

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

JIAWEI TECHNOLOGY (HK) LTD., JIAWEI TECHNOLOGY (USA) LTD.,
SHENZHEN JIAWEI PHOTOVOLTAIC LIGHTING CO., LTD., ATICO
INTERNATIONAL (ASIA) LTD., ATICO INTERNATIONAL USA, INC.,
CHIEN LUEN INDUSTRIES CO., LTD., INC. (CHIEN LUEN FLORIDA),
CHIEN LUEN INDUSTRIES CO., LTD., INC. (CHIEN LUEN CHINA),
COLEMAN CABLE, LLC, NATURE'S MARK, RITE AID CORP.,
SMART SOLAR, INC., and TEST RITE PRODUCTS CORP.,
Petitioner,

v.

SIMON NICHOLAS RICHMOND,
Patent Owner.

Case IPR2014-00936
Patent 7,196,477 B2

Before WILLIAM V. SAINDON, JUSTIN T. ARBES, and
BARRY L. GROSSMAN, *Administrative Patent Judges*.

SAINDON, *Administrative Patent Judge*.

DECISION

Final Written Decision
35 U.S.C. § 318(a); 37 C.F.R. § 42.73

Granting Motion to Seal
37 C.F.R. § 42.55

Denying-in-Part and Dismissing-in-Part Motions to Exclude
37 C.F.R. § 42.64(c)

I. BACKGROUND

We have jurisdiction under 35 U.S.C. § 6(c). This Final Written Decision is entered pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. With respect to the grounds asserted in this trial, we have considered the papers submitted by the parties and the evidence cited therein. For the reasons discussed below, we determine that Petitioner has shown, by a preponderance of the evidence, that the subject matter of claims 1–29 of U.S. Patent No. 7,196,477 B2 (Ex. 1001, “the ’477 patent”) is unpatentable. In addition, we deny-in-part and dismiss-in-part Petitioner’s and Patent Owner’s Motions to Exclude Evidence, and we grant Petitioner’s Motion to Seal.

A. *Procedural History*

Petitioner filed a revised Petition to institute an *inter partes* review (Paper 14, “Pet.”) of the ’477 patent on June 30, 2014. Pet. 1. Patent Owner filed a Preliminary Response. Paper 20 (“Prelim. Resp.”). We instituted an *inter partes* review of claims 1–29 of the ’477 patent on December 16, 2014. Paper 21 (“Dec. on Inst.”). Patent Owner then filed his Response to Petitioner’s Petition (Paper 31, “PO Resp.”), to which Petitioner filed its Reply (Paper 48, “Pet. Reply”). An oral hearing was held on September 21, 2015. Paper 66 (“Tr.”).

Patent Owner alleged that Petitioner failed to list all real parties in interest and we authorized the parties to brief the issue. Paper 34 (Motion to Terminate); Papers 42, 43 (Opposition); Paper 46 (Reply). We denied Patent Owner’s Motion to Terminate. Paper 56.

There are several outstanding motions decided herein. Patent Owner filed a Motion to Exclude Evidence. Paper 53 (“PO Mot. Excl.”); *see also* Paper 60 (Petitioner’s Opposition, “Pet. Opp. PO Mot. Excl.”); Paper 62 (Patent Owner’s Reply, “PO Reply PO Mot. Excl.”). Likewise, Petitioner filed a Motion to Exclude Evidence. Paper 55 (“Pet. Mot. Excl.”); *see also* Paper 58 (Patent Owner’s Opposition, “PO Opp. Pet. Mot. Excl.”); Paper 61 (Petitioner’s Reply, “Pet. Reply Pet. Mot. Excl.”). Lastly, Petitioner filed a Motion to Seal. Paper 40 (“Pet. Mot. Seal”). Patent Owner did not file an opposition to Petitioner’s Motion to Seal.

B. Related Matters

Petitioner states that Patent Owner has asserted a number of lawsuits against the Petitioner companies alleging infringement of the ’477 patent. Pet. 3–4; Paper 18, 3; Paper 19, 3–4. Petitioner and Patent Owner also are involved in other *inter partes* reviews: IPR2014-00935 (U.S. Patent No. 8,089,370 B2) (instituted), IPR2014-00937 (U.S. Patent No. 8,362,700 B2, “the ’700 patent”) (denied), and IPR2014-00938 (U.S. Patent No. 7,429,827 B2, “the ’827 patent”) (instituted). Pet. 4; Paper 19, 1. The ’700 patent is a continuation-in-part of the ’827 patent, which is a continuation-in-part of the ’477 patent.

C. The ’477 Patent

The ’477 patent describes a solar powered light that produces light of varying color. Ex. 1001, 1:6–8. According to the ’477 patent, producing light of a variable color is known, and solar powered “garden lights” are known. *Id.* at 1:12–20. The claimed invention “overcome[s] or substantially ameliorate[s] at least one of the . . . disadvantages” of the prior

art, which includes “difficulty in adjusting the various lighting functions” and “not producing a uniform desired colour.” *Id.* at 1:21–30.

D. Exemplary Claims

Of the claims challenged, claims 1 and 20 are independent. Claim 1 is reproduced below.

1. A lighting device to produce light of varying colour, said device including:
 - a body including a spike;
 - a lens mounted on the body and generally enclosing a chamber having an upper rim surrounding a top opening, and a bottom region;
 - a cap assembly including securing means to releasably engage the rim so that the cap assembly can be selectively removed from the lens; said assembly including:
 - a base; and
 - a circuit having at least two lamps of different colours to produce a desired colour including a varying colour, the lamps being mounted to direct light into said chamber, connections for at least one rechargeable battery to power the circuit and a solar cell mounted on a surface of the assembly so as to be exposed to light and operatively associated with the connections to charge the battery, and a switch operated to control delivery of electric power from the battery to operate said circuit, the switch being exposed to provide for access thereto by a user.

