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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

HOME DEPOT U.S.A., INC.
Petitioner

v.

LYNK LABS, INC.
Patent Owner

IPR2021-01368 (Patent10,757,783 B2)
IPR2021-01370 (Patent 10,349,479 B2)

Record of Oral Hearing
Held: November 17, 2022

Before JON B. TORNQUIST, MONICA S. ULLAGADDI, and SCOTT RAEVSKY, *Administrative Patent Judges.*

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The above-entitled matter came for hearing on Thursday, November 17, 2022, commencing at 1:00 p.m. via teleconference.

P-R-O-C-E-E-D-I-N-G-S

(1:00 p.m.)

JUDGE RAEVSKY: Welcome to the Patent Trial Appeal Board. We're here for oral argument today in Inter Partes Review Nos. IPR2021-01368 and 013790, in which Home Depot U.S.A., Inc., is the Petitioner and Lynk Labs, Inc., is the Patent Owner.

At issue in IPR2021-01368 is U.S. Patent Number 10,757,783 B2. At issue in IPR2021-01370 is U.S. Patent Number 10,349,479 B2. Judges Tornquist and Ullagaddi join me on the panel.

As requested by Patent Owner, without opposition from Petitioner, we will hear these two IPRs serially, so we'll begin with IPR 2021-01368, followed by 01370.

Let's start with appearances.

Petitioner, please tell us who is appearing and who will be arguing for each case.

MR. MUELLER: Good morning, Your Honors. Benjamin Mueller for Petitioner, Home Depot. With me today are my co-counsel, Jennifer Nall, who will be arguing IPR 2021-01368 with me, as well, and for the other IPR, we have Brian Erickson, as well as Mary Dahl, all for Home Depot.

JUDGE RAEVSKY: Thank you. And who do we have -- who do we have appearing and arguing for Patent Owner today?

MR. McBRIDE: Good morning, Your Honor. This is Steve McBride with Carmichael IP. I have Jim Carmichael with me and Mitch Yang is on as well. I will be arguing for the 01368 IPR and Mr. Yang will be arguing for the 01370 IPR. And we may have some other people on the public line. I'm not sure.

JUDGE RAEVSKY: That's fine. Thank you, counsel. We wanted to clarify for the benefit of the court reporter whether the parties are requesting separate transcripts or are okay with combined transcripts today for the two hearings.

MR. MUELLER: Petitioner is okay with the combined transcript.

MR. McBRIDE: As is Patent Owner, Your Honor.

JUDGE RAEVSKY: Okay. Thank you.

Before we begin, I do have a few reminders. If you've been in hearings before, you've heard these; please bear with me.

When you're referring to a slide today, please tell us the slide number so that we can follow along. Also, please remember to mute yourself when not speaking and when you do speak -- start to speak, please give your name for the benefit of the court reporter. And as has been noted, please be aware that there may be members of the public on the line today.

For each case, each side will have 45 minutes to argue, with one modification related to the LEAP program, which I'll discuss in a moment. Following the portion of the hearing addressing IPR2021-01368, we will take a short recess, and then we will hear argument in the 1370 case.

Petitioners filed a Legal Experience and Advancement Program, or LEAP, request in each case, which grants 15 minutes of additional argument time for practitioner having three or fewer substantive oral arguments in any federal tribunal. The Board has granted these requests. Because this hearing is consolidated, Petitioner is granted 15 additional minutes total, rather than 15 additional minutes per case. Petitioner may determine how to allocate those 15 minutes however they'd like between the two cases, and, of course, the LEAP practitioners may argue the entirety of the two cases or as much of the cases as Petitioner determines is appropriate.

Petitioner, how would you like to allocate your additional 15 minutes of time across the two cases today?

MS. NALL: This is Jennifer Nall for Petitioner. We're going to divide it evenly, please, Your Honor.

JUDGE RAEVSKY: Okay. For each case, we'll first hear from Petitioner and then from Patent Owner.

Petitioner, would you like to reserve any time for rebuttal today for the 1368 portion of the hearing?

MR. MUELLER: Good afternoon, Your Honor. Benjamin Mueller for Home Depot. Yes. For 01368, we would respectfully reserve, I believe it's about 22 1/2 minutes for rebuttal leaving 30 minutes for the opening.

JUDGE RAEVSKY: Thank you. When you're ready, you may begin.

MR. MUELLER: Good afternoon, Your Honors. My name is Benjamin Mueller for Home Depot. With me is my co-counsel, Jennifer

Nall, for Home Depot, as well. We'll begin the discussion of IPR2021-01368. Today I'll be speaking for a few moments about claiming construction, as well as Ground 2, with my co-counsel, Jennifer Nall, discussing Ground 1 and Ground 3. This is my first time speaking before the Board and I greatly appreciate the opportunity.

With that, I believe we can turn to Slide 4 to discuss claim construction for a few moments. The Board construed one claim term in this matter, a switch configured to enable user selection of the different color temperatures of light. In doing so, the Board rejected two pre-institution arguments that were made by Patent Owner, the first being that Patent Owner argued that the switch must enable direct control. But if we look at the Board's construction of this claim term, to permit a user to select a color temperature through direct or indirect use of the switch, the Board rejected Patent Owner's argument -- that limiting argument.

Secondly, Patent Owner argued, pre-institution, that the construction of switch must be a physical switch and that that was necessary; for example, a physical dimmer switch that's user operable on the wall as opposed to a transistor within the product. The Board, in its construction, found Patent Owner's proper construction of a physical switch to be unnecessary.

If we move on to Slide 5, in Patent Owner's response, Patent Owner applied the Board's preliminary construction; therefore, waiving and abandoning those two pre-institution claim construction arguments.

And with that, I will turn it over to Jennifer Nall who will be discussing Ground 1.

MS. NALL: May it please the Court, Jennifer Nall. I'll be discussing Grounds 1 and 3.

To start with Ground 1, the dispute here is about whether or not Grajcar in view of Walter discloses elements 1b, 1e, the corresponding elements of Claim 8, and whether that combination also is disclosed in 8f -- discloses 8f, and so we're going to be focusing on those elements. None of the other elements are disputed, nor is it disputed that the '783 patent copied wholesale portions of Grajcar into its specification.

Turning to Slide 8, we're going to start with limitation 1B. In its decision to institute, the Board addressed the proposed combination and found that Switch 2115 is indirectly enabling user selection of color temperature in Grajcar. Patent owner argues that Switch 2115 does not enable user selection.

However, Patent Owner does admit -- turning to Slide Number 11 -- oops, 10 -- turning to Slide 10, Patent Owner does admit that Grajcar embodiments do have user selection of color temperature, that in some of those embodiments, Switch 2115 opens and closes in response to user selection. And there's no dispute about whether 2115 is itself a switch.

So Switch 2115 is a switch configured to enable user selection of color temperature of the light emitted by the circuit in Grajcar, and that

alone should be dispositive. Nonetheless, I'm going to address the arguments Patent Owner made and explain why those arguments lack merit.

JUDGE RAEVSKY: Ms. Nall, do we need to revisit our construction from the Institution Decision in order to find that Grajcar discloses this limitation?

MS. NALL: No, Your Honor. Your Institution Decision said that it -- that this limitation, the switch configured to enable user selection doesn't require direct control. It can be direct or indirect. And Patent Owner agreed with that construction and did not -- did not argue any different construction in their Patent Owner response and that construction is correct.

Moving on to Slide 11, one of the arguments Patent Owner makes is that Grajcar discloses that Switch 2115 can be actuated in response to different things, not only user selection, but analog inputs, digital inputs, and that they be -- that, as shown in paragraph 192 in Grajcar, they can be used alone or in combination with input from a user.

And Patent Owner argues that because it's not user selection alone, that that means that 2115 is not enabling user selection. However, Claim 1 is a comprising claim and limitation 1b requires a switch that enables user selection. And Claim 7 of 7 -- of the '783 is a dependent claim from Claim 1 that further adds a limitation that a sensor can also change color temperature selection.

And so just like the '783, Grajcar allows multiple things to be input into the color temperature selection in addition to user control, which is

explicitly disclosed in Grajcar. And so the fact that Grajcar has multiple inputs does not mean that user selection does not enable -- the switch is not enabled by user selection.

Also, I want to point out in the paragraph 192 that what Grajcar says is that the excitation voltage can be modulated in response to multiple different things, one of one them being user selection. And later we'll see that Grajcar discloses that that excitation voltage, the source voltage, is 120 volts, 60 Hertz, but we'll get to that later.

Moving on to --

JUDGE RAEVSKY: So this is Judge Raevsky, again. Ms. Nall, is Grajcar's dimmer switch part of the LED lighting device?

MS. NALL: So in Grajcar, it is not disclosed that the dimmer switch is part of -- is integrated into the LED lighting device. And that same issue is addressed in the proposed combination.

In the proposed combination, shown here on Slide 7 -- 12, the petition says that the proposed combination is taking Figure 21 of Grajcar and integrating it inside the bulb of Walter where the user selection is done by Switch 170. And so in the proposed combination, there -- there's no proposed combination having an external dimmer switch. All of the user control in the proposed combination is integrated on the bulb where Switch 170 is the switch that is providing all the user control of that color temperature selection in the proposed combination, which was explicitly explained in the petition as shown on page -- on Slide 12.

JUDGE RAEVSKY: It seems like from the briefing that Patent Owner thinks that the combination is a bit unclear. So you clarified that the dimmer switch is not part of the combination, but is it -- is it that the Figure 21 circuit of Grajcar is inside the bulb or is it that the switch, in your view of Walter, is in the Figure 21 circuit of Grajcar?

MS. NALL: I think it would help to answer your question to look at Figure 21, which is shown on Slide 13. So Figure 21 does not have the dimmer switch shown on it. That -- there's no component shown that has the dimmer switch. There's as shown earlier in the discussion of Grajcar, there can be a dimmer switch or a sensor or digital inputs or analog inputs. All of those are possible ways to control Switch 2115 and none of them are shown in Figure 21.

What is shown in Figure 21 is that there is a -- there is a symbol for a switch that has some kind of control and in the proposed combination, as shown on Slide 12, the proposed combination says that Grajcar -- embodiment of Grajcar requires user selection and that user input is going to be Switch 170 in the proposed combination. Grajcar doesn't require a dimmer switch and it doesn't require the dimmer switch to be external.

And in the proposed combination, the user control of color temperature is Switch 170. And so the proposed combination, looking again at Slide 13, it's taking all of the circuits in Figure 21 and putting them into the bulb of Figure 2 where any user selection of color temperature is done using Switch 170.

JUDGE RAEVSKY: Okay. So that's helpful. How do you respond, Ms. Nall, to Patent Owner's contention that you didn't explain that in the briefing and that it's unclear how the combination would be made?

MS. NALL: Your Honor, the -- as shown on Slide 12, the petition makes abundantly clear exactly what the combination is and that the Figure 21 LED circuits are in the bulb and that Switch 170 is the switch that allows user input as taught by Walter -- as required by Walter. So I think Patent Owner is wrong that the petition doesn't disclose that and it is expressly shown in the petition that that is the proposed combination. To the extent that Patent Owner's arguing that we didn't explain exactly how Figure 21 would be replacing the elements inside of Walter, that's bodily incorporation, which is not required under the law.

What the petition says is that -- that the bulb in Figure 2, plus the Switch 170, would be combined with the circuits in Figure 21 and that is the proposed combination and it was explained in the petition.

JUDGE RAEVSKY: Thank you.

MS. NALL: I'd like to, at this time, show Slide 7 that Petitioner -- I'm sorry -- that Patent Owner has in their demonstratives because I think Slide 7 of Patent Owner's demonstrative shows -- oh, actually -- no. I'm going to move to Slide 17 first. I apologize.

Moving to Slide 17, the next argument that Patent Owner makes is that the combination does not disclose element 1e, which requires that the

source voltage for the combination -- the source voltage for the claim be AC mains.

As shown on Slide 17, Grajcar, at paragraph 191, expressly says that the excitation voltage for an embodiment in Grajcar is 120 volts at 60 Hertz. And the petition states that a POSITA -- that a person of ordinary skill in the art would understand this disclosure to mean that the source voltage is disclosed as being AC mains.

Now, all the experts agree that Grajcar -- that 120 volts, 60 Hertz, is AC mains in the United States and so that's not in dispute. What is in dispute -- that's as shown on Slide 18, excerpts from the deposition transcripts of Patent Owner's expert and the declaration by Petitioner's expert.

Moving on to Slide 19, this is Claim 1. And I thought showing this claim and talking about limitation 1e, the AC mains limitation, would be helpful to understanding the argument.

So Patent Owner says that Grajcar doesn't disclose AC mains because the device receives the voltage after a dimmer. However, as just discussed, in the proposed combination, there is no dimmer. Any user control is expressly part of -- that user interface is part of the device, is integrated into the proposed combination. So Patent Owner's argument is wrong for that first reason.

Second, Patent Owner is arguing that the source voltage is after the dimmer -- is the dimmer switch and does not include the AC mains voltage

into the dimmer switch, but Patent Owner's expert has testified that a dimmer switch is a component that you can buy off the shelf at Home Depot and on its own it is not a source voltage. It doesn't -- you don't get electrocuted if you take it out of the box. It's just a component.

And this is the time when I want to show -- show Slide 7 from Patent Owner's slides. This slide, I think, is a very good description of exactly what Patent Owner is arguing. They're saying that there is a wall dimmer switch that is after the source. So the wall is connected to the voltage on a house, which is AC mains, and it's right here: 2110 is a dimmer switch connected to that AC mains and then the rest of it is the LED lighting device.

And what Grajcar says is that the AC excitation supplied to that is reduced by a dimmer switch. However, that doesn't make the dimmer switch a source. The dimmer switch is just a component. The excitation voltage, as disclosed in Grajcar, is the voltage into it. And in Patent Owner's own slides, that is a dimmer switch which is connected to a house, which is AC mains.

In addition, in the combination, as I said, this dimmer switch is part of the integrated bulb and so there is no dispute that the source voltage into the bulb would be AC mains.

Another reason Patent Owner is wrong is because when this dimmer switch is fully on at a hundred percent, the voltage out is AC mains, is a hundred percent. And there is no requirement -- there is no temporal

requirement in Claim 1 that means that if the voltage it receives is only sometimes AC mains, it is not invalidated by that disclosure. And so the fact that a dimmer switch can be a hundred percent means that Patent Owner's argument is again wrong for that reason.

JUDGE RAEVSKY: Ms. Nall, this is Judge Raevsky. I think I might have misunderstood earlier. I thought you said that the dimmer switch was not part of the combination. Again, I may have misheard, but it just sounds like you said that it is part of the combination and is therefore internal to the bulb. Can you clarify that please?

MS. NALL: I apologize for the confusion, Your Honor. There is no dimmer switch in the combination. The example that Patent Owner is making is that this dimmer switch would be the user input and in the combination, the user input is only that switch that is on top of the bulb, Switch 170, and so I was making an analogy between this dimmer switch and the Switch 170, which is part of the bulb in the --

JUDGE RAEVSKY: Okay.

MS. NALL: -- proposed combination. And so in the proposed combination, there's no separate dimmer switch. It's just that Switch 170 that allows the user input.

JUDGE RAEVSKY: Okay. Thank you.

MS. NALL: And then moving back to slides from Petitioner, I'm going to move to Slide 21.

So in Slide 21, I want to explain that Patent Owner's interpretation of its claim that the voltage after a dimmer switch is not AC mains actually excludes all embodiments disclosed in the '783 patent that allow for color temperature selection based on user input. The only embodiments in the '783 patent that allow for user input are a dimmer switch which then goes into a lighting device. So in the '783 patent, if the Board were to interpret it the way Patent Owner wants, it excludes every single embodiment.

And so to be clear, the proposed combination is the bulb of Walter with Switch 170 that has the user input and this bulb is disclosed as being a standard lighting fixture and it has a standard connection on the bottom and both Grajcar and Walter say that the input into those is a normal house input, 120 volt, 60 Hertz, which is AC mains.

Finally, in addition to the arguments Patent Owner makes about 1a and 1e, which it also makes about Claim 8. For Claim 8, Patent Owner argues that element 8f is not disclosed by the proposed combination. And this limitation requires that all of the LEDs be integrated on a single die.

In the petition, the petition states that this limitation is both disclosed and rendered obvious over Grajcar. In the first sentence of paragraph 189 of Grajcar, it says that in some embodiments, that a single die can have some or all of the illuminating LEDs. And looking at Figure 21, the illuminating LEDs are Groups 1 through 5 of the LEDs. There's no dispute that all of these LEDs are illuminating.

And so in the petition, it was argued that this disclosure, that some or all means that a person of ordinary skill in the art would know and would find it obvious to implement Figure 21 on a single die.

