

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the *Inter Partes* Review of U.S. Patent No. 10,299,336

Trial No.: Not Yet Assigned

Issued: May 21, 2019

Filed: June 21, 2018

Inventors: John Edward Bowen and Raymond Janik

Assignee: Signify Holding B.V.

Title: CONFIGURABLE LIGHTING SYSTEM

MAIL STOP PATENT BOARD

Patent Trial and Appeal Board

United States Patent & Trademark Office

P.O. Box 1450

Alexandria, Virginia 22313-1450

PETITION FOR *INTER PARTES* REVIEW
UNDER 37 C.F.R. § 42.100

On behalf of Menard, Inc. (“Menard” or “Petitioner”) and in accordance with 35 U.S.C. § 311 and 37 C.F.R. § 42.100, *inter partes* review (“IPR”) is respectfully requested for claims 1-20 of U.S. Patent No. 10,299,336 (“the ’336 Patent”) (Ex.1001).

The undersigned representative of Petitioner authorizes the Office to charge the \$41,500 Petition and Post-Institution Fees for 20 claims, and any additional fees, to Deposit Account 233030, ref: 034395-000702.

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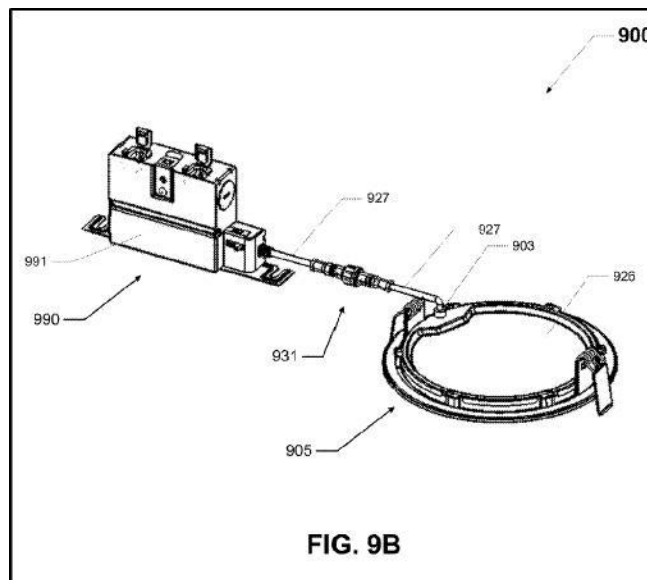
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I. INTRODUCTION

Petitioner Menard, Inc. (“Menard”) requests *inter partes* review (“IPR”) of claims 1-20 of U.S. Patent No. 10,299,336 (the “’336 Patent”) and by motion requests joinder with recently instituted IPR2024-00101.

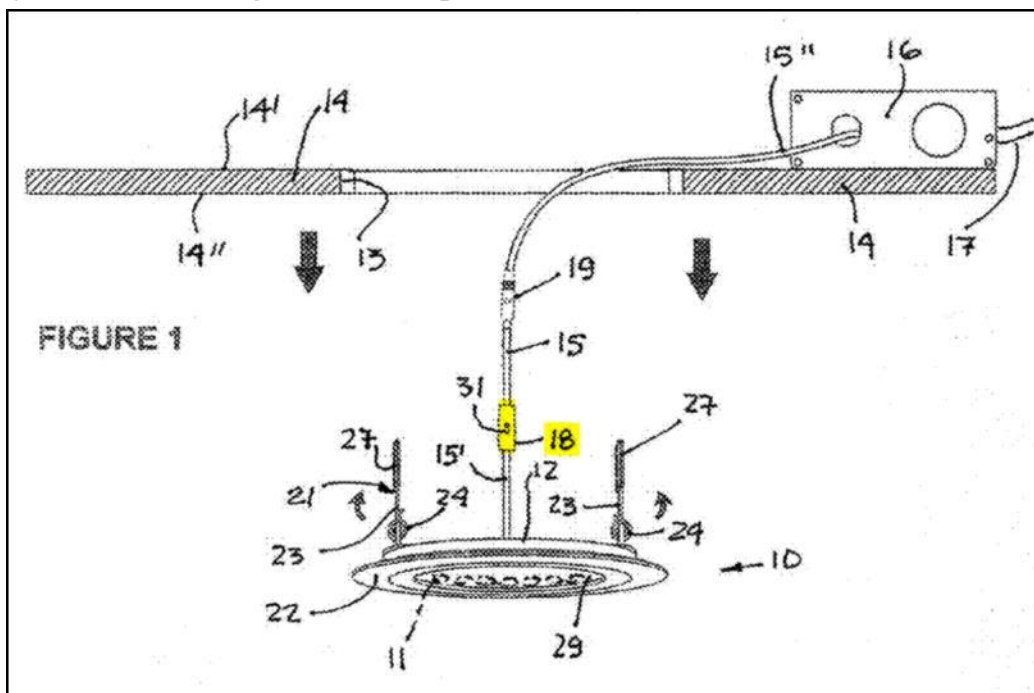
The ’336 Patent describes a luminaire that includes a switch used to control a correlated color temperature (CCT) output of the luminaire. Ex.1001, Abstract. The inventors listed on the ’336 Patent did not invent such a switch, as is clear from the prior art considered by the Patent Office during examination. *See, e.g.*, Ex.1002, 16:45-17:2. Rather, the allegedly inventive feature of the ’336 Patent is the *placement* of this well-known switch such that it is located “remotely from [a] housing” and/or “coupled to [an] electrical cable” (Ex.1001, Claim 1):



Id., Fig. 9b (depicting switch 931 located remotely from housing 905 and coupled to electrical cable 927).

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But the inventors of the '336 Patent did not invent this, either. In addition to being an elementary design choice that would have been obvious to skilled artisans, the placement of a CCT switch as claimed by the '336 Patent was well-known and disclosed in multiple prior-art references. The Chaimberg reference discussed below, for example, discloses an LED light fixture with a CCT switch 18 located remotely from a housing 12 and coupled to an electrical cable 15:



Ex.1003, Fig. 1 (color added).

Had Chaimberg and the other prior-art references presented herein been considered by the Patent Office during prosecution, the '336 Patent would not have issued. Accordingly, and for the reasons explained below, Menard asks the Board to institute IPR and hold the challenged claims unpatentable.

II. REQUIREMENTS FOR IPR UNDER 37 C.F.R. § 42.204

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A. Grounds For Standing Pursuant To 37 C.F.R. § 42.104(a)

Menard certifies that the '336 Patent is available for IPR and that Menard is not barred or estopped from requesting IPR challenging the patent claims on the grounds identified herein. 35 U.S.C. § 315(b); 37 CFR § 42.122(b). Per rule 37 CFR § 42.122(b), This petition is being filed within one month of the institution date of *Luminex Int'l Co., Ltd. v. Signify Holdings B.V.*, IPR2024-00101, Paper 14 (PTAB Sept. 9, 2024). The one year time bar does not apply for joinder purposes. 35 U.S.C. § 315(b); 37 CFR § 42.122(b).

B. This Petition Should Be Granted Despite Parallel Litigation

The Board should institute IPR as “there is a reasonable likelihood” at least one claim is unpatentable. 35 U.S.C. § 314(a). The related district-court litigation does not counsel otherwise. That case is still relatively early in its proceedings. In that case, the parties have engaged in some written discovery. The parties have exchanged technical (but not damages) expert reports. However, no fact or expert depositions have been taken to date. Dispositive motion briefing was recently completed on September 3, 2024, but the Court has not issued an order. The deadline to disclose damages experts is approaching but has not yet passed. The close of fact discovery is approximately three months away on December 20, 2024, with trial currently scheduled to begin on March 17, 2025.

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Moreover, “where the PTAB determines that the information presented at the institution stage presents a compelling unpatentability challenge, that determination alone demonstrates that the PTAB should not discretionarily deny institution under *Fintiv*.” Katherine K. Vidal, *Interim Procedure for Discretionary Denials in AIA-Post Grant Proceedings with Parallel District Court Litigation*, USPTO, at 4-5 (June 21, 2022). As discussed herein, the CCT switch claimed in the ’336 Patent was well known in the art and disclosed in multiple prior art references, and it is highly likely that Petitioner will prevail with respect to at least one of the challenged claims for the reasons explained in the grounds below. Thus, trial should be instituted given the compelling merits.

Additionally, Petitioner stipulates that if the PTAB institutes IPR, Petitioner will not pursue in the District Court the same grounds raised in the IPR or any grounds that could have reasonably been raised in this IPR. *Sotera Wireless, Inc. v. Masimo Corp.*, IPR2020-01019. Paper 12 (PTAB Dec. 1, 2020). The USPTO Director has confirmed that “the PTAB will not discretionarily deny institution of an IPR or PGR, in view of parallel district court litigation where a petitioner” makes this stipulation. *Interim Procedure* (June 21, 2022) at 7.

For at least these reasons, the Board should not exercise its discretion to deny institution under *Fintiv* and its progeny. See *Apple Inc. v. Fintiv, Inc.*, IPR2020-00019, Paper 11 (PTAB Mar. 20, 2020) (precedential). Menard reserves the right to seek a

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reply to the POPR to further address any discretionary denial arguments that Patent Owner might raise.

III. BACKGROUND

A. Technical Background

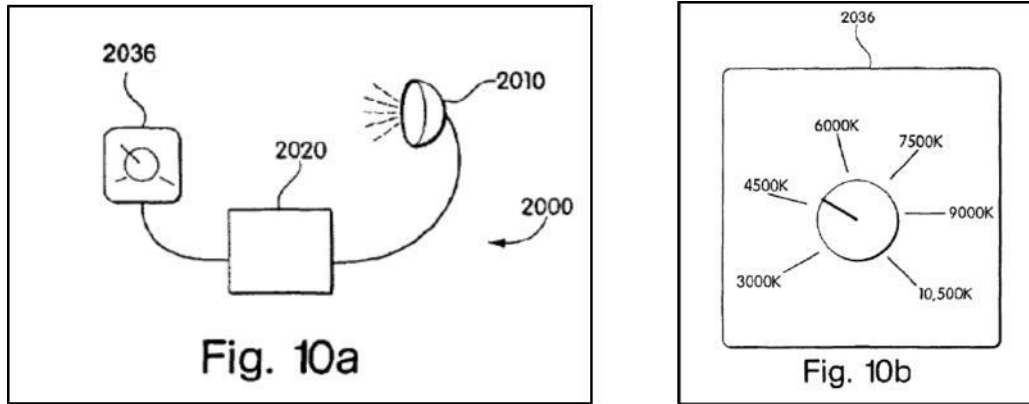
LED light fixtures have risen to prominence in the past few decades, replacing traditional incandescent and fluorescent light fixtures. Many LED light fixtures maintain the same shapes as their predecessors (*e.g.*, can lights, tube lights, and even individual light bulbs). Correlated color temperature (CCT) is a term well known in the art that refers to the hue and tone of a specific light output. For white light, a lower CCT (*e.g.*, 2500K to 3500K) produces a “warm” white light color which has a distinct yellow-orange-red tint. A white light with a higher CCT (*e.g.*, 5000K or higher) produces a “cool” white light having a blue tint. Luminex’s expert, Dr. J. Gary Eden explains the well-known applications of lights with various CCT. The color temperature scale shown below illustrates different CCT between 2500K and 5000K plus. Ex.1004, ¶133.

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Ex.1005, 1.

Configurable lighting devices (including those with LEDs) that allow for a variable CCT were well known in the art at the time of the '336 Patent. For example, a patent filed by Color Kinetics in November 2000, U.S. Patent No. 7,014,336 ("Ducharme"), disclosed lighting fixtures that "comprise a plurality of LEDs" able to "produce white light within a range of color temperatures such as, but not limited to, the range 500K to 10,000K." Ex.1002, 4:54-61. Ducharme's "lighting fixture may include a controller and/or processor for controlling the intensities of the LEDs to produce various color temperatures in the range." *Id.*, 4:62-64. Figure 10a and 10b of Ducharme depict an embodiment of the manual control 2036 with a dial switch "marked to indicate a range of color temperatures, *e.g.*, from 3000K to 10,500K" (*id.*, 16:64-67):



Id., Figs. 10a, 10b. The manual control 2036 is “useful on a lighting fixture to produce a range of color temperatures (‘colors’) of white light.” *Id.*, 16:64-17:2. While Figure 10b depicts the manual control 2036 as including a dial switch for selecting a desired color temperature, Ducharme also states that embodiments of the manual control 2036 include a “slider switch, multipole switch, console” or any other “combination of controllers to permit a user to modify the illumination conditions.” *Id.*, 16:45-50. As explained by Dr. Eden, these simple switches were well known in the art for decades before the alleged invention of the ’336 Patent. Ex.1004, ¶¶36-38, 40-41.

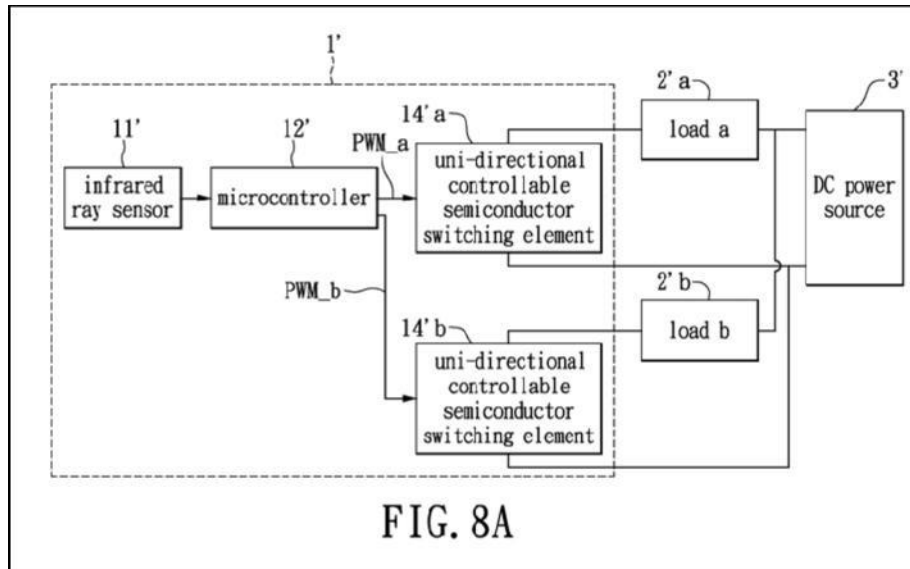
The lighting industry continued to make significant improvements to LED lighting technology in the years following Ducharme. For example, on December 22, 2014—four years before the alleged invention of the ’336 Patent—Luminex filed a patent application directed to a new color-tunable LED light fixture. Ex.1006, Abstract. Luminex’s application, which issued as U.S. Patent No. 9,345,112, described a light fixture with a microcontroller-based switch that used a touchless switch (such as infrared-ray sensors) or a direct-touch switch (such as a push button)

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to detect a user's selection of desired CCT output.¹ This was a significant improvement over the rudimentary mechanical switches of Ducharme and other previous approaches. *Id.*, 22:19-39. In embodiments of Luminex's invention, the switch generates a sensing signal that ultimately "change[s] the color temperature" of the output light. *Id.*, 10:43-45, 6:54-7:11 (describing a selectable CCT range of 3000K to 5700K).

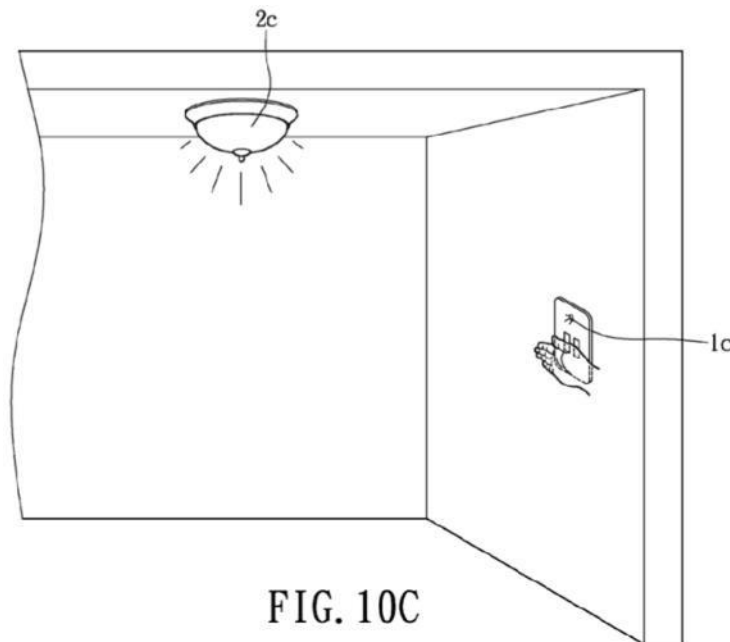
To achieve this, Luminex introduced an innovative technique known as "CCT tuning" or "color temperature tuning," whereby the outputs of two sets of LEDs with different CCTs are blended to create a third CCT output according to ratios of power level respectively delivered to each of the two sets of LEDs. Ex.1004, ¶¶43-45. In embodiments described in Luminex's patent, such color temperature tuning method involved "controlling different levels of electric power transmission to the two lighting loads"—*i.e.*, LEDs of different CCTs—reversely and complementary (Ex.1006, 8:4-8):

¹ The inventor of the '112 Patent is Luminex's owner.



Id., Fig. 8A.

Luminex’s patent also disclosed “a wall switch construction electrically connected to a ceiling light” (*id.*, 22:19-21):



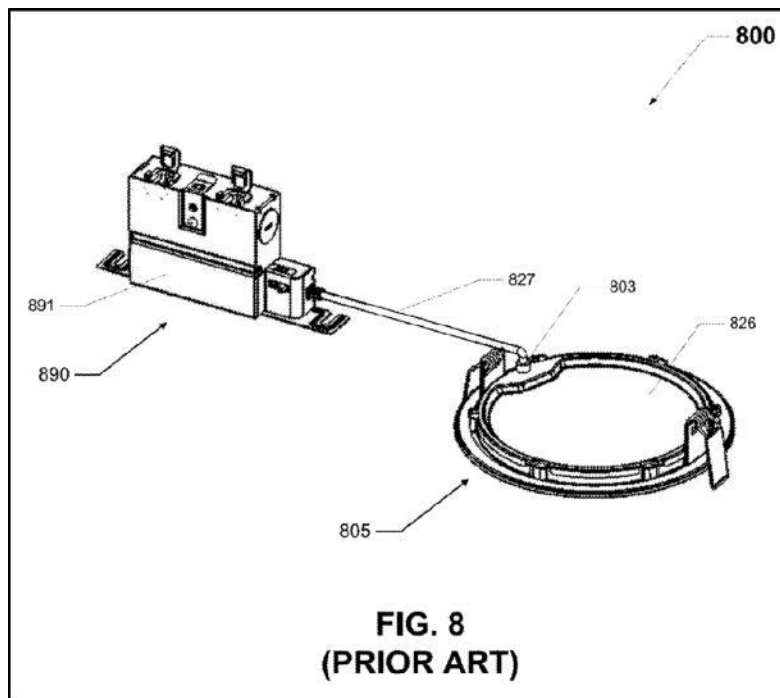
Id., Fig. 10C. This enabled a user to “select a desired [CCT]” by waving his or her hand in front of the wall switch 1c. *Id.*, 22:19-39.

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In sum, lighting devices with variable CCT outputs were well-known years before the '336 Patent. The early development of such devices (including those with LEDs) is further explained in Grounds 1a through 3 presented below, as well as in the expert declaration of Dr. Eden. (Ex.1004).

B. The '336 Patent

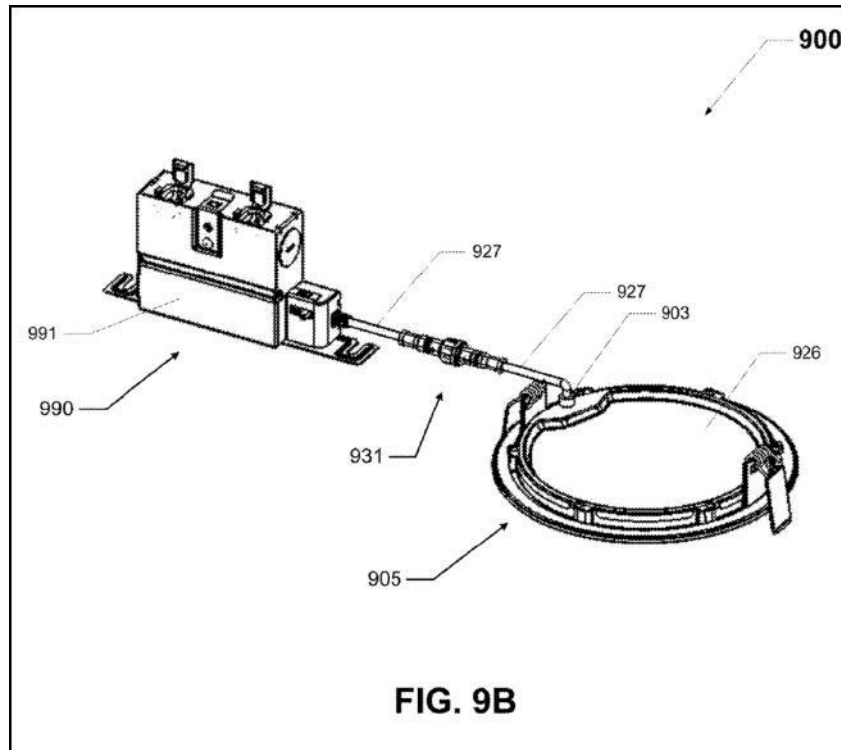
The '336 Patent relates to “lighting systems that can be readily configured to produce illumination of different color temperatures.” Ex.1001, Abstract, 1:19-22. The '336 Patent describes a “luminaire currently known in the art” with reference to Figure 8 (*id.*, 3:24-25):



Id., Fig. 8. The prior-art luminaire depicted in Figure 8 includes a housing 805 with one or more light sources, a junction box 890, and an electrical cable 827 connected to the one or more light sources. *Id.*, 10:66-11:12.

