

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THERMALTAKE TECHNOLOGY CO., LTD. and
THERMALTAKE INC.,
Petitioner,

v.

CHIEN-HAO CHEN,
Patent Owner.

IPR2024-01230
Patent 10,690,336 B1

Before MONICA S. ULLAGADDI, SHARON FENICK, and
ANDREAS BALTATZIS, *Administrative Patent Judges*.

BALTATZIS, *Administrative Patent Judge*.

PRELIMINARY GUIDANCE
PATENT OWNER'S MOTION TO AMEND
37 C.F.R. § 42.121(e)

I. INTRODUCTION

On February 19, 2025, we instituted trial as to claims 1–5 of U.S. Patent No. 10,690,336 B1 (“the ’336 patent,” Ex. 1001). Paper 12 (“Inst. Dec.”). After institution, Patent Owner filed a Motion to Amend that is contingent on the unpatentability of claims 2 and 3. Paper 19 (“Mot.” or “Motion”). In particular, Patent Owner requests that “if original claim 2 is found to be unpatentable . . . the Board order the replacement of claim 2 with claim 6” and “if original claim 3 is found to be unpatentable . . . [the Board order] the replacement of claim 3 with claim 7.” Mot. 2, App. A (Proposed Substitute Claims Listing). Petitioner filed an Opposition on August 13, 2025. Paper 24 (“Opp.”).

In the Motion, Patent Owner requests that we provide preliminary guidance concerning the Motion in accordance with 37 C.F.R. § 42.121(a)(1)(ii). Mot. 2; see 37 C.F.R. § 42.121(e)(1); *see also Rules Governing Motion to Amend Practice and Procedures in Trial Proceedings under the America Invents Act before the Patent Trial and Appeal Board*, 89 Fed. Reg. 76,421 (Sept. 18, 2024) (“Final Rule”). We have considered Patent Owner’s Motion and Petitioner’s Opposition.

In this Preliminary Guidance, we provide information indicating our initial, preliminary, non-binding views on whether Patent Owner has shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend in an *inter partes* review and whether Petitioner establishes a reasonable likelihood that the substitute claims are unpatentable. 37 C.F.R. § 42.121(e)(1), (2); *see also* 35 U.S.C. § 316(d) (statutory requirements for a motion to amend); 37 C.F.R. § 42.121(a)(2), (a)(3), (b) (regulatory requirements and burdens for a motion to amend); *Lectrosonics, Inc. v. Zaxcom, Inc.*, IPR2018-01129, Paper 15 (PTAB Feb. 25, 2019) (precedential) (providing information and guidance regarding motions to amend). The reasonable likelihood

standard this Preliminary Guidance applies is different than the preponderance of the evidence standard applied when ultimately deciding the Motion. *Compare* 37 C.F.R. § 42.121(e)(1), *with* § 42.121(d). Finally, this preliminary guidance is not a “decision” for purposes of rehearing under 37 C.F.R. § 42.71(d). 37 C.F.R. § 42.121(e)(2).

For purposes of this Preliminary Guidance, we focus on the proposed substitute claims, and specifically on the amendments proposed in the Motion. *See* 37 C.F.R. § 42.121(e)(1); Final Rule, 89 Fed. Reg. at 76,425. We do not address the patentability of the originally challenged claims. *See id.* Moreover, in formulating our preliminary views on the Motion and Opposition, we have not considered the parties’ other substantive papers on the underlying merits of Petitioner’s challenges. We emphasize that the views expressed in this Preliminary Guidance are subject to change upon consideration of the complete record, including any revision to the Motion filed by Patent Owner. Thus, this Preliminary Guidance is not binding on the Board when rendering a final written decision or any other subsequent decision in this proceeding. 37 C.F.R. § 42.121(e)(2); *see Medytox, Inc. v. Galderma S.A.*, 71 F.4th 990, 1000 (Fed. Cir. 2023).

Before providing our preliminary guidance concerning the Motion, we observe that Patent Owner requests contingent replacement of claim 2 by claim 6, and contingent replacement of claim 3 by claim 7. However, Patent Owner’s claim listing shows *the changes* in the proposed substitute claims *with respect to original claim 1*. *See* Mot. 23, App. A. Patent Owner appears to show changes with respect to claim 1 to emphasize that the proposed amendments do not broaden the substitute claims with respect to claim 1 (that we address below). We note, however, that “[f]or each proposed substitute claim . . . the *changes* in the proposed substitute claim *with respect to the original patent claim that it is*

intended to replace” (e.g., with respect to original claim 2, and with respect to original claim 3). *See Lectrosonics*, Paper 15, 8 (emphasis added). We excuse the error in this instance, but we direct Patent Owner to this requirement should Patent Owner file a revised motion to amend.

II. PRELIMINARY GUIDANCE

A. Statutory and Regulatory Requirements

Patent Owner bears the ultimate burden to show that its motion to amend complies with the requirements of 35 U.S.C. § 316(d)(1), (3) and 37 C.F.R. § 42.121(a)(2), (a)(3), (b)(1), and (b)(2). 37 C.F.R. § 42.121(d)(1). For the reasons discussed below, at this stage of the proceeding, and based on the current record, it appears that Patent Owner has not shown a reasonable likelihood that it has satisfied the statutory and regulatory requirements associated with filing a motion to amend with respect to proposed substitute claims 6 and 7. *See* 37 C.F.R. § 42.121(e)(1).

1. Reasonable Number of Substitute Claims

A motion to amend must propose a reasonable number of substitute claims. 35 U.S.C. § 316(d)(1)(B); 37 C.F.R. § 42.121(a)(3).

Patent Owner has shown that it proposes a reasonable number of substitute claims. In particular, Patent Owner proposes no more than 1 substitute claim for each of challenged claims 2 and 3. *See* Mot. 1–4, App. A (Proposed Substitute Claims Listing). Petitioner does not argue otherwise. *See generally* Opp.

2. Respond to Ground of Unpatentability

A motion to amend must respond to a ground of unpatentability involved in the proceeding. 37 C.F.R. § 42.121(a)(2)(i).

Patent Owner has responded to the grounds of unpatentability involved in this proceeding. *See* Mot. 2–3, 17–21. Upon review of Patent Owner’s arguments, we agree that proposed substitute claims 6 and 7 add limitations and combinations of limitations that directly respond to the grounds of unpatentability involved in the trial. *See* Mot. 2–3, 17–21, App. A (Proposed Substitute Claims Listing). Petitioner does not argue otherwise. *See generally* Opp.