E. Prior Art and Asserted Grounds

References	Basis under 35 U.S.C.	Claims Challenged
Chliwnyj, ¹ Wu, ² and Hung ³	§ 103	1, 2, 4–9, 20–22, and 26
Chliwnyj, Wu, Hung, and Pu ⁴	§ 103	10–12, 23–25, and 27–29
Chliwnyj, Wu, Hung, and Xu ⁵	§ 103	3 and 13–16
Chliwnyj, Wu, Hung, Xu, and Pu	§ 103	17–19

II. MOTIONS

A. Petitioner's Motion to Seal

Petitioner moves to seal Exhibits 1018 and 1031, portions of Exhibits 1021, 1042–1044, and 1046, and portions of its Opposition to Patent Owner's Motion to Terminate.⁶ Pet. Mot. Seal 2. Petitioner proposes entry of the Default Protective Order. *Id.* at 5; *see Office Trial Practice Guide*, 77 Fed. Reg. 48,756, 48,769–71 (Aug. 14, 2012). Petitioner has provided redacted versions of Exhibits 1021, 1042–1044, and 1046. Pet. Mot. Seal 2.

The Exhibits generally relate to an internal corporate resolution, listings of financial account numbers, and invoices for attorney fees. *See* Pet. Mot. Seal 3–4. The redacted versions of these documents, upon which

¹ U.S. Patent No. 5,924,784, issued July 20, 1999 (Ex. 1005).

² U.S. Patent Application Publication No. US 2003/0201874 A1, published Oct. 30, 2003, filed Apr. 24, 2002 (Ex. 1006).

³ PCT Application WO 91/02192, published Feb. 21, 1991 (Ex. 1016).

⁴ Chinese Patent Publication No. CN 2522722Y, published Nov. 27, 2002 (Ex. 1008) (certified translation).

⁵ Chinese Patent Publication No. CN 2541713Y, published Mar. 26, 2003 (Ex. 1012) (certified translation).

⁶ Petitioner filed two such oppositions, Papers 42 and 43, but neither appears to have been filed with confidentiality restrictions.

we relied in our denial of Patent Owner's Motion to Terminate (Paper 56), sufficiently disclose the basis for our decision, so there is little public interest in making the non-redacted versions publicly available.

Accordingly, Petitioner has shown good cause for sealing Exhibits 1018 and 1031, and portions of Exhibits 1021, 1042–1044, and 1046. We do not seal Papers 42 and 43 (which appear to be identical copies) because they were filed publicly, which we deem to be a withdrawal of the Motion as to these papers.

The parties are reminded that confidential information that is subject to a protective order ordinarily becomes public 45 days after final judgment in a trial. *Office Patent Trial Practice Guide*, 77 Fed. Reg. at 48,761. After final judgment in a trial, a party may file a motion to expunge confidential information from the record prior to the information becoming public. *See* 37 C.F.R. § 42.56.

*B. Patent Owner's Motion to Exclude
Evidence*

Patent Owner first argues that Exhibits 1050–1066 should be excluded because they are “exhibits that could reasonably have been, but were not, included in an earlier filing.” PO Mot. Excl. 2. Patent Owner's argument is that, essentially, because it was possible that these documents could have been filed earlier, they cannot later be filed. *See id.* at 1–4. We reject such a literal reading of 37 C.F.R. § 42.23(b). We have reviewed the arguments in Petitioner's Reply and Petitioner's citations therein to Exhibits 1050–1066, and are persuaded that Petitioner presents arguments and evidence that are properly responsive to Patent Owner's arguments and evidence. We find

this to be a proper use of Reply exhibits and deny Patent Owner's Motion on this basis.

Patent Owner then argues that paragraphs 26 and 27 of Exhibit 1050 should be excluded "because they include hearsay statements and [Petitioner's declarant, Peter W. Shackle, Ph.D.] offers factual observations without laying a proper foundation or otherwise demonstrating personal knowledge of the recited facts." PO Mot. Excl. 4. Patent Owner argues Exhibits 1051–1060 should also be excluded for similar reasons. *Id.* at 5. Exhibits 1051–1060 are profiles obtained from websites such as LinkedIn and are offered to show the educational background of various inventors. *See* Ex. 1050 ¶¶ 26–27. Because we do not rely on Exhibits 1051–1061, we dismiss this aspect of the motion as moot.

Patent Owner then argues that Exhibits 1061–1063, which contain dictionary definitions of the word "varying," should be excluded under Federal Rule of Evidence 401 and 403 "because they lack any probative value" and "are unduly prejudicial to Patent Owner." PO Mot. Excl. 5–6. Given that the term "varying" appears in the claims and that Patent Owner argues a construction for the term in his Response (PO Resp. 14–17), these definitions have probative value. Further, Patent Owner has not offered a cogent explanation as to how these dictionary definitions are unduly prejudicial. We do not exclude Exhibits 1061–1063.

Patent Owner argues that various excerpts of the testimony of his declarant, Alfred Ducharme, Ph.D., should be excluded from Exhibit 1049. PO Mot. Excl. 6–12. Reviewing Patent Owner's explanation, it appears that he is simply arguing that Dr. Ducharme's testimony should not be treated as standing for the notions upon which Petitioner argues. *See, e.g., id.* at 11

(“Petitioner cited the above excerpt as support for [a position]. Not only do the cited excerpts offer no support for that characterization, but the testimony . . . is inadmissible because the question . . . is ambiguous, argumentative, and misleading.”). We will make our own judgments as to what extent, if any, Dr. Ducharme’s testimony supports Petitioner’s positions and to what extent the answer given is based on an unclear or ambiguous question, to the extent we rely on that testimony at any point in our analysis below. Accordingly, we do not exclude the testimony.

In view of the above, we deny-in-part and dismiss-in-part Patent Owner’s Motion to Exclude.

C. Petitioner’s Motion to Exclude

Petitioner first moves to exclude Exhibits 2034, 2042, 2044, 2046, and 2054. Pet. Mot. Excl. 2–3. This evidence was provided in support of Patent Owner’s Motion to Terminate, which we denied on August 21, 2015 (Paper 56). This evidence was not considered and the Motion was denied. We dismiss Petitioner’s Motion as to these Exhibits as moot.

Petitioner next moves to exclude portions of Dr. Shackle’s testimony in Exhibits 2022 and 2023 as confusing, misleading, and/or irrelevant. Pet. Mot. Excl. 4–7. We decline to exclude this evidence. This panel acts as both the gatekeeper of evidence and as the weigher of evidence. Rather than excluding evidence that is allegedly confusing, misleading, and/or irrelevant, we will simply not rely on it or give it little weight, as appropriate, in our analysis. Accordingly, we deny-in-part and dismiss-in-part Petitioner’s Motion to Exclude.