Now, to be sure, it doesn't say that every embodiment has all. It does -- it also has the disclosure that in some embodiments, it could be some. And then it follows with a nonlimiting example describing an embodiment where only some of the LED are integrated on a die. But that is a nonlimiting example and Patent Owner is relying on that to say that Petitioner is misunderstanding the first sentence of paragraph 189.

But if the Board were to interpret Grajcar the way Patent Owner wants, then the first sentence of paragraph 189, which says some or all, would be limited to just some of the illuminating LED, and that's not what it says.

Also, the -- moving on to Slide 25, the petition said it was both disclosed and rendered obvious over this disclosure in Grajcar. And Patent Owner has -- in the Patent Owner response, it did not respond to the obviousness argument but did say -- did respond to it in their sur-reply and that new argument is improper and should not be allowed. However, nonetheless, even if the Board decides to address it, it is not improper to say something is both disclosed and rendered obvious over a disclosure in a single reference. First of all, it's an often quoted maxim of patent law that anticipation is the epitome of obviousness; for example, in *Cohesive Technologies v. Water Corp.*, 543 F.3d 1351.

In addition, Figure 21 is not expressly stated to be the embodiment that some or all of paragraph 189 of Grajcar is describing. And so it was proper for the petition and for Petitioner's expert to discuss the application of the embodiment described in Figure -- paragraph 189 with respect to the embodiment in Figure 21 and say it was obvious, in light of Grajcar alone, to use the disclosure of implementing all the LED on a single die. And that was specifically addressed in the petition.

With Your Honor's permission, I'll move on to Ground 3. With respect to --

JUDGE TORNQUIST: So this is Judge Tornquist. I just have one clarifying question for you. So if I understand it correctly, in Grajcar, that switch is activated by the AC input excitation current dropping; is that correct? -- or being modified.

MS. NALL: Yes, Your Honor.

JUDGE TORNQUIST: Okay. So you're getting rid of the dimmer control and -- is there any other way that that input excitation energy would change there without the dimmer control?

MS. NALL: Your Honor, yes. Switch 170 is the way that that switch is being -- is being actuated in the proposed combination.

JUDGE TORNQUIST: Okay. So we're getting rid of all of this dropping, in a sense, and we're just saying, look, just use the 170 Switch and that will turn on your change of color activity.

MS. NALL: You're right, Your Honor. Yes. The petition doesn't say exactly how Switch 170 will actuate Switch 2115, but -- and bodily incorporation is not required under the law. It could be done with a dimmer -- Switch 170 might be a dimmer switch. It is disclosed as being something that the user can turn, I believe. And so it could be a dimmer switch that at -- that reduces the voltage that's -- the input source voltage, that's the excitation voltage, to the bulb. But it could be some other way.

Just like in Grajcar, it discloses that Switch 2115 can be actuated based on a digital input, an analog input, user control, or a sensor. And all of those are possible ways to actuate 2115 in Grajcar. And the user input 170 Switch could be done using any of those mechanisms. It doesn't have to be a dimmer, though it could be.

JUDGE TORNQUIST: Okay. Okay.

MS. NALL: Thank you.

JUDGE ULLAGADDI: Counsel, I have a follow up question to that. What would a person of ordinary skill in the art have thought about that Switch 170? Is there any expert testimony that supports your contention that it could be any of these or that it would have been understood to be a dimmer switch or some of the other options you're talking about?

MS. NALL: So, Your Honor, the --there's lengthy declaration support and deposition testimony of Petitioner's expert on this point.

I'm going to move back to Slide 12. This shows the petition and it doesn't necessarily show where in the expert declaration the expert discussed

it, but the expert explained that a POSITA would know that Switch 170 is disclosed as being a user input switch and that in Walter, that is the way that the user changes colors and that a POSITA would have found -- have been motivated and found it obvious to try to use the bulb of 1 -- bulb of Figure 2 with Switch 170 to do the color temperature selection that requires user input control as disclosed in Grajcar.

JUDGE ULLAGADDI: I guess what I'm asking is that Grajcar discloses a specific way to select that color, which is with a dimmer, and user Switch 170 is not as specific. So why should the panel find that it would be compatible with a switch that is actuated by a dimmer?

MS. NALL: Your Honor, I respectfully disagree. Grajcar doesn't say that it has to be a dimmer switch. It gives multiple different nonlimiting examples, one of which is a dimmer switch, to actuate Switch 2115. It says that it could be actuated by a sensor; it could be actuated by analog input and digital input.

In Walter, Switch 170 ends up being a digital input into the bulb, and so Grajcar expressly discloses that's one of the ways to actuate 2115 and so that is expressly disclosed. Moreover, Switch 2115, alone, is enabling user temperature selection and there's no requirement of direct user selection.

JUDGE ULLAGADDI: Thank you.

JUDGE RAEVSKY: This is Judge Raevsky. Either now or later in your rebuttal, would you please give us citations from Grajcar that explain those other input options that you just discussed?

MS. NALL: Yes, Your Honor.

JUDGE RAEVSKY: Thank you. It would also be helpful if you can point to where in your briefing those input options were discussed.

MS. NALL: Yes, Your Honor. I will do that in the rebuttal.

If I may turn, very quickly, to Ground 3? Patent Owner only disputes whether elements 1a and 1f are disclosed in Ground 3. There's no dispute that Walter alone discloses red, green, and blue LEDs. The dispute is whether or not those different colors are color temperatures. And in the petition, it points -- sorry. And what we know is that Walter definitely has different colors and so the question is whether those are different color temperatures.

Grajcar, which was verbatim copied by the '783 patent from many elements, discusses what a person of ordinary skill in the art would know about color temperature in the context of LED lighting devices. And what Grajcar says is that blue and green, which are colors, would have a color temperature select -- color temperature of around 2700 to 3000 Kelvin and that they would be described as having warm or cool temperatures. And we know Grajcar is evidence of what a person of ordinary skill in the art would know and would talk about with respect to LED lighting devices because it was copied and it's at the time and it expressly says LED lighting devices have colors and those have color temperatures.

In response to the Patent Owner response saying that colors don't have color temperatures, Petitioner asked Patent Owner's expert about color

wheels, which are described -- which describe colors as having color temperatures, and in Patent Owner's expert's deposition, he agreed that colors are generally described as having color temperatures of warm or cool. He disputed whether or not that is -- applies to lighting and said it would only apply to paint; however, we know from Grajcar that's not true. Colors have color temperatures. They're described as warm and cool and that is what a person of ordinary skill in the art would know about LED lighting devices at the time. There's no disclosure in anything other than Patent Owner's expert's proposition that the colors being described as warm and cool be limited to paints and not illumination colors.

JUDGE RAEVSKY: Ms. Nall, I'll just interject that you have about a minute left in your main time. We notice that you haven't reached Ground 2. Of course, you can feel free to go into your rebuttal time if you'd like to do so.

MS. NALL: Thank you, Your Honor. I'll quickly address element 1f of Walter and then we'll move and do two minutes of Ground 2 and then save the rest for rebuttal, if that's okay.

JUDGE RAEVSKY: Of course.

MS. NALL: With respect to element 1f, the petition states that Walter alone discloses a water resistant bulb in Figure 2, that Walter says that figure can be any standard lighting fixture, and that a person of ordinary skill in the art would understand and would find it obvious, based on Walter, that the disclosure of having any standard lighting fixture would be a disclosure of

lighting fixtures that require water-resistant housing, for example, bathrooms, outdoor lights, showers, and that those -- that means that this limitation is obvious over Walter alone.

And the petition also points to Grajcar, which was the -- '783 patent copied, verbatim, Grajcar into the '783. There's no disclosure in the '783, other than what was copied from Grajcar, about water-resistant housing. And Patent Owner's expert has agreed that water-resistant housing, in the context of lights in a house, was known -- that water-resistant housings for LEDs at the time was known and that all of the disclosure in the '783 patent about water-resistant housing is part of the prior art.

And for those reasons, Your Honor, Ground 3 should be found to invalidate the asserted claims. I'm going to now pass it to my colleague, Ben Mueller for Ground 2.

JUDGE RAEVSKY: Ms. Nall, I'll just ask a question -- really quick question in light of your short time. This applies to both Grounds 2 and 3. I'd like to hear your response to Patent Owner's contention that you've changed the grounds in your reply by bringing in Grajcar to bolster your case.

MS. NALL: Your Honor, that is not accurate. As shown on Slide 32 -- well, on page 21 -- 73 of the petition, it expressly cites to Grajcar, Exhibit 1004, paragraph 195, which shows that water-resistant housing was known to a person of every skill in the art at the time and so it was put in the petition and it is part of the petition that water-resistant housing was known

to a person of ordinary skill in the art. It doesn't change the grounds. The grounds are Walter alone. And Walter renders, obvious, using a water-resistant housing based on its disclosure of standard lighting fixtures.

And as the petition says, a person of ordinary skill in the art would understand that to include water-resistant housing as required by showers, outdoor fixtures, and as disclosed by Grajcar. This is not a difference in what was in the petition.

JUDGE RAEVSKY: Thank you.

MS. NALL: Thank you. And now I'll turn it over to Ben Mueller to handle Ground 2.

MR. MUELLER: Thank you. Very briefly, Your Honors, on Ground 2, if we could hop over to Slide 38.

Patent owner only disputes whether the Reymond and the Stephens combination discloses elements 1a and 1e. With 1a, we are back talking about the different colored LEDs emitting light of different color temperatures and with 1e, that is the AC mains voltage source being used to drive the LED lighting device.

If we turn to Slide 39, please, Reymond discloses red, green, and yellow LEDs, which is undisputed. Like with Walter, the disclosure of separate colored LEDs, it would be obvious to a POSITA, for the same reasons that Ms. Nall has already articulated, that the disclosure of separate colored LEDs necessarily discloses LEDs that emit light of different colored temperatures.

And if we could please advance to Slide 41, moving on to elements 1e, which is -- or, actually, rather, we can just go to Slide 19 which just shows us the claim language. Apologies.

Element 1e -- when the LED lighting device is driven with an AC mains voltage source, Patent Owner makes two arguments that are not commensurate with the scope of the claims regarding element 1e. This element is disclosed by Reymond and Stephens. The first argument is that there are components within the Reymond and Stephens combination that are designed to be driven by batteries. But as we can see from the claim language in this broad LED-lighting-device-comprising claim, there's no specific claim language that requires specific components to be driven by AC mains voltage; rather, it's the entire LED lighting device that is driven with an AC mains voltage source.

And, finally, Patent Owner also makes an argument in its Patent Owner response that the Reymond and Stephens device must be driven by AC mains voltage at all times. Again, there's no temporal requirement regarding elements 1e when we looked to the direct claim language.

And with that --

JUDGE RAEVSKY: Mr. Mueller, this is Judge Raevsky. So when the AC mains is connected to Stephens' device, is it solely charging the battery or does it also power the other functions of the device?

MR. MUELLER: Your Honor, in the Reymond and Stephens combination, what happens is that there is a plug that is connected to an AC

mains voltage source and then when the Reymond and Stephens combination is then plugged in from that AC mains voltage source, the AC mains voltage source plug is the device that is then powering, at that moment, the entire LED lighting device.

In Stephens, there is a disclosure at column four, line 6 through 15, that the batteries can be charged from 110 VA voltage AC and within the Reymond and Stephens device is an integrated battery charger. Again, when it's plugged in at that point, it's the device that is being powered by AC mains voltage.

JUDGE RAEVSKY: So could -- in the combination, in your view, the combined device, the handheld device, could operate as intended in Stephens with changing the lights and so forth, not merely just charging the battery.

MR. MUELLER: Your Honor, I believe that it is when the device is plugged into the AC mains voltage source that the device would be considered to be powered by the AC mains voltage, at that moment.

JUDGE RAEVSKY: But we don't know from the combination if that power is merely charging the battery or, also, powering the functionality of turning on lights, et cetera, in the combined device.

MR. MUELLER: I believe, Your Honor, that the disclosure at column 4, line 6 through 15, is the disclosure in Stephens that discusses whether or not the device is powered by the AC mains voltage source. I'm

happy to take another look at the disclosure in Stephens and we can further respond as necessary and rebuttal.

JUDGE RAEVSKY: Okay. Are you -- is your time complete, then, for now?

MR. MUELLER: That's correct, Your Honors.

JUDGE RAEVSKY: Okay. So you have about 15 1/2 minutes remaining for your rebuttal.

We'll go ahead and go to Patent Owner now. Would you like to reserve any time for sur-rebuttal today?

I believe you're on mute, Counsel.

MR. McBRIDE: Apologies, Your Honor. Yes. We'd like to reserve 15 minutes, please. Thank you.

JUDGE RAEVSKY: It's quite all right. I was on mute earlier. I get it. Fifteen minutes reserved. You have 30 minutes for your main argument.

MR. McBRIDE: Bear with me one second while I find my -- share my screen here. Okay. Thank you, Your Honors. I appreciate it. Let me set my -- up here and get started.

Okay. So I'll jump, first, to Slide 3, just a quick overview of the '783 patent.

The effective filing date here is December 2, 2011. That's what we're using, at least, for the IPR. There was a student, he petitioned about what the proper date was, but this is what everybody's been using. It doesn't -- it doesn't appear to really impact any of the dates.

Three grounds here: Grajcar and Walter; Reymond and Stephens; and Walter. I will note that Claims 8 and 11 of Walter are 102, so, obviously, this doesn't really matter for those particular claims. It is an anticipation argument.

Moving on to Slide 4, this is Representative Claim 1. I want to note that the claims of the '783 patent are direct to an LED lighting device and each of the claims in the patent is directed to LED lighting devices and what an LED lighting devices comprises. Thus the limitations are largely directed to elements that must be integrated into the LED lighting device and not elsewhere.

Turning to Slide 6 of our presentation, Grajcar does not disclose a switch configured to enable user selection of the different colored temperatures of white. The switch from Grajcar the Petitioner is relying on -- this is Bypass Switch 2115 -- is switching at 60 Hertz a second -- that's 60 times a second -- and maybe even faster. I mean there's a bridge rectifier there, 21 and 5, so it's probably, actually, 120 Hertz in different embodiments. It can -- it can be much higher than that. But the point is, it's much too fast for a user to actually switch back and forth. This is something that has to be controlled elsewhere.

And, further -- and then where it is controlled by is from input coming in from 2110, the voltage supply on the -- on the left side, the AC excitation. We'll talk a little bit more about that.

Further, Bypass Switch 2115 is switching regardless of whether there is any user input. In certain embodiments of Grajcar, the switch can be switched automatically by, for example, a processor with some programs that are programmed to provide the AC excitation. So there are a lot of embodiments in Grajcar that don't even have a user input and, thus, there is no user selection of different color temperatures in those embodiments. So the switch by itself does not enable users to select different color temperatures.

I understand that there was a claim construction, but I don't think it really applies to the plain claim language here where you need something enabling user selection of the different colors, and whether that's the switch or whether that's the user input element -- whether that's the user input element alone or in combination with the switch, you need a user input element to enable user selection.

JUDGE RAEVSKY: Mr. McBride, this is Judge Raevsky.

MR. McBRIDE: Yes, Your Honor.

JUDGE RAEVSKY: In other embodiments, do you understand the switch to the actuated by the dimmer or some other user input element in Grajcar?

MR. McBRIDE: Yes, yes. There are different embodiments. So 2110 -- and this is Slide 7, so this leads into Slide 7, Your Honor. 2110 is the -- is the AC excitation source. It's the voltage source. And that is what's being -- is being modified -- it's being adjusted -- to control how fast Switch

2115 goes up and down; and how fast Switch 2115 opens and closes controls the color of -- the color being produced by the LEDs.

So as shown in Grajcar, paragraph 107, the AC excitation supplied to the light engine is reduced, for example, by lowering a position of the user input element on the dimmer control. So there are elements that have a user input element; they're embodiments that have a user input element. That user input element controls the AC excitation 2110.

And my read of Grajcar is that when there's a computer or processor or something like that, that's all it does, providing inputs, perhaps automatically, perhaps through a safe program, or, you know, whatever the software is telling it to do automatically, that is also controlling this AC excitation here.

So that's an external element, an external user input element, so it's not actually part of the device itself, if that makes sense. But, yes, there are other elements with, for example, dimmer controls. Grajcar talks about user input element. Dimmer control is usually how -- what it talks about. It could be something else. It could be a switch or something like that, but -- but in all cases that we're seeing, it's actually outside of Figure 21, outside the device of Figure 21. It's providing whatever voltage is received here, and it may be just a switch; it may be -- it may be the dimmer control; it may be a computer processor; it may be, really, anything, but it's the voltage received at 2110. It's some external source providing that.

JUDGE RAEVSKY: Mr. McBride, are you advocating for a construction of device here that would be more limiting than any electronics that are used for lighting?