3. Scope of Amended Claims

An amendment may not enlarge the scope of the claims of the patent. 35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii).

Although proposed substitute claims 6 and 7 change the scope of original dependent claims 2 and 3 that they are intended to replace by deleting some limitations present in claims 2 and 3, proposed substitute claims 6 and 7 do not enlarge the scope of the claims of the challenged patent. That is because proposed substitute claims 6 and 7 include narrowing limitations as compared to original independent claim 1, such that both proposed substitute claims are narrower than original claim 1. *See* Mot. 3, App. A (Proposed Substitute Claim Listing).

Thus, the amendment proposed in Patent Owner’s Motion would not enlarge the scope of the claims of the ’336 patent. Petitioner does not argue otherwise. *See generally* Opp.

4. New Matter

A motion to amend may not introduce new subject matter. 35 U.S.C. § 316(d)(3); 37 C.F.R. § 42.121(a)(2)(ii).

On this record, Patent Owner does not appear to have sufficiently identified adequate written description support for proposed substitute claims 6 and 7. *See Lectrosonics*, Paper 15, 7 (requiring Patent Owner to “set forth written description

support in the originally filed disclosure of the subject patent for each proposed substitute claim”); *see also* 37 C.F.R. § 42.121(a)(2)(ii), (b)(1).

Proposed substitute claim 6 recites “[a] system comprising a first illumination fan for a computer connectable with a second illumination fan for a computer,” the system of fans satisfying limitations (B) and (C):

(B) the power socket is electrically connected with the first connector, the second connector, the center fan and the illumination area, such that when the power socket on the first side of the body is supplied with power, the center fan and the illumination area of the body of the first illumination fan are respectively driven into rotation and illumination; and

(C) when the first connector of the body is connected with a second connector of a body of the second illumination fan, a center fan and an illumination area of the body of the second illumination fan are respectively driven into rotation and illumination.

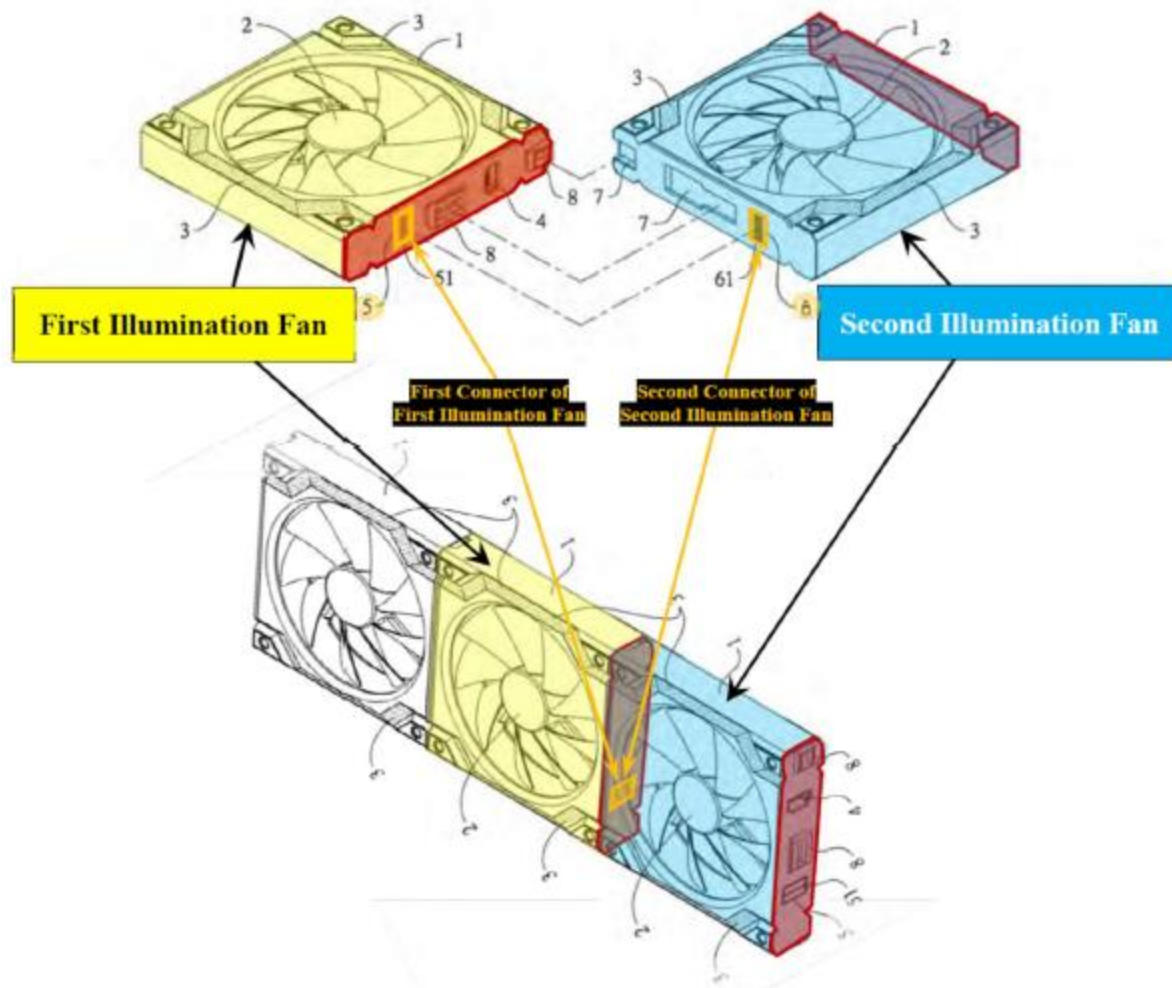
See Mot. App. A (Proposed Substitute Claims Listing). Claim 7 recites similar limitations.¹

Proposed substitute claims 6 and 7 add a “system” and a “second” fan to original claim 1. For example, claim 6 recites “A system comprising a first illumination fan for a computer connectable with a second illumination fan for a computer” with “the first connector [of the first illumination fan] compris[ing] a first electrical terminal configured to electrically connect with a second electrical terminal of the second illumination fan,” “the second illumination fan . . . driven into rotation and illumination” via “the first connector [of the first illumination fan].” *See* Mot. App. A (Proposed Substitute Claims Listing).

