was made. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007). Obviousness is resolved based on underlying factual determinations, including: (1) the scope and content of the prior art; (2) differences between the prior art and the claims at issue; (3) the level of ordinary skill in the art; and (4) when in evidence, objective evidence of nonobviousness, i.e., secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966).

Petitioner bears the burden of proving unpatentability of the challenged claims, and the burden of persuasion never shifts to Patent Owner. *Dynamic Drinkware, LLC v. Nat’l Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015). Petitioner must demonstrate unpatentability by a preponderance of the evidence. 35 U.S.C. § 316(e) (2018); 37 C.F.R.

§ 42.1(d); *see also Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2016) (citing 35 U.S.C. § 312(a)(3) (2012) (requiring *inter partes* review petitions to identify “with particularity . . . the evidence that supports the grounds for the challenge to each claim”)).

B. Level of Ordinary Skill in the Art

Petitioner contends that a person of ordinary skill in the art at the time of the invention would have had “an engineering degree and/or 4 years experience designing food service equipment.” Pet. 17 (citing Ex. 1103 ¶ 17).

Patent Owner contends that a person of ordinary skill in the art would have had “a mechanical engineering or equivalent degree and/or approximately four years of experience designing food service equipment,” as well as “an understanding of heat transfer concepts.” PO Resp. 10 (citing Ex. 2027 ¶ 69) Patent Owner also contends: “Additional education may substitute for experience and significant experience in the food service equipment industry may substitute for formal education.” *Id.*

Neither party argues that the outcome of this case would differ based on our adoption of any particular definition of one of ordinary skill in the art. On this record, we find that the differences in the parties’ contentions as to the level of ordinary skill are not consequential, in part because the levels of skill both Petitioner and Patent Owner set forth are based on an engineering degree and a length and type of experience that overlap. Accordingly, we adopt Patent Owner’s definition, because it is consistent with the cited prior art. We further note that the prior art itself demonstrates the level of skill in the art at the time of the invention. *See Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001) (explaining that “specific findings on the level

of skill in the art . . . [are not required] ‘where the prior art itself reflects an appropriate level and a need for testimony is not shown’” (quoting *Litton Indus. Prods., Inc. v. Solid State Sys. Corp.*, 755 F.2d 158, 163 (Fed. Cir. 1985))).

C. Claim Construction

We apply the claim construction standard articulated in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc). 37 C.F.R. § 42.100(b) (2019). Under *Phillips*, claim terms are afforded “their ordinary and customary meaning.” *Phillips*, 415 F.3d at 1312. “[T]he ordinary and customary meaning of a claim term is the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention.” *Id.* at 1313. Only terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Vivid Techs., Inc. v. Am. Sci. & Eng’g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

In the Petition, Petitioner provides a claim construction for the following claim terms: “well;” “insulative gap;” “thermally isolated;” “system/temperature controlling system/system control/independent electronic control system for each well/electronic control system;” “wells are spaced by a distance of only approximately three inches;” and “thermal blanket.” Pet. 18–25. Patent Owner discusses claim constructions for the terms: “well;” “insulative gap;” “a frame;” “wells spaced by a distance of only approximately three inches;” “thermally isolated;” “temperature-control system/temperature controlling system;” and “thermal blanket.” PO Resp. 11–25. The meaning of “module” is also at issue throughout the parties’ post-institution briefing. PO Resp.; Reply; Sur-Reply.

At oral hearing, the parties narrowed the terms they deemed necessary for us to construe to resolve the case to five terms: “adjacent,”⁹ “module/frame,” “well,” the “3-inch” term, and the “system” term. Tr. 11:13–13:14 (Petitioner indicating that “adjacent,” “module/frame,” “well,” “3-inch” and “control system” means-plus-function terms were important to construe), 32:9–33:2 (Patent Owner stating that “four terms must be considered to resolve this,” namely, “adjacent,” “module/frame,” “well,” and the “means-plus-function idea”), 72:5–24 (Petitioner agreeing that “adjacent, module/frame, well, and then the means-plus-function terms” along with the “three-inch limitation” were important to construe). We discuss the terms relevant to resolving the dispute below.

1. *Well*

Petitioner argues that one of ordinary skill in the art “would understand ‘well’ to mean structure, not negative space.” Pet. 18 (citing Ex. 1101, 3:64–4:9; Ex. 1102, 123, 125; Ex. 1103 ¶¶ 64–69). In its Reply, Petitioner argues that “‘well’ refers to the entire structural well unit, including the well’s exterior walls, if present.” Reply 3. Petitioner further argues that “nothing in the intrinsic evidence limits ‘well’ to only the negative space or only the structure directly bounding the negative space.” *Id.* at 1. Rather, “the claims and specification identify the ‘well’ as

⁹ The term “adjacent” is present in the claims at issue in IPR2021-00413 and IPR2021-00415, which were part of the same hearing as this case. The term “adjacent” is not present in the claims of the ’970 patent and, therefore, we do not construe it here. *See* Tr. 10:24–11:3 (counsel for Petitioner, when asked “Do we need to construe [“adjacent”] in the 414 case, then?” responding “I believe that’s the ’970 Patent and, Your Honor, I don’t believe so. Adjacent doesn’t appear in the claims.”)

comprising the entire structural well unit as shown in Fig. 6, including: the interior walls, the floor, the exterior walls, the heating elements, and the cooling coils.” *Id.* at 1–2.

Patent Owner contends that “‘wells,’ as the name makes clear, are openings for receiving the food-containing tray defined by the surrounding structure.” PO Resp. 11; Ex. 2027 ¶¶ 29–32 (Dr. Mayor opining that “well” is “the nominal opening for receiving a food-stuff containing pan created by the interior and exterior walls”). In its Sur-Reply, Patent Owner argues that “‘wells’ are the openings ‘for receiving containers of bulk food’ defined by their walls.” Sur-Reply 6.

On this record, we determine that “well” includes at least the interior well walls, the exterior well walls (if present), and the bottom or floor. The specification discloses that “[w]ell 18 may comprise generally vertically-extending interior walls 22 connected by bottom or floor 26,” “[w]ell 18 additionally may comprise four exterior walls 30,” and “well 18 preferably . . . is formed of stainless steel,” which by the plain meaning of the words indicates that the interior walls, the exterior walls, and the bottom or floor are part of the wells. Ex. 1101, 3:64–4:9. Certain claims provide that each well comprises “a plurality of generally vertically-extending exterior walls spaced from the plurality of vertically-extending walls,” and “a floor.” *Id.* at claims 3, 6, 8; Reply 2. We do not find support in the specification or elsewhere for limiting the well to only the opening defined by the interior walls, or to the opening and structure including only the interior walls. We need not construe “well” any further to resolve the parties’ dispute in this case. *Vivid Techs.*, 200 F.3d at 803.

2. *Frame/Module*

Petitioner does not present a claim construction for the terms “frame” or “module” in the Petition, but argues in its Reply that “‘frame’ should be construed according to its plain and ordinary meaning—‘a rigid supporting structure.’” Reply 7 (citing Ex. 1137 (New Oxford American Dictionary)). “Module,” according to Petitioner, “is merely a generic placeholder synonymous with ‘unit,’ ‘device,’ or ‘apparatus.’” *Id.* at 8.

Patent Owner primarily discusses “frame” in terms of “module,” as we note below, but to the extent Patent Owner proposes a stand-alone construction of “frame,” Patent Owner argues that “‘a frame’ should be construed according to its normal, singular use.” PO Resp. 17. Focusing most of its arguments on “module,” Patent Owner argues that a “module” is “a singular frame connecting adjacent wells capable of independent temperature control and operation.” *Id.* at 18. Patent Owner further argues that modules are “self-contained within a single frame” and that a module “contains a single frame housing adjoining, temperature independent wells.” *Id.* at 19. Patent Owner emphasizes that a “module” must be “a self-contained unit where the independent temperature controlled wells are so close that absent thermal isolation, one would interfere with the other’s temperature.” Sur-Reply 8.

Figure 3, showing module 10 and frame 12, is reproduced below.

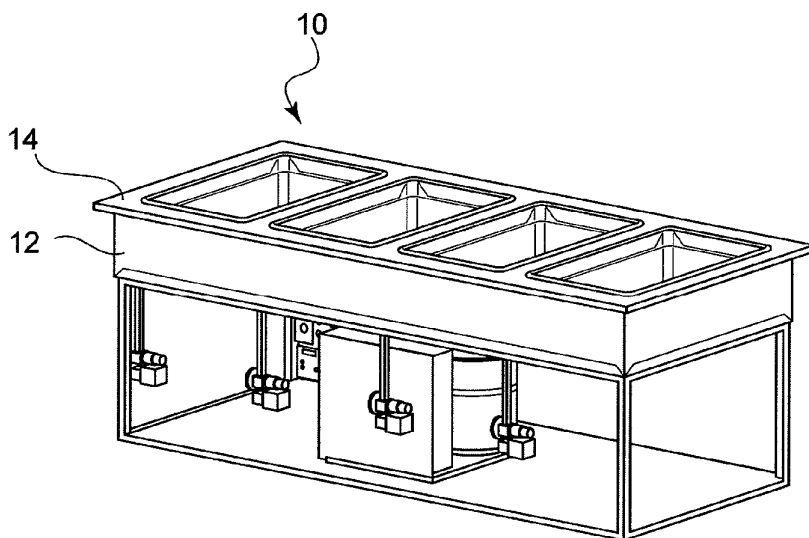


FIG. 3

Figure 3 depicts module 10 and frame 12, described as follows: “module 10 includes a frame 12 having a generally planar upper surface 14 from which multiple wells 18 (see FIG. 6) depend.” Ex. 1101, 3:50–52. The term “frame” does not appear in the specification apart from this citation and the claims in which it appears, namely, claims 1, 10, 12, 14, and 23–25. Claims 1 and 24 provide for a “food presentation module generally immobile in use, comprising: a. a frame;” claim 10 provides for a “fixed-position food presentation module comprising a frame;” claim 12 provides for “a food presentation module comprising: a. a frame;” claim 14 provides for “a frame for housing the at least two wells, the frame comprising a condensing unit;” and claims 23 and 25 provide for “a frame for housing the at least two wells and the electronic control system, the frame further comprising a condensing unit.”