MR. McBRIDE: I think-- I think so. If we go back to Claim 1, Your Honor, Claim 1 is an LED lighting device comprising. So whatever elements are in the LED lighting device, they have to be within it. So whether we call it a construction or whether it's just what's required by the claim language, I think that what's -- what the claim requires is that these various components be internal to the LED lighting device.

And if you go down -- with respect to switch, if you go down to the fourth limitation wherein the, at least, one LED circuit and the switch are integrated into the LED lighting device -- and this is part of Claim 8, as well -- if you go down to that limitation, then you see that the device itself has to have the circuit and switch inside of it. You can't have them be external.

So, to me, that just seems like an LED lighting device is a bulb or a fixture or something like that. It is not, you know, something where there's a -- there's a wall switch somewhere else, if that makes sense. I don't know. Does that answer your question, Your Honor?

JUDGE RAEVSKY: Yeah. I think that's helpful. I didn't understand the -- can you please go back to the claim language for a moment?

MR. McBRIDE: Yes, Your Honor.

JUDGE RAEVSKY: I didn't -- I didn't understand the Patent Owner's Response argument that Grajcar or the combination does not disclose

wherein the at least one LED circuit and the switch are integrated into the LED lighting device. Is that your position now, that that limitation is not disclosed?

MR. McBRIDE: In Grajcar? Yes, yes. I -- the position was that it's an external -- the switch is external and therefore does not satisfy the claim. And that is -- that is why. And then we've couched it in terms of enabling user selection. But the reason wouldn't, you know, having this dimmer outside would not work is because it doesn't satisfy that, and it also doesn't satisfy the preamble LED lighting device comprising either.

JUDGE TORNQUIST: So, Counsel -- this is Judge Tornquist -- can you just step me through -- why does it matter for their proposed combination, because they're now going to the switch of Walter? So now we actually have user control with the switch that is in the light bulb or at least attached to it. So why does your argument matter for the combination as they've proposed it?

MR. McBRIDE: Right. Well, I think there are a couple of different issues here with Walter, one of which is that -- the way the Petitioner has couched it as Walter's switch being added to Grajcar. It isn't what they said in the relevant part of the -- of the petition, right? So if you look -- I'll change to the petition. I hope you're seeing it here. But -- I'm trying to highlight what the petition says. It says, "It would have been obvious to modify Grajcar by adding a switch that allows user input as taught by Walter."

So our understanding of this element is that they're saying Grajcar is going into -- I'm sorry, that the switch of Walter is going into Grajcar, right? So that's what is in the petition.

Now --

JUDGE TORNQUIST: Okay. But they also pointed us to page 21 of their petition that says one of skill would have been motivated to integrate the LED circuits and switch of Figure 21 with the LED bulb disclosed in Walter.

That seems to suggest that going into the bulb and not --

MR. McBRIDE: Right.

JUDGE TORNQUIST: -- in your modification that you pointed to.

MR. McBRIDE: So where they're talking, at paragraph 26 and 27, about element 1b, they're talking about putting the switch of Walter into Grajcar. Now, they're pointing back to page 21, which is part of their rationale to combine Grajcar and Walter.

So this is talking about why you would combine. It's not talking about why Grajcar believes and Walter teaches things. So it's a little bit confusing in terms of what exactly the argument is, but we were going with what was -- what was discussed with respect to each limitation with respect to that, if that makes sense, and the limitations --

JUDGE TORNQUIST: Okay. So the problem is we might have a little ambiguity here that Patent Owner was faced with from reading the petition and having to respond to it.

MR. McBRIDE: Yes, Your Honor. It's -- you know, usually we have to respond to the arguments, I think, as a Patent Owner, that they're provided in the limitations themselves, right? So for limitation 1b, the argument is that it would be obvious to modify Grajcar by adding a switch that allows user input as taught by Walter. To the extent that they're doing something else, I just can't -- I don't -- I don't know how to respond to that.

There's ambiguity in terms of responding to what they're arguing. And it's not really something that I think that we've seen addressed head on in the -- in the papers from Petitioner here in the reply or the -- or the petition itself. So I think that's the ambiguity in the two.

But in terms of why you would add that switch -- and I'll go back to Slide 8 here just to show Figure 21 of Grajcar, which is what we understood the combination to be -- and this is something we asked the expert about and there's several slides on this and it's in our papers and the expert wasn't really clear about how he was combining Grajcar and Walter either.

Our understanding, as best we can tell, is they were trying to replace Switch 2115 with something from Walter with Switch 170. And as we understand that, you can't really just put a switch here because, again, we were talking about already, the switch is opening and closing at 60 Hertz a second or 120 Hertz a second, whatever it is. You can't just put a push-button switch or a toggle switch or something here. You would have to put it outside to enable excitation of the circuit because that's what -- that's what is in this circuit is causing the change in colors, if that makes sense.

JUDGE RAEVSKY: Counsel, can you please point to us where in your briefing you made that argument that the rapid switching of bypass switch 2115 precludes combining Walter's switch 170 with Grajcar?

MR. McBRIDE: Yes. We will check for rebuttal and provide cites for that.

JUDGE RAEVSKY: Thank you.

MR. McBRIDE: Okay. But I think it stems from the fact that Switch 2115 is 60 to 120 Hertz and the entire -- the entire circuit is, basically, designed to be controlled by the AC input excitation, so you can't just add a toggle switch to 2115.

Okay. I'd like to move on to the LED light, Slide 10 of our presentation, where Grajcar does not disclose the LED lighting device is driven with an AC mains voltage source. So I've put up -- we've put up Slide 10 -- from the petition, this is the LED lighting device, Figure 21, disclosed by Grajcar, is driven by an AC voltage source item, 2110.

So the LED -- the AC voltage source of Grajcar, they're alleging as AC mains, is 2110. That's what's driving Figure 21 and that's what the petition is saying, and we agree with that, to the extent a voltage source is driving Figure 21, it would be 2110.

The problem with it is that this voltage source is not and cannot be an AC mains voltage source because it has -- the AC excitation of 2110 has to vary, right? It has to be variable; otherwise, there's not going to be any color change in this -- in this circuit. This circuit is designed to have a variable

AC excitation source. And we talked about that up above at Slide 7, right? So the AC excitation supplied to the light engine is reduced, for example, by lowering a position to the user input element on the dimmer control. So --

JUDGE ULLAGADDI: Counsel?

MR. McBRIDE: Yes, Your Honor.

JUDGE ULLAGADDI: Can I ask a question? Is it your position that the LED lighting device is directly driven with an AC mains voltage source, that that's how we should interpret that limitation?

MR. McBRIDE: I think -- I think our interpretation of driven or driver is going to be that that has to be what is actually -- that has to be the -- that has to be the circuitry that is providing the power that is -- that is actually lighting up the LEDs, right? The LED lighting device is driven with an AC mains voltage source. What is coming into the LED light -- to back up, what is coming into the LED lighting device -- that's the power coming in -- basically, is how I would interpret that claim limitation.

Again, I don't know if it's -- if it's a construction or if it's just a plain -- you know, just looking at the plain language of the claim, the LED lighting device is driven with an AC mains voltage. But the power coming into this device of Figure 21 is the power at AC voltage source 2110 which cannot be AC mains in order to drive circuit and change color.

JUDGE RAEVSKY: Mr. McBride, this is Judge Raevsky. So earlier you pointed out that the switch is integrated into the LED lighting device.

So if the switch receives AC power, isn't the LED lighting device being driven by AC mains?

MR. McBRIDE: You mean the user input element?

JUDGE RAEVSKY: The claimed switch. It says, "wherein the at least one LED circuit and the switch are integrated into the LED lighting device." So if the switch receives power from AC mains, doesn't that not mean that the LED lighting device is driven with AC mains?

MR. McBRIDE: Yes. That's correct with respect to Claim 1, Your Honor. Our position is that Grajcar itself doesn't disclose a switch within the LED lighting device. The switch in Grajcar is external. So that's -- if Grajcar had a switch that was internal, perhaps it would satisfy that limitation, but it does not. What it's talking about is a user input element external to its lighting device. Does that make sense, Your Honor?

JUDGE RAEVSKY: Right. So now I'm trying to remember if Petitioner took the position that the switch from Walter in the combination is part of the AC mains voltage. Do you recall?

MR. McBRIDE: Again, this goes into the -- exactly what Petitioner is arguing with respect to Walter's switch. Our understanding would have been replacing Switch 2115 directly, but if it was -- to the extent they are trying to actually just replace out the user input element with the switch from Walter, it would be external.

JUDGE RAEVSKY: Okay. So let's take a different tack. Petitioner said that your interpretation is excluding all the embodiments. What's your response?

MR. McBRIDE: Oh. Give me one second, Your Honor. I've got to find that slide. I think it was Slide 21. Is this -- I've turned to Petitioner slides now. Is this the one you were talking about, Your Honor? Is this is the argument?

JUDGE RAEVSKY: Yes.

MR. McBRIDE: Okay. So I don't really understand the argument, to the extent the argument is that the dimmer itself cannot be an AC mains power source. I don't think the quotes here actually support that. The middle quote, "LED device 10 -- connecting to an AC power source like for example mains power or a switch or dimmer connected to mains power." It seems to indicate that the switch or dimmer is acting as the AC power source. It seems to indicate there's a difference between mains power and the AC power source itself.

So that's what I would understand from that -- from that argument.

I do think -- bear with me one second. Yes, I do think that the '733 patent acknowledges that a dimmer is not mains power for the reason, at least, described in that quote, in that '783 patent, column 12, lines 18 through 21.

Does that answer your question, Your Honor? There may be other places.

JUDGE RAEVSKY: That partly answers it. I'm trying to figure out, are there -- are there any embodiments you can point to in the challenged patent where the LED lighting device received AC mains power directly and is not modified by a switch?

MR. McBRIDE: In the '783 patent?

JUDGE RAEVSKY: Yes.

MR. McBRIDE: Well, so, I mean, my understanding -- and I have to go back and look at these, but my understanding is most of these -- you know, I'm looking right now at pages 4 and pages 5, Figure 2A of 2B, 3A, 3B, 4 of 5. I think that there are embodiments where certain of these could be driven by just AC mains. That is one of the main goals of the patent, is identifying where you can just add AC mains power.

JUDGE RAEVSKY: So the problem with that, though, is that none of those figures have a switch, and the claim requires a switch to be integrated with an LED lighting device. The only figure that shows a switch is Figure 8, which receives AC mains power, presumably, from element 44 and then it supplies presumably modified voltage to the LED lighting device.

So I'm struggling with your response because it seems like Petitioner might have some teeth to that argument, that your interpretation of the claims excludes all embodiments, which the Federal Circuit has said is rarely, if ever, a correct interpretation.

MR. McBRIDE: Well, Your Honor, I think the claim language is the dimmer switch -- my response would be the claim language is that the

dimmer -- the switch is within the LED lighting device. The LED lighting device comprises -- so I -- you know, I don't know that we've actually -- we've addressed whether the switches -- whether they're -- where the switch is actually within the lighting device, but the plain language of the claim is that the LED lighting light device comprises the switch and the switch is integrated into the LED lighting device.

So what's actually being claimed is a little bit different than what is in Figure 8, if that make sense, Your Honor.

JUDGE RAEVSKY: That does make sense.

MR. McBRIDE: Okay. Thank you. I appreciate it.

JUDGE TORNQUIST: Counsel, this is Judge Tornquist. Just so I understand your argument, if there was a transformer, which so many of these LED devices need a transformer from AC mains to drop it down --

MR. McBRIDE: Yes.

JUDGE TORNQUIST: -- if there was a transformer, then these would not be driven by AC mains power?

MR. McBRIDE: I think it would depend on -- Your Honor, respectfully, I think it's a hypothetical that would depend on where the transformer was, how it was integrated with the LED lighting device, and we'd have to look at the claim language to see how that fit within -- in what is required by the claims. If the transformer is external and the power being received at the device is not -- is not AC mains, and I don't think the device is being driven by AC mains, no.

JUDGE TORNQUIST: Okay.

MR. McBRIDE: If the transformer was internal -- I still think the -- the transformer is more traditionally -- and then, you know, if you look at Figure 21, the bridge rectifier, the resistors -- this is traditionally more what you would call a driver of a circuit, right? This is traditionally what would -- what would drive a circuit. Because it's taking whatever -- it's taking some voltage and it's transforming it into something that the circuit itself can use, the device itself can use, whatever's required.

So that's traditionally what we would think. I don't think that that issue -- you know, to the extent we have to interpret what a driver actually is, that hasn't really come up too much. I think -- I think Petitioner argued a little bit about a certain limitation -- a prior construction -- a prior -- from another -- another IPR. I'm not sure how relevant that actually is to the -- to the arguments we're -- that we're making here. But, traditionally, the circuitry that's going -- including transformers that is going to provide the power that we need to operate the circuit is what the driver is in -- in our general understanding and that's, again --

JUDGE TORNQUIST: Okay.

MR. McBRIDE: -- not something we've construed here but --

JUDGE TORNQUIST: Okay. So to recap, it really has to do for -- in your opinion, as to where it's located. If it's in the device, it could still be driven by AC mains, then, even if you had a transformer.

MR. McBRIDE: Again, I don't -- I don't -- I would have to look at the specific embodiment. I'm not -- I'm not --

JUDGE TORNQUIST: Okay.

MR. McBRIDE: -- sure. I'm sorry. I'm not -- we would have to -- now I think we're getting to a point where I would want to look and see if we had to construe the device driver in that -- in that hypothetical.

JUDGE TORNQUIST: Okay.

MR. McBRIDE: But, definitely, if the device itself is not receiving, you know, if the transformer is external, what's being received is not AC mains, and that's really what -- the argument we're making with respect to Figure 21 is that what's coming in here is not AC mains. So whatever -- if you want to say that 2110 -- AC voltage source 2110 is the driver, as Petitioner said in its petition, at Slide 10 of our demonstratives, well, that -- that's not actually AC mains. I mean, you could -- you could set that to -- you could -- you could open up -- like the Petitioner talked about, you could open it up and put it at 120 the whole time, but then you're not going to get any change in light, right? It's just going to be one color light with Figure 21. There may be other embodiments of Grajcar that would operate reasonably with AC mains, but not Figure 21.

Any further questions on that, Your Honor?

JUDGE TORNQUIST: No, no. You can move forward.

MR. McBRIDE: Yeah, jump down to Ground 2, Slide 14. Reymond does not disclose LEDs with different color temperatures.

Reymond discusses LEDs with different colors. It does not discuss different color temperatures as required by the claims. And this is really -- this is really, kind of, the crux of these arguments, is that colors are not color temperatures. They're something very different, at least in the context of LED lighting, lighting in general, and what I've seen and what I would understand the color temperature to be.

Fundamentally, color temperatures, in the context of LED lighting, refer to white light. You can think of this as different colors of the sun, for example. A black box radiator is what they call the technical term, and this is in the -- this is in the expert declarations -- Ducharme, our expert, at least, and I think it might be -- and Lebby's, as well. But you can think of it as the colors -- the different colors of white that you might see from the sun. Exhibit 2009 is the Ducharme declaration. Paragraphs 83 to 93 explain this pretty well.

So white light is composed of different components of physical light. The various different colors may be combined to create white light, but white light itself is not a component of different colors. And as discussed in Dr. Lebby's opening declaration, the range of white light is disclosed in Slide 14 here of our presentation, which shows the chart from Dr. Lebby's paragraph 52. White light is disclosed along the black dotted line referred to as the Planckian locus.

So shades that do not fall along this line are not white light and do not have color temperatures. Colors by themselves: Red, green, or blue or -- for

example, do not contain white light by definition. They need to be combined in order to create white light. One can add colors together and possibly obtain white light, but the color by itself does -- indicates the absence of white light and therefore the absence of a temperature.

So looking at Dr. Lebby's chromaticity diagram, you can -- at -- we've reproduced it at Slide 14. You can notice that each temperature shown at the bottom line here, these little -- the temperatures are along the bottom -- correspond to a specific dot along this black line right? This is the -- this is the Planckian locus. That's the temperatures each correspond to a place on the Planckian locus and colors that happen to be in -- on that -- on that black dot are colors that have color temperatures. Colors that are not do not have color temperatures.

And Dr. Lebby, in his deposition, testified to as much, for example, at Exhibit 2011, the Lebby transcript, at page 62, lines 16 to 18, stated color temperature numbers are only given on the Planckian locus for different scales of white light. So he's saying that the color temperatures are only along this Planckian locus, this black line, right?

When a white light says, for example, 2800 Kelvin color temperature, which is, you can see, between .4 and .5 -- you can see the 2800 there, right -- it's going to correspond to that dot up there, which is kind of a -- it's going be a white light with a yellow, orange-ish tint to it. It's not going to be green or red or blue because those are colors and not color temperatures. So those are the color temperatures.