¹ Patent Owner explains that “claim 7 includes all the limitations of claim 6 plus additional limitations relating to a flat surface of the first and second connectors.” *See* Mot. 13.

Patent Owner indicates that the amendments including the claimed “system” characterized by limitations (B) and (C) are supported by Figs. 2 and 3 and column 1, line 53–column 2, line 2 of the ’336 patent. Mot. 5, 11–12.

Petitioner contends claim 6 introduces new subject matter because the disclosure of the ’336 patent does not support limitations (B) and (C) together with the requirement (from earlier limitations of claim 6) that the first illumination fan’s power socket and first connector be on the same body side. Opp. 6–9. Petitioner’s argument refers to the figure reproduced below that combines Figures 2 and 3 of the ’336 patent.



Petitioner's annotated figure illustrates connecting a first illumination fan to a second illumination fan. *See id.* at 8.

Petitioner contends that

substitute claim 6 requires that power is supplied to the power socket on the first side of the first illumination fan, and from the first connector on the same first side of the first illumination fan to the second connector of the second illumination fan to drive the rotation and illumination. . . .

However, the '336 Patent specification discloses only a single mechanism for connecting the first connector of the first illumination fan and the second connector of the second illumination fan by direct contact, as illustrated in Figures 2–5. . . . PO's proposed new limitations are not supported by the '336 Patent disclosures—*i.e.*, when the first connector of the first illumination fan is directly connected with the second connector of the second illumination fan, there is no space between the first side of the first illumination fan and the second side of the second illumination fan to allow for supplying power to the claimed power socket located on the first side of the first illumination fan.

Opp. 7–9.

To the extent claims 6 and 7 require the claimed system to operate as directed by limitation (B) *at the same time* it operates as directed by limitation (C), we preliminarily agree with Petitioner's assessment. Claims 6 and 7 require both a power socket and a first connector disposed on the same first side of the first illumination fan body. *See* Mot. App. A (Proposed Substitute Claims Listing, claim elements 6(A)(iv), 6(A)(v), 7(A)(iv), 7(A)(v)). Because both a fan's power socket and first connector are on the same first side of the fan, only one (of the power socket and first connector) can be connected at any given time when that fan is connected to a second fan. For example, the '336 patent (Figs. 2 and 3) illustrates that when the first connector of a first illumination fan is connected to a second connector of a second illumination fan (as in limitation (C)), the first fan's first

body side is covered by the second fan, such that the first fan's power socket opening (on the same first body side) does not appear to be accessible—and therefore limitation (B) (“the power socket on the first side of the body is supplied with power”) would not occur. More particularly, the '336 patent shows (*see* Figs. 2, 3) that when first connector 5 of a first illumination fan is connected with second connector 6 of a second illumination fan (as in limitation (C)), the first fan's power socket 4 is covered by the second fan such that the power socket does not appear to be accessible to be supplied with power. Instead of the claimed limitations, Figures 2 and 3 of the '336 patent appear to show a second connector of a first illumination fan (disposed on the second side of the body) being connected with a connector of a second illumination fan² so that the power socket on the first side of the first illumination fan can be supplied with power while the fans are connected, thereby powering both fans.

We consider Patent Owner's citation to column 1, line 53–column 2, line 2 of the '336 patent, which discloses “wherein the power socket is electrically connected with the first connector, the second connector, the fan and the illumination area, such that when the power socket on the one side of the body is supplied with power, the fan and the illumination area of the body can be respectively driven into rotation and illumination” and “when the first connector of the body is connected with a second connector of a body of another illumination fan, a fan and an illumination area of the body of another illumination fan can be respectively driven into rotation and illumination.” *See* Ex. 1001, 1:53–2:2. Taken separately, these descriptions refer to substitute claim limitations (B) and (C). But,

² Alternatively, for the first connector of the first illumination fan to be connected to a second connector of the second illumination fan, the power socket of the second illumination fan could be supplied with power.

the Specification does not address the apparent contradiction in including both limitation (B) and limitation (C) in each proposed substitute claim, as discussed above.

Moreover, the recitation of *first* and *second* illumination fans in each of proposed substitute claims 6 and 7—which is not reflected in the description at column 1, line 53–column 2, line 2 of the ’336 patent—appears to be relevant to the order in which the fans are connected in a chain. If the claimed *first illumination fan* is the first element (receiving power) in a daisy-chain of fans, then limitation (C) would not occur (as discussed *supra*); but if the claimed *first illumination fan* is an intermediary (inner) element in the daisy-chain, then limitation (B) would not occur (as discussed *supra*). Column 1, line 53–column 2, line 2 of the ’336 patent do not describe an arrangement in which *limitations (B) and (C) both occur for a first illumination fan at a set position* within the daisy-chain.

Limitation (C) (which recites that elements of “the second illumination fan are respectively driven into rotation and illumination”) requires some provision of power to these elements. Neither of claims 6 and 7, however, provide for power to be provided to any element except the first fan’s power socket—but, as noted *supra*, the ’336 patent does not disclose a mechanism or arrangement by which the first fan’s power socket would be supplied with power when the power socket is covered by the body of the second fan under limitation (C).

Patent Owner has the burden to establish written description support for the proposed substitute claims. On the current record, the cited written description does not appear to sufficiently support the proposed substitute claims.. Thus, Patent Owner has not met its burden. For purposes of this preliminary guidance and based on the current record, we agree with Petitioner that proposed substitute

claims 6 and 7 appear to contain new matter, for the reasons discussed *supra*. We acknowledge that Patent Owner has not yet had the opportunity to respond to Petitioner's argument (and to our analysis *supra*). Patent Owner will have the opportunity to do so in its Reply to Petitioner's Opposition (or in a revised motion to amend) in this proceeding.

We further add that we preliminarily do not find persuasive Petitioner's contention that claim 7's *flat surfaces* lack written description support. See Opp. 9. Patent Owner's Motion has set forth adequate written description support for "a first connector comprising a first flat surface disposed on the first side of the body" and "a second connector comprising a second flat surface disposed on the second side of the body." See Mot. 13–15. For example, Figs. 1–3 of the '336 patent show that each of the first connector 5 and second connector 6 comprise (include) a flat surface disposed on the respective body side. Thus, Petitioner's argument that "the specification provides no disclosure on how to implement or select flat surface connectors" (see Opp. 9) is contradicted by the cited disclosure in the Specification. Petitioner's additional argument that Fig. 1 of the '336 patent does not provide support because Figure 1 "is at best ambiguous as to whether connector 5 and terminal 51 are flat or merely can flex or spring back" (see *id.*) is irrelevant because claim 7 does not require the connector to be rigid, and does not preclude a connector with some degree of flexibility or resiliency. Claim 7 encompasses a connector *including a flat surface*, and does not require *a flat connector*.

