

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

WALMART INC. and CURRENT LIGHTING SOLUTIONS, LLC,
Petitioner,

v.

POWER CONCEPTS, LLC,
Patent Owner.

IPR2022-00534
Patent 10,837,628 B2

Before KEVIN F. TURNER, JEFFREY S. SMITH, and
DANIEL J. GALLIGAN, *Administrative Patent Judges*.

SMITH, *Administrative Patent Judge*.

DECISION
Granting Institution of *Inter Partes* Review
35 U.S.C. § 314

I. INTRODUCTION

A. *Background and Summary*

Walmart Inc. and Current Lighting Solutions, LLC (collectively, “Petitioner”) filed a Petition (Paper 3, “Pet.”) requesting *inter partes* review of claims 1, 2, 4–13, and 15–28 of U.S. Patent No. 10,837,628 B2 (Ex. 1001, “the ’628 patent”) pursuant to 35 U.S.C. § 311(a). Patent Owner Power Concepts, LLC filed a Preliminary Response to the Petition. Paper 8 (“Prelim. Resp.”). Patent Owner also disclaimed claims 13 and 15–17, leaving only claims 1, 2, 4–12, and 18–28 at issue. Exs. 2001, 2002.

Pursuant to 35 U.S.C. § 314(a), the Director may not authorize an *inter partes* review unless the information in the petition and preliminary response “shows that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” For the reasons that follow, we determine that institution of *inter partes* review of claims 1, 2, 4–12, and 18–28 is warranted.

B. *Related Matters*

The parties indicate that the ’628 patent is the subject of *Power Concepts, LLC v. Walmart Inc.*, No. 7:21-cv-00408-TMC (D. S.C.). See Pet. xv; Paper 4, 2. The ’628 patent is a continuation of U.S. Patent No. 10,429,041 B2, which is the subject of IPR2022-00569.

C. *Challenged Patent*

The ’628 patent relates to “a ceiling light LED retrofit kit” and discloses “a kit for installation of light emitting diode lighting mounted upon a previously-installed fluorescent lighting fixture.” Ex. 1001, 1:19–22. Figure 1 of the ’628 patent is shown below:

