

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HOME DEPOT USA, INC.,
Petitioner,

v.

LYNK LABS, INC.,
Patent Owner.

Case PGR2022-00009
U.S. Patent No. 10,932,341

PATENT OWNER'S RESPONSE PURSUANT TO 37 C.F.R. § 42.120

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EXHIBIT LIST	
2001	Lynk Labs Motion for Expedited Scheduling Conference, 1:21-cv- 05021 (N.D. Ga.) (Dkt. 60) (Dec. 22, 2021)
2002	Home Depot’s Preliminary Invalidity Contentions (Aug. 18, 2021)
2003	Lynk Labs Opposition to Home Depot’s Motion to Transfer Venue, 6:21-cv-00097 (W.D. Tex.) (Dkt. 47) (Nov. 29, 2021)
2004	Home Depot USA, Inc.’s Motion to Stay, 1:21-cv-05021 (N.D. Ga.) (Dkt. 56) (Dec. 21, 2021)
2005	Order Setting <i>Markman</i> Hearing, 6:21-cv-00097 (W.D. Tex.) (Dkt. 48) (Nov. 29, 2021)
2006	Joint Claim Construction Statement, 6:21-cv-00097 (W.D. Tex.) (Dkt. 49) (Nov. 30, 2021)
2007	Reserved
2008	Declaration of Dr. Eric Bretschneider (“Bretschneider Decl.”)
2009	CV of Dr. Eric Bretschneider
2010	Deposition Transcript of Dr. Dean Neikirk, dated July 29, 2022. (“Neikirk Tr.”)
2011	<i>Excerpts from All About Circuits</i> , Tony R. Kuphaldt, 2001, available at https://www.allaboutcircuits.com/textbook/semiconductors/chpt-3/introduction-to-diodes-and-rectifiers/ (last accessed August 12, 2022) (“All About Circuits”)
2012	Datasheet for Samsung High Power LED LH502C, Rev. 2.2, May 4, 2022. (“Samsung Datasheet”)

2013	Datasheet for Cree CxxxMB290-S0100 series LEDs, 2003. (“Cree Datasheet”)
2014	<i>Printout from https://www.baldengineer.com/led-basics.html</i> (last accessed August 12, 2022). (“Bald Engineer”)
2015	Final Guidelines for Implementing the First Inventor To File Provisions of the AIA, 78 Fed. Reg. 11083 (Feb. 14, 2013).
2016	September 03, 2020 Information Disclosure Statement from file history for App. No. 16740295. (“9-3-20 IDS”)
2017	December 25, 2020 List of References Considered by Examiner from file history for App. No. 16740295. (“12-25-20 List of References Considered”)
2018	September 29, 2020 Information Disclosure Statement from file history for App. No. 16740295. (“9-29-20 IDS”)
2019	Declaration of Stephen McBride in Support of Exhibits 2011 and 2014 dated August 17, 2022

I. INTRODUCTION

U.S. Patent No. 10,932,341 (the “’341 Patent”) is directed towards a multi-voltage and multi-brightness LED lighting device and methods of using the same. Ex. 1001 [’341 Patent], Title. Petitioner Home Depot USA, Inc. (“Home Depot” or “Petitioner”) has petitioned for review of five grounds of alleged unpatentability against claims 1-5, 7-12 and 14-19 of the ’341 Patent.

As discussed below, the claims of the ’341 Patent are not impossible to perform and are supported by pre-AIA applications. Petitioner’s arguments otherwise rely on interpreting the ’341 Patent in manners that are not consistent with the explicit text of the claims and specification. Thus, the ’341 Patent is ineligible for post-grant review.

Further, each alleged ground of unpatentability independently fails for the reasons discussed below. None of the grounds discloses the claimed “switch” that enables a user to individually change a voltage level to or turn on/off separate LED circuits for the reasons discussed below. In particular, the transistor Q1 in Bruning is not switched by a user and nothing in Bruning indicates Bruning’s panel light setting is a switch. Further, Kabel’s manually activated slider bar does not switch LEDs on or off and Dowling’s two-way switch selects between different programs stored on a memory; it does not actually switch an LED on or off.

For the reasons set forth below, the '341 Patent is ineligible for post-grant review and the Petition fails to demonstrate by a preponderance of the evidence that any of challenged claims 1-5, 7-12 and 14-19 of the '341 Patent are unpatentable.

II. OVERVIEW OF THE '341 PATENT AND THE STATE OF THE ART

A. Technical Background

The general field of the '341 Patent is LED lighting, and in particular a multi-brightness LED lighting device having at least two LED circuits. Ex. 1001 ['341 Patent], Abstract. The '341 Patent “specifically relates to multiple voltage level and multiple brightness level light emitting diode circuits, single chips, packages and lamps ‘devices’ for direct AC voltage power source operation, bridge rectified AC voltage power source operation or constant DC voltage power source operation.” Ex. 1001 ['341 Patent], 1:41-46.

B. Challenged Claims

The Petition has challenged claims 1-5, 7-12 and 14-19 of the '341 Patent. Claims 1, 8, and 15 are independent and directed to an LED lighting device. The remainder of the claims depend from independent claims 1, 8 and 15. The independent claims are directed to LED lighting devices comprising at least two LED circuits configured to emit different color lights, where the LED lighting device contains a switch that may select between switching voltage level inputs to

the LED circuits or switching the LED circuits on or off. Additionally, the LED lighting device is configured to connect to an LED voltage power source.

The dependent claims recite further improvements on these concepts, including using at least two different DC forward voltages to the LED circuits, using switches to change the light output of the LED circuit, and using at least two different AC voltage power sources.

The grounds of the petition are as follows:

- Ground 1: Claims 3, 10 and 17 are invalid under 35 U.S.C. §112.
- Ground 2: Claims 4, 11 and 18 are invalid under 35 U.S.C. §112.
- Ground 3: Claims 1, 3, 5, 7-8, 10, 12, 14-15, 17 and 19 are anticipated under 35 U.S.C. §102 by Bruning (Ex. 1004).
- Ground 4: Claims 1-3, 5, 7-10, 12, 14-17 and 19 are obvious under 35 U.S.C. §103 over Bruning in view of Kabel (Ex. 1005).
- Ground 5: Claims 1-2, 5, 7-9, 12, 14-16 and 19 are obvious under 35 U.S.C. §103 over Dowling (Ex. 1006) in view of Mueller (Ex. 1007).

Note that '341 Patent claims 6, 13 and 20 of the '341 Patent are not challenged by any ground and are therefore not subject to this PGR. Further, claims 4, 11 and 18 are challenged only as impossible under Ground 2 and are not challenged by any prior art ground.

C. Level of Ordinary Skill

The Petition and Petitioner's expert (Dr. Neikirk) have asserted that a person of ordinary skill in the art as of the time of the '341 Patent would have had a bachelor's degree in electrical engineering, or similar technical field, with two years of relevant experience in the field of design and/or development of LEDs and circuits in the context of lighting control systems, and that an increase in experience could compensate for less education. Pet., 10-11, Ex. 1002 [Neikirk Decl.], ¶ 46. For purposes of institution, the Institution Decision adopted Petitioner's definition. Paper 9, 11.

As discussed above, the '341 Patent is directed toward lighting devices. *See* §II.A. Thus, the proper field is “the field of design and/or development of LEDs and circuits in the context of *lighting devices*,” not “*lighting control systems*.” *See, e.g.*, Ex. 1001 ['341 Patent], 1:26-29 (“The present invention specifically relates to multiple voltage level and multiple brightness level LED devices, packages and lamps.”), 1:41-46 (“The present invention specifically relates to multiple voltage level and multiple brightness level light emitting diode circuits, single chips, packages and lamps ‘devices’ ...”); Ex. 2008 [Bretschneider Decl.], ¶40. Indeed, as seen in '341 Patent, Figs. 1-12, the disclosure is directed to devices such as LED packages and lamps, not the control systems that can be used to control LEDs. Ex. 2008 [Bretschneider Decl.], ¶40. So, for example, the '341 Patent is directed to

devices like LED chips, bulbs, or lamps, not multicomponent lighting control systems.

III. CLAIM CONSTRUCTION

In accordance with 37 C.F.R. § 42.100(b), the PTAB construes the claims according to the same claim construction standard that would be used to construe the claims in district court. The claims should be construed starting with the ordinary and customary meaning as understood by the person of ordinary skill in the art (POSITA) and considering the intrinsic evidence consisting of (1) the claim language, (2) the specification, and (3) the prosecution history. *David Netzer Consulting Eng’r LLC v. Shell Oil Co.*, 824 F.3d 989, 993-94 (Fed. Cir. 2016); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312-15 (Fed. Cir. 2005).

Often, the specification is dispositive; it is the single best guide to the meaning of the disputed claim term and provides a “concordance for the claims.” *Wright Medical Tech., Inc. v. Osteonics Corp.*, 122 F.3d 1440, 1443 (Fed. Cir. 1997); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005). The specification acts as a dictionary when it expressly defines terms used in the claims or when it defines terms by implication. *Phillips*, 415 F.3d at 1321.

A. Background

The Petition argued that the preamble of the independent claims is limiting (Pet. 33) and argued for a construction of “forward voltage” to mean “the

minimum voltage difference required between the anode and cathode of the LEDs in the claimed circuit to allow current to flow through the LEDs.” Pet., 25.

Alternately, the Petition argued that “‘forward voltage’ should be construed as ‘a voltage in a diode’s forward direction.’”. Pet., 26. The Petition also argued that the claim terms “switch”, “selectable by a user switching the switch” and “driver” are entitled to their ordinary meaning and need no construction. Pet., 26-29.

Patent Owner did not dispute Petitioner’s construction for purposes of the preliminary response. Paper 5 [Preliminary Response], 13. The Institution Decision preliminarily adopted Petitioner’s proposed construction of “forward voltage” as “the minimum voltage difference required between the anode and cathode of the LEDs in the claimed circuit to allow current to flow through the LEDs” but declined to adopt any further constructions. Paper 10 [Institution Decision], 33-38.

B. Forward Voltage

1. Proper construction for “forward voltage”

The term “forward voltage” in the ’341 Patent should be construed as the operating voltage for the claimed LED circuit.

The term “forward voltage” is present in dependent claims 3, 10 and 17. Ex. 1001 [’341 Patent], claims 3, 10 and 17. Each of these claims is substantial similar. Claim 3 is representative and is reproduced below:

The LED lighting device of claim 1, wherein the switching of the switch provides at least two different DC forward voltages to at least one of the first operating LED circuit or the at least one additional LED circuit.

Id.

Per the express language of claim 3, a forward voltage is the voltage “provide[d]” to the claimed “operating LED circuit.” *Phillips*, 415 F.3d at 1312 (“It is a ‘bedrock principle’ of patent law that ‘the claims of a patent define the invention to which the patentee is entitled the right to exclude.’”) (internal citations and quotations omitted). This is essentially Patent Owner’s construction. Patent Owner’s construction uses the term “operating” voltage for the LED circuit to clarify that the claim requires voltage in a range that will actually cause the LED circuit to “operat[e]”—that is, illuminate in the manner intended. If the forward voltage were zero, below the minimum turn on voltage the LED circuit would not provide light and would not be an “operating LED circuit.” Ex. 2008 [Bretschneider Decl.], ¶46. If the forward voltage were above the maximum operating voltage for that particular LED circuit, a number of undesirable effects would occur, including possible LED failure, a shorter LED life, a shift away from the intended color or intensity, and/or excessive heat generation. Ex. 2008

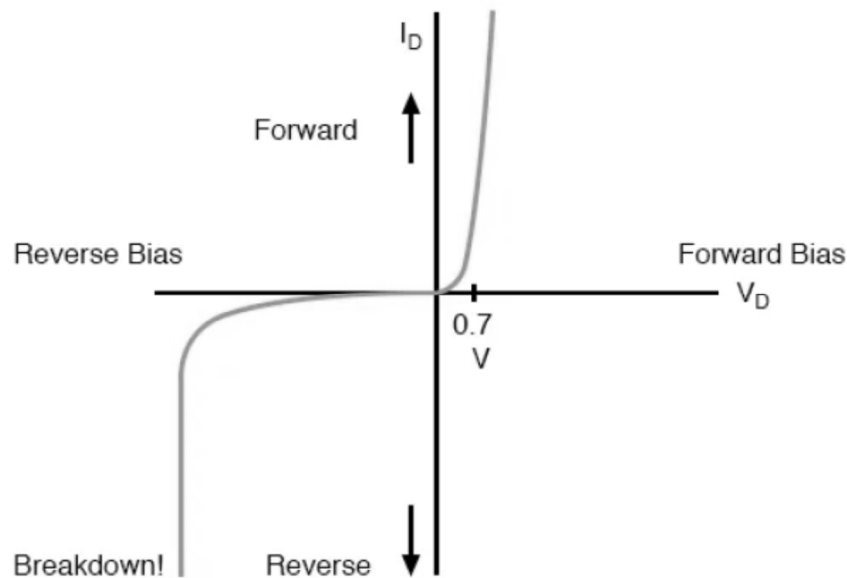
[Bretschneider Decl.], ¶46. Under any of these conditions, the LED circuit would not operate as intended.

The specification also supports Patent Owner's construction. *Phillips*, 415 F.3d at 1315 (“the specification ‘is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.’”) (internal citation and quotation omitted). The title of the '341 Patent is “multi-voltage and multi-brightness LED lighting devices and methods of using same.” Ex. 1001, ['341 Patent], Title. *See also id.*, Abstract (“A single chip multi-voltage or multi-brightness LED lighting device...”), 1:25-28 (“The present invention specifically relates to multiple voltage level and multiple brightness level LED devices, packages and lamps.”), 1:41-46 (same). Thus, the repeatedly stated purpose of the '341 Patent is to provide multiple voltages to LED lighting devices in order to change the brightness of the LED circuit.