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The purported invention of the '336 Patent is nearly identical to the prior-art luminaire of Figure 8, and the '336 Patent concedes this: It describes an embodiment of its purported invention as being “substantially the same as the luminaire 800 of FIG. 8” (*id.* at 11:25-29):

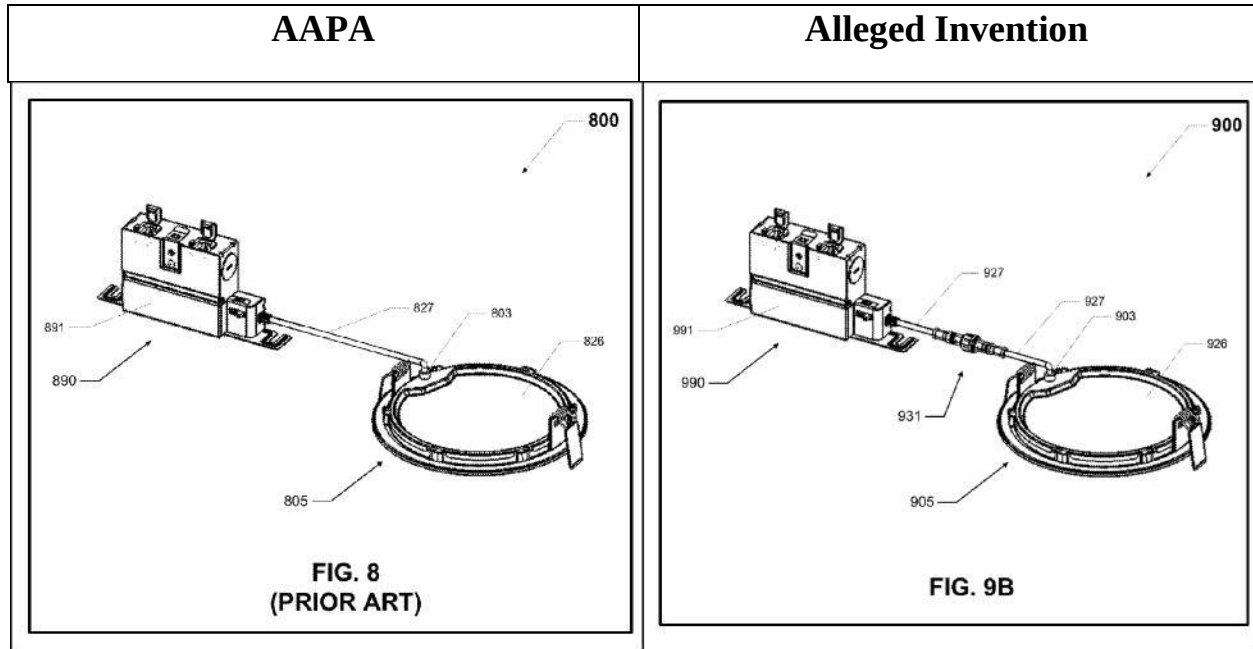


Id., Fig. 9B.

Like the prior-art luminaire of Figure 8, the luminaire 900 depicted above includes a housing (905) with one or more light sources, a junction box (990), and electrical cable (927) connected to the one or more light sources. *Id.*, 11:30-41. The purported invention of the '336 Patent differs from the prior-art luminaire in only one respect: As shown in Figure 9B (above), the purported invention includes a switch 931 that is not included in the prior-art luminaire. *Id.*, 11:25-29 (“[T]he luminaire 900

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... is substantially the same as the luminaire 800 of FIG. 8, except that the luminaire 900 of FIGS. 9A and 9B includes the example switch 931.”). The luminaires depicted in Figure 8 (labeled “Prior Art”) and Figure 9B are otherwise indistinguishable:



The switch of the purported invention “is used to adjust the CCT output by one or more of the light sources of the luminaire 900.” *Id.*, 12:17-21. Such switches were well-known in the art at the time of the ’336 Patent, as explained above. The ’336 Patent also states that its switches can be located on an electrical cable (927) or in/on the junction box (990/1090). *Id.*, 12:21-24, 12:56-67, Fig. 10. But choosing to locate the switch on a cable, junction box, housing, or elsewhere is an elementary design choice, and the prior-art described below contain express disclosures of the ’336 Patent’s purported invention. Ex.1004, ¶¶125-127.

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C. Prosecution History

U.S. Application No. 16/014,394 (“the ’394 Application”), which ultimately issued as the ’336 patent, was filed on June 21, 2018 as a continuation-in-part of U.S. Application No. 15/811,062 (“the ’062 Application”). Ex.1001, Cover. The ’062 Application is a continuation of U.S. Application No. 15/435,141 (“the ’141 Application”) and claims priority to U.S. Provisional Application No. 62/297,424 (“the ’424 Provisional”). *Id.* As detailed below in Section V.A.2, claims 1-20 of the ’336 Patent are not entitled to the priority dates of any of the preceding applications, and so Luminex applies June 21, 2018 as the priority date for these claims.

The ’336 Patent was allowed without rejection on October 16, 2018, less than four months after the application was filed. Ex.1007, 94-100 (October 16, 2018 Notice of Allowance). In the notice of allowance, the examiner indicated that the “primary reasons for the allowance of the claims are in the inclusion of the [following] limitations” (*id.*, 99-100):

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“... an electrical cable comprising a first end and a second end, wherein the first end is coupled to the at least one electrical component; and a switch coupled to the electrical cable, wherein the switch is disposed remotely from the housing, wherein the switch has a plurality of positions, wherein each position of the plurality of positions of the switch corresponds to a discrete correlated color temperature (CCT) output by one or more light sources of the luminaire” and combination thereof, in the claim(s), i.e., claim 1, (claims 2-12 are allowed as being dependent on claim 1), and

“... at least one first coupling feature disposed on the body, wherein the at least one first coupling feature is configured to electrically couple to an electrical cable of the luminaire; and an actuator disposed on the body, wherein the actuator has a range of positions, wherein each position of the range of positions of the actuator corresponds to a CCT of the light emitted by the luminaire” and combination thereof, in the claim(s), i.e., claim 13, (claims 14-20 are allowed as being dependent on claim 13), which are not found in the prior art references.

Id.

D. Level Of Skill In The Art

A person of ordinary skill in the art (“POSA”) as of June 2018 would have possessed a bachelor’s degree in mechanical engineering, electrical engineering, optics, or physics with at least three years of experience working in the design of LED lights or lighting fixtures; a master’s degree in one of the above disciplines with at least two years of experience; or equivalent experience. Ex.1004, ¶¶26-29.

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IV. IDENTIFICATION OF CHALLENGE PURSUANT TO 37 C.F.R. § 42.104(b)

A. 37 C.F.R. § 42.104(b)(1): Claims For Which IPR Is Requested

IPR is requested for claims 1-20 of the '336 Patent.

B. 37 C.F.R. § 42.104(b)(2): The Prior Art And Specific Grounds On Which The Challenge Is Based

IPR is requested in view of the following references:

- U.S. Patent No. 10,234,091 (“Chaimberg”);
- U.S. Patent No. 7,178,941 (“Roberge”);
- U.S. Patent No. 9,801,250 (“Halliwell”); and
- U.S. Patent No. 7,192,160 (“Reiff”).

Menard requests review and cancellation of the challenged claims on the following grounds:

Ground	Claim(s)	Basis
1a	1, 3, 6-9, 11-13, 15, and 17-19	Chaimberg anticipates under §102 and/or renders obvious under §103
1b	2, 4, 5, 10, 14, 16, and 20	Chaimberg alone or in view of Roberge renders obvious under §103
2	1, 2-5, 7, 9-13, 15, 16, 19, and 20	Halliwell anticipates under §102 and/or renders obvious under §103
3	13 and 15	Reiff anticipates under §102 and/or renders obvious under §103

C. 37 C.F.R. § 42.104(b)(3): Claim Construction

The Board gives claims their ordinary and customary meaning, or “the meaning

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that the term would have to a [POSA] at the time of the invention.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (*en banc*); 37 C.F.R. § 42.100(b). At this time, Menard applies the same scope of the claim terms that Signify applied in its complaint and its infringement contentions served on October 6, 2023 in the district-court case. Menard proposes no terms for construction at this time. Menard does not waive, and expressly reserves, the claim scope arguments, constructions, and evidence it may raise in other proceedings.

D. 37 C.F.R. § 42.104(b)(5): Supporting Evidence

An Appendix of Exhibits supporting this petition is attached. Also submitted herewith is a supporting declaration from Dr. Eden. Ex.1004.

V. CLAIMS 1-20 ARE UNPATENTABLE

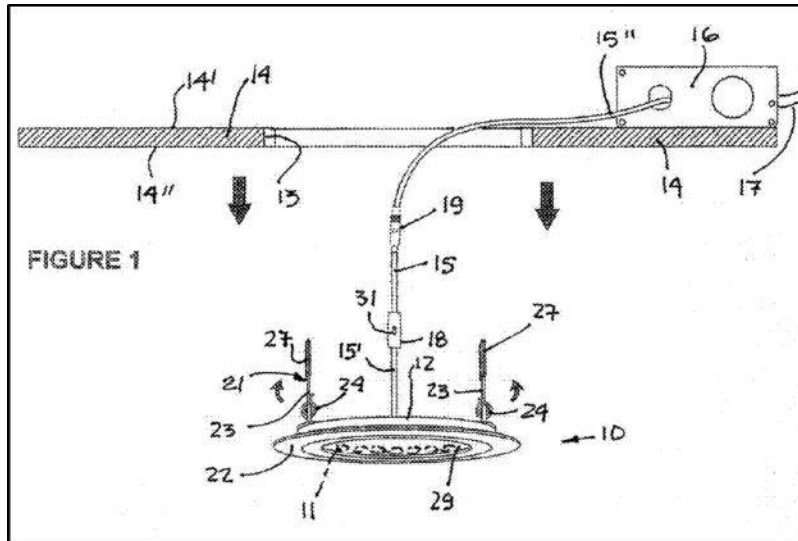
A. Ground 1a: Claims 1, 3, 6-9, 11-13, 15, And 17-19 Are Unpatentable As Anticipated And/Or Rendered Obvious By Chaimberg

1. Chaimberg

Chaimberg was filed on April 27, 2018 and issued on March 19, 2019. Ex.1003, Cover. Chaimberg claims priority to Canadian Patent Application CA 2999308, which was filed on March 26, 2018. *Id.* As detailed in Section V.A.2, claims 1-20 of the '336 Patent are entitled to a priority date no earlier than June 21, 2018, thus Chaimberg is prior art to the '336 Patent under at least 35 U.S.C. § 102(a)(2). Ex.1004, ¶¶59-66, 69.

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Chaimberg discloses an LED light fixture with at least two sets of LEDs “of different correlated color temperatures (CCT)” mounted in a housing 12: (Ex.1003, Abstract, 1:7-10, 2:24-44):



Id., Fig. 1.

The LED light fixture is “adapted to be removably secured” in a ceiling and includes a cable 15 “to supply drive current to the LED sets.” *Id.*, Abstract, 3:61-4:3. In one embodiment, a three-position switch 18 is mounted on the cable 15, enabling the user to choose from “three different color temperature (CCT) light” settings. *Id.*, Abstract, 3:17-20. Chaimberg also discloses that the switch 18 can be mounted on a driver housing, such as the driver housing 16 depicted in Figure 1. *Id.*, 1:44-50; *see also id.*, 3:28-32 (“Usually, a [CCT] selector switch is mounted on the driver housing.”).

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2. Claims 1-20 Have Priority Dates No Earlier Than June 21, 2018

The '336 Patent was filed as a continuation-in-part application on June 21, 2018 and claims priority to the '062 Application (Ex.1021), which was filed on November 13, 2017, the '141 Application (Ex.1022), which was filed on February 16, 2017, and the '424 Provisional (Ex.1008), which was filed on February 19, 2016. See Ex.1001, Cover. As explained below, however, the '062 Application, the '141 Application, and the '424 Provisional fail to provide written description support for claims 1-20 of the '336 Patent, and these claims are therefore entitled to a priority date no earlier than the '336 Patent's June 21, 2018 filing date.

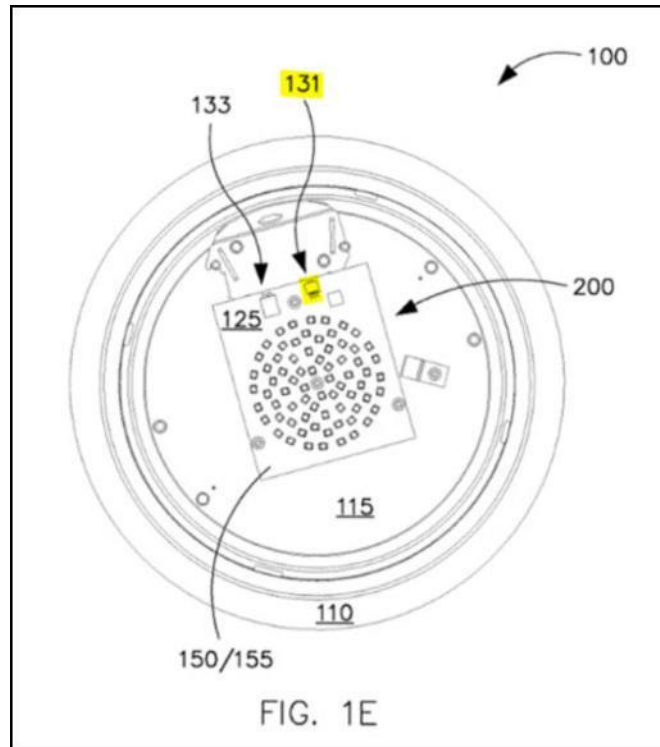
Claims 1-12 require a CCT switch with discrete positions that is “coupled to [an] electrical cable, wherein the switch is disposed remotely from the housing” of the luminaire. *Id.*, 14:39-45. Claims 13-20 similarly require a CCT switch that is configured to couple to an electrical cable of the luminaire. As noted above, the examiner identified these features as the “primary reasons for the allowance of the claims.” Ex.1007, 94-100. Yet, the '424 Provisional, '141 Application, and '062 Application lack *any* description of these key features.

Specifically, the '424 Provisional describes a luminaire that can be “configured to produce illumination of different color temperatures.” Ex.1008, 15. The luminaire includes “[s]witches 210 [that] provide input for configuring the luminaire 100 to operate at a selected [CCT]. In the illustrated embodiment [of the '424 Provisional],

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the circuit 200 comprises two manual switches 210” mounted on the circuit board. *Id.*, 19. The ’424 Provisional further discloses that the switches 210 could comprise “dual inline pin (DIP) switches,” and they could “be mounted to the housing 105 of the luminaire” or “mounted on the substrate 125,” which is also located within the housing. *Id.*. These disclosures do not describe a CCT switch that is configured to couple to an electrical cable of the luminaire, or remotely located from the housing. Ex.1004, ¶¶61, 64-66. Accordingly, claims 1-20 of the ’336 Patent are not entitled to ’424 Provisional’s priority date.

Applicant added additional disclosures when it filed the ’141 Application (Ex.1022), however, the ’141 Application (which issued as the U.S. Patent No. 9,820,350 (the “’350 Patent”), Ex.1009) likewise failed to disclose a remotely located CCT switch that is coupled to an electrical cable. For example, the ’141 Application updated Fig. 1E with a depiction (and corresponding description) of the circuit board mounted switch disclosed in the ’424 Provisional.



Ex.1009, Fig. 1E (color added).²

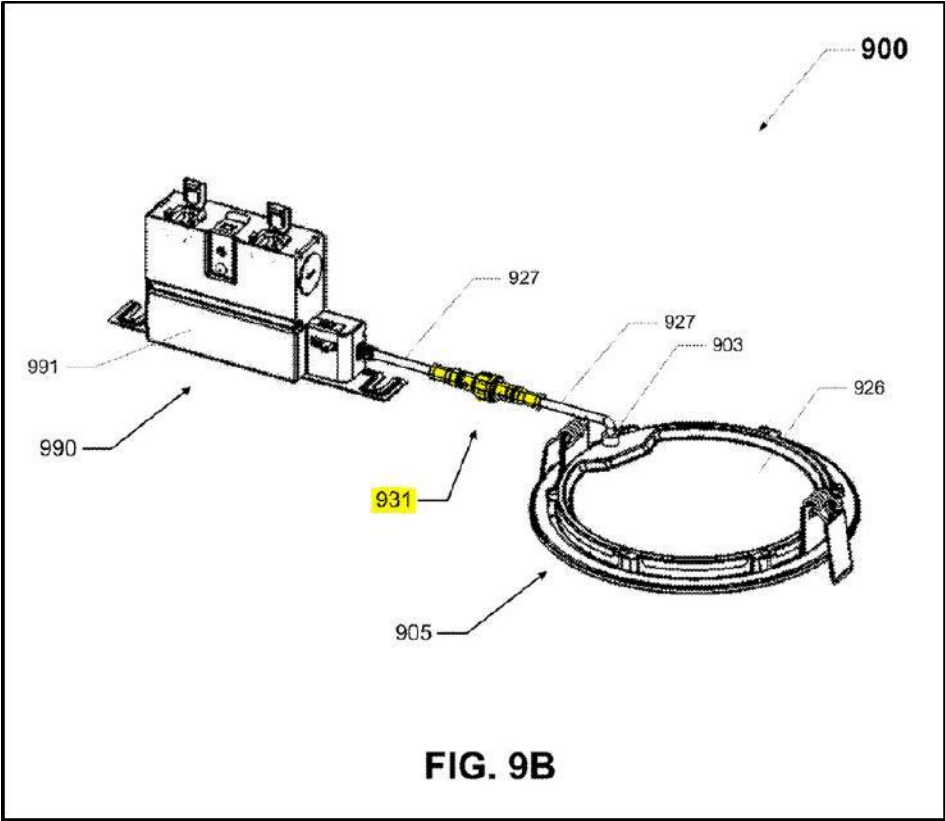
However, the switch is still described as “a dual inline pin switch 131 [that] is mounted on a circuit board.” *Id.*, 5:12-14. The ’141 Application also discloses additional switch styles beyond the three examples of the ’424 Provisional (*e.g.*, rocker, reed, magnetic, slide or rotary switches). However, the ’141 Application again describes that even these new switches are still mounted to the substrate, circuit board, or housing. *Id.*, 5:12-15, 6:28-50, 8:12-25. Thus, even the additional disclosures in

² Reference is made herein to the disclosures of the issued ’350 Patent (Ex.1009). These same disclosures were included in the ’141 Application, as filed on February 16, 2017 (Ex. 1022).

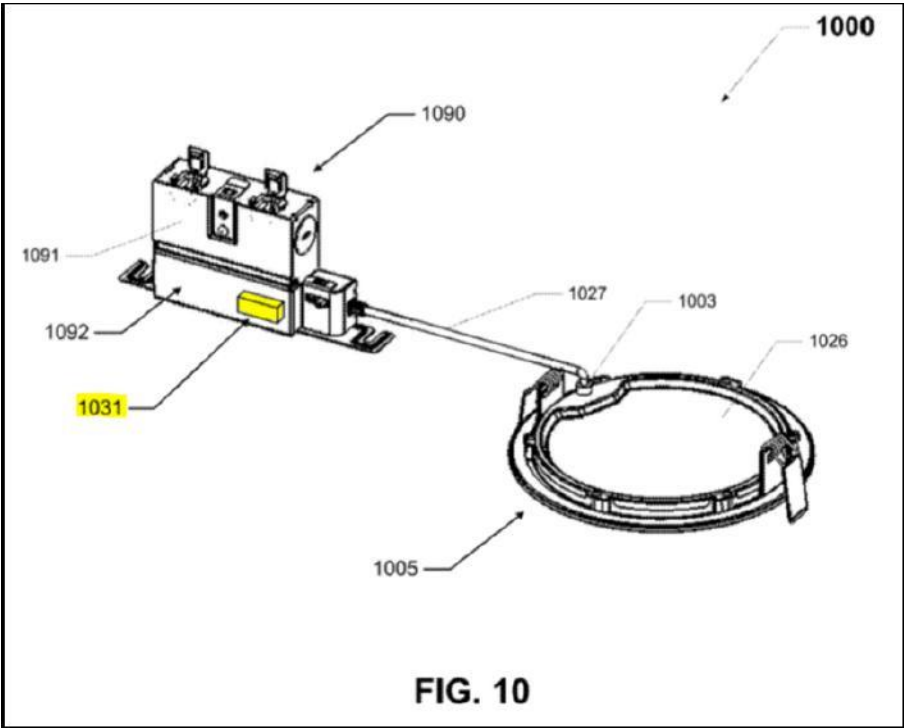
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the '141 Application do not describe a remotely located switch and/or a switch configured to couple to an electrical cable of the luminaire as required by claims 120, and the '336 Patent is not entitled to the '141 Application's priority date. The '062 Application (Ex.1021) was filed as a continuation of the '141 Application and contains the same disclosures; the '062 Application, therefore, does not provide written description support the claimed switch for the same reasons stated above for the '141 Application. *See also* Ex.1023 (issued U.S. Patent No. 10,299,335 corresponding to the '062 Application).

Applicant added a significant amount of disclosure when it filed the '394 Application as a continuation-in-part on June 21, 2018, including Figures 5-10 (and related descriptions). In the '394 Application, Applicant described for the first time a CCT switch (931/1031) that is located remotely from the housing (905/1005), and that includes "one or more coupling features (e.g., terminal points) that are used to couple to one or more electrical conductors of one or more electrical cables 927[/1027]." Ex.1001, 11:61-12:5; Fig. 10 (showing a junction box mounted switch 1031).