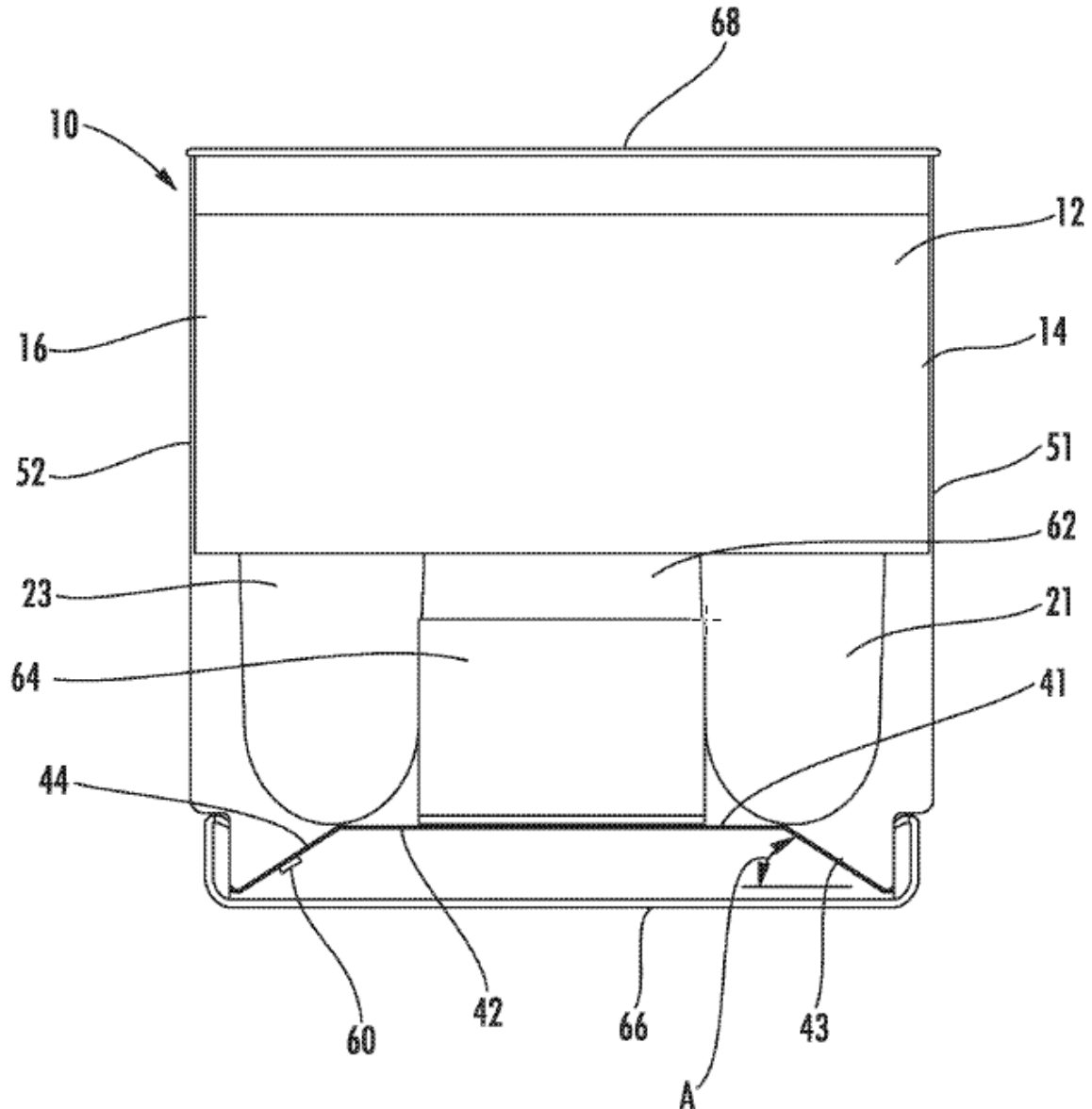


FIG. 1

Figure 1 above is an end elevation view of a ceiling light LED retrofit kit. Ex. 1001, 2:59–61. Fixture 10 includes pre-installed base 12, which has first and second longitudinal sides 14, 16, and is attached to ceiling 68 of a building. *Id.* at 3:33–36. Base 12 includes first electrical receptacle 21 (also known as a tombstone), second electrical receptacle 22 (opposite to

receptacle 21 and shown in Figure 4), and third electrical receptacle 23. *Id.* at 3:36–38, 5:58–60. First and second electrical receptacles 21 and 22 are configured to receive and energize a fluorescent light tube disposed between them. *Id.* at 3:39–42. A light panel includes first side 41 facing fixture 10 and opposed second side 42. *Id.* at 3:45–48. The light panel of Figure 1 includes angled wings 43 and 44. *Id.* at 3:45–49. One or more LEDs 60 are disposed on second side 42 of the light panel, such as on angled wing 44 as shown in Figure 1. *Id.* at 3:49–54. Power supply 64 energizes LED 60 and is located within raceway 62. *Id.* at 3:54–55.

Figure 3 of the '628 patent is shown below:

