

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

THERMALTAKE TECHNOLOGY CO., LTD. and
THERMALTAKE INC. (a.k.a. THERMALTAKE USA),

Petitioners,

v.

LIAN LI INDUSTRIAL CO., LTD., and CHEN, CHIEN-HAO,

Patent Owners.

IPR2024-01230
U.S. Patent No. 10,690,336

**PETITIONERS' OPPOSITION TO PATENT OWNER'S
REVISED CONTINGENT MOTION TO AMEND**

TABLE OF CONTENTS

	<u>Page</u>
I. SUBSTITUTE CLAIMS 6-7 LACK WRITTEN DESCRIPTION SUPPORT UNDER 35 U.S.C. § 112	1
A. Limitations (B) and (C) of The Proposed Substitute Claims Are Not Supported By The Specification.	1
B. There Is No Written Description Support For “An Illumination Area” In Substitute Claims 6 And 7 Under PO’s Definition.	4
C. Substitute Claim 7 Is Not Supported By The Specification And Contradicts PO’s Own Interpretation Of The Patent Disclosure.	4
II. SUBSTITUTE CLAIMS 6-7 ARE INDEFINITE UNDER 35 U.S.C. § 112.....	7
A. Claim 6: Limitations 6(A)(iv), 6(A)(v), 6(B), 6(C)	7
B. Claim 7: connectors with a “flat” surface	8
III. PROPOSED SUBSTITUTE CLAIMS 6-7 ARE OBVIOUS UNDER GROUND 1 IN THE PETITION: TSUJI IN VIEW OF HUANG	8
A. Claim 6	9
B. Claim 7	18
IV. PROPOSED SUBSTITUTE CLAIMS 6-7 ARE OBVIOUS UNDER GROUND 4 IN THE PETITION: LAI IN VIEW OF HASEGAWA	23
A. Claim 6	23
B. Claim 7	24
V. CONCLUSION.....	25

TABLE OF AUTHORITIES

Page(s)

Cases

<i>Anascape, Ltd. v. Nintendo of Am., Inc.</i> , 601 F.3d 1333 (Fed. Cir. 2010)	3
<i>Interval Licensing LLC v. AOL, Inc.</i> , 766 F.3d 1364 (Fed. Cir. 2014)	8
<i>Lockwood v. Am. Airlines, Inc.</i> , 107 F.3d 1565 (Fed. Cir. 1997)	3
<i>Nautilus, Inc. v. Biosig Instruments, Inc.</i> , 572 U.S. 898 (2014).....	8

Codes

35 U.S.C. § 112	1, 7, 25
-----------------------	----------

EXHIBIT LIST

<i>Exhibit No.</i>	<i>Description</i>
1001	U.S. Patent No. 10,690,336 B1 to Chen
1002	File History for U.S. Patent No. 10,690,336 B1 to Chen
1003	Taiwanese Patent Application No. 107217659 U, filed on December 26, 2018
1004	Declaration of Dr. Andrew Wolfe (“Wolfe Decl.”)
1005	<i>Curriculum Vitae</i> of Dr. Andrew Wolfe
1006	Japanese Publication No. 2018041147A to Tsuji et al. (“Tsuji”) published March 15, 2018
1007	Certified Translation of Tsuji
1008	U.S. Patent No. 10,082,286 B1 to Huang issued September 15, 2018 (“Huang”)
1009	U.S. Publication No. 2008/0124234 A1 to Echazarreta (“Echazarreta”)
1010	U.S. Publication No. 2008/0279694 A1 to Chou et al. (“Chou”)
1011	U.S. Publication No. 2015/0233391 A1 to Liu (“Liu”)
1012	U.S. Publication No. 2017/0314777A1 to Lai (“Lai”)
1013	Japanese Publication No. 2005051085A to Hasegawa (“Hasegawa”)
1014	Certified Translation of Hasegawa

<i>Exhibit No.</i>	<i>Description</i>
1015	Complaint for Patent Infringement, <i>Lian Li Industrial Co., Ltd., and, Chen, Chien-Hao v. Thermaltake Technology Co., Ltd. and Thermaltake Inc. (a.k.a. Thermaltake USA)</i> , No. 2:23-cv-07470-HDV-MARx (C.D. Cal.) (the “California Action”)
1016	Waiver of Service (Dkt. No. 22 of the California Action)
1017	Returned Summons (Dkt. No. 12 of the California Action)
1018	Disclosure of Asserted Claims and Infringement Contentions in the California Action, dated March 6, 2024
1019	Scheduling Conference and Order Setting Pretrial and Trial Schedule (Dkt. No. 37 of the California Action)
1020	<i>Ex Parte</i> Reexamination Request No. 90/019,565 (the “Axpertec Reexamination”)
1021	Finding of substantial new question of patentability in the Axpertec Reexamination, dated July 18, 2024
1022	Joint Claim Construction and Prehearing Statement (Dkt. No. 43 of the California Action)
1023	Declaration of Christopher Kao in Support of Petitioners’ Unopposed Motion for Admission <i>Pro Hac Vice</i> of Christopher Kao
1024	Declaration of David J. Tsai in Support of Petitioners’ Unopposed Motion for Admission <i>Pro Hac Vice</i> of David J. Tsai
1025	Declaration of Brock S. Weber in Support of Petitioners’ Unopposed Motion for Admission <i>Pro Hac Vice</i> of Brock S. Weber

<i>Exhibit No.</i>	<i>Description</i>
1026	Declaration of Surui Qu in Support of Petitioners’ Unopposed Motion for Admission <i>Pro Hac Vice</i> of Surui Qu
1027	Demonstrative of Figure 2 of Ex[1001] (’336 Patent), marked during deposition of Dr. David Tuckerman
1028	Expert Declaration of Dr. David Tuckerman Regarding Claim Construction (Dkt. 50-2) in the California Action
1029	Page 20 of Declaration of Dr. David Tuckerman in Support of Patent Owner Response and Contingent Motion to Amend (Ex[2006])
1030	Transcript of Deposition of Dr. David Tuckerman, July 15, 2025
1031	Reply Declaration of Dr. Andrew Wolfe (“Wolfe Supp. Decl.”)
1032	“Side,” <i>Merriam-Webster’s Collegiate Dictionary</i> , Eleventh Edition (2003)
1033	RayPCB Article, <i>What is the difference between WS2813 and WS2812B LED strips?</i> , accessed at: https://www.raypcb.com/ws2812b-vs-ws2813/
1034	Product page for WS2812B LED, accessed at: https://alitove.com/products/alitove-dream-color-led-strip-16-4ft
1035	Data sheet for Kingbright WP1503ID T-1 ¾ LED, Spec No. DSAF2382, Rev V.6A, dated January 20, 2015.
1036	Tom’s Hardware Article, <i>Thermaltake Launches Software-Controlled Riing RGB LED Radiator Fans</i> , accessed at: https://www.tomshardware.com/news/thermaltake-riing-led-rgb-fans,32338.html