D. Patent Owner's Motion for Observation

Patent Owner filed a Motion for Observation (Paper 54) on the cross-examination of Dr. Shackle, which took place after Petitioner filed its Reply. Petitioner filed a Response (Paper 59). We have considered Patent Owner's observations and Petitioner's responses in rendering our decision.

III.PATENTABILITY ANALYSIS

A. The Level of Ordinary Skill in the Art

The parties differ significantly in their positions as to the level of ordinary skill in the art for the '477 patent. We have reviewed the arguments of Patent Owner (PO Resp. 2–12) and Petitioner (Pet. 7–8; Pet. Reply 2–7).

In general, Patent Owner seeks to define the person of ordinary skill in the art as a person having little if any technical skill. PO Resp. 8. According to Patent Owner, this person is focused on the “physical ornament[al]” design of the products, but not the “relatively unsophisticated electrical circuits.” *Id.* at 5; *see also id.* (characterizing a person of ordinary skill in the art as having “limited mechanical and electrical skills” and “only know[ing] the basics of electrical components and circuits that are commonly used in solar garden lights”). To that end, a person of ordinary skill in the art, according to Patent Owner, only has “the ability to recognize how a pre-designed circuit may operate and the ability to combine such a circuit into a pre-designed solar garden light . . . making only simplistic changes to the exterior aesthetic of the product.” *Id.* at 3.

Petitioner argues that a person of ordinary skill in the art has technical knowledge, such as an electrical engineering background or equivalent

experience. Pet. 7–8. In its Reply, Petitioner points out that patent specifications are addressed to a person of ordinary skill in the art, and that Patent Owner’s proposed person of ordinary skill in the art would seemingly be unable to understand the ’477 patent (particularly the circuit diagram in Figure 9) and the art of record. Pet. Reply 3.

In determining the level of ordinary skill in the art, a court may consider various factors, including the “type of problems encountered in the art; prior art solutions to those problems; rapidity with which innovations are made; sophistication of the technology; and educational level of active workers in the field.” *In re GPAC, Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (quoting *Custom Accessories, Inc. v. Jeffrey-Allan Indus., Inc.*, 807 F.2d 955, 962 (Fed. Cir. 1986)). The prior art itself is often the best guide as to the level of skill in the art. *Id.*; *Okajima v. Bourdeau*, 261 F.3d 1350, 1355 (Fed. Cir. 2001).

The ’477 patent, Chliwnyj, Wu, Xu, and Pu include circuit diagrams. The parties seem to be in agreement that a person of ordinary skill in the art would be capable of reading the diagrams and understanding what function(s) they perform, at least at some level. PO Resp. 3 (a person of ordinary skill in the art has “the ability to recognize how a pre-designed circuit may operate”); Pet. Reply 3 (a person of ordinary skill in the art “would have been able to understand the patent’s descriptions and drawings”). Patent Owner’s position, however, seems to be that although a person of ordinary skill in the art would recognize what these circuits do, he or she would be unable to make any modifications to those circuits and would only be capable of taking them whole cloth and inserting them into another device. Patent Owner would seemingly limit the person of ordinary

skill in the art to ornamental design changes only. We reject the notion that a person of ordinary skill in the art would only be capable of making ornamental design variations. Under Patent Owner’s proposed level of skill, any functional modification would be beyond the level of ordinary skill in the art and render the modified device patentable (so long as it was not anticipated); this proposed level of skill is so low it eviscerates the notion of obviousness.

Instead, upon review of the record before us, we find that a person of ordinary skill in the art is able to comprehend what is being shown in the prior art *and* has some ordinary level of creativity with respect to their modification. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007) (“A person of ordinary skill is also a person of ordinary creativity, not an automaton.”). We agree with Petitioner that a person of ordinary skill in the art at the time of the ’477 patent⁷ would have had a graduate degree in electrical or electronics engineering or physics with experience in circuit design, or a bachelor’s degree in electrical or electronics engineering or physics with at least two years industrial experience and experience in circuit design, and apply that level of skill for purposes of this Decision. See Ex. 1002 ¶ 36.

*B. Dr. Shackle is Qualified to Testify to the
Level of Ordinary Skill in the Art*

Patent Owner argues that Petitioner’s declarant, Dr. Shackle, is not qualified to testify as to the level of ordinary skill in the art. PO Resp. 13–14. Patent Owner argues that, for example, he “has never supervised

⁷ The ’477 patent was filed in February 2004 and claims priority to a foreign application filed in December 2003.

engineers in the design of solar lights.” *Id.* at 13. Patent Owner argues we should give his declarant, Dr. Ducharme, more weight because Dr. Ducharme is allegedly better qualified. *Id.* We weigh competing testimony of witnesses on an observation-by-observation basis, based on the witness’s skills and experience, as well as the reasoning and evidence they offer with respect to that particular observation. Further, we are not persuaded that Dr. Shackle would not have been a person of ordinary skill in the art at the time of the invention simply for not being a supervisor of engineers designing solar lights. Instead, we find that Dr. Shackle has ample experience in the field of lighting devices to testify in this proceeding. *See* Ex. 1002 ¶¶ 3–5; Ex. 1050 ¶¶ 30–41; *see also* Pet. Reply 7–8 (persuasively arguing why Dr. Shackle is qualified to testify).

C. Claim Construction

We interpret the claims of an unexpired patent using the broadest reasonable interpretation in light of the specification of the patent. 37 C.F.R. § 42.100(b); *In re Cuozzo Speed Techs., LLC*, 793 F.3d 1268, 1276 (Fed. Cir. 2015). Under the broadest reasonable interpretation standard, claim terms are given their ordinary and customary meaning, as would be understood by one of ordinary skill in the art in the context of the entire disclosure. *In re Translogic Tech. Inc.*, 504 F.3d 1249, 1257 (Fed. Cir. 2007).

We construed the terms “desired colour,”⁸ “varying colour,” and “securing means” in our Decision on Institution as follows:

⁸ The written description of the ’477 patent generally, but not always, uses the British spelling, “colour.” *See* Ex. 1001 (54), (57) (spelling “color”).

“desired color”: a color that is desired by the user or intended by the designer;

“varying colour”: a perceptible changing of color over time;

“securing means”: function of releasably engaging the rim so that the cap assembly can be selectively removed from the lens, and corresponding structure of flange segments 36.