JUDGE RAEVSKY: Mr. McBride --

MR. McBRIDE: Yeah.

JUDGE RAEVSKY: -- before I ask my question, I'll just let you know you have a two minutes remaining in your main time.

I'd like you to address the evidence in the reply that Grajcar, paragraph 1 of 7, states that blue or green colors may have a warm color temperature of about 2700 to 3000 Kelvin. I'd like you to address whether that is new reply evidence and why and, if you so choose to do so, address it substantively, as well.

MR. McBRIDE: Right. We'll have to check and I'll get back to you to, check on whether it's new reply evidence or not. To be honest with you, Your Honor, with respect to this passage from Grajcar, I'm not really sure what it -- what it's talking about. If you see, it's talking about a substantially warm color, blue or green. Nobody is calling blue or green warm color in this -- in this proceeding. And as -- that's with the color temperature of about 2700 to 3000, right? And if you go back to Slide 14 -- I'm sorry. Let me explain what I just did here. I was looking at Slide 29 of Petitioner's demonstratives which have this section of Grajcar that Your Honor was asking about.

So it's saying blue and green are the color temperature of about 2700 to 300. If you go back to Dr. Lebby's graph, which is, you know, pulled from a third-party source, CIE 1931 Chromaticity Diagram, if you look at 27 to 3000, that's going to fall, kind of, around the .4 to .5 range. And if you go

up to that black line, it's going to be white light with an orange-ish, reddish -- or not reddish, orangey-yellowish tint, pretty much. It's going to be -- kind of yellow light is what you're going to be seeing there.

So it's really kind of confusing, I think, to us, and the experts would say this is, well, why they're talking about blue or green as a color temperature with about 2700 to 3000 Kelvin light.

The same thing is with white itself: Color temperature of about 5000 to 6000, which is what Grajcar is talking about at paragraph 0107. White light itself is going to be somewhere around the dots -- I don't know if you can see it in our Slide of 14, which is the CIE diagram, again. I'll try to pull it up. There's a point that says equal energy, right? It's going to be along the black line. White light is going to be along -- the pure white is equal energy along the black line here at some point. That's what's going to be the pure line. And that's somewhere -- and that's going to be somewhere along -- around 4000 Kelvin. That's if you look down at the bottom. That's what -- that's what equates there.

So I'm not sure that -- whatever Grajcar is talking about, I'm not sure -- maybe if he had a typo or maybe he -- he wasn't talking about -- but you can go back to the -- to the paragraphs we talked about with Ducharme. You can look at paragraph 54 of Dr. Lebby's opening report and they will talk about specific colors that are -- that are very different than what Grajcar is talking about here.

So I think -- looking at this, and it's reported very, very well on the record, would not understand it's an accurate description of what color temperatures are, because the color temperature is wrong and then, as you see, we're talking here about blue or green being a warm color and white being a cool color. That's generally contrary, I think, to what the experts in this -- and the parties in this matter would describe blue and green and white, as well.

So does that answer your question, Your Honor?

JUDGE RAEVSKY: Yes. Thank you. You're at 32 minutes. You're welcome to continue into rebuttal, if you like.

MR. McBRIDE: Thank you --

MR. CARMICHAEL: Pause for one second.

MR. McBRIDE: Thank you, Your Honor. Yeah, we will reserve the remainder of our time for rebuttal. Thank you.

JUDGE RAEVSKY: Okay. Thank you. You have about 13 minutes remaining for sur-rebuttal

Petitioner, you have about 15 1/2 minutes for your rebuttal. You can begin whenever you'd like.

I don't see a video from Petitioner. I just want to make sure that you're not on mute.

MS. NALL: I was on mute. I apologize.

JUDGE RAEVSKY: No problem. I'll start the timer over.

MS. NALL: Thank you. I'm going to address three points on rebuttal. First, I'm going to respond to Your Honor's question that was asked during the opening. Then I'll address the fact that there's no ambiguity in the proposed combination. And, finally, I'm going to address the fact that Patent Owner's proposed construction excludes all embodiments.

So starting with the question Your Honor asked during the open -- opening argument, you asked for citations to Grajcar where other input options are discussed. This is at Slide 11 of Petitioner's, charts and on that you'll see that the excitation voltage supplied may be modulated with automatically generated analog or digital inputs alone or a combination with input from a user. For example, a programmable controller may supply it.

This is one of the examples Your Honor asked for, for inputs other than a dimmer control that are discussed in Grajcar. This is in the petition at 26 and 27, as well. And during Patent Owner's response, they admitted that Grajcar discloses different embodiments with inputs other than a dimmer control and that those embodiments function in substantially the same way.

Patent Owner argued that Switch 2115 switches at 60 Hertz, but that is not anything that is required in Grajcar. It says that the -- one of the embodiments, the excitation voltage, it is reduced, so the AC mains is reduced, and so the voltage coming into this device is lower and that causes the switch to close and -- or open depending on whether or not the color temperature selection makes it open or close. It doesn't switch at 60 Hertz.

And -- but the point for Grajcar alone is that no matter what it -- what it is, whatever the dimmer switch or other input into Figure 21 is, it includes AC mains into it, and this switch, 2115, is -- am I sharing my screen? Yes -- is operating to include or exclude LED Group 3 and that changes the color temperature. So Switch 2115 is enabling color selection by a user alone and that satisfies limitation 1B.

And showing Patent Owner's Slide 7, again, which I don't have, it shows -- Patent Owner Slide 7 added a dimmer control here, but what we know is that that dimmer control, at a hundred percent, would have -- supplied AC mains out and so the source into the LED lighting system, if it's Grajcar alone, when the switch is at a hundred percent, would be AC mains. This is the only thing disclosed in the '783 patent showing a user control, is that the source goes through the dimmer switch and it supplies AC mains to the lighting device.

The next argument that Patent Owner makes is that the embodiment in Ground 1 is ambiguous, but it's not. Looking at the paragraph that Patent Owner cited, they said they don't know how the modification would exactly work because they think Switch 2115 is replaced by the switch in Walter; however, that's not what it says. It says that it would be modified by adding a switch that allows user input as taught by Walter and then it points back to the motivation to combine. And so it's not replacing 2115; it's adding the switch of Walter.

And if we go back to the petition, which is shown on Slide 12 of Petitioner's slides, the petition in the motivation to combine section says that the proposed combination is the bulb with the switch and this switch is what allows user input and the bulbs internals have the Figure 21 internals.

This is not ambiguous. The whole -- everything that's required in Grajcar for user selection is disclosed in the petition. It's -- and the petition says we're adding Switch 170 to Figure 21 of Grajcar so that the user control is integrated if Patent Owner argues 2115 alone is not integrated enough, even though it's a switch that is integrated. So both Grajcar discloses and Grajcar, plus Walter, renders obvious this limitation.

JUDGE RAEVSKY: Ms. Nall, so when you say that in the petition that the Switch 170 of Walter is added to Grajcar, it sounds like that the petition is giving, potentially, and I'd like you to confirm this, an alternative argument: one argument where the Figure 21 circuit of Grajcar is incorporated into the bulb of Walter and another alternative argument where the switch of Walter is added to Figure 21 of Grajcar.

Did I accurately convey your arguments in the petition?

MS. NALL: No, Your Honor. It's one single proposed combination where -- so it -- the -- what -- the petition says that Switch 170 is at -- is integrated and added onto Grajcar, but Figure 21 of Grajcar doesn't show a switch or a sensor or a digital input. It just shows 2110 is the source into it and that they're -- Grajcar says there are lots of different options for what

that source can be modulated by to allow either user control or sensor control or other digital inputs or analog inputs that modify this input.

And so it is not that we're proposing two different combinations. The combination is the bulb of Walter, which has user input 170, and inside the bulb is Figure 21 of all -- the circuits of -- and switch of Figure 21 is in the bulb of Walter. And that's exactly what it says in the petition at 21 and that -- there is no alternative embodiment. It is just adding the switch in so that Walter has -- so that Grajcar has this bulb, this switch, and all of its circuits.

To be clear, this is adding a switch into Grajcar onto the -- but it is -- in the proposed combination, it's the bulb with the switch and all of the insides, which is exactly what was the -- in the petition.

And in the proposed combination that user input control is not external, it's internal in the device; the device is the bulb. Patent Owner admitted a device can be a bulb. And this switch is part of that device. And the input -- the excitation voltage to the bulb is AC mains. So there is no ambiguity in the proposed combination.

And, finally, with respect to -- I actually think I already addressed this in the rebuttal, but Patent Owner's proposed combination excludes all embodiments. What Patent Owner said is that these quotations show that the source voltage is not a dimmer switch. And to be clear, we're not -- Petitioner is not arguing the source voltage is a dimmer switch. The source voltage is AC mains in the proposed combination.

What Petitioner is arguing is that if the claim is interpreted the way the Patent Owner wants, then there are no embodiments in the '783 patent that disclose user input selection of color temperature. All of them require a dimmer switch that's external. And so the source voltage to the device can include it going through a component, such as a dimmer switch, before it gets to the device, under the '783 patent, plain and ordinary interpretation of that patent.

And just to clarify, the combination does not add a user control switch to Grajcar. Grajcar discloses a user control switch, 2115. It just doesn't show where the -- where it -- sorry. It shows that there's going to be a Switch 2115, that is -- that has an embodiment which is controlled by a dimmer switch. It just doesn't show where exactly that dimmer switch is, how that -- or the sensor or the digital input switch, but it does not require that to be external to the LED lighting device.

The proposed combination of Walter shows that a person of ordinary skill in the art would have been motivated to have a single device that includes user control and that is the proposed combination, that the switch is integrated in the device as shown in the proposed combination and Walter discloses where to put it, which is not discussed in Grajcar at all.

If there are no further questions from the Board, I will rest and respectfully request that the Board, for the reasons discussed, find that the claims are invalid under all three grounds disclosed in the petition.

JUDGE RAEVSKY: Thank you, Ms. Nall. We have no further questions.

Mr. McBride, you have 13 minutes remaining for your sur-rebuttal.

MR. McBRIDE: Thank you, Your Honor.

Let's start here. I should be sharing our presentation, again.

JUDGE RAEVSKY: We can see it.

MR. McBRIDE: Okay. So, first of all, Your Honors have asked about -- where we had discussed Walter's button in our previous papers, at least the sur-reply, 3 to 4, we had talked about that. But I think the issue there is we didn't really understand how Walter's Button was being incorporated into.

The question about how you would replace 2115 with Walters button, I think, was a question from one of Your Honors. I might be wrong about that, but that is why I responded. And I have to check to see what, specifically, we say about 2115, but that's where the argument is.

With respect to Grajcar, so the point here is that, again, with whatever the user input element is in Grajcar -- it could be a dimmer switch, it could be whatever -- it has to be external. And Petitioner is right that there can be all kinds of different things that are inputs into 2110 -- showing Slide 8 here.

There can be all kinds of things that are input into voltage supply 2110 that are going to cause the voltage, but the issue is that a lot of those things aren't actually user inputs and if you don't have this user input element, you don't have any user selection of different colors, so you need

something like a dimmer or something like that to be provided and as Grajcar is talking about, that's not part of the circuit of Figure 21. That's not talking part of Figure 21's device. And that's the point that we're making here.

And, correspondingly, to the extent it's external, it's not integrated into the device. Now, Petitioner was talking about this and arguing that a switch could be integrated with Figure 21, but integrated with is just different than the claim language which is integrated into the device. So whatever switch is enabling user selection of the different color temperatures has to be integrated into the device of Claims 1 and 8 of '783 patent and that's just the claim language. So by disclosing inputs that are external to the device of Figure 1 of 21 of Grajcar, we don't think that Grajcar disclosed it because these are not actually switches that are internal to Figure 21, if that makes sense.

JUDGE RAEVSKY: I think Petitioner's point is that Grajcar doesn't say where that dimmer switch is. What's your response to that?

MR. McBRIDE: I think it does say where it is and it's back at Slide 7. You see the AC excitation supplied to the light engine is reduced, for example, by lowering your position on the user input element on the dimmer control. And this, again, is Grajcar at paragraph 107.

So what it's talking about in Grajcar -- paragraph 192 and 198 also talk about various inputs into the circuitry. What it's talking about is there is an external tier user input element that is controlling. It's controlling

whatever voltage is coming in to the figure -- in Figure 21. So whatever is being received by 2100 -- whatever voltage 2105 is receiving, right, that's being provided by something external to it, the switch or the dimmer switch or the computer processor that's -- has programmed inputs into the voltage.

So I think Grajcar is pretty clear about where the input to 2110 is coming from and it's not coming from anything in the circuit; it's coming from something external. 2110 is controlled by something external to Figure 21, if that makes sense. That's the way I would read Grajcar paragraphs 107 and 192 and 198, is that there's some external mechanism that is providing this input to the switch.

So I think in -- at least in all environments we're seeing, I think Grajcar needs on external controller, if that makes sense. And if there are no further questions as --

MR. CARMICHAEL: Hold on one second.

MR. McBRIDE: And I did want to note with respect to Walter, what is being integrated with Walter is -- what Walter does not control --whatever switch Walter has does not actually change color temperature. Walter doesn't disclose color --change in color temperatures. We discuss this in our petition and I think, again, in Ground 3 and Ground 1. But Walter has a compact fluorescent light that provides white light. It only provides one color temperature. It doesn't provide multiple. And the LEDs that Walter does control are just colored LEDs that do not have any component of white

light. So there's nothing in Walter that actually changes any particular color temperature, if that makes sense.

JUDGE TORNQUIST: Counsel -- so this is Judge Tornquist -- I have one clarifying question for you and I think you've just touched on it with your response there, but if we find that Petitioner did sufficiently argue that it's -- the combination is Grajcar into Walter, what are the questions that we have to resolve? -- because most of the arguments you're making are the opposite direction. What questions are left, other than the question of whether Walter changes colors -- color temperature. I'm sorry.

MR. McBRIDE: Well, the AC mains issue remains, certainly. I mean, if it is -- if it's incorporating Grajcar into Walter, I think -- again, I think we went on the language of the petition when it was talking about whether -- in the section talking about whether Walter actually -- Walter in Grajcar disclose the particular limitation, that that's what we looked on -- looked at to determine whether that limitation was disclosed. We didn't look at the page -- the motivation to combine, necessarily, as informing.

So I think you still have to look at the AC mains argument. I think you still have to look at -- for the other grounds, you have to look at the other issues brought up there and including the color temperature issues.

JUDGE TORNQUIST: Certainly. So with the AC mains, this is a light bulb that's going right into a plug. I mean, how is that not AC mains power?

MR. McBRIDE: Right. I think that's where we would get into what exactly it means to drive a light bulb. I think that's the issue, is -- the circuitry that's providing the driving is going to be, like I said, Figure 21 of Grajcar. You know, what the driver really, typically, would be -- would be that bridge rectifier, the resistors there, and whatever, you know -- there could be transformers. It could be stuff like that. That's really what is driving the circuit, if that makes sense, because that's what's providing power to the device. That's what -- that is what is causing the power. It is allowing the device to operate, I guess.

So, again, I think that's -- that is where our position on that would be, is that you've got to start talking about what a driver is at that point.

JUDGE TORNQUIST: Okay. So you've kind of confused me there. So if you have a circuit out there that has a bridge rectifier, has AC mains coming into a bridge rectifier, you -- that would not read on your claim?

MR. McBRIDE: I don't think the -- I don't think the AC mains itself is driving the device itself. It's -- that's not the power that is turning it on, right. So we talk about what is driving specific LEDs, right? So we've got to talk about what is driving the circuit, what kind of power is being received at that -- and the AC mains is being -- at least in Grajcar, whatever the voltage is, there is circuitry that is converting that voltage into what can be used to make the circuit operate, right? It's got to be used at a different level, if that makes sense. So we'd have to talk about what a driver means, then.

JUDGE TORNQUIST: Okay.

JUDGE RAEVSKY: Mr. McBride, I'd like to ask a clarifying question, as well.

MR. McBRIDE: Yes, Your Honor.

JUDGE RAEVSKY: So if the combination is Grajcar into Walter, it sounds like you agree that if that combination were appropriate, it discloses a switch limitation and then your argument for patentability, the only one that remains, is based on the AC mains limitation. Is that a correct statement of your position?

MR. McBRIDE: I would -- I would say, rather, that the ground is Walter -- Grajcar in view of Walter and then what the implementation says is that Walter goes into Grajcar when they're discussing this limitation. To the extent that it's something other than what they're discussing with limitation, we haven't considered at this point.

JUDGE RAEVSKY: Okay. So you have no argument to respond against the combination if it is putting Grajcar into Walter.