<i>Exhibit No.</i>	<i>Description</i>
1037	AnandTech, <i>Capsule Review: Sunon MagLev 120 mm Fan</i> , retrieved from: https://web.archive.org/web/20240902073447/https://www.anandtech.com/print/21376/capsule-review-sunon-maglev-120mm-fan
1038	Manual for Thermaltake Riing 12 RGB Radiator Fan TT Premium Edition
1039	Tom’s Hardware Article, <i>Noctua Releases All-New NF-A12x25 120 mm Fan</i> , accessed at: https://www.tomshardware.com/news/noctua-releases-nf-a12x25-120mm-fan,36994.html
1040	“IEC 60320,” Wikipedia entry, accessed at: https://en.wikipedia.org/wiki/IEC_60320
1041	User Manual for SilverStone Multi-RVZ01-E
1042	Exhibit 1042 to Transcript of Deposition of Dr. David Tuckerman, October 20, 2025
1043	Exhibit 1043 to Transcript of Deposition of Dr. David Tuckerman, October 20, 2025
1044	Supplemental Reply Declaration of Dr. Andrew Wolfe in Support of Petitioners’ Opposition to Patent Owner’s Revised Contingent Motion to Amend dated October 29, 2025
1045	Transcript of Deposition of Dr. David Tuckerman, October 20, 2025
1046	U.S. Publication No. US 2019 / 0260150 A1 to Costello
1047	U.S. Patent No. 8,840.415 B2 to Orris Issued September 23, 2014

<i>Exhibit No.</i>	<i>Description</i>
1048	Chinese Patent CN107871987B
1049	Serial ATA: High Speed Serialized AT Attachment Revision 1.0a; 7-January-2003
1050	Thermaltake RGB Fan Manual 2017
1051	Printout of https://www.dvtests.com/nzxt-aer-rgb120-and-rgb140-test-and-review/
1052	NZXT AER RGB120 manual

Patent Owner's ("PO") Revised Contingent Motion to Amend ("RMTA," Paper 28) should be denied. PO proposes claims 6-7 as substitutes for original claims 2-3 of the '336 Patent in the event that claims 2-3 are found to be unpatentable. The only limitations that PO argues are not taught by the prior art are:

- "(iv) a power socket comprising an opening located on the first side of the body" and
- "(v) a first connector disposed on the first side of the body, wherein the first connector is structurally distinct and separable from the power socket"

RMTA at 23. However, proposed claims 6-7 are not patentable over Petitioners' prior art and also fail to meet the requirements of 35 U.S.C. § 112.

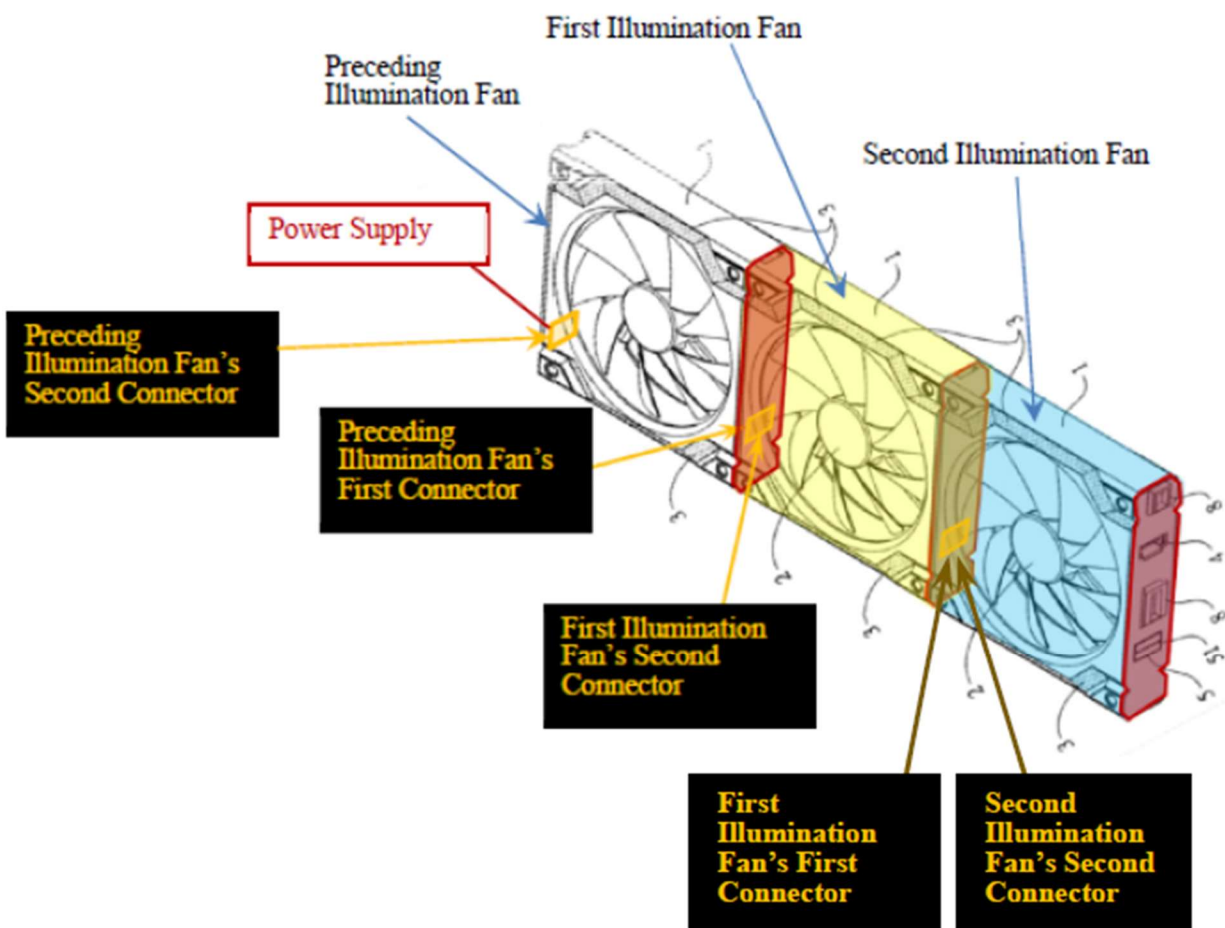
I. SUBSTITUTE CLAIMS 6-7 LACK WRITTEN DESCRIPTION SUPPORT UNDER 35 U.S.C. § 112

A. Limitations (B) and (C) of The Proposed Substitute Claims Are Not Supported By The Specification.

In its Preliminary Guidance, the Board properly determined that the '336 Patent specification lacks written description for the claimed system to operate as directed by limitation (B) at the same time it operates as directed by limitation (C) in proposed claims 6-7. Paper 25 at 5-11.¹ To try to change the Board's mind, PO

¹ Limitations (B) and (C) are: (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

argues that the claims cover an embodiment wherein external power is provided directly to the second connector of a third fan (referred to as a “preceding illumination fan” in the RMTA as annotated in, e.g., Ex[2037] reproduced below) rather than directly to the power socket. RMTA at 11-14.