Id., Fig. 9B.



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Id., Fig. 10.

Every disclosure of a switch that is located remotely and/or coupled to an electrical cable was introduced in the '394 Application. The '394 Application even acknowledged that in “embodiments discussed previously [*i.e.*, Figs. 1-8], the example switch is located on the housing of the luminaire or within the housing.”

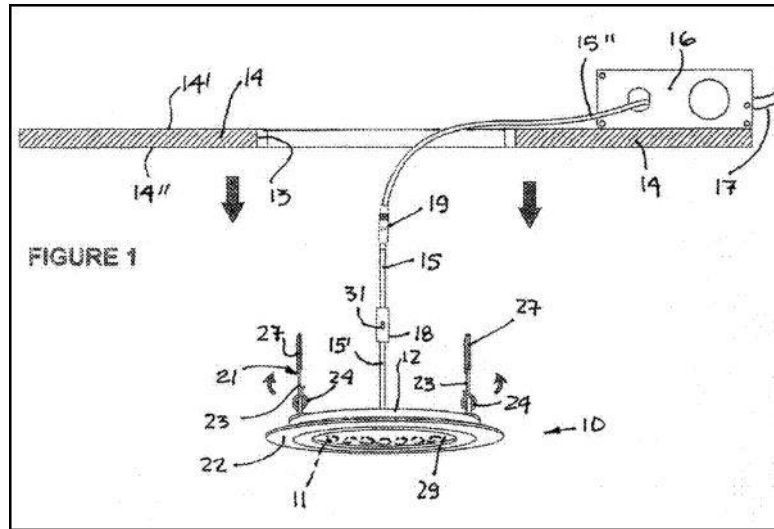
Id., 11:61-63.

In sum, neither the '424 Provisional, the '062 Application, nor the '141 Application provide written description support for the switch required by claims 120. Claims 1-20 are, therefore, entitled to a priority date no earlier than June 21, 2018, the date on which the '336 Patent was filed. *See Dynamic Drinkware, LLC v. National Graphics, Inc.*, 800 F.3d 1375, 1378 (Fed. Cir. 2015); *New Railhead Mfg., L.L.C. v. Vermeer Mfg. Co.*, 298 F.3d 1290, 1294 (Fed. Cir. 2002).

3. Claim 1

(a) Preamble: “A luminaire comprising:”

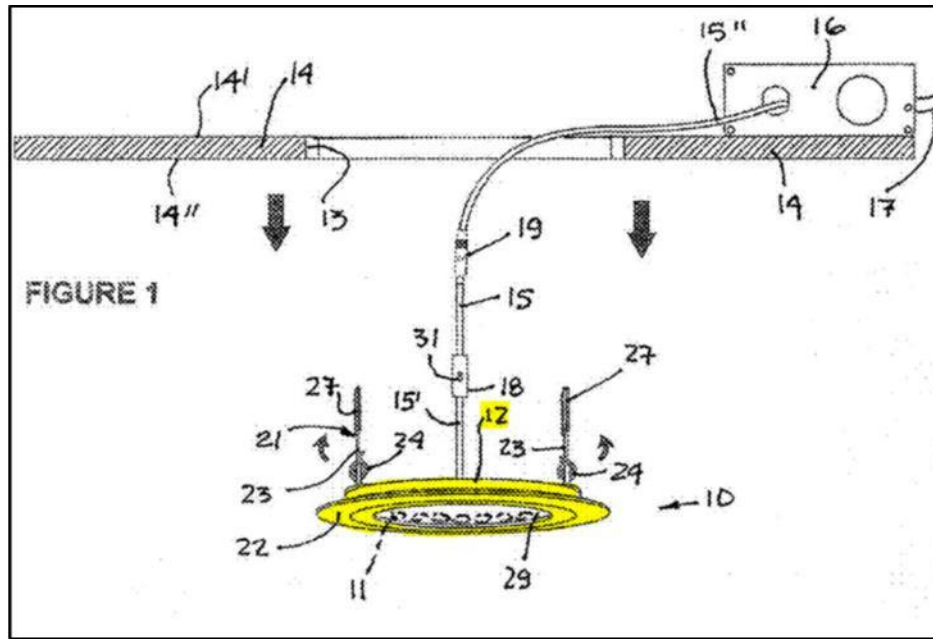
To the extent limiting, Chaimberg discloses the preamble of claim 1. Ex.1004, ¶¶88-90. Chaimberg describes ceiling-mountable LED light fixtures, such as the LED light fixture 10 described with reference to Figure 1 (Ex.1003, 2:51-57):



Id., Fig. 1. As explained by Dr. Eden, the terms “luminaire” and “light fixture” are generally synonymous and refer to a complete lighting unit. Ex.1004, ¶89. Chaimberg therefore discloses the “luminaire” recited in the preamble of claim 1. *Id.*, ¶90.

(b) Element 1a: “a housing comprising at least one outer surface that forms a first cavity;”

Chaimberg discloses this claim element. Ex.1004, ¶¶91-96. Chaimberg’s LED light fixture includes a housing 12 (Ex.1003, 3:10-11):



Id., Fig. 1 (color added).

The housing 12 includes a circumferential flange 22, as shown above. *Id.*, 2:3234, 3:61-4:3. The housing 12 also includes a “wall” that extends vertically from the circumferential flange 22, towards ceiling sheeting 14. *Id.*, 3:3-5. As shown in Figure 1, outer surfaces of the wall and the circumferential flange 22 form a cavity that holds LEDs 11. *Id.* (LEDs 11 are mounted “inside a wall of the housing 12”).

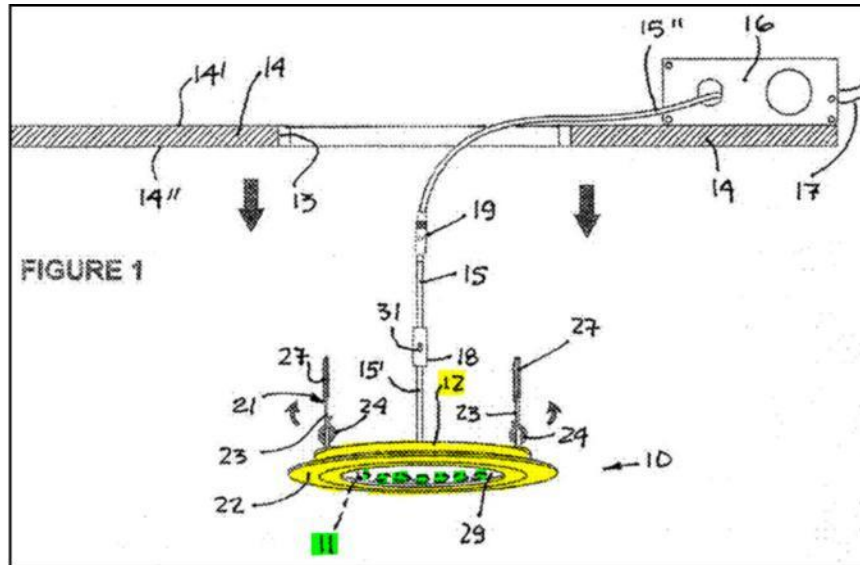
Further, in the district-court case, Signify has interpreted the “housing” of claim 1 as encompassing a structure nearly indistinguishable from the wall and circumferential flange 22 of Chaimberg:



Ex.1010, 5. Further, the '336 Patent concedes that this claim element was known in the prior art. *See, e.g.*, Ex.1001, Fig. 8 (labeled “prior art” and depicting housing 805 with an outer surface that forms a cavity).

(c) Element 1b: “at least one electrical component disposed, at least in part, within the first cavity;”

Chaimberg discloses this claim element. Ex.1004, ¶¶97-100. Chaimberg’s LEDs 11 are electrical components mounted inside the above-described “wall” of the housing 12. Ex.1003, 3:3-5 (LEDs 11 are mounted “inside a wall of the housing 12”). Thus, the LEDs 11 (“shown in phantom lines” and highlighted green below) are disposed, at least in part, within the first cavity of Chaimberg’s housing 12 (*id.*, 2:663:12):



Id., Fig. 1 (colors added).

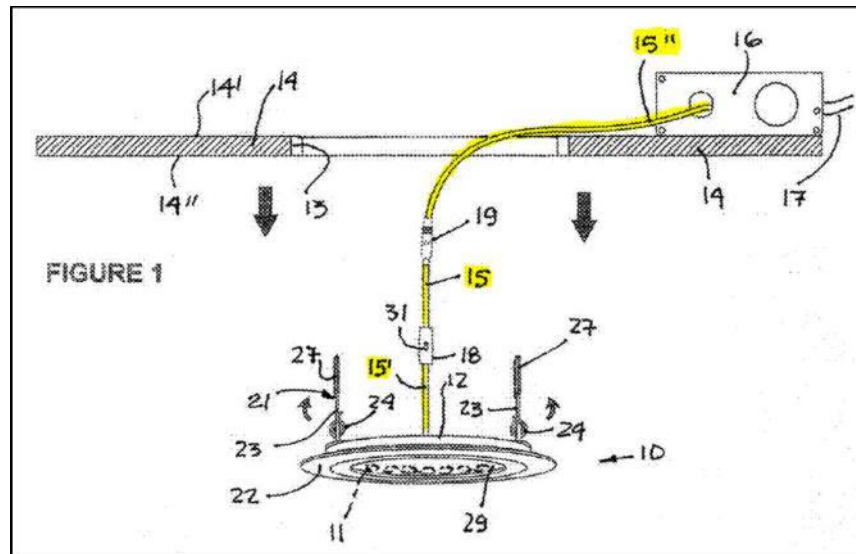
Further, in the district-court case, Signify has interpreted the “at least one electrical component” as encompassing LEDs like those disclosed in Chaimberg:

[1.b] at least one electrical component disposed, at least in part, within the first cavity;	The 349-1292 product includes at least one electrical component disposed, at least in part, within the first cavity. For example, the 349-1292 product includes LEDs disposed within the first cavity.

Ex.1010, 6. The '336 Patent also concedes that this claim element was known in the prior art. *See, e.g.*, Ex.1001, Fig. 8; 11:5-12 (labeled “prior art” and described as a luminaire including “one or more [electrical] components (*e.g.*, light sources) disposed on and/or within the housing 805.”).

(d) Element 1c: “an electrical cable comprising a first end and a second end, wherein the first end is coupled to the at least one electrical component; and”

Chaimberg discloses this claim element. Ex.1004, ¶¶101-103. Chaimberg's LED light fixture includes a cable 15 with wires "secured to the two sets of LED[s] to supply driving current to each of the sets" (Ex.1003, 3:14-25):



Id., Fig. 1 (colors added).

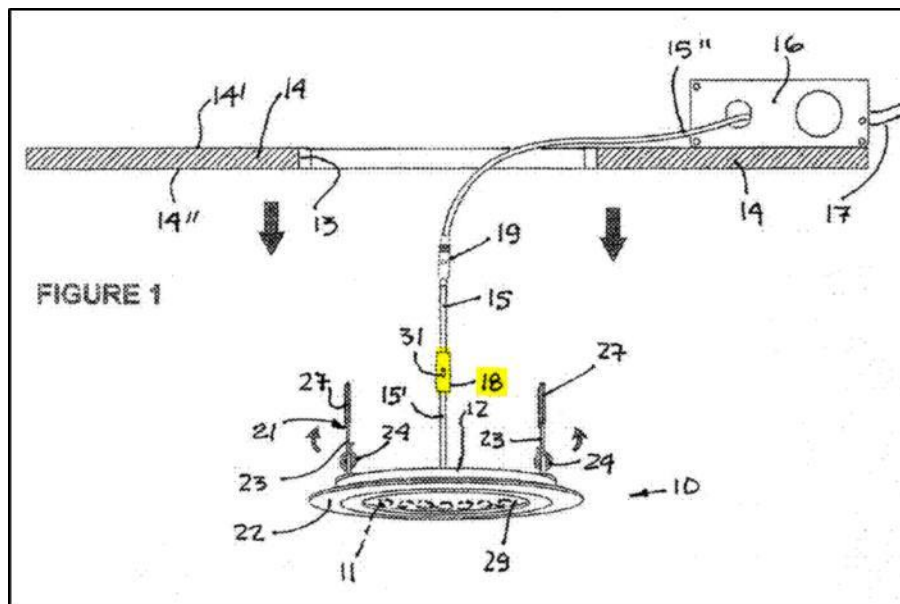
Because cable 15 is secured to and supplies current to the LEDs 11 (*i.e.*, the “at least one electrical component”), cable 15 is an electrical cable with a “first end ... coupled to the at least one electrical component.” Ex.1004, ¶102. Cable 15 also includes a far end (*i.e.*, a “second end”) secured to a driver circuit 20 “mounted in a driver housing 16.” Ex.1003, 3:17-3:25. Further, the ’336 Patent concedes that this claim element was known in the prior art. *See, e.g.*, Ex.1001, 11:6-12, Fig. 8 (labeled

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“prior art” and depicting an electrical cable 827 that is “connected to one or more [electrical] components (*e.g.*, light sources) disposed ... within the housing 805.”).

(e) Element 1d: “a switch coupled to the electrical cable, wherein the switch is disposed remotely from the housing,”

Chaimberg discloses this claim element. Ex.1004, ¶¶104-108. Chaimberg’s LED light fixture includes a switch 18 “mounted on the cable 15” (Ex.1003, 3:49-54):



Id., Fig. 1 (color added). Because switch 18 is mounted on cable 15, switch 18 is physically coupled to cable 15. Ex.1004, ¶105. Switch 18 is also electrically coupled to cable 15 because manipulation of switch 18 controls the drive current supplied to one or more of the sets of LEDs. *Id.*; Ex.1001, 4:30-5:10.

Chaimberg’s switch 18 is “disposed remotely from the housing,” as shown in Figure 1, and Chaimberg states that switch 18 is located “adjacent to the LED light fixture housing.” Ex.1003, 3:49-54.

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- (f) Element 1e: “wherein the switch has a plurality of positions, wherein each position of the plurality of positions of the switch corresponds to a discrete correlated color temperature (CCT) output emitted by one or more light sources of the luminaire.”**

Chaimberg discloses this claim element. Ex.1004, ¶¶109-111. Chaimberg’s “switch 18 is a toggle switch provided with a slide button 31 having two conducting arms 32 and 33 and displaceable to three switch positions,” corresponding to three discrete CCT outputs. Ex.1003, 4:34-37. Chaimberg’s exemplary CCT outputs are 3000K (first position), 5000K (second position), and 4000K (third position). *Id.*, 4:375:10. Chaimberg’s driver circuit controls the output of light based on the setting of the switch 18. *Id.*, 4:30-49, Fig. 3.

Claim 1 is therefore anticipated by and/or would have been obvious over Chaimberg. Ex.1004, ¶112.

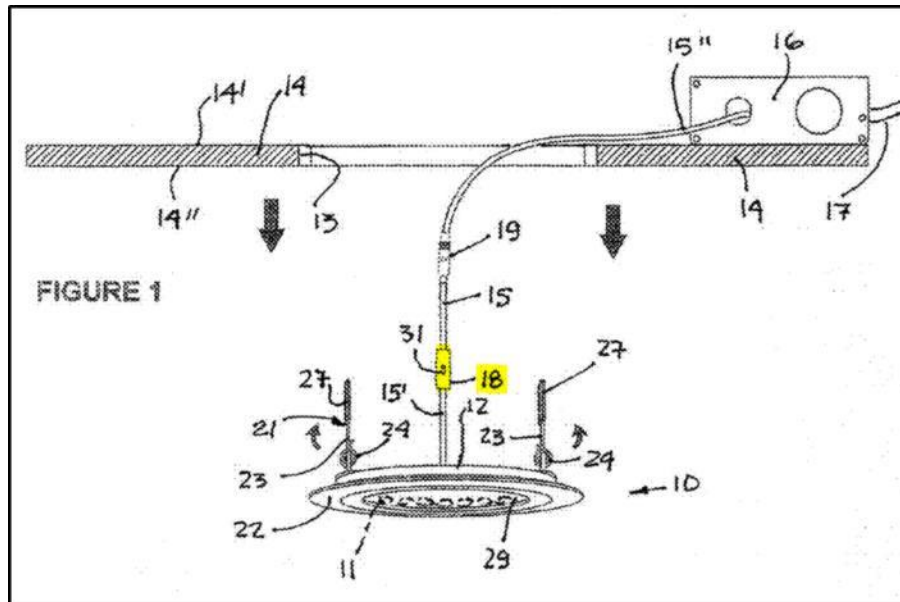
4. Claim 3

Claim 3 depends from claim 1 and recites “wherein each position of the plurality of positions is discrete.” Chaimberg discloses the limitations added in claim 3. Ex.1004, ¶¶113-115. As explained above for Element 1e of claim 1, Chaimberg’s exemplary “switch 18 is a toggle switch provided with a slide button 31” that is displaceable to three discrete positions. *Id.*, 4:30-63; Ex.1004, ¶¶114-115.

Claim 3 is therefore anticipated by and/or would have been obvious over Chaimberg. Ex.1004, ¶116.

5. Claim 6

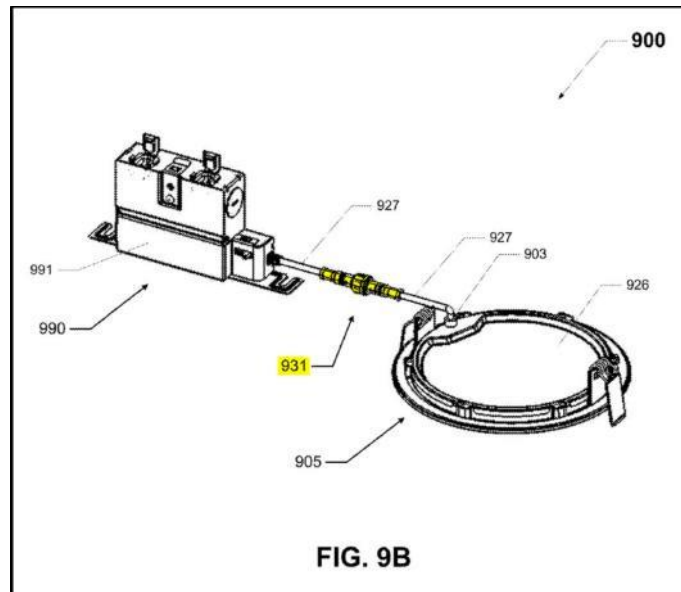
Claim 6 depends from claim 1 and recites “wherein the switch is integrated with the electrical cable.” Chaimberg discloses the limitations added in claim 6. Ex.1004, ¶¶117-119. As explained above for element 1d of claim 1, Chaimberg’s CCT “switch is mounted in[on] the cable” (Ex.1003, Abstract, 3:49-53):



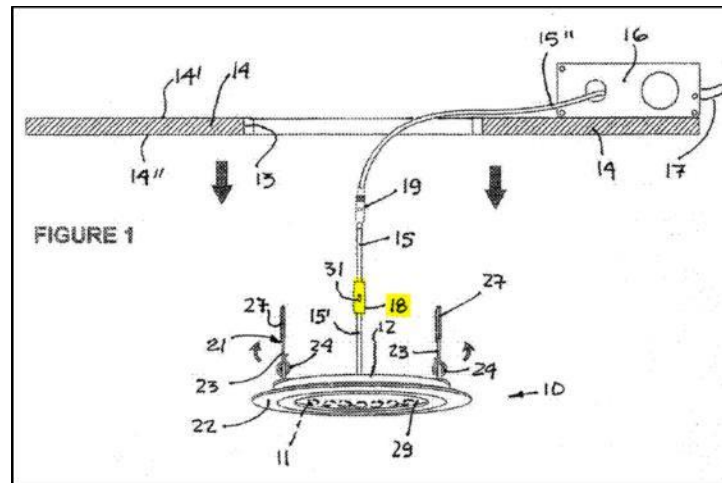
Id., Fig. 1 (color added). As explained by Dr. Eden, a POSA would have understood that the switch 18 is “integrated with” the electrical cable because the switch controls the CCT output of Chaimberg’s light fixture. Ex.1004, ¶¶118-119.

Moreover, the specification of the ’336 Patent states that: “[w]hen the switch 931 is in-line with the electrical cable 927, as in this example [shown in Fig. 9], the switch 931 can be integrated with the electrical cable 927.” Ex. 1001, 12:21-23. To the extent the “switch 931” of the ’336 Patent is “integrated with the electrical cable 927” as claimed in claim 6, Chaimberg’s switch 18 is likewise “integrated with the

electrical cable” 15 (Ex.1004, ¶119):



Ex. 1001, Fig. 9B (color added).



Ex. 1003, Fig. 1 (color added).

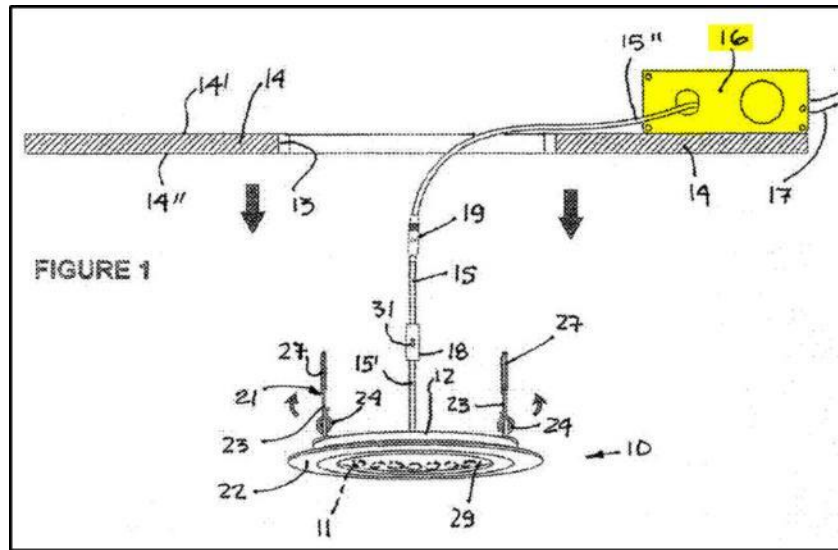
Claim 6 is therefore anticipated by and/or would have been obvious over Chaimberg. Ex.1004, ¶120.