Thus, based on the current record, it preliminarily appears that there is adequate support in the original disclosure of the '336 patent for the "flat surface" limitations ("a first connector comprising a first flat surface disposed on the first side of the body" and "a second connector comprising a second flat surface disposed on the second side of the body") recited in proposed substitute claim 7.

B. Unpatentability Arguments by Petitioner

Petitioner bears the ultimate burden to show that any proposed substitute claims are unpatentable. 37 C.F.R. § 42.121(d)(2). For the reasons discussed herein, at this stage of the proceeding, and based on the current record,³ it appears that Petitioner has shown a reasonable likelihood that proposed substitute claims 6 and 7 are unpatentable as lacking written description (*infra*) and being indefinite (*supra*). See 37 C.F.R. § 42.121(e)(1).

1. Indefiniteness

Petitioner has established a reasonable likelihood that Claims 6 and 7 are indefinite under 35 U.S.C. § 112(b).

In particular, Petitioner argues that claim 6⁴ is indefinite because as discussed . . . in Section III.A [(section on lack of written description support)], a POSITA would not be able to understand, with reasonable certainty, what it means in the context of the '336 Patent specification: (a) for the power socket and the first connector to be on a first side of a first illumination fan; (b) when the first connector of the body is connected with a second connector of a body of the second illumination fan, a center fan and an illumination area of the body of the second illumination fan are respectively driven into rotation and illumination;⁵ and (c) when the first connector of the body is connected with a second connector of a body of the second

³ We express no view on the patentability of original claims 1–5 in this Preliminary Guidance. Instead, we focus on limitations added to those claims in the Patent Owner's Motion to Amend.

⁴ Claim 7 recites similar limitations. See Mot. 13 (“claim 7 includes all the limitations of claim 6 plus additional limitations relating to a flat surface of the first and second connectors”).

⁵ Petitioner's listing of limitation (B) here appears to contain an error as it merely reproduces what is discussed next at limitation (C). See Opp. 10. Limitation (B) in claim 6 recites “when the power socket on the first side of the body is supplied with power, the center fan and the illumination area of the body of the first illumination fan are respectively driven into rotation and illumination.”

illumination fan, a center fan and an illumination area of the body of the second illumination fan are respectively driven into rotation and illumination.

Opp. 10.

On this record, Petitioner has established a reasonable likelihood that the combination of limitations (B) and (C) together with the requirement (from limitations (A)(iv) and (A)(v) of each of claims 6 and 7) that the power socket and first connector be on the same body side of the first illumination fan, renders the claims indefinite. That is because the specification fails to inform an ordinarily skilled artisan, with reasonable certainty, about the scope of the invention claimed in claims 6 and 7. *See Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014).

For example, it is unclear from claim 6 (and the similar claim 7) whether the claimed *system* includes two *disparate and disconnected* illumination fans, or whether the claimed first and second illumination fans form the *claimed system when connected to each other*. The claim recites “first” and “second” illumination fans whose terminals are “configured to electrically connect” to achieve limitations (B) and (C), however, as discussed *supra* in the section on new matter, when the fans are connected to satisfy limitation (C), limitation (B) does not appear to occur—because when the first connector of the first fan is connected with the second connector of the second fan (limitation (C)), the first fan’s first body side is covered by the second fan such that the first fan’s power socket (which is on the first body side) does not appear to be accessible to be supplied with power (to perform limitation (B)). And when limitation (B) is satisfied (when the first fan is the first element in a daisy-chain of fans such that its first side is exposed and the power socket thereon is accessible to be supplied with power), limitation (C) does

not appear to occur—because the first connector on the first fan’s first side does not connect with a second connector of a second fan.

Thus, the combination of (i) the first illumination fan’s power socket and first connector being on the same fan body side together with (ii) limitation (B) and (iii) limitation (C) in claims 6 and 7 renders the metes and bounds of the substitute claims’ scope unclear—or at least not determinable with reasonable certainty. The uncertain claim scope renders proposed substitute claims 6 and 7 indefinite.

We acknowledge that Patent Owner has not yet had the opportunity to respond to Petitioner’s contention (and our analysis *supra*) that the combination of these limitations in claim 6 render this claim (and the similar claim 7) indefinite. Patent Owner will have the opportunity to do so in its Reply to Petitioner’s Opposition (or in a revised motion to amend) in this proceeding.

We do not find persuasive Petitioner’s additional contention that the claimed *flat surfaces* in claim 7 render the claim indefinite. *See* Opp. 10–11. Petitioner’s support for this contention relies upon Petitioner’s previous argument that the Specification lacks written description support for the claimed flat surfaces. *See id.* As discussed *supra*, we are not persuaded by Petitioner’s argument that the Specification provides no disclosure of connectors including flat surfaces. Here, the scope of the subject matter embraced by the claimed “a first connector comprising a first flat surface disposed on the first side of the body” and “second connector comprising a second flat surface disposed on the second side of the body” in proposed substitute claim 7 is clear, as one having ordinary skill in the art would, in light of the Specification, have understood such connectors to include a flat surface. *See* Ex. 1001, Figs. 1–4.

2. Enablement

Petitioner has not established a reasonable likelihood that claims 6 and 7 are not enabled under 35 U.S.C. § 112(a).

Petitioner argues that claim 6 is not enabled because “the ’336 Patent does not provide any teaching or examples that would enable the proposed limitations [(B) and (C) in claim 6]” as “the specification [of the ’336 patent] requires the first connector of the body of the first illumination fan to be directly connected with the second connector of the body of the second illumination fan” thereby “leaving no space to provide power to a power socket located on the same first side of the first illumination fan.” *See* Opp. 11. Petitioner also argues that claim 7 is not enabled because “the ’336 Patent specification provides no enabling disclosure on how to implement or select flat surface connectors nor does it mention them.” *Id.*

As noted *supra*, we are not persuaded by Petitioner’s argument that the ’336 patent provides no disclosure of connectors including flat surfaces. As such, we are also unpersuaded by Petitioner’s argument that the ’336 patent’s disclosure would not enable those skilled in the pertinent art to make and use fans with connectors having flat surfaces as recited in proposed substitute claim 7.