Ex[2037]

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.

However, there is no written description of such an embodiment in the '336 Patent. Ex[1044], ¶64. The specification does not disclose the power supply as added by PO's expert. Nor is there disclosure of supplying power directly from the power supply to the second connector. *Id.* Unable to point to an affirmative disclosure that supports the purported embodiment, PO argues that "such direct power connection on the second connector of the preceding illumination fan does not need to be expressly disclosed or taught by the '336 patent so long as this power connection is permitted and is not excluded thereunder." RMTA at 14.

PO's position turns the written description requirement on its head and is contrary to law. The '336 Patent specification cannot provide written description support merely by failing to explicitly exclude what PO now tries to add to its invention. *See Lockwood v. Am. Airlines, Inc.*, 107 F.3d 1565, 1572 (Fed. Cir. 1997) ("It is not sufficient for purposes of the written description requirement of § 112 that the disclosure, when combined with the knowledge in the art, would lead one to speculate as to modifications that the inventor might have envisioned, but failed to disclose."); *Anascope, Ltd. v. Nintendo of Am., Inc.*, 601 F.3d 1333, 1339 (Fed. Cir. 2010) (reversing judgment of validity and underscoring "[a] patentee is not ... presumed to support variants that are not described" for adequate written description and rejecting patentee's expert testimony that "is not supported by any evidence at

all, and cannot override the objective content of these documents.”). PO’s argument only serves to highlight that power supply to the claimed system is not disclosed.

B. There Is No Written Description Support For “An Illumination Area” In Substitute Claims 6 And 7 Under PO’s Definition.

PO’s expert has opined that “the plain language of claim 1, ... makes clear that an ‘illumination area’ is not simply an area where light happens to be visible to the user – it is the area of the body that actually generates light, i.e., illuminates.” Ex[2006], ¶51. He further opines that it is insufficient with respect to the claims to show that light from LEDs is visible from a top view. *Id.* While Petitioners disagree and contend that the plain meaning of “illumination area” is “an area that is illuminated” (Ex[1044], ¶¶15-23), proposed claims 6 and 7 lack written description support if PO’s construction were adopted. The area Dr. Tuckerman has marked as the claimed “illumination area” (Ex[2006], p. 20) is not disclosed to generate light (Ex[1044], ¶61). In fact, there is no embodiment described in the ’336 Patent in which the light generating elements are located at the top of the body. *Id.*, ¶¶60-62. This is entirely absent from the specification.

C. Substitute Claim 7 Is Not Supported By The Specification And Contradicts PO’s Own Interpretation Of The Patent Disclosure.

Limitations 7(A)(iv) and 7(A)(v) require two connectors on sides of the body, each with a “flat surface.” The term “flat” does not appear in the specification of the

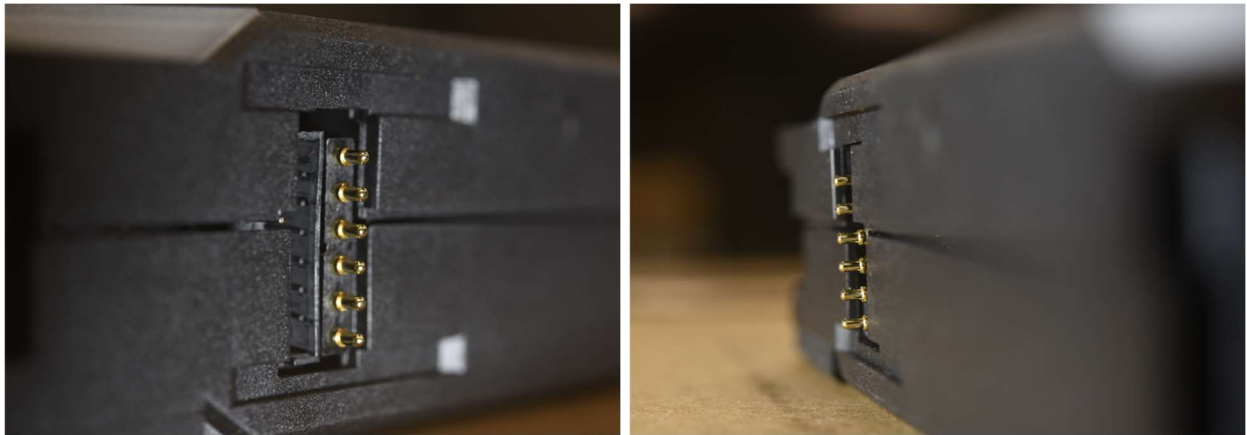
'336 Patent. Ex[1044], ¶66. In fact, PO's expert admitted that there is no discussion in the specification regarding the shape of a connector that would clarify the meaning of "a flat surface." Ex[1045] at 191:4-11.

It is unclear from the specification how to implement or select flat surface connectors. PO's attempt to conjure connectors with a "flat surface" contradicts its own treatment of other disclosures of the '336 Patent specification. For instance, PO construes "side" to mean a lateral face of an object. *See* Ex[2052], ¶30. As such, connector 5 as depicted in Figure 1 is disposed in an *opening* in the lateral face of the body as required by claim 7, *not on the lateral face* of the body. A POSITA would recognize the portion of connector 5 that Dr. Tuckerman has identified as an *opening* and *not as a flat surface*. Ex[1044], ¶68. Additionally, it is clearly inset from the surface of the fan body in the drawing. *Id.*

PO's expert, Dr. Tuckerman, previously identified a Lian Li product as covered by at least claim 4 of the '336 Patent, which includes a connector as depicted below. Ex[2006] at 65 (¶93) and 105 (Appendix C). A POSITA would recognize connector 5 as the same type of connector that Dr. Tuckerman identified in the Lian Li product. Ex[1044], ¶69.



Ex[2006] at 105



Ex[1044], ¶69

Dr. Tuckerman testified that he did not see anything that looked flat. Ex[1045] at 196:1-12. The connector identified in the Lian Li product is clearly inset from the surface of the fan body in the drawing, and a POSITA applying PO's construction would recognize that it does not have a flat surface disposed on the side of the body. Ex[1044], ¶69. The connector is disposed in an opening and is attached to an interior

surface. *Id.* A POSITA would understand connector 5 to be this same configuration or at least would not find a flat surface disposed on the lateral surface of the body to be clearly disclosed. *Id.* PO's proposed amendment is at odds with its own proposed interpretation of the patent.