Dec. on Inst. 6–10.

The terms “desired colour” and “securing means” are not at issue in this Decision. We do not perceive any reason or evidence that now compels any deviation from our prior interpretations, and apply them for purposes of this Decision. Patent Owner proposes a construction of “lamp” (PO Resp. 17) but we do not construe this term because it is unnecessary to the outcome of this proceeding. We thus turn to Patent Owner’s proposed construction of “varying colour.”

“varying colour”

Patent Owner disagrees with our prior construction of “varying colour.” PO Resp. 14–17. Patent Owner argues that the term should be construed as “color that changes over time by varying the intensity of one or more of the lamps with time.” *Id.* at 15.

In our Decision on Institution, we did not adopt Petitioner’s or Patent Owner’s proposed constructions of this term because we determined that both proposed constructions focused too much on how the varying color was created rather than what was varying color. Dec. on Inst. 6–8. Or, to put it another way, we determined that the claim required a particular observable

We use the word “color” unless quoting the claim language.

phenomenon (varying color) from a particular structure (a circuit having at least two lamps) but did not limit the manner in which the structures were operated to achieve that result. As we stated then, we declined to incorporate any particular way to create varying color because the specification of the '477 patent does not so limit the term. *Id.* at 7. For that reason, we construed “varying colour” as “a perceptible changing of color over time.” *Id.* at 8.

Patent Owner argues that we should construe the term the same as it was construed in a district court action, but Patent Owner offers no explanation as to why.⁹ See PO Resp. 15. Patent Owner previously argued that we should *not* adopt the district court’s construction, but rather a modified version thereof, because that construction “is not binding on Patent Owner because it was *based upon a stipulation* by the parties in [that] case.” Prelim. Resp. 22 n.14 (emphasis added).¹⁰ In either event, district court claim construction standards are different from ours and, although it is often helpful to consider a district court’s analysis and construction of a term, the decision is less helpful here because the parties to that action stipulated to the term’s meaning. Nevertheless, we have considered the evidence before

⁹ Patent Owner cites Exhibit 2006, but that is merely the *Markman* order listing the claim constructions; no analysis is present. The *Markman* transcript provided (Ex. 2007) is only an excerpt of one page and, without appropriate context, is not useful to us. The memorandum opinion (Ex. 2008) is a decision by the court to deny summary judgment of invalidity; the discussion of “varying colour” is limited to application of the stipulated construction.

¹⁰ Petitioner was not a party to that suit. Prelim. Resp. 22.

us regarding the term's interpretation in the district court proceeding. *See* n. 9.

Patent Owner then sets forth a number of bullet points that appear to discuss the testimony of Petitioner's declarant, Dr. Shackle. The first point discusses the word "varying" and how it is a present participle, implying that Patent Owner is arguing that the term refers to an action. *See* PO Resp. 15. The claims are not method claims, however. The word "varying" modifies the term "colour," and "varying colour" is claimed as the *output* of a circuit having lamps of different colors. There is nothing from the context of the claim or any rule of grammar that mandates that a present participle be an action. Indeed, as in the claim here, present participles often act as adjectives.¹¹ For example, Petitioner, who argues the prior construction is correct, offers a thesaurus entry showing "varying" as a modifier word, having synonyms including "differing" and "changing." Ex. 1061, 3; Pet. Reply 9–10. Our construction of "varying colour" as "a perceptible changing of color over time" is consistent with this use of the term.

We have reviewed the remainder of Patent Owner's argument and do not find it persuasive for Patent Owner's offered construction. *See* PO Resp. 14–17. Thus, for the reasons expressed herein and in our Decision on Institution, we interpret "varying colour" to mean a perceptible changing of color over time.

We further note that Patent Owner states that he "will apply the Board's construction," and makes similar statements in another paper. *Id.* at 17; PO Opp. Pet. Mot. Excl. 2 ("the Board in its Decision chose its own

¹¹ Exciting book, boring flight, differing opinions, interesting argument, etc.

construction of varying color . . . which for purposes of the IPR proceeding neither party contested”). Although we take such stances by the parties into consideration,¹² preliminary constructions in Decisions on Institution are not final and agreements by the parties as to claim construction are not binding on us.

D. The Chliwnyj, Wu, and Hung Ground

Petitioner asserts that claims 1, 2, 4–9, 20–22, and 26 are unpatentable in view of Chliwnyj, Wu, and Hung. Pet. 17–34. In general, Petitioner cites to Chliwnyj for the limitations directed to solar-powered lamps producing varying color (*see, e.g., id.* at 17–18, 21–23), Wu for the limitations directed to the body, lens, base, and cap assembly (*see, e.g., id.* at 18–21, 22), and Hung for a switch (*see, e.g., id.* at 23). Petitioner reasons that it would have been obvious to locate the lighting device in Chliwnyj in the solar-powered garden light device of Wu because it was well known in the art to use such garden lights to illuminate the ground, and it would have been obvious to “provide the device of Chliwnyj with a body and spike to place the lighting device in the ground in order to provide light at an elevated position relative to the ground.” *Id.* at 30–33. Petitioner reasons that it would have been obvious to add the switch of Hung to the lighting device of Chliwnyj because it was well known in the art to use switches to control power to the circuit as necessary, and the location of the switch would be a matter of design choice. *Id.* at 33–34.

¹² For example, as an indication that the prior construction was correct, was not meaningfully incorrect, or is no longer relevant to the outcome of the proceeding.

Patent Owner argues that Chliwnyj and Wu are not combinable (PO Resp. 18–37) and that it would not have been obvious to modify Chliwnyj in view of Hung to incorporate an exposed switch (*id.* at 37–46). These arguments are presented as several sub-arguments, which we address in turn.

