

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CURRENT LIGHTING SOLUTIONS, LLC
D/B/A GE CURRENT

Petitioner,

v.

JIAXING SUPER LIGHTING ELECTRIC APPLIANCE CO., LTD.

Patent Owner.

Case No. IPR2023-00675

Patent No. 10,897,801

PATENT OWNER'S PRELIMINARY RESPONSE

Table of Contents

EXHIBIT LIST	ii
I. Introduction.....	1
II. PETITIONER HAS NOT ESTABLISHED A REASONABLE LIKELIHOOD OF PROVING ANY CHALLENGED CLAIM IS INVALID.	1
A. Petitioner Has Not Shown That Any Challenged Claims Are Obvious Based on Ground 1.....	1
B. Grounds 2 and 3 Fail for the Same Reasons.....	13
III. Conclusion.....	13

EXHIBIT LIST

Exhibit	Description
2001	<i>Current Lighting Solutions, LLC D/B/A/ GE Current v. Jiaxing Super Lighting Electric Appliance Co., Ltd.</i> , IPR2023-00269, Paper 18 (PTAB Aug. 16, 2023) (denying institution of <i>inter partes</i> review).

I. INTRODUCTION

Current's Petition challenging the '801 patent cannot be instituted. The challenged claims consist of one independent claim, claim 13, and twelve dependent claims that depend from claim 13. Inexplicably, the Petition completely ignores the express requirement in claim 13 for "at least one opening being on the end wall." None of the cited prior art references teach or suggest this feature, and the Petition does not even argue that they do. While this failing is fatal to the Petition, Petitioner also fails to demonstrate sufficient motivation to combine the Li and Ono references and fails to show that the prior art teaches or suggests locating a resistor close to the end wall of the end cap as required by all the challenged claims. Accordingly, the Petition fails to demonstrate a reasonable likelihood that any of the challenged claims are unpatentable, and institution must be denied.

II. PETITIONER HAS NOT ESTABLISHED A REASONABLE LIKELIHOOD OF PROVING ANY CHALLENGED CLAIMS INVALID.

A. Petitioner Has Not Shown That Any Challenged Claims Are Obvious Based on Ground 1.

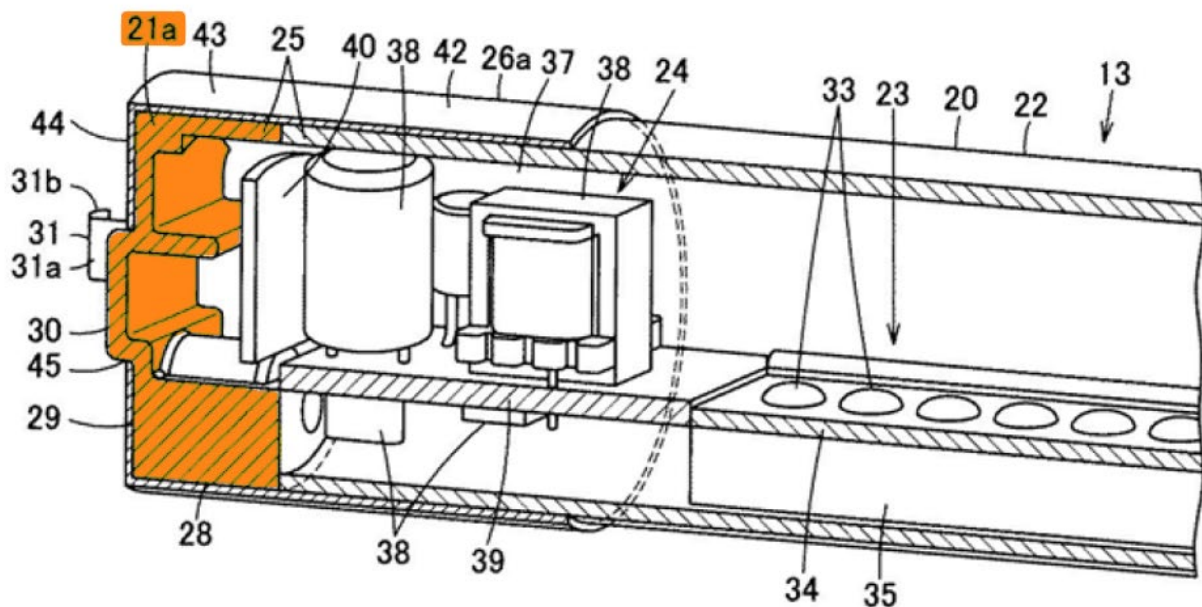
1. The Petition Fails to Address the Entirety of Limitation 13[e2].