II. SUBSTITUTE CLAIMS 6-7 ARE INDEFINITE UNDER 35 U.S.C. § 112

A. Claim 6: Limitations 6(A)(iv), 6(A)(v), 6(B), 6(C)

As discussed above in Section I.A., 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; 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. Ex[1031], ¶90. PO's reliance on the second connector of a preceding connector does not provide more clarity because a POSITA would not be able to understand how power is supplied to the second connector of the preceding illumination fan. *See* Section I.A., above.

Given this lack of clarity, the claim “fail[s] to inform, with reasonable certainty, those skilled in the art about the scope of the invention.” *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 901 (2014).

B. Claim 7: connectors with a “flat” surface

As discussed above in Section I.C, the term “flat surface” does not appear in the specification, and the specification provides no disclosure on how to implement or select flat surface connectors. For example, this term may encompass two flat surfaces without any springs or other structures to maintain contact that would be an unreliable connection mechanism to a POSITA. Ex[1031], ¶91. Nor does it provide any “objective boundaries” for measuring the scope or degree of flatness. *See Interval Licensing LLC v. AOL, Inc.*, 766 F.3d 1364, 1371 (Fed. Cir. 2014). Thus, the term “flat surface” is indefinite in the context of the ’336 Patent. *See Nautilus*, 572 U.S. at 901.

III. PROPOSED SUBSTITUTE CLAIMS 6-7 ARE OBVIOUS UNDER GROUND 1 IN THE PETITION: TSUJI IN VIEW OF HUANG

Proposed substitute claims 6-7 are obvious over Tsuji in view of Huang as shown in the Petition (Paper 1 at 23-44), in the Reply in support of the Petition (Paper 23 at 24-28), in Petitioners’ prior Opposition (Paper 24 at 11-15), and as established by Dr. Wolfe in his Reply Declaration (Ex[1031] at ¶¶95-131) and Supplemental

Reply Declaration (Ex[1044] at ¶¶72-110). Again, the only limitations that PO argues are not taught by the prior art are:

- “(A)(iv) a power socket comprising an opening located on the first side of the body” and
- “(A)(v) a first connector disposed on the first side of the body, wherein the first connector is structurally distinct and separable from the power socket”

RM TA at 23. PO’s position is without merit. These two limitations are addressed below (relying upon PO’s only attempts to distinguish the prior art).

A. Claim 6

6(A)(iv): a power socket comprising an opening disposed on the first side of the body; and

As Petitioners’ prior Opposition showed, PO’s proposed substitute claims containing the amendment “a power socket comprising an opening disposed on the first side of the body” are invalid as obvious over Tsuji in view of Huang. Paper 24 at 12-14.

To the extent that the Board determines that the connection pins for the signals and power must be split between two connector housings on the same side of the fan body, that would have been obvious to a POSITA. Ex[1044], ¶86. As established in Petition, it would have been obvious to a POSITA to separate power connections and signals into separate housings to implement a structurally distinct and separate first connector and power socket. Pet. 62; Ex[1004], ¶116. It is a simple design

choice whether to combine the power connections and signals into a single connector or to split them between two connectors. Ex[1031], ¶88. To the extent that this new limitation requires splitting multiple connections into two housings on the same side of the fan body, this would have been a simple and obvious design choice to a POSITA. *Id.*; Ex[1044], ¶42. With respect to small connectors like the ones used in computer fans, these are interchangeable design choices and either would be obvious once the required connections are enumerated. *Id.*

Alternatively, a POSITA would have been motivated to combine Tsuji and Huang with the teaching of one or more of the references discussed below in order to use two connector housings for the connector pins disclosed for CNC. *Id.*, ¶86.

One example is the SATA connectors (as disclosed in the SATA 1.0 standard) that have been used in personal computers since 2003. *Id.*, ¶44 (citing Ex[1049]). The SATA 1.0a specification was published in January 2003. *Id.* Among other things, it discloses the connectors used for power and data on SATA hard drives. *Id.* A SATA hard drive is a motorized component in a PC that requires both power and data connections. *Id.* The specification supports more than one drive sharing cables. *Id.* It is about the same size and shape as a PC fan and is a component in the same device that also requires power and data connections. *Id.* A POSITA would be

familiar with this technology and motivated to adopt aspects of these connectors into an illumination fan. *Id.*

Figure 5 in the SATA 1.0 specification shows two examples of the connectors used for power and signals (i.e. data). *Id.*, ¶45 (citing Ex[1049] at 38). The connector pins can be in a single housing (as in example g) or in two housings (as in examples c & d). *Id.* Both approaches work, and they are interchangeable. *Id.* A POSITA would understand that either part of the connector can be in either a single housing or two housings. *Id.*

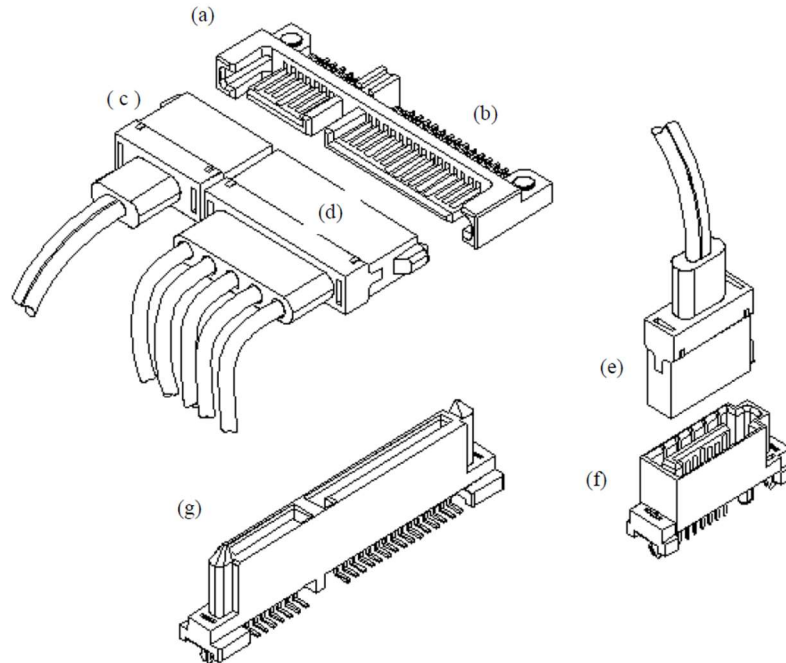


Figure 5 – Serial ATA connector examples

Illustrated above: (a) device signal plug segment or connector; (b) device power plug segment or connector; (c) signal cable receptacle connector, to be mated with (a); (d) power cable receptacle connector, to be mated with (b); (e) signal cable receptacle connector, to be mated with (f), the host signal plug connector; (g) host receptacle connector mating directly with device plug connector (a) & (b).