We determine that the proper meaning of “frame” allows for structure that supports multiple wells that are separated one from another, as depicted

and described in the '970 patent itself. To the extent that we understand Patent Owner's construction of "frame," we decline to adopt a construction of "frame" that is premised on the term "module." The specification is straightforward about the relationship of the terms "frame" and "module," and defines their relationship clearly enough without the need for a complicating claim construction. *See supra* ("module 10 includes a frame 12" and claim language directed to a "food presentation module . . . comprising: a. a frame"). Accordingly, we determine "frame" has its plain and ordinary meaning of "a rigid supporting structure." *See Phillips*, 145 F.3d at 1321 ("Properly viewed, the 'ordinary meaning' of a claim term is its meaning to the ordinary artisan after reading the entire patent.").

Regarding "module," we agree with Petitioner that the term "module" appears to be used in the specification generally to refer to an entire food bar. Reply 4–5 (citing Ex. 1101, 1:13–20 (the "invention relates to multi-well food presentation modules and more particularly" to "generally immobile food serving bars")), 5:17–20 (preferably, module 10 "has its position fixed and is generally immobile in use, although it may include castors or wheels enabling its movement between uses"), 1:24–2:25 ("food presentation modules" in the prior art are described as food-holding units, portable serving systems, portable food-delivery devices, and non-portable food presentation equipment)). Accordingly, based on the relationship between "frame" and "module" depicted and described in the '970 patent itself and as recited in the claims, we determine that the term "module" allows for structure that includes a frame that supports multiple wells that are separated from one another.

3. *3-inch limitation*

Petitioner argues that the term “wells are spaced by a distance of only approximately three inches” means “closer to three inches than to two or four inches” and that “the distance is measured between the wells where their respective structures are closest to each other, such as between their outer flanges.” Pet. 24. Petitioner further argues that once it is established that “well” means the entire structural well unit, “the plain claim language supports measuring the distance between where the wells’ respective structures are closest to each other—e.g., exterior walls.” Reply 11.

Patent Owner urges us to “measure the wells from inner wall to inner wall.” PO Resp. 22. Patent Owner argues that this is the “only way to achieve the preferred embodiment dimensions and still hold standard-sized food-stuff trays.” *Id.* Patent Owner also relies on the specification disclosing that “the wells are designed to receive a standard food-stuff containing tray that has dimensions of 12"x20"x6".” *Id.* at 21 (citing Ex. 2028, 4:62–63).

The specification states: “Adjacent wells 18 typically are spaced distance D1 along length L of module 10, with D1 preferably being approximately three inches.” Ex. 1101, 3:54–56. The specification also provides that, in a preferred embodiment, the total length L of module 10 is preferably “approximately fifty-eight and one-half inches” but that “values of D1 and L different from these preferred values may be selected” and “although the value of D1 preferably is uniform between adjacent wells 18 of a module 10, it need not necessary[il]y be uniform and instead may vary along length L.” *Id.* at 3:56–62. In one version of module 10, well 18 “has

dimensions of approximately 12"x20"x6".¹⁰ *Id.* at 5:1–2.¹⁰ A 58.5-inch long module with four 12-inch-wide wells (having a total width of 48 inches) would leave 10.5 inches for spacing between wells; dividing this spacing evenly among four wells would allow for approximately 3 inches of D1 spacing between each well (having a total distance of 9 inches), with approximately 1.5 inches left over, presumably used at either end of module 10. Although we do not read dimensions into a dimensionless drawing (*Hockerson-Halberstadt, Inc. v. Avia Grp. Int'l, Inc.*, 222 F.3d 951, 956 (Fed. Cir. 2000)), Figure 4, which we reproduce below, generally appears to illustrate this application of the preferred measurements.

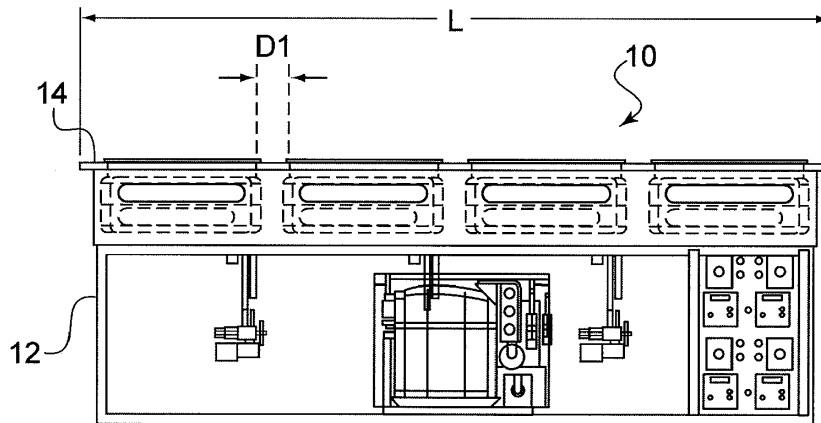


FIG. 4

Figure 4 is a front elevational view of the module of Figure 1, depicting measurement D1 and length L. Ex. 1101, 3:41. Taking into account our determination that “well” includes at least the interior well walls and exterior well walls (if present), we determine that the “three-inch” limitation means

¹⁰ Patent Owner appears to cite this passage from the specification as disclosing a well for receiving a “tray” having dimensions of approximately 12"x20"x6". PO Resp. 21.

that the distance between wells in the preferred embodiment is approximately three inches measured from the closest point of one well to the closest point of another well.

4. *Control System Limitations*

Petitioner argues that “system” (claims 1 and 24), “temperature controlling system” (claim 12), “system control” (claim 14), “independent electronic control system” (claim 20), and “electronic control system” (claim 23) (hereafter “control system limitations”) “should be construed as means-plus-function terms under 35 U.S.C. §112, ¶6” because “system” is a nonce term. Pet. 21–22. Petitioner also argues that the “claimed functions include 1) independently controlling temperature of each well, and 2) switching a well from heating to cooling or vice versa, regardless of temperature of other wells.” *Id.* at 22 (citing *Williamson v. Citrix Online, LLC*, 792 F.3d 1339, 1351 (Fed. Cir. 2015)). The “disclosed structure required to meet the control system limitations is controls that can selectively connect the heating element for each well to an electrical source and open and close refrigerant valving associated with the wells, and equivalents thereof.” *Id.* at 23–24. Petitioner, however, also applies the asserted prior art element-by-element as if the control system limitations are not means-plus-function terms (*id.* at 31–33, 58–60), identifying structure disclosed in the ’970 patent that Petitioner contends performs the recited function, except that there are “separate controls (56A-D) for each well.” *Id.* at 24 (citing Ex. 1101, 4:45–46, 4:49–52, 4:59–63; Ex. 1103 ¶ 127). Petitioner further contends that a person of ordinary skill in the art would have recognized “a single global control capable of independently controlling each well is an equivalent” and “would have been

interchangeable with the separate controls and would have performed the same function (i.e., control well temperatures) in the same way (controlling power to an electric heater and opening and closing refrigerant valving) to achieve the same result (heating or refrigerating each well independently).” *Id.* (citing Ex. 1103 ¶ 130). In its Reply, Petitioner reiterates that because a “system” is a collection of nonspecific “things,” those terms “fail to connote sufficiently definite structure and thus are subject to means-plus-function construction.” Reply 12.

Patent Owner argues that a “temperature control system connotes structure sufficient to avoid means-plus-function treatment.” PO Resp. 24. Patent Owner further argues that the term “temperature control system” is “part of a phrase describing the structures by which a single well can be regulated from hot to cold, and vice versa.” *Id.* at 23. Specifically, Patent Owner contends that “temperature control systems are known structures” and that “there is no reason to deviate from the presumption that temperature control system connotes structure sufficient to avoid means-plus-function treatment.” *Id.* at 24 (citing Ex. 2027 ¶ 58). Patent Owner also argues that Petitioner’s proposed construction “is contradicted by its expert’s testimony,” in which Dr. Homan explains that the variations of temperature control systems do not all work the same, and do not work the same as the claimed systems. Sur-Reply 18 (citing Ex. 1149 ¶ 60; Ex. 2051, 241:21–242:2).

On this record, we determine that the control system limitations sufficiently connote structure and are not subject to means-plus-function construction. *See Williamson*, 792 F.3d at 1349 (stating the determination of whether a limitation is a means-plus-function term “subject to the strictures

of § 112, para. 6” is not based merely on the presence or absence of the word “means” but on whether “the words of the claim are understood by persons of ordinary skill in the art to have a sufficiently definite meaning as the name for structure”). As to Petitioner’s argument that Patent Owner only demonstrates support for “controls” and “controllers” being known in the art and not for a “system,” as the claims recite (Reply 11–12), we determine that there is no meaningful distinction because the controls or controllers disclosed in the ’970 patent are necessarily included in systems with other known elements to control temperature. Further, the disclosure of exemplary apparatus in the specification, including disclosure incorporated by reference (Ex. 1101, 1:58–61), supports that temperature control systems are known structures/apparatuses, and Petitioner fails to establish that they are not (*see generally* Pet.; Reply). In sum, we determine the control system limitations are terms that persons of ordinary skill in the art would have understood to have a sufficiently definite meaning as the name for structures of a broad category of systems known to those of skill in the art. The breadth and diversity of the structures/apparatuses ordinarily skilled artisans would have understood to be included within the meaning of the terms do not subject the terms to means-plus-function construction. Further construction of the terms is not necessary.

D. Summary of Relevant Prior Art

1. Finegan (Ex. 1105)

Finegan is a PCT Application Publication titled, “Hot and Cold Food Storage and Display Apparatus and Method of Manufacture.” Ex. 1105, code (54). Finegan relates to food servers providing both hot and cold food storage and display. *Id.* at 1:5–6. Finegan discloses that by using a shallow

pan with a thermally conductive material in contact with the pan sidewalls and top flange, cooling is “efficiently and effectively transmitted to the sidewalls and top of the pan for frosting thereof.” *Id.* at 3:1–5. One embodiment of a portion of Finegan’s pan is depicted in Figure 4, reproduced below.