1. Light Sensitive Switch of Wu

Claims 2 and 21 depend from claims 1 and 20, respectively, and require “a light sensitive switch that renders the circuit operative at low light levels.” Petitioner asserts that Wu teaches a light sensitive switch. Pet. 24 (citing Ex. 1006 ¶ 20, Fig. 3; Ex. 1002 ¶¶ 124–127). Wu is directed to a rodent-expelling device that also has an illumination function. Ex. 1006, Abstract. Wu’s device includes three circuits: (A) power-supplying circuit, (B) sound-emitting circuit, and (C) light-emitting circuit. *Id.* ¶ 16. Sound-emitting circuit B is intended to expel rodents, whereas light-emitting circuit C is intended to provide a pleasing visual effect. *Id.* ¶¶ 20, 22. Power-supplying circuit A includes rechargeable battery 13 and solar panel 12. *Id.* ¶ 18. Wu states that during the “daytime . . . the solar-energy powered electricity generating element 12 generates power.” *Id.* ¶ 20. Then, “in a particular time (such as at night), the buzzer 14 and the light emitting element 15 will [be] automatically activated.” *Id.* Figure 3, depicting the three circuits of Wu, is reproduced below with annotation:

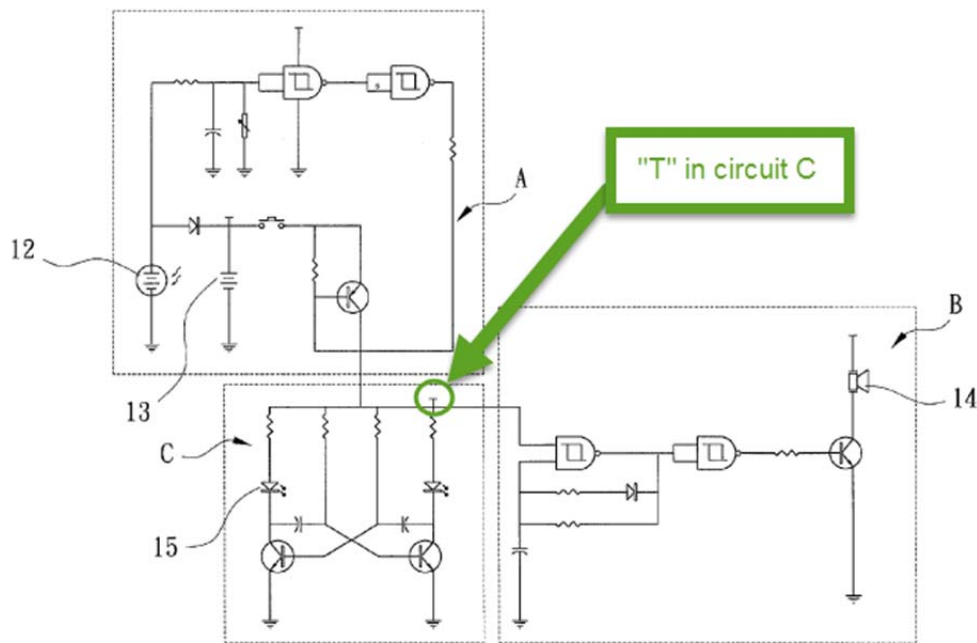


Fig. 3

Figure 3 of Wu depicts circuit elements A, B, and C discussed above. A “T” shape in circuit C, discussed next, is identified.

Patent Owner’s argument is that Wu does not describe a light-activated switch and instead describes each circuit in Wu directly connected to the battery (i.e., always on), based on the presence of a “T” shape in each circuit, which Patent Owner alleges indicates that the power rail is attached. *See, e.g.*, PO Resp. 24. Patent Owner argues that Petitioner’s declarant, Dr. Shackle, only performed a high-level review of the circuit in his analysis and did not address this “T.” *Id.* at 22 (arguing that Dr. Shackle “admits that he did not even analyze or simulate the circuit” but rather “relied on the ‘well-known’ character of pieces of the circuit”). It is Patent Owner’s position, based on the testimony of his declarant, Dr. Ducharme, that power circuit A in Wu operates to provide solar power if it is producing voltage but otherwise uses the batteries to provide power. *Id.* at 23–24 (citing Ex. 2021

¶¶ 86–87). In other words, the circuits are always on so long as there is power.

Reviewing the evidence and arguments before us, we find Patent Owner’s arguments unpersuasive and instead find that Petitioner has shown, by a preponderance of the evidence, that Wu discloses a light sensitive switch for turning the device on at night (i.e., when there are low light levels). First, Petitioner’s interpretation is more consistent with the textual disclosure of Wu, regardless of what is shown in Figure 3. As we will explain later, Petitioner’s interpretation is also more consistent with what is shown in Figure 3.

Wu, in its textual description, states that solar energy is collected *and stored* during the daytime. Ex. 1006 ¶ 20; *see also id.* ¶ 16 (“the power is stored in a rechargeable battery 13”). This indicates that energy is not used during the daytime, but rather collected. Next, Wu states that the light and sound circuits are *activated automatically* “[w]hen in a particular time (such as at night).” *Id.* ¶ 20. This indicates that the stored energy is used at night and that activation is automatic. A solar collector is a device that automatically generates power when light shines upon it. *See, e.g., id.* (“solar-energy powered electricity generating element 12 generates power by irradiation of the sun light”). Thus, it is a way to implement the automatic activation at night, i.e., a low-light-activated switch. The testimony of Petitioner’s declarant, Dr. Shackle, is consistent with this reading of Wu. *See* Ex. 1002 ¶¶ 124–127; Ex. 1050 ¶¶ 50–57. The testimony of Patent Owner’s declarant, Dr. Ducharme, is also consistent with this reading of Wu. *See* Ex. 1049, 119:4–13 (testifying that “I do understand Circuit Element A to be a light sensitive switch,” in isolation);

id. at 54:16–56:20 (testifying that light-sensitive switches were known). In view of this evidence, we are persuaded that a person of ordinary skill in the art, being a person capable of recognizing circuit elements, even under Patent Owner’s proposed level, would recognize that Wu discloses a solar switch in order to automatically activate the device at night. *See* Ex. 2021 ¶¶ 39, 44 (arguing a person of ordinary skill in the art can “recognize how a pre-designed circuit may operate” and “is capable of implementing a circuit for a specified function . . . once they are told what is the function”).