Furthermore, Figure 10 in the SATA 1.0 specification shows that it was well known to have two distinct connectors supporting two distinct cables in the same housing. *Id.*, ¶46.

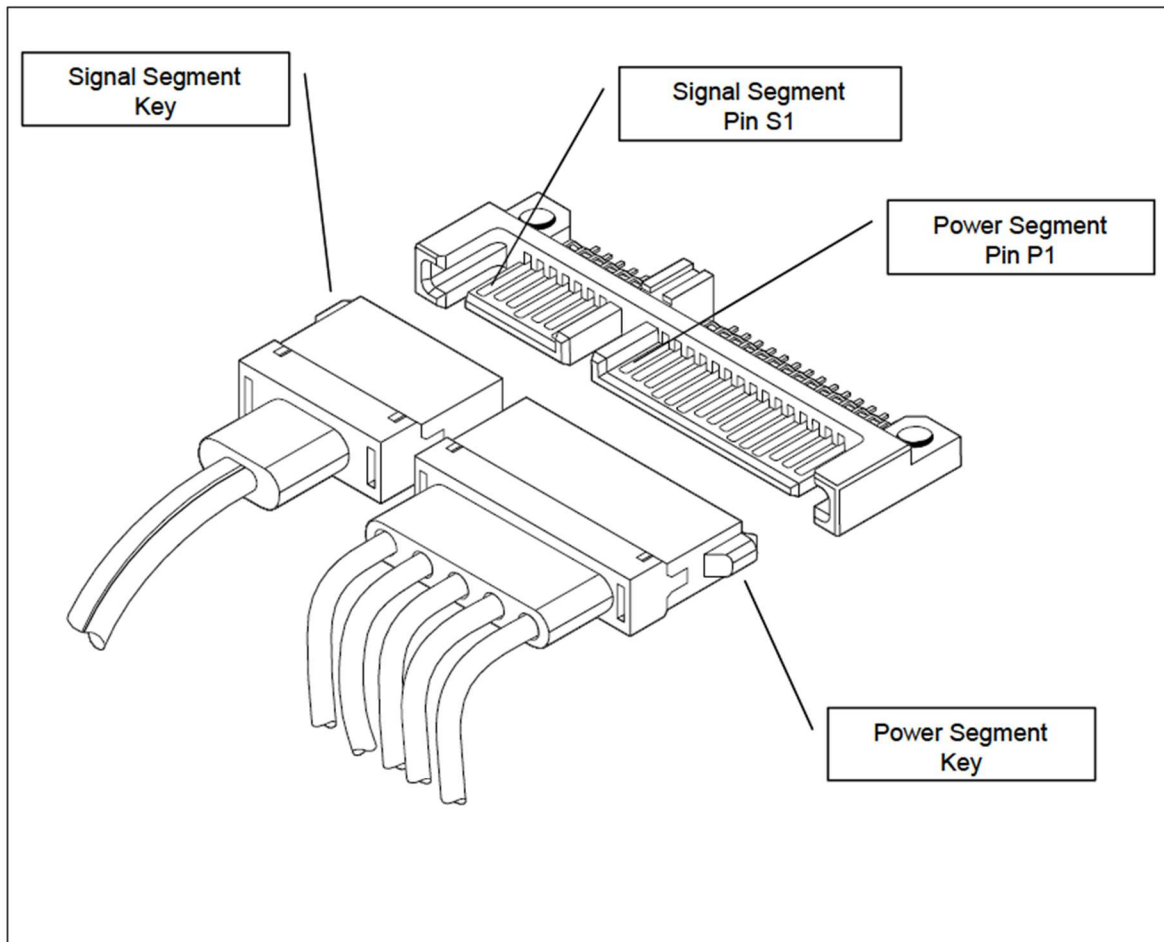


Figure 10 **Connector Pin and Feature Locations**

In addition to combining or separating power and signal connectors, the SATA specification teaches that one can have either one or two power connectors on the same side of the device. *Id.*, ¶47. Figure 68 shows adjacent power and signal connections that can be in the same housing as illustrated in Figure 10. *Id.* Figure 73 illustrates the alternative of adding a separate legacy power connector in a separate housing, connected to the first power connector and on the same side of the device.

Id. Figure 71 illustrates having a separate power connector housing and signal housing. *Id.* The SATA 1.0 specification clearly teaches that these are simple design choices. *Id.*