Likewise, the specification continually references the fact that the forward voltage “drives” the LED circuit. *See, e.g.*, Ex. 1001 ['341 Patent], 3:12-14 (“This invention comprises circuits and devices that can be driven with more than one AC or DC forward voltage ‘multi-voltage’ at 6V or greater.”); 4:33-35 (“each single voltage series LED circuit is designed to be driven with a predetermined forward voltage...”); 4:38-41 (“each multi-voltage AC or DC LED device would be able to be driven with at least two different AC or DC forward voltages...”); 5:27-34

(referencing a first and second “forward voltage drive level.”). The term “drives” underscores that the forward voltage must be in the range sufficient to operate the LED circuit—that is, to turn on the LED circuit at the desired light intensity. Ex. 2008 [Bretschneider Decl.], ¶48. If the forward voltage was not within the operating range, it would not drive the LED circuit. Ex. 2008 [Bretschneider Decl.], ¶48.

The extrinsic record confirms Patent Owner’s construction. A basic property of diodes is that they have a range of forward voltages that may be applied for the diode to operate and are not limited to a single minimum voltage. For example, one electrical engineering textbook discloses that “[t]he voltage dropped across a conducting, forward-biased diode is called the *forward voltage*.” Ex. 2011 [All About Circuits]. Ex. 2011 [All About Circuits] explains that forward voltage “varies only slightly for changes in forward current and temperature” and provides a graph showing the relationship. As can be seen in the graph below, the forward voltage (labelled “Forward Bias”) for this particular diode varies from a minimum of about .5V to a maximum of about .9V depending on the current applied. Ex. 2008 [Bretschneider Decl.], ¶49.



The above disclosure indicates that for even a single diode, the forward voltage will vary depending on the current applied. A POSITA reviewing the '341 Patent would readily understand that the forward voltage must be within the operating range (i.e., the operating voltage) for the specific LED circuit being driven. Ex. 2008 [Bretschneider Decl.], ¶50. Again, this is because forward voltages outside of this range would not result in an “operating LED circuit.” Ex. 2008 [Bretschneider Decl.], ¶50. Designing LED circuits with forward voltages within operating ranges is critical. LED circuits are designed to operate with specific voltages and currents depending on the configuration and specifications of the LEDs. A POSITA would understand that LED circuits would not be designed with forward voltages outside of the operating range. Ex. 2008 [Bretschneider

Decl.], ¶50. Accordingly, a POSITA would understand that the term “forward voltage” in the ’341 Patent should be construed as the operating voltage for the claimed LED circuit.

2. Petitioner’s constructions are incorrect

As discussed above, Petitioner argued for a construction of “forward voltage” to mean either “the minimum voltage difference required between the anode and cathode of the LEDs in the claimed circuit to allow current to flow through the LEDs.” (Pet., 25) or, alternatively, as ““a voltage in a diode’s forward direction.””. Pet., 26. Both constructions are incorrect.

a. Petitioner’s first construction is incorrect

Petitioner’s first proposed construction is “the minimum voltage difference required between the anode and cathode of the LEDs in the claimed circuit to allow current to flow through the LEDs.” Petitioner bootstraps this proposed construction to further argue that it means the forward voltage in claims 3, 10 and 17 must be a single, predetermined voltage. Pet. 25-26. This is incorrect.

Petitioner’s construction is inconsistent with the claims and specification as discussed above. Claims 3, 10 and 17 ***require “two different” forward voltages.*** Construing “forward voltage” in a manner that limits it to only one voltage directly contradicts the express language of the claims. *See, e.g., ACTV, Inc. v. Walt Disney Co.*, 346 F.3d 1082, 1088 (Fed. Cir. 2003) (“the context of the surrounding words

of the claim also must be considered in determining the ordinary and customary meaning of those terms”).

Further, interpreting forward voltage to be one fixed minimum voltage would be contrary to the central purpose of the '341 Patent, which is to provide multiple voltage levels and multiple brightness levels to LED circuits. *See, e.g.,* Ex. 1001 ['341 Patent], Title, Abstract, 3:12-14, 4:33-35, 4:38-41, 5:27-34. *See, e.g., Nobel Biocare Services AG v. Intradent USA, Inc.*, 903 F.3d 1365 (Fed. Cir. 2018) (“there is a strong presumption against a claim construction that excludes a disclosed embodiment.”) (*quoting In re Katz Interactive Call Processing Patent Litig.*, 639 F.3d 1303, 1324 (Fed. Cir. 2011)). Petitioner’s construction would exclude numerous embodiments of the '341 Patent discussed above, including the embodiment covering the stated purpose of the patent.

Petitioner’s statement that its construction is “consistent with the specification of the '341 patent, which repeatedly states that each LED circuit has a ‘single’ and ‘predetermined’ ‘forward voltage’” (Pet, 25-26) mischaracterizes the intrinsic record. While there are embodiments in the specification that disclose LED circuits with a single voltage, *the express field of the invention “relates to multiple voltage level ... light emitting diode circuits.”* Ex. 1001 ['341 Patent], 1:41-46. *See also id.*, 3:5-11 (“It would further be advantageous to provide multiple voltage level ... light emitting LED circuits...”), 6:4-6 (“According to

another aspect of the invention, a multi-voltage ... LED circuit...”), 6:47-51 (“multiple individual discrete LED chips are used to form at least one multi-voltage ... LED circuit”). Thus, any construction interpreted to limit claims 3, 10, and 17 to a single predetermined voltage directly contradicts the claims themselves, the specification, and the stated purpose of the ’341 Patent.

Further, even in the embodiments of the ’341 Patent that discuss a single voltage LED circuit, the ’341 Patent discusses that these two single voltage LED circuits may be configured to operate at a first forward voltage level when connected in parallel and a second forward voltage level when connected in series. *See, e.g.*, Ex. 1001 [’341 Patent], 4:12-18 (“According to another aspect of the invention, each multi-voltage AC LED device would be driven with at least two different AC forward voltages resulting in a first forward voltage drive level by electrically connecting the two single voltage AC LED circuits in parallel and a second forward voltage drive level by electrically connecting the at least two single voltage AC LED circuits in series.”). Thus, the ’341 Patent teaches combining single voltage LED circuits in parallel or series to create multi-voltage LED circuits. Ex. 2008 [Bretschneider Decl.], ¶56.

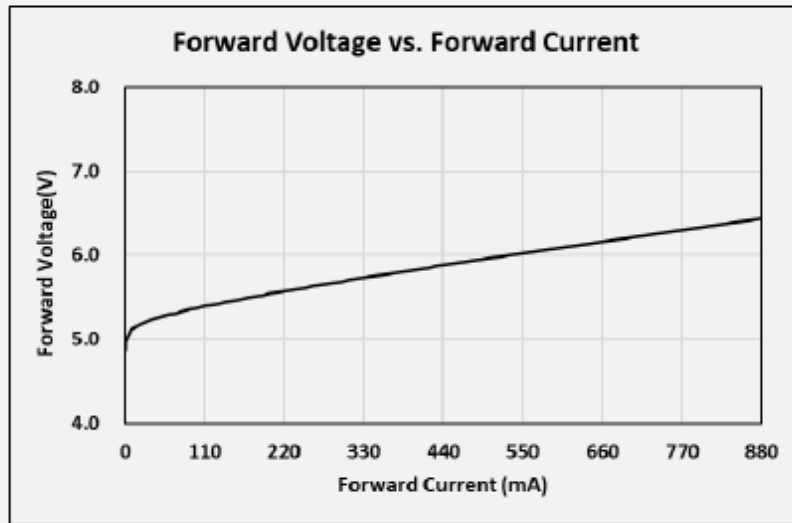
Putting aside the repeated express teachings of the ’341 Patent that directly contradict Petitioner’s proposed construction, the extrinsic record clarifies that Petitioner’s proposed construction is nonsensical. For example, LED datasheets are

clear that the type of commercially available LEDs that the '341 Patent is directed to are not limited to a single minimum voltage. Ex. 2008 [Bretschneider Decl.], ¶57. For example, Ex. 2012 [Samsung Datasheet] is a publicly available datasheet for a typical LED, Samsung High Power LED LH502C. Page 3 lists various electro-optical characteristics for the LED. Ex. 2012 [Samsung Datasheet], 3. One characteristic is “Forward Voltage V_F ”. *Id.* As can be seen below, the datasheet lists a “Min.” (the minimum, 5.9V.), a “Typ.” (typical forward voltage, 6.1V), and a “Max.” (maximum forward voltage, 6.3V). Thus, the Samsung datasheet recommends a range of forward voltages between 5.9 and 6.3V, not one single forward voltage and not just a minimum voltage.

b) Electro-optical Characteristics ($I_F = 640 \text{ mA}$, $T_J = 25^\circ\text{C}$)

Item	Unit	Rank	Min.	Typ.	Max.
Forward Voltage (V_F)	V	YE	5.9	6.1	6.3

Similarly, page 10 of Ex. 2012 [Samsung Datasheet] displays various characteristic graphs for the LED. In the top left corner is a graph of forward voltage versus forward current. As can be seen from the graph, current flows from a forward voltage of around 5V to around 6.5 V. Ex. 2012 [Samsung Datasheet], 10. Again, this demonstrates there is a range of potential forward voltages for the Samsung LED depending on the amount of current desired. Ex. 2008 [Bretschneider Decl.], ¶58.

b) Forward Current Characteristics ($T_j = 25^\circ\text{C}$)

Other portions of the datasheet are clear that the amount of current determines the luminous flux (which determines the perceived brightness of the LED), for the LED. Ex. 2008 [Bretschneider Decl.], ¶59. Thus, multiple voltages may be applied to the LED depending on the desired brightness of the LED during operation. Ex. 2008 [Bretschneider Decl.], ¶59. When additional LEDs are added in series to the LED circuit (as taught in the '341 Patent), the forward voltage would necessarily change to account for the voltage drop of the additional LEDs. Ex. 2008 [Bretschneider Decl.], ¶59].

The Samsung datasheet is a typical LED datasheet. Ex. 2008 [Bretschneider Decl.], ¶60. Any number of other LED datasheets also show a range of possible forward voltages because that is typically the way LEDs operate. Ex. 2008

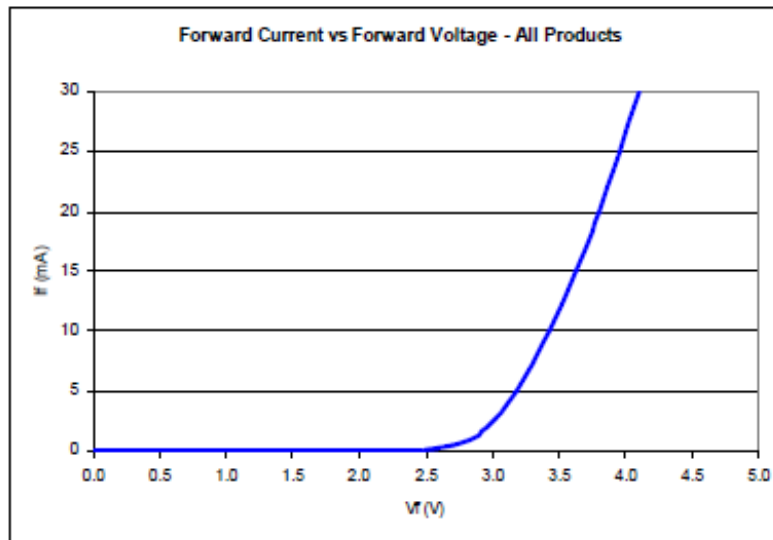
[Bretschneider Decl.], ¶60. In another example, Ex. 2013 [Cree Datasheet] is a publicly available datasheet for Cree MegaBright LEDs in the CxxxMB290-S0100 series. As shown at page 2 of Ex. 2013 [Cree Datasheet], the typical forward voltages for these LEDs can range from a minimum of 3.0V to a maximum of 3.8 or 4.0V. Once again, there is no single forward voltage associated with the LED, and the forward voltage is not limited to a minimum. Ex. 2008 [Bretschneider Decl.], ¶60.

Typical Electrical/Optical Characteristics at $T_A = 25^\circ\text{C}$, $I_f = 20\text{mA}$ ^{Note 3}

Part Number	Forward Voltage (V_f , V)			Reverse Current [$I(V_r=5V)$, μA]	Peak Wavelength (λ_p , nm)	Full Width Half Max (λ_D , nm)	Optical Rise Time (τ , ns)
	Min	Typ	Max	Max	Typ	Typ	Typ
C460MB290-S0100	3.0	3.5	3.8	10	458	26	30
C470 MB290-S0100	3.0	3.5	3.8	10	468	26	30
C505 MB290-S0100	3.0	3.8	4.0	10	502	30	30
C527 MB290-S0100	3.0	3.8	4.0	10	518	35	30

At page 4, the Cree datasheet also shows a characteristic curve of forward current versus forward voltage that is similar to the graph from the Samsung datasheet (albeit with the axes switched.) Ex. 2013 [Cree Datasheet], 4. As the Cree graph shows below, these LEDs have a forward voltage range of about 3.0V to 4.0 or 4.5V depending on the desired amount of current. Ex. 2013 [Cree Datasheet], 4. Again, the forward voltage is not limited to a single minimum voltage. Ex. 2008 [Bretschneider Decl.], ¶61.

Characteristic Curves



Thus, a POSITA would understand very well that an LED's forward voltage is not limited to a single minimum forward voltage, as proposed by the Petitioner.

Petitioner's proposed construction rests entirely on its characterization of a statement from the file history of another patent as an "express definition" of forward voltage. Pet., 25. The Petition relies on Ex. 1023, which is from an amendment to App. No. 16/274,164, The '164 Application is the parent application to the '341 Patent and it issued as U.S. Pat. No. 10,537,001 (the "'001 Patent."). There are several reasons why Petitioner's reliance on the statement from the '001 Patent's file history is inappropriate.