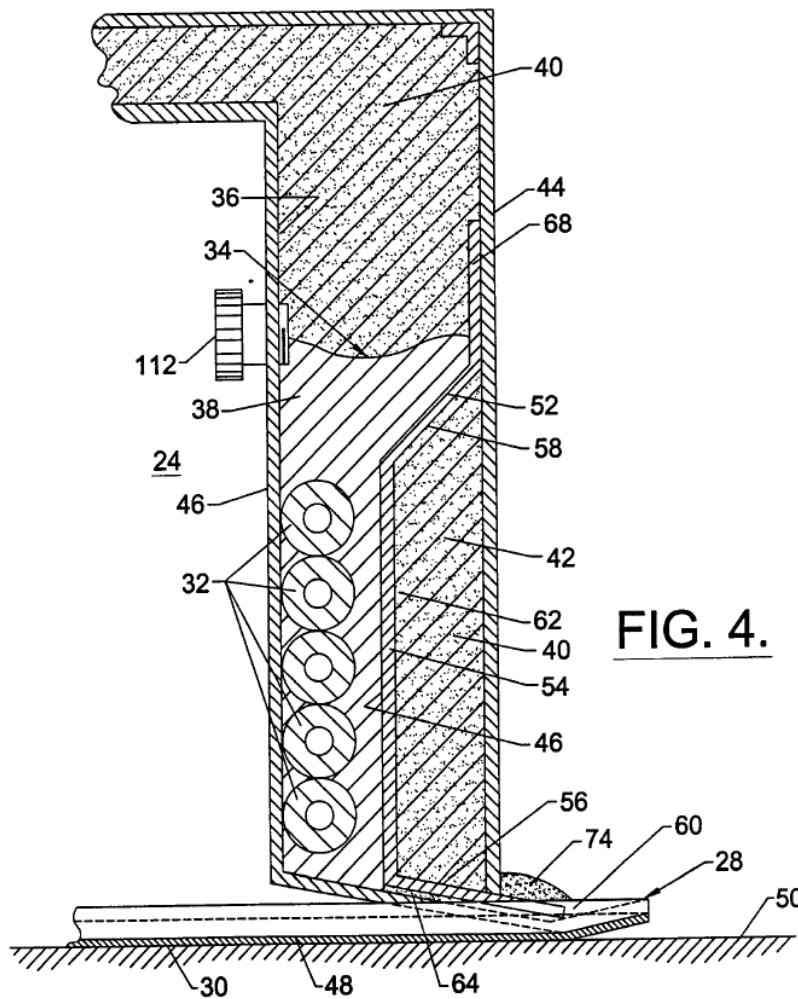


Figure 4 is a partial cross-section enlarged view of one side wall portion of an embodiment including refrigerant coils embedded within thermally conductive material. *Id.* at 4:11–13. In Figure 4, pan 18 is inverted so that, as depicted, top surface 30 is placed onto support surface 50, for example, a tabletop. *Id.* at 6:7–8. Cooling coils 32 are surrounded by thermally

conductive material 38 that fills coil chamber 34 and contacts flange 28. *Id.* at 5:26–28. Thermal insulation 40 is within channel 42 that is formed by outside wall 44, partition wall 54, and wing walls 56, 58. *Id.* at 5:28–30, 6:12–14. The thermally conductive material provides “an effective and desirable conductive pathway for transferring cooling provided by the coils and frosting onto the side wall outside surface 36 and pan top surface 30.” *Id.* at 6:31–7:2. Finegan discloses that “pan 18 is filled with water up to a desired level and heated” using heating coil 78 incorporated in bottom wall 22 of pan 18 (*id.* at 9:23–25) as shown in Figure 7, reproduced below.

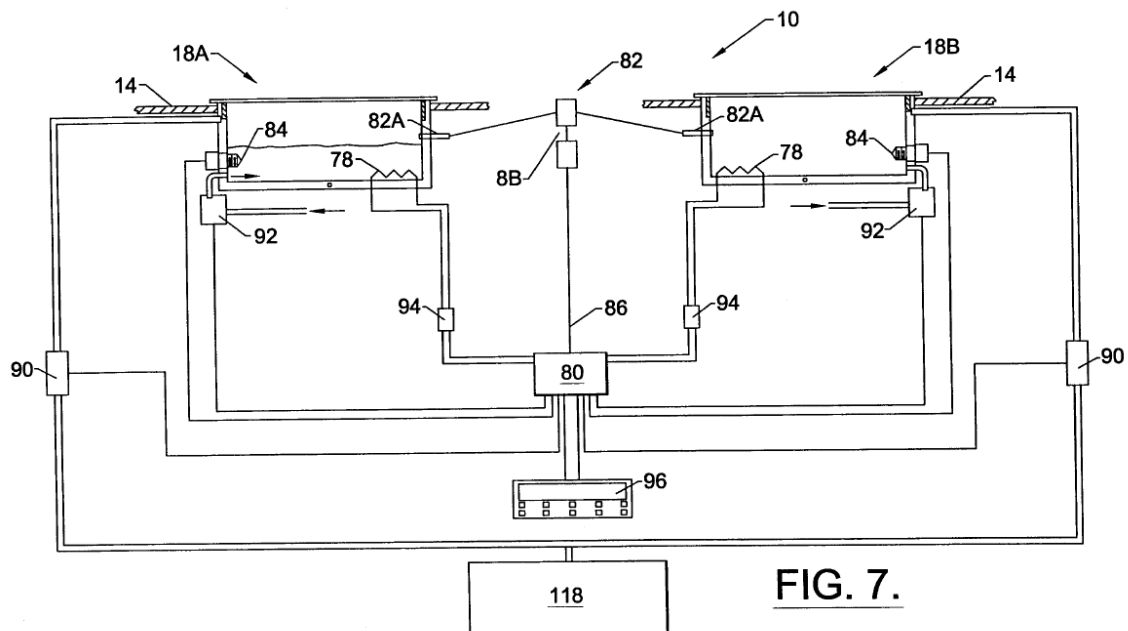


Figure 7 is a schematic style flow diagram illustrating operating elements of one of Finegan’s embodiments. *Id.* at 4:16–17. In Figure 7, a user controls pan 18 with programmable logic controller 80, which allows the user to

control the temperature of two pans 18A, 18B independently.¹¹ *Id.* at 9:27–30. In one example, “one pan could be hot and the other pan could be cold.” *Id.* at 9:30–10:1.

2. *Safyan (Ex. 1106)*

Safyan relates to buffet and serving trays and to chilling and heating foods in such trays. Ex. 1106, 1:18–20. An exemplary tray is depicted in Figure 2, reproduced below.

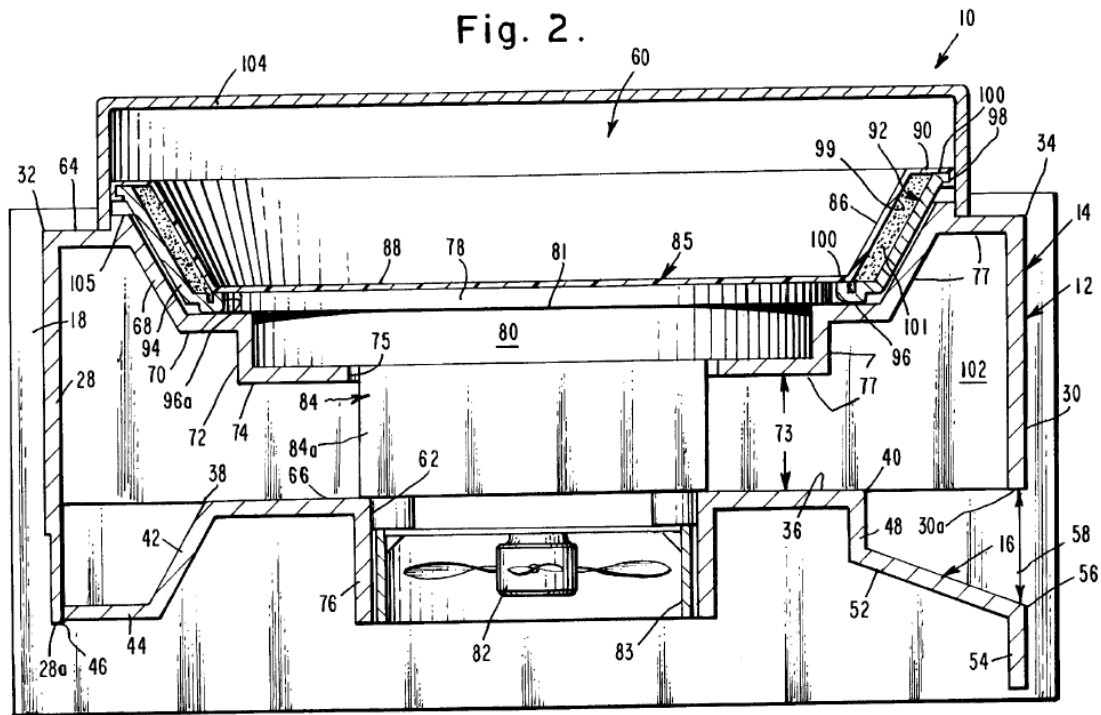


Figure 2 is a cross-sectional view of an embodiment of a buffet tray showing one section and its heating and cooling unit. *Id.* at 3:1–4. Figure 2 depicts buffet tray 10 having “heat conducting plate 78 which is designed to be

¹¹ Finegan transposes identifier 18A, 18B with 80 in the last full sentence of page 9, bridging lines 28 to 30. *Compare* Ex. 1105, 9:28–30, *with id.* at 8:5–7, 9:27–28, 10:1, Fig. 7.

heated or cooled.” *Id.* at 4:3–4. Food is retained in pan 85, and generally U-shaped ridge 96 provides a socket, which locates pan 85 centrally over heat conducting plate 78, providing continuous and enhanced insulation between the heat conducting plate and the pan. *Id.* at 4:36–37, 4:57–62. Pan 85 has sloped annular wall 86, and liner 92 also has sloped annular wall 94, which is parallel to wall 86, but spaced therefrom so as to provide gap 99 between these walls. *Id.* at 4:36–43. Safyan explains that gap 99 may be filled with a thermal foam or may be left open to constitute an air gap. *Id.* at 4:43–44. “In both cases, gap 99, whether or not filled with foam, acts to augment the thermal insulation.” *Id.* at 4:44–46.

3. *Hansen (Ex. 1108)*

Hansen, titled “Food Heating Unit,” is directed to a “food warming and holding receptacle” having “a well supported on a planar surface, and at least one tray containing food disposed in the well.” Ex. 1108, codes (54), (57), 1:11–15. Hansen relates to a burnerless food heating unit equipped with a heating element for maximizing heat transfer to the food. *Id.* at 1:13–15. An exemplary food heating unit is depicted in Figure 1, reproduced below.