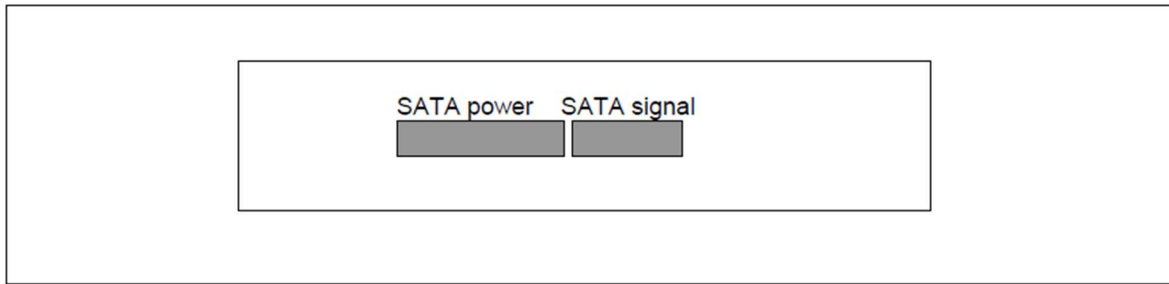


Figure 68 - Device connector configuration 35A1

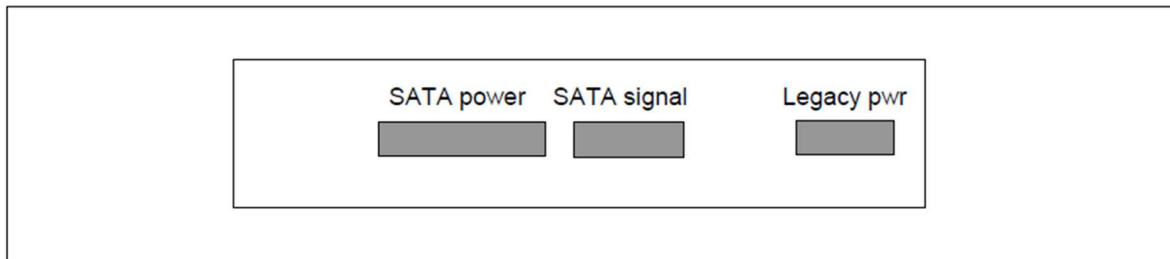


Figure 73 - Device connector configuration 35B5

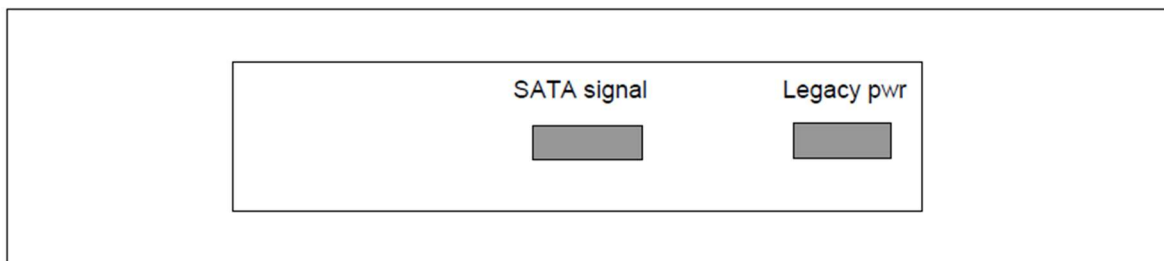
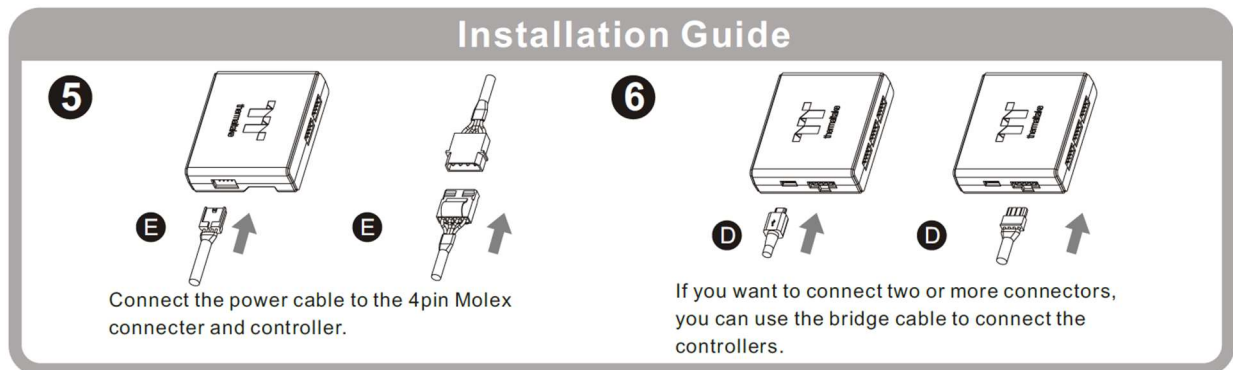


Figure 71 - Device connector configuration 35B3

As another example, the manual for a Thermaltake computer fan product from 2017 illustrates an illumination fan controller that has a power connector on one side coupled to another power connector on the other side. *Id.*, ¶48 (citing Ex[1050]). The second power connector is on the same side as a data connector. *Id.* A POSITA would be motivated to use the same connector configuration for power and data on an illumination fan as is used on the companion illumination fan controller and would find it obvious to do so. *Id.*



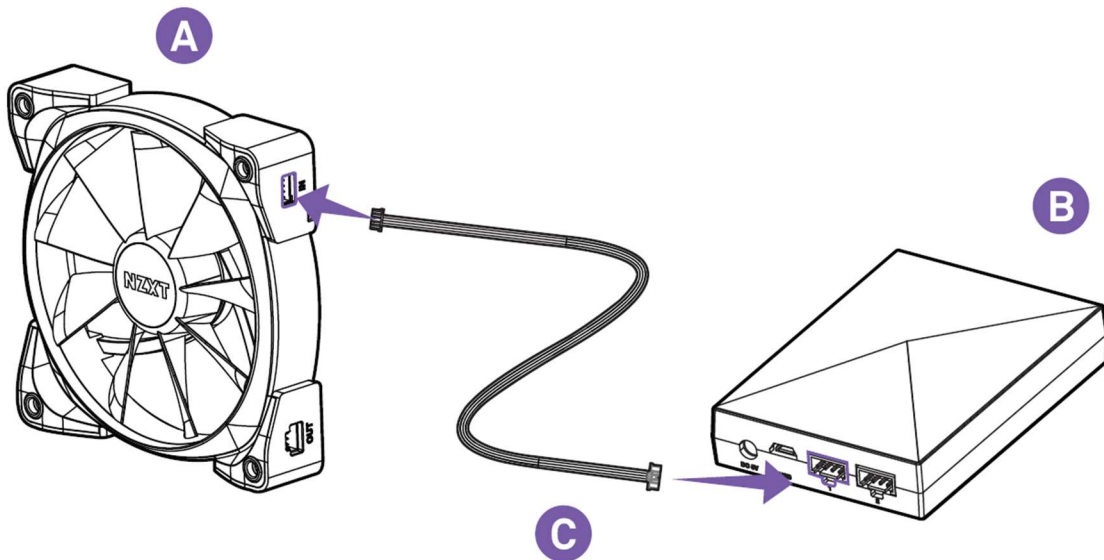
Thermaltake rgb fan manual 2017

As another example, a published review of the NZXT AER RGB120 illumination fan from 2017 corroborated by the NZXT AER RGB120 manual shows that illumination fans with two connectors on the same side of the fan were well known at the time. *Id.*, ¶48 (citing Ex[1051] and Ex[1052]).



NZXT AER RGB120 review

3 Connect the controller cable to the HUE⁺ and to the Aer RGB's IN port.



NZXT AER RGB120 manual

A POSITA would have been aware of all of these documents as well as corresponding products that demonstrate the obviousness of using connectors in one or two housings on a side of an illumination fan. *Id.*, ¶50.

6(A)(v): 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 Petitioners' prior Opposition showed, PO's proposed substitute claim 6 containing the amendment "a first connector disposed on the first side of the body, wherein the first connector is structurally distinct and separable from the power socket" is invalid as obvious over Tsuji in view of Huang. Paper 24 at 13-14. PO's

RMTA does not argue otherwise. For proposed substitute claim 6, PO only argues that Tsuji in view of Huang fails to teach Limitation (A)(iv) (*see* RMTA at 24), which is addressed in the Section immediately above.

B. Claim 7

7(A)(iv): a power socket comprising an opening disposed on the first side of the body; and

Tsuji discloses and/or renders obvious a power socket comprising an opening disposed on the first side of the body for the same reason as discussed for Limitation 6(A)(iv). Ex[1044], ¶104.

7(A)(v): a first connector 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

As discussed for Limitation 6(A)(v), Tsuji discloses and/or renders obvious a first connector disposed on the first one 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. *Id.*, ¶105.