6. Claim 7

Claim 7 depends from claim 1 and recites “a junction box comprising at least

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one wall that forms a second cavity, wherein the switch is disposed within the second cavity, wherein the second end of the electrical cable is coupled to the switch.” Chaimberg discloses or at least would have rendered obvious the limitations added in claim 7. Ex.1004, ¶¶121-129. Chaimberg’s LED light fixture includes a driver housing 16 that discloses the claimed “junction box” (Ex.1003, 4:30-32):



Id., Fig. 1 (color added).

As explained by Dr. Eden, a junction box is an enclosure that houses electrical components. Ex.1004, ¶¶122, 124-125. Chaimberg’s driver housing 16 is a junction box because it houses driver circuit 20, which includes electrical components for driving the LEDs 11 of the light fixture. Ex.1003, 4:30-32 (“driver circuit 20 [] is mounted in the driver housing 16”), 3:23-24; *see also* Ex.1001 at 11:44-47 (the ’336 Patent describing junction box 990 as including “one or more walls 991 to enclose one or more electrical components (*e.g.*, a driver)”). Further, because Chaimberg’s

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driver circuit 20 is disposed inside of the driver housing 16, the driver housing 16 includes “at least one wall that forms a second cavity,” as claimed. Ex.1004, ¶122.

Chaimberg also discloses or at least would have rendered obvious “the switch is disposed within the second cavity” of the junction box (*i.e.*, the driver housing). *Id.*, ¶¶124-125. Chaimberg states that it was known in the art to mount a CCT switch “on the driver housing.” Ex.1003, 1:44-50. While Chaimberg does not expressly describe locating the switch 18 *inside* the driver housing, such an arrangement would have been obvious to the POSA. Chaimberg describes enclosing other electrical components (*e.g.*, the driver circuit 20) inside the driver housing 16. *Id.*, 4:30-37. Despite Chaimberg’s disclosure that the CCT switch was located on the cable to increase accessibility to the switch, a POSA would have understood that in certain applications, it would have been desirable to make the switch *less* accessible to the user. Therefore, the POSA would have been motivated to put the switch (still coupled to the electrical cable) inside the junction box to prevent users from accessing the switch and to provide additional protection to the switch. Ex.1004, ¶¶124-125.

Moreover, Chaimberg’s driver housing 16 is intended to be installed within a ceiling (*i.e.*, above the ceiling sheeting 14), and the POSA would have understood the ceiling environment as potentially including elements (*e.g.*, dust, debris, insects, rodents, etc.) that could detrimentally affect the operation of the switch 18. *Id.*, ¶125. Accordingly, the POSA would have been motivated to locate the switch 18 within the

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cavity of the driver housing 16 (*i.e.*, “within the second cavity” of the junction box, as claimed) to protect the switch 18 from these elements. *Id.* As Dr. Eden further explains, disposing the switch 18 within the driver housing 16 would have been an obvious combination of prior-art elements according to known methods to yield predictable results. *Id.*, ¶¶126-129. Chaimberg discloses or at minimum would have rendered obvious “the switch is disposed within the second cavity” of the junction box for these reasons.

Finally, Chaimberg discloses or at least would have rendered obvious “wherein the second end of the electrical cable is coupled to the switch.” As explained above for Element 1c of claim 1, CCT switch 18 is coupled to the cable 15, and the first end of Chaimberg’s cable 15 is coupled to the LEDs 11 (*i.e.*, “coupled to the at least one electrical component,” as claimed). The “second end” of Chaimberg’s cable 15 ends in the driver housing (*i.e.*, junction box). When the switch and cable are both disposed in the junction box, a POSA would have understood that the switch would have been coupled to the second end of the cable 15 because connecting electrical terminal of the switch to the power source (through the cable 15) is necessary to have a complete circuit. Ex.1004, ¶128.

Claim 7 is therefore anticipated by and/or would have been obvious over Chaimberg. Ex.1004, ¶130.

7. Claim 8

Claim 8 depends from claim 1 and recites “a junction box comprising at least one wall that forms a second cavity, wherein the second cavity has disposed therein at least one additional electrical component; and an additional electrical cable, wherein the switch is coupled to the second end of the electrical cable, wherein the additional electrical cable is coupled to the switch and to the at least one additional electrical component, wherein the switch is disposed outside the second cavity.” Chaimberg discloses or at least would have rendered obvious the limitations added in claim 8. Ex.1004, ¶¶131-133.

As discussed above with respect to claim 7, and explained by Dr. Eden, it would have been obvious for a POSA to locate Chaimberg’s CCT switch on or in the driver housing (*i.e.*, junction box comprising at least one wall that forms a second cavity). Moreover, Chaimberg’s “driver circuit 20 is mounted in a driver housing 16 to which is supplied line voltage from live wire 17.” Ex.1003, 3:23-25. A POSA would have understood that the driver circuit would have been an “additional electrical component” and the “live wire 17” would function as “an additional electrical cable” located within the junction box. A POSA would have understood that Chaimberg’s “live wire 17” is coupled to the “driver circuit 20” because it supplies “line voltage” to the driver circuit and LED light fixture. Likewise, because the CCT switch controls the power provided to the LEDs, it would have been obvious for a POSA to “couple”

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the live wire to the CCT switch when the switch is located in/on the driver housing. *See id.*, 2:61, 4:30-5:10, Fig. 3. Finally, as explained above, Chaimberg discloses that its CCT switch could be mounted on the outside of driver housing. *Id.*, 1:44-50, 3:2832.

Claim 8 is therefore anticipated by and/or would have been obvious over Chaimberg. Ex.1004, ¶134.

8. Claim 9

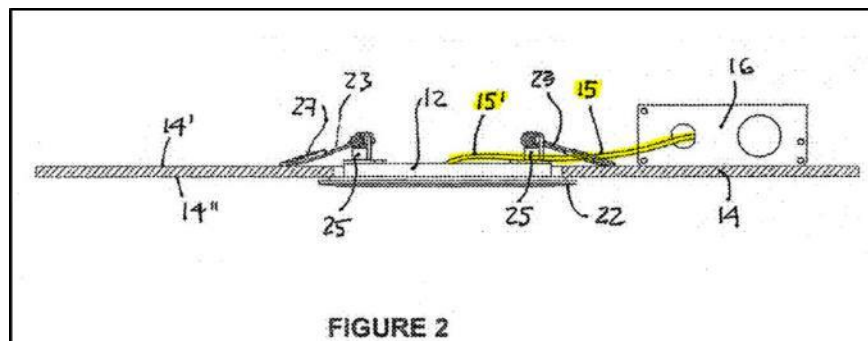
Claim 9 depends from claim 1 and recites “wherein the switch is a slide switch.” Chaimberg discloses the limitations added in claim 9. Ex.1004, ¶¶135-136. Chaimberg discloses that its switch 18 “is a toggle switch provided with a slide button 31,” thus making it a slide switch. Ex.1003, 4:34-37. To the extent the switch 18 is not a “slide switch,” Dr. Eden explains that it would have been obvious to modify the switch 18 to be a “slide switch.” Ex.1004, ¶¶36-38, 136. As Dr. Eden explained, physical switches (*e.g.*, slide, toggle, rocker, dial, etc.) are generally interchangeable and were well known in the art for decades before the alleged invention of the ’336 Patent. *Id.* It would have been a simple, routine design choice for a POSA to use a “slide switch” in place of a toggle switch with “a slide button.” *Id.*, ¶136.

Claim 9 is therefore anticipated by and/or would have been obvious over Chaimberg. *Id.*, ¶137.

9. Claim 11

Claim 11 depends from claim 1 and recites “wherein the switch is inaccessible when the housing is installed.” Chaimberg discloses the limitations added in claim 11. Ex.1004, ¶¶138-142. Chaimberg’s LED light fixture is “adapted to be removably secured in a housing mounting hole in a ceiling sheeting material.” Ex.1003, Abstract. As discussed above with respect to claim 1, Chaimberg’s “selector switch 18 is mounted [in/]on the cable 15” (*id.*, Abstract, 3:49-54), and “is made accessible and visible by simply withdrawing the light fixture from” the ceiling. *Id.*, Abstract. When the light fixture is “retracted from its fixture mounting hole,” the switch 18 is below the ceiling 14 and accessible to the user. *Id.*, 3:13-15, Fig. 1.

Fig. 2 is shows Chaimberg’s light fixture “mounted in the fixture mounting hole.” *Id.*, 2:58-61, Fig. 2. The cable 15 (where the switch 18 is mounted) is on the inner side of the “ceiling sheeting material 14” and inaccessible when the LED light fixture is installed. *Id.*, 4:16-29, Fig. 2; Ex.1004, ¶¶141-142.



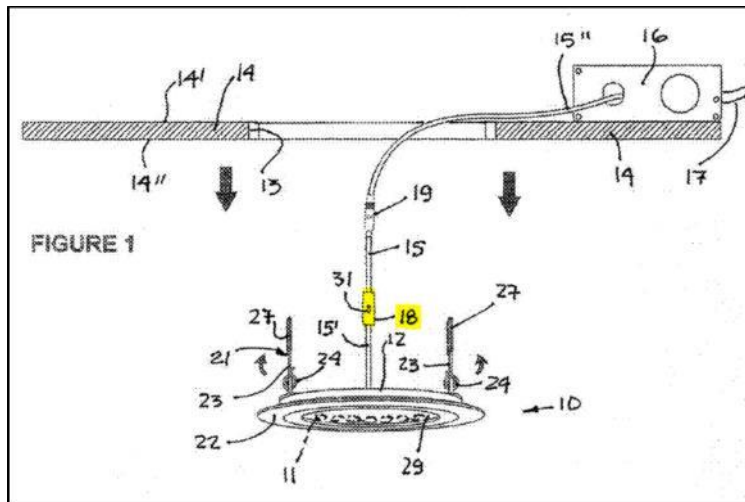
Id., Fig. 2 (color added).

Claim 11 is therefore anticipated by and/or would have been obvious over

Chaimberg. Ex.1004, ¶143.

10. Claim 12

Claim 12 depends from claim 1 and recites “wherein the switch is accessible to a user when the housing is removed from its installed location.” Chaimberg discloses the limitations added in claim 12. Ex.1004, ¶¶144-147. The CCT switch 18 “is made accessible and visible by simply withdrawing the light fixture from” the ceiling. Ex.1003, Abstract. Figure 1 shows that the switch 18 is “accessible and visible” to the user when the housing is removed from its installed location (*id.*, Abstract, 4:16-29):



Id., Fig. 1 (color added).

Claim 12 is therefore anticipated by and/or would have been obvious over Chaimberg. Ex.1004, ¶148.

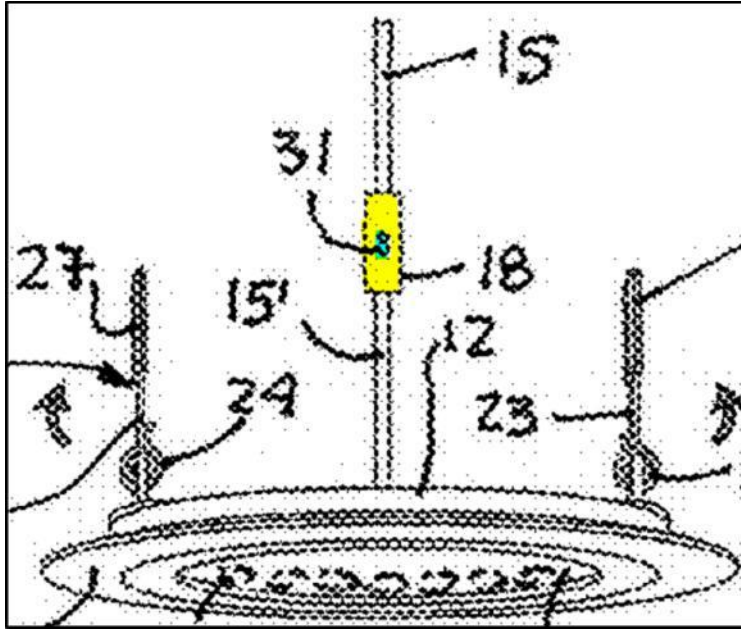
11. Claim 13

- (a) Preamble: “A switch for controlling a correlated color temperature (CCT) of light emitted by a luminaire, the switch comprising:”**

To the extent limiting, Chaimberg discloses the preamble of claim 13. Ex.1004, ¶¶149-152. For the reasons explained above for claim 1, Chaimberg’s switch 18 is a “switch for controlling a correlated color temperature (CCT) of light emitted by a luminaire.”

- (a) Element 13a: “a body;”**

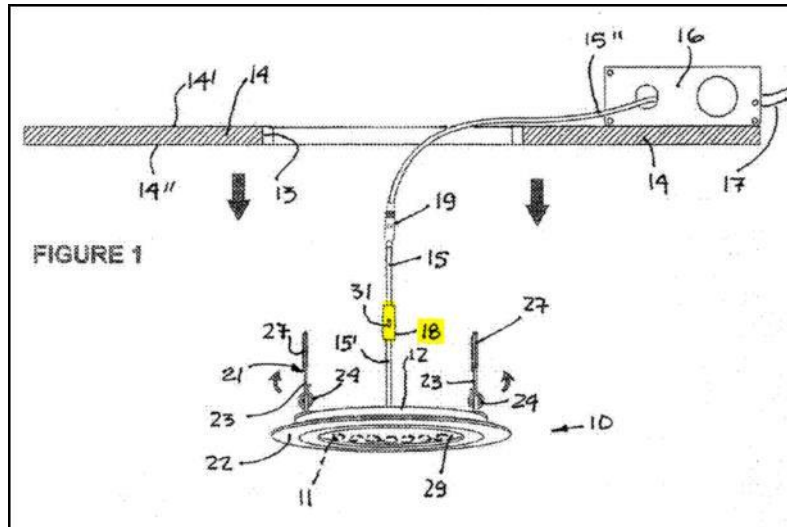
Chaimberg discloses this claim element. Ex.1004, ¶¶153-155. Chaimberg’s “switch 18 is a toggle switch provided with a slide button 31 [that is] displaceable to three switch positions.” Ex.1003, 4:30-63. The switch 18 provides a body wherein the slide button 31 is located. Ex.1004, ¶154. The “body” portion of the switch 18 is highlighted in yellow below, and the slide button 31 is highlighted in blue:



Ex.1003, Fig. 1 (colors added).

- (b) **Element 13b: “at least one first coupling feature disposed on the body, wherein the at least one first coupling feature is configured to electrically couple to an electrical cable of the luminaire; and”**

Chaimberg discloses this claim element. Ex.1004, ¶¶156-159. Chaimberg’s CCT “switch 18 is mounted on the cable 15 adjacent to the LED light fixture housing 12” (Ex.1003, 3:49-51):

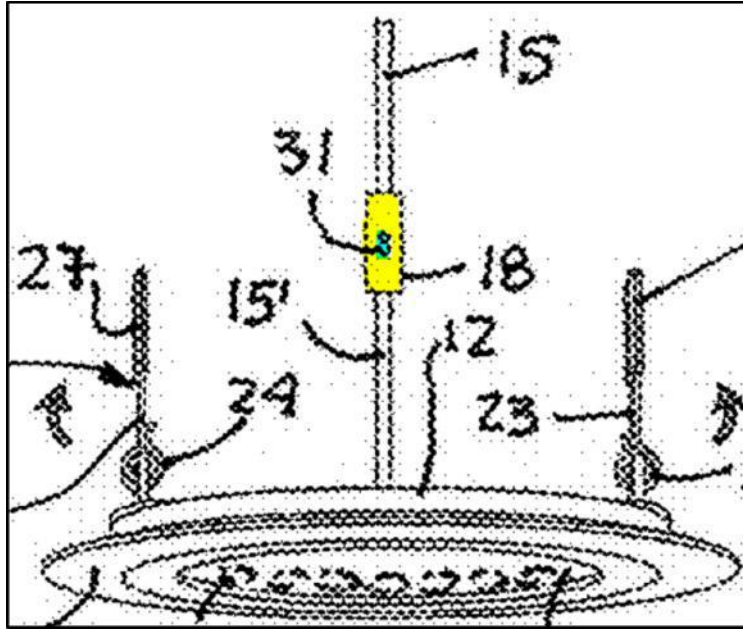


Ex.1003, Fig. 1 (color added).

Because the switch 18 is mounted on the electrical cable 15 and is used to adjust the CCT output of the LED light fixture, a POSA would have understood that the switch 18 includes at least one coupling feature and is configured to electrically couple to the electrical cable 15. Ex.1004, ¶¶157-158.

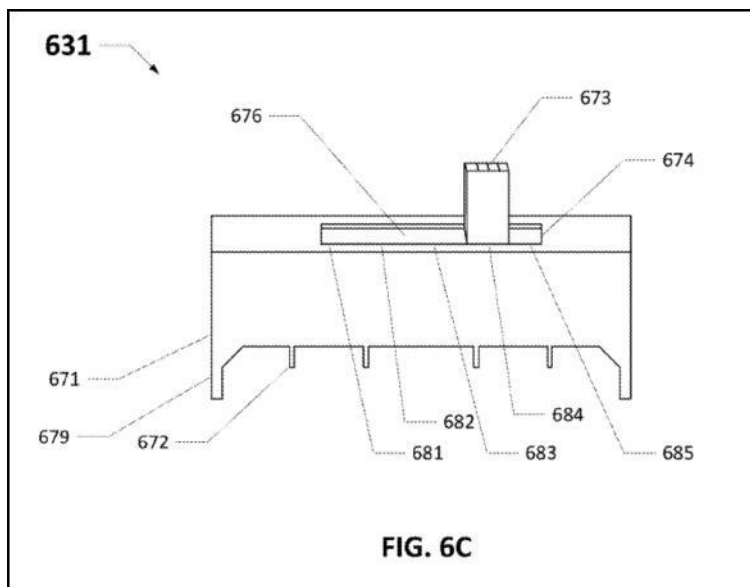
(c) Element 13c: “an actuator disposed on the body, wherein the actuator has a range of positions,”

Chaimberg discloses this claim element. Ex.1004, ¶¶160-168. As noted above, Chaimberg’s switch 18 includes a slide button 31 (highlighted in blue) that functions as “an actuator disposed on the body” of the switch 18 (Ex.1003, 4:30-63):



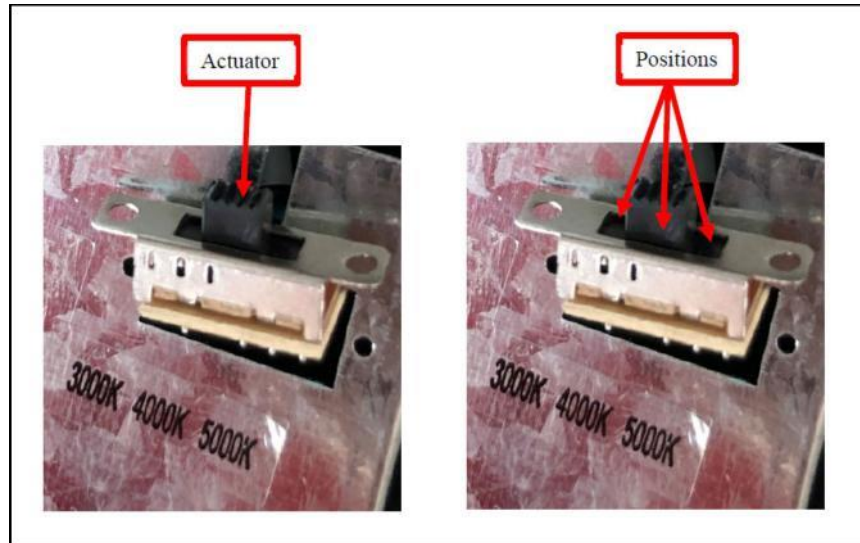
Id., Fig. 1 (colors added).

The '336 Patent likewise depicts an actuator (673) as a button that the user can slide “along the length” of a slot within the body of a switch (631) (Ex.1001, 10:1720) like the slide button disclosed in Chaimberg:



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Id., Fig. 6C. Further, in the district-court case, Signify has interpreted the “actuator” of claim 13 as encompassing slide buttons like those disclosed in Chaimberg:



Ex.1010, 27. As explained by Dr. Eden, electrical switches are a type of “actuator” that is manually or electrically switched. A slide switch is generally switched manually, as shown by the black plastic slide with a corrugated surface, pictured above. A wide range of actuators were well-known in the art decades before the alleged invention of the ’336 Patent. Ex.1004, ¶167.

Finally, Chaimberg’s switch has a “range” of three positions. See Ex.1003, 4:30-63; Ex.1004, ¶168.

(d) Element 13d: “wherein each position of the range of positions of the actuator corresponds to a CCT of the light emitted by the luminaire.”

Chaimberg discloses this claim element for the reasons explained above for Element 1e of claim 1. Ex.1004, ¶¶169-171.

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Claim 13 is therefore anticipated by and/or would have been obvious over Chaimberg. Ex.1004, ¶172.

12. Claim 15

Claim 15 depends from claim 13 and recites “wherein each position is discrete within the range of positions.” Chaimberg discloses the limitations added in claim 15 for the reasons explained above for claim 3. Ex.1004, ¶¶173-175. Claim 15 is therefore anticipated by and/or would have been obvious over Chaimberg. *Id.*, ¶176.