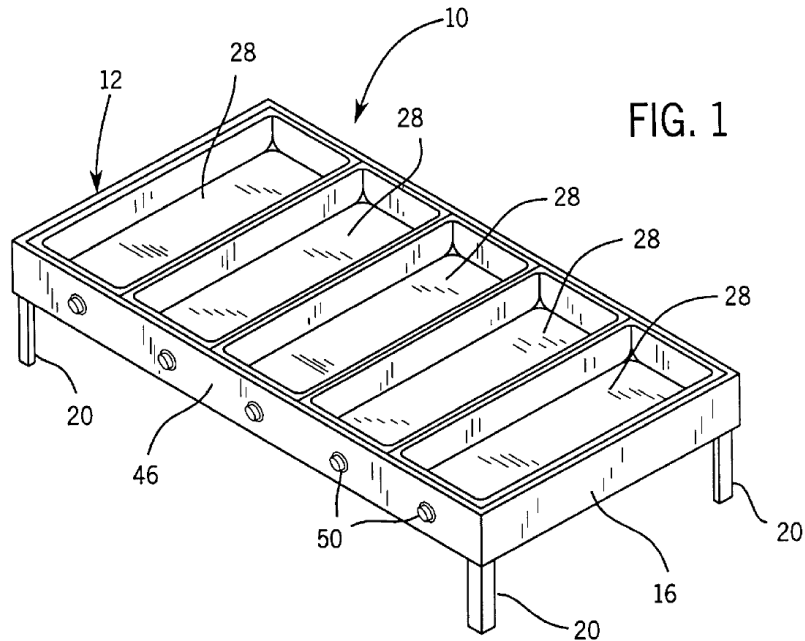


Figure 1 is a perspective, top view of a food heating unit. *Id.* at 3:16. Food heating unit 10 has well 12 for supporting an array of generally rectangular trays 28 containing food. *Id.* at 3:45–46. A flattened, serpentine-shaped, rigid heating element 34 supplies electrical energy to heating unit 10 and lies beneath and substantially coextensive with the length and width of respective tray 28. *Id.* at 3:57–60, 4:5–6. Control panel 46, which includes a series of thermostat controls 50, regulates heat control for each tray 28. *Id.* at 4:11–13. Hansen explains that heating element 34 defines a specific zone for each tray 28, and that “[e]ach heated zone is controlled precisely with individual thermostats being disposed in the heat source area.” *Id.* at 4:22, 5:1–3.

4. *Tipton (Ex. 1109)*

Tipton, titled “Combined Refrigerated and Heated Food Service Table,” is directed to a food service table that “includes separate heating and cooling systems enclosed within a housing” which may be “selectively

activated to heat or to cool food displayed and served on the table.”

Ex. 1109, codes (54), (57), Fig. 1. Tipton discloses that its hot/cold food holding pan may have pad-type silicone heater 26 attached to the bottom of the pan for heating food. *Id.* at 3:21–24, 3:43–48, 3:61–66.

E. Alleged Anticipation of Claims 1, 6, 7, 10, 12, 14, 16–20, and 22–26 by Finegan (Ground 1)

1. Petitioner’s Arguments

Petitioner argues that Finegan anticipates claims 1, 6, 7, 10, 12, 14, 16–20, and 22–26. With respect to claim 1, Petitioner argues that Finegan discloses:

1.P¹² A food presentation module generally immobile in use, comprising: (Pet. 25 (citing Ex. 1105, Fig. 1, element 10 (generally immobile food storage and display apparatus)));

1.a a frame; (*id.* at 26–27 (citing Ex. 1105, Figs. 1, 7 (food bar and countertop 14 acting as a frame)));

1.b.1 at least two wells for receiving containers of bulk food, (*id.* at 27–28 (citing Ex. 1105, Fig. 7 (apparatus 10 including first and second pans 18A and 18B)));

1.b.2 the wells being uncovered in use so as to expose food received therein to the ambient environment, (*id.* at 28–29 (citing Ex. 1105, Fig. 1, element 12));

1.b.3 each well being thermally isolated from other wells; and (*id.* at 29–31 (citing Ex. 1105, Fig. 4, elements 12, 28, and 44));

¹² Petitioner’s headings (1.P, 1.a, etc.) correspond to the claim limitations outlined in its Claim Listing (Ex. 1119). Pet. 25 n.5.

1.c.1 a system for controlling temperatures of the at least two wells independently, (*id.* at 31–33 (citing Ex. 1105, Fig. 7, elements 80, 78, 94, 90, 118, 32, 96, and 82A));

1.c.2 wherein temperatures of the wells may be switched between heating and refrigerating, regardless of the temperature of the other well such that food received in the first well may be refrigerated to a temperature substantially below ambient while food received in a the second well may be heated to a temperature substantially above ambient, food received in the first well may be heated to a temperature substantially above ambient while food received in the second well may be refrigerated to a temperature substantially below ambient, both wells may be heated, or both wells may be refrigerated (*id.* at 33–36 (citing Ex. 1105, Fig. 7 (annotated versions))).

Petitioner presents additional arguments detailing how Finegan discloses the elements of claims 6, 7, 10, 12, 14, 16–20, and 22–26. Pet. 37–49.

2. *Patent Owner's Arguments*

First, Patent Owner argues that Finegan fails to teach thermally isolated wells. PO Resp. 26. Patent Owner argues that the “ability to have a pan that could convert from hot to cold ‘while still providing sufficient frosting of the top surface’” is “central to the teachings of Finegan and key to why its teachings would not lead the person of skill to the claimed inventions.” *Id.* (citing Ex. 1105, 2:11–13), *id.* at 27 (“Finegan’s stated goal was to provide for the appearance of frost on the upper surface 30 of the apparatus 10.”). Thus, Patent Owner argues, Finegan fails to teach thermally isolated wells because Finegan’s pans intentionally transfer “cooling provided by the coils and frosting onto the side wall outside surface 36 and

pan top surface 30,” resulting in a situation where placing a hot pan next to a cold pan would prevent frosting on the cold pan’s flange. *Id.* at 28–29.

Second, Patent Owner argues that Finegan fails to teach wells in a single frame. *Id.* at 29. According to Patent Owner, “skilled artisans would view the two apparatuses (10) in Figure 7 of Finegan to be independent pieces of equipment and thus not a module with wells bound by a single frame.” *Id.* at 32.

Third, Patent Owner argues that Petitioner does not show that Finegan teaches a “temperature-control system.” *Id.* at 32. According to Patent Owner, Petitioner “has offered no argument that the claims are unpatentable” if this claim term is not given a means-plus-function construction. *Id.* at 32–33. Patent Owner also takes issue with Petitioner’s mapping of Finegan’s controls 56A–D and PLC 80 to the temperature control system. *Id.* at 33.

Patent Owner argues that Finegan does not anticipate claims 6, 10, 12, 14, 20, 23, 24, and 25 for the same reasons Finegan does not anticipate claim 1. *Id.* at 34–36, 38. Patent Owner argues that Finegan does not anticipate claims 16–19 for the same reason Finegan does not anticipate claim 14. *Id.* at 36–37. Patent Owner argues that Finegan does not anticipate claim 22 for the same reasons that Finegan does not anticipate claim 20. *Id.* at 38.

Regarding claim 12, Patent Owner argues that “the heating mechanism of Finegan is not a heating element attached to a well for receiving a bulk food tray” but “heats the water, not the well, and the water, in turn, heats a food containing tray.” *Id.* at 36.

Regarding claim 7, Patent Owner argues that Finegan does not have a “generally vertically-extending” walls, as the claim requires, because Finegan’s wall extends beyond vertical, and out over and away from the exterior wall. *Id.* at 37.

3. *Analysis*

On the record before us, we determine that Petitioner persuasively relies on Finegan to disclose all the limitations of the claims challenged under its anticipation ground.

Regarding Patent Owner’s first argument, we find that Finegan sufficiently discloses thermally isolated wells and insulative gaps. Finegan’s wells are either thermally isolated as a result of their relative orientation (Pet. 31 (citing annotated Finegan Fig. 7)), or as a result of the insulation or insulative air gap (Pet. 29–31 (citing annotated Finegan Figs. 4, 7)). Finegan’s flanges, whether frosted or not, are “part of the well and must themselves be thermally isolated from their surroundings to facilitate frost formation,” and “the inclusion of the flanges does not defeat the well’s thermal isolation.” Reply 13; Ex. 1103 ¶¶ 294–297 (Dr. Homan’s testimony). Petitioner also demonstrates that Finegan’s insulation material would reduce heat transfer. Ex. 1149 ¶¶ 84–85 (Dr. Homan’s testimony that Finegan’s insulation material and insulation tape reduce heat transfer). Finegan’s insulation “extends over most of the well and the thermally-conductive material (38), to insulate the well.” Reply 13 (citing Ex. 1149 ¶ 84; Ex. 1105, 7:22–26, Fig. 4). Although we agree with Patent Owner that Finegan states that there is a “need to provide for a food service table or buffet that employs a shallow pan for use in both hot and cold service conditions while still providing sufficient frosting of the top surface”

(Ex. 1105, 2:11–13), Petitioner has demonstrated that Finegan’s thermal isolation and insulation would not defeat this objective. Reply 13–14.

Regarding Patent Owner’s second argument, we refer to our claim construction to find that Finegan teaches wells in a single frame. Because, under our construction, a well includes at least the interior well walls and exterior well walls (if present), and a frame refers to a “rigid supporting structure,” we find that Petitioner persuasively demonstrates that Finegan teaches wells in a single frame. Pet. 26–27, 29–31. We disagree that “skilled artisans would view the two apparatuses (10) in Figure 7 of Finegan to be independent pieces of equipment and thus not a module with wells bound by a single frame” and that “Finegan does not teach wells in a single frame” because the pans are separated by what Patent Owner argues is an “indeterminate distance of countertop.” PO Resp. 32. As discussed above, we decline to adopt Patent Owner’s claim construction for “a frame.” Accordingly, we find that, under our claim constructions, Petitioner demonstrates that Finegan’s countertop 14 and side walls housing its wells 18 meet the limitations of the challenged claims, particularly those that require an arrangement between the frame and the wells (i.e. claims 14, 23, and 25). Reply 14–15, 17 (citing Ex. 1105, annotated Figs. 1, 7; Ex. 1149 ¶ 101); *see also* Ex. 2050, 10–11 (finding unfounded the district court’s determination “that Finegan’s Figure 7 only discloses a single pan in each of two separate modules” and determining that Figure 7 “discloses a single ‘apparatus 10’ with two wells 18A and 18B Those wells are shown within a single countertop 14.”). Additionally, we disagree with Patent Owner’s characterization of Dr. Homan’s testimony as admitting that Finegan’s pans/wells are separate modules. PO Resp. 30–32 (citing

Ex. 1130, 241:24–242:3, 217:20–24, 240:5–14). A fair reading of Dr. Homan’s testimony indicates that he was referring to “wells,” despite counsel using the term “modules,” ultimately supporting Petitioner’s position that Finegan discloses two wells in a single frame. Reply 15–16 (citing Ex. 1130, 241:15–242:2).