Patent Owner seeks to muddy this disclosure by pointing to an irregularity in Figure 3 of Wu. PO Resp. 23–27. Even considering Figure 3, however, we remain persuaded that Wu discloses the power circuit to be activated at night. To read Figure 3 in a manner consistent with Wu’s textual disclosure, the “T” in light-emitting circuit C, presumably indicating a connection to source power, must be treated, effectively, as a mistake. This is because if light-emitting circuit C were connected directly to the battery, as Patent Owner proposes, then it renders much of the disclosure and the circuit elements superfluous. *See* Ex. 1049, 116–119 (Patent Owner’s declarant, Dr. Ducharme, testifying that, with the “T” present in circuit C, various components depicted in circuit A “serve no purpose”); Ex. 1050 ¶ 53 (Petitioner’s declarant, Dr. Shackle, agreeing with Dr. Ducharme on this point). In effect, the “T” in light circuit C would render the connection from power circuit A redundant, as well as much of the circuitry in power circuit A. The effect would be that circuits B and C would always be on. However, if the light and sound were always on, then that would be contrary to the disclosure of Wu that “in a particular time (such as at night), the buzzer 14 and the light emitting element 15 will [be] *automatically*

activated.” Ex. 1006 ¶ 20 (emphasis added). In addition, there would be no point to the transistor and logic gates in power circuit A. *See* Ex. 1049, 116–119; Ex. 1050 ¶ 53. Thus, Patent Owner’s reading would be contrary to the textual disclosure of Wu and would make little sense, electrically, in the context at issue in Figure 3.

In addition, Patent Owner’s assertion that the switch depicted in power circuit A could be operated to turn off the circuit in his proposed reading of the circuit diagram is not plausible, further leading us to find Patent Owner’s theories for how the circuit operates unpersuasive. *See* PO Resp. 25 (citing Ex. 2021 ¶¶ 88–89); *see also* Ex. 2021 ¶¶ 85–87 (discussing same). In particular, Patent Owner cites to his declarant, Dr. Ducharme, as support for his position that the switch in power circuit A turns on and off the lights. PO Resp. 25. Dr. Ducharme, in turn, bases his testimony not on his own analysis of Figure 3, but on that of Petitioner’s declarant, Dr. Shackle. *See* Ex. 2021 ¶¶ 85–89 (citing Ex. 2022, 158:7–9); *see also* Tr. 91–94 (Patent Owner arguing based on Dr. Shackle’s testimony). But Dr. Shackle’s testimony is based upon a reading of Wu wherein circuit A, and only circuit A, provides power to circuit C. *See* Ex. 2022, 157:1–16. Thus, Patent Owner is attempting to bolster his position by taking Dr. Shackle’s testimony out of context. The switch operates as Dr. Shackle testifies because Dr. Shackle’s position is that power circuit A provides power to light-emitting circuit C. *Id.* If that is the case, then it makes sense that the manual switch in power circuit A would also turn on and off the power to the lights, because it would cut power off to the source of the PNP transistor, which in turn is what supplies power to circuit C. In Patent Owner’s interpretation of power circuit A, however, this transistor is redundant

because of the “T” in light-emitting circuit C effectively bypassing the power circuit’s ability to control. Thus, manipulating the switch and cutting power off to this transistor would not serve any effect in Patent Owner’s reading of the circuit. This is further confirmed by looking at power circuit A and noting that the battery and solar panel have connections to power and ground without having to go through the switch. Thus, the switch, in Patent Owner’s interpretation, would also be redundant.

In light of the above, we find that a person of ordinary skill in the art would, upon review of the entire disclosure of Wu, understand that Wu operates by way of a light sensitive switch that renders a circuit operative at low light levels.

2. “Nighttime” as a Particular Time

Patent Owner also argues that night is not a particular time; a particular time, according to Patent Owner, would be, for example, “6:00 p.m.” PO Resp. 27–28. On that basis, Patent Owner argues that Wu operates with the ability to be activated at any arbitrary time, such that Wu’s disclosure must be limited only to controls that allow selection of an arbitrary time with to-the-minute granularity. *Id.* at 29. According to Patent Owner, the circuitry to enable such a device could be a timer. Tr. 88:8–19 (Patent Owner’s counsel arguing that the switch in Figure 3 could be a timer); *id.* at 94:1–7 (same). This argument is not persuasive.

First, we do not consider reasonable Patent Owner’s reading of the disclosure in Wu (“automatically activated” at “a particular time (such as at night)”). In effect, Patent Owner is interpreting this general statement to mean that Wu could only function, and must only function, when the user

has the ability to customize exactly when it is turned on. This precludes more plain readings, such as what Wu implies: that the device is off during the daytime (for charging batteries) and on during the nighttime (to shine a light and emit noises). Indeed, Wu implies that it considers “night” a “particular time,” by its very language: “a particular time (such as at night).” Such a disclosure is consistent with a light-sensitive switch, which would automatically allow such functionality at the specified conditions. It makes little sense to interpret Wu as intending a particular time to be a specific hour/minute designation when Wu seems satisfied with simply stating “night.”

Further, the structure already disclosed in Wu allows for automatic activation at a “particular time” because it is dark at night and the solar element 13 reacts to this stimulus (or lack thereof). Patent Owner’s reading, on the other hand, would require additional complexity and structures not disclosed in the reference. For example, no programmable timer, or the like, is described in Wu or shown in the circuit diagram in Figure 3. Patent Owner attempts to imply that the manual switch in circuit A could be a timer (Tr. 88:8–19) but fails to explain how this simple switch is a complex programmable timer. *See* Ex. 1049, 115:6–117:1 (Patent Owner’s declarant, Dr. Ducharme, testifying that he has “no idea” what kind of switch is depicted in circuit A and suggests it may be a simple switch, like “a single position, single throw switch”). Accordingly, Patent Owner’s argument that night is not a particular time, or that Wu requires a programmable timer or similar structure, is unpersuasive.

3. Modification of Chliwnyj's Device to Operate Only at Low Light Levels

With respect to dependent claims 2 and 21, Petitioner asserts that it would have been obvious to modify the device of Chliwnyj “to incorporate a light sensitive switch so the lights run only during the night to achieve the predictable result of using light only when needed to preserv[e] energy.” Pet. 33–34 (citing Ex. 1002 ¶ 158); Pet. Reply 16 (arguing that “[i]t would have been obvious to a [person of ordinary skill in the art] trying to use Chliwnyj’s technology to look to a light sensitive switch such as Wu’s to turn the simulated flame off during the day and on at night to save power”). Patent Owner argues that “it would have been beyond the technical ability of the skilled artisan to modify the circuit of Chliwnyj to operate only at low light levels.” PO Resp. 30; *see also id.* at 30–37 (setting forth the details of Patent Owner’s argument).