First, as discussed above, Petitioner's interpretation of the '001 Patent's file history requiring a single minimum forward voltage for the '341 Patent is

completely inconsistent with the express language of the claims and specification of the '341 Patent. It is a bedrock principle of patent law that “the claims are ‘of primary importance, in the effort to ascertain precisely what it is that is patented.’ *Phillips*, 415 F.3d at 1312 (quoting *Merrill v. Yeomans*, 94 U.S. 568, 570, 24 L.Ed. 235 (1876)). Further, “the prosecution history ... often lacks the clarity of the specification and thus is less useful for claim construction purposes” than the specification. *Phillips*, 415 F.3d at 1317. *Phillips*’ guidance is especially instructive here, where the statement Petitioner relies upon for its construction comes from the file history for a different patent (the '001 Patent) discussing different claims (requiring LED circuits that have “a forward voltage of 6V or greater”) in the context of prior art that is not at issue here. *See, e.g.*, Ex. 1023 at 9. As discussed above, the specification (and claims) of the '341 Patent repeatedly and unambiguously state that LED circuits may have multiple forward voltages. *See* §III.B.1, above. Absent some ambiguity in the claims and specification (which does not exist), it would be clear legal error to elevate ambiguous and out-of-context statements from another file history above the clear teachings of the claims and specification of the '341 Patent.

Further, because Petitioner’s proposed construction directly contradicts the teachings of the claims and specification of the '341 Patent, what Petitioner is really arguing is argument-based prosecution history disclaimer. *See, e.g., Rhodia*

Chimie & Rhodia, Inc. v. PPG Indus., Inc., 402 F.3d 1371, 1384 (Fed. Cir. 2005) (“The purpose of consulting the prosecution history in construing a claim is to ‘exclude any interpretation that was disclaimed during prosecution.’”) (*quoting* *ZMI Corp. v. Cardiac Resuscitator Corp.*, 844 F.2d 1576, 1580 (Fed.Cir.1988); *Lazare Kaplan Intern., Inc. v. Photoscribe Technologies, Inc.*, 628 F.3d 1359 (Fed. Cir. 2010) (“To the extent that the Defendants contend that these statements amount to a disclaimer of subject matter, these statements fall short of the clear and unmistakable disavowal necessary for the doctrine of prosecution disclaimer to apply.”). The Petition does not attempt to argue that the statement in the prosecution history for the ’001 Patent is a clear and unmistakable disavowal of the explicit teachings of the claims and specification of the ’341 Patent. Indeed, the Petition cannot do so because the statement is from the file history for another patent discussing different claim language in a context that is different than the construction proposed here.

While the institution decision states that the application “[m]ade clear that the claimed ‘forward voltage of 6V or greater’ excludes a 120V AC voltage from a wall outlet” (Paper 10, 34), this is a different issue than Petitioner’s argument, which seeks to limit all forward voltage in a circuit to one minimum voltage. Further, the claim language being addressed in the ’001 Application (“forward voltage of 6V or greater”) is different, the application under review (’164

Application) is different, and the prior art being addressed (the Colby reference) is not at issue here. Taken together, it is very *unclear* how the statement applies in the context of the '341 Patent. What is clear is that Petitioner's position is expressly and repeatedly contradicted by the plain language of the claims and specification of the '341 Patent. Thus, adopting Petitioner's proposed construction would be clear legal error.

The Petition therefore does not meet its burden to show by a preponderance of the evidence that the statement constitutes a clear and unmistakable disavowal of claim scope. *See, e.g., Ruckus Wireless, Inc. v. Innovative Wireless Solutions, LLC*, 824 F.3d 999 (Fed. Cir. 2016) ("If, after applying all other available tools of claim construction, a claim is ambiguous, it should be construed to preserve its validity."). Petitioner's construction should be rejected on this basis alone.

Regardless, the context of the '001 Patent file history (which the Petition did not discuss) make it clear that the Applicant did not intend to disclaim any interpretation of forward voltage other than a single minimum voltage. There, the Examiner had rejected claim 1 of the '164 Application over the prior art reference Colby. Ex. 1023, 9. In response, the Applicant amended claim 1 of the '164 Application to include the limitation "wherein the first operating LED circuit and the at least one additional LED circuit both have a forward voltage of 6V or greater." Ex. 1023, 9. Thus, the proposed amendment itself was explicit that the

forward voltage did not have one specific minimum value, but could have multiple values of “6V or greater.” *Id.*

Not only was the claim at issue in the '001 Patent file history materially different than the claims in the '341 Patent (none of which claim a forward voltage of 6V or greater), but the issue being addressed in the '001 Patent file history was also different. There, the Applicant was arguing that the “forward voltage of an LED” was different than the “AC voltage supplied from a wall outlet.” *Id.* That issue does not appear relevant to the arguments made in this PGR.

In arguing to support its amendment, the Applicant stated that “[t]he ‘forward voltage’ of an LED circuit, as recited in claim 1, is the minimum voltage difference required between the anode and cathode of the LEDs in the claimed circuit to allow current to flow through the LEDs.” Ex. 1023, 9. This is the statement Petitioner’s proposed construction is based on. Pet., 25. Notably, Applicant qualified its statement to be limited to the then-current version of claim 1 of the '164 Application (“as recited in claim 1”), which is different than any of the claims of the '341 Patent. Thus, on its face, Applicant’s statement applies only to the then-pending version of claim 1 of the '164 Application. It is not a clear and unmistakable disavowal of claim scope applying to the (different) claims of the '341 Patent.

Further, the statement itself is ambiguous. “The minimum voltage difference required” does not rule out, and in fact implies the potential use of voltages in excess of that minimum. Ex. 2008 [Bretschneider Decl.], ¶¶69. This interpretation is supported by the language of the claim being discussed (“a forward voltage of 6V or greater”), which clarifies that a forward voltage can have values equal to or greater than the minimum voltage (there, 6V) to allow current to flow.

This interpretation is also supported by the website that the Applicant cited (www.baldengineer.com/led-basics.html) in support of its statement. Ex. 2014 [Bald Engineer]. The website states that “[t]he ‘Forward Voltage’ rating of a diode will determine the minimum voltage difference between the anode and cathode to allow current to flow.” Read carefully, the website is drawing a distinction between forward voltage and minimum voltage—the forward voltage rating determines the minimum voltage, but is not necessarily limited to that minimum voltage. Ex. 2008 [Bretschneider Decl.], ¶¶71. Further in the discussion, the website cites to data sheets showing that yellow LEDs have a forward voltage operating range, including a minimum and maximum voltage:

ITEMS	Symbol	Test condition	Min.	Typ.	Max.	Unit
Forward Voltage	V _f	I _f =20mA	1.8	---	2.2	V

Ex. 2014 [Bald Engineer], 4. *See id.*, 5 (“[t]he goal is to set the Forward Current for the LED at 20mA which means the LED will drop 1.8-2.2V.”). This is inconsistent with Petitioner’s proposed construction and consistent with Patent Owner’s proposed construction because it shows a range of possible forward voltages for an exemplary LED. Thus, the context of Ex. 2014 [Bald Engineer] clarifies that Petitioner’s interpretation is an oversimplification of how LEDs operate. Accordingly, Petitioner’s first construction should be rejected.

b. Petitioner’s alternate construction is incorrect

Petitioner’s second proposed construction (“a voltage in a diode’s forward direction”) is also incorrect because it allows for forward voltages that could be less than the minimum operating voltage and greater than the maximum operating voltage. In essence, Petitioner’s alternate construction completely ignores the intrinsic record and the context in which “forward voltage” is used. *See, e.g.*, Ex. 2010 [Neikirk Tr.], [56:14-16] (“What I did was construe forward voltage in isolation as one of – with its plain and ordinary meaning which is very broad.”).

First, as discussed above, claims 3, 10 and 17 require the first LED circuit to be “operating.” *See also* Ex. 1001 [’341 Patent], claims 1, 7, 8, 10, 14, 15. The forward voltage cannot be *any* voltage because if the forward voltage is outside of the operating range of the LED circuit, the LED circuit will not provide light or will otherwise not operate. Similarly, as discussed above in §III.B.1, the

specification is clear that the forward voltage “drives” the LED circuits. *See, e.g.*, Ex. 1001 [’341 Patent], 3:12-14; 4:33-35; 4:38-41; 5:27-34. This means that the forward voltage applied to the LED circuit is within the appropriate range to allow the LED to illuminate as intended. Ex. 2008 [Bretschneider Decl.], ¶73. Even the materials relied upon to support Petitioner’s first proposed construction indicate that the forward voltage is a specified value (or range of values) defined by the specific LED(s) being used. *See, e.g.*, Ex. 2014 [Bald Engineer], 3 (“forward voltage rated at 3.0 volts), 4 (showing a range of forward voltages between 1.8V and 2.2V). Thus, Petitioner’s second proposed construction is also incorrect.

The forward voltage should be construed as the operating voltage for the claimed LED circuit.

C. Other Constructions

As discussed above, Petitioner has argued that the preambles of the ’341 Patent are limiting and that the terms “switch,” “selectable by a user switching the switch”, and “driver” need not construction. Pet., 25-29. For purposes of this PGR, Patent Owner agrees with Petitioner because Patent Owner believes the preambles are limiting and does not believe that constructions for the term “switch,” “selectable by a user switching the switch” or “driver” are necessary to resolve the issues in this PGR. Patent Owner reserves its right to propose constructions for

these terms in other proceedings, or to propose constructions in this proceeding to the extent required by future developments.

IV. THE '341 PATENT IS INELIGIBLE FOR POST GRANT REVIEW

A. Petitioner Has Failed To Demonstrate Any Claims That Are Not Supported By Pre-AIA Applications

The Petition argues that three sets of claims lack an effective filing date before March 16, 2013: (1) claims 3, 10, and 17 of the '341 Patent (Pet., 17-20), (2) claims 4, 11, and 18 of the '341 Patent (Pet., 20-21) and (3) claims 1-15 of the '001 Patent (which is the parent patent to the '341 Patent).

The '341 Patent claims priority to three applications and two provisional applications filed before March 16, 2013:

- U.S. Patent Application Ser. No. 13/322,796, filed Nov. 28, 2011, nationalized from International Application No. PCT/US2010/001597, filed May 28, 2010, which claims priority to U.S. Provisional Application No. 61/217,215, filed May 28, 2009, and
- U.S. Patent Application Ser. No. 12/287,267, filed Oct. 6, 2008, which claims priority to U.S. Provisional Application No. 60/997,771, filed Oct. 6, 2007 (collectively, the “Pre-AIA Applications”).

The Pre-AIA Applications are exhibits 1014-1019 in this PGR.

As discussed below, in each case, Petitioner has failed to show that the claims are not supported in a Pre-AIA Application. Accordingly, post grant review is inapplicable for the '341 Patent.

1. Claims 3, 10, and 17 of the '341 Patent

Claims 3, 10 and 17 of the '341 Patent are supported by at least the pre-AIA '597 Application. The '597 Application expressly discloses a “multi-voltage AC or DC operable LED device” (Ex. 1018 ['597 Application], ¶[0024]) that allows for “forward voltage drive selection.” Ex. 1018 ['597 Application], ¶[0025]. Thus, the '597 Application discloses a switch that can provide at least two different DC forward voltages to an LED circuit as required by the claims.

Further, the '597 Application describes a scenario in which a switch configured to provide a second, different forward voltage would not only be possible, but would be beneficial. Ex. 1018, ['597 Application], ¶¶[0028], [0030] (describing scenarios where an LED device is “driven with at least two different DC forward voltages” and provides “a first forward voltage drive level when the two single voltage LED circuits are connected in parallel and a second forward voltage drive level ... when the at least two LED circuits are connected in series.”). In these embodiments, the second DC forward voltage is different than the first DC forward voltage. Ex. 1018, ['597 Application], ¶¶[0028], [0030] (describing the

second forward voltage level as “twice the level of the first forward voltage drive level”).

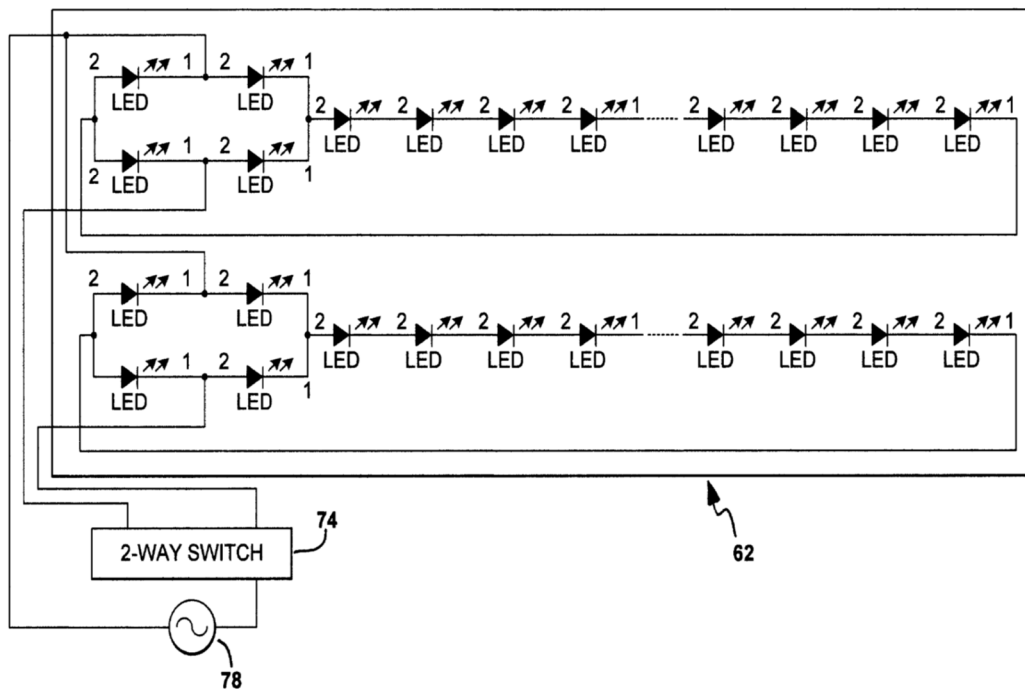
The Petition’s arguments with respect to Claims 3, 10, and 17 do not address these clear supporting disclosures. Petition, 17–20. Instead, the Petition argues that “these claims include embodiments wherein the two different voltages are applied to only one of the LED circuits” and therefore “there is no disclosure of a switch providing two different voltages to one ‘or’ the other LED circuit as claimed.” Petition, 19–20. Petitioner’s argument does not track the language of the claims.