MR. McBRIDE: We would have to consider what the argument is, but we've argued that, as the petition said, Walter's switch is being integrated into Grajcar when they're asking what this limitation says, but I would say look back at the petition and look back at our response and sur-reply in terms of what our arguments are. I can't sit -- sitting here today, I can't say for sure that we don't have something -- we haven't addressed it, because it's

not really something that was in the petition when they were talking about whether the limitation was disclosed or not.

JUDGE RAEVSKY: Okay. Thank you.

MR. McBRIDE: Thank you, Your Honor. One second, Your Honor.

All right. Thank you, Your Honor. That's all we have.

JUDGE RAEVSKY: Thank you, Counsel.

Are there any further questions from the panel?

JUDGE ULLAGADDI: None from me.

JUDGE RAEVSKY: Okay. And we will take a break in a moment, but before we do, I'd like to just give a moment for the court reporter to ask any questions on this portion of the hearing.

(Off the record discussion.)

JUDGE RAEVSKY: Thanks, everyone. We'll be on recess for ten minutes.

(Whereupon, the above-entitled matter went off the record and resumed following a brief recess.)

JUDGE RAEVSKY: This portion of the hearing will address IPR2021-1370. We'll again hear from Petitioner first, followed by Patent Owner.

Petitioner, would you like to reserve any time for rebuttal today for this portion of the hearing?

MR. ERICKSON: Yes, Your Honor. We would like to reserve 20 minutes.

JUDGE RAEVSKY: Okay. So you may begin when ready.

MR. ERICKSON: May it please the Board, I'm Brian Erickson for Petitioner, Home Depot. I'll be addressing some preliminary matters, including the effective filing date of the '479 Patent and the proper interpretation and application of the switch and disconnected limitations to the prior art and then I'll be passing it to my colleague, Ms. Dahl, who will address issues related to the lighting system and, specifically, whether the transformer and switch must be integrated into the device and whether the lighting system is driven by AC.

JUDGE RAEVSKY: Mr. Erickson, before you begin, I noticed there are several slides on the effective filing date and whether the AIA or pre-AIA statutes apply. Does it matter in this case one way or the other, and how?

MR. ERICKSON: The Board should address the effective filing date in order to determine which law it's going to apply in its patentability determination. Whether the Board needs to do that or whether the Board can proceed in the alternative and find that it is -- the claims are unpatentable under both the pre-AIA and AIA law, I think that is probably within the Board's discretion. In other words, I don't think it would be reversible error for the Board to rule in the alternative, but I think the Board should address this before determining which law should be applied and addressing its patentability determinations.

JUDGE RAEVSKY: So is it your position, then, that whether the AIA or pre-AIA applies, there's no difference in the outcome?

MR. ERICKSON: It is correct that the claims are unpatentable under each of the potentially applicable statutes. Correct, Your Honor.

JUDGE RAEVSKY: In that case, I would suggest if you'd like to economize your time, you might consider skipping those slides.

MR. ERICKSON: Okay. All right. We'll move to Slide 5.

The '497 Patent discloses a warm-on-dim feature. As shown here in Figure 8, there's a voltage source 44, there's a dimmer switch 42, through which the user can adjust the voltage applied to LED Device 10.

Moving forward to Slide 6, the voltage is applied on the left side; for example, in Figure 2B, to leads 24 and 26, and the circuitry including the bridge rectifier and the constant current regulators will determine whether sufficient voltage is applied to one or both of LED circuits 12 or 14 to turn them on. I mentioned this embodiment briefly because almost all of Patent Owner's arguments, as we'll see moving forward, exclude this embodiment.

Moving forward to Slide 16 -- I'm sorry, moving forward to Slide 14. Prior to institution, Patent Owner relied on an implicit narrow interpretation of switch that required direct manipulation by the user to directly achieve the claim functionality. The Board correctly rejected that interpretation and Patent Owner's attempt to distinguish the prior art in its institution decision.

It appeared to Petitioner that Patent Owner was maintaining that position in its response. However, in Patent Owner's sur-reply, Patent Owner

has disclaimed reliance on that position moving forward, so I am not going to spend any more time in my opening remarks addressing this issue. To the extent Patent Owner clarifies during its remarks that it is relying on this issue, we'll address it in rebuttal.

Moving forward to Slide 16, Patent Owner is arguing or relying, I'm sorry, on another improperly narrow construction of a claim term, and this time it's "disconnected." Petitioner contends that it's entitled to its ordinary meaning, which would include the disconnection that's achieved by an electronic switch, such as an open transistor, which would inherently have some leakage current. Patent Owner, on the other hand, is asserting that it requires a mechanical switch with an air gap which would have almost an imperceptible amount of leakage current. There's just no basis for Patent Owner's proposed narrow interpretation.

JUDGE RAEVSKY: Mr. Erickson -- this is Judge Raevsky, again -- I noticed that the parties briefly discussed the meaning of switch, but spend most of their powder arguing what disconnected means. Is your position that we don't need to construe switch or would you also propose that we construe switch?

MR. ERICKSON: They are very much related, Your Honor, and while Patent Owner explicitly professes to -- or, I'm sorry, advances a relatively broad construction of switch on its own, its arguments infer -- or, I'm sorry, imply that it is relying on a mechanical switch interpretation.

I'll jump forward to Slide 23. On the left here, we have Patent Owner's response at page 10 and it asserts that since -- this is in respect to Ter Weeme and it's distinguishing the electronic switch 51 and Patent Owner states that because, or since, it is not a mechanical switch with contacts, it cannot perform the function of connection or disconnection. So there is, I believe, Your Honor, some residual dispute over the meaning of switch, whether it is entitled to a -- its full breadth of its construction or whether it's limited to a mechanical switch that creates air gaps.

Moving back to Slide 17, the ordinary meaning of disconnected and the related term switch clearly encompasses electronic switches that -- like transistors, that may still have some leakage current.

Cited here on Slide 17 are contemporaneous extrinsic evidence cited by Petitioner in their reply to address Patent Owner's narrow interpretation. These references all refer to electronic switches, such as transistors, that inherently have leakage current as connecting or disconnecting an LED circuit. And so, clearly, one of ordinary skill on the ordinary meaning of switches that connect and disconnect, that would include electronic switches, like transistors, even though they have some leakage current.

Moving forward to Slide 20, this is the extrinsic evidence relied on by Patent Owner and its expert. We see excerpts here that are discussing electronic switches, again, transistors, that inherently have some leakage current, but the references themselves state that this is considered to be zero current, when you have an open transistor for the purposes of the circuit

design, that there's no current, no drain, zero amps, zero current. That's the relevant level of open end or disconnect that should be applied to these claims.

Moving back to Slide 23, we have already discussed the portion on the left related to Ter Weeme, but the portion on the right is Patent Owner's response to page 18 where Patent Owner is attempting to distinguish Dowling, and Patent Owner relies on its examination of Petitioner's expert.

Where the so-called concession they were able to extract was that the switch in Dowling did not result in an air gap, and that is cited by Patent Owner as their evidence that Dowling has not disclosed the claim -- the claim switch that disconnects the circuit. Clearly, that's not required by the claim, no air gap is required, and Patent Owner's argument has no merit.

Moving forward to Slide 27, the disconnection functionality relates to the second claim switch, and as you can see in the dependent claims here on Slide 27, the dependent claims require that the second switch be a dimmer switch. And as you can see in the bottom portion, the relevant portion of the specification gives one concrete example of a dimmer switch. It says it can be, basically, any type of switch, which the Board noticed is an extremely broad disclosure in its Institution Decision.

But the concrete example it gives is a phase dimmer switch and both of the experts agreed that a phase dimmer switch is an electronic switch that's literally chopping edges off the phase of an AC waveform at a -- you

know, 60 Hertz or greater. So that's an electronic switch and it's the only concrete example of a disclosed switch.

So all of Patent Owner's arguments that a mechanical switch or an airgap switch with almost zero leakage current is required would exclude the one concrete example of a disclosed switch.

JUDGE RAEVSKY: It excludes one concrete example, but does it really exclude all embodiments, because the claim -- the independent claim broadly claims the switch and the specification broadly refers to a switch. So how much weight can we put into the fact that that one specific example happens to be an electronic switch?

MR. ERICKSON: The Board correctly noted that there is expansive language in the specification that says the switch can be any type of switch, so it's not that every possible embodiment is excluded by Patent Owner's proposed interpretation. The one concrete example is excluded. And Patent Owner's argument really goes against the intrinsic record where one of ordinary skill looking at the intrinsic record sees that broad disclosure that the Board recognized, that the switch can be implemented in any known manner. And one of ordinary skill would recognize that, and particularly in the context of the extrinsic evidence we just discussed, to know that this type of switch would include electrical disconnection of the type known in the art, even if there is some leakage current.

JUDGE RAEVSKY: Okay. So I think you've shown on your slides some evidence that tends to suggest that a transistor can be open. I can't

recall which slide, but it showed an image of an open switch next to it. Where in the record does -- is that connected to the word disconnected? -- if you could pardon my use of the word connected in that sentence.

MR. ERICKSON: Yes, Your Honor. So the concepts of opening and closing a transistor or opening and closing a switch and how that relates to connect/disconnect is woven into the expert's testimony and some of the definitions, and we do have slides -- we do have slides on each of those.

Let me see. We can start with Slide 19. This is a deposition of Patent Owner's expert. And the question was: "Opening a circuit means electrically disconnecting a circuit?" And he agreed: "That would be an example." So an open circuit is one type of electrically disconnected circuit.

Petitioner's expert -- this is from Exhibit 1026, paragraph 11, saying that a person of ordinary skill would have understood that the ordinary meaning of connect and disconnect encompasses an electrical disconnection -- connection or disconnection sufficient to turn the LED circuit on or off, including using an electronic switch, like a transistor, to perform the electrical connection or disconnection.

The definitions relied on by Patent Owner's expert in -- and this is on Slide 22 -- refer to a switch for changing, I'm sorry, opening and closing a circuit or connecting a line to one of several different lines.

So, again, these are -- these are the dictionary definitions that were introduced by Patent Owner.

So this concept in the electronic art of an open or closed switch is -- I don't want to say synonymous, Your Honor, but very, very closely related to an electrical connection or disconnection.

Moving forward to Slide 26, the intrinsic record here includes the file history and these are applicant's own statements discussing the applied prior art. And, in particular, I'd point the Board to the April amendment and the discussion of the Shteynberg reference. And this is a quote from the language used by applicant itself, stated that "Switches 110," -- and these are transistors -- "that are dynamically switching the electrical connection of LEDs to and from each other."

And, again, the second bullet point: "dynamically switch the LEDs in and out of an electrical connection to each other." So this is how the applicant was discussing electronic switches in the prior art. This is precisely what Patent Owner now is trying to exclude from the claims. They're saying, no, those types of electronic switches like transistors, cannot be the claimed switches because they do not connect and disconnect because there's leakage current. It's totally inconsistent with the intrinsic record.

We spent a good amount of time with Patent Owner's expert at his deposition on this very issue, about the intrinsic record and whether there's any support for this narrow interpretation, and so moving forward here to Slide 30, we have some citations to the expert's deposition that are addressed in Petitioner's reply.

As we walk through the specification. Patent Owner's expert admitted that Figures 1 through 13 did not show the claimed switches under his interpretation. Now, that includes Figure 8 that we discussed before which is really the only disclosed switch.

As he was running out of figures, I think he decided he should point to something and he pointed to Figures 15, 16, and -- sorry -- 14 through 16 as disclosing the claimed switches. But none of these figures disclose a switch, at all. They just disclose a circuit with electrical contacts. There's no discussion in the specification of adding a mechanical switch that would change the connections and insert an air gap or nonselective circuits.

Now, how does this apply to the prior art? So Grounds 1 and 2 rely on Dowling. Dowling discloses a mode switch where the user can select a mode and then it -- also, if he pushes to the left, it's a mode. If he pushes it to the right, it selects a parameter. So using that mode switch, for example, the user can select which static color will be displayed and then can change that color by moving that mode switch to select a different parameter.

So, for example, the user can display red and in that situation, the controller will connect the red LED circuit to the power and -- so that the red LED circuit will illuminate while the others do not, and the user could switch to blue or green and connect those LED circuits. Additional modes include, for example, the strobe mode where you can have the red and green LED circuits blinking so they're connected and disconnected from the power while the blue LED circuit remains off.

Moving to Slide 36 --

JUDGE RAEVSKY: Can I stop you there for a moment, please?

MR. ERICKSON: Yes, Your Honor.

JUDGE RAEVSKY: I just want to clarify. So is it your position that -- and I believe you referred to the pulse-width modulation in the reference that is causing that strobing to occur. Is it your position that when the pulse-width modulation is low, that one of those LEDs is off?

MR. ERICKSON: Correct, Your Honor.

JUDGE RAEVSKY: Okay.

MR. ERICKSON: And let me expound on that a bit. The -- even the LED being illuminated, if the user has manipulated the dimming switch such that it's a hundred percent -- Dowling discloses that you can manipulate it, you know, a hundred percent and zero -- then the pulse-width modulation is just -- the width of the pulse is a hundred percent. It's on all the time. So it's, as I would say, statically connected.

But if you reduce that to fifty percent, then that -- even the LED that appears to a human to be constantly on will actually be blinking on and off, you know, and there's only one voltage amplitude applied. It's always, for example, 5 volts, as disclosed in Dowling, and so it's just applied for 50 percent of the time.

And to a human whose eyesight and brain integrates that blinking over time, it will appear to be on at a certain level of brightness. The other LEDs will be disconnected -- you know, remain disconnected the whole

time. So -- but even in that situation, if you have one LED on 50 percent, then it will be electrically connected and disconnected, connected and disconnected.

But those time periods when the voltage is low, whether that's just a portion of the time or a hundred percent of the time, yes, it is our position, Your Honor, that that LED is disconnected from the AC power source. Dowling discloses that these LED circuits are driven by an applied voltage and that applied voltage is 5 volts. So it's that voltage is either applied or it's not. That's an electronic switch and, yes, there would inherently be some leakage current there, but that's just not relevant.

JUDGE RAEVSKY: Okay. So thank you for that answer. So I'd like to also understand, do you need us to reach whether the strobing and other mode -- sorry, the -- not the strobing, the color wash and other modes are required to meet the limitation or is it sufficient that one mode, the strobing alone, meets the limitation?

MR. ERICKSON: It is sufficient that one mode meets the limitation.

JUDGE RAEVSKY: Okay.

MR. ERICKSON: Ground 3 relies on Ter Weeme. And so jumping forward to Slide 62, the switch -- the electronic switch in Ter Weeme is electronic switch 501 and depending on its operating state, it will connect one of either LED Circuit 113 or LED Circuit 114. And, in fact, in the text itself, Ter Weeme describes that as connected. This is consistent with all of the other extrinsic evidence that refers to electronic switches as connecting

and disconnecting LED circuits. So this is not only an explicit disclosure for the purposes of Ter Weeme, but, again, this is reinforcing that the ordinary meaning of a switch that can connect and disconnect would include these types of electronic switches.

Ter Weeme discloses that this can be from a user's perspective, again, a hundred percent one way or the other such that the switch remains connected to one LED circuit and the other LED circuit is disconnected and Ter Weeme discloses that you can put the switch, I guess, in a -- in a middle position where the switch will be rapidly switching back and forth, and by doing that you can have the warm-on-dim feature depending on which of the LEDs you're leaving on are connecting for a greater percentage of the time.

Unless there are any other questions on this issue, I will pass to my colleague Ms. Mary Dahl.

MS. DAHL: May it please the honorable Board, Mary Dahl for Petitioner, Home Depot. I'll briefly address the remaining issues in the grounds, which are the limitations driven with AC transformer and the LED lighting system limitations.

So I'll discuss the driven-with-AC issue first. So moving to Slide 38, Patent Owner argues that Dowling system is not driven with an AC voltage because the LED circuits are driven by DC. But that argument not only conflates the claimed system with circuit, it also contradicts the spec.

Moving to Slide 39, the claim requires that the system be driven with AC. It does not require the circuits be driven with AC. And you can see that from the face of Claim 9.

Moving to Slide 40, here we have unchallenged Claims 2 and 8. An unchallenged claim has a very similar structure to challenged Claim 9, which I -- which was previously shown. It has the same preamble, an LED lighting system comprising, and it's similarly requires that the system be driven by AC. But Claim 8, which depends on Claim 2, further requires that the circuit be driven by DC. So the structure of these claims confirm that the system driven by AC can contain circuits driven by DC, and that's what Dowling discloses.

Moving to Slide 41, Patent Owner's response repeatedly conflates the claimed system with circuit.

Moving to Slide 42, as we discuss in our reply, and you see that very long string site at the top of the slide, the '479 patent is replete with examples of systems rectifying AC and using constant current regulators before driving LED circuits.