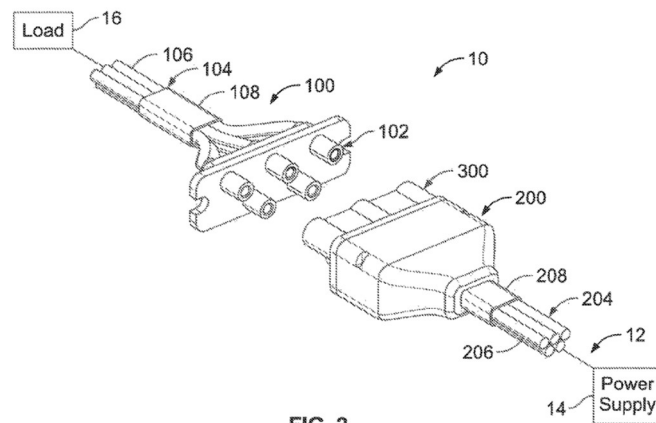
Further, as the Board recognized in its Preliminary Guidance, “Tsuji would render obvious a connector comprising a ‘flat surface’ recited in claim 7” because Tsuji’s first connector CNC and second connector CND “each include flat surfaces by which each connector connects to a connector from a next fan, even if the

connectors themselves are not flush with the side.” Paper 25 at 22-23. In the RMTA, PO makes no new argument that Tsuji’s connectors lack a flat surface. *See* RMTA at 23-25. PO’s expert further confirms that proposed substitute claim 7 does not require the claimed “flat surface” to be planar with no features extending outward from it or recessed from it. Ex[1045] at 191:13-20. Instead, proposed substitute claim 7 can read on a connector with electrical contacts that protrude from or are recessed from the outer surface. *Id.* at 194:4-8. Therefore, applying PO’s own construction, Tsuji would render obvious a connector comprising a “flat surface.”

Indeed, under PO’s construction of a connector comprising a “flat surface,” the use of connectors comprising a flat surface would have been so commonplace as to have been both disclosed by and obvious to use in light of the prior art. Ex[1044], ¶51. PO’s expert conceded as much during cross-examination. Ex[1045] at 203:10-13 (“Q. Were electrical connectors with a flat surface known before December 2018? A. I’m sure they were.”).

A simple search for connector patents from popular connector manufacturers also provides many suitable examples of known connectors with a flat surface. Ex[1044], ¶54. A POSITA would have been motivated to use such connectors in the prior art relied upon in this matter because almost all ordinary connectors meet this requirement. *Id.*, ¶51. U.S. Patent Application 2019/0260150 (Ex[1044]) illustrates

numerous such connectors including the connector in Figure 2 (reproduced below) that includes a flat surface. *Id.*, ¶54. This connector is intended to be disposed on the side of a housing (as illustrated by the fastening detent 120 on each side) and includes several round contacts protruding from the flat surface. *Id.*; Ex[1044] Figures 3-4 and [0028].



A similar disclosure of a connector is taught by U.S. Patent 8,840,415 (Ex[1047]). Ex[1044], ¶55. This patent relates to power connector systems and thus a POSITA would be motivated to look to it for a power connector. *Id.*; Ex[1047] at 1:5-6. Figure 3 (reproduced below) illustrates a power connector 102 including a housing 112 and any number of power terminals inside the housing. *Id.* at 3:5-28. This connector comprises a number of flat surfaces on the bottom, sides, and front. Ex[1044], ¶55.

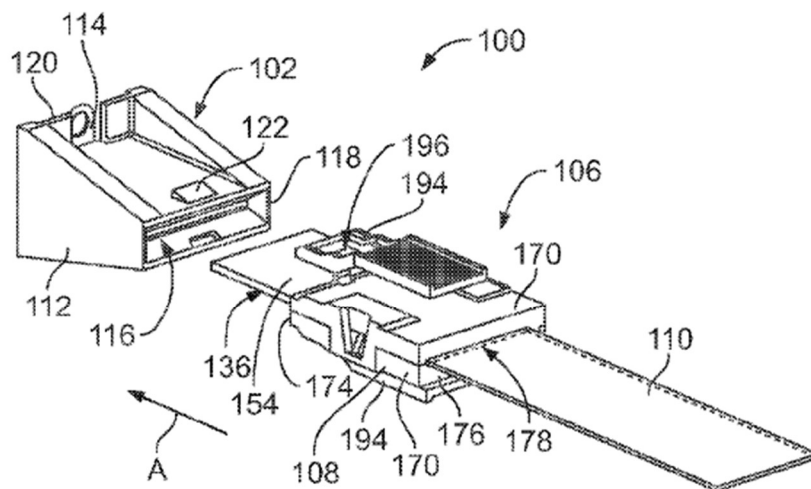
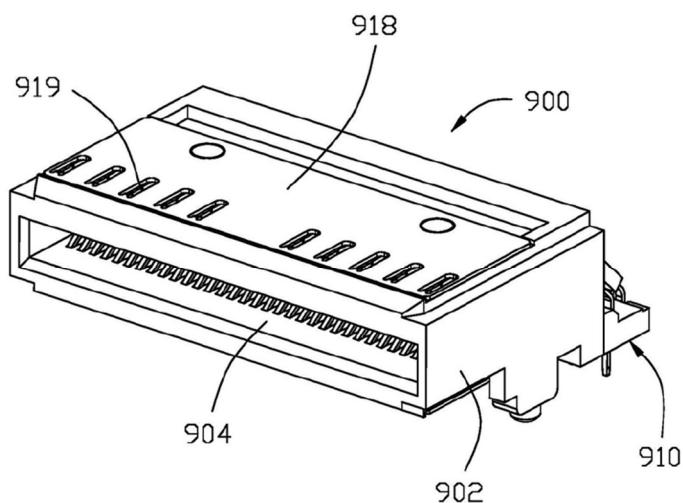


FIG. 3

A similar disclosure of a connector is illustrated in Chinese Patent CN107871987B (Ex[1048]). *Id.*, ¶56. This patent also clearly illustrates a connector with a flat outer surface. *Id.*



Further, PO's expert appears to contend that the claimed "flat surface" need not be on the actual conducting element of the connector but can be on any surface of the connector housing. *See, e.g.*, Ex[2052] pp. 29-30; Ex[1044], ¶25. Because PO's expert does not attribute any claimed functionality to the "comprising a first flat surface/ comprising a second flat surface" language and, in fact, contends that it can be any surface of the connector, it does not appear to be more than an aesthetic limitation. Ex[1044], ¶25. Aesthetic claim elements are not sufficient to distinguish prior art. *See, e.g.*, MPEP at 2144.04 ("matters relating to ornamentation only which have no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art"). In any event, Limitation 7(A)(iv) is obvious in light of the simple and obvious design choice of any admittedly known and ordinary connector or by combining the teaching of Tsuji (i.e., Tsuji's first connector CNC) with the abovementioned references. Ex[1044], ¶57.