Petitioner further refers to its written description arguments to argue that claims 6 and 7 are not enabled as to limitations (B) and (C). But “an invention may be enabled even though it has not been described.” *University of Rochester v. G.D. Searle & Co.*, 358 F.3d 916, 921 (Fed. Cir. 2004). For example, “[t]he specification need not explicitly teach those in the art to make and use the invention; the requirement is satisfied if, given what they already know, the specification teaches those in the art enough that they can make and use the invention without ‘undue experimentation.’” *Amgen, Inc. v. Hoechst Marion*

Roussel, Inc., 314 F.3d 1313, 1334 (Fed. Cir. 2003). Petitioner makes no arguments as to undue experimentation.

Petitioner has not shown or explained how undue experimentation would be required for a skilled artisan to identify how power could be provided to first and second fans.

Accordingly, on the record before us, Petitioner has not shown a reasonable likelihood that the '336 patent's disclosure would not enable those skilled in the pertinent art to make and use the full scope of the invention claimed in proposed substitute claims 6 and 7.

3. *Obviousness*

Petitioner has asserted the following obviousness challenges against the following substitute claims:

- Ground asserting Tsuji (Ex. 1006, Ex. 1007)⁶ and Huang (Ex. 1008) against proposed substitute claims 6 and 7; and
- Ground asserting Lai (Ex. 1012) and Hasegawa (Ex. 1013, Ex. 1014)⁷ against proposed substitute claims 6 and 7.

Opp. 11–24.

On this record, it appears that Petitioner (or the record) has *not* shown a reasonable likelihood that:

- proposed substitute claims 6 and 7 are unpatentable as obvious over the combination of Tsuji and Huang; and
- proposed substitute claims 6 and 7 are unpatentable as obvious over the combination of Lai and Hasegawa.

Below, we analyze each of Petitioner's proposed grounds against the

⁶ We rely on Petitioner's submitted English translation (Ex. 1007).

⁷ We rely on Petitioner's submitted English translation (Ex. 1014).

proposed substitute claims.

Tsuji-Huang Ground

Proposed substitute claims 6 and 7

Proposed substitute claim 6 replaces original claim 2 and adds new limitations directed to

- a body [of the first illumination fan] comprising a top, a bottom, and sides, wherein the sides include at least a first side and a second side;

- a center fan [of the first illumination fan] located in a center of the body;

- an illumination area [of the first illumination fan] located at the top of the body and disposed on at least two sides of the center fan;

- a power socket [of the first illumination fan] comprising an opening disposed on the first side of the body;

- a first connector [of the first illumination fan] disposed on the first side of the body, wherein the first connector is structurally distinct and separable from the power socket, and wherein the first connector comprises a first electrical terminal configured to electrically connect with a second electrical terminal of the second illumination fan; and

- a second connector [of the first illumination fan] disposed on the second side of the body.

See Mot. App. A (Proposed Substitute Claims Listing).

Proposed substitute claim 7 replaces original claim 3 and adds new limitations which include those recited in claim 6 plus additional limitations directed to connectors having flat surfaces:

- a body [of the first illumination fan] comprising a top, a bottom, and sides, wherein the sides include at least a first side and a second side;

- a center fan [of the first illumination fan] located in a center of the body;

- an illumination area [of the first illumination fan] located at the top of the body and disposed on at least two sides of the center fan;

- a power socket [of the first illumination fan] comprising an opening disposed on the first side of the body;

a first connector [of the first illumination fan] comprising a first flat surface disposed on the first side of the body, wherein the first connector is structurally distinct and separable from the power socket, and wherein the first connector comprises a first electrical terminal configured to electrically connect with a second electrical terminal of the second illumination fan; and

a second connector [of the first illumination fan] comprising a second flat surface disposed on the second side of the body.

See Mot. App. A (Proposed Substitute Claims Listing).

Petitioner contends claim 6 (and, similarly, claim 7) are obvious over Tsuji and Huang. Opp. 11–14. In particular, Petitioner relies on Tsuji to disclose “power sockets . . . shown as connectors CNA and CNB” on a first illumination fan, and “first connector CNC that is structurally distinct from a power socket CNA.” Opp. 12–13 (citing Ex. 1007, 39–44, 69, 92, Figs. 5–7, 14). Petitioner asserts that connectors “CNC and CNA in Tsuji also include an opening.” *Id.* at 2 (citing Ex. 1007, Fig. 6).

Petitioner asserts that “Tsuji discloses a power socket and a first connector on one side of the body, and a second connector on another side of the body” and contends that “[t]o the extent that CNA [of Tsuji] is not determined to be on a first side of the body, it would be obvious to place it there because connector CNC is on that side of the body and has the same power connections” and “it would have been obvious for . . . [the] power socket to comprise an opening disposed on the first side of the body.” *Id.* at 2–3, 12–13 (citing Ex. 1031 ¶¶ 85–87, 106–109; Exs. 1036, 1037, 1038, 1039).

On this record, we are not persuaded by Petitioner’s contentions. Tsuji discloses that power connectors CNA and CNB (power sockets receiving power) have power-connection openings disposed on *front and rear surfaces* of the fan units, while inter-fan connectors CNC and CND are disposed on *end sides of the*

fan units that are different from the *front and rear surfaces* of the fan units. See Ex. 1007 ¶¶ 31, 38–41, Figs. 5–7. Thus, Tsuji’s power socket (CNA or CNB) does not have *an opening disposed on same side of the fan body where a first connector* (CNC or CND) *is disposed*, as required by proposed substitute claim 6 (and the similar claim 7). As such, Petitioner’s assertion that “Tsuji discloses a power socket and a first connector on one side of the body” (see Opp. 12) is not supported by Tsuji.

Petitioner’s reliance on Dr. Wolfe’s associated testimony does *not* appear to show a reasonable likelihood that the teachings of Tsuji (in combination with Huang) render obvious “a power socket comprising an opening disposed on the first side of the body” and “a first connector disposed on the first side of the body” as recited in proposed substitute claims 6 (and the similar claim 7). Petitioner references paragraphs 85–87 and 106–109 in Dr. Wolfe’s testimony in support of the assertions that “it would be obvious to place . . . [the CNA of Tsuji on a first side of the body] because connector CNC is on that side of the body and has the same power connections” and “it would have been obvious for . . . [the] power socket to comprise an opening disposed on the first side of the body.” See Opp. 2–3, 12–13 (citing Ex. 1031 ¶¶ 85–87, 106–109). Dr. Wolfe’s testimony, however, provides an insufficient underlying factual basis for Petitioner’s obviousness contentions.