Patent Owner’s arguments are unpersuasive because they presume a person of ordinary skill would have been incapable of performing virtually any modification to a functional feature of a device, and also presume that a person of ordinary skill in the art would not modify an ornamental aspect of a device. *See, e.g.*, PO Resp. 32 (“Adding a light sensitive switch to keep the light off during the day and operate only at night would preclude Chliwnyj from doing what Chliwnyj says it will do—operate during the day.”); *id.* at 36 (“A light sensitive switch would be contrary to the normal operating policy of keeping the lights on past sunset (the time when low light levels typically begin) and would remove the ability of users to select the time that the LED intensity is reduced.”).

Petitioner’s proposed combination is to add a light sensitive switch to Chliwnyj’s flame simulating device, such as to make the flame on at night

and off during the day. We find nothing in the record that suggests this modification would have been unpredictable to a person of ordinary skill in the art. Indeed, the simplistic nature of the combination—using a light sensitive switch to make the circuit light sensitive—is nothing more than using a device known to provide a certain functionality (switching based on light levels) to another device to operate in the same way.

That one of Chliwnyj’s intended uses is a flame that is always on does not teach away from a flame that is only on at night. The concept of using illumination when it is dark and not using illumination when it is light is within any level of skill. Patent Owner points to no disclosure that affirmatively discredits or discourages such an endeavor in this context. *Cf. DePuy Spine, Inc. v. Medtronic Sofamor Danek, Inc.*, 567 F.3d 1314, 1327 (Fed. Cir. 2009) (“A reference does not teach away . . . if it merely expresses a general preference for an alternative invention but does not ‘criticize, discredit, or otherwise discourage’ investigation into the invention claimed.”); *see also In re Kuhle*, 526 F.2d 553, 555 (CCPA 1975) (omission of a feature obvious because it would only result in omission of that feature). Patent Owner alleges that Petitioner’s proposed combination “would have rendered the eternal light inoperable for its intended purpose.” PO Resp. 37. The intended purpose of Chliwnyj, in Patent Owner’s view, is essentially *acting in the exact manner as disclosed in Chliwnyj*. This line of reasoning, if it were persuasive, would preclude virtually any modification to any prior art device. We are not persuaded that the intended purpose case law is intended to reach into ornamental factors or to require satisfying each of the prior art inventor’s wishes for how the device should be used. Instead, the correct focus is on the technical feasibility of the modification—would such

a modification actually work? *See Tec Air Inc. v. Denso Mfg. Michigan Inc.*, 192 F.3d 1353, 1360 (Fed. Cir. 1999) (“If when combined, the references ‘would produce a seemingly inoperative device,’ then they teach away from their combination.” (quoting *In re Spinnoble*, 405 F.2d 578, 587 (CCPA 1969))); *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984) (discussing how, if a prior art filter were flipped upside down, the device would be physically incapable of working because it relies on gravity and a certain orientation to work). We have no evidence that the combination asserted by Petitioner is technically infeasible, unpredictable, or taught away from in the art.

In view of the above, we find that Petitioner has established, by a preponderance of the evidence, that a person of ordinary skill in the art had a reason to modify Chliwnyj’s device to include a light sensitive switch and that such a combination is neither taught away from nor would have been unpredictable.

4. Modification of Chliwnyj in View of Hung to Incorporate an Exposed Switch

Independent claims 1 and 20 require a switch operable to control delivery of electric power from the battery to operate the circuit, “the switch being exposed to provide for access thereto by a user.” Petitioner asserts that Hung discloses an exposed switch for controlling the power of a solar light. Pet. 23 (citing Ex. 1016, 7:10–20, Fig. 2). Petitioner reasons that it would have been obvious to a person of ordinary skill in the art to place a switch where it is user-accessible as a matter of design choice, with Hung being evidence that placing a switch on an external surface of a light was a known choice. *Id.* at 33 (citing Ex. 1002 ¶ 157); Pet. Reply 19–20 (arguing that “it would have been obvious to look to Hung to add an exposed switch

to, for example, permit the user to turn the device on and off,” a person of ordinary skill in the art would have understood that having a switch be “exposed to provide easy access for the user” would have been “simply a matter of design choice,” and Chliwnyj similarly teaches a “user interface” to control its device).

We have reviewed Patent Owner’s arguments and find them unpersuasive. PO Resp. 38–46. Patent Owner acknowledges that “persons of ordinary skill can move a switch from one location to another when designing a solar garden light” but argues that “he must have a reason to do so.” *Id.* at 40. In effect, what Patent Owner argues is that it would have been apparent to a person of ordinary skill in the art to place a switch in many different locations, but that obviousness requires a specific and direct motivation for placing in a particular location. Although a showing of motivation in a prior art reference is sufficient to prove obviousness, it is not necessary; this is the basic holding in *KSR*. *KSR*, 550 U.S. at 415 (rejecting rigid application of the teaching, suggestion, motivation test). We find no evidence that the placement of a switch would have been unpredictable. To the contrary, the prior art references show switches in all manner of locations. Chliwnyj describes switches inside a hollow base (Ex. 1005, 11:1–3, Fig. 4), away from view, and as a keypad (*id.* at 14:12–20), immediately in view. Hung’s switch is outside the base, easily accessible to a user. Ex. 1016, 7:9–12, Figs 1–3 (depicting a switch on the side of the main body of the lighting device).¹³ Further, we find no evidence that

¹³ We further note, as background evidence of the level of ordinary skill, that Xu’s switch 14 is on the underside of the lid (Ex. 1012, 2, Fig. 1) and Shalvi’s switch is hidden to prevent unauthorized use (Ex. 1015, 2:31–35).

moving the switch on Chliwnyj as proposed would have any meaningful functional, as opposed to ornamental, effect on the operation of the device. In that way, Petitioner’s proposed combination appears to be nothing more than a combination of familiar elements performing their known functions, or a predictable design choice. *KSR*, 550 U.S. at 416–17; *see also In re Japikse*, 181 F.2d 1019, 1030 (CCPA 1950) (claims to a hydraulic power press were unpatentable because shifting the position of the starting switch would not have modified the operation of the device—a design choice may be an obvious rearrangement of elements).