Regarding Patent Owner’s third argument, and referring to our claim construction, we find that Finegan teaches the control system limitations. Although we do not find these terms to be subject to means-plus-function construction, we nevertheless find sufficient Petitioner’s mapping of these limitations to the structures in Finegan performing the functions of the control system limitations. *See, e.g.*, Pet. 31–32 (regarding claim 1.c.1, referring to Finegan Fig. 7 to map PLC 80 connected to heating elements 78 (via switches 94) and valving 90 for controlling refrigerant flow from condensing unit 118 to cooling coils 32, and using user interface 96 and temperature sensors 82A). Petitioner persuasively argues that Finegan’s PLC (programmable logic controller) 80 and user interface 96 meet the control system limitations: “Both Finegan’s global control and the ‘970 patent’s individual controls perform this function [of independently controlling the wells’ temperatures] in the same way, by connecting the electrical resistance heating elements to an electrical power source and by operating valving to control the flow of refrigerant.” Reply 20 (citing Ex. 1101: 4:49–52, 4:56–63; Ex. 1105, 9:27–11:28); Pet. 32–33.

Regarding claim 12, which requires “an electrical-resistance heating mechanism,” we agree with Petitioner’s arguments that “[n]othing within the claims of the ’970 Patent requires direct heating of the food,” contrary to Patent Owner’s argument that the heating mechanism of Finegan does not

qualify as a “heating element.” Reply 21. We are persuaded by Petitioner’s argument and evidence that both Finegan and the ’970 Patent have “operable wet” food presentation modules using indirect heating. *Id.* (citing Ex. 1101, 3:17–19; Ex. 1149 ¶¶ 109–111).

Regarding claim 7, we are persuaded by Petitioner’s arguments that Finegan has generally vertically-extending walls as the claim requires. Each of Finegan’s wells 18 has side wall 20 with opposed surfaces 36 and 46. Ex. 1106, Figs. 3, 4; Pet. 46–47. The eventual angling of side wall 20 does not defeat Petitioner’s case here, because the claim only requires that the walls be “generally vertically-extending,” which Finegan’s side wall is.

Regarding the remaining claims and claim limitations that Patent Owner does not expressly dispute, we find Petitioner’s arguments persuasive and adopt the facts and reasoning identified within those arguments as findings of our own. *See In re NuVasive, Inc.*, 842 F.3d 1376, 1381 (Fed. Cir. 2016) (holding that a patent owner’s failure to proffer argument at trial as instructed in the scheduling order constitutes waiver). In summary, Petitioner establishes that Finegan discloses the limitations of claims 1, 6, 7, 10, 12, 14, 16–20, and 22–26.

F. Alleged Obviousness of Claims 1, 2, and 6–26 over Finegan, Safyan, and Hansen (Ground 2)

1. Petitioner’s Arguments

Petitioner argues that the combination of Finegan, Safyan, and Hansen discloses every limitation of claims 1, 2 and 6–26. Pet. 49–62. Regarding claims 1, 7, 12, 14, and 20, Petitioner refers to its arguments for its anticipation ground based on Finegan. Pet. 49–50. Regarding claims 2, 13, 15, and 21, which recite additional wells (e.g., a third well), Petitioner

argues that “it would have been obvious to provide more wells for more versatility in holding food items at different temperatures” and “in arrangements, types, and quantity of food displayed by the food bar.” *Id.* at 49 (citing Ex. 1103 ¶ 261). Petitioner relies on “Safyan’s explicit teaching to add wells” to argue that it would have been obvious to duplicate Finegan’s wells. *Id.* (citing Ex. 1103 ¶ 269).

Regarding claim 8, which further includes walls that form insulative gaps, Petitioner relies on Safyan’s teaching that its gap 99 between liner walls 86 and pan jacket 92 is filled with thermal insulation material 40; however, it may be omitted to leave an insulative gap. Pet. 11, 51–52. Petitioner argues that one of ordinary skill in the art would have understood that “air gaps and foam are alternative forms of thermal insulation.” *Id.* at 52 (citing Ex. 1106, 4:41–46). Therefore, Petitioner argues, removing insulating material from Finegan and leaving insulating air gaps as Safyan teaches would have been “a simple substitution of one known alternative (insulating material) with another (insulating air gap),” and a “design choice.” *Id.* at 52 (citing Ex. 1103 ¶¶ 281–282). Petitioner further argues that one of ordinary skill in the art “would have expected Safyan’s air gap in Finegan would successfully function to replace the insulation material.” *Id.* (citing Ex. 1103 ¶ 282).

Regarding claim 9, which requires a 3-inch gap between the first and second wells, Petitioner argues that the Finegan-Safyan combination teaches wells that are spaced by a distance of approximately three inches. *Id.* at 53–57. Petitioner cites to references that indicate space and flexibility are at a premium on cafeteria lines to support its reasoning that the ordinarily skilled artisan would have configured Finegan’s insulated wells “as close

together as desired without preventing the wells from achieving desired hot and cold holding temperatures,” while recognizing that “spacing the wells apart by any distance—such as approximately three inches—would have increased thermal isolation of adjacent wells.” *Id.* at 53–54 (citing Ex. 1105, Fig. 4, 1:12–17, 2:19–20, 5:28–30, 7:3–12; Ex. 1106, 1:43–47; Ex. 1102, 57; Ex. 1103 ¶¶ 286–287). Petitioner also argues that “Finegan designed its flanges to be thermally isolated from the countertop to facilitate frost formation.” Pet. 55 (indicating that even if Finegan’s flange contacted the countertop, it would only do so “at the flange’s hairline edge”); Ex. 1103 ¶¶ 294–296 (Dr. Homan’s testimony).

Regarding claim 11, which requires the food received in the first well to be kept at least at 150° F and the food received in the second well to be kept at 41° F or lower, Petitioner argues that even though Finegan does not disclose specific temperature values, it “would have been obvious to operate Finegan’s food bar to maintain food in the ‘hot’ well at 150°F or higher and food in the ‘cold’ well at 41°F or lower.” Pet. 58. One of ordinary skill in the art, argues Petitioner, “would have recognized 150°F or higher would be used for hot food and 41°F or lower would be used for cold food to keep food safe for human consumption, because people enjoy food at those temperatures, plus the specific values would be unpatentable routine optimization.” *Id.* at 57–58 (citing Ex. 1103 ¶¶ 302–304; Ex. 1120, 57; Ex. 1113, 8; Ex. 1114, 22–23; Ex. 1115, 5; Ex. 1116, 1; Ex. 1117, 29).

Petitioner provides additional arguments for the “control system limitations” in claims 1, 2, and 6–26, for which Petitioner argues that “Hansen discloses separate thermostatic controls (50) for respective food trays (28).” *Id.* at 58. “Safyan and Hansen show separate controls were well

known and desirable,” Petitioner argues, and identifies reasons it “would have been obvious to duplicate Finegan’s control and dedicate each control to a respective well.” *Id.* at 59 (citing Ex. 1103 ¶¶ 309–311). Petitioner also argues the claims do not require “wells in the same food bar,” but that the combination of Finegan and Safyan discloses those. *Id.* at 60–62 (citing Ex. 1103 ¶¶ 315–320).

2. *Patent Owner’s Arguments*

Patent Owner argues that “Petitioner’s read of Finegan is flawed and fails to present sustainable grounds of obviousness.” PO Resp. 39.

Regarding claim 8, Patent Owner argues that Finegan fails to teach an “insulative gap” because it teaches an “unbounded amount of a material that is the opposite of a thermally insulative material” covering the pan side wall outside surface. *Id.* at 39–40. According to Patent Owner, the space between inner wall and outer wall of the Finegan pan is designed to transfer heat energy, not reduce that transfer. *Id.* at 40. Patent Owner also argues that the “only reason to modify given is that Safyan is in the same field of endeavor.” *Id.* at 41.

Regarding claim 9, Patent Owner argues that Petitioner’s rationale for combination of Finegan and Safyan to meet the three-inch limitation is hindsight. *Id.* at 42. According to Patent Owner, “Finegan’s pans are not insulated to achieve the necessary proximity of the openings” and even if they were, “modifying Finegan would violate the purpose of Finegan’s pans” i.e. the frost top. *Id.* at 42–43.

Regarding claim 11, Patent Owner argues that “nothing in the art suggests these achievable temperatures.” *Id.* at 43.

Regarding the “control system elements” of claims 1, 2, and 6–26, Patent Owner argues that “Petitioner’s construction read is wrong” and the relied-on references “fail to motivate one to modify the references to achieve this element.” *Id.* at 44.

Regarding claims 1, 2, and 6–26, Patent Owner argues that the “claims require a module made up of wells bound by a frame” and one of ordinary skill in the art “would view the two apparatuses (10) in Figure 7 of Finegan to be independent pieces of equipment and thus not a module with wells bound by a single frame.” *Id.* (citing Ex. 2027 ¶¶ 78–85). Patent Owner argues that Finegan cannot be modified without destroying Finegan’s teachings, namely, that “Finegan is express in its intention to provide for a pan to receive a food tray with a conductive pathway that transfer[s] cold heat energy out of the pan.” *Id.* at 45 (citing Ex. 1105, 6:28–7:2).