Limitation 13[e2] recites "wherein in the end wall comprises an insulating portion made of an insulating material and *at least one opening being on the end*

wall.” Pet. at p. vi (emphasis added). Petitioner’s discussion of limitation 13[e2] completely ignores the requirement for an opening on the end wall. See Pet. at 38. Petitioner’s expert, Dr. Ackley, also ignores the requirement. See Ex. 1003 ¶ 99.

Petitioner argues that Ono’s cap 21a satisfies the requirement in 13[e2] that “the end wall compris[e] an insulating portion made of an insulating material.” Pet. at 38. But Ono’s end cap 21a does not include any openings in its end wall. For example, Fig. 1 shows end cap 21a having no openings on its end surface 29:

[Fig. 1]



Ex. 1006 (“Ono”) at Fig. 1 (highlighting added). Although Petitioner expressly relies on Ono’s end caps, Patent Owner notes that Li’s end covers 21 have no openings either. See Ex. 1005 (“Li”) at Fig. 1.

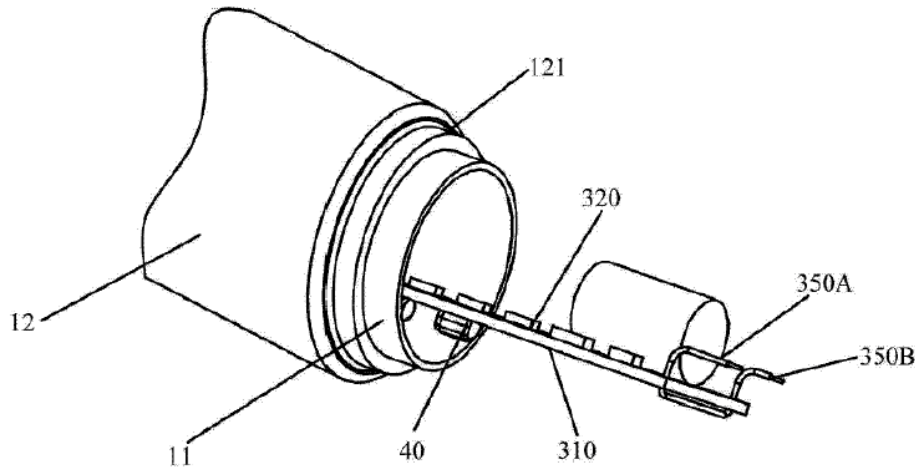
By failing to address an express limitation of claim 13, Petitioner has failed to demonstrate that the claim is obvious. *See, e.g., Verizon Bus. Network Servs. Inc. v. Huawei Techs. Co. Ltd.*, IPR2020-01080, Paper 39 at 34-36 (PTAB Jan. 12, 2022) (holding petitioner failed to demonstrate obviousness of claims containing a limitation the petitioner failed to address in its petition). Moreover, because all of the other challenged claims depend from claim 13, Petitioner has failed to show *any* of the challenged claims are obvious. Accordingly, the Petition cannot be instituted. *See* 35 U.S.C. § 314(a) (IPR cannot be instituted unless petitioner “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition”)

2. The Petition Fails to Show the Prior Art Teaches or Suggests Limitation 13[h].

Limitation 13[h] recites, in part, “a resistor which is positioned close to the end wall of the first end cap.” Pet. at p. *vii* (emphasis added). Petitioner fails to show that Ground 1 teaches or suggests this limitation.

Petitioner first points to Li’s Fig. 6. Pet. at 42-43. But Li does not disclose or suggest that the circuit diagram in Fig. 6 reflects the physical layout of the components on substrate 310. Indeed, there is no clear correspondence between the circuit diagram shown in Li’s Fig. 6 and the depiction of substrate 310 in Fig.