Moving to Slide 43, Patent Owner's own expert even admits that a system can be driven by AC while the LEDs receive DC as direct input.

Moving to --

JUDGE RAEVSKY: Counsel, is it your position that there is no disclosed embodiment of driving the entire circuit with just AC?

MS. DAHL: So I can't recall all of the embodiments at this time, but it's clear that the '479 specification discloses many examples of AC driven systems that have circuits that do not receive AC direct input. And the issue here is that Patent Owner argues that Dowling doesn't meet the required LED system as driven off the AC voltage source limitation because Dowling's circuits do not receive AC.

But if we go to Slide 39 and look at the claim -- Slide 39 -- there's no requirement that the LED circuit be driven with AC.

JUDGE RAEVSKY: Well, let me push back a little bit. So it says the system is driven with AC, so doesn't that mean the whole thing is driven with AC? And if the specification has embodiments driven where the entire circuit -- or, in other words, the entire system is driven with AC, isn't that what they're claiming here, as opposed to claiming something driven part AC, part DC?

MS. DAHL: So as we see on this -- on the Slide 39, it talks about the requirements for the LED circuits. So there's a first LED circuit, there's a second LED circuit. And it doesn't say anything about whether or not it's driven by AC.

And if you look at Slide 40, it's clear that you can't have a system that's driven with AC that also has circuits not driven by AC. So it is possible to have -- to answer your question, is it possible to have a LED lighting system driven with AC and then have the circuits not driven by AC. That's clearly confirmed by the structure of the claim's intrinsic record.

JUDGE RAEVSKY: Thank you.

MS. DAHL: So if we can move to Slide 45, Dowling's system is clearly driven by AC. Remember Dowling is a light bulb. You see that at the top of paragraph 63. It's a light bulb we screw into a normal light bulb socket to receive 110 or 220 Volt AC. So that's Patent Owner's critique of Dowling. That's in both Grounds 1 and 2, but Patent Owner does raise the same issue in Ground 3 for Ter Weeme.

So if we can just jump to Slide 60 very quickly. So moving to Slide 60, Patent Owner argues that Ter Weeme's system not driven by AC because circuits are driven by DC. And as you can see from these excerpts from Ter Weeme on the slide, Ter Weeme clearly discloses that it's light plugs into the wall socket receiving 230 Volt AC.

So unless there's any questions, I will discuss the transformer issue in Ground 2.

JUDGE RAEVSKY: So I do have a question. So if you bought a lamp at the store, would you call the lamp a lighting system or when you plugged it into the wall, would you include -- would you say that the lamp and the wall outlet and the switch on the wall is a lighting system?

MS. DAHL: So I would say the latter because system is very broad. The plain ordinary meaning of system is very broad and, in fact, in the intrinsic record, if you look at the prosecution history of the '479 Child Patent -- I believe that's on Slide 59 -- the examiner understood a lighting system to include both the lighting device and the wall-mounted switch.

And back to the broad -- plain and ordinary meaning, if you were to ask me -- I'm sitting in my office here today -- like, what is the building's lighting system, I would -- I would say, you know, the switch is on the wall, the lighting elements, and then the wiring that connects the two. So to answer your question, it would be the latter.

JUDGE RAEVSKY: Does the specification give any guidance on what system really means?

MS. DAHL: Yes. And if we could just move to Slide 55?

So Patent Owner mainly raises this in the Ter Weeme ground, but -- let's move to Slide 57, actually.

So the '479 -- so '479 Patent repeatedly discloses that an LED device is only one portion of a system. So, for example, device may be integrated into a lighting system -- device may be integrated into the system et cetera, et cetera.

And if we move to Slide 49, this is the sole -- this is another disclosure of that support system being very broad from the intrinsic record. It says, "system may include multiple such devices." And so it's clear that it doesn't -- it's broad; it can have multiple components that are not necessarily connected to one another.

JUDGE RAEVSKY: Thank you.

MS. DAHL: And -- okay. So unless there's any other questions, I'm going to move and talk about the transformer issue in Ground 2. So we can move to Slide 47.

JUDGE RAEVSKY: Please hold on just one moment.

MS. DAHL: Sure.

JUDGE RAEVSKY: I want to see if one of my colleagues has a question to follow up.

JUDGE TORNQUIST: None for me.

JUDGE RAEVSKY: Okay. Please proceed.

MS. DAHL: So on Slide 47, Patent Owner argues that "transformer in the combination is external to the claimed LED 'circuit,'" but moving to Slide 48, that argument is just not commensurate with the scope of the claims.

So you see here Patent Owner's reply repeatedly conflates the claim system with circuit arguing that transformer is not a component, is not a part, of the LED system. But the claim language actually requires that the system, not the circuit, comprise the transformer.

Moving to Slide 49 -- I actually just talked about this earlier -- this is a sole disclosure of transformer in the '479 Patent and it says, "a lighting system may include multiple devices and -- transformers." So this confirms that transformer can be external, separate from the device, and still be part of the system.

Moving to Slide 50, Patent Owner's argument is also incorrect because Dowling actually does disclose voltage transformation that occurs inside the device. It just doesn't use the word transformer. So Dowling is a light bulb. You see that Figure 8 on the right. It plugs into a socket. And the

description on the left, it explains that 110 or 220 volts, that's internally dropped to 5 or 12 volts.

Moving to Slide 51 --

JUDGE RAEVSKY: Just to interject, you have about one minute remaining in your main time.

MS. DAHL: Okay. So Dr. Neikirk explained it would have been obvious to perform this internal voltage transformation that Dowling already discloses using a transformer.

Okay. If we can just drop -- or jump really quickly to Slide 56? This is related to the system question that you asked me about earlier and it's the objection that Patent Owner mounts against Ter Weeme. You can see from the right diagram that Patent Owner annotated, Patent Owner interprets LED system to require an integrated LED device, but that's just contrary to plain and ordinary meaning.

And if we jump to Slide 58, there's another portion of the intrinsic record that confirms that Patent Owner's interpretation is just too narrow. So here you see Figure 8. A dimmer switch is 42 and that's separate and distinct from the LED Lighting Device, 10. And altogether, the system is 40, but the lighting device is 10. So the corresponding description also confirms, you know, device is just a portion of the system and thus Patent Owner's argument that system requires an integrated device cannot be correct.

Unless there's any other questions, we will reserve the rest of time for rebuttal.

JUDGE RAEVSKY: Thank you, Counsel. You have about 19 1/2 minutes remaining.

Patent Owner, would you like to reserve any time for sur-rebuttal?

MR. YANG: Yes, Your Honor. I'd like to reserve 15 minutes.

JUDGE RAEVSKY: Okay. So you'll have about 30 minutes for your main argument. And you may begin when ready.

MR. YANG: Thank you, Your Honor. Mitch Yang for Patent Owner.

Before I get into the substantive arguments, I'd like to say, as well, that I believe the Board need not decide the AIA issue because we haven't contested the priority status of any other references, so we don't believe that deciding the AIA issue bears on the outcome of this proceeding.

With that, I want to begin with the discussion of Grounds 1 and 2 focusing on the Dowling reference. I don't think there's much disagreement over how Dowling's mode switch is used. The device has a mode switch. A user uses the mode switch to select a mode of operation for the programmable LEDs, and the brightness and colors of the LEDs vary depending on the selected mode.

But the issue with Petitioner's theory is that there's a logical leap between saying that the modes determine the brightness and color of the

LEDs and the idea is that the modes flip some LEDs on and some other LEDs off at the same time.

So if you look at the Petitioner's Slide 35, Petitioner's Slide 35 shows that their invalidity theory assumes that Dowling's modes turn LED circuits on or off, but then, at the same time, they don't point to any disclosure in Dowling that actually says that a mode turns an LED circuit on and turns another LED circuit off. Because that additional disclosure that's required to anticipate or render obvious the claim limitations, that additional disclosure was created by the Petitioner.

So if you look at each of the modes in detail, Modes 1 through 5 in Dowling, none of the -- none of the modes actually turn some LEDs on and turn other LEDs off. And that's what I want to do here.

First of all -- so let's look at paragraphs 44 to 48 where Dowling describes the mode. If you look at the Patent Owner's Slide 5, Dowling says mode one cycles through the color spectrum. The Petitioner wants you to believe that this mode activates some of the LEDs and deactivates other LEDs, but Dowling never says that. Dowling only says the color changes. It doesn't say that we get the colors to change because we turn these LEDs on and those other LEDs off. It just says the color changes. There's no turning -- there's no disclosure that Dowling turns any LEDs on or off.

And then if you look at Patent Owner's Slide 7, you'll see paragraph 43 of Dowling and you'll see why Dowling doesn't have this disclosure. Dowling says that these color effects are created by varying the intensity of

the LEDs over time. In other words, it's producing the changes in color and the changes in brightness by controlling the current flowing through the LEDs to control the intensity of the LEDs. It's not connecting one set of LEDs to an AC power source and disconnecting another set of LEDs from the AC power source.

And the same is true for Mode 2, which is in paragraph 45 of Dowling. Mode 2 transitions through a sequence of colors, but Dowling never says it makes the transition by turning some LEDs on and turning other LEDs off. That's never disclosed anywhere in Dowling. Instead, what Dowling says is that it changes the colors of the LEDs by varying the current through the LEDs. So you're not disconnecting or connecting LEDs to an AC power source. What you're doing is you're adjusting the current through the LEDs in order to cause color changes within the LEDs.

And that's also true for Mode 3. If you look at Patent Owner's Slide 6, Mode 3 is described as a static mode. And, obviously, in a static mode, the LED colors are always on. There's no LEDs to turn on or off.

And, finally, Mode 4 is the strobe mode, which Petitioner relies on in their Slide 35. What this -- what Dowling says about the strobe mode is that it changes the color more quickly than the color wash so that the LEDs -- the LEDs are changing color and, perhaps, they're becoming brighter at some times and dimmer at other times. But, again, Dowling doesn't say that the strobe mode causes some LED circuits to be connected and other LED circuits to be disconnected. Dowling doesn't say that the strobe mode turns

the LEDs on and turns other LEDs off. That's simply not disclosed anywhere in Dowling for this mode -- for the strobe mode. What Dowling --

JUDGE RAEVSKY: Mr. Yang, can I jump in for a moment? I'd like to know where in your briefing, in the Patent Owner response, you discussed the strobe mode.

MR. YANG: This is discussed both in -- on page five of the sur-reply and on page 17 of the Patent Owner response. In the middle of page 5 of the sur-reply, we say that there is no requirement that the operation of a mode connect an LED circuit to a voltage source or disconnect an LED circuit from a voltage source.

So what we're saying there is that what the Petitioners are implying about Dowling's modes, that they turn on or off, that's not disclosed anywhere in Dowling. What Dowling is actually saying is the next sentence. It says that the mode of operation simply dims the brightness of the LEDs and changes their color based on the current flowing through the LEDs. But there's no turning LEDs on or off explicitly described in any of the five modes of Downing.

JUDGE RAEVSKY: And what about on page 17 of the Patent Owner response? How do you argue against the strobe mode there?

MR. YANG: That's on the first -- second full sentence. It starts with Dowling states that the program -- the look-up table operates on adjusting the input voltage to control the LED brightness as required by the selected mode.

What that's referring to is that the mode -- the mode switch actually selects a mode, and in the mode table is the one that is selected by the mode switch is what actually controls the LEDs in Dowling. What the mode table does is it adjusts the brightness of the control signals to the LEDs so the LEDs -- so the LEDs vary in intensity and color. But there's nothing there that says that the LEDs themselves are turned on or off or connected or disconnected to an AC power source.

JUDGE RAEVSKY: So your Patent Owner response talks, on page 17, generically about a selected mode but does not specifically address the strobe mode. Would you agree?

MR. YANG: It addresses all five modes, because each of the modes -- Dowling's description of each of the modes are pretty much the same. Dowling says that the modes change in color and intensity. Dowling never says that the modes are -- turn any LEDs on or off.

JUDGE RAEVSKY: But you would agree that page 70 does not mention the word "strobe mode," correct?

MR. YANG: And -- it's directed to all the modes. Dowling doesn't distinguish the strobe mode from any other mode and specifically to say that that particular mode turns LEDs on or off.

JUDGE RAEVSKY: But my concern is that you spend a lot of time talking about the strobe mode in your sur-reply but didn't talk about it in the Patent Owner response, so that sounds like a new argument on reply because

you only generically discuss that mode in connection with the other modes, you say, on page 17 of the Patent Owner response.

MR. YANG: That's because our original argument applies equally to all of Dowling's modes. Dowling's -- our argument is that none of Dowling's modes turn LEDs on or off. That's applicable to Mode 1; that's applicable to Mode 2; that's applicable to Mode 3; and that's also applicable to Mode 4.

So it seems to me like the petitioners have focused on strobe mode in the response, which is why we particularly brought up the strobe mode on the reply, is to show that for all four of these modes -- and none of these modes Dowling actually discloses or suggests that LEDs are being turned on or off.

JUDGE RAEVSKY: So it says in paragraph 47 of Dowling that the device may strobe, that is, flash on and off. Why does that not teach that it's turning the LEDs on and off?

MR. YANG: Because what's happening in Dowling there is that it's varying the current through the -- through the LEDs so the LEDs appear brighter and dimmer. When the LEDs are dimmer, it appears that the LED is off, but the LED is still -- is still electrically connected to the AC power source. It's just that at that particular moment, the current flowing through the LED is less than when the LED is fully bright. But at the same time, it doesn't say that the LED is off; it just says that the LEDs flash between these

modes. There's no disclosure the LED is actually turned off. In fact, that's something else I wanted to discuss.

If you look at the next paragraph of Dowling, specifically Dowling's fifth mode, you'll see that Dowling explicitly says in the fifth mode that it is -- it appears to be an off mode in which the -- it says that the LED is off. But specifically for the fifth mode, it doesn't turn another set of LEDs on. It appears to just turn all of the LEDs off.

So it doesn't meet the claim language, but Dowling's fifth mode seems to disclose turning LEDs off whereas the other four modes don't. The other four modes describe modes of operation in which the LEDs simply flash or change colors, which are -- which are done by adjusting the current that's flowing through the LEDs.

JUDGE RAEVSKY: So if a user selected Modes 1 through 4, you would agree that some LEDs are on and then if they select Mode 5, you just said that the LEDs are off; therefore, it's switching between them being on and off.

MR. YANG: Well, that's -- that doesn't meet the claim language, because the claim requires you to connect a LED circuit and disconnect another LED circuit. When you're turning all of the LEDs off, you're not connected -- you're not connecting an LED circuit; you've disconnected all of them.

JUDGE RAEVSKY: I understand your position.

MR. YANG: Okay. So our position here is that none of these modes -- Dowling doesn't describe any of these modes as turning one set of LEDs on and another set of LEDs off, because Dowling doesn't disclose -- and because of that, Dowling can't disclose connecting an LED circuit to a power source and it can't disclose disconnecting another LED circuit from a power source.

Unless Your Honors have any further questions, I'd like to move on to Ter Weeme.

JUDGE RAEVSKY: Go ahead.

MR. YANG: Okay. So for Ter Weeme -- with respect to Ter Weeme, the dispute between the parties is what constitutes an LED lighting system as shown in Ter Weeme's Figure 1.

If you look at Patent Owner's Slide 14, we've reproduced Ter Weeme's Figure 1 and shown that element 9 is the switch that the Petitioner is relying on as the first switch in Claim 9. But between the switch and the remaining elements of the lighting system, there's a wall socket in 8 there.

What happens is that they're -- you're plugging in the LED lighting system, which is -- which includes the LED lighting device 10, as well as additional components 11 and 12, into the wall socket and by doing that you're connecting it to the electrical infrastructure of the building that you're in. And so this -- Figure 1A shows that the switch that's being relied on as part of the LED lighting system is actually part of the electrical infrastructure of the building. It's -- because it's on the other side of the wall

socket from the LED lighting system, it's connected to the AC power source. It's on the far left side.

But based on Figure 1A, it's evident that Ter Weeme's dimmer switch is part of the electrical infrastructure of the building. By contrast, the remaining of the actual elements of the lighting system are the elements on the right-hand side of the wall socket. Those are elements of the lighting system that produces the light.

And Patent Owner's position is that the dimmer switch, because it's part of the electrical infrastructure of the building, is not part of the lighting system. So if you look at Petitioner's arguments, the Petitioner doesn't actually address the facts that the claims are directed not to a system generically, but specifically to a lighting system.

So for a lighting system, the system has to be directed to lighting. It can't be directed -- it's not directed to any system, as Petitioners argue. It's specifically directed to a lighting system.