Claims 3, 10, and 17 require a switch that “provides at least two different DC forward voltages *to at least one of* [two LED circuits].” Because the claims provide different voltages to “at least one of” the two circuits, they clearly allow for different voltages to one or both of the LED circuits. For example, this could be 6V, 7V, 12V or some other voltage level. There are only examples and no limitation to the different voltages that can be provided to one or both of the LED circuits.

Further, the ’597 Application repeatedly and expressly discloses single multi-voltage LED circuits (that is, LED circuits that operate using more than one forward voltage) *See, e.g.*, Ex. 1018 [’597 Application], ¶[0013] (“The art is deficient in that it does not provide a multi-voltage ... circuit monolithically integrated on a single substrate”), ¶[0014] (“It would further be advantageous to

have a multi-voltage ... circuit that can provide options in voltage level, brightness level and/or AC or DC powering input power preference.”), ¶[0015] (“It would further be advantageous to provide multiple voltage level and/or multiple brightness level light emitting LED circuits”), ¶[0015] (“It would further be advantageous to provide multiple voltage level and/or multiple brightness level light emitting LED circuits ... that can be driven with more than one AC or DC forward voltage...”). The Figures of the ’597 also disclose circuits that may operate using more than one forward voltage. For example, Fig. 9 (below) discloses a “multi-voltage and/or multi-brightness LED device.” Ex. 1018 [’597 Application], ¶[0060]. While the ’597 Application describes Fig. 9 as a “device”, the circuitry within LED lighting device 62 still constitutes a circuit:

FIG. 9



See also id., Figs. 4, 5, 7, 8. In other words, just because the circuit resides within a device does not mean it is no longer a circuit. Nor does the fact that a multi-voltage circuit is composed of two or more single voltage circuits mean that each of the single circuits cannot be driven with more than one voltage, or that the multi-voltage circuit is no longer a circuit.

The institution decision credited Petitioner’s arguments in part because it believed the citations by Patent Owner “do not disclose that the two different forward voltage drive levels are applied to only one single voltage LED circuit.” Paper 10, 19. Respectfully, claims 3, 10, and 17 require an “LED circuit”, not a “single voltage LED circuit.” Petitioner’s rationale appears to be implicitly

interpreting the term “LED circuit” to be limited to a “single voltage LED circuit.” However, as discussed above, the ’597 Application repeatedly and expressly discloses multi-voltage LED circuits. An interpretation excluding these embodiments is improper. Further, the term “LED circuit” is a common term that a POSITA would understand covers numerous possible circuit configurations, not just single voltage LED circuits. Ex. 2008 [Bretschneider Decl.], ¶84.

It is clear legal error to limit the claim term “LED circuit” to a “single voltage LED circuit.” The words of a claim are generally given their ordinary and customary meaning as understood by a person of ordinary skill in the art when read in the context of the specification and prosecution history. *See* , 415 F.3d at 1313 “There are only two exceptions to this general rule: 1) when a patentee sets out a definition and acts as his own lexicographer, or 2) when the patentee disavows the full scope of a claim term either in the specification or during prosecution.” *Thorner v. Sony Computer Entertainment America LLC*, 669 F.3d 1362 (Fed. Cir. 2012). There is no definition of “LED circuit” in the ’341 Patent and no disavowal of claim scope.

Thus, an LED circuit may be two LEDs and a switch that switches the LEDs between a parallel and a series configuration. Ex. 2008 [Bretschneider Decl.], ¶86. Whether in the parallel or series configuration, it is still the same circuit, yet the two configurations would have different forward voltages. Ex. 2008 [Bretschneider

Decl.], ¶86. An LED circuit may be the combination of two single voltage LED circuits that can be switched to be in either a parallel or series configuration. Ex. 2008 [Bretschneider Decl.], ¶86. In either instance, the LED circuit is still the same circuit, yet it would have two different forward voltage depending on the configuration. An LED circuit may be many single voltage LED circuits packaged together with numerous different configurations, each having different forward voltages or adjustability of the forward voltages as taught in the patent owner's specification. Ex. 2008 [Bretschneider Decl.], ¶86. Indeed, the '341 Patent envisions such large scale configurations when it discusses LED packages and monolithically integrated chips. *See, e.g.*, Ex. 1001 ['341 Patent], 10:43-48 ("The multi-voltage and/or multi brightness lighting device 30 may be a monolithically integrated single chip 38, a monolithically integrated single chip integrated within an LED package 38, or a number of individual discrete die integrated onto a substrate 38..."). The Petition's artificially narrow interpretation of "LED circuit" is contrary to the plain and ordinary meaning of the term and should be rejected. Accordingly, Claims 3, 10, and 17 of the '341 Patent are supported by at least the pre-AIA '597 Application.

2. Claims 4, 11, and 18 of the '341 Patent

The Petition argues that claims 4, 11 and 18 claim "impossible subject matter" that "is not disclosed in the Pre-AIA Applications." Pet., 20-21.

Petitioner's argument appears to be that impossible claims necessarily must lack support in prior applications.

Petitioner's argument should be rejected for a number of reasons. First, the Petition has not even alleged that claims 4, 11, and 18 lack support in any of the pre-AIA applications. Nor did the Petition provide any authority for its position that an impossible claim which is otherwise described and supported in an application filed before March 16, 2013, is not entitled to claim the benefit of the earlier filing date. Further, any supposed impossibility is not relevant for the analysis of whether a PGR is appropriate, which is limited here to whether the priority claim is supported by pre-2013 applications. *See* AIA § 3(n)(1). Under Petitioner's argument, these claims are not entitled to any priority date at all, much less a priority date on or after March 16, 2013.

Second, Petitioner's argument presumes that claims 4, 11, and 18 are impossible. As discussed below in §VI, the claims are far from impossible and would be well understood by any POSITA.

Finally, Petitioner has not satisfied and cannot satisfy its burden to show that claims 4, 11 and 18 are not supported in Pre-AIA Applications. These features of these claims are clearly supported and disclosed in at least the '597 Application. For example, Figs. 7 and 9 of the '597 Application clearly disclose a 2-way switch 60 connected between an AC power source and an LED lighting device. Ex. 1018,

Figs. 7, 9, [0057]–[0058]. Further, the '597 Application discloses embodiments where the switch is part of the LED lighting device. *See* Ex. 1018 ['597 Application] (“The multi-voltage ... single chip AC LED and /or package is configured to provide a means of switching...”). Thus, claims 4, 11, and 18 are clearly supported by at least the '597 Application.

3. Claims 1-15 of the '001 Patent

Finally, Petitioner argues that Claims 1–15 of U.S. Pat. No. 10,537,001 (the “'001 Patent,” which is the patent that issued from the '341 Patent’s parent application) are not supported by any applications filed before March 16, 2013. Petition, 21–23. First, Petitioner argues that no “Pre-AIA Application” discloses a “switch that is selectable to ‘independently switch on or off’ at least a first LED circuit or an additional LED circuit” as required by the independent claims of the '001 Patent. Petition at 21 (quoting Ex. 1020, 12:16–21, 13:30–23).

As discussed above, the '597 Application expressly discloses a “multi-voltage AC or DC operable LED [lighting] device” (Ex. 1018, [0024]) that allows for “forward voltage drive selection.” Ex. 1018, [0025]. Further, the '597 Application discloses a “switching means that connects and/or disconnects at least one additional LED circuit to and/or from a first LED circuit.” Ex. 1018, [0015]. See also Ex. 1018, [0018] (“It would further be advantageous to provide multi-brightness LED devices that can be switched to different levels of brightness by

simply switching additional circuits on or off in addition to a first operation circuit within a single chip and or LED package.”), [0057] (“Figure 7 discloses a schematic diagram similar to the multi-voltage and/or multi-brightness LED device 50 shown in Figure 6 integrated within a lamp 58 and connected to a switch 60 to control the brightness level of the multi-voltage and/or multi-brightness LED lighting device 50.”). While the Petition emphasizes the claim term “independently,” the examples discussed above disclose allowing a user to independently “connect[] and/or disconnect[]” LED circuits on and off. Accordingly, the independent claims of the ’001 Patent are supported by at least the ’597 Application.

The Petition further argues that the dimmer switch of ’001 Patent, claim 15 is not supported in any application prior to March 16, 2013. Petition, 22–23. This is incorrect. The dimmer switch is disclosed and supported in at least Provisional Application No. 61/217,215, filed May 28, 2009. Ex. 1014, [0022] (“the LED circuit driver may be coupled to a dimmer switch that regulates voltage or frequency or may have integrated circuitry that allows for adjustability of the otherwise relatively fixed voltage and/or relatively fixed frequency output of the LED circuit driver.”).

Petitioner argues that the ’215 Provisional does not support claim 15 because the dimmer of claim 15 “adjusts a voltage of the mains power source” while the

'215 Provisional discusses a dimmer that **“is coupled to the driver and adjusts the output of the driver.”** Petition, 23. Petitioner’s distinction is not meaningful. The '215 Provisional discusses that LED devices can be driven using mains power sources. Ex. 1014, [0009] (“LEDs can be ... **driven with high voltage low frequency mains AC power sources...**”); [0021] (“whether the **LED circuit driver is a mains power source**”). Note that the use of “whether” in the preceding quote indicates the driver may or may not be a mains power source. Thus, claim 15 is claiming the disclosed and supported scenario where the circuit driver is a mains power source. claim 15 is therefore supported by applications filed before March 16, 2013.

Finally, the Petition argues that '001 Patent claim 9 is not supported by any application prior to March 16, 2013, because claim 6 of the '001 Patent requires an “LED lighting device is configured to connect to a driver” and claim 9 requires an LED lighting device “further comprises the driver.” Petition at 23. This is incorrect for several reasons. First, the “Pre-AIA Applications” clearly support a driver. *See, e.g.,* Ex. 1014, [0021], [0022]; Ex. 1018, [0025], [0030] (describing different drive settings for LED lighting devices). Second, there is nothing inconsistent in the structure of the claims. Independent claim 6 of the '001 Patent does not specify where the driver is located; dependent claim 9 is simply narrowing the independent

claim by specifying the driver is part of the LED lighting device. Accordingly, the Board should reject this argument.

Petitioner has not shown that any claim had an effective filing date on or after March 16, 2013. The claims of the '341 Patent and its parent applications are fully supported by at least the '597 Application. The '597 Application was filed before March 16, 2013. Therefore, the '341 Patent is not subject to PGR and this Petition should be dismissed.

B. To the Extent The Board Determines Claims 3, 4, 10, 11, 17, or 18 Are Not Supported By Pre-AIA Applications, Those Claims Are Ineligible For Post Grant Review

To the extent the Board determines claims 3, 4, 10, 11, 17, or 18 are not supported by Pre-AIA Applications because it determines that the claims are impossible, the claims are still ineligible for post-grant review because new matter added during prosecution cannot convert pre-AIA claims to post-AIA claims.

Claims 3, 4, 10, 11, 17, and 18 were each added during prosecution of the '593 Application, which issued as the '251 Patent. The as-filed application included only claim 1, which was rejected in an office action dated June 1, 2020. Ex. 1004, (part 1), 92-93. In its September 29, 2020 response to the June 1, 2020 office action, Applicant amended the claims to include new claims 2-20, including challenged claims 3, 4, 10, 11, 17, and 18. Ex. 1004, (part 1), 545-549.

The Final Guidelines for Implementing the First Inventor To File Provisions of the AIA provide that “an amendment (other than a preliminary amendment filed on the same day as [the] application) seeking to add a claim to a claimed invention that is directed to new matter in an application filed on or after March 16, 2013, that, as originally filed, discloses and claims only subject matter also disclosed in a previously filed pre-AIA application to which the application filed on or after March 16, 2013, is entitled to priority or benefit under 35 U.S.C. 119, 120, 121, or 365, would not change the application from a pre-AIA application into an AIA application.” 78 Fed. Reg. 11083 (Feb. 14, 2013) (attached hereto as Ex. 2015.) Thus, amendments adding new matter to applications which disclose and claim only matter from a pre-AIA application does not transform that application into an AIA application. Because claims 3, 4, 10, 11, 17, and 18 were added after filing to an application claiming the benefit of pre-AIA applications, to the extent those claims were directed to new matter because they are impossible (which they are not), they do not transform the application into a post-AIA application.

The Institution Decision cites *Team Worldwide Corp. v. Intex Recreation Corp.*, 2021 WL 4130634, *1 (Fed. Cir. 2021) (non-precedential) to support the position that the AIA applies to the challenged claims of the '341 Patent. *Team Worldwide* is distinguishable because it did not address the issue of whether an unsupported claim added during prosecution can convert a pre-AIA application to

an AIA application. In fact, at footnote 6, *Team Worldwide* explicitly stated it did not rely on any possible new matter that was introduced in an amendment:

While the Board observed that the patentee's amendment to the '979 specification added a detail that the '847 application had not expressly stated in that it associated elements 121 and 122 with the pressure controlling assembly, the Board's rejection of TWW's priority claim makes clear that it did not rely on that amendment—or any arguments related to new matter being added to the '979 patent specification—to reach its no priority conclusion.