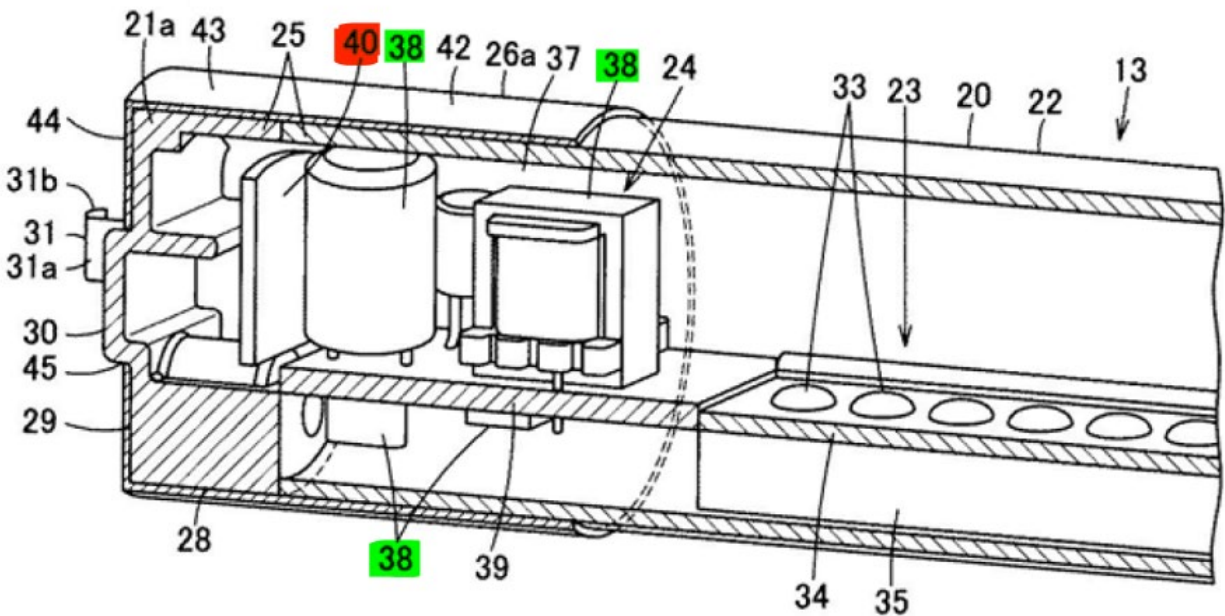
3.

**Fig. 3**

Li at Fig. 3. *See also* Ex. 2001 (IPR2023-00675, Paper 18 (denying institution of related patent)) at 22 (“[C]onsistent with Patent Owner’s argument, Li’s Figure 6 is a ‘schematic circuit diagram,’ not a representation of lamp components’ spatial arrangement.”).

Petitioner next argues that “[t]he location of [Li’s] varistor R1 closest to the end wall of the end cap is confirmed by Ono.” Pet. at 43. However, Ono never expressly discloses or suggests placing a resistor (or any other particular component) close to the end wall of the end cap. Indeed, Ono uses the generic identifier 38 to refer to a variety of components including resistors, switching elements, capacitors, and inductors. Ono at ¶ [0017]. *Id.* at Fig. 1. Moreover, Ono’s figure 1 (above) shows auxiliary board 40 as closer to the end wall of the end cap than any of the components labelled 38. *Id.* at ¶ [0017] (discussing auxiliary board 40).

[Fig. 1]



Id. at Fig. 1 (highlighting added). *See also* Ex. 2001 at 24 (“Petitioner does not address auxiliary board 40, much less its position closer to the end wall than any resistor or capacitor on circuit board 39.”); *see also generally id.* at 23-24 (rejecting Petitioner’s similar argument based on Ono).