13. Claim 17

Claim 17 depends from claim 13 and recites “at least one second coupling feature disposed adjacent to the at least one first coupling feature, wherein the at least one second coupling feature is configured to electrically couple to an additional electrical cable of the luminaire.” As explained above with respect to claim 8, it would have been obvious for a POSA to modify Chaimberg’s CCT switch 18 as a junction box mounted CCT switch, wherein an “additional electrical cable is coupled to the switch.” As explained above with respect to claim 13, Chaimberg’s CCT switch necessarily includes multiple coupling features that are “configured to electrically couple to an electrical cable of the luminaire.” Therefore, when Chaimberg’s CCT switch is coupled to an additional electrical cable, a POSA would have understood that the CCT switch would necessarily include electrical coupling features configured to couple to the additional cable. Ex.1004, ¶¶177-179. Placing the second coupling

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feature adjacent to the first coupling feature would have been obvious to a POSA and a matter of mere routine design choice. Ex.1004, ¶179.

Claim 17 is therefore anticipated by and/or would have been obvious over Chaimberg. Ex.1004, ¶180.

14. Claim 18

Claim 18 depends from claim 13 and recites “wherein the body is configured to be integrated with the electrical cable.” Chaimberg discloses or at least renders obvious the limitations added in claim 18 for the reasons explained above for claim 6. Ex.1004, ¶¶181-182. Claim 18 is therefore anticipated by and/or would have been obvious over Chaimberg. *Id.*, ¶183.

15. Claim 19

Claim 19 depends from claim 13 and recites “wherein the body is configured to be disposed within a junction box.” Chaimberg discloses or at least renders obvious the limitations added in claim 19 for the reasons explained above for claim 7. Ex.1004, ¶¶184-185. Claim 19 is therefore anticipated by and/or would have been obvious over Chaimberg. *Id.*, ¶186.

B. Ground 1b: Claims 2, 4, 5, 10, 14, 16 and 20 Are Unpatentable As Obvious Based On Chaimberg In View Of Roberge

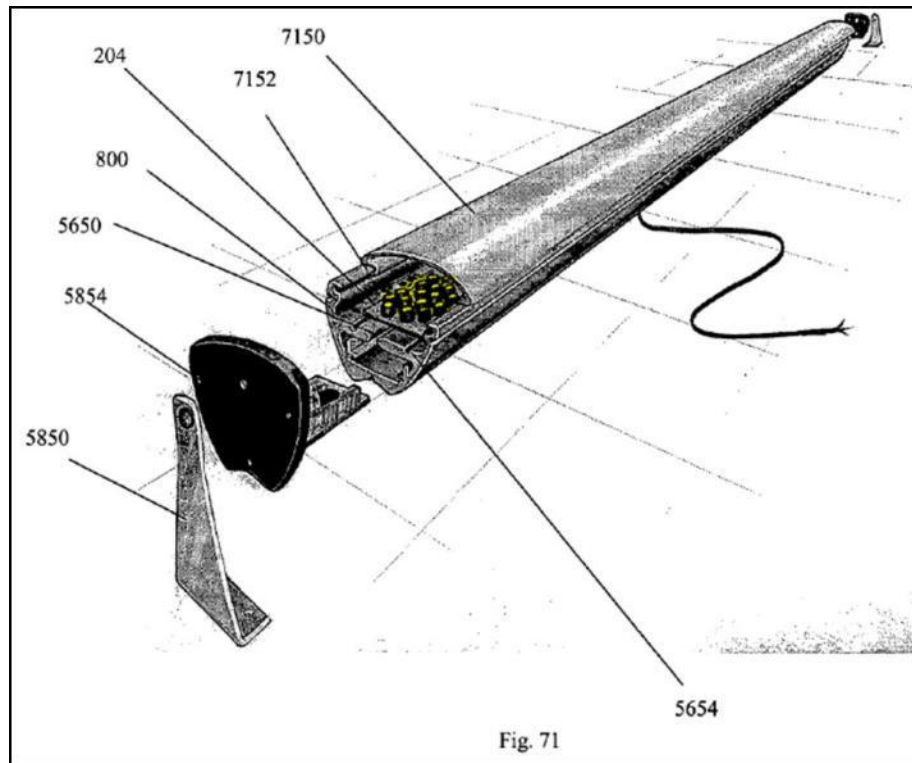
1. Roberge

Roberge was filed as Application No. 10/839,765 on May 5, 2004 by Color Kinetics Inc. Ex.1011, (21) (22). Roberge claims priority to provisional application

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No. 60/467,847, filed on May 5, 2003. Ex.1011, (60). Accordingly, Roberge is prior art to the '336 Patent under at least 35 U.S.C. 102(a)(2). Ex.1004, ¶73.

Roberge discloses “[l]ighting methods and systems [with] a plurality of LEDs.” Ex.1011, 1:28-31. As one example, Fig. 71 of Roberge depicts a linear light system that can be mounted on a “wall, beam, ceiling, or other surface” using the bracket 5850. Ex.1011, 65:19-23, 66:43-50, Fig. 71. The lighting fixture of Fig. 71 includes a housing 800 that forms a cavity wherein the circuit board 204 is located. *Id.*, 66:43-50, Fig. 71. Roberge discloses that the circuit board 204 “support[s] a plurality of LEDs” which are highlighted in yellow in Fig. 71 below. *Id.*, 1:30-31, 19:49-51, Fig. 71; Ex.1004, ¶74. While Fig. 71 shows a housing in a linear shape, Roberge discloses that the “[h]ousings 800 can take various shapes, such as one that resembles a point source, such as a circle or oval.” Ex.1011, 17:23-26.



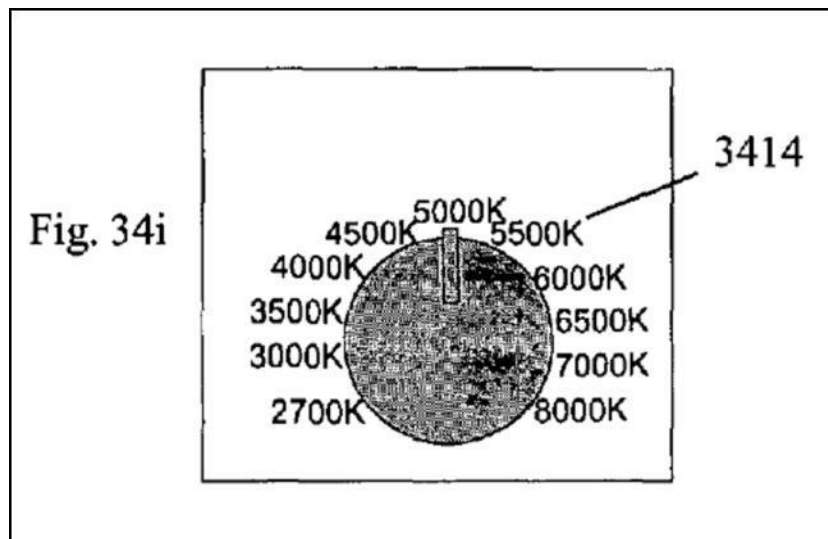
Id., Fig. 71 (color added).

Roberge discloses that the LEDs can include “two white sources of varying characteristics, three white sources of varying characteristics, or four or more white sources of varying characteristics.” *Id.*, 7:33-36. Roberge’s LEDs can be arranged such that the “light generated by two or more of the light sources combines to produce a mixed color light (including essentially white light having a variety of color temperatures).” *Id.*, 7:40-46. Roberge discloses that “[t]he various embodiments described throughout [its] specification encompass all possible combinations of LEDs in lighting units 102, so that light of varying ... color temperature can be produced on demand.” *Id.*, 7:53-60.

Roberge discloses a number of controls and switches for controlling the varying

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CCT outputs. For example, Fig. 34i shows “a dial [that] allows a user to select one or more color temperatures from a scale 3414[, which can] include different color temperatures of white light.” *Id.*, 42:51-54. “The [lighting] designer can specify use of a particular color temperature of light, which the installer can select by setting the right position on the scale 3414 with the dial.” *Id.*, 42:54-57. As shown below, the exemplary switch of Fig. 34i allows the user to select from 11 CCT outputs. While Fig. 34i discloses a rotary switch, Roberge discloses that “[a] slide mechanism [*i.e.*, switch] can be used like the dial to set a particular color temperature of white light.” *Id.*, 42:57-59.



Id., Fig. 34i.

2. Motivation To Combine

Chaimberg and Roberge both disclose LED lighting systems with adjustable white light CCT outputs. Specifically, both references disclose LED lighting systems

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that can be placed in or on a ceiling, and both disclose using LEDs of multiple color temperatures to display white light at a variety of color temperatures.

As discussed above in Section V, Chaimberg discloses “[a] ceiling mountable LED light fixture ... wherein at least two sets of LED’s of different correlated color temperatures (CCT) are mounted in its housing.” Ex.1003, Abstract. Chaimberg discloses a “switch 18 [that] is a toggle switch provided with a slide button 31 [that is] displaceable to three switch positions,” which correspond to three discrete CCT outputs: 3000K, 4000K, and 5000K. *Id.*, 4:30-5:10; Ex.1004, ¶188. Chaimberg’s LED light fixture emits light having a CCT of 3000K by powering only the 3000K LEDs, and emits a light at 5000K by powering only the 5000K LEDs. Ex.1003, 4:305:10; Ex.1004, ¶188. Chaimberg emits an apparent temperature of 4000K by powering a mix of the 3000K and 5000K LEDs. Ex.1003, 4:30-5:10; Ex.1004, ¶188. While the embodiment disclosed in Chaimberg only includes LEDs having one of two temperatures (3000K and 5000K), Chaimberg also discloses that its light fixture includes “**at least two sets** of LED’s of different correlated color temperatures.” Ex.1003, Abstract (emphasis added).

Accordingly, a POSA would have understood that Chaimberg’s LED light fixture could include additional LEDs having CCTs other than 3000K or 5000K. Ex.1004, ¶¶188-189. If additional temperature LEDs were included as disclosed in Chaimberg, the switch 18 would require additional positions. *Id.* A POSA would

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have looked to other CCT switches disclosed in the art for CCT switches with more than three positions. In practice, however, both slide and rotary switches offer multiple positions. *Id.*, ¶189.

Like Chaimberg, Roberge discloses LED “[l]ighting methods and systems [with] a plurality of LEDs.” Ex.1011, 1:28-31. Roberge discloses that its LED lights “can take various shapes, such as one that resembles a point source, such as a circle or oval. Such a point source can be located in a conventional lighting fixture, such as a lamp or a cylindrical fixture.” *Id.*, 17:23-26. Roberge discloses that the LEDs can include “two white sources of varying characteristics, three white sources of varying characteristics, or four or more white sources of varying characteristics.” *Id.*, 7:3336. The LEDs in Roberge can be arranged such that the “light generated by two or more of the light sources combines to produce a mixed color light (including essentially white light having a variety of color temperatures).” *Id.*, 7:40-46.

Like Chaimberg, Roberge discloses a number of switches for controlling the output of its LED light fixture, including “a dial [that] allows a user to select one or more color temperatures from a scale 3414[, which can] include different color temperatures of white light.” *Id.*, 42:51-54, Fig. 34i. While Fig. 34i shows a “dial” switch, like Chaimberg, Roberge discloses that “[a] slide mechanism [*i.e.*, switch] can be used like the dial to set a particular color temperature of white light.” *Id.*, 42:57-59.

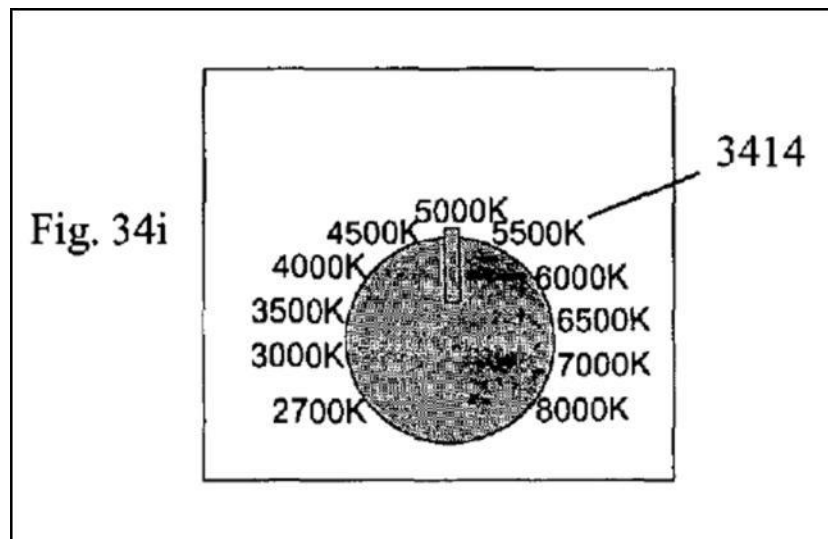
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Because Chaimberg and Roberge both relate to ceiling mountable LED lighting systems with adjustable white light CCT outputs, a POSA would have been motivated to combine Chaimberg and Roberge. In particular, a POSA would have been motivated to incorporate the switch, and corresponding color temperatures, disclosed in Fig. 34i of Roberge in Chaimberg's LED light fixture. A POSA would recognize that including additional CCT outputs would advantageously provide more configurability and flexibility (e.g., usability in a larger range of settings). Ex.1004, ¶189. Having been motivated to use two or more sets of LEDs in Chaimberg to achieve additional CCTs, the POSA would recognize that he/she would need a suitable switch for selecting among the available CCTs. Ex.1004, ¶¶189-190. Roberge discloses one such switch having a relatively large number of positions for selecting from a correspondingly large set of CCTs. The POSA would have been motivated to use Roberge's switch in an implementation of Chaimberg having more than two sets of LEDs because he/she would recognize that it would provide a simple and effective means of selecting from among the different available CCTs. In particular, a POSA would have been motivated to include a 2700K CCT output because 2700K is a common temperature for traditional incandescent bulbs and consumers would have been familiar with and would have desired a temperature with which they were familiar. Ex.1004, ¶220. Likewise, 3500K CCT is another common temperature with which consumers would have been familiar. *Id.*

3. Claim 2

Claim 2 depends from claim 1 and recites “wherein the switch is a dial.” Chaimberg alone or in view of Roberge would have rendered obvious the limitations added in claim 2. Ex.1004, ¶¶200-201. As explained by Dr. Eden, selection of a CCT switch style (*e.g.* slide vs. dial) is a matter of routine design choice. *Id.*, ¶201. A POSA would have understood that a dial switch, or many simple switches, like those disclosed in Roberge, would function as Chaimberg’s CCT switch. *Id.*, ¶¶201-202.

Further, Section V.B.2 above explains why it would have been obvious to implement Chaimberg’s switch 18 consistent with the “dial” CCT switch disclosed in Fig. 34i of Roberge (Ex.1011, 42:51-54):



Id., Fig. 34i.

Claim 2 would have been obvious over Chaimberg alone and/or in view of Roberge. Ex.1004, ¶202.

4. Claim 4

Claim 4 depends from claim 3 and recites “wherein the plurality of positions of the switch comprises a first position, a second position, a third position, a fourth position, and a fifth position.” Chaimberg alone or in view of Roberge would have rendered obvious the limitations added in claim 4. *Id.*, ¶¶203-211. As discussed above with respect to claim 13, Chaimberg discloses an “LED light fixture having **at least** two sets of LED’s of different correlated color temperature (CCT),” but the exemplary embodiment includes just two sets of LEDs and a switch with three positions. Ex.1003, 1:9-11 (emphasis added). A POSA would have understood that if Chaimberg’s LED light fixture incorporated additional LEDs with temperatures other than 3000K or 5000K (as suggested in Chaimberg), the switch 18 would need more than three positions. Ex.1004, ¶205.

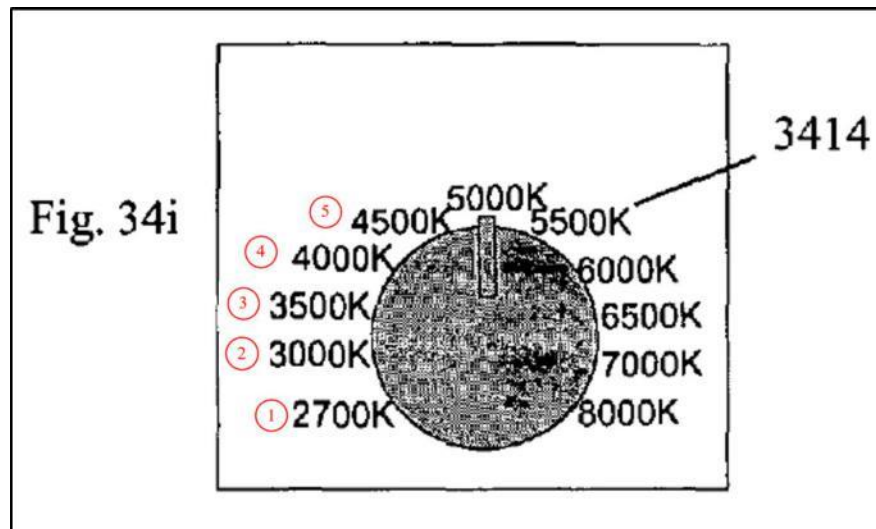
For example, if Chaimberg included LEDs of a third and fourth temperature, the switch 18 would require at least two additional positions, *e.g.*, a fourth and fifth position. Ex.1004, ¶205. Both slide and rotary switches will readily accommodate five switch positions or more. *Id.* Accordingly, it would have been obvious for a POSA to modify Chaimberg’s switch 18 to include a fourth and fifth position. *Id.*, ¶206.

Further, Section V.B.2 above explains why it would have been obvious to implement Chaimberg’s switch 18 consistent with the switch disclosed in Fig. 34i of

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Roberge. As discussed above, Chaimberg and Roberge both disclose LED light fixtures capable of generating multiple, discrete, white light CCT outputs.

Fig. 34i of Roberge shows “a dial [switch that] allows a user to select one or more color temperatures from a scale 3414[, which can] include different color temperatures of white light:” (Ex.1011, 42:51-54):



Id., Fig. 34i (annotated).

“The lighting designer can specify use of a particular color temperature of light, which the installer can select by setting the right position on the scale 3414 with the dial.” *Id.*, 42:54-57. As shown in Fig. 34i, Roberge’s switch includes 11 positions, including a first, second, third, fourth, and fifth position. While Fig. 34i shows a “dial” switch, Roberge discloses that “[a] slide mechanism [(like Chaimberg’s)] can be used like the dial to set a particular color temperature of white light.” *Id.*, 42:57-59.

Accordingly, Roberge’s switch is a switch that “comprises a first position, a

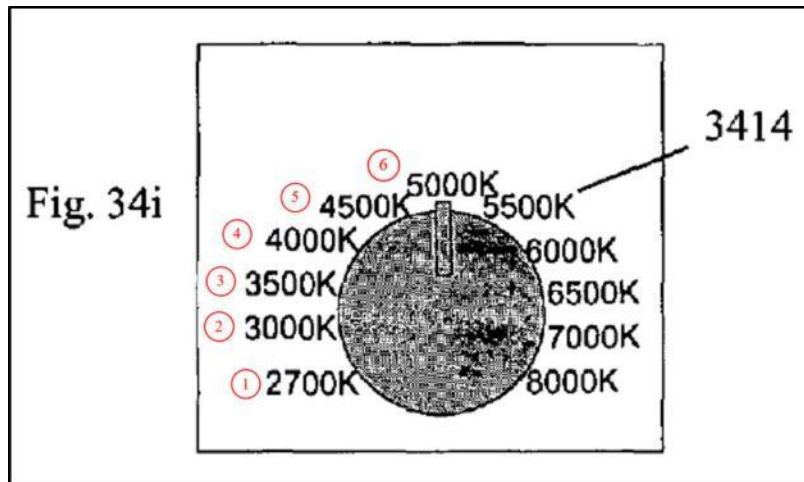
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second position, a third position, a fourth position, and a fifth position.” Ex.1004, ¶¶209-210. Claim 4 would have been obvious over Chaimberg alone and/or in view of Roberge. Ex.1004, ¶212.

5. Claim 5

Claim 5 depends from claim 4 and recites “wherein the first position of the switch corresponds to 2700 Kelvin (K) output by the one or more light sources, wherein the second position of the switch corresponds to 3000 K output by the one or more light sources, wherein the third position of the switch corresponds to 3500 K output by the one or more light sources, wherein the fourth position of the switch corresponds to 4000 K output by the one or more light sources, and wherein the fifth position of the switch corresponds to 5000 K output by the one or more light sources.” Chaimberg alone and/or in view of Roberge would have rendered obvious the limitations added in claim 5. Ex.1004, ¶¶213-220. As discussed above with respect to claim 4, it would have been obvious for a POSA to modify Chaimberg’s switch 18 to include a fourth and fifth position.

Further, Section V.B.2 above explains that Chaimberg in view of Roberge renders obvious a LED light system with a CCT switch with five or more positions. Ex.1004, ¶214. As noted above, the switch of Fig. 34i of Roberge includes 11 positions, including first (2700K), second (3000K), third (3500K), fourth (4000K), fifth (4500K), and sixth positions (5000K):



Ex.1011, Fig. 34i (annotated).

As discussed above, Roberge discloses that the eleven temperatures are exemplary. Ex.1011, 42:51-65; Ex.1004, ¶218. Accordingly, a POSA would have understood that the fifth position of Roberge's switch could be 5000K. As explained above and by Dr. Eden, a POSA would have been motivated to include 2700K and 3500K CCT outputs because these are a common temperatures that consumers are familiar with and would desire in restaurant or home settings in particular. Ex.1004, ¶220.

Claim 5 would have been obvious over Chaimberg alone and/or in view of Roberge. Ex.1004, ¶221.