3. *Analysis*

Regarding claim 8, we find that Finegan in combination with Safyan sufficiently discloses insulative gaps. The Petition shows that Finegan’s wells are “individually insulated and thermally isolated by thermal insulation (40) between exterior and interior wall (44, 20 (identifiable by opposed surfaces (36, 46))).” Pet. 50 (citing Ex. 1103 ¶ 273; Ex. 1105, Fig. 4). Safyan teaches air gaps (i.e., an unfilled insulating space) as an alternative to foam. *Id.* at 51 (citing Ex. 1103 ¶¶ 276–277, Ex. 1106, Fig. 2, 4:36–46). Petitioner argues with evidentiary support that one of ordinary skill in the art would have had reasons to omit Finegan’s insulating material to leave an insulative gap, as in Safyan, to reduce material and labor costs, as a matter of simple substitution, with a reasonable expectation of success. *Id.* at 52 (citing Ex. 1103 ¶¶ 279–282). Patent Owner’s argument that Finegan does

not disclose an insulative gap and that its insulation does not meet the limitations of the challenged claims argues against Finegan individually, rather than against the Finegan-Safyan combination. *See In re Merck & Co.*, 800 F.2d 1091, 1097 (Fed. Cir. 1986) (“Non-obviousness cannot be established by attacking references individually where the rejection is based upon the teachings of a combination of references.”). Petitioner also provides adequate motivation to combine Finegan and Safyan, not limited to arguing that the two references are in the same field of endeavor. Pet. 51–53 (relying on Ex. 1103 ¶¶ 276–282); Reply 22–23.

Regarding claim 9, we find that Petitioner provides adequate motivation as to why one of ordinary skill in the art “would have minimized the distance between wells.” Pet. 53–54; Ex. 1149 ¶ 124–126. We credit Petitioner’s reliance on references and evidence supporting its assertion that one of ordinary skill in the art “would have located Finegan’s wells as close together as needed (e.g., three inches or less)” to “meet size restrictions for a compact space-saving design.” Pet. 56 (citing Ex. 1103 ¶¶ 298–299). We disagree that “Finegan’s frost top would be destroyed” (PO Resp. 43) by this combination, because spacing “as small as a fraction of an inch between the flanges of adjacent wells would ensure thermal isolation of the wells and that a cooled flange would form frost.” Pet. 56 (citing Ex. 1103 ¶297).

Regarding claim 11, we find Petitioner’s arguments and evidence regarding the claimed temperatures and routine optimization persuasive (Pet. 57–58), and Patent Owner’s counterargument unsupported (PO Resp. 43).

Regarding the “control system elements” or “control system limitations” of claims 1, 2, and 6–26, although we do not adopt Petitioner’s

means-plus-function construction, we nevertheless find Petitioner’s mapping of these limitations to the structures in Finegan persuasive. *See* Pet. 58 (referring to Pet. Sections IV(D), V(A) (referring to annotated Finegan Fig. 7 to map PLC 80, heating elements 78 via switches 94 and valving 90 for controlling refrigerant flow from condensing unit 118 to cooling coils 32), V(C)–(G)). Petitioner persuasively argues that Finegan’s PLC (programmable logic controller) 80 and user interface 96 “form a global control for independently controlling each well,” which is “equivalent to the separate controls of the ’970 patent.” Pet. 32–33. Petitioner also argues persuasively that even if the control system limitations require separate controls for each well, the claims would have been obvious over Finegan in view of Safyan and/or Hansen, describing Safyan and Hansen’s “well-known and desirable” separate controls and providing reasoning for the combination. *Id.* at 58–60 (citing Ex. 1103 ¶¶ 307–313; Ex. 1106, 5:22–26; Ex. 1108, Fig. 1, 4:11–13, 5:1–3). Additionally, we credit Petitioner’s argument that “it would have been obvious to duplicate Finegan’s control” as a matter of “combining familiar elements . . . according to known methods . . . to yield no more than predictable results,” with a reasonable expectation of success. *Id.* at 59–60 (citing Ex. 1103 ¶¶ 309–312).

Regarding claims 1, 2, and 6–26 and Patent Owner’s argument that the “claims require a module made up of wells bound by a frame,” we refer to our claim construction to find that Finegan does not fail to teach one or more wells within a frame. As discussed *supra*, under our construction, a well includes at least the interior well walls and exterior well walls (if present), and a frame refers to a “rigid supporting structure,” and we find that Petitioner persuasively demonstrates that Finegan teaches one or more

wells in a single frame. Pet. 26–27, 29–31. Also as discussed *supra*, regarding Finegan’s “stated goal” to “provide for the appearance of frost” (PO Resp. 27), we agree with Petitioner that Patent Owner’s arguments “incorrectly assume that ‘module’ and ‘frame’” “require the wells to be so close that Finegan’s flange would not frost.” Reply 24. Additionally, if needed, we agree with Petitioner that Safyan would have motivated one of ordinary skill in the art to arrange Finegan’s wells within Finegan’s food bar “to permit simultaneous display of independently heated and cooled food in a compact space-saving arrangement.” Pet. 61 (citing Ex. 1103 ¶ 318; Ex. 1106, 1:43–47; Ex. 1105, 1:15–17, 2:19–20); *see also* Ex. 2050, 11–13 (finding that Petitioner’s evidence in the district court proceeding that “a skilled artisan would modify Finegan to include a third (or more) of *Finegan’s* wells” stands unrebutted).

In summary, Petitioner establishes that the Finegan-Safyan-Hansen combination discloses the limitations of claims 1, 2, and 6–26. Petitioner also shows that one of ordinary skill in the art would have modified Finegan in view of Safyan and Hansen. Before determining whether Petitioner has met its burden on the issue of obviousness, we address Patent Owner’s evidence of objective indicia of nonobviousness, below, but first, we discuss Petitioner’s contentions that Finegan and Tipton disclose all of the limitations of claims 3–5, and that an ordinarily skilled artisan would have combined their teachings.

G. Alleged Obviousness of Claims 3–5 over Finegan and Tipton (Ground 3)

Petitioner challenges claims 3–5, which additionally require a thermal blanket, based on the combination of Finegan and Tipton. Pet. 63–68.

Petitioner relies on Finegan for most of the elements of claims 3–5, but notes that “Finegan’s heating element (78) is directly attached to the floor, but the heating element is not specifically a thermal blanket.” *Id.* at 64 (citing Ex. 1103 ¶ 327; Ex. 1105, Fig. 7, 7:18–19, 14:10–12). According to Petitioner, Tipton, which is cited in Finegan as prior art, “discloses a hot/cold food holding well (24) in a food serving bar having pad-type silicone heaters (26)—i.e., thermal blankets—attached to the bottom of the well.” *Id.* (citing Ex. 1109, Figs. 1, 2, 3:21–24, 3:43–48, 3:61–66). Petitioner argues that it would have been obvious to use Tipton’s pad-type silicone heaters as Finegan’s heating elements because they are “especially well-suited to a combination heating and cooling food service table.” *Id.* at 65 (quoting Ex. 1109, 3:66–4:2). This modification would have been a simple substitution to obtain predictable results, according to Petitioner, and would have been a matter of design choice. *Id.* (citing Ex. 1103 ¶ 330). The thermal blankets would have been installed on Finegan’s floor on the bottom surface, per Tipton, or on the top surface, per Finegan. *Id.* For claim 4, Petitioner refers back to its claim 3 argument. *Id.* at 67 (citing Ex. 1103 ¶ 334; Ex. 1109, 3:64–4:2). For claim 5, Petitioner argues that Finegan’s well floor (22) slopes toward drain (100). *Id.* (citing Ex. 1103 ¶¶ 336–337; Ex. 1105, Figs. 2, 5, 9, 7:16–18, 8:25–28).

Patent Owner argues that claims 3 and 4 would not have been obvious because claim 1 is not anticipated, and that claim 5 would not have been obvious for the same reasons claim 1 would not have been obvious. PO Resp. 46–47. Nevertheless, Patent Owner argues, changing and relocating Finegan’s “heating element would not be as simple as exchanging parts”

given that “the mechanical design, thermal isolation, and fitment in Tipton are distinctly different.” *Id.*

On this record, we find Petitioner persuasively supports its argument that every element of claims 3–5 is found in the combination of Finegan and Tipton, and that one of ordinary skill in the art would have been motivated to make the combination with a reasonable expectation of success. Pet. 63–68. Petitioner identifies each element of claims 3–5 in the references, and relies on Dr. Homan’s testimony for support (Ex. 1103 ¶¶ 325–337). Petitioner presents, and Dr. Homan explains in greater depth, the two suggested placements of the thermal blanket in the proposed combination (bottom of floor surface or top of floor surface), and reasons why either placement would have avoided some of the problems associated with Finegan’s bain-marie style of heating. Pet. 65–67 (citing Ex. 1103 ¶¶ 331–332). We find Petitioner’s arguments persuasive and Dr. Homan’s testimony credible regarding how the combination of Finegan and Tipton teaches the limitations of claims 3–5, and regarding the combination thereof by one of ordinary skill in the art. *See KSR*, 550 U.S. at 416–17.

H. Objective Indicia of Nonobviousness

Patent Owner contends that there is evidence of “commercial success and industry praise,” as well as “copying,” which we should consider as objective indicia of nonobviousness. PO Resp. 7–10 (Sections II.D. and II.E.). Patent Owner later contends: “As detailed above, there is substantial evidence of the long-felt need, failure of others, commercial success, and extensive copying of the invention. *Supra* II.D. and II.E.” PO Resp. 65. We note that Sections II.D. and II.E. of Patent Owner’s Response, however, are captioned only “commercial success and industry praise” and “copying.”

See id. at 7–10. Patent Owner relies on its “patented QuickSwitch” product and on Petitioner’s hot-cold-freeze (“HCF”) food service product. *Id.*

For us to give substantial weight to objective indicia of nonobviousness, a proponent must establish a nexus between the evidence and the merits of the claimed invention. *ClassCo, Inc., v. Apple, Inc.*, 838 F.3d 1214, 1220 (Fed. Cir. 2016). “[T]here is no nexus unless the evidence presented is ‘reasonably commensurate with the scope of the claims.’” *Id.* (quoting *Rambus Inc. v. Rea*, 731 F.3d 1248, 1257 (Fed. Cir. 2013)). A patentee is entitled to a presumption of nexus “when the patentee shows that the asserted objective evidence is tied to a specific product and that product ‘embodies the claimed features, and is coextensive with them.’” *Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1373 (Fed. Cir. 2019) (quoting *Polaris Indus., Inc. v. Arctic Cat, Inc.*, 882 F.3d 1056, 1072 (Fed. Cir. 2018)).