Lastly, Petitioner asserts in conclusory fashion that a POSITA would have placed a resistor close to the end wall of the end cap to facilitate “heat dissipation.” Pet. at 44. Petitioner cites only Dr. Ackley’s declaration for support, but his discussion consists only of the following hindsight-based analysis:

Further, a POSITA would have understood that resistors are heat generating circuit elements. *See, e.g.,* EX1019, 1/2. Therefore, it would have been obvious for a POSITA

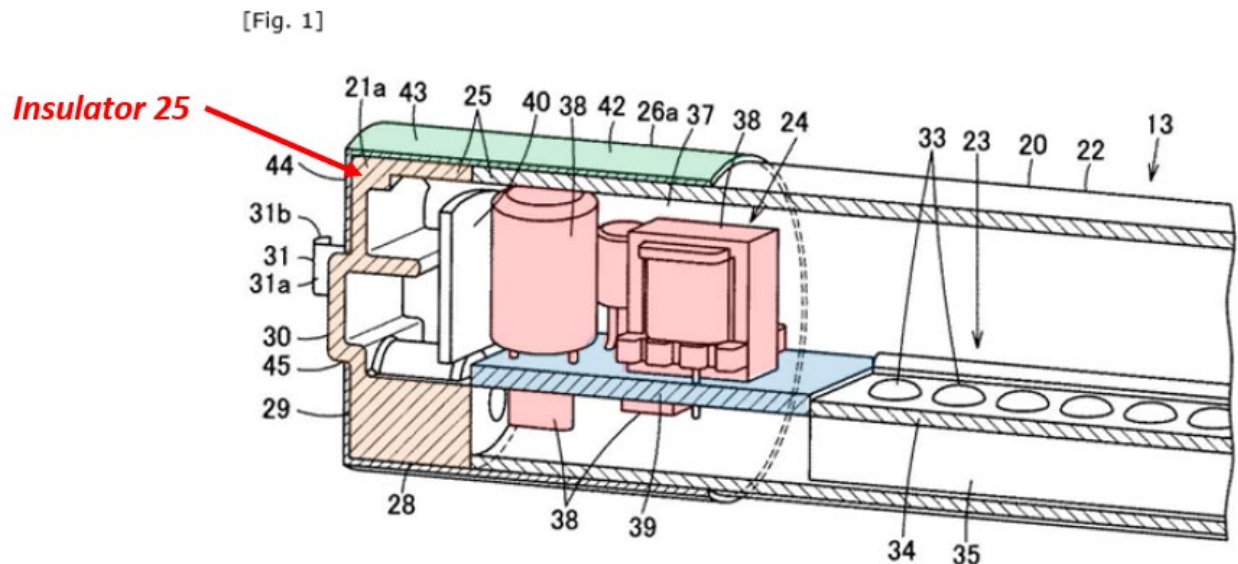
to place the varistor R1 closest to the end cap such that heat would be efficiently dissipated through heat dissipating functions in the end caps, such as ventilating holes. This placement would cool the resistor as well as minimize the effects of the resistor heating up other components on the PCB and improve the lifespan of the LED lamp. As an alternative to, or in addition to ventilation holes, the PCB could be placed in direct contact with the end cap. A POSITA would have understood that heat is transferred to the end cap through this direct connection and would have been conducted out of the LED lamp to the outside environment directly through the end wall or through the conducting pins. Thus, it would have been obvious to a POSITA to locate the (heat generating) varistor R1 closest to the end cap.

Ex. 1003 ¶ 107.

Dr. Ackley's reasoning relies on "ventilating holes" in the end caps even though, as discussed, neither Li nor Ono discloses end caps with ventilating holes. Dr. Ackley also suggests it would have been obvious to directly connect a resistor and the end cap—another feature not disclosed or suggested by Li or Ono. *See Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1368 (Fed. Cir. 2012) ("While the Supreme Court made clear that a mechanical application of the teaching-suggestion-motivation test, requiring an explicit teaching in the prior art,

is inappropriate, “[w]e must still be careful not to allow hindsight reconstruction of references to reach the claimed invention without any explanation as to how or why the references would be combined to produce the claimed invention.””) (citation omitted).

Beyond smacking of improper hindsight, Petitioner and Dr. Ackley’s heat dissipation arguments plainly contradict Petitioner’s specific reliance on Ono’s “*insulator end caps*” in the proposed combination. See Pet. at 25-26 (emphasis added). The insulator 25 in Ono’s end cap would *inhibit heat dissipation* through the end wall of the end cap.