Team Worldwide, 2021 WL 4130634 at *4 n. 6. This is distinguishable from the '341 Patent, where the alleged new matter was indisputably added in an amendment to the claims during prosecution. Thus, *Team Worldwide* does not contradict the Federal Register Notice, which is the only authority on point. Even if claims 3, 4, 10, 11, 17, and 18 were directed to new matter, they would not convert the '295 Application to a post-AIA application. Accordingly, the '341 Patent is not eligible for post grant review.

V. GROUND 1: CLAIMS 3, 10 AND 17 SATISFY 35 U.S.C. § 112

A. Claims 3, 10 and 17 Are Possible

The Petition argues that claims 3, 10 and 17 are invalid under 35 U.S.C. §112 for lack of written description, lack of enablement and indefiniteness because

Petitioner’s first proposed construction of “forward voltage” (“the minimum voltage difference required between the anode and cathode of the LEDs in the claimed circuit to allow current to flow through the LEDs.”) renders these claims impossible to perform. Pet., 30-31. As discussed above in §III.B.2, Petitioner’s first proposed construction is incorrect. Limiting claims 3, 10 and 17 to a single forward voltage when the claims require “two different” forward voltages, thereby disregarding the express disclosure of both the claims and specification, would be clear legal error. Under either the correct construction for “forward voltage” of “the operating voltage for the claimed LED circuit” or Petitioner’s second (incorrect) proposed construction, claims 3, 10, and 17 are not impossible.

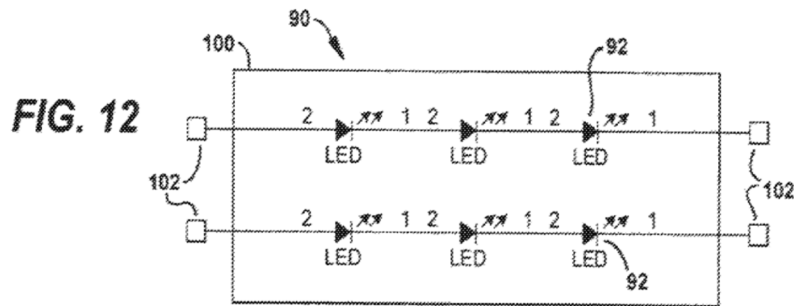
Even under Petitioner’s first (incorrect) construction, the claim recites permissible features. *See, e.g., Wasica Finance GmbH v. Continental Automotive Systems, Inc.*, 853 F.3d 1272, 1288 n.10 (Fed. Cir. 2017) (“It is highly disfavored to construe terms in a way that renders them void, meaningless, or superfluous.”). Petitioner’s first proposed construction is “the minimum voltage difference required between the anode and cathode of the LEDs in the claimed circuit to allow current to flow through the LEDs.” Pet., 25. Two different forward voltages can clearly be applied to the two different LED circuits—that is, one forward voltage for the “first operating LED circuit” and a different forward voltage for the

“one additional LED circuit.” Even under Petitioner’s flawed argument, there does not appear to be any dispute about that the above interpretation.

Instead, Petitioner’s argument appears to rest on the assumption that each LED circuit has only a single forward voltage. *See* Pet., 30 (“Because each circuit has only a single ‘forward voltage,’ no switch can provide ‘at least two different’ forward voltages to either circuit.”). This assumption directly contradicts the express teachings of the ’341 Patent. For example, claim 1 (from which claim 3 depends) recites a switch capable of “switching a voltage level input” to the LED circuits. Thus, the claim itself requires an LED circuit to have more than one voltage level options that can be delivered to the LED circuit and are selectable by a switch.

Further, the specification clearly and repeatedly teaches that LED circuits may have more than one voltage level. *See, e.g.,* Ex. 1001 [’341 Patent], 3:5-12 (“It would further be advantageous to provide multiple voltage level ... LED circuits ... that can easily be electrically configured for at least two forward voltage drive levels...”). In one example, the ’341 Patent explains that this multiple voltage level functionality “is achieved by electrically connecting the LED circuits in a series or parallel circuit configuration.” Ex. 1001 [’341 Patent], 3:12-19. The LED circuits use “a switching means that connects and/or disconnects at least one additional LED circuit to and/or from a first LED circuit.” Ex. 1001 [’341 Patent],

3:12-19. The '341 Patent describes numerous embodiments with similar multi-voltage functionality. For example, Fig. 12 of the '341 Patent (below) illustrates one multi-voltage configuration:



The '341 Patent explains (consistent with other embodiments) that “[t]he LED package 100 has electrical contacts 102 that are used to wire the at least two series LEDs circuit [92] into a series circuit, a parallel circuit or in anti-parallel to form an AC LED circuit all within a single LED package.” Ex. 1001 [’341 Patent], 12:3-7. In other words, the ’341 Patent teaches connecting LED circuits in series and parallel configurations to form new circuits. Each of these new circuits may (depending on the configuration) have a different forward voltage. Ex. 2008 [Bretschneider Decl.], ¶98.

Putting these teachings in the context of claim 3, when the LED circuits of Fig. 12 are connected in series, they would form an LED circuit with one forward voltage. Ex. 2008 [Bretschneider Decl.], ¶99. However, when the LED circuits are connected in parallel, the resulting LED circuit would have a second (different)

forward voltage. Ex. 2008 [Bretschneider Decl.], ¶99. In other words, a central teaching of the '341 Patent is that its LED circuits can be connected in different configurations and that these different configurations may have different forward voltages. Any POSITA would understand an LED circuit may have different forward voltages depending on whether the LEDs are connected in series or parallel. Ex. 2008 [Bretschneider Decl.], ¶99. Accordingly, claims 3, 10 and 17 are possible.

B. Claims 3, 10 and 17, Satisfy the Written Description Requirement Under Any Construction

The Petition also argues that claims 3, 10 and 17 lack written description support even under the correct construction of “forward voltage.”¹ Pet., 31-32. Petitioner’s argument is that no “embodiments [of the '341 Patent] include a switch, wherein switching the switch provides two different DC forward voltages to an LED circuit.” Pet., 32.

Petitioner’s argument selectively cites disclosure of the '341 Patent in a favorable manner while ignoring explicit disclosure that clearly teaches switches

¹ Note this section of the Petition does not involve indefiniteness or enablement.

providing different DC forward voltages to an LED circuit. For example, at 3:12-19, the '341 Patent states:

This invention comprises circuits and devices that can be driven with more than one AC or DC forward voltage “multi-voltage” at 6V or greater based on a selectable desired operating voltage level that is achieved by electrically connecting the LED circuits in a series or parallel circuit configuration and/or more than one level of brightness “multi-brightness” based on a switching means that connects and/or disconnects at least one additional LED circuit to and/or from a first LED circuit.

Ex. 1001 ['341 Patent], 3:12-19. This disclosure alone discloses “a switch” (e.g., switching means) “wherein switching the switch” (e.g., connecting or disconnecting the at least one additional LED circuit to and/or from a first LED circuit) “provides two different DC forward voltages” (e.g., more than one AC or DC forward voltage) to an LED circuit (one additional LED circuit or the first LED circuit or the combination of the one additional LED circuit with the first LED circuit). There are numerous other embodiments of the '341 Patent disclosing similar configurations. *See, e.g.*, Ex. 1001 ['341 Patent], 4:33-45, 5:35-51, 5:52-6:3; Figs. 8, 9, 11, 12. To the extent there are minor differences between an embodiment and the specific claim language (e.g., the term “switch” is not

explicitly mentioned in a particular embodiment or the embodiment does not specify whether it uses AC or DC), a POSITA would easily understand how to implement those differences and would understand that they can look to other embodiments for the differences. Ex. 2008 [Bretschneider Decl.], ¶102.

Notably, Petitioner's argument does not cite the '341 Patent a single time and instead relies entirely on its own selective characterization of the '341 Patent (as reflected in the Petition's "Summary of the 341 Patent" section), and grouping the entire disclosure of the patent into four embodiments that allegedly represent the entirety of the patent. Pet., 31-32. Petitioner's characterization is a strawman that relies on how Petitioner characterizes the '341 Patent and not what the '341 Patent actually says. *Id.* Further, Petitioner's characterization of the '341 Patent treats each alleged embodiment as a silo that cannot be combined with the teachings of any other part of the specification. The patent clearly teaches that LED circuits can be connected and disconnected to each other and driven with different voltage levels and that input voltage levels to one or more LED circuits can be adjusted with a switch. Petitioner provides no rationale as to why a POSITA reading the '341 Patent would compartmentalize the various embodiments without looking at the '341 Patent as a whole. This is improper. *Phillips*, 415 F.3d at 1323 ("persons of ordinary skill in the art rarely would confine their definitions of terms to the exact representations depicted in the embodiments.").

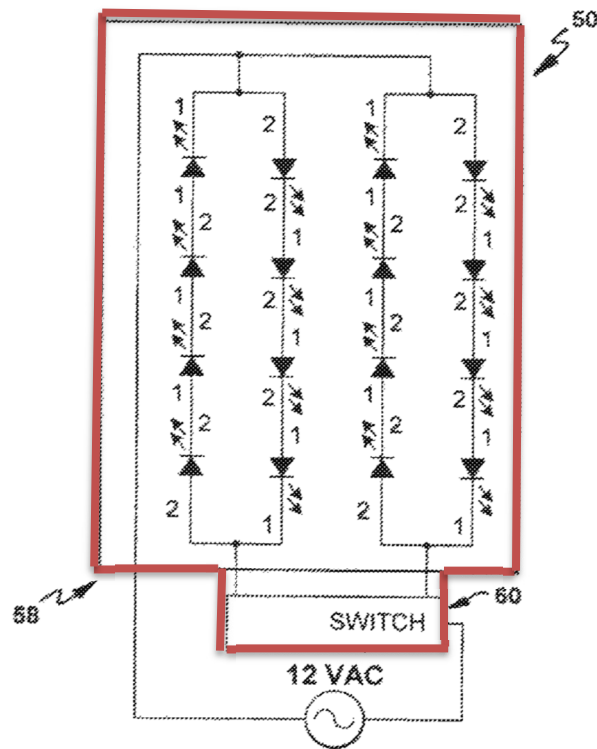
Accordingly, claims 3, 10, and 17 are supported by the written description of the '341 Patent.

VI. GROUND 2: CLAIMS 4, 11 AND 18 ARE POSSIBLE

The Petition argues that claims 4, 11 and 18 are “drawn to impossible subject matter” because the claimed switch “cannot be both part of the LED lighting device and connected between that device and something else.” Pet., 33. Petitioner’s position ignores the language and clear intent of claims 4, 11 and 18 in favor of an argument based on a box drawing exercise.

Claim 4 requires “an LED lighting device comprising ... a switch” wherein that “switch is connected between the AC voltage power source and the LED lighting device.” There does not appear to be any dispute that this claim is directed toward an arrangement similar to Fig. 7, except that the box 50 comprising the LED device is extended to encompass switch 60 as shown in the red box below:

FIG. 7



Thus, the switch is within the lighting device but at the same time it is connected between the lighting device and the power source. This is a natural arrangement for an LED device containing a switch. While the independent claims characterize the LED device as “comprising” the switch, a POSITA would understand that Claims 4, 11, and 18 are simply specifying where in the LED device the switch would be connected relative to the power source. In other words, the claims are directed to a switch that acts as the interface between the AC voltage power source and the LED lighting device. *See, e.g.,* Ex. 1001, Figs. 7, 9 (showing a switch located between a voltage source and the rest of a LED device). As the

interface, this switch is both *a part of* the LED lighting device (as the independent claims require) and *between* the AC voltage power source and the LED lighting device (as the dependent claims require).

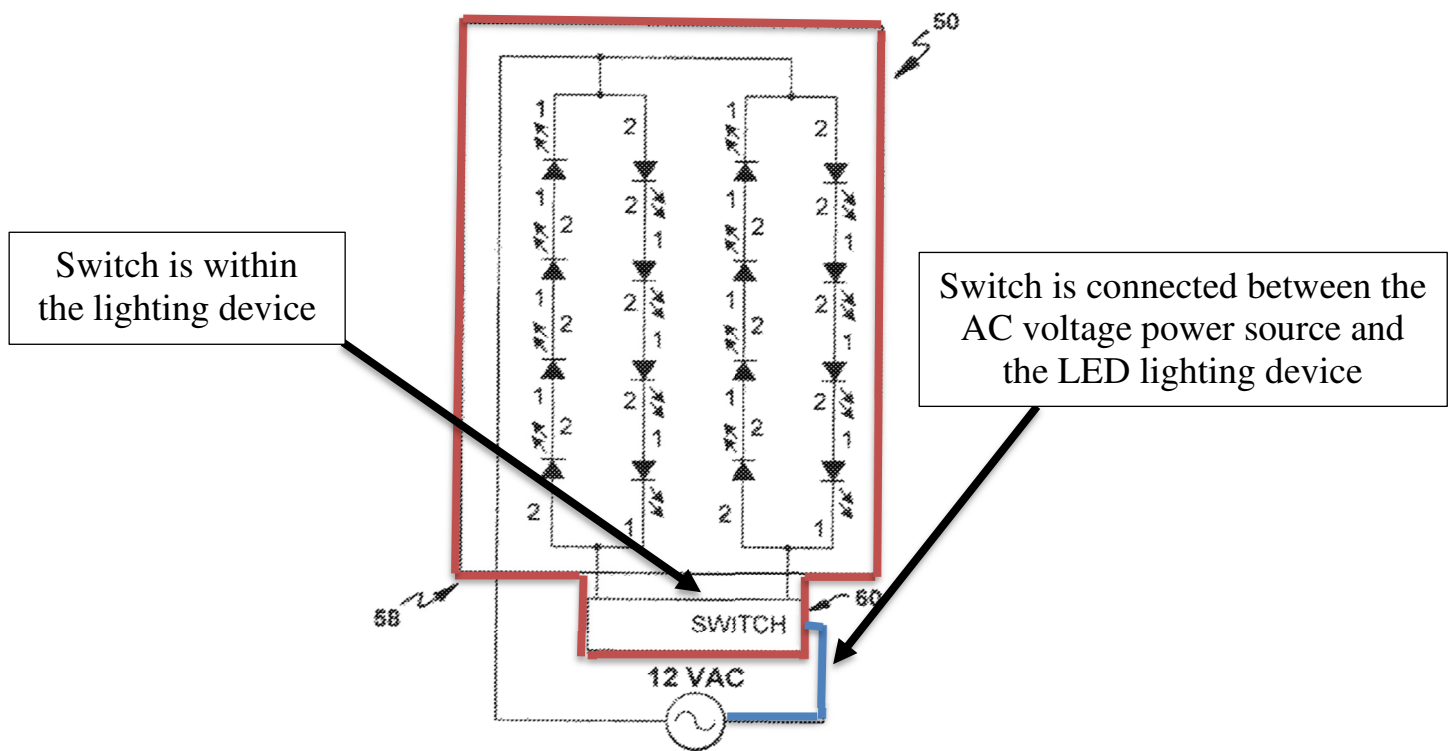
Petitioner argues that “[t]he switch cannot be both part of the LED lighting device and connected between that device and something else.” Pet., 33. This interpretation should be rejected because it elevates a narrow interpretation of the claim language over the obvious intent of the claim and purpose of the patent. *See, e.g., Renishaw PLC v. Marposs Societa’per Azioni*, 158 F.3d 1243 (Fed. Cir. 1998) (“The construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.”).