I. Nexus

Patent Owner does not appear to directly address nexus. *See, e.g.*, PO Resp. 7–10, 65–66. Petitioner argues that Patent Owner “tied its secondary considerations exclusively to independent temperature controllable wells in the same unit,” but “offers no nexus to other claimed features.” Reply 35 (citing *Rambus Inc.*, 731 F.3d at 1257 (“[O]bjective evidence of nonobviousness lacks a nexus if it exclusively relates to a feature that was known in the prior art.”))).

A “patentee is entitled to a rebuttable presumption of nexus between the asserted evidence of secondary considerations and a patent claim if the patentee shows that the asserted evidence is tied to a specific product and that the product ‘is the invention disclosed and claimed.’” *Fox Factory*, 944

F.3d at 1373. Applying *Fox Factory*, the Board uses a two-step analysis in evaluating nexus between the claimed invention and the evidence of secondary considerations. *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 33 at 33 (PTAB Jan. 24, 2020) (precedential). We first consider whether the patent owner has demonstrated “that its products are coextensive (or nearly coextensive) with the challenged claims,” resulting in a rebuttable presumption of nexus. *Id.* If not, that “does not end the inquiry into secondary considerations”; “the patent owner is still afforded an opportunity to prove nexus by showing that the evidence of secondary considerations is the ‘direct result of the unique characteristics of the claimed invention.’” *Id.* (quoting *Fox Factory*, 944 F.3d at 1373–75).

Based on the full record, Patent Owner does not provide sufficient argument and evidence that the product identified as “QuickSwitch” is coextensive with the challenged claims. *See* PO Resp. 7–10, 65–66; Sur-Reply 26–28. Other than the bare assertion that the QuickSwitch embodies the challenged claims, Patent Owner does not point to record evidence that would indicate that the QuickSwitch includes the claimed features. *Id.* Patent Owner’s cited testimony from Mr. Casey merely states that the QuickSwitch embodies the challenged claims without further analysis or citation to evidence in the record. *See* Ex. 2004 ¶¶ 12–14; Ex. 2027 ¶ 300 (“I further understand that the ’970 Patent is practiced by Patent Owner’s QuickSwitch units.”). For example, there is no chart comparing claim limitations with the QuickSwitch product. *See* PO Resp. 7–10, 65–66; Sur-Reply 26–28; Ex. 2004; Ex. 2027. Thus, Patent Owner is not entitled to a presumption of nexus.

Patent Owner, however, may still prove nexus by showing that the evidence of objective indicia of non-obviousness is the direct result of the unique characteristics of the claimed invention. We address this nexus with respect to the individual, asserted objective indicia below.

2. *Commercial Success*

Patent Owner argues that the “success of the patented QuickSwitch is attributable to meeting an unmet consumer demand.” PO Resp. 7. Patent Owner provides evidence that Petitioner purchased about 40 QuickSwitch modules, and that “sales of QuickSwitch represent up to 20%” of Patent Owner’s revenues. *Id.* at 7–8.

Petitioner argues that Patent Owner “provides no sales data supporting commercial success, but instead only relies on QuickSwitch representing 20% of its revenues” and on selling 40 QuickSwitch units to Petitioner. Reply 36 (citing *Cisco Sys., Inc. v. Crossroads Sys., Inc.*, IPR2014-01463, Paper 49 at 35 (PTAB Mar. 16, 2016) (“sales volume, if provided without market share information, is only weak evidence, if any, of commercial success”)).

“When a patentee can demonstrate commercial success, usually shown by significant sales in a relevant market, and that the successful product is the invention disclosed and claimed in the patent, it is presumed that the commercial success is due to the patented invention.” *Galderma Labs., L.P. v. Tolmar, Inc.*, 737 F.3d 731, 740 (Fed. Cir. 2013).

Patent Owner’s evidence does not sufficiently demonstrate nexus to commercial success or “significant sales in a relevant market.” The cited evidence does not show nexus between the QuickSwitch and the challenged claims, let alone the asserted number of QuickSwitch units sold. *See, e.g.*,

PO Resp. 7–10, 65–66; Sur-Reply 26–28; Ex. 2004 ¶¶ 12–14; Ex. 2027 ¶ 340–342. Even if nexus were established, the cited evidence does not indicate how the number of QuickSwitch units sold or the percentage of Patent Owner’s market share represented by QuickSwitch units correspond to “significant sales in a relevant market.” For example, Patent Owner does not point to any record evidence that would indicate that QuickSwitch representing 20% of Patent Owner’s revenues is significant compared to the market as a whole. *See* PO Resp. 7–8. Thus, Patent Owner’s evidence is entitled to little weight.

3. *Industry Praise*

Petitioner argues that Patent Owner “provides no evidence of any industry praise it received and who outside of LTI has ever given praise.” Reply 36 (citing *Masterimage 3D, Inc. v. RealD Inc.*, IPR2015-00040, Paper 85 at 37 (PTAB Apr. 14, 2016) (industry praise “is not meaningful without additional details ... about who praised the product, in what setting, [and] why”)).

We agree that, to the extent Patent Owner raises industry praise in its Response, the cited evidence does not establish that the praise is directed to the claimed features of the QuickSwitch unit. *See* PO Resp. 7–8. The cited portions of the exhibits are from representatives of Patent Owner and generally describe the QuickSwitch in laudatory terms, but do not specifically address any industry praise directed at the patented features of the QuickSwitch product. *See, e.g.*, Ex. 1030, 34:17–35:25, 36:18–38:12; Ex. 2004 ¶¶ 12–14, 22; Ex. 2005, 329–330. Thus, Patent Owner’s evidence is entitled to little weight.

4. *Long-Felt Need*

Patent Owner contends that the success of its “patented QuickSwitch” product is due to meeting an “unmet consumer demand.” PO Resp. 7–8 (citing Ex. 2004 ¶¶ 12–13; Ex. 2027 ¶¶ 340–341; Ex. 1130, 36:18–37:13).

Patent Owner fails, however, to provide sufficient explanation how this assertion supports a finding of unmet, long-felt need. Establishing long-felt need requires objective evidence that an art-recognized problem existed for a long period of time without solution. *Newell Cos. v. Kenney Mfg. Co.*, 864 F.2d 757, 768 (Fed. Cir. 1988). Establishing long-felt need also requires objective evidence that the invention satisfies the long-felt need. *In re Cavanagh*, 436 F.2d 491, 496 (CCPA 1971). Patent Owner’s evidence does not establish that the need for its QuickSwitch product existed for a long period of time without solution. Thus, that evidence is entitled to little weight.

5. *Failure of Others*

Patent Owner argues that “[a]s detailed above, there is substantial evidence of the . . . failure of others,” but does not direct us to any evidence of a prior unsuccessful attempt to provide a product allowing temperature switching of wells within a module. PO Resp. 65. Failure of other requires “that, notwithstanding knowledge of the references, the art *tried and failed* to solve the problem.” *Nike, Inc. v. Adidas AG*, 812 F.3d 1326, 1338 (Fed. Cir. 2016), *overruled on other grounds by Aqua Prods., Inc. v. Matal*, 872 F.3d 1290 (Fed. Cir. 2017) (emphasis added). Patent Owner’s evidence does not demonstrate “failure of others;” on the contrary, Patent Owner presents evidence that no other company had sold a “quick switch product” until “Duke entered the market.” Ex. 1130, 37:11–13. Patent Owner’s evidence

does not demonstrate that others tried and failed to solve the problem Patent Owner identifies and, therefore, the evidence is entitled to little weight.

6. *Copying*

Patent Owner argues that “Petitioner decided to copy” Patent Owner’s QuickSwitch product due to the market’s growing preference for HCF products. PO Resp. 8 (citing Ex. 2029). Patent Owner points to evidence that it alleges proves Petitioner’s copying, such as project proposals indicating the unit would be “NOT an innovation differentiated product” (Exs. 2030, 2031), an email recommending “fast follow and simply copy” (Ex. 2032), and an “Action Register” outlining new product development (Ex. 2033). PO Resp. 8–10.

Petitioner argues:

Far from a copy of LTI’s QuickSwitch, Duke’s HCF has a different heating system (Ex. 1144: ¶¶20-21), cooling system (Ex. 1144: ¶¶31-36), control system (Ex. 1144: ¶¶41-53, 60-65), temperature set points (Ex. 1144: ¶¶54-57), product dimensions (Ex. 1144: ¶¶58-59), and component vendors and models (Ex. 1144: ¶¶68-70), and has additional innovative features (Ex. 1144: ¶¶27-30, 37-40). Ex. 1049: ¶¶173-180. Further, Duke was already in possession of many of the features incorporated into its HCF product. Ex. 1144: ¶¶71-77; Ex. 1049: ¶181.

Reply 37.

Copying “requires duplication of features of the patentee’s work based on access to that work, lest all infringement be mistakenly treated as copying.” *Institut Pasteur & Universite Pierre et Marie Curie v. Focarino*, 738 F.3d 1337, 1347–48 (Fed. Cir. 2013). “This may be demonstrated either through internal documents; direct evidence such as disassembling a patented prototype, photographing its features, and using the photograph as a

blueprint to build a virtually identical replica; or access to, and substantial similarity to, the patented product (as opposed to the patent).” *Iron Grip Barbell Co. v. USA Sports, Inc.*, 392 F.3d 1317, 1325 (Fed. Cir. 2004) (internal citations omitted); see *Liqwd, Inc. v. L’Oreal USA, Inc.*, 941 F.3d 1133, 1137 (Fed. Cir. 2019).

On this record, Patent Owner’s arguments and evidence of copying are not persuasive. Patent Owner’s evidence of copying relates to HCF technology that “allows for individual food wells within a single food presentation module to be set to any temperature, regardless of the temperature of other neighboring food wells” and “allows each individual food well to switch from hot-to-cold-to-frozen in an hour or less.” Ex. 2004 ¶ 9; see PO Resp. 8–10. As noted above, Finegan teaches individual food wells within a single food presentation module to be set to any temperature regardless of the temperature of neighboring food wells. *See supra* Section II.E.3; Reply 35 (alleging that Patent Owner “tied its secondary considerations exclusively to independent temperature controllable wells in the same unit,” but “Finegan discloses this feature”). Patent Owner does not provide evidence that switching from hot to cold to frozen in an hour or less is commensurate in scope with the challenged claims.