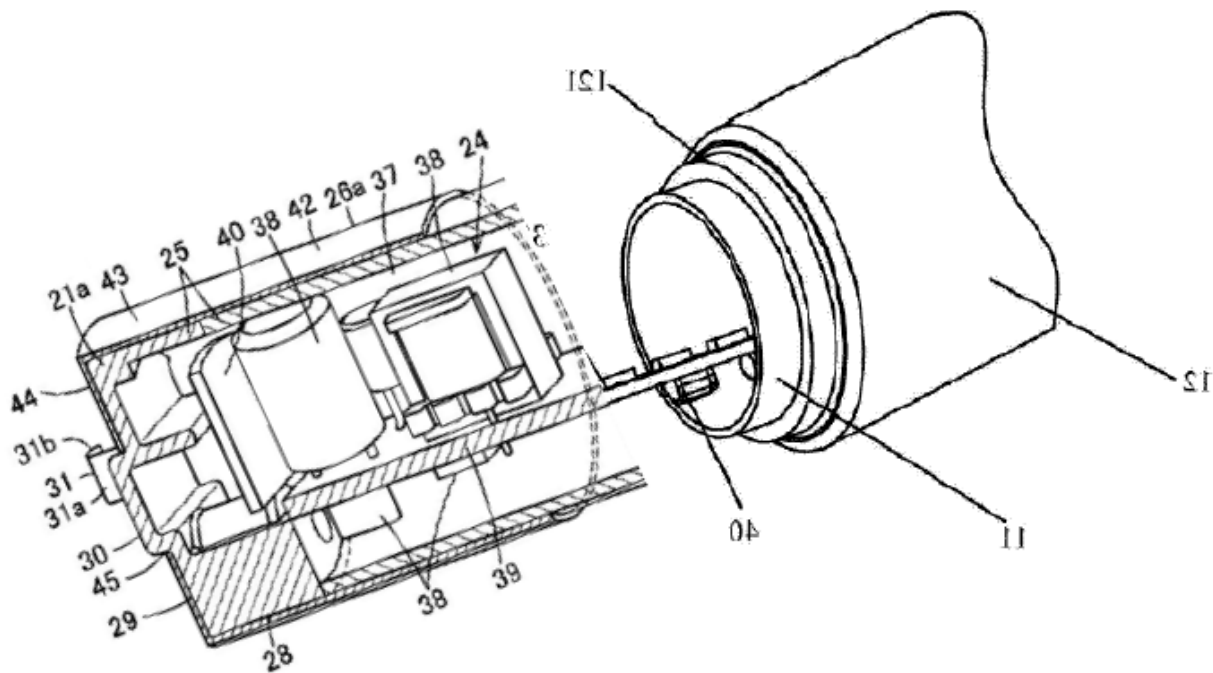


Pet. at 20 (red annotations added).

Accordingly, Petitioner has not shown that Ground 1 teaches or suggests limitation 13[h]. Because all the other challenged claims depend from claim 13, Ground 1 also fails to render obvious any of those claims.

3. Petitioner Has Failed to Meet Its Burden of Showing That A POSA Would Have Combined Li with Ono and Holec in the Manner Petitioner Proposes.

Petitioner's proposed combination of Li and Ono relies on Li for the overall design of the LED lamp and relies on Ono for several features including (1) Ono's insulator end caps and non-combustible covers and (2) Ono's double-sided PCB implementation for a drive circuit. *See* Pet. at 20-24. The Petition contains the below mock-up that combines Fig. 1 of Ono and Fig. 3 of Li.



Id. at 31.

Petitioner fails to adequately demonstrate that a POSITA would have been motivated to combine Li and Ono in the manner Petitioner proposes. First, Petitioner ignores Li's teaching from the "Summary of the Invention" section that "the LED units and the drive circuit module are integrated on the same substrate,

thereby reducing the volume of optoelectronic units and enabling optimization of the overall structure of the LED fluorescent lamp.” Li at [0015].¹ Petitioner’s proposal involves connecting Ono’s lighting circuit PCB with Li’s LED substrate by soldering the two circuit boards together. Pet. at 31 (summarizing proposed combination of Li, Ono, and Holec). But this proposed combination would eliminate the stated advantages of Li’s single substrate design. Despite arguing that a POSITA would be motivated to *simplify manufacturing* and *reduce the number of parts* (Pet. at 25-26), Petitioner suggests a POSITA would do precisely the opposite by replacing Li’s single substrate with two separate circuit boards that need to be soldered together. Further, Petitioner fails to identify a single benefit that would be gained by dividing Li’s single substrate into two circuit boards as Petitioner proposes.