Even if Petitioner’s interpretation of the claim were correct (and it is not), the claim is still possible. Claim 4 does not require the “**switch**” to be between the LED circuit and AC voltage power source; instead, it requires the switch’s **connection** to be between the LED circuit and AC voltage power source. As shown in the modified version of Figure 7 of the ’341 Patent below, the switch can be both within the LED lighting device and “connected between the AC voltage power source and the LED lighting device.” In particular, the **connection** between the AC voltage power source and the switch (shown in blue) is literally “between the AC voltage power source [the 12VAC circle] and the LED lighting device

[characterized by the red box]” as required by the claim. *See, e.g.,* Ex. 2010

[Neikirk Tr.], 46:3-12 (“Q: And do you see the line between voltage source 12 VAC and switch 60 [of Fig. 7]? A. I do. Q. Does that represent the connection between the voltage source and the switch 60? A. [] Yes, I would assume it does...”). At the same time, the switch is still part of LED lighting device 50.

FIG. 7



Further, the 12VAC power source is just one example power source and the specification teaches the power source can be DC. *See, e.g.,* Ex. 1001 [’341 Patent], 1:39-46. Further, the 12VAC or 12VDC shows that the switch could be between the output of a driver and LED circuit, but the driver is still connected to

the mains, which means that the switch is still between the LED circuit and the mains connection. Ex. 2008 [Bretschneider Decl.], ¶108.

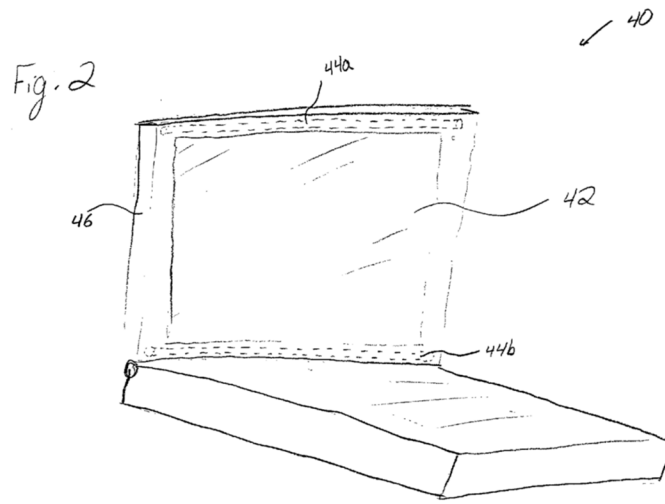
For at least the reasons above, claims 4, 11 and 18 are not impossible.

VII. GROUND 3: CLAIMS 1, 3, 5, 7-8, 10, 12, 14-15, 17 AND 19 ARE NOT ANTICIPATED BY BRUNING

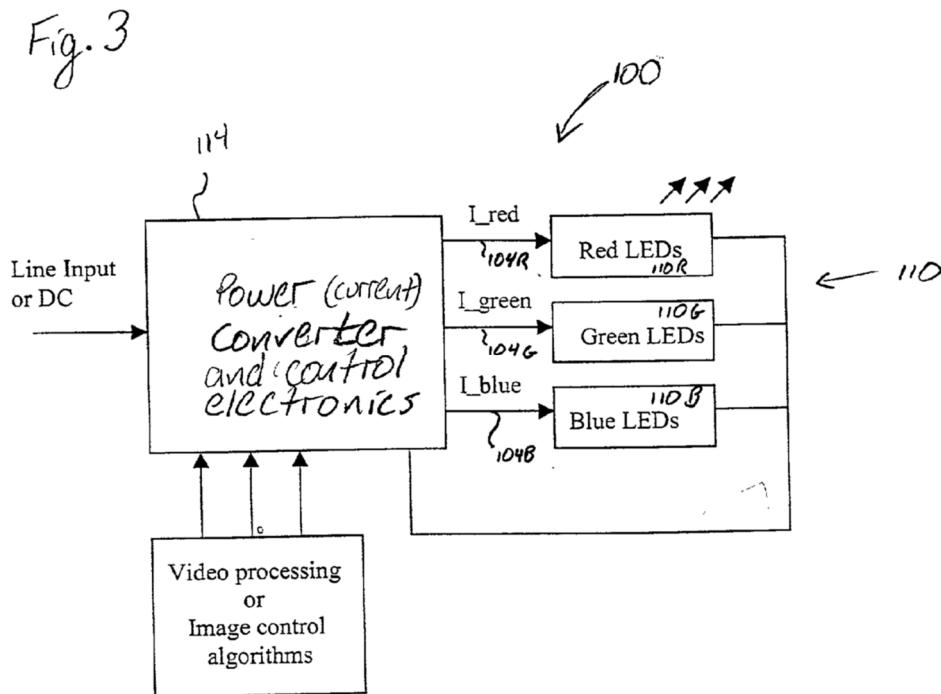
Ground 1 of the Petition alleges that claims 1, 3, 5, 7-8, 10, 12, 14-15, 17 and 19 are anticipated by Bruning. Pet., 5. For the reason discussed below, these claims are not anticipated based on Bruning.

A. Bruning (Ex. 1004)

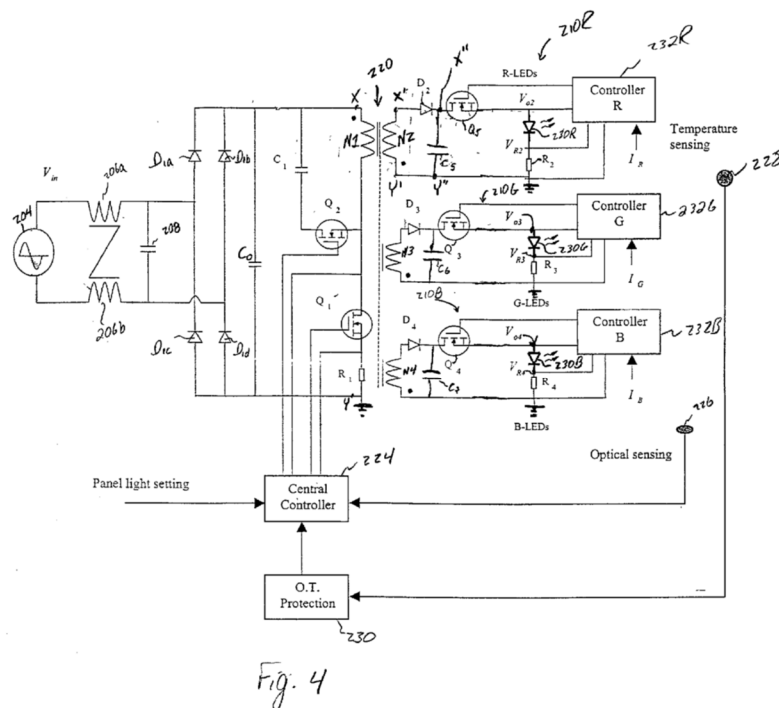
Bruning teaches a back light for LCD displays. Ex. 1004 [Bruning], ¶[0002] (“A back light is typically used to illuminate an LCD panel for information display.”). Bruning further teaches that “[t]he liquid crystal itself does not generate light, but instead either passes or impedes the passage of light as described above. Thus, a ‘back light’ is typically provided for the LCD, which provides light to the pixels of the LCD.” Ex. 1004 [Bruning], ¶[0004]. Fig. 2 of Bruning (below) illustrates a display of the sort that is backlit in Bruning.



In certain embodiments, Bruning's back light is lit by an LED array 110 composed of red, green, and blue LEDs, as shown in Bruning Fig. 3. These LED arrays "may be controlled by power converter so that each sub-array 110R, 110G, 110B contributes the requisite amount of red, green and blue light so that LED array 110 outputs controlled white light." Ex. 1004 [Bruning], ¶[0026].



Bruning Fig. 4 (below) shows more detail regarding the LEDs and drivers, which include a transformer and other components of the power converter. As shown, the transformer consists of primary winding N1 and secondary windings N2-N4. Each secondary winding is coupled to an LED array (red, green, or blue) by way of switches Q5, Q3, and Q4. The duty cycles of these switches (which is “on the order of microseconds”) are altered to vary the current reaching the LED arrays, and thereby alter the color and/or intensity of the white light provided to the back light. Ex. 1004 [Bruning], ¶¶[0043]-[0045].



B. Claims 1, 8, and 15 are patentable over Bruning

The independent claims of the '341 Patent recite “a switch capable of at least one of: (a) switching a voltage level input to at least one of the first operating LED circuit or the at least one additional LED circuit, or (b) switching the at least one additional LED circuit on or off, wherein (a) or (b) is selectable by a user switching the switch.” Ex. 1001 [’341 Patent], claims 1, 8, 15.

Petitioner relies on two components in Bruning to disclose the claimed switch: Q1 and the “panel light setting.” Pet., 37. Neither component, either alone or in combination, is a switch selectable by a user for switching a voltage level input or switching an additional circuit on or off, as required in each of Claims 1, 8, and 15. First, the claims require that a user be able to modify the switch by the “user

switching the switch.” Ex. 1001 [’341 Patent], claims 1, 8, 15. Switch Q1 is a transistor “controlled by controller 224,” which sets the “duty cycle of switch Q1.” and is therefore not capable of being switched by a user. Ex. 1004 [Bruning], ¶¶[0037-38]. This can be seen clearly in Figures 4, 4b, 4c, and 4d, which denote switches Q1, Q2, Q3, Q4, and Q5 with the transistor symbol. Figure 4 is reproduced below.

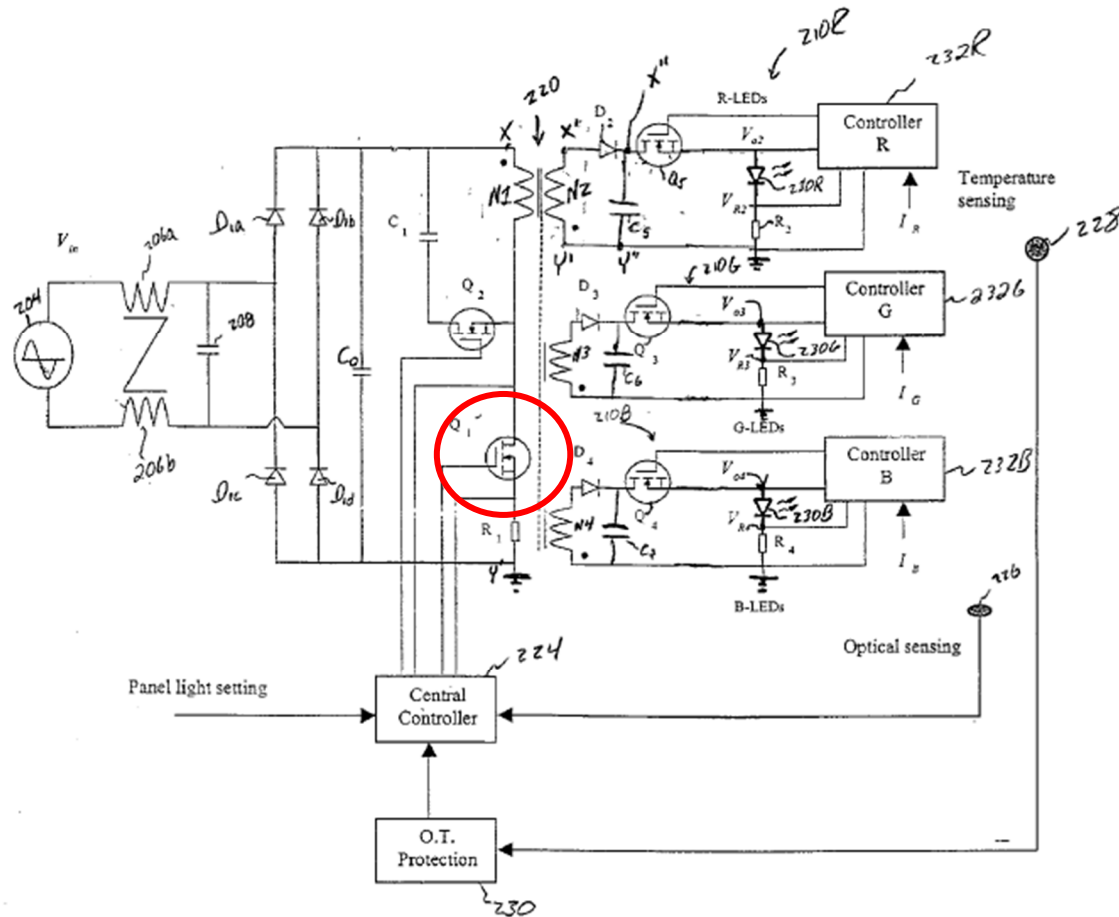


Fig. 4

Ex. 1004, Fig. 4 (annotated); *see also* Ex. 1004 [Bruning], Figs. 4b, 4c, 4d; Petition at 38–39. Indeed, it is impossible for a user to switch transistor Q1, which has cycles “each having a period on the order of **10 microseconds.**” Ex. 1004 [Bruning], ¶¶0033; Ex. 2010, [Neikirk Tr.], ¶¶81:20-24 (“the off portion of the duty cycle Q1 which may be used to adjust overall intensity of the LED back light, is likewise on the order of microseconds.”).