JUDGE RAEVSKY: Mr. Yang, could you address Petitioner's Slide 49 where they reproduce a portion of the specification, column 7, 51 -- lines 51 through 55, that says a lighting system may include multiple devices, including, but not limited to, power supplies, transformers, et cetera? So, for instance, the -- what's coming into the wall, I imagine, would be a power supply. Please help me understand how that doesn't meet the claim -- or it doesn't inform the proper interpretation of the claim as Petitioner has set forth.

MR. YANG: Yeah, certainly, Your Honor.

What that statement means is that a lighting system isn't limited to one specific device. So, for example, if I had three chains of Christmas lights, I could link all three chains together and together that would form a lighting system. I could also include a battery in that chain of lighting -- in that chain of Christmas lights and that would also be part of the lighting system.

But what that statement doesn't say is that the -- is that the electrical infrastructure that you're connecting the lighting system to is also part of the lighting system. If you understood it that way, then we would have to look at the transformers outside the power lines that go directly to the power plant and, in fact, even the power plant itself.

Under the Petitioner's interpretation, that would all be part of the same lighting system and, as Dr. Credelle's testimony has stated, no person of ordinary skill is going to say that a power plant is part of the same lighting system as the lighting system for your house. That's just absurd.

And the same is true, if you think about it, even if you have different appliances connected -- all plugged into your house. For example, if I say I have a refrigeration system, I would consider that just to be the refrigerator and the other -- and attended components of that. If I plug the hair dryer into my house, I wouldn't consider the hair dryer to be part of my refrigeration system. Likewise, I wouldn't look for -- I wouldn't look at my washer and dryer, the motor of the washer and dryer, to meet -- to meet a motor of a refrigeration system.

Because even though all these components are electrically connected together, the word "lighting system" -- lighting modifies what a system is. So the system that is in the claims of the '479 patents are directed to lighting. They're not directed to providing electricity generally or they're -- and they're not directed to other components that are also connected to the electrical infrastructure.

JUDGE RAEVSKY: Is there any testimony in the record or other evidence to indicate what the word "power supplies" means in this passage on Slide 49 of Petitioner slides?

MR. YANG: I don't believe so, Your Honor. But I believe that refers to, for example, batteries and other ways of -- and other supplies of providing power to a lighting system. But I don't believe that refers to the electrical infrastructure all around us that is -- that would -- that wouldn't be considered part of the lighting system.

I think one of the easiest ways to think about it is the wall socket in Ter Weeme. The wall socket separates what's being plugged into it from the power infrastructure itself. So anything plugged -- so anything plugged into the wall socket, everything outside of the wall socket, would be considered part of the lighting system. Everything beyond the wall socket, that's part of the electrical infrastructure that's providing electricity to wherever you are. That wouldn't be part of the system because that's part of the background infrastructure.

JUDGE RAEVSKY: So I have a light -- a few lights in my office and when I come into the office, I hit the switch on the wall and it turns them on. That switch, in your view, is not part of the lighting system.

MR. YANG: Well, that's different because that switch -- that switch is directed to the lights in your office. I mean, if you look at Ter Weeme, that's not the embodiment Ter Weeme discloses. Ter Weeme discloses -- you -- you plug in Ter Weeme's system into the wall socket. That's sort of like saying -- if you're looking at plugging in a refrigerator or microwave into a wall socket, the refrigerator is part of a refrigeration system, the microwave is part of a cooking system.

In your particular example, the wall socket isn't present because the lighting -- the lights in your office are all integrated already into the walls of your office. That's different than what we have in Ter Weeme, which is that the system itself is not integrated into the electrical infrastructure.

But even then -- even your example, I think I -- I think a person of ordinary skill would consider that lighting system to be just the lights in your office and the switch. The person -- because this -- that switch is connect -- is integrated into the lighting system itself. The person of ordinary skill wouldn't consider another switch down the hall that controls, for example, a door to be part of that lighting system.

JUDGE RAEVSKY: I understand the distinction you're making. Thank you.

MR. YANG: And the last point I want to make about Ter Weeme is that Ground 3 based on Ter Weeme is an anticipation ground. It's not an obviousness ground. And an anticipation ground is limited to what Ter Weeme discloses within the four corners of the document.

If there -- in order to anticipate the claims, Ter Weeme has to disclose a lighting system with all of these elements. And it's not sufficient for -- to say that it would have been obvious to incorporate elements into the lighting system when they're not.

With that, I'd like to address some of the other issues in the Patent Owner response starting with AC power which applies both to Ground 1, Dowling, as well as Ground 3, Ter Weeme.

Our position for AC power is that if you convert AC to DC before supplying the power to the LED lighting system, then the LED lighting system isn't being driven by AC, it's being driven by DC. Otherwise, this claim element would be fairly meaningless because there's always an AC main somewhere that's powering whatever your system is.

So I understand the Petitioner has said that this is inconsistent with the specification, but I disagree. I don't think that it's inconsistent. If you look at the specification, the specification discloses multiple embodiments. Some of them -- in some of them, AC power is directly applied to the LEDs. In some of them, AC power is applied to the lighting system as a whole, and some of them certainly utilize DC power.

There's no requirement that each claim must be directed to every embodiment listed in the specification. And, in fact, Patent Owner routinely draft claims encompassing less than all of the disclosed embodiments. So as long as they're disclosed embodiments in the specification where AC power is applied to the system as a whole, which I understand that there is, then that disclosure alone is sufficient to support Claim 9. It's unnecessary for the Board to consider additional embodiments in the specification that are not claimed but embodiments that, for example, apply DC power directly to the LEDs or embodiments that utilize DC power.

JUDGE TORNQUIST: Counsel, let me ask -- this is Judge Tornquist. Let me ask a question.

MR. YANG: Certainly.

JUDGE TORNQUIST: AC -- if AC power is provided to a bridge rectifier which then provides that voltage and current to the LEDs, is that AC power? Is it regulated AC power or is it DC?

MR. YANG: I believe that --

JUDGE TORNQUIST: Or is it rectified AC?

MR. YANG: I believe that would either be rectified AC or regulated DC, because you're talking about a bridge rectifier that's rectifying AC power. I don't think you'll -- I don't think, unless you have a very good one, you will produce DC power. But, more importantly, I think -- for that I think it depends on where the bridge rectifier actually is.

If the bridge rectifier is part of the electrical system -- for example, if the bridge rectifier is in the electrical power plant that's supplying power, then I don't think that bridge rectifier -- whatever the output of the bridge rectifier is, is what is input to the lighting system. It's not the input to the bridge rectifier.

On the other hand, if the bridge rectifier was part of the lighting system, then it would be the input to the bridge rectifier that would control what the input to the lighting system was. So it's very important to understand where the bridge rectifier is, whether it's part of the lighting system or whether it's outside the lighting system providing power to the lighting system.

JUDGE TORNQUIST: Okay. So I understood one of your previous answers was the wall socket itself is not part of any sort of system, right? It's separate. But once you plug something in, that could be part of the system.

MR. YANG: The wall socket is a barrier between what you're plugging in and the power infrastructure that you're being plugged - that it's being plugged into. It's a natural separation between the lighting -- the lighting system that's being plugged into the power source and the power source itself.

JUDGE TORNQUIST: Right. I get that. I get that. But what if what the thing I plug into the wall was the transformer and the transformer is also

connected to the device? Isn't that part of the system, then, because it's inside from the wall socket?

MR. YANG: It might be. But as I said before, what we're looking at here for Ter Weeme is anticipation and that is not disclosed anywhere in Ter Weeme.

JUDGE TORNQUIST: And, Counsel, but you also had that argument for your Ground 1, as well --

MR. YANG: I believe that --

JUDGE TORNQUIST: -- this AC/DC part.

MR. YANG: I believe that was Ground 2 because -- which I was trying to get to, but I'm happy to discuss now.

In Ground 2, the Mueller and Okuno references have transformers that are part of the power generation rather -- but those transformers are not part of the lighting system.

JUDGE TORNQUIST: Okay. I was looking at your Ground 1 and you say that Dowling takes in AC, converts it to direct DC, and powers the LEDs, and you said that makes a distinction.

MR. YANG: That does make a distinction because I said -- as I said before, the distinction is what kind of power is being provided to the lighting system. If the lighting system is being provided AC power, then it's being driven by AC. If the lighting system is being provided by DC power, then it's being driven by DC.

JUDGE TORNQUIST: I guess, what is converting in Dowling? I just want to make sure I understand, because you do make this argument on page 19, I believe, of your Patent Owner response.

MR. YANG: So I believe what page 19 into page 20 is saying is that Dowling's lighting system receives DC power because the AC voltage source is already converted to DC before it's being supplied to Dowling's lighting system.

JUDGE TORNQUIST: Okay. I can just look at it. Always -- these patent claims always raise the question of where we have to be looking precisely to figure out the system and what's doing the conversion.

MR. YANG: That's absolutely correct, Your Honor.

JUDGE TORNQUIST: Okay. Sorry to sidetrack you. Keep going with your arguments.

MR. YANG: So for my next -- my next argument was actually directed to Ground 2, which is the transformer in, I believe, Claim 14.

So for that -- for the specific transformer in Claim 14, the Okuno and Mueller references state that the transformer is part of the commercial power supply. Because the transformer is part of the commercial power supply, then that transformer is not part of the lighting system. Therefore, that transformer cannot be considered part of the lighting system.

I understand that Petitioners have raised an additional argument and they've suggested that Dowling itself has a built-in transformer, but that's not what Dowling actually says. Dowling only says that the -- Dowling's device

is capable of voltage transformation. That doesn't necessarily mean that there's a transformer actually within Dowling itself.

The argument for Ground 2 that Dowling would have had an internal transformer simply because it's capable of doing both the transformation is the kind of conclusionary assertion without evidence rejected by *Arendi S.A.R.L. v. Apple*. Here, Dowling -- the Petitioner only has a teaching in Dowling that the device can do internal transformation. There's no evidence that that internal transformation is being done by a transformer within the device.

And the last one I would --

JUDGE TORNQUIST: How would it work -- how would it work in Dowling? I mean, it looks like a -- just pulling it up, but it looks like a -- the figures are basically like a light bulb connected to the wall socket, right?

MR. YANG: That's --

JUDGE TORNQUIST: Not the wall socket. It's a bulb.

MR. YANG: That's certainly what it looks like.

JUDGE TORNQUIST: So where would the transformation be happening other than in that bulb?

MR. YANG: Well, the thing is Dowling doesn't disclose it, so that's -- you can't conclude that there's a transformer within the bulb. Dowling only says that voltage transformation happens. That -- that's too -- I think that's too ambiguous of a statement to conclude that there's a transformer actually within the bulb.

JUDGE TORNQUIST: Okay. I'll have to look at it, but, I mean, Figure 10 of Dowling has a light that's just stuck right into the wall socket. And I have to look and make sure the, you know, the -- you know, the disclosures matched with Figure 10. But I'm just figuring out where would a transformer be other than in that light?

MR. YANG: I mean, I just want to note that Figure 10 doesn't actually show a transformer and Dowling doesn't say transformer. Dowling said -- just says that voltage transformation happens. There's no -- you can't draw a conclusion from that statement that there's a transformer in the light that's doing the voltage transformation.

JUDGE TORNQUIST: Okay.

JUDGE RAEVSKY: Is the Petitioner relying on the combination to say that there's a transformer elsewhere as taught by another reference and internally there's a voltage transformation in Dowling and therefore it would have been obvious to have a transformer in Dowling? Maybe I'm mistaking Petitioner's position, but I think that might be one argument they're making.

MR. YANG: I think you are because I think they're making two separate arguments. One is that there is a transformer separate from Dowling in Okuno and Mueller, and, two, that Dowling itself, because of the voltage transformation reference, suggests -- I mean, teaches a voltage -- a transformer within the device.

I don't think the petitioners have actually made the argument that you're making now, which is that based on voltage transformation in

Dowling, you would place the transformer from Mueller or Okuno inside the lighting system. I don't think they've actually made that argument.

JUDGE RAEVSKY: Okay.

MR. YANG: So the final issue I wanted to touch on is the claim construction of the word disconnected. I think that this claim construction only applies to the argument concerning this electronic switch in Ter Weeme, which is Ground 3. Otherwise, even if you find that the word disconnected can encompass electronic switches, that shouldn't affect any of the other arguments made for any of the other grounds.

Specifically, for this claim construction argument, Petitioners have provided a lot of extrinsic evidence of what other references believe the word connected to be. Petitioners, I believe, have intentionally ignored the intrinsic evidence of the patent, the '479 Patent, itself, which discusses what connected and disconnected mean. And that is discussed on page 2 to page 4 of Patent Owner's sur-reply.

If you look at pages 2 through 4 of the sur-reply, the '479 Patent actually talks about connecting versus reducing the amount of current being applied to an LED device.

In the first example that's on page 2, the '479 Patent, column 13, line 22 to 27, says that you slowly drop the voltage that's being applied to an LED and the LED will become dimmer and dimmer and turn off. That specifically refers to the kind of operation that's being described by Dowling

and the other references in which the amount of current that's being applied to the LEDs is reduced so they become dimmer.

By contrast, if you look at column 17, line 3 to 11, it's specific here -- the '479 Patent specifically uses the word disconnected, and it says, "if the driver or bypass or shunt active current limiting device fails, the LED lighting device may be disconnected from the failed driver or bypass and be reused with a new driver or bypass."

What that's saying is that you're physically removing the failed driver bypass and replacing -- in other words, disconnecting that from the lighting device system and replacing it with a new driver bypass. So the '479 Patent itself, the intrinsic evidence, is very clear that there's a distinction between reducing voltage in current, causing LEDs to become dimmer and eventually go out, versus disconnecting a component from the LED system entirely.

JUDGE RAEVSKY: Counsel, we have about 30 seconds remaining in your main time.

MR. YANG: I'd like to reserve the remaining time for rebuttal, if that's all right.

JUDGE RAEVSKY: Yes, that's fine.

MR. YANG: Thank you, Your Honor.

JUDGE RAEVSKY: You have about 15 1/2 minutes remaining.

Okay. Petitioner, you have 19 1/2 minutes remaining.

MR. ERICKSON: Thank you, Your Honor.

I'm Brian Erickson for Petitioner, Home Depot.

I'd like to start where Patent Owner left off and that is the intrinsic record that Patent Owner heavily, if not exclusively, relies on that's excerpted in Patent Owner's demonstrative Slide 19.

There's two portions to the specification that are excerpted here, and these are from the portions of Patent Owner's reply that they just mentioned, pages 2 to 4, specifically pages 2 to 3. The lower portion of this slide excerpts the portion from column 17, lines 3 to 11.

This is talking about physically disassembling the device. Recall the claim term at issue is a switch, a switch that is configured to connect or disconnect. This is not a switch connecting or disconnecting anything. This is literally a device that has failed and someone is disassembling it to reconnect it in a different configuration.

Now, Petitioner does not dispute that literally disassembling a device would also fall within the ordinary meaning of the term disconnected in isolation, but it certainly has no relevance to a person of ordinary skill in the art. It's looking at the intrinsic record to determine whether the claim term, a switch that can connect or disconnect, is entitled to its -- the full scope of its ordinary meaning or not.

The top portion of this slide is referring to the portion of the disclosure in column 13. This is actually talking about functionality provided by the disclosed switch. In fact, it's the only disclosed switch. So it's interesting for Patent Owner to argue that as its patent -- as Patent Owner's expert did, that the only disclosed switch is excluded from their

interpretation of connecting and disconnecting and what is really required is the disassembly as discussed at column 17.

Now, moving back to Dowling, I'm just attempting to display what is paragraph 47 of Dowling, and this is the paragraph that was discussed by Patent Owner and the Board related to the strobe. And the one thing I want to add here is that Dowling's embodiment -- disclosed embodiment here that's being discussed has three LED circuits: Red, green and blue.

And so when -- in paragraph 47, when it's discussing a strobe mode that's going to turn on and flash on and off and it's going to alternate green and red, that discloses to a person of ordinary skill in the art that it is connecting and disconnecting, alternatingly, the red and the green LEDs and not connecting the blue LED circuits.

And I would like to reiterate that even in the static mode, where the user has selected to display, for example, blue, and so the blue LED circuit is connected, the user can dim, whether it's a hundred percent or fifty percent, and with pulse pulse-width modulation, even in the static mode, the system will be connecting and disconnecting the selected LED circuit from the power. And that would also satisfy the claim.

JUDGE RAEVSKY: Counsel, if the LEDs are dim, they still have current flowing through them, correct?

MR. ERICKSON: They have the exact same amount of current as when they are not dimmed. With pulse-width modulation, the system is applying a voltage pulse and it's always -- Dowling discloses two different

options, either 5 volts or 12 volts. They're not current-driven LEDs; they're voltage driven. And so for the portion of a second that that pulse-width is applied at 5 volts, the current will immediately flow through that LED and it's not going to change.