In particular, paragraphs 106–109 of Dr. Wolfe’s testimony rely on various portions of Tsuji as an underlying factual basis for the assertion that it would be obvious to dispose Tsuji’s power socket opening (e.g., opening of power connector CNA) on the side of the body where connector CNC is disposed. See Ex. 1031, ¶¶ 106–109. Tsuji, however, does not disclose such an arrangement, and instead specifically requires power connectors CNA and CNB to have *openings disposed*

on different faces (front and rear faces) of the fan than the faces (end sides) where inter-fan connectors CNC and CND are disposed, in order to selectively provide power at connectors CNA/CNB to each of multiple interlocked fans, hot-swap individual fans, and associate each fan's address with the fan's individual power connection position in the daisy chain. See Ex. 1007 ¶¶ 9, 25, 29, 31–32, 39–43, 45–49, Figs. 5–7. Thus, Petitioner's contentions that "it would be obvious to place . . . [the CNA of Tsuji on a first side of the body] because connector CNC is on that side [(first side)] of the body and has the same power connections" and that "it would have been obvious for . . . a power socket to comprise an opening disposed on the first side of the body" (see Opp. 12–13), and Dr. Wolfe's testimony asserting the same (see Ex. 1031 ¶¶ 106, 109), lack an underlying factual basis and are unpersuasive.

Paragraphs 106–109 of Dr. Wolfe's testimony also rely on earlier paragraphs 85–87, which in turn reference Exhibits 1036, 1037, 1038, and 1039. See Ex. 1031 ¶¶ 85–87, 106–109. Petitioner's Opposition references Exhibits 1036, 1037, 1038, and 1039, too, as well as Exhibit 1040. See Opp. 3–4. However, none of the referenced documentary evidence shows a fan with a power socket opening and first connector disposed on the same side. See Exs. 1036–1040. Although some fans are shown in Exs. 1036–1040, none have a power socket opening and first connector disposed on the same side; and the remaining disclosures in Exs. 1036–1040 concerns docking stations, controllers, PC enclosures (also reproduced at Opp. 3–4), and digital hubs—none of which are fans or are connected in a daisy-chain. See Exs. 1036–1040; Opp. 3–4. We also observe that some of Petitioner's submitted documentary evidence is dated after December 2018 (earliest priority date for the '336 patent) and even after May 2019 (filing date of the U.S. application that became the '336 patent). See, e.g., Ex. 1037, 1; Ex. 1039, 5–6.

Petitioner additionally contends that “[i]t would also be obvious to split connector CNC into two connectors, one of which is a power socket, as a simple design choice.” Opp. 13–14 (citing Ex. 1031 ¶ 109). This contention, again, lacks an underlying factual basis, as it merely relies on Dr. Wolfe’s unsupported declaration testimony—which asserts the same without any supporting evidence. *See* Ex. 1031, ¶ 109; *see In re Chaganti*, 554 F. App’x 917, 922 (Fed. Cir. 2014) (“It is not enough to say that . . . to do so would ‘have been obvious to one of ordinary skill.’ Such circular reasoning is not sufficient—more is needed to sustain an obviousness rejection.”); *see also Belden Inc. v. Berk–Tek LLC*, 805 F.3d 1064, 1073 (Fed. Cir. 2015) (“[O]bviousness concerns whether a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.”).

Based on the current record, Petitioner does not appear to have shown a reasonable likelihood that Tsuji and Huang disclose or suggest an illumination fan with a power socket and a first connector as recited in proposed substitute claim 6 (i.e., “a power socket comprising an opening disposed on the first side of the body” and “a first connector disposed on the first side of the body”) and the similarly recited limitations in proposed substitute claim 7.

With respect to the “flat surface” limitations recited in claim 7, Petitioner contends the “flat surface” limitations would have been obvious because “using a flat surface as the connector was widely known in the art” as “[t]he ’336 Patent . . . admit[s] that such [flat surface] connectors would have been well-known to a POSITA.” Opp. 14–15 (citing Ex. 1031 ¶¶ 126–127). Petitioner further asserts that the “flat surface” limitations would have been obvious on the basis that “[i]t would have been obvious to a POSITA to employ flat connectors with Lai based on Lai’s disclosure that the fan bodies should be places [sic] adjacent to one another so that

their sides touch and based on the general availability of flat connectors as a design choice.” *Id.* at 15 (citing Ex. 1031 ¶ 127).

On this record, we are not persuaded by Petitioner’s contentions. We do not see the ’336 patent as “admitting that such [flat surface] connectors would have been well-known to a POSITA” (as Petitioner contends, *see* Opp. 14). Moreover, Petitioner’s contentions that “using a flat surface as the connector was widely known in the art” and that “[i]t would have been obvious to a POSITA to employ flat connectors with Lai based on Lai’s disclosure that the fan bodies should be place[d] adjacent to one another so that their sides touch and based on the general availability of flat connectors as a design choice” (*see* Opp. 14–15 (citing Ex. 1031 ¶¶ 126–127)) are unpersuasive because (i) Lai is not included in the present Tsuji-Huang ground and (ii) even if Petitioner intended to rely on Lai’s single input and single output connectors 111 and 112, Petitioner does not outline any combination between elements of (or, more generally, between the teachings of) Tsuji and those of Lai. Petitioner’s additional reference to “Tsuji disclos[ing] and/or render[ing] obvious a second connector 112 on the right side of the fan body” (*see* Opp. 15) is incorrect because Tsuji does not disclose any connector labeled 112.

Nevertheless, we are also unpersuaded by Patent Owner’s argument that “neither the CNC connector nor the CND connector of Tsuji has a flat surface as required by claim 7.” *See* Mot. 19. Patent Owner does not explain why this is so. Claim 7 merely requires “a first connector comprising a first flat surface disposed on the first side of the body” and “a second connector comprising a second flat surface disposed on the second side of the body”—which does not provide details as to the specifics of these flat surfaces, e.g., how the flat surfaces would be disposed with respect to the side of the body. The connectors with flat surfaces recited in claim 7 appear to read on Tsuji’s CNC and CND connectors at least

because Tsuji’s CNC and CND connectors each include flat surfaces by which each connector connects to a connector from a next fan, even if the connectors themselves are not flush with the side.⁸ See Ex. 1007, Figs 5–7. In conclusion, it appears that Tsuji would render obvious a connector comprising a “flat surface” recited in claim 7.