In other words, Q1 is constantly switching on and off tens of thousands of times each second, as instructed by the controller 224. Ex. 2008 [Bretschneider Decl.], ¶117. A user cannot possibly switch that fast, nor could a user reasonably switch that many times. User input may influence the controller to set a different rate of switching for Q1, but Q1 still switches regardless of user input. Ex. 2008 [Bretschneider Decl.], ¶117. Note the independent claims require switching “on *or* off,” further emphasizing that they anticipate a relatively long period of time that the circuit is left on before it is eventually switched back off. Ex. 1001 [’341 Patent], claim 1, 8, 15.

To the extent a user is interpreted as “switching” Q1, the user would be switching every transistor in the circuit, an interpretation that would render this limitation meaningless as nearly every circuit has numerous transistors that may switch based on any number of factors, including user input. Ex. 2008 [Bretschneider Decl.], ¶118. There are five transistors explicitly shown in Bruning

Fig. 4 alone, not counting the numerous transistors that are certainly present in the various system controllers. Ex. 1004 [Bruning], Fig. 4. For example, a personal computer may have millions of transistors that ultimately only switch because of some action set in motion by a user, but interpreting the user as switching each of those transistors is nonsensical. *See, e.g., In re Power Integrations*, 884 F.3d 1370, 1376 (Fed. Cir. 2018) (“The phrase ‘the digital to analog converter [is] coupled to the counter’ [] would be superfluous if, as the board said, it means only that the two components are in the same circuit.”); *Bicon, Inc. v. Straumann Co.*, 441 F.3d 945, 950–51 (Fed. Cir. 2006) (refusing to construe claim terms in a way that made other claim limitations meaningless); *Merck & Co. v. Teva Pharm. USA, Inc.*, 395 F.3d 1364, 1372 (Fed. Cir. 2005) (“A claim construction that gives meaning to all the terms of the claim is preferred over one that does not do so.”). Thus, a user does not switch Q1. Ex. 1004 [Bruning], ¶¶0038].

Further, the claims require that the switch individually switch a single LED circuit. *See, e.g.,* Ex. 1001 [’341 Patent], claim 1 (“a switch capable of at least one of: (a) switching a voltage level input to at least one of ***the first operating LED circuit*** or ***the at least one additional LED circuit***, or (b) switching ***the at least one additional LED circuit*** on or off”). In other words, the claim requires individual control of specific LED circuits. As shown in Bruning Fig. 4, Q1, through primary winding N1, affects voltage to each of secondary windings N2-N4—and therefore

LED circuits 210R, 210G and 210B—simultaneously. In other words, it does individually switch any of these circuits. *See also* Ex. 1004 [Bruning], ¶¶[0033], [0034].

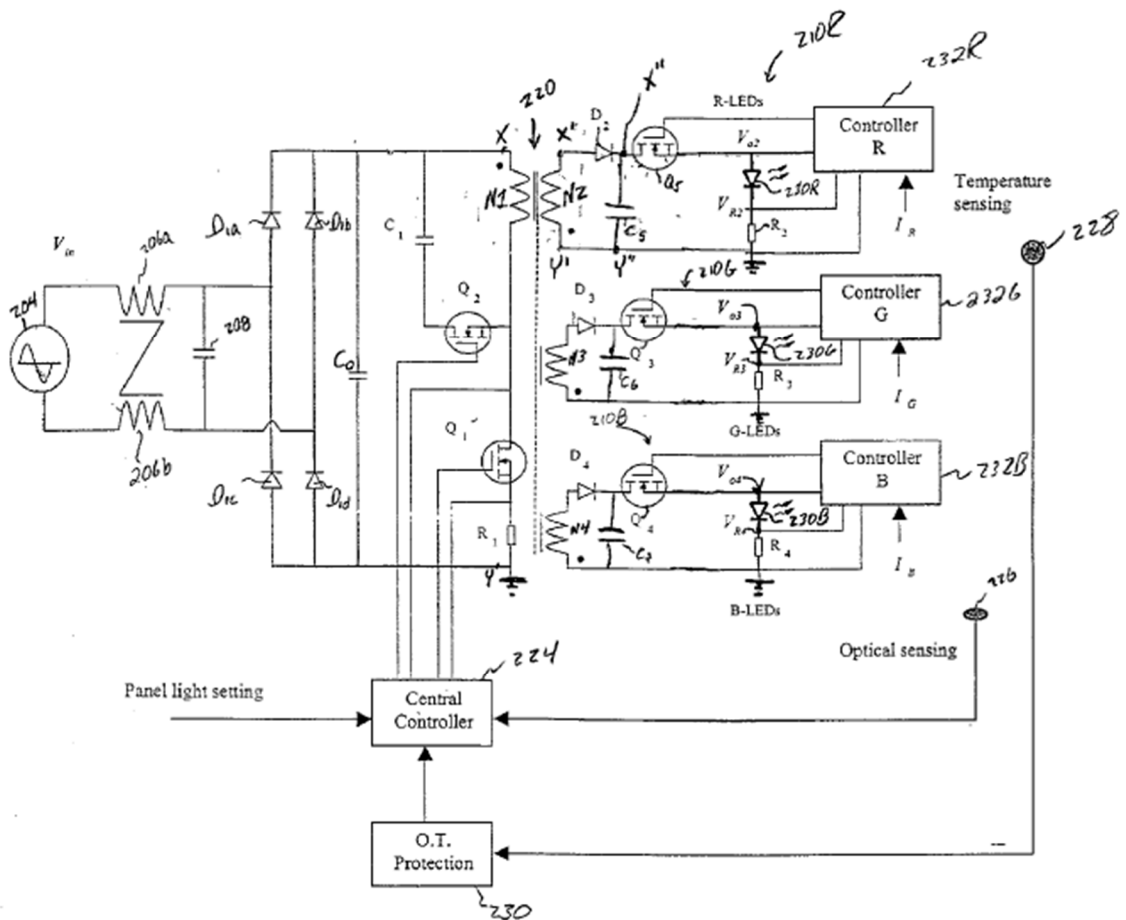


Fig. 4

The Petition also cites the “panel light setting” as a switch that anticipates the claimed switch. Pet., 39–40. Bruning only describes the “panel light setting” as an “input to central controller 224 (controlled, for example, by a user or other input, including video input.)”. Ex. 1004 [Bruning], ¶[0038]. There is no indication in

Bruning that the panel light setting is a switch or that a user switches the switch and the Petition's argument that the "panel light setting" is a switch is not supported by anything in Bruning.

In addition, the panel light setting (through controller 224) "adjusts the duty cycle of Q1." Ex. 1004 [Bruning], ¶[0038]. Q1 does not operate as the claimed "switch" for the reasons discussed above. The panel light setting, therefore, fails to disclose the claimed switch that switches the voltage level input of any LED circuit or switches any LED circuit on or off.

Bruning, therefore, fails to disclose "a switch capable of at least one of: (a) switching a voltage level input to at least one of the first operating LED circuit or the at least one additional LED circuit, or (b) switching the at least one additional LED circuit on or off, wherein (a) or (b) is selectable by a user switching the switch," and therefore fails to anticipate Claims 1, 8, and 15.

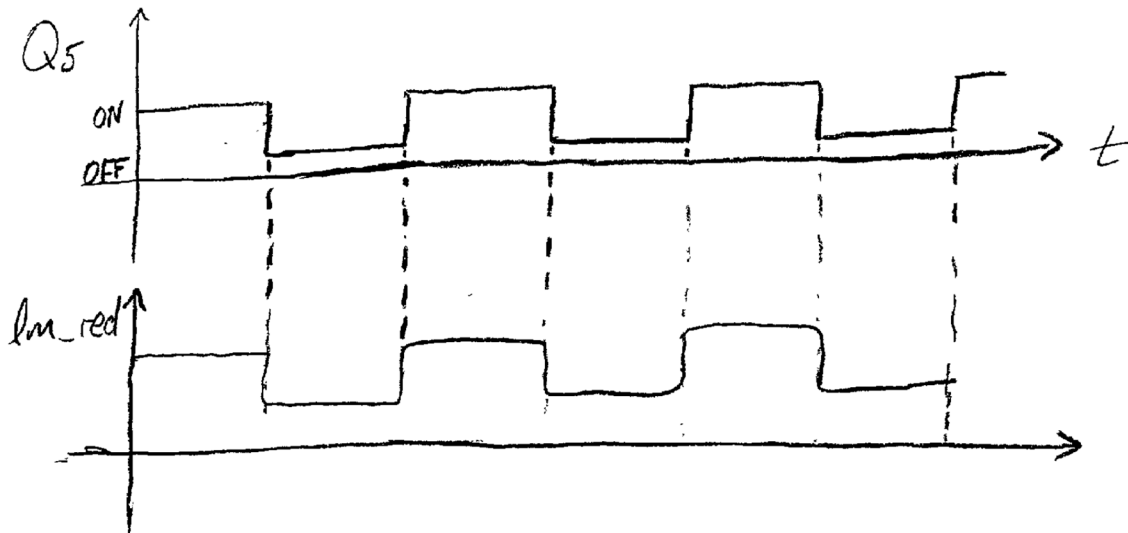
C. Bruning does not anticipate claims 3, 10, and 17

Claims 3, 10 and 17 depend from independent claims 1, 8 and 15, respectively. Claims 3, 10 and 17 of the '341 Patent recite "wherein the switching of the switch provides at least two different DC forward voltages to at least one of the first operating LED circuit or the at least one additional LED circuit." Ex. 1001 ['341 Patent], claims 3, 10, 17. Bruning does not anticipate claims 3, 10, and 17 for at least the reasons described above in §VII.B for the independent claims.

Bruning discloses changing a duty cycle using transistors to adjust light output. For example, Bruning explains that “switching Q5 on and off in a cyclical manner causes the current through red LED 230R to rise and fall in a cyclical manner, thus resulting in a cyclical rise and fall in the light output of red LED 230.” Ex. 1004 [Bruning], ¶[0042]. “Because of the fast switching duty cycle (on the order of microseconds), the eye integrates the output of the red LED 230R as the average value.” Ex. 1004 [Bruning], ¶[0042]. *See also* Ex. 1004 [Bruning], ¶[0044] (“Since the duty cycle of each controller [] is on the order of microseconds, the eye integrates the separate color outputs into a resulting color composite.”).

Bruning teaches varying the output using various modulation techniques, including pulse amplitude modulation, pulse-frequency modulation and pulse-width modulation. Ex. 1004 [Bruning], ¶[0043]. One example can be seen at Bruning Fig. 5, where transistor Q5 pulses on and off according to a duty cycle.

Fig. 5



Thus, Bruning changes the light output of the LED by varying the duty cycle at frequencies in the order of microseconds, with the actual voltage level staying the same. Ex. 2008 [Bretschneider Decl.], ¶126. The light output in Bruning is varied by pulse modulation, not by providing different DC forward voltages. Bruning therefore does not disclose providing different DC forward voltages to the LED circuits.

D. Bruning does not anticipate claims 5, 7, 12, 14, or 19

Claims 5, 12 and 19 depend from independent claims 1, 8, and 15, respectively. Ex. 1001 ['341 Patent], claims 5, 12, 19. Bruning does not anticipate claims 5, 12, and 19 for at least the reasons described above in §VII.B for the independent claims.

VIII. GROUND 4: CLAIMS 1-3, 5, 7-10, 12, 14-17 AND 19 ARE PATENTABLE OVER THE COMBINATION OF BRUNING IN VIEW OF KABEL

Ground 4 of the Petition alleges that claims 1-3, 5, 7-10, 12, 14-17 and 19 are obvious based on the combination of Bruning and Kabel. Pet., 5. This ground relies primarily on Bruning as discussed in Ground 3, but concedes that Bruning does not disclose the claimed switch. Ground 4 therefore adds Kabel to cure the deficiencies in the independent claims regarding “switch”, as well as dependent claims 9 and 16. Bruning does not disclose these claims for at least the reasons discussed above for Ground 3. *See* §VII. In addition, Kabel does not disclose these limitations for the reasons discussed below.

A. Overview of Kabel

Kabel is directed to a computer program, method, and device for controlling the brightness of a display. Ex. 1005 [Kabel], Title. In particular, Kabel teaches reducing the brightness of a display after the back light of the display has been dimmed to its lowest level. Ex 1005 [Kabel], Abstract. Kabel does this because there are a number of scenarios where even the dimmest back light may be brighter than desired. Ex 1005 [Kabel], ¶[0006] (“Those skilled in the art will appreciate that it is often desirable to dim a display beyond the lowest threshold of its back light in some environments such as in the cockpit of an aircraft or boat at night.”). Kabel accomplishes this by readjusting the amount of light being passed by the

LCD elements. Ex 1005, [Kabel], ¶[0028] (“Once the back light 12 has been dimmed to its lowest level before it turns off or to a selected threshold level, the display 10 may then be further dimmed by controlling the luminosity of each pixel of the display 10 to limit the amount of light that passes through the display module 16.”).