6. Claim 10

Claim 10 depends from claim 1 and recites "wherein the switch is a rotary switch." Chaimberg alone or in view of Roberge would have rendered obvious the limitations added in claim 10. Ex.1004, ¶¶222-223. As explained by Dr. Eden,

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selection of a CCT switch style (*e.g.* slide vs. rotary) is a matter of routine design choice. *Id.*, ¶¶ 36-38, 223. A POSA would have understood that a rotary switch would function as Chaimberg's CCT switch. *Id.*

Further, Section V.B.2 above explains why it would have been obvious to modify Chaimberg's switch 18 with the dial (or rotary) switch disclosed in Fig. 34i of Roberge.

Claim 10 would have been obvious over Chaimberg alone and/or in view of Roberge. Ex.1004, ¶224.

7. Claim 14

Claim 14 depends from claim 13 and recites "wherein each position is continuous within the range of positions." Chaimberg alone or in view of Roberge would have rendered obvious the limitations added in claim 14. Ex.1004, ¶¶225-227.

As explained by Dr. Eden, while Roberge's rotary/dial switch disclosed in Fig. 34i includes discrete positions, it would have been obvious for a POSA to modify the switch with continuous positions based on the potential user setting. Ex.1004, ¶227. Dr. Eden explains why modifying the switch would have been a routine design choice for a POSA utilizing a potentiometer in the switch to enable a continuous selection of temperature outputs. *Id.* Further, a POSA would have understood that use of a continuous switch would have been useful in a home setting, where several users may want to select custom CCTs versus the standard pre-set temperatures. *Id.*

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Claim 14 would have been obvious over Chaimberg alone and/or in view of Roberge. *Id.*, ¶228.

8. Claim 16

Claim 16 depends from claim 13 and recites “wherein the range of positions comprises a first position, a second position, a third position, a fourth position, and a fifth position.” Chaimberg alone or in view of Roberge would have rendered obvious the limitations added in claim 16 for the same reasons discussed above with respect to claim 4. Ex.1004, ¶¶229-230. Claim 16 therefore would have been obvious over Chaimberg alone and/or in view of Roberge. Ex.1004, ¶231.

9. Claim 20

Claim 20 depends from claim 13 and recites “wherein the switch is a rotary switch.” Halliwell discloses the limitations added in claim 20. Ex.1004, ¶¶232-233. Chaimberg in view of Roberge discloses or at least renders obvious the limitations added in claim 20 for the reasons explained above for claim 10. Ex.1004, ¶233. Claim 20 therefore would have been obvious over Chaimberg alone or in view of Roberge. *Id.*, ¶234.

C. Ground 2: Claims 1, 2-5, 7, 9-13, 15, 16, 19, and 20 Are Anticipated And/Or Rendered Obvious by Halliwell

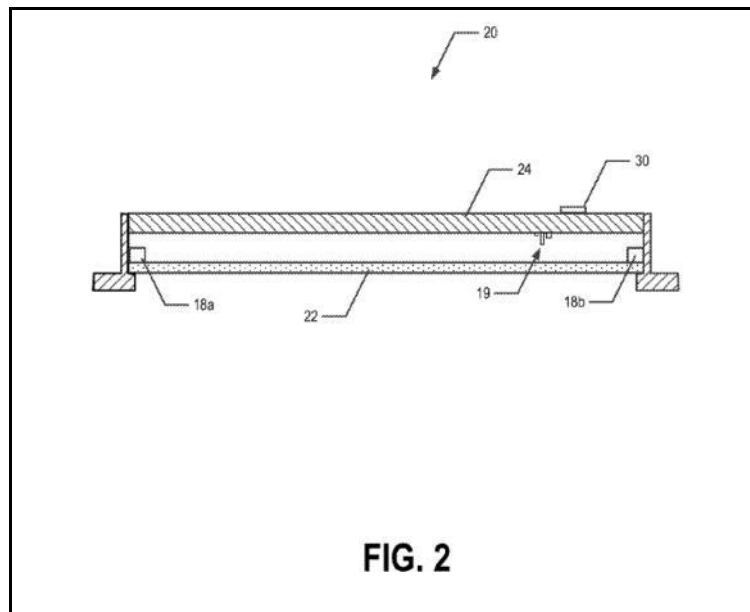
1. Overview Of Halliwell

U.S. Patent No. 9,801,250 (“Halliwell”) was filed as Application No. 15/274,575 on September 23, 2016 and issued on October 24, 2017. Ex.1012, (10),

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(21), (22), and (45). As detailed above, the challenged claims of the '336 Patent are entitled to a priority date no earlier than June 21, 2018, and so Halliwell is prior art to the '336 Patent under at least 35 U.S.C. § 102(a)(2). Ex.1004, ¶78.

Halliwell discloses a number of LED luminaires. See Ex.1012, Abstract. For example, Halliwell discloses that its “LED lighting device 20 may be a lighting fixture, a luminaire, ... and/or the like.” Ex.1012, 6:36-42. Halliwell’s LED lighting device includes a “device housing 24” that “may be configured to house ... one or more LED packages 18” (Ex.1012, 6:51-56):

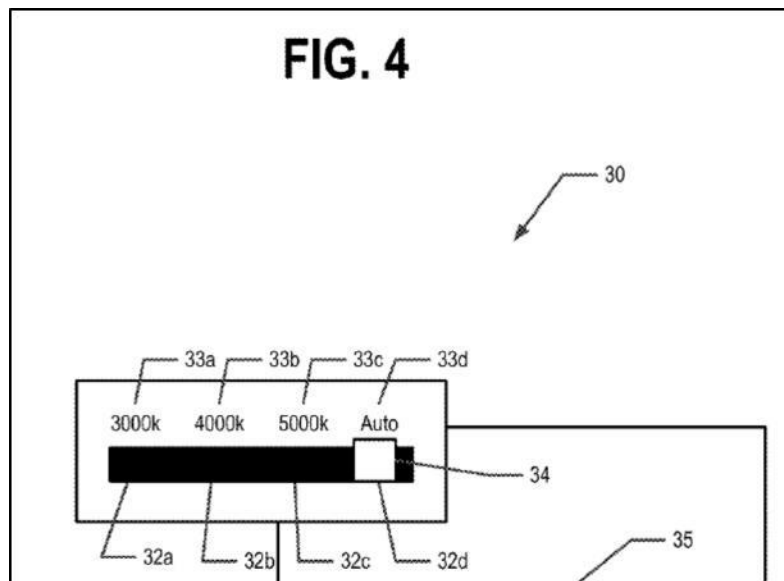


Ex.1012, Fig. 2.

Halliwell discloses that the “electrical components of the LED lighting device 20 (*e.g.*, the driver circuitry 19, switch control unit 35, and/or the like) may be configured to be directly wired to line voltage (*e.g.* through a junction box).” *Id.*, 7:819. Fig. 4 is a “block diagram of at least some of the electrical components of

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[Halliwell's] LED lighting device,” (*id.*, 3:26-29) including an exemplary CCT switch 30 with four positions corresponding to four “color temperature mode[s],” including 3000K, 4000K, and 5000K. *Id.*, 12:60-13:14, Fig. 4. However, Halliwell discloses that the CCT “switch 30 may comprise a plurality of switch positions,” including “two, three, four, five, six, seven, eight or more switch positions.” *Id.*, 11:55-67. Moreover, Halliwell discloses that the LED packages “may be configured to emit light of at least one of 2700K, 3000K, 3500K, 4000K, 5000K, 5700K, 6000K, 7000K, 7500K and/or other color temperatures, as appropriate for the application.” Ex.1012, 7:61-67.

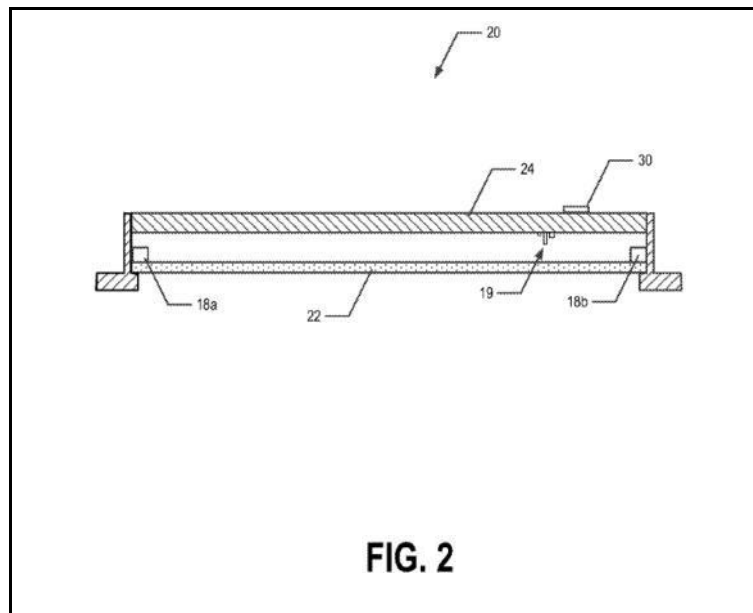


Id., Fig. 4 (cropped).

Halliwell also discloses that a CCT switch can be located remotely from the housing, including as a “junction box mounted toggle switch.” Ex.1012, 17:39-42.

2. Halliwell's Switch 30 Depicted In Fig. 4 Would Function As A "Junction Box Mounted" CCT Switch

As discussed in Section V.C.1 above, Halliwell discloses several potential locations and setups for its CCT switch. For example, Halliwell discloses a CCT switch 30 that can be mounted on or in the housing of the LED lighting device:

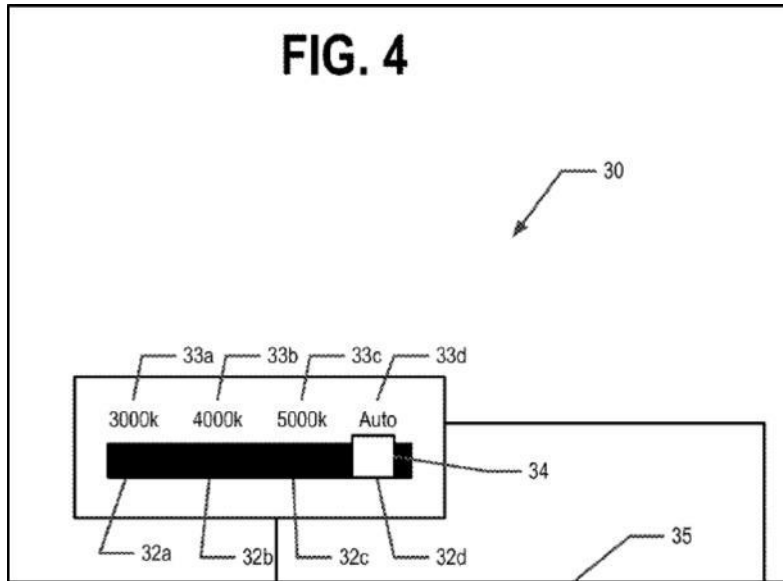


Ex.1012, Fig. 2.

However, Halliwell discloses that its LED lighting device could also employ a remote switch in addition to or in place of a housing-mounted switch, such as “a wall switch, remote control, mobile computing device, and/or the like,” or a “junction box mounted toggle switch.” *Id.*, 1:60-67, 17:39-42. While Halliwell discloses a “junction box mounted” CCT switch, it does not describe the mechanisms of the switch in detail. However, Halliwell discloses that the remote switch 40 (like the switch 30) may include “a slide ... button” as an actuator and that the remote switch “may comprise additional user interface components as appropriate for the application.” *Id.*, 18:31-

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41. As explained by Dr. Eden, a POSA would have understood that a slide switch, like that shown in figure 4, would have been “appropriate for the application” of a “junction box mounted” CCT switch:



Ex.1012, Fig. 4 (cropped); Ex.1004, ¶¶236-238. Accordingly, Halliwell discloses that the “junction box mounted CCT switch” would have been a switch like that disclosed in Fig. 4.

To the extent that Halliwell does not disclose using a switch like the switch of Fig. 4 as the “junction box mounted” CCT switch, it would have been obvious for a POSA to use the switch 30 as the “junction box mounted” CCT switch. *Id.* As explained by Dr. Eden, these simple switches were known in the art decades before the alleged invention of the '336 Patent. *Id.* Dr. Eden also describes that switches other than slide or rotary were also available to a POSA. *Id.* The switch 30 depicts a well-known switch, and a POSA would have understood that such a switch would

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function as a “junction box mounted” CCT switch in Halliwell. *Id.* This is further confirmed by Halliwell’s disclosure that the “remote switch” (*e.g.*, the “junction box mounted” CCT switch) includes a “remote selector 44 [that] may be a slide ... button,” like that shown in Fig. 4. Ex.1012, 18:31-31.

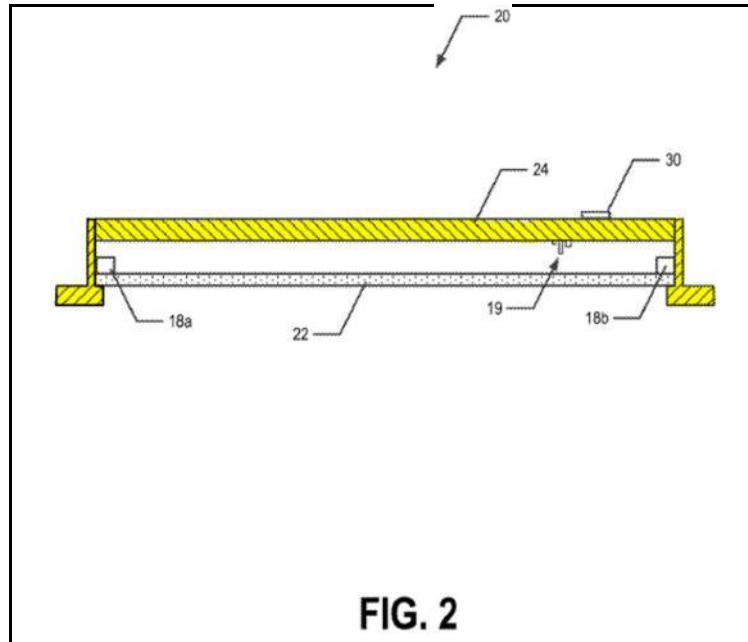
3. Claim 1

(a) Preamble

To the extent limiting, Halliwell discloses the preamble of claim 1. Ex.1004, ¶¶239-241. Halliwell states that “the LED lighting device 20 may be a lighting fixture, a luminaire, ... and/or the like.” Ex.1012, 6:36-42. Halliwell’s LED lighting devices therefore disclose the “luminaire” recited in the preamble of claim 1. Ex.1004, ¶241.

(b) Element 1a

Halliwell discloses this claim element. Ex.1004, ¶¶242-246. Halliwell’s LED lighting device includes a “device housing 24” that “may be configured to house ... one or more LED packages 18” (Ex.1012, 6:51-56):

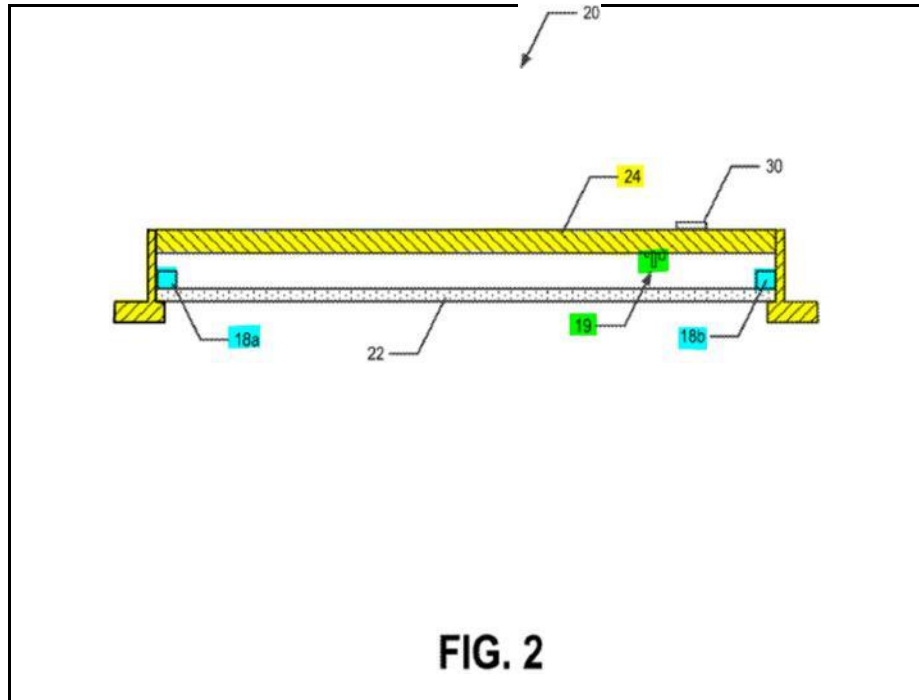


Ex.1012, Fig. 2 (color added).

As shown Fig. 2, the device housing 24 (highlighted in yellow) forms a cavity wherein the one or more LEDs 18, driver circuit 19, and device lens 22 are located. *Id.*; Ex.1004, ¶¶243-244. Further, the '336 Patent concedes that this claim element was known in the prior art. *See, e.g.*, Section V.A.3(b) *supra*; Ex.1004, ¶¶245-246.

(c) Element 1b

Halliwell discloses this claim element. Ex.1004, ¶¶247-251. Halliwell's "driver circuitry 19 [and] one or more LED packages 18" are electric components mounted in the above-described device housing. Ex.1012, 6:51-56. The LED packages 18a and 18b (blue) and driver circuitry 19 (green) are disposed at least in part within the first cavity formed by the device housing 24 (yellow):



Ex.1012, Fig. 2 (colors added).

Further, the '336 Patent concedes that this claim element was known in the prior art. *See*, Section V.A.3(c) *supra*; Ex.1004, ¶¶250-251.

(d) Element 1c

Halliwell discloses this claim element. Ex.1004, ¶¶252-255. Halliwell discloses that “electrical components of the LED lighting device 20 (*e.g.*, the driver circuitry 19, switch control unit 35, and/or the like) may be configured to be directly wired to line voltage (*e.g.*, through a junction box).” Ex.1012, 7:8-19. Moreover, as discussed above, a POSA would have understood that the switch depicted in Fig. 4 would function as the “junction box mounted toggle switch ... in wired communication with the switch control unit 35.” *Id.*, 17:39-42. As explained by Dr. Eden, when the “electrical components” are “directly wired to line voltage” as disclosed in Halliwell,

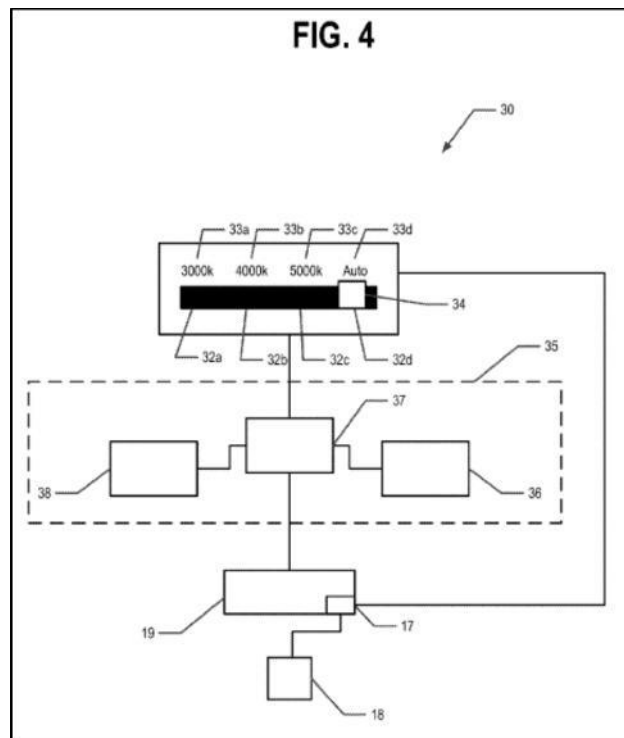
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the LED lighting device would necessarily include an electrical cable that is coupled to the electrical components, *e.g.*, the driver circuitry 19 or LED packages 18. Ex.1004, ¶254.

Further, the '336 Patent concedes that this claim element was known in the prior art. See Section V.A.3(d) *supra*; Ex.1004, ¶255.

(e) Element 1d

Halliwell discloses this claim element. Ex.1004, ¶¶256-260. Halliwell's luminaire includes a CCT switch, including the switch depicted in Fig. 4 (Ex.1012, 3:26-29, Fig. 4):



Ex.1012, Fig. 4.

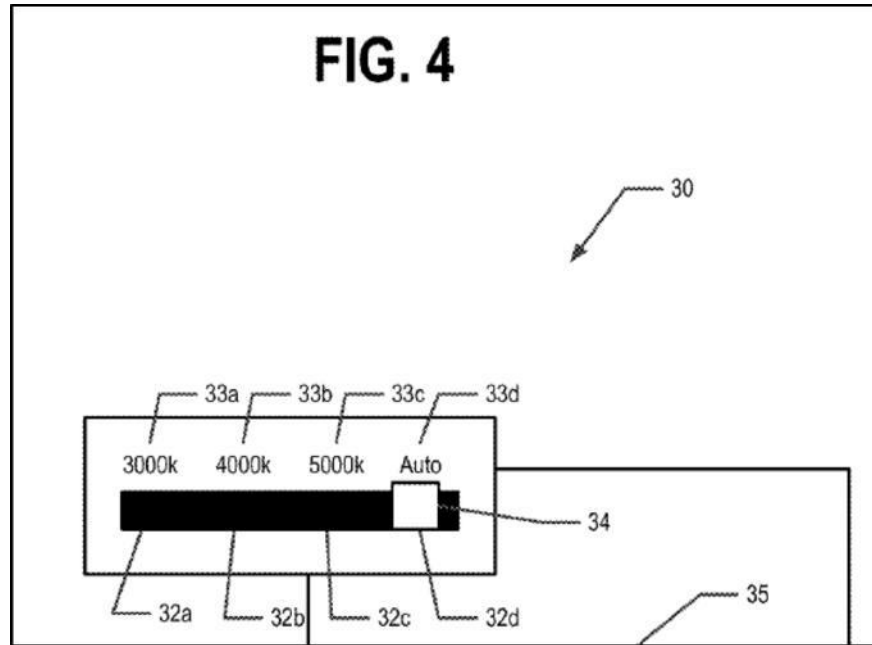
The exemplary switch 30 includes four positions corresponding to four “color

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temperature mode[s],” including 3000K, 4000K, and 5000K. *Id.*, 12:60-13:14, Fig. 4. As discussed above, a POSA would have understood that Halliwell’s LED luminaire would have used a switch like the one disclosed in Fig. 4 as the “junction box mounted” CCT switch. Ex.1004, ¶¶235-238. If the switch is mounted in the junction box as disclosed in Halliwell, and the “electrical components” are “directly wired to line voltage” as disclosed in Halliwell and discussed above in Section V.C.3(d), the “junction box mounted” CCT switch would necessarily be coupled to the electrical cable and disposed remotely from the housing 24. Ex.1004, ¶¶253-254.