So if you're at 25 percent or 75 percent, during the period of time that that LED circuit is on, it is conducting the same amount of current that are some nanosecond transition time as the current ramps up. But when it's -- when it's emitting light, it's at the same current and the same brightness.

And it's just the perception by a human, when your eye receives that flashing light, whether the brightness -- the perceived subject of brightness of the light, when that light is on, it is on at the same voltage and the same current and then it's off. So it's connected and disconnected very, very quickly.

JUDGE RAEVSKY: So is it merely -- if it's merely perceived to be off, is it actually off? Is that -- is that what the reference says? Because the reference says the device may strobe, that is, flash on and off, but Patent Owner seems to point to an ambiguity there that doesn't clearly state that the LEDs are off.

MR. ERICKSON: So a person of ordinary skill reading this passage, understanding that the LED has a red LED circuit and a green LED circuit and a blue LED circuit -- and this is describing the user-level functionality of a strobe mode -- so, in other words, a user-perceptible strobing -- and then Christmas, you're going to want red and green blinking. These are for the

holiday-type lights. So the user can select to strobe red and green. They won't see blue. It's never on at all. And red will be blinking on and off and green will be blinking on and off.

I think that is the fair reading of this disclosure to a person of ordinary skill in the art.

JUDGE RAEVSKY: Thank you.

MR. ERICKSON: Okay. Moving to Ter Weeme -- I'm sorry. I had one more point to make on Dowling, and I'm speaking with reference to Petitioner's Slide 50.

What I believe I heard Patent Owner say as part of their remarks in response to a question from the Board was that the LED lighting system might be some undefined sub-portion of the integrated device shown in Figure 8. In other words, because -- even though it's undisputed that AC drives the bulb that's in Figure 8 by being applied to the end of the bulb, that that's not the end of the inquiry; that Patent Owner is somehow subdividing that device and saying that, well, because somewhere within there there's a conversion from AC to DC and that the LED circuits are being driven by DC, that the lighting system may be something less than even that integrated device.

So this, kind of, moving goal line of the box Patent Owner wants to draw around what they perceive or contend is an acceptable system is really unsupported in the record.

The Board did correctly understand the combination relied on by Petitioner being -- at page 28 of the petition. Dowling does disclose that there is circuitry that performs an internal voltage transformation from 110 or 120 volts, the commercial voltage that it's screwed into when you screw that into the light socket, and that it's only applying 5 or 12 volts to the LED circuits.

So Dowling discloses that there is an internal voltage transformation. Dowling just doesn't use the word transformer. And so we're relying on the secondary reference of Okuno that explicitly states that when you want to drop a commercial voltage -- AC voltage to a voltage that you're going to apply to an LED circuit, you can use a transformer to do that. And so that teaching would tell one of ordinary skill in the art, in implementing Dowling, that you should perform that internal voltage transformation using a transformer.

JUDGE RAEVSKY: So I don't think Patent Owner raised this argument, but as Petitioner, you bear the burden, so I want to push back on this a little bit.

So I think Patent Owner did mention that Okuno teaches a commercial transformer. I can't recall offhand if Okuno also teaches a small transformer. But I would understand that commercial transformer to be something, say, in a substation that's fairly large. And so it seems that you're proposing putting the transformer, as taught by Mueller and Okuno, into a light bulb. How would that be possible? Why would -- what of ordinary

skill in the art look to these references -- presumably, if I -- if I remember them correctly, that are teaching this large transformer to put that in a light bulb?

MR. ERICKSON: I think that is the implication trying to be advanced by Patent Owner. That's not what Okuno discloses. Okuno discloses transforming commercial voltage -- it does use the words "commercial voltage" -- down to a voltage suitable to drive an LED. It doesn't state that it's, you know -- explicitly whether it's a 40,000 volts down to, you know, 220 volts or whether it's 220 volts down to 110 volts or 110 volts down to 5 volts. It just says the way you transform voltages -- when you're interested in transforming voltage to apply to a LED is with a transformer, and it uses that word. Okuno discloses that immediately after that transformation, it's applied directly to the LED circuit.

So I think it's an unfair reading of Okuno to suggest that that transformer is somewhere distant doing some massive large transformation or that it's some large -- you know, large transformer. It's the transformer immediately before the voltage is applied to the circuits that are discussed in Okuno. Okuno says, here's the figure, here's the voltage applied to the LED circuit itself, and, by the way, this voltage could have been dropped from a higher voltage. And it does use the word commercial, but I don't think there's any basis to say that that implies that it's anything other than the commercial voltage you buy from your power company and that is applied to the circuits in your house.

So that's the first response to your question, Your Honor, is that I disagree with that characterization of Okuno. But even assuming that's true, even assuming it's referring to a big transformer, we're not arguing for bodily incorporation of whatever Okuno's transformer is and wedging it into Dowling.

The teaching in Okuno is that when you want to perform voltage transformation to apply a voltage to an LED circuit, you use a transformer. So one of ordinary skill in the art implementing Dowling's system would understand that the transformer they're looking for is performing the voltage transformation explicitly disclosed in Okuno -- I'm sorry, in Dowling of dropping 120 -- 110 or 120 volts down to the 5- or 12-volt range. That teaching is well within the skill of one in the art.

JUDGE TORNQUIST: Counsel, can I ask just a quick scientific question, but you could explain it to me? In your paragraph 63 there, there's a power converter -- I think it's about the third sentence -- a power converter that takes in variable amplitude AC signals and, where appropriate, maintains a constant DC power supply.

I've truncated the sentence a little bit.

MR. ERICKSON: Yes, Your Honor. And, I'm sorry, what --

JUDGE TORNQUIST: So how is it doing that? How are we going from an alternating -- variable amplitude AC signal to a constant DC power supply within that power converter?

MR. ERICKSON: The -- Dowling describes, consistent with that voltage drop, that eventually there is internal circuitry that is both dropping the voltage and applying a lower voltage using pulse-width modulation to the LED circuits. The precise circuitry that does that is not explicitly defined in Dowling. It's incorporated by reference from Mueller. So these are patents from the same inventors assigned to the same assignee, the same timeframe, exact same packages. They just put most of the circuitry description in Mueller not in Dowling itself. So --

JUDGE TORNQUIST: Okay. I'm guessing -- my question is why doesn't this suggest that there is something within this package here, this light bulb, that is converting from AC to DC?

MR. ERICKSON: Yes, it absolutely does suggest that, Your Honor. And, you know, if pages or words were unlimited and the Board's time were unlimited, you know, this is -- this -- we would have run one ground that said it's inherent, that there is circuitry within that light bulb that's performing this voltage drop and whatever construction of transformer would be proposed is inherently disclosed by that fact. There is circuitry inside that package that's performing a voltage drop. That is a transformer.

We did not run that ground as an inherent ground or single reference ground. Because it didn't use the actual word transformer, we rely on the teaching of the secondary reference to get us that precise word of transformer. When one of ordinary skill wants to perform this type of

voltage drop, internal to this light bulb, they would use a transformer as taught by Okuno.

JUDGE TORNQUIST: Okay. That's helpful. Thank you.

MR. ERICKSON: Yeah. Okay.

In moving to Ter Weeme, the Board is familiar with the integrated device issues that were raised in the Child Patent, the '783 Patent, earlier in the related hearing. Patent Owner knows how to claim an integrated device when it wanted to. The Patent Office recognizes that a system is one of the broadest ways a patentee can attempt to claim an apparatus.

You can have a lighting system of many different types. A building can have a lighting system; a concert can have a lighting system that comprises many, many lights that are all plugged in, and maybe there's a plug that they're releasably connected together. None of that matters. They're -- lighting system is an incredibly, flexibly broad term that would encompass the smallest fiber optic light to the largest citywide lighting system. It's just not a bounded -- a relevant -- real bound here, particularly with respect to the actual devices and the actual prior art here that we've been discussing.

You know, the fact that Patent Owner would suggest that Dowling's light bulb should be subdivided, that it's not a lighting system, just shows that they're using that term to arbitrarily drop a box to exclude the claim components. Recall that we --

JUDGE RAEVSKY: I think you also need to figure out where to draw the line because -- you know, as the example I used in my office where I've got a light above me and a switch on the wall, Patent Owner, I think, agrees that that's a lighting system. But now when you have something that you buy off the shelf, like Ter Weeme, that has a plug and you plug it into the wall, how much of the electrical infrastructure can we say is the lighting system? At some point, doesn't it become absurd to say the substation and the coal-fired power plant is the lighting system? Where do we draw the line? How do we -- how do we draw that line?

MR. ERICKSON: I think they could -- you could easily drop the claim that states the city as a highway lighting system that includes thousands of lights along the highway, the cables that connect that to a power station, and you could draw a claim to that and say this is a lighting system and it would not be the term "lighting system" that would distinguish that from the prior art.

And, you know, just because there is a releasable connection that a user can manipulate, as opposed to taking a screw and unscrewing a wired-in connection -- you know, I think it's irrelevant whether the light in your office is plugged in to the electric system or screwed in or glued or welded in. I don't think that's relevant.

And in response to Patent Owner's narrowing argument, I would direct the Board to the reply at page 18 where we discuss in Ter Weeme -- that's Exhibit -- Ter Weeme is Exhibit 1007 at column 4, lines 23 to 27 --

that Ter Weeme also discloses a hard -- what they called a hardwired embodiment.

So we brought that up in response to Patent Owner's narrowing argument. I don't think it's relevant whether it's releasably connected or hardwired in. A lighting system is broad enough to include a building's lighting system. Maybe that building is powered by an internal generator, maybe it's a flashlight with an internal battery, but lighting system itself would not serve as a basis to exclude, you know, the light switch that controls the light.

JUDGE RAEVSKY: So in that section of Ter Weeme that you've cited -- I think it's page 4, lines 23 through 27 -- it says something about a lighting kit of parts, comprising a dimmer, having input terminals, adapted to connect to an electrical power supply, having output terminals, adapted to provide a variable electrical power, an embodiment of the lighting device according to the present invention as terminals configured to be connected to the output terminals of the dimmer. What part of that says hardwired to you?

MR. ERICKSON: Apologize for that.

JUDGE RAEVSKY: And we have about a minute left. You have a minute left of your time.

MR. ERICKSON: Yeah. I apologize, Your Honor. I don't have that available to me. Let me see if I can pull it up in the time I've got remaining. Otherwise, I would have to rely on that portion --

MS. DAHL: I can -- I can jump in. So it was the -- basically, that embodiment of Ter Weeme that said that -- that you would have an embodiment of a lighting device and it could be connected directly to that dimmer switch. So in that case, it would be hardwired together and contrary to what Patent Owner alleges is not improper to consider that.

And we would respectfully direct the Board to IPR2019-00488 at paper 42 where it was -- the Board found it was okay for the Petitioner to properly -- to respond in the alternative that the claims are obvious under Patent Owner's overly narrow interpretation that Patent Owner introduced, for the first time, in its response.

JUDGE RAEVSKY: So in your view, the word connected means hardwired?

MS. DAHL: Yes. In that particular embodiment of Ter Weeme, yes.

MR. ERICKSON: Thank you, Ms. Dahl. Unless there are any other questions, we'll rest.

JUDGE RAEVSKY: Thank you, Counsel.

Any other questions from the panel?

Okay. Patent Owner, you have 15 1/2 minutes remaining.

MR. YANG: Thank you, Your Honor.

I want to start with the disclosure of Ter Weeme on page 4 that you were just discussing. If you look on page 37 through 39 of the petition, I don't think the embodiment on page 4 of Ter Weeme the Petitioner is now pointing to was ever cited for the first switch.

And according to the Supreme Court and SAS Institute, the scope of the IPR is exactly what is written in the petition, no less and no more. And since this embodiment was never cited in the petition, I don't think it's appropriate for the Petitioner to bring it up now in this hearing for the first time.

Going back to the construction of lighting system, I think the parties are in agreement that a lighting system can encompass more than one device. The issue is whether the system as a whole was directed to lighting. And the -- and I understand that you asked earlier where you draw the line for that? And I believe that the line for that is the wall socket. That's the line. Everything past the wall socket is part of the electrical infrastructure and everything connected to the wall socket is part of the lighting system.

I'd also like --

JUDGE RAEVSKY: How do you respond to -- how do you respond to Petitioner's point where you could have a citywide lighting system which is going to include -- it's going to have to include electrical infrastructure?

MR. YANG: Well, your Honor, as I said before, this is -- Ter Weeme specifically is an anticipation ground. We -- you have to look at exactly what Ter Weeme itself discloses and you can't look at hypotheticals beyond Ter Weeme to determine if Ter Weeme actually anticipates the reference.

And, specifically, for that -- specifically for that, I believe that a lighting -- that the lighting system in that case are the interconnected lighting devices throughout the entire city. But at the same time, you still wouldn't

consider the -- as you said earlier, the coal-fired power plant to be part of that lighting system.

So I'd really like to direct you to paragraph 47 of Dowling. I heard earlier that the Petitioner described paragraph 47 of Dowling as saying that there's three LED circuits there. But if you actually look at paragraph 47 of Dowling, that's not what it says.

Paragraph 47 says that there are three LED colors, not three LED circuits. That's the -- that's the issue that Petitioners created this entire time, is that Dowling is saying that -- you have a number of LEDs and you can generate all three colors from the same LED based on whatever the current flowing through LED is, and that's how you get the strobe effect. And somehow Petitioner is -- based on that disclosure, somehow inventing the fact that the different colors of LEDs are being turned on and off. And that's simply not the case in paragraph 47.

Paragraph 47 says that there are three LED colors, not three LED circuits. So you can't conclude from the fact that the colors are -- the colors are changing between three different colors, that LED circuits are being turned on or off. It doesn't say that there are three LED circuits there. It says that there are -- the LEDs vary between three colors.

JUDGE ULLAGADDI: Counsel, how else would it -- how else would a person of ordinary skill in the art read that, then, if the colors don't correspond to circuits?

MR. YANG: Well, I directed you earlier to paragraph 43 of Dowling. And in paragraph 43, it says that the colors of the LEDs change based on the intensities of the LEDs. So it's certainly possible, based on the disclosure and Downing itself, that the -- that there's one series of LEDs and the colors of those LEDs themselves are changing based on the mode because of the current that's flowing through the LEDs.

There's no requirement that you're turning on or off LEDs of different colors based on the mode. That's an entire -- that's an entire invention from the -- from the actual disclosure in paragraph 47.

The other thing I want to point out is that Claim 9 requires connecting an LED circuit and disconnecting another LED circuit. So there's a connection of one LED circuit and a disconnection of another LED circuit.

I believe I heard Mr. Erickson say earlier that there was a point to connecting and disconnecting the same circuit, and I'd like just to point out that doing that wouldn't meet the claim limitation which requires connecting of one circuit and disconnection of another circuit.

And, finally, with respect to the issue -- the issue with the construction of disconnected, the Federal Circuit has said that the words used in the specification and the claims have to be consistent. If you use the word one way in the patent, it should be read the same way through the entire patent. And if the specification uses the word disconnected to mean that it's being -- you know, removing components from the lighting system, that's -- and the specification doesn't use the word disconnected in the context of reducing

voltage, then that's the word that -- that's the way that the word disconnected has to be construed. That's the way that the specification consistently uses.

So the point that Mr. Erickson raised earlier that it could exclude a particular embodiment, as Your Honor has pointed out, the patent itself broadly discusses switches. There are many -- there are multiple embodiments of switch in -- described by the specification. And there's certainly no need for a specific claim to cover every single embodiment of the patent, as long as there is -- as long as there are certain embodiments that are covered by the claim.

JUDGE RAEVSKY: If the specification is talking about disconnecting a component so that you can go to the store and buy another one and plug it back in, is that really the right context that the claim is referring to where it's a switch that's disconnecting rather than a person disconnecting?

MR. YANG: The patent is -- the patent is supposed to use the word disconnected in the same way throughout the patent. You can't use the word disconnected one way in one section of the patent and then use it in a completely different way in the claim language itself. That would violate the canons of claim construction.

What you're looking -- what you have to do is look at the specification and make sure that the claims, as construed, are consistent with how the -- that claim term is -- that the term -- consistent with how the term is used throughout the specification. And if you do that, you'll see that the word

disconnected, as used in the specification, refers to removing components rather than reducing voltage.

So unless your Honor has any further questions, I will rest.

JUDGE RAEVSKY: No, we don't have any further questions. Thank you, Counsel, for your time today. It's been a long hearing.

We appreciate everyone's full participation and answers to your questions and we're also grateful for our court reporter and other court staff who have helped today. With that, we're adjourned, but I'd like you to please stay on the line, if the court reporter has any further questions.

(Whereupon, the above-entitled matter went off the record at 4:25 p.m.)

IPR2021-01368 (Patent 10,757,783 B2)
IPR2021-01370 (Patent 10,349,479 B2)

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