However, since (as noted *supra*), Petitioner has *not* shown a reasonable likelihood that Tsuji and Huang disclose or suggest an illumination fan with a power socket and a first connector as recited in proposed substitute claim 6 (i.e., “a power socket comprising an opening disposed on the first side of the body” and “a first connector disposed on the first side of the body”) and the similarly recited limitations in proposed substitute claim 7, based on the current record, Petitioner has not shown a reasonable likelihood that the teachings of Tsuji and Huang render obvious proposed substitute claims 6 and 7.

Lai-Hasegawa Ground

Proposed substitute claims 6 and 7

As noted, proposed substitute claims 6 and 7 recite a first illumination fan including a power socket and first and second connectors with particular physical characteristics. See Mot. App. A (Proposed Substitute Claims Listing).

Petitioner contends claim 6 (and the similar claim 7) are obvious over Lai and Hasegawa. Opp. 15–24. In particular, Petitioner relies on Lai to disclose “a power socket comprising an opening disposed on the first side of the body” in Fig. 3 which allegedly “shows that the power connections are within an opening in the housing.” See Opp. 16 (citing Ex. 1012, Fig. 3; Ex. 1031 ¶¶ 139–140).

⁸ It is also unclear how Tsuji’s connectors having flat surfaces are distinguishable from Hasegawa’s connectors having flat surfaces (which are not distinguished by Patent Owner in the Motion to Amend). See *supra*, n. 9.

Petitioner also asserts that “Lai discloses a first connector disposed on the first one side of the body” in Fig. 2 which allegedly shows “the power socket and first connector comprise input 111. . . including 6 connectors” of which “[t]he power socket is comprised of the ground connector and the two VCC connectors [shown in Figs. 4–6]” and “[t]he first connector is comprised of the LED data signal, the PWM signal, and the sense signal [shown in Figs. 4–6].” *Id.* at 16, 22–23 (citing Ex. 1012, Figs 2, 4–6; Ex. 1031 ¶ 139, 145).

On this record, we disagree with Petitioner’s argument that Lai’s “ground connector and . . . two VCC connectors” teach a power socket structurally distinct and separable from “the LED data signal, the PWM signal, and the sense signal” representing a “first connector.” See Opp. 16–17. Lai identifies element 111 as “a single input” and explicitly states that the LED fans 10 “are linked together using a single transmission line” (and not two structurally distinct lines for a connector and a power socket). See Ex. 1012 ¶¶ 11–12, Figs. 2–3. To the extent Lai discloses a power line and additional connecting lines for the LEDs, they are disclosed as being configured as a single input connector 111, and not as “structurally distinct and separable” connectors (as claimed in the proposed substitute claims). See Ex. 1012, ¶¶ 11–12, Figs. 2–3.

Petitioner further contends that a “structurally distinct and separable” connector and power socket would also have been obvious for multiple reasons. See Opp. 19–23.

One reason, according to Petitioner, is that Lai’s Figs. 4–6 suggest that it would be obvious to include separate power and ground signals as suggested by Figure 6 on the first connector. [] Figures 4, 5, and 6 all suggest that *there are two places* where power and ground are required in the fan system and illustrate *two sets of connections on one side*. It would have been obvious therefore to have two connectors *on one side* that each have power and ground and each have control

signals. [] Either one could be the power socket and the other would be the first connector.

....

Figures 4, 5, and 6 all *suggest that there are two places* where power and ground are required in the fan system and illustrate two sets of connections *on one side*. It would have been *obvious therefore to have two structurally distinct and separable connectors*, a power socket and a first connector, *on one side* that each have power and ground whereby the first connect[o]r includes the control signals. It would be obvious to a POSITA *to separate a first connector and the power socket into two housings* for the same reasons stated above for Limitation 6(A)(iv). . . . A plurality of signals can be combined *onto a single connector housing or split between two as a matter of simple design choice* in this application.

Opp. 16–18, 23 (emphasis added) (citing Ex. 1012, Figs. 2–6; Ex. 1031 ¶¶ 139, 145).

On this record, we disagree with Petitioner’s contentions. Lai’s Figs. 4, 5, and 6 are *circuit diagrams* (see Ex. 1012 ¶¶ 8–10) which *do not show physical sides or physical separations* of the elements in the underlying devices. Rather, the circuit diagrams show how the internal electronics receive control and power signals. See *id.* at Figs 4–6. We are therefore unpersuaded by Petitioner’s argument (*supra*) that Lai’s Figs. 4, 5, and 6 suggest any *physical separations* between connections, or a specific arrangement of connectors *on a physical device side or in a physical housing*. Moreover, Lai’s figures that do disclose *physical characteristics* of its devices (Figs. 2 and 3) show that all power and signal connectors are grouped into the single physical input connector 111. See Ex. 1012, Figs. 2–3. Thus, we do not discern any suggestion by Lai to have “two sets of connections on one side,” or “two connectors on one side that each have power and ground and each have control signals,” or “two structurally distinct and separable connectors, a power socket and a first connector, on one side” (as Petitioner

contends, *see* Opp. 16–18, 23).

Moreover, Petitioner relies on testimony (Ex. 1031 ¶¶ 139, 145) that does not provide a sufficient underlying factual basis for Petitioner’s contentions that “[i]t would have been obvious . . . to have two structurally distinct and separable connectors, a power socket and a first connector, on one side” or that “[i]t would be obvious . . . to separate a first connector and the power socket into two housings.” *See* Opp. 16–18, 23. Dr. Wolfe’s unsupported declaration testimony—which presents the same contentions without any supporting evidence or underlying factual basis for the contentions—does not explain why “a skilled artisan not only *could have made* but *would have been motivated to make* the combinations or modifications of prior art to arrive at the claimed invention.” *See Belden Inc.*, 805 F.3d at 1073; *see also Chaganti*, 554 F. App’x at 922 (“It is not enough to say that . . . to do so would ‘have been obvious to one of ordinary skill.’ Such circular reasoning is not sufficient—more is needed to sustain an obviousness rejection.”). Petitioner’s (and Dr. Wolfe’s) assertion that a plurality of signals in Lai “can be combined onto a single connector housing or split between two *as a matter of simple design choice*” (*see* Opp. 19, 23 (emphasis added); Ex. 1031 ¶¶ 139, 145) is not supported by the disclosure of Lai—which specifically seeks an arrangement of fans 10 that improves “the entire appearance” by providing each “LED fan 10 . . . *only . . . with windows of a single input 111* and a single output 112 [so] that all the addressable RGB LEDs 16 can be controlled” and linking “LED fans 10 . . . *together using a single transmission line 12.*” *See* Ex. 1012 ¶¶ 2, 11–12 (emphasis added), Figs. 2, 3.