Second, Petitioner fails to persuasively explain why a POSITA would try to combine Li’s drive circuit with Ono’s PCB when it would be easier to simply use Ono’s PCB without change to achieve the same results. Petitioner asserts that Ono’s “lighting circuit 24 is a double-sided PCB with a particular configuration of well-known components.” Pet. at 29. Petitioner further asserts that Ono’s

¹ Petitioner’s assertion that Li fails to “describe how the PCB and LED light strip are connected to one another” is incorrect. *See* Pet. at 27.

lighting circuit 24 “serve[s] the same function [as Li’s drive circuit] of providing power to LEDs using a double-sided PCB.” *Id*; *see also* Ex. 1003 ¶ 86 (“Both Li’s drive circuit and Ono’s lighting circuit 24 serve the same purpose: providing power to LED lamps.”). Dr. Ackley also states that “Ono itself successfully implements its lamp-end configuration in LED tube lamps used to replace conventional fluorescent bulbs” and that “[t]his is an identical application as Li.” Ex. 1003 ¶ 88. Assuming for argument’s sake that Petitioner is correct that a POSITA would look to Ono because Li provides “limited detail” regarding its drive circuit (*id.* at 24; Ex. 1003 ¶ 80), Petitioner fails to provide any reason for not simply using Ono’s PCB which already contains a drive circuit that does the same thing as Li’s. Indeed, Petitioner does not identify a single advantage that would justify modifying Ono’s PCB to use Li’s drive circuit rather than simply using Ono’s PCB as-is.

Petitioner’s proposed combination of Li and Ono also ignores important heat dissipation teachings of Li. Li discloses, for example, that “in order to improve the heat dissipation capability, the substrate surface can be covered with an infrared radiation material, or the substrate can be made of a material with excellent thermal conductivity and infrared radiation performance, so that the heat from the LED units and the driver power supply module is dissipated by means of heat conduction and heat radiation at the same time.” Li at ¶ [0096]. Given Li

already discloses features to dissipate heat from the drive circuit, Petitioner fails to show why a POSA would view Ono’s distinct heat dissipation features as necessary or worthwhile, particularly when they rely on additional components (e.g., non-combustible covers 26a) that would add cost and complicate the manufacturing process—contrary to Li’s stated goal (*see* Li at ¶ [0006]).

In addition to glossing over the issues above, Petitioner offers arguments concerning motivation to combine that are superficial and conclusory. For example, Petitioner suggests that Ono’s “end cap configuration” would somehow “reduce the number of parts and improve the efficiency of assembly” Pet. at 26. But swapping Ono’s two end caps (21a, 21b) for Li’s two end caps (21, 22) would not reduce the number of parts, and adding Ono’s non-combustible covers, as proposed,² would *increase the number of parts* and add steps to the manufacturing process.

Petitioner’s “obvious to try” arguments (*see* Pet. at 27-29) are conclusory and unpersuasive. Petitioner and its expert baldly assert “there were a finite number of identified, predictable solutions as POSITA would have pursued” to

² *See* Pet. at 25 (“A POSITA would have been motivated to configure the ends of Li’s lamp ... with the insulator end caps *within a non-combustible cover like Ono’s* for each of several independent reasons.”) (emphasis added).

implement Li's drive circuit using Ono's approach of a double-sided PCB with capacitors and inductors on one surface and resistors and switches on the other. Pet. at 27-28; Ex. 1003 ¶ 83. Notably, Li does not disclose *a double-sided drive circuit*, only that the "strip substrate" that includes the LEDs and the drive circuit is preferably "an aluminum substrate or double-sided printed circuit board." Li at [0021]. Neither Petitioner nor its expert actually present *any reasoning or evidence* to support their claim that Ono's "double sided PCB ... with a particular arrangement of components" (Pet. at 28) was one of only a small number of solutions for implementing a drive circuit on a strip substrate as Li discloses. *See* Pet. at 27-28; Ex. 1003 ¶ 83.

Petitioner's "simple substitution" argument (*see* Pet. at 29-30) is also flawed because, as already discussed, the interchangeability of the drive circuits between the two references would motivate a POSA simply to utilize Ono's drive circuit, not to try to devise a new drive circuit by combining aspects of the drive circuits in both references for no benefit whatsoever as Petitioner proposes.