5. *Conclusion for Chliwnyj, Wu, and Hung Ground*

Patent Owner’s arguments, discussed above, touch claims 1, 2, 20, and 21. Those arguments were unpersuasive. Patent Owner does not offer persuasive challenges to Petitioner’s assertions on any other claims in this ground. Reviewing the record before us, we determine that Petitioner has shown, by a preponderance of the evidence, that the subject matter of claims 1, 2, 4–9, 20–22, and 26 would have been obvious in view of the teachings of Chliwnyj, Wu, and Hung.

E. The Chliwnyj, Wu, Hung, and Pu Ground *The Chliwnyj, Wu, Hung, and Xu Ground*

Patent Owner’s arguments for the Chliwnyj, Wu, Hung, and Pu ground are largely similar to the arguments addressed above with respect to

These show further choices known to a person of ordinary skill in the art. *See Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) (holding the Board should consider all evidence before it that demonstrates the knowledge and perspective of one of ordinary skill in the art).

the modification of Chliwnyj in view of Hung. *See* PO Resp. 46–49; Pet. 34–38 (setting out Petitioner’s ground). The same can be said for Patent Owner’s arguments for the Chliwnyj, Wu, Hung, and Xu ground. *See* PO Resp. 49–50; Pet. 38–40 (setting out Petitioner’s ground). These arguments are unpersuasive for similar reasons. Reviewing the record before us, we determine that Petitioner has shown, by a preponderance of the evidence, that the subject matter of claims 10–12, 23–25, and 27–29 would have been obvious in view of the teachings of Chliwnyj, Wu, Hung, and Pu, and that the subject matter of claims 3 and 13–16 would have been obvious in view of the teachings of Chliwnyj, Wu, Hung, and Xu.

*F. The Chliwnyj, Wu, Hung, Xu, and Pu
Ground*

Claims 17–19 depend ultimately from claim 1 and require, *inter alia*, that the light be operable to select a fixed color. Petitioner asserts that Pu discloses a switch for selecting a fixed color. Pet. 35, 40–41 (citing Ex. 1008, 5;¹⁴ Ex. 1002 ¶¶ 160–163). Petitioner asserts that it would have been obvious and predictable to include a switch that allowed the user to select a fixed color as taught in Pu. *Id.* at 41 (citing Ex. 1002 ¶ 192); Ex. 1008, 5 (discussing how, in Pu’s solar lamp, “switch SW2 is used to select a light color”).

Patent Owner argues that “Chliwnyj teaches away from ‘selecting a fixed color.’” PO Resp. 50–52. This argument, like the teaching away arguments discussed above, frames teaching away in terms of the intentions of the prior art inventor rather than any discussion of the technical feasibility

¹⁴ Page number stamped on the lower right hand corner of the Exhibit.

of the feature or the level of ordinary skill. *Cf. Tec Air*, 192 F.3d at 1360. A person of ordinary skill in the art knows that devices are not limited to their intended uses. *KSR*, 550 U.S. at 420 (“Common sense teaches, however, that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle.”). Not only that, but a person of ordinary skill in the art is not precluded from considering the obvious benefits of a prior art device simply because the prior art device was initially designed to solve a different problem. *See id.* (it is error to “assum[e] that a person of ordinary skill attempting to solve a problem will be led only to those elements of prior art designed to solve the same problem”).

Chliwnyj teaches a simulated flame device¹⁵ that uses multiple colors to create the flame effect; use of multiple colors, rather than just a single color, is described as *enhancing* the flame effect. Ex. 1005, 5:15–25. This passage teaches 1) a flame effect can be done with one color and 2) a better flame effect can be done with more than one color. In this way, Chliwnyj teaches that single color flames both were known and technically feasible, even if Chliwnyj characterizes the prior technology as less realistic. To conclude that using a single color is patentable just because Chliwnyj teaches multiple colors is to take away from what is already in the prior art. *See In re Katz Interactive Call Processing Pat. Litig.*, 639 F.3d 1303, 1321 (Fed. Cir. 2011) (“A reference can distinguish prior art in order to show the novelty of an invention without teaching away from combining the prior art

¹⁵ Chliwnyj is not limited to a simulated flame, however. *Compare* Ex. 1005, claim 1, *with id.*, claim 45.

with the invention disclosed in the reference.”). Thus, we are persuaded that there is no unpredictability or teaching away in the notion of modifying Chliwnyj’s flame simulator to hold a particular flame color in a manner consistent with Pu’s teaching of doing so. Indeed, Chliwnyj indicates that the color and number of lights are not particularly important. Ex. 1005, 15:1–5 (“the present invention is not in any way limited to the particular choice of light[s] . . . described herein”); *id.* at 6:17–36 (stating that the specification “should not be construed to prevent larger and/or varied lighting configurations” and that “light[s] . . . are generally available in a number of suitable colors from many different manufacturers”).

Reviewing the record before us, we are persuaded that Petitioner has shown, by a preponderance of the evidence, that it would have been obvious and predictable to modify Chliwnyj’s solar powered flame simulating device, having multiple flame colors, to be fixable to a single color, as described in Pu’s solar powered lighting device, as an example of a mere rearrangement of “old elements with each performing the same function it had been known to perform.” *KSR*, 550 U.S. at 417.

G. Conclusions

Petitioner has shown, by a preponderance of the evidence, that:

Claims 1, 2, 4–9, 20–22, and 26 would have been obvious in view of Chliwnyj, Wu, and Hung.

Claims 10–12, 23–25, and 27–29 would have been obvious in view of Chliwnyj, Wu, Hung, and Pu.

Claims 3 and 13–16 would have been obvious in view of Chliwnyj, Wu, Hung, and Xu.

Claims 17–19 would have been obvious in view of Chliwnyj, Wu, Hung, Xu, and Pu.

IV. ORDER

In view of the forgoing, it is hereby:

ORDERED that Petitioner’s Motion to Exclude (Paper 55) is *denied-in-part* and *dismissed-in-part*;

FURTHER ORDERED that Patent Owner’s Motion to Exclude (Paper 53) is *denied-in-part* and *dismissed-in-part*;

FURTHER ORDERED that Petitioner’s Motion to Seal (Paper 40) is *granted*;

ORDERED that claims 1–29 of the ’477 patent are unpatentable as obvious; and

FURTHER ORDERED that this is a Final Written Decision under 35 U.S.C. § 318(a) and that parties to the proceeding seeking judicial review of the decision under 35 U.S.C. § 319 must comply with the notice and service requirements of 37 C.F.R. § 90.2.

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