Kabel explains that this is done by remapping the brightness levels to a lower maximum so that the brightness of the entire display is proportionally reduced:

In the case of an active matrix display, the luminosity of the pixels may be reduced by proportionally reducing the voltage to each and every active pixel used to create an image. For example, if an image requires five pixels on the display module 16 to have brightness levels of 50, 100, 150, 200, and 250 (on a scale of 0-255), and it is desired to dim the display 10, the voltage delivered to each of these pixels may be proportionally reduce to brightness levels of 25, 50, 75, 100, and 125 so that each active pixel is proportionally dimmed by 50%.

Ex 1005, [Kabel], ¶[0028]

Kabel is therefore not directed to the field of LED lighting, nor is Kabel even directed at lighting. Ex. 2008 [Bretschneider Decl.], ¶131. To the contrary,

the express purpose of Kabel is to absorb or restrict the amount of light emitted by a display.

B. Claims 1, 8 and 15 are patentable over Bruning and Kabel

The Petition argues that “[u]nder PO’s narrow construction of ‘switch,’ it would have been obvious to implement Bruning’s ‘panel light setting’ switch as a ‘manually-activatable slider bar’ with at least two positions as taught by Kabel.” Pet., 58. As discussed above, Bruning does not switch voltage levels to LEDs; instead, Bruning controls light intensity through various forms of pulse modulation. *See* §§VII.B-C, above.

The Petition only uses Kabel for its teachings regarding the “manually-activatable slider bar.” Nothing cited in the Petition indicates that Kabel operates by switching voltage levels to LEDs, or by switching LED circuits on or off as required by the claims. In fact, Kabel’s slider bar does not switch on or off an LED circuit. Rather, Kabel uses the slider bar exclusively to provide a dimming function. *See* Petition 59–60 (collecting references regarding the dimming function of the slider bar); *see also* Ex.1005, [0028] (explaining low brightness settings are achieved by dimming the back light 12 “to its lowest level **before it turns off**”). The point of Kabel is to dim back lights beyond their ordinary minimum for use in applications where lower light levels are desirable. *See, e.g.*, Ex 1005 [Kabel], ¶¶[0006], [0028]. Kabel gives examples of aircraft and boats at night where even the dimmest back

light display settings emit too much light. Ex. 1005 [Kabel], ¶¶[0005-0006]. However, even in these low light environments, operators still need enough illumination to see the display. Kabel's purpose would be frustrated if the back light were completely shut off because vehicles like aircraft and boats would be at risk of accidents if the display lights were entirely shut off. Ex. 2008 [Bretschneider Decl.], ¶133.

Regardless of the claim construction, Bruning and Kabel do not disclose the "switch" limitation and therefore do not disclose the independent claims.

C. Claims 2-3, 5, 7, 9-10, 12, 14, 16-17, and 19 are patentable over Bruning and Kabel

These claims are each dependent from independent claims 1, 8 and 15. Therefore, they are each patentable for the reasons discussed above for independent claims 1, 8 and 15. Further, claims 3, 10, and 17 are patentable for the additional reasons discussed above in §VIII.B.

IX. GROUND 5: CLAIMS 1-2, 5, 7-9, 12, 14-16, AND 19 ARE PATENTABLE OVER DOWLING IN VIEW OF MUELLER

Ground 5 of the Petition alleges that claims 1-2, 5, 7-9, 12, 14-16 and 19 are obvious based on Dowling in view of Mueller. Pet., 5. For the reasons discussed below, these claims are not obvious over Dowling and Mueller.

A. Overview of Dowling

Dowling is one of the references cited on the face of the '341 Patent. Ex. 1001 ['341 Patent], 2. Dowling was identified on a September 3, 2020 IDS filed by Applicant. Ex. 2016 [9-3-20 IDS], 1. Dowling was considered, along with Mueller, by the Examiner on December 25, 2020, which was before the notice of allowance. Ex. 2017 [12-25-20 List of References Considered], 1, 3, 5. The examiner did not reject any claims based on Dowling (or Mueller) despite having considered both.

Dowling is directed to light emitting diode based products. Ex. 1006 [Dowling], Title. In particular, Dowling discloses using high-brightness LEDs combined with a processor to “produce a variety of pleasing effects for display and illumination.” Ex. 1006 [Dowling], Abstract. Examples given include bringing “autonomous color-changing ability and effects to a variety of consumer products and other household items.” Ex. 1006 [Dowling], Abstract. Dowling Fig. 1 is a block diagram of one embodiment that shows the processor 2 that operates the various LEDs through controllers 3:

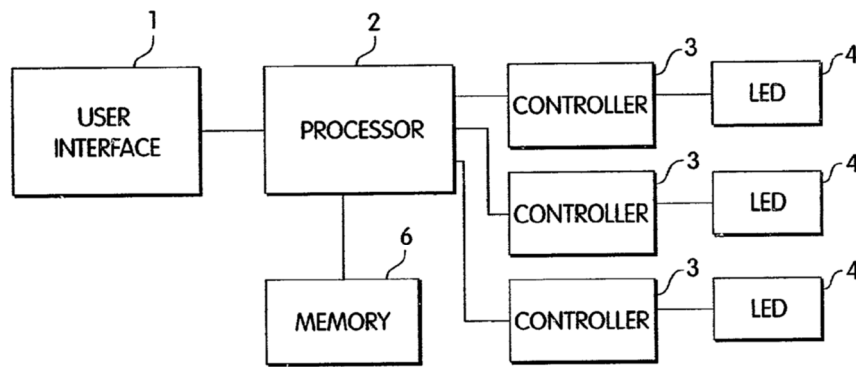


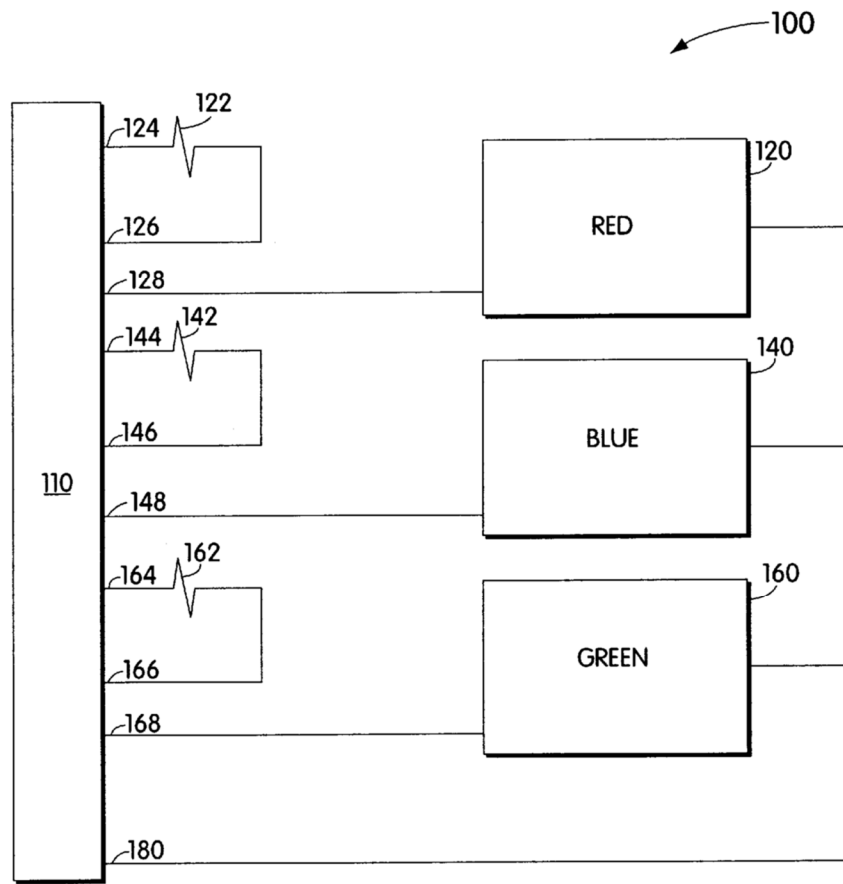
Fig. 1

B. Overview of Mueller

Mueller is one of the references cited on the face of the '341 Patent. Ex. 1001 ['341 Patent], 2. Mueller was identified on a September 29, 2020 IDS filed by Applicant. Ex. 2018 [9-29-20 IDS], 1. Mueller was considered, along with Dowling, by the Examiner on December 25, 2020, which is before the notice of allowance. Ex. 2017 [12-25-20 list of references considered], 1, 3, 5. The examiner did not reject any claims based on Mueller (or Dowling) despite having considered both.

Mueller is directed to a multicolored LED lighting and apparatus. Ex. 1007 [Mueller], Title. In particular, Mueller discloses light emitting LEDs that “may be controlled by a processor to alter the brightness and/or color of the generated light.” Ex. 1007 [Mueller], Abstract. The resulting illumination “may be controlled by a computer program” to provide different patterns of light. Ex. 1007 [Mueller],

Abstract. Mueller Fig. 1 (below) discloses a “stylized electrical circuit schematic of the light module of the present invention.” Ex. 1007 [Mueller], 2:40-41.



C. Claims 1, 8, and 15 are patentable over Dowling and Mueller

Petitioner asserts that mode switch or two-way switch 190 of Dowling renders obvious the claimed “switch capable of at least one of: (a) switching a voltage level input to at least one of the first operating LED circuit or the at least one additional LED circuit, or (b) switching the at least one additional LED circuit on or off, wherein (a) or (b) is selectable by a user switching the switch.” Pet., 70–73. This

two-way switch, however, fails to teach each of the claimed limitations and therefore does not render the claim obvious. In particular, while the claim requires a switch that is both “selectable by a user switching the switch” and performs one of the claimed switching functions, the Petition does not allege how two-way switch 190 performs any switching function.

Instead, two-way switch 190 is part of the embodiment disclosed in Fig. 8 of Dowling which does not disclose or discuss the various modes that two-way switch 190 may select. Ex. 1006 [Dowling], [0062]. To the extent two-way switch 190 may select the modes discussed with respect to Fig. 1, the two-way switch 190 corresponds to the user interface 1, shown in Fig. 1. Ex. 1006 [Dowling], Fig. 1. User interface 1 shown in Fig. 1 controls a processor 2, which executes a program stored in the memory 6 to generate signals which controllers 3 convert into a form suitable for driving the LEDs. Ex. 1006, [0038]. While user interface 1 of Dowling (which may correspond to two-way switch 190) may be capable of receiving input from a user (e.g., changing a mode), it does not switch any LED circuits as the claim describes. Instead, user interface 1 is “used to select a program from the memory 6” or for a similar function. Ex. 1006, [0042]. Indeed, the citations which Petitioner relies on identify the modes as being “under control of a program executing on the processor 2 of Fig. 1,” which then sends a signal to controller 3 to enter one of the modes described in Dowling. Pet., 71–72; Ex. 1006 [Dowling], [0044]–[0047].

The actual switching of the LEDs in the Dowling embodiment cited by the Petitioner is performed by controllers 3, not by user interface 1. Ex. 1006 [Dowling], Fig. 1 (showing user interface 1 connected to processor 2, which is connected to three controllers 3, each of which is connected to LED 4), [0040] (describing the controllers as different types of electronic componentry, such as transistors). These controllers 3, are not, however, “selectable by a user switching the switch,” which the claims explicitly require.

Further, the claims require that the switch individually switch a single LED circuit. *See, e.g.*, Ex. 1001 [’341 Patent], claim 1 (“a switch capable of at least one of: (a) switching a voltage level input to at least one of ***the first operating LED circuit*** or ***the at least one additional LED circuit***, or (b) switching ***the at least one additional LED circuit*** on or off”). In other words, the claim requires individual control of specific LED circuits. Dowling’s user interface 1 (and two-way switch 190) select a mode, which consists of switching various LEDs on and off depending on the requirements of the specific mode. Pet., 70-72, Ex. 1006 [Dowling], ¶¶[0044]-[0048]. This is different than switching an individual LED circuit, as required by the claims. Accordingly, Dowling and Mueller do not disclose the independent claims.

D. Claims 2, 5, 7, 9 12, 14, 16, and 19 are not disclosed by Dowling and Mueller

These claims each depend from independent claims 1, 8 and 15. Therefore, they are each patentable for at least the reasons discussed above for independent claims 1, 8 and 15. *See* §§IX.C.

Understandably, the original examiner did not make any rejection based on Dowling and/or Mueller despite having considered both references. Accordingly, the Dowling-Mueller combination does not disclose claims 1-2, 5, 7-9, 12, 14-16 and 19.

X. CONCLUSION

For the foregoing reasons, the claims should be affirmed.

Respectfully submitted,

/James T. Carmichael/
James T. Carmichael, Reg. No. 45,306
CARMICHAEL IP, PLLC

Date: August 17, 2022

CERTIFICATE OF COMPLIANCE WITH TYPE-VOLUME LIMITS

This Patent Owner Response (the “POR”) consists of 13,768 words, excluding table of contents, table of authorities, certificate of service, this certificate, or table of exhibits. The POR complies with the type-volume limitation of 14,000 words as mandated in 37 C.F.R. § 42.24. In preparing this certificate, counsel has relied on the word count of the word-processing system used to prepare the paper (Microsoft Word).

Respectfully submitted,

/Stephen McBride/

Date: August 17, 2022

CERTIFICATE OF SERVICE

The undersigned hereby certifies that the following documents were served
by electronic service, by agreement between the parties, on the date below:

PATENT OWNER'S RESPONSE

EXHIBITS 2008-2019

The names and address of the parties being served are as follows:

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Respectfully submitted,

/Stephen McBride/

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