Finally, Petitioner's "expectation of success" argument (*see* Pet. at 30-31) does not provide any motivation to combine the teachings of Li and Ono in the manner that Petitioner proposes. At most, the argument addresses why a POSA would expect the proposed combination to be successful. *See, e.g., Unified Patents, LLC v. Velos Media, LLC*, IPR2019-01663, Paper 9, at 14 (Apr. 17,

2020) (allegations of reasonable expectation of success, even if true, “are insufficient, because they do not establish a reason *why* the skilled artisan would have gone down that path in the first place”) (emphasis original) (citing *KSR Int’l Co., v. Teleflex Inc.*, 550 U.S. 398, 418 (2007)).

B. Grounds 2 and 3 Fail for the Same Reasons.

Grounds 2 and 3 add further secondary references, Guang and Esaki, to attack claims 18-25, all of which depend from claim 13. *See* Pet. at 4. Neither Ground 2 nor Ground 3 addresses limitation 13[e2] which Petitioner ignored in Ground 1. *See* Pet. at 49-82. Because dependent claims 18-25 include limitations 13[e2] and 13[h] by virtue of their dependency on claim 13, Grounds 2 and 3 fail for at least the same reason as Ground 1.

III. CONCLUSION

For all the reasons discussed above, the Board should deny institution of Petitioner’s Petition for *inter partes* review of the ’801 Patent.

Dated: August 31, 2023

Respectfully submitted,

/Patrick J. McKeever/

Lead Counsel

Patrick J. McKeever, Reg. No. 66,019

Back-Up Counsels

Miguel Bombach, Reg. No. 68,636

Matthew C. Bernstein (pro hac vice)

Evan Day, Reg. No. 75,992

Han-Wei Chen, Reg. No. 75,350

Wei Yuan, Reg. No. 71,772

PERKINS COIE LLP

11452 El Camino Real, Suite 300

San Diego, California 92130

Tel: (858) 720-5700

Attorneys for Patent Owner

*Jiaxing Super Lighting Electric Appliance
Co., Ltd.*

CERTIFICATION OF WORD COUNT UNDER 37 C.F.R. § 42.24(d)

Pursuant to 37 C.F.R. § 42.24(d), the undersigned hereby certifies that the word count for the foregoing Patent Owner's Preliminary Response totals 2,465 excluding the parts exempted by 37 C.F.R. § 42.24(a). Accordingly, this Petition is under the word count limit of 14,000 words.

This word count was calculated by using the built-in word-count tool in Microsoft Word 2016, the software used to prepare the document.

Dated: August 31, 2023

Respectfully submitted,

PERKINS COIE LLP
11452 El Camino Real, Suite 300
San Diego, CA 92130
Telephone: (858) 720-5700
Fax: (858) 720-5834

/Patrick J. McKeever/

Lead Counsel
Patrick J. McKeever, Reg. No. 66,019

Back-Up Counsel
Miguel Bombach, Reg. No. 68,636'
Matthew C. Bernstein (pro hac vice)
Evan Day, Reg. No. 75,992
Han-Wei Chen, Reg. No. 75,350
Wei Yuan, Reg. No. 71,772

PERKINS COIE LLP
11452 El Camino Real, Suite 300
San Diego, California 92130
Tel: (858) 720-5700

Attorneys for Patent Owner
Jiaxing Super Lighting Electric Appliance
Co., Ltd.

CERTIFICATE OF SERVICE

I hereby certify that true and correct copies of the foregoing PATENT OWNER'S PRELIMINARY RESPONSE and Exhibit 2001 were served via electronic mail upon the following counsel of record for Petitioner:

Eagle H. Robinson
eagle.robinson@nortonrosefulbright.com
Arthur P. Licygiewicz
art.licygiewicz@nortonrosefulbright.com
Catherine J. Garza
cat.garza@nortonrosefulbright.com
Valerie Barker
valerie.barker@nortonrosefulbright.com

Norton Rose Fulbright US LLP
98 San Jacinto Boulevard, Suite 1100
Austin, TX 78701

Dated: August 31, 2023

/Kristina Grauer/
Kristina Grauer
Paralegal