(f) Element 1e

Halliwell discloses this claim element. Ex.1004, ¶¶261-264. As noted above, Halliwell’s exemplary CCT “switch 30 may comprise a plurality of switch positions,” including “two, three, four, five, six, seven, eight or more switch positions” (Ex.1012, 11:55-67):



Ex.1012, Fig. 4 (cropped).

The exemplary switch shown in Fig. 4 includes four positions that “correspond to set operating color temperature modes with each position corresponding to a particular set operating color temperature,” including 3000K, 4000K, and 5000K. *Id.* 12:10-15, 13:4-15, Fig. 4. These three color temperature outputs are discrete. Ex.1004, ¶¶263-264.

Claim 1 is therefore anticipated by and/or would have been obvious over Halliwell. Ex.1004, ¶265.

4. Claim 2

Halliwell discloses that its CCT switch may be a “dial” or include a “rotary” as an actuator, and that the remote switch “may comprise additional user interface components as appropriate for the application.” Ex.1012, 18:28-41; Ex.1004, ¶¶266-

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267. As explained by Dr. Eden, a POSA would have understood that any of the switches discussed by Halliwell, such as the dial or rotary switch, would have been “appropriate for the application” of a “junction box mounted” CCT switch. Ex.1004, ¶267.

Claim 2 is therefore anticipated by and/or would have been obvious over Halliwell. Ex.1004, ¶268.

5. Claim 3

As discussed above for Element 1e of claim 1, Halliwell’s switch, “may comprise a plurality of switch positions,” including “two, three, four, five, six, seven, eight or more switch positions.” Ex.1012, 11:55-67. For example, the exemplary switch shown in Fig. 4 includes four discrete positions that “correspond to set operating color temperature modes with each position corresponding to a particular set operating color temperature,” including 3000K, 4000K, and 5000K. *Id.* 12:10-15, 13:4-15, Fig. 4; Ex.1004, ¶¶269-271.

Claim 3 is therefore anticipated by and/or would have been obvious over Halliwell. Ex.1004, ¶272.

6. Claim 4

As discussed above for Element 1e of claim 1, Halliwell’s exemplary switch shown in Fig. 4 includes four positions that “correspond to set operating color temperature modes with each position corresponding to a particular set operating color

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temperature,” including 3000K, 4000K, and 5000K. Ex.1012, 12:10-15, 13:4-15, Fig. 4; Ex.1004, ¶¶273-275. However, Halliwell discloses that the “switch 30 may comprise a plurality of switch positions,” including “two, three, four, five, six, seven, eight or more switch positions.” Ex.1012, 11:55-67. Thus, Halliwell discloses that its switch would include five discrete positions.

Claim 4 is therefore anticipated by and/or would have been obvious over Halliwell. Ex.1004, ¶276.

7. Claim 5

As discussed above with respect to claim 4, Halliwell discloses that the exemplary “switch 30 may comprise a plurality of switch positions,” including “two, three, four, five, six, seven, eight or more switch positions.” Ex.1012, 11:55-67. Halliwell further discloses that its LEDs “may be configured to emit light of at least one of 2700K, 3000K, 3500K, 4000K, 5000K, ... and/or other color temperatures, as appropriate for the application.” *Id.*, 7:61-67. Accordingly, Halliwell, discloses that its LED light fixture can be configured to emit light at the first five listed CCT outputs: 2700K, 3000K, 3500K, 4000K, and 5000K. *Id.*; Ex.1004, ¶278.

If configured with these five positions as disclosed in Halliwell, a POSA would have understood that the junction box mounted CCT switch would need to have five positions, one for each CCT output. Ex.1004, ¶¶279-280. Claim 5 is therefore anticipated by and/or would have been obvious over Halliwell. Ex.1004, ¶281.

8. Claim 7

Halliwell’s “electrical components of the LED lighting device 20 (*e.g.*, the driver circuitry 19, switch control unit 35, and/or the like) may be configured to be directly wired to line voltage (*e.g.* through a junction box).” Ex.1012, 7:8-19. Thus, Halliwell discloses that its LED light fixture can include a junction box.

As explained by Dr. Eden, a junction box is an enclosure that houses electrical components. Ex.1004, ¶283. A junction box, like that disclosed in Halliwell, includes an open space containing the electrical wires and other electrical components, *i.e.* a second cavity. *Id.*; *see also* Ex.1001 at 11:44-47 (the ’336 Patent describing junction box 990 as including “one or more walls 991 to enclose one or more electrical components (*e.g.*, a driver)”).

Halliwell further discloses, or at least would have rendered obvious “the switch disposed within the second cavity” of the junction box. Ex.1004, ¶¶283-284. As discussed above, Halliwell discloses that “the remote switch 40 may be a ... junction box mounted toggle switch ... in wired communication with the switch control unit 35.” Ex.1012, 17:39-42. Thus, Halliwell discloses that the switch can be mounted in or on the junction box, *i.e.* disposed within the cavity of the junction box. Ex.1004, ¶¶283-284. While Halliwell does not expressly describe locating the CCT switch *inside* the junction box—*i.e.*, “within the second cavity” of the junction box, as claimed—such an arrangement would have been obvious to the POSA. Halliwell

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describes enclosing other electrical components (*e.g.*, electrical cables and connections) inside the junction box (*see* Ex.1012, 7:8-19), and the POSA would have been motivated to also include the switch within the junction box to protect the switch from dust, debris, and/or other elements. Ex.1004, ¶284. A POSA also would have been motivated to place the switch inside the junction box to make the switch less accessible to users or visitors to the light fixture's installed location in certain business applications. Ex.1004, ¶284.

Finally, Halliwell discloses or at least would have rendered obvious “wherein the second end of the electrical cable is coupled to the switch.” As explained above for Element 1c of claim 1, when Halliwell's switch is mounted in the junction box as disclosed in Halliwell, and the “electrical components” are “directly wired to line voltage,” the “junction box mounted” CCT switch would necessarily be coupled to the electrical cable. The electrical cable would run from the “housing” to the junction box and end in the junction box, and the “second end” would be located in the junction box. Ex.1004, ¶285. When the switch located in the junction box, a POSA would have understood that the switch would have been coupled to the “second end” of the electrical cable. *Id.*

Claim 7 is therefore anticipated by and/or would have been obvious over Halliwell. Ex.1004, ¶287.

9. Claim 9

As discussed above, a POSA would have understood that a switch, like the slide switch shown in Fig. 4, would have been placed in the junction box as the “junction box mounted” CCT switch. Ex.1004, ¶¶235-238, 288-290; *see also* Ex.1012, 13:4345 (“[t]he switch 30 [in Fig. 4] has been illustrated herein as a slider switch”); 11:4647 (“the switch 30 may comprise a slide switch”); 18:31-31 (“the remote selector 44 may be a slide ... button.”).

Claim 9 is therefore anticipated by and/or would have been obvious over Halliwell. Ex.1004, ¶291.

10. Claim 10

As discussed above, Halliwell discloses that its CCT switch may be a “dial” or include a “rotary” as an actuator, and that the remote switch “may comprise additional user interface components as appropriate for the application.” Ex.1012, 18:28-41; Ex.1004, ¶¶292-293. As explained by Dr. Eden, a POSA would have understood that any of the switches discussed by Halliwell, such as the dial or rotary switch, would have been “appropriate for the application” of a “junction box mounted” CCT switch. *Id.*

Claim 10 is therefore anticipated by and/or would have been obvious over Halliwell. Ex.1004, ¶294.

11. Claim 11

As discussed above, Halliwell discloses an LED luminaire wherein the CCT switch is mounted in a junction box. A POSA would have understood that because the CCT switch is mounted in the junction box, it is inaccessible to the user when the LED housing is installed in the ceiling. Ex.1004, ¶¶296-297. Moreover, Halliwell discloses that “a user may select a desired operating light aspects or qualities (e.g., color temperature...) for the ... LED lighting device before the ... LED lighting device is installed” in a ceiling, confirming that the switch will be inaccessible after the LED lighting device is installed. Ex.1012, 4:31-35; Ex.1004, ¶296.

Claim 11 is therefore anticipated by and/or would have been obvious over Halliwell. Ex.1004, ¶298.

12. Claim 12

As discussed above, Halliwell discloses an LED luminaire wherein the CCT switch is mounted in a junction box. Ex.1004, ¶300. A POSA would have understood that when the junction box and LED light fixture are both installed in a ceiling, the junction box mounted CCT switch would have been inaccessible. Ex.1004, ¶¶300-301. Likewise, removing the LED light fixture from its installation location would typically make the junction box (and thus the switch) accessible to the user. Ex.1004, ¶300.

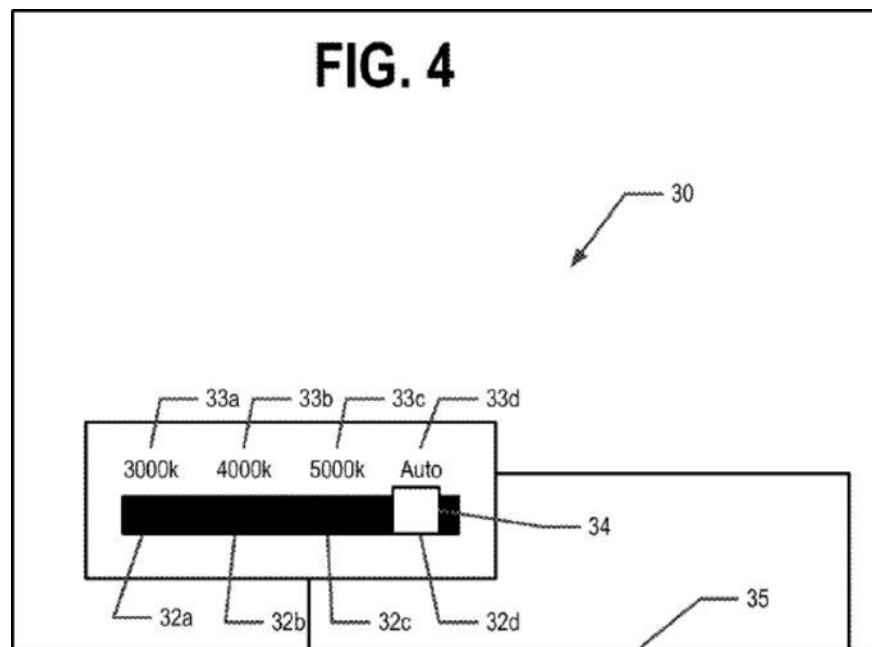
Claim 12 is therefore anticipated by and/or would have been obvious over

Halliwell. Ex.1004, ¶302.

13. Claim 13

(a) Preamble

To the extent limiting, Halliwell discloses the preamble of claim 13. Ex.1004, ¶¶303-306. Halliwell discloses that its LED luminaire includes a CCT switch (Ex.1012, 12:60-13:14):

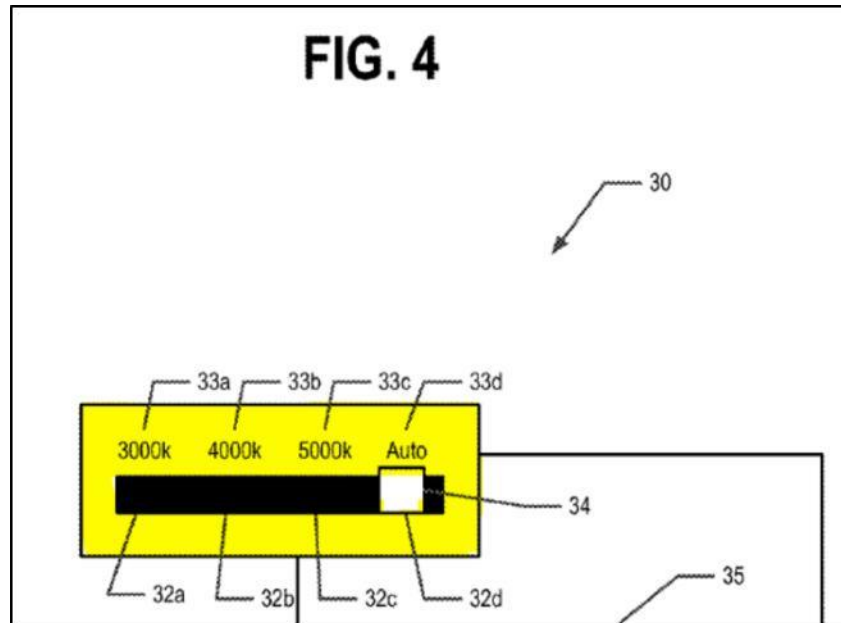


Ex.1012, Fig. 4.

The exemplary CCT switch 30 includes four positions corresponding to four “color temperature mode[s],” including 3000K, 4000K, and 5000K. *Id.* 12:60-13:14, Fig. 4. As discussed above, a POSA would have understood that Halliwell’s LED luminaire would use a switch, like the one disclosed in Fig. 4 as the “junction box mounted” CCT switch. Ex.1012, 17:39-42; Ex.1004, ¶¶304-305.

(b) Element 13a

Halliwell discloses this claim element. Ex.1004, ¶¶307-309. Halliwell's exemplary CCT switch 30 includes a body, which is highlighted in yellow in Fig. 4 below (Ex.1004, ¶308):



Ex.1012, Fig. 4 (color added).

Accordingly, Halliwell discloses a CCT switch with “a body.” Ex.1004, ¶309.

(c) Element 13b

Halliwell discloses this claim element. Ex.1004, ¶¶310-313. As noted above, a POSA would have understood that Halliwell's LED light fixture would use a switch, like the switch disclosed in Fig. 4, as the “junction box mounted” CCT switch. Ex.1012, 17:39-42; Ex.1004, ¶311.

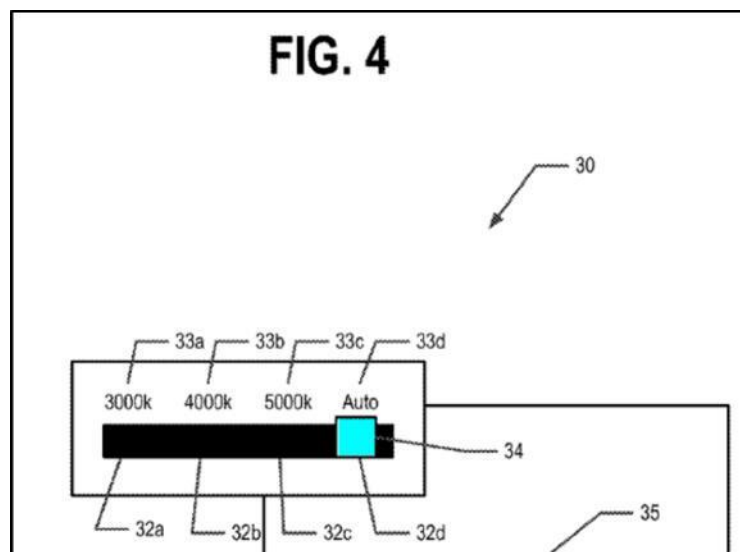
Halliwell also discloses that the “electrical components of the LED lighting device 20 (*e.g.*, the driver circuitry 19, switch control unit 35, and/or the like) may be

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configured to be directly wired to line voltage (*e.g.* through a junction box).” Ex.1012, 7:8-19. As discussed above with respect to claim 1, when the “electrical components” are “directly wired to line voltage” as disclosed in Halliwell, the LED lighting device would necessarily include an electrical cable that is coupled to the luminaire and junction box. Ex.1004, ¶312. If Halliwell’s CCT switch is mounted in the junction box, and the “electrical components” are “directly wired to line voltage” as disclosed in Halliwell, the “junction box mounted” CCT switch would necessarily be coupled to the electrical cable. *Id.*

(d) Element 13c

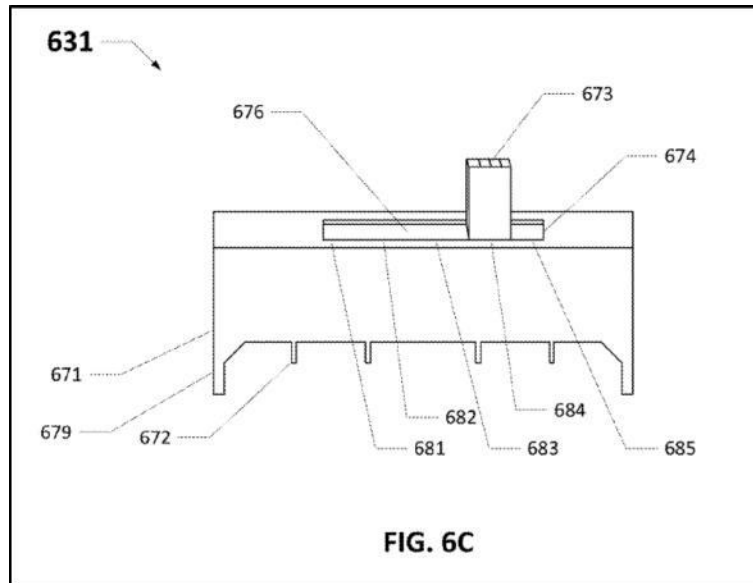
Halliwell discloses this claim element. Ex.1004, ¶¶314-316. As shown in Fig. 4, the exemplary CCT switch 30 includes an actuator (highlighted blue) that can be set four positions including 3000K, 4000K, and 5000K. Ex.1012, 12:60-13:14, Fig. 4; Ex.1004, ¶315.



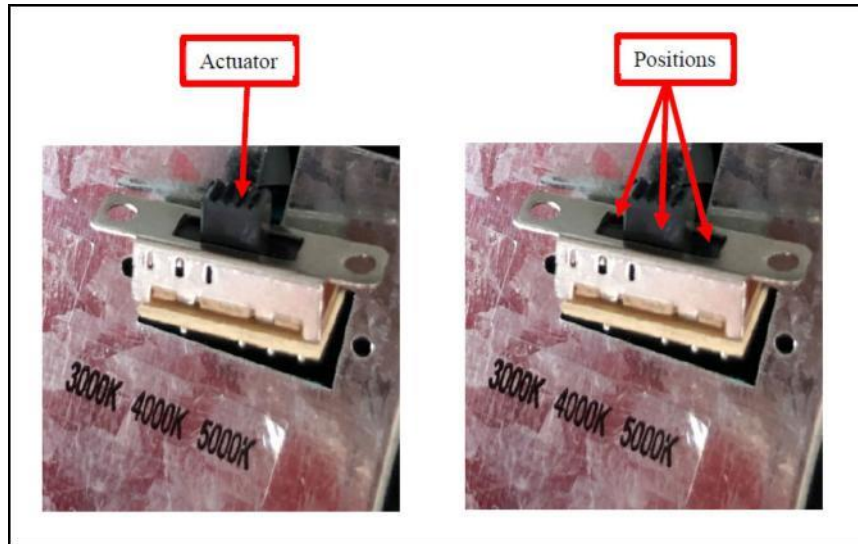
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Ex.1012, Fig. 4 (color added).

The '336 Patent likewise depicts an actuator (673) as a button that the user can slide “along the length” of a slot within the body of a switch (631) (Ex.1001, 10:1720) like the slide button disclosed in Halliwell:



Id., Fig. 6C. Further, in litigation involving the '336 Patent, patentee Signify has interpreted the “actuator” of claim 13 as encompassing slide buttons like that disclosed in Halliwell:

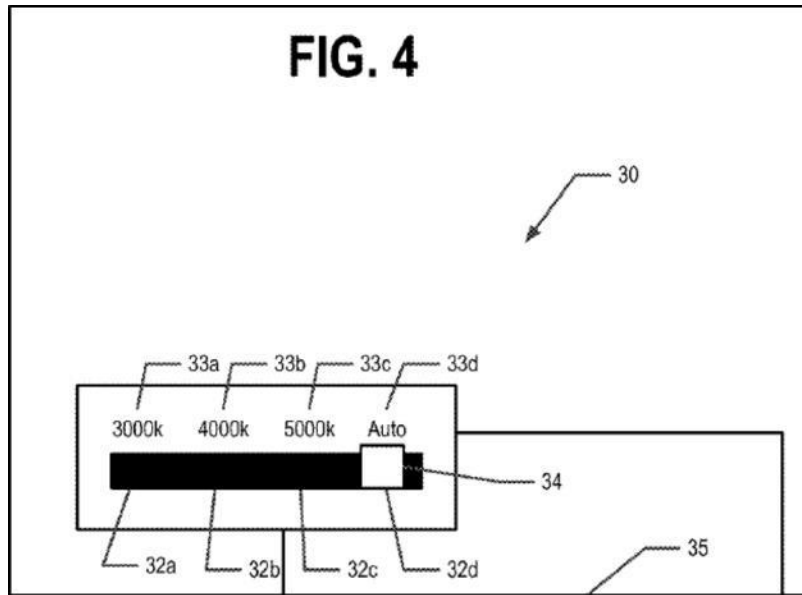


Ex.1010, 27. As explained by Dr. Eden, an electrical switch with an actuator was well known in the art decades before the alleged invention of the '336 Patent.