Petitioner, conversely, provides evidence that although its development of a competing HCF product led to a similar product, many aspects of Petitioner’s product were either different than the QuickSwitch product, were additional innovative features, or were already in Petitioner’s possession. Reply 37. Accordingly, Patent Owner’s evidence does not demonstrate that Petitioner copied Patent Owner’s product rather than

developing its own technology or using existing technology, and is entitled to little weight.

I. Conclusion as to Obviousness of Claims 1–26

“Once all relevant facts are found, the ultimate legal determination [of obviousness] involves weighing of the fact findings to conclude whether the claimed combination would have been obvious to an ordinary artisan.”

Arctic Cat Inc. v. Bombardier Recreational Prods. Inc., 876 F.3d 1350, 1361 (Fed. Cir. 2017). We provide our factual findings in the framework of the *Graham* factors identified above. *Graham*, 383 U.S. at 17–18.

In particular, we find that (1) Patent Owner’s proposed level of ordinary skill in the art is consistent with the prior art of record, (2) Finegan, Safyan, and Hansen teach or suggest all the limitations of claims 1, 2, and 6–26, and Finegan and Tipton teach or suggest all the limitations of claims 3–5, (3) one of ordinary skill in the art would have combined Finegan, Safyan, and Hansen, and Finegan and Tipton, with a reasonable expectation of success, and (4) Patent Owner has not established nexus with the objective evidence of nonobviousness presented in relation to claims 1–26, and we have considered the objective evidence but found it is entitled to little weight. Given these underlying factual determinations, Petitioner persuades us, by a preponderance of the evidence, that claims 1, 2, and 6–26 of the ’970 patent are unpatentable over Finegan, Safyan, and Hansen, and that claims 3–5 of the ’970 patent are unpatentable over Finegan and Tipton. *Arctic Cat*, 876 F.3d at 1361.

J. Remaining Grounds

Because we determine above that Petitioner shows that Finegan alone anticipates claims 1, 6, 7, 10, 12, 14, 16–20, and 22–26, that Finegan, Safyan

and Hansen would have rendered obvious claims 1, 2 and 6–26, and that Finegan and Tipton would have rendered obvious claims 3–5, we need not reach the additional challenges to claims 1–26. *See SAS Inst. Inc. v. Iancu*, 138 S. Ct. 1348, 1359 (2018) (holding a petitioner “is entitled to a final written decision addressing all of the claims it has challenged”); *see also Bos. Sci. Scimed, Inc. v. Cook Grp. Inc.*, 809 F. App’x 984, 990 (Fed. Cir. 2020) (non-precedential) (recognizing that the “Board need not address issues that are not necessary to the resolution of the proceeding” and, thus, agreeing that the Board has “discretion to decline to decide additional instituted grounds once the petitioner has prevailed on all its challenged claims”).

III. MOTIONS TO EXCLUDE

A. *Petitioner’s Motion to Exclude*

Petitioner moves to exclude cited portions of Exhibit 2004 (testimony of Mr. Casey). Pet. Mot. Excl. 1. Even if we were to exclude the cited portions of Exhibit 2004, it would not change the outcome of this Decision. Therefore, and because we do not rely on the cited portions of this exhibit in a manner adverse to Petitioner in our Decision, Petitioner’s Motion to Exclude is dismissed as moot.

B. *Patent Owner’s Motion to Exclude*

Patent Owner moves to exclude Exhibits 1103 and 1149 (testimony of Dr. Homan), and Exhibits 1145–1148 relied on by Dr. Homan. PO Mot. Excl. 1–3. More particularly, Patent Owner argues that we should exclude Dr. Homan’s obviousness opinions because Dr. Homan fails to consider objective indicia of nonobviousness (*id.* at 3–10), that Exhibits 1145–1148 are irrelevant and not authenticated (*id.* at 10–13), and that Dr. Homan’s

testimony is part of a pattern that renders his testimony not credible and inadmissible (*id.* at 13–15).

Patent Owner’s arguments that Dr. Homan allegedly fails to consider objective indicia do not establish that his testimony is inadmissible. PO Mot. Excl. 3–10. Rather, Dr. Homan’s testimony is relevant because it tends to make a fact of consequence more or less probable. Fed. R. Evid. 401 (“Evidence is relevant if . . . it has any tendency to make a fact more or less probable than it would be without the evidence; and . . . the fact is of consequence in determining the action.”). Unless the U.S. Constitution, a federal statute, the Federal Rules of Evidence, or other rules the Supreme Court has prescribed provide otherwise, relevant evidence is admissible. Fed. R. Evid. 402. Patent Owner argues that Dr. Homan failed to properly consider the objective indicia evidence, citing FRE 702 and 703 (PO Mot. Excl. 7–8), but Patent Owner’s concerns about Dr. Homan’s analysis of the evidence do not render his testimony inadmissible.

Patent Owner’s arguments that Exhibits 1145–1148 are not authenticated and are irrelevant do not establish that the exhibits are inadmissible. As to authentication, Patent Owner contends that Dr. Homan’s testimony regarding the webpages provided as Exhibits 1145–1148 falls short (PO Mot. Excl. 10–12), and that “without his testimony, those exhibits lack authenticating testimony from a witness with knowledge under FRE 901(b)(1)” (*id.* at 12). Petitioner responds that Dr. Homan’s testimony is sufficient (Opp. PO Mot. Excl. 7–8) and that, regardless, the testimony of Mr. Haskell, served as supplemental evidence, cures “any deficiency in the authentication of the exhibits” (*id.* at 8–9 (citing 37 C.F.R. § 42.64(b)(2); Paper 39; Ex. 1153)). We need not reach the sufficiency of Dr. Homan’s

testimony because our rules allow for supplemental evidence, timely served in response to a timely objection, to correct a deficiency (*see* 37 C.F.R. § 42.64(b)), and Mr. Haskell’s testimony authenticates Exhibits 1145–1148. Ex. 1153.

As to relevance, Patent Owner contends that Exhibits 1145–1148 (purportedly webpages of Patent Owner) are “irrelevant under FRE 402 and 403” because Petitioner relies on them “as evidence of the meaning of ‘module’ in the challenged claims,” despite the webpages dating from years after the priority date for the ’970 patent. PO Mot. Excl. 12–13. Petitioner argues that the evidence is relevant under FRE 401 as evidence “how a person of skill in the art would interpret the ’970 patent’s use of the term ‘module’” and that non-prior art evidence can be relied on to show what terms would mean to one of ordinary skill in the art. Opp. PO Mot. Excl. 9–10. Here, the exhibits are relevant evidence under FRE 401 because they tend to make a fact of consequence more probable; that is, the meaning of “module” to one of ordinary skill in the art, and Patent Owner fails to establish any prejudice, waste of time, or other reason to exclude this evidence under FRE 403. Fed. R. Evid. 401–403.

Finally, Patent Owner contends that “Dr. Homan is not a credible witness,” arguing that he has “testif[ied] falsely and repeatedly offer[ed] inconsistent testimony that shifts with Petitioner’s arguments.” PO Mot. Excl. 13–14. Patent Owner contends that, accordingly, “Dr. Homan’s testimony is not reliable and should be excluded under FRE 702.” *Id.* at 14. Petitioner argues that “[t]here is no ‘troubling pattern of inconsistent and incorrect testimony’ on the part of Dr. Homan” and that “mistakes or changed opinions go to an expert’s credibility, not the admissibility of the

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entire testimony.” Opp. PO Mot. Excl. 10–11 (citing *Xilinx, Inc. v. Intellectual Ventures I LLC*, IPR2013-00112, Paper 51 at 41–45 (PTAB June 26, 2014)).

Patent Owner’s contentions of inconsistent and incorrect testimony go to the credibility of Dr. Homan’s testimony, not its admissibility. Although Patent Owner contends the testimony “should be excluded under FRE 702,” there is insufficient explanation why we should exclude the testimony under FRE 702.

Accordingly, we deny Patent Owner’s Motion to Exclude.

IV. CONCLUSION¹³

For the reasons discussed above, we determine Petitioner has satisfied its burden of establishing, by a preponderance of the evidence, that the challenged claims are unpatentable, as summarized in the following table:

Claims	35 U.S.C. §	References/ Basis	Claims Shown Unpatentable¹⁴	Claims Not Shown Unpatentable
1, 6, 7, 10, 12, 14, 16– 20, 22–26	102	Finegan	1, 6, 7, 10, 12, 14, 16–20, 22– 26	
1, 2, 6–26	103(a)	Finegan, Safyan, Hansen	1, 2, 6–26	
3–5	103(a)	Finegan, Tipton	3–5	
3–5	103(a)	Finegan, Tipton, Safyan, Hansen		
1, 2, 6, 7, 9–26	103(a)	Richmond, Finegan		

¹³ Should Patent Owner wish to pursue amendment of the challenged claims in a reissue or reexamination proceeding subsequent to the issuance of this decision, we draw Patent Owner’s attention to the April 2019 *Notice Regarding Options for Amendments by Patent Owner Through Reissue or Reexamination During a Pending AIA Trial Proceeding*. See 84 Fed. Reg. 16654 (Apr. 22, 2019). If Patent Owner chooses to file a reissue application or a request for reexamination of the challenged patent, we remind Patent Owner of its continuing obligation to notify the Board of any such related matters in updated mandatory notices. See 37 C.F.R. § 42.8(a)(3), (b)(2).

¹⁴ Certain grounds have not been reached because the panel concludes that the pertinent claims are unpatentable based on other grounds.

Claims	35 U.S.C. §	References/ Basis	Claims Shown Unpatentable¹⁴	Claims Not Shown Unpatentable
1, 2, 6–26	103(a)	Richmond, Finegan, Safyan, Hansen,		
1–4, 6, 7, 9–26	103(a)	Richmond, Finegan, Tipton		
1–4, 6–26	103(a)	Richmond, Finegan, Tipton, Safyan, Hansen		
10	102	Shackelford		
Overall Outcome			1–26	

V. ORDER

In consideration of the foregoing, it is hereby:

ORDERED that Petitioner establishes, by a preponderance of the evidence, that claims 1–26 of U.S. Patent No. 8,661,970 B2 are unpatentable; and

FURTHER ORDERED that this is a Final Written Decision; therefore, parties to the proceeding seeking judicial review of the decision must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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