Petitioner further asserts, “[a]lternatively, it would have been obvious, therefore, to have two connectors on one side that each have power and ground and each have control signals” whereby “[e]ither one [of the connectors] could be the

power socket and the other would be the first connector.” Opp. 23 (citing Ex. 1031 ¶ 146). Petitioner’s contention, however, lacks an underlying factual basis, as it merely relies on Dr. Wolfe’s unsupported declaration testimony—which asserts the same without any supporting evidence. *See* Ex. 1031, ¶ 146.

Petitioner also argues “[t]o the extent that the power and ground terminals [in Lai] are not a ‘socket’ it would be obvious to a POSITA to use a socket-style power connector” as “[b]oth male and female connectors are commonly available.” *See* Opp. 19. We are unpersuaded, however, that a general knowledge of sockets and male and female connectors would show that the configuration recited in the proposed substitute claims is obvious. The substitute claims do not merely require a socket or a male or female connector. Rather, they require “a power socket [of the first illumination fan] comprising an opening disposed on the first side of the body” and “a first connector [of the first illumination fan] disposed on the first side of the body, wherein the first connector is structurally distinct and separable from the power socket.”

Petitioner next submits that

To the extent that one was to understand Lai not to disclose the power socket on the side of the fan body, it would be obvious to a POSITA that Lai’s connectors can be moved to the left and right edges of the fan body without any substantial impact to the structure or operation of Lai’s embodiments. [] Lai already indicates that one connector should be near the left corner, and one should be near the right corner. Ex[1012] at Figure 2. . . .

Furthermore, a POSITA would be motivated to look to Hasegawa (Ex[1014]) to see an alternative positioning of the connectors for serial connection of fans and modify Lai to place connectors on opposing sides. [] The connectors on two sides are illustrated in Figures 29 and 31 [of Hasegawa].

. . .

The combination of Lai and Hasegawa would have involved applying Hasegawa’s known technique of placing cooling fan

connectors on the fan body sides to the known LED fans of Lai to yield predictable results of connecting the fans in series. [] The combination would have appeared similar to Figure 3 of Lai, but with visible connectors on the fan body sides as shown below in red boxes and not just visible transmission lines.

Opp. 19–22 (citing Ex. 1031 ¶¶ 141–143).

At the outset we observe that Lai’s connectors referenced by Petitioner are the single input 111 and single output 112 (shown in Lai’s Fig. 2)—which Petitioner mapped to the claimed “first connector” and “second connector” (*see* Opp. 24). Thus, although Petitioner’s argument may establish that first and second connectors on different body sides of a fan may be obvious, the argument does not identify why a first connector “structurally distinct and separable from the power socket” and disposed on the same body side as the power socket (as required by the proposed substitute claims) would have been obvious. As both Lai and Hasegawa show power connectors and inter-fan connectors disposed in a single physical connector at the surface of the fan (*see* connector 111 in Lai’s Fig. 2, connections 12 or 13 in Lai’s Fig. 3, and connector 25 in Hasegawa’s Figs. 29–32), Petitioner’s argument regarding the Lai-Hasegawa combination does not explain why the combination would have prompted an ordinarily skilled artisan to modify the unitary connectors of these references to present a first connector “structurally distinct and separable” from a power socket (as required by the proposed substitute claims). Dr. Wolfe’s relied-upon testimony (Ex. 1031 ¶¶ 141–143) does not discuss the “structurally distinct and separable” limitation, either; rather, it discusses why first and second connectors would be disposed on different body sides.

Thus, based on the current record, Petitioner does not appear to have shown a reasonable likelihood that Lai and Hasegawa disclose or suggest an illumination

fan with “a power socket comprising an opening disposed on the first side of the body” and “a first connector disposed on the first side of the body, wherein the first connector is structurally distinct and separable from the power socket” as recited in proposed substitute claim 6, and similarly recited in proposed substitute claim 7.⁹

III.CONCLUSION

This concludes our Preliminary Guidance. Patent Owner has the option to reply to this Preliminary Guidance *or* to file a revised MTA by DUE DATE 3. 37 C.F.R. § 42.121(e)(3), (f); Paper 9 (Scheduling Order). Patent Owner’s reply or revised MTA may only respond to this Preliminary Guidance or Petitioner’s Opposition and may be accompanied by new evidence (including declarations). 37 C.F.R. § 42.121(e)(3). Petitioner has the option to file a sur-reply responsive to this Preliminary Guidance, Patent Owner’s reply, or Patent Owner’s revised MTA but may not present new evidence in any case. 37 C.F.R. § 42.121(e)(3). Petitioner may also file a reply to the preliminary guidance in the case Patent Owner does not file a reply or revised MTA. 37 C.F.R. § 42.121(e)(4).

In addition, Patent Owner is reminded that amendments of the challenged claims may also be pursued in a separate reissue or reexamination proceeding

⁹ For completeness, we note that the additional limitations recited in proposed substitute claim 7 directed to first and second connectors having a “*flat surface* disposed on the [respective] side of the body” do not appear to distinguish the claim from the asserted art to Lai and Hasegawa at least because Hasegawa’s connector 25 appears to have at least one flat surface disposed on the side of the body of fan unit 601. *See* Ex. 1014 ¶ 121, Figs. 29, 30–31 (showing that connector 25 has at least one surface flat with respect to the fan’s body side formed by plate 662 which mates with connector 25 at window 662a; connector 25 also has an additional flat surface that is secured by screws S to an underlying body side of the fan).

before, during, or after an AIA trial proceeding, including subsequent to the issuance of the Final Written 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. 16,654 (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).

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