7(A)(vi): a second connector comprising a second flat surface disposed on the second side of the body;

Tsuji discloses and/or renders obvious a second connector CND on the right side of the fan body. *Id.*, ¶107. As explained above for Limitation 7(A)(v), using a flat surface as the connector was widely known in the art and would have been obvious. *Id.*, ¶108.

IV. PROPOSED SUBSTITUTE CLAIMS 6-7 ARE OBVIOUS UNDER GROUND 4 IN THE PETITION: LAI IN VIEW OF HASEGAWA

Proposed substitute claims 6-7 are obvious over Lai in view of Hasegawa as shown in the Petition (Paper 1 at 55-76), in the Reply in support of the Petition (Paper 23 at 11-23), in Petitioners' prior Opposition (Paper 24 at 15-24), and as established by Dr. Wolfe in his Reply Declaration (Ex[1031] at ¶¶132-173) and Supplemental Reply Declaration (Ex[1044] at ¶¶111-150). Again, the only two limitations that PO incorrectly contends are novel and non-obvious over the prior art are addressed below.

A. Claim 6

6(A)(iv): a power socket comprising an opening disposed on the first side of the body; and

As Petitioners' prior Opposition showed, PO's proposed substitute claims containing the amendment "a power socket comprising an opening disposed on the first side of the body" are invalid as obvious over Lai in view of Hasegawa. Paper 24 at 15-22.

It also would have been obvious to a POSITA to separate a first connector and the power socket into two housings for the same reasons stated in Section III.A. Ex[1044], ¶118.

6(A)(v): a first connector disposed on the first one side of the body, wherein the first connector is structurally distinct and separable from the power socket

As Petitioners' prior Opposition showed, PO's proposed substitute claims containing the amendment "a first connector disposed on the first one side of the body, wherein the first connector is structurally distinct and separable from the power socket" are invalid as obvious over Lai in view of Hasegawa. Paper 24 at 22-23. It also would have been obvious to a POSITA to separate a first connector and the power socket into two housings for the same reasons stated in Section III.A. Ex[1044], ¶124.

B. Claim 7

7(A)(iv): a power socket comprising an opening disposed on the first side of the body; and

Lai discloses a power socket comprising an opening disposed on the first side of the body for the same reasons as discussed for Limitation 6(A)(iv). *Id.*, ¶144.

7(A)(v): a first connector 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

As discussed for Limitation 6(A)(v), Lai discloses and/or renders obvious a first connector disposed on the first one 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. *Id.*, ¶145. As discussed above in Section III.B, using a flat surface as the connector was admittedly widely known in the art and would have been obvious. *Id.*, ¶146.

7(A)(vi): a second connector comprising a second flat surface disposed on the second side of the body;

Lai discloses and/or renders obvious a second connector 112 on the right side of the fan body. *Id.*, ¶147. And, as discussed above for Limitation 7(A)(v), using a flat surface as the connector was widely known in the art and would have been obvious. *Id.*, ¶148.

V. CONCLUSION

For the foregoing reasons, Petitioners respectfully request that the Board deny PO's RMTA because proposed substitute claims 6-7 fail the requirements of 35 U.S.C. § 112 and because they are unpatentable.

Dated: October 29, 2025

Respectfully submitted,

/Robert C.F. Pérez/

Robert C.F. Pérez (Reg. No. 39,328)

PILLSBURY WINTHROP SHAW PITTMAN LLP

7900 Tysons One Place, Suite 500

Tysons, VA 22102

Telephone: 703.770.7759

Facsimile: 703.770.7901

Email: robert.perez@pillsburylaw.com

Jaclyn Schade (Reg. No. 50,569)
PILLSBURY WINTHROP SHAW PITTMAN LLP
7900 Tysons One Place, Suite 500
McLean, VA 22102
Telephone: 703.770.7900
Facsimile: 703.770.7901
Email: jaclyn.schade@pillsburylaw.com

Christopher Kao (*pro hac vice*)
David J. Tsai (*pro hac vice*)
Brock S. Weber (*pro hac vice*)
Surui Qu (*pro hac vice*)
PILLSBURY WINTHROP SHAW PITTMAN LLP
Four Embarcadero Center, 22nd Floor
San Francisco, CA 94111
Telephone: 415.983.1000
Email: christopher.kao@pillsburylaw.com
Email: david.tsai@pillsburylaw.com
Email: brock.weber@pillsburylaw.com
Email: surui.qu@pillsburylaw.com

Counsel for Petitioners

CERTIFICATE OF COMPLIANCE

1. The undersigned certifies that this brief complies with the type volume limitations of 37 CFR § 42.24(b)(iii). This brief contains 25 pages (excluding the table of contents, the table of authorities, mandatory notices under 37 CFR § 42.8, the certificate of service, certificate of compliance, and appendix of exhibits).

2. The undersigned further certifies that this brief complies with the typeface requirements of 37 CFR § 42.6(a)(2)(ii) and typestyle requirements of 37 CFR § 42.6(a)(2)(iii). This brief has been prepared in a proportionally spaced typeface using Microsoft Word in Times New Roman 14-point font.

Dated: October 29, 2025

Respectfully submitted,

By: /Robert C.F. Pérez/
Robert C.F. Pérez (Reg. No. 39,328)
PILLSBURY WINTHROP SHAW
PITTMAN LLP
7900 Tysons One Place, Suite 500
Tysons, VA 22102
Telephone: 703.770.7759
Facsimile: 703.770.7901
Email: robert.perez@pillsburylaw.com

Counsel for Petitioners

CERTIFICATE OF SERVICE

The undersigned hereby certifies that on October 29, 2025, a true and correct copy of the foregoing **PETITIONERS' OPPOSITION TO PATENT OWNER'S REVISED CONTINGENT MOTION TO AMEND** is being served via electronic mail as agreed by the parties on the following attorneys of record:

LEAD COUNSEL	BACK-UP COUNSEL
Heath J. Briggs (Reg. No. 54,919) GREENBERG TRAURIG, LLP 1144 15th Street, Suite 3300 Denver, CO 80202 Telephone: 303-685-7418 Facsimile: 720-904-6118 Email: BriggsH@gtlaw.com	James L. Ryerson (Reg. No. 64,617) GREENBERG TRAURIG, LLP 500 Campus Drive, Suite 400 Florham, NJ 07932 Telephone: 973-360-7900 Facsimile: 973-301-8410 Email: ryersonj@gtlaw.com
	Kyle Chen (<i>Pro Hac Vice</i>) GREENBERG TRAURIG, LLP 1900 University Avenue, 5th Floor East Palo Alto, CA 94303 Telephone: 650-328-8500 Facsimile: 650-328-8508 Email: kchen@gtlaw.com

By: /Robert C.F. Pérez/
Robert C.F. Pérez (Reg. No. 39,328)
Lead Counsel

Counsel for Petitioners