Ex.1004, ¶320.

(e) Element 13d

Halliwell discloses this claim element. Ex.1004, ¶¶321-323. As discussed above, the exemplary CCT switch 30 includes four positions corresponding to four “color temperature mode[s],” including 3000K, 4000K, and 5000K. Ex.1012, 12:6013:14, Fig. 4; Ex.1004, ¶322.



Ex.1012, Fig. 4 (cropped).

Accordingly, Halliwell discloses a CCT switch “wherein each position of the range of positions of the actuator corresponds to a CCT of the light emitted by the luminaire,” and claim 13 is therefore anticipated by and/or would have been obvious over Halliwell. Ex.1004, ¶324.

14. Claim 15

Halliwell discloses the limitations added in claim 15 for the reasons explained above for claim 3. Ex.1004, ¶¶325-326. Claim 15 is therefore anticipated by and/or would have been obvious over Halliwell. *Id.*, ¶327.

15. Claim 16

Halliwell discloses the limitations added in claim 16 for the reasons explained above for claim 4. Ex.1004, ¶¶328-329. Halliwell therefore anticipates and/or renders obvious claim 16. *Id.*, ¶330.

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16. Claim 19

As discussed above with respect to claim 7, Halliwell discloses a CCT switch “wherein the switch is disposed within” a junction box. Accordingly, for the same reasons discussed above with respect to claim 7, Halliwell’s CCT switch is a switch “wherein the body is configured to be disposed within a junction box,” and claim 19 is therefore anticipated by and/or would have been obvious over Halliwell. Ex.1004, ¶¶331-333.

17. Claim 20

Halliwell discloses the limitations added in claim 20 for the reasons explained above for claim 10. Ex.1004, ¶¶334-335. Claim 20 is therefore anticipated by and/or would have been obvious over Halliwell. *Id.*, ¶¶336.

D. Ground 3: Claims 13 and 15 Are Anticipated By Reiff

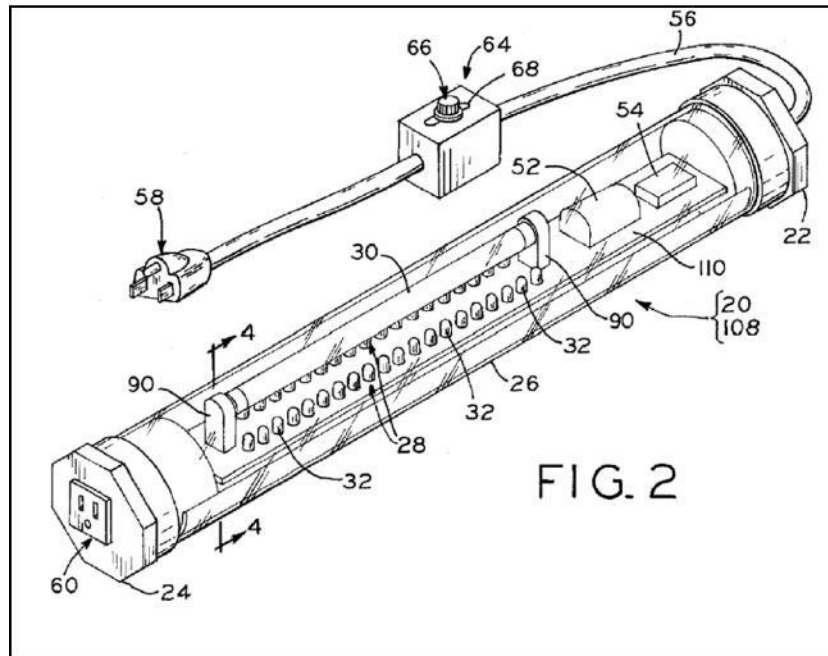
1. Overview Of Reiff

U.S. Patent No. 7,192,160 (“Reiff”) was filed as Application No. 10/889,411 on Jul. 12, 2004 and issued on March 20, 2007. Ex.1013, (10), (21), (22), and (45). Accordingly, Reiff is prior art to the ’336 Patent under at least 35 U.S.C. § 102(a)(2). Ex.1004, ¶84.

Reiff discloses a number of lighting devices that “include[] fluorescent and/or LED light sources,” “wherein the color of the emitted light can easily be switched.” Ex.1013, Abstract. The exemplary lighting device shown in Reiff Fig. 2 “is a

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perspective view of an [] embodiment of a light in accordance with [Reiff's] invention,” that includes both LED light sources (32) and a fluorescent lamp (30).
Ex.1013, 2:45-46.



Id., Fig. 2.

When Reiff's light “is powered by conventional 120-volt power, electrical cord 56 extends from one end 22 of the light” and has a “plug 58 at a distal end of the cord for insertion into a conventional electrical outlet.” Ex.1013, 4:16-19. As shown above, Reiff's control box 64 is “[l]ocated along electrical cord 56.” Ex.1013, 6:1820. The “control box 64 [] includes a switch [66 for] ... selecting between the different light sources [28] ... [E]ither a regular white light fluorescent light source can be selected, or a ‘colored’ LED light source can be selected.” Ex.1013, 4:28-36.

The “switch 66 [] which is a stepped dimmer switch linearly slidable in slot 68

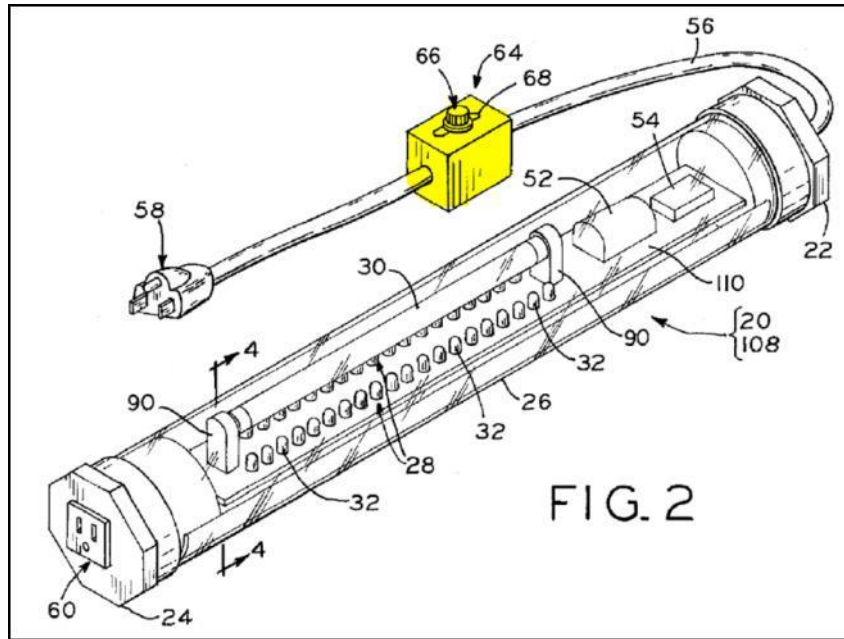
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to select a light source 28.” *Id.* “Switch 66 has three positions, one position being the off position as shown in Fig. 2, one position operating the fluorescent lamp and one position operating the LEDS. Switch 66 slides into one of the three positions.” *Id.*, 6:20-24. “Each of the light sources emits a different color of light,” thus, each light source emits light at a different CCT and a user can select the CCT output by adjusting the switch 66. *Id.*, 2:19-22; Ex.1004, ¶87.

2. Claim 13

(a) Preamble

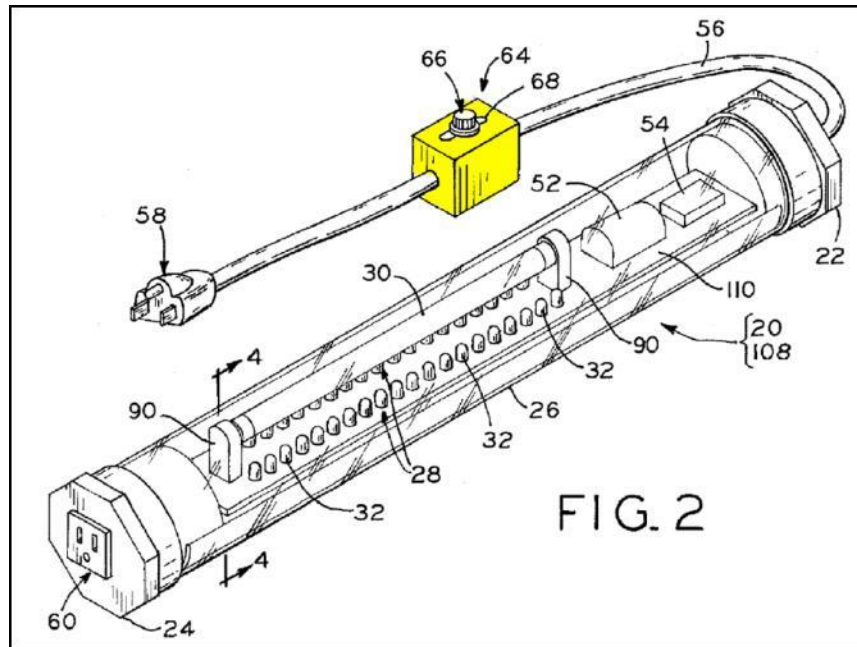
To the extent limiting, Reiff discloses the preamble of claim 13. Ex.1004, ¶¶337-339. For example, Reiff discloses a number of lighting devices that “include[] fluorescent and/or LED light sources,” “wherein the color of the emitted light can easily be switched.” Ex.1013, Abstract. The exemplary light device shown in Fig. 2 includes both LED light sources and a fluorescent light source. *Id.*, 2:45-46. The light includes a “control box 64 which includes a switch for ... selecting between the different light sources ... [E]ither a regular white light fluorescent light source can be selected, or a ‘colored’ LED light source can be selected.” Ex.1013, 4:28-36. The “switch 66 [] is a stepped dimmer switch linearly slidable in slot 68 to select a light source 28.” *Id.* “Each of the light sources emits a different color of light,” thus, each light source emits light at a different CCT. *Id.*, 2:19-22; Ex.1004, ¶338. The control box, including the switch, are highlighted in yellow in Fig. 2 below.



Ex.1013, Fig. 2 (color added).

(b) Element 13a

Reiff discloses this claim element. Ex.1004, ¶¶340-342. As discussed above, the “control box 64 [includes a] switch 66 which is ... linearly slideable in slot 68.” Ex.1013, 4:28-36. As shown in Fig. 2 below, the control box 64 (highlighted yellow) provides and necessarily includes a body for the switch.



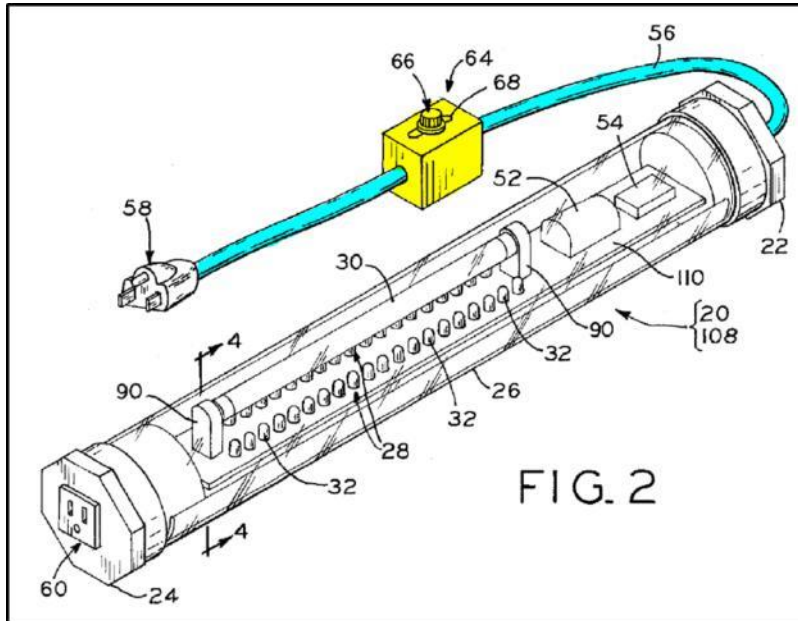
Ex.1013, Fig. 2 (color added).

(c) Element 13b

Reiff discloses this claim element. Ex.1004, ¶¶343-345. As shown in Fig. 2, when Reiff's light "is powered by conventional 120-volt power, electrical cord 56 extends from one end 22 of the light" and has a "plug 58 at a distal end of the cord for insertion into a conventional electrical outlet." Ex.1013, 4:16-19. As shown above and below, Reiff's control box 64 is "[l]ocated along electrical cord 56 [which] extend[s] from end cap 22" and is connected to the light device. Ex.1013, 6:18-20. The control box 64 (and switch 66) is highlighted in yellow below and the electrical cord 56 is highlighted in blue in Fig. 2 below. Because the control box 64 is located on the electrical cable 56, it is necessarily electrically coupled to electrical cable 56, and therefore must include at least one coupling feature. Ex.1004, ¶344. As explained

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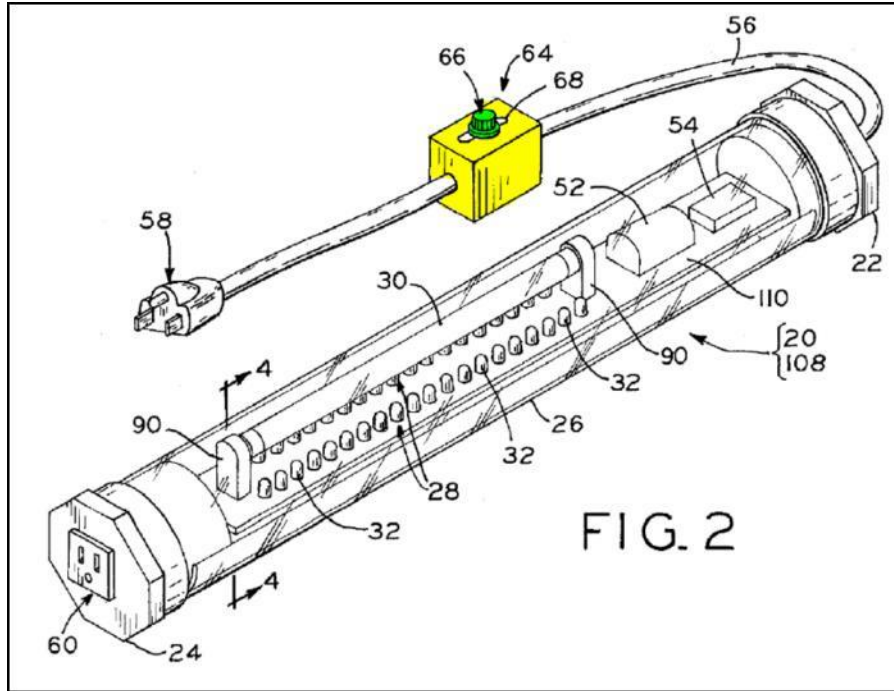
by Dr. Eden, the input and output terminals of the control box (and switch 66) must be electrically connected to the cable 56 by soldering, screw terminals, spade lugs, pins, or a myriad of other connectors or connections that have been developed over the past century. *Id.*



Ex.1013, Fig. 2 (colors added).

(d) Element 13c

Reiff discloses this claim element. Ex.1004, ¶¶346-348. Reiff's control box switch includes an actuator, identified as switch 66, and highlighted in green in Fig. 2 below. Ex.1004, ¶347. The actuator portion of the switch 66 is located on the body formed by the control box 64 (highlighted yellow). Ex.1013, Fig. 2. "Switch 66 has three positions, one position being the off position as shown in Fig. 2, one position operating the fluorescent lamp and one position operating the LEDS. Switch 66 slides into one of the three positions." *Id.*, 6:20-24.



Id. Fig. 2 (colors added).

(e) Element 13d

Reiff discloses this claim element. Ex.1004, ¶¶349-351. As discussed above, Reiff’s control box switch includes “three positions, one position being the off position as shown in Fig. 2, one position operating the fluorescent lamp and one position operating the LEDs. Switch 66 slides into one of the three positions.” Ex.1013, 6:20-24. Moreover, “[e]ach of the light sources emits a different color of light,” so, each light source emits light at a different CCT. *Id.*, 2:19-22; Ex.1004, ¶350. Accordingly, the two “on” positions correspond to different CCT emitted by the luminaire: the LED operating position corresponds to a CCT emitted by the LEDs, and the fluorescent lamp operating position corresponds to a “different” CCT emitted by the fluorescent lamp. Ex.1004, ¶¶350-351. The two “on” positions are “a range

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of positions” that each “correspond[] to a CCT of the light emitted by the luminaire.”
Id.

Accordingly, Reiff’s control box switch is a switch “wherein each position of the range of positions of the actuator corresponds to a CCT of the light emitted by the luminaire,” and claim 13 is therefore anticipated by and/or would have been obvious over Reiff. Ex.1004, ¶352.

3. Claim 15

As discussed above, Reiff’s control box switch includes two on positions. Ex.1013, 6:20-24. These two positions are a “range of positions” and the switch actuator can only be set to one position at a time, therefore they are discrete. Ex.1004, ¶¶353-354.

Claim 15 is therefore anticipated by and/or would have been obvious over Reiff. Ex.1004, ¶355.

VI. CONCLUSION

Petitioner respectfully requests IPR of claims 1-20.

VII. MANDATORY NOTICES PURSUANT TO 37 C.F.R. § 42.8(a)(1)

Pursuant to 37 C.F.R. § 42.8(a)(1), the mandatory notices identified in 37 C.F.R. § 42.8(b) are provided below as part of this Petition.

A. 37 C.F.R. § 42.8(b)(1): Real Parties-In-Interest

Menard is the real party-in-interest for Petitioner.

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B. 37 C.F.R. § 42.8(b)(2): Related Matters

The '336 Patent is involved in the following pending litigation that may affect, or be affected by, a decision in this proceeding: *Signify N.A. Corp., v. Menard, Inc.*, No. 3:22-cv-00706-jdp (W.D. Wis.).

The '336 Patent is currently being challenged in *Luminex Int'l Co., Ltd. v. Signify Holdings B.V.*, IPR2024-00101 (P.T.A.B), instituted on September 9, 2024. This is the IPR petitioner wishes to join.

C. 37 C.F.R. § 42.8(b)(3), (4): Lead And Back-Up Counsel And Service Information

Petitioner provides the following designation of counsel:

<u>Lead Counsel</u>	<u>Backup Counsel</u>
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Pursuant to 37 C.F.R. § 42.10(b), a Power of Attorney accompanies this petition. Please address all correspondence to lead and back-up counsel at the addresses above. Petitioner also consents to electronic service by email at the email addresses listed above.

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Respectfully submitted,

Date: September 23, 2024

s/Charles Meyer

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing petition for Inter Partes Review of U.S. Patent No. 10,299,336, including all Exhibits, was served on September 23, 2024 via Express Mail delivery directed to the following correspondence address of record for the patent, and additional addresses of record for patentee Signify:

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Date: September 23, 2024

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CERTIFICATE OF WORD COUNT UNDER 37 C.F.R. § 42.24(a)

I, the undersigned, do hereby certify that the attached petition contains 13,961 words, as measured by the Word Count function of Microsoft Word 2016. This is less than the limit of 14,000 words as specified by 37 C.F.R. § 42.24(a)(i).

Date: September 23, 2024

s/Charles Meyer

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APPENDIX OF EXHIBITS

EXHIBIT NO.	TITLE
1001	U.S. Patent No. 10,299,336 (“the ’336 Patent”).
1002	U.S. Patent No. 7,014,336 (“Ducharme”)
1003	U.S. Patent No. 10,234,091 (“Chaimberg”)
1004	Supporting Declaration Submitted by Dr. J. Gary Eden
1005	CCT: Understanding the Basics, superbrightleds.com (March 2, 2016) (https://www.superbrightleds.com/blog/what-is-cct-understanding-the-basics.html)
1006	U.S. Patent No. 9,345,112 (the “’112 Patent”)
1007	File history of the ’336 Patent
1008	U.S. Provisional Application No. 62/297,424 (“the ’424 Provisional”)
1009	U.S. Patent No. 9,820,350 (the “’350 Patent”)
1010	Signify’s infringement claim chart concerning the ’336 Patent served in the district-court case
1011	U.S. Patent No. 7,178,941 (“Roberge”)

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1012	U.S. Patent No. 9,801,250 (“Halliwell”)
1013	U.S. Patent No. 7,192,160 (“Reiff”)
1014	Gregory Kay, “ <i>Architectural SSL: Tunable white light and its benefits become more accessible</i> ”, LEDS Magazine (September 14, 2023) (https://www.ledsmagazine.com/architectural-lighting/article/14298849/architectural-ssl-tunable-white-light-and-its-benefits-become-more-accessible)
1015	U.S. Patent No. 2,828,393 (the “’393 Patent”)
1016	U.S. Patent No. 3,502,825 (the “’825 Patent”)
1017	Excerpts of the Assignment History for U.S. Patent No. 7,178,941
1018	<i>Signify N.A. Corp., v. Menard, Inc.</i> , No. 3:22-cv-00706-jdp, ECF No. 137 (W.D. Wis. Mar. 17, 2023)
1019	<i>Signify N.A. Corp., v. Menard, Inc.</i> , No. 3:22-cv-00706-jdp, ECF No. 193 (W.D. Wis. Oct. 2, 2023)
1020	<i>Signify N.A. Corp., v. Menard, Inc.</i> , No. 3:22-cv-00706-jdp, ECF No. 191 (W.D. Wis. Sep. 26, 2023))
1021	File history of U.S. Application No. 15/811,062
1022	File history of U.S. Application No. 15/435,141

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1023	U.S. Patent No. 10,299,335
1024	Declaration of Jeffrey S. Messing