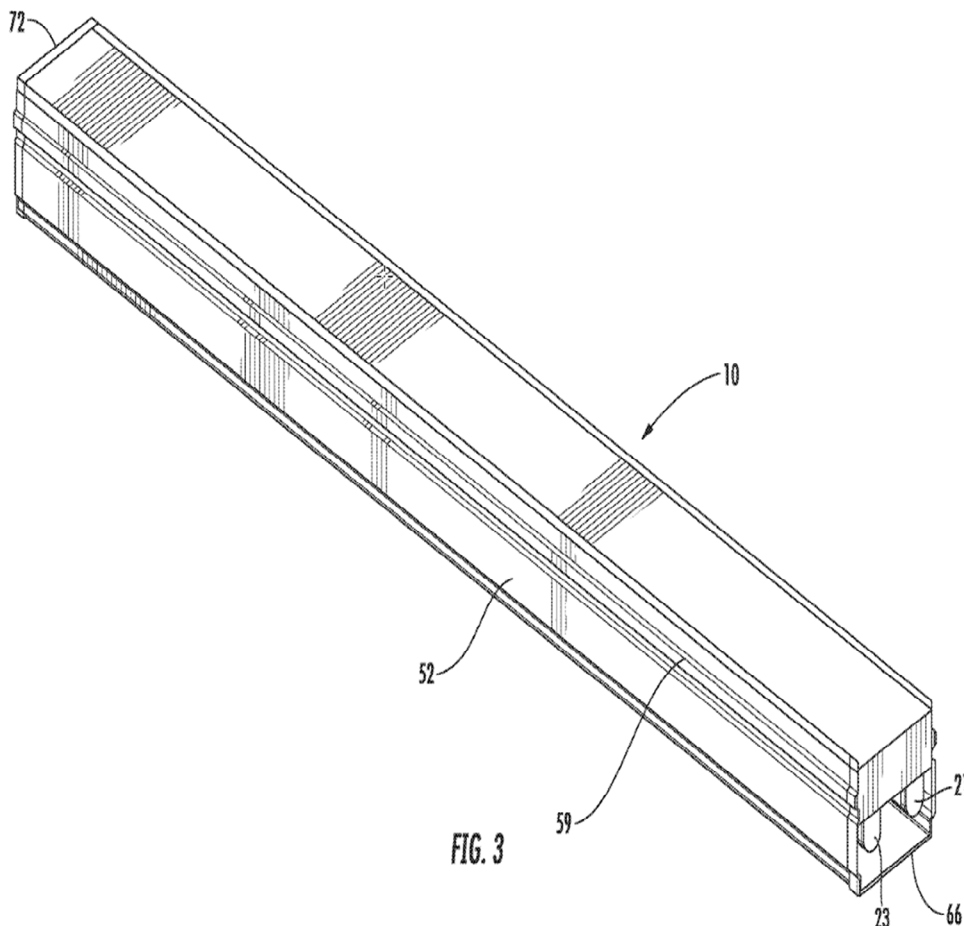


Figure 3 above shows an assembled LED retrofit kit. Ex. 1001, 4:59–60. First profile 51 (shown in Figure 1) and second profile 52 extend

longitudinally. *Id.* at 4:60–62. Lens 66 is attached to the first and second profiles by endcap 72. *Id.* at 4:63–65. The first and second profiles include one or more longitudinal ribs 59. *Id.* at 4:66–67.

D. Illustrative Claim

Challenged claim 1 of the '628 patent recites:

1. A retrofit kit for mounting with a previously-installed light fixture attached to the ceiling of a building to which electrical power has been disconnected, the previously-installed light fixture having first and second tombstones configured to energize a fluorescent light tube, the previously-installed light fixture being devoid of a fluorescent light tube, the retrofit kit comprising:

a light panel, the light panel including a first side facing the previously-installed light fixture and an opposite second side;

the light panel residing at least partially between the first tombstone and the second tombstone;

the light panel defining a raceway external to and above the light panel and below the previously-installed light fixture;

a light emitting diode residing on the second side of the light panel; and

an electrical conductor, the electrical conductor residing in the raceway and in electrical communication with the light emitting diode.

E. Evidence

Petitioner relies on the following prior art:

U.S. Patent Application Publication No. 2006/0221606 A1, published Oct. 5, 2006, (Ex. 1007, “Dowling”);

U.S. Patent Application Publication No. 2012/0113628 A1, published May 10, 2012, (Ex. 1008, “Burrow”);

U.S. Patent No. 8,896,208 B2, issued Nov. 25, 2014 (Ex. 1016, “Shew”);

U.S. Patent Application Publication No. 2015/0345751 A1, published Dec. 3, 2015 (Ex. 1014, “Oksengendler”).

Petitioner also relies on the testimony of Alfred Ducharme, Ph.D. (Ex. 1003).

F. Asserted Grounds

Petitioner asserts that claims 1, 2, 4–12, and 18–28 of the '628 patent are unpatentable on the following grounds:

Claim(s) Challenged	35 U.S.C. §	References/Basis
1, 2, 5–10, 12, 18–20, 22–26, 28	103	Dowling
1, 5–9, 10–12, 18, 20, 22–24, 26	103	Burrow
1, 4, 18, 21, 24, 27	103	Shew
1, 4, 18, 21, 24, 27	103	Oksengendler

II. ANALYSIS

A. Claim Construction

In an *inter partes* review, a claim “shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. 282(b).” 37 C.F.R. § 42.100(b) (2021). Under that standard, we construe the claim “in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent.” *Id.*

Petitioner asserts that it applies the plain and ordinary meaning of the challenged claims to the asserted prior art references. Pet. 6. Dr. Ducharme contends that the preambles of each of independent claims 1, 18, and 24 are not limiting, because the body of each claim defines a structurally complete invention, and the preamble merely states the fixtures for which it would be used. Ex. 1003 ¶¶ 326, 361, 382.

Patent Owner contends that, with respect to claims 1 and 18, limitations in the body of each claim find antecedent basis in the preambles. Prelim. Resp. 8. In particular, Patent Owner contends that “the previously-installed light fixture” and “the first tombstone and the second tombstone” recited in the body of claim 1 find antecedent basis in the preamble. *Id.* Patent Owner contends that “the ceiling light fixture,” “the second side,” “the first tombstone,” and “the second tombstone” recited in the body of claim 18 find antecedent basis in the preamble. *Id.* at 8–9.

We do not need to construe the preambles at this stage to resolve any controversy. Even were we to consider the preambles as limiting, Petitioner has sufficiently shown that the prior art teaches the preambles, as discussed below in the context of our unpatentability analysis. Should the parties believe that construing the preambles is necessary to resolve a dispute, we invite the parties to present any arguments they wish to make regarding construction of the preambles in the appropriate trial paper (e.g., Patent Owner’s Response, Petitioner’s Reply).

To guide the parties, we highlight that the preamble recitation of “for mounting with a . . . fixture” indicates an intended use of the retrofit kit, but the body of the claim indicates that the retrofit kit has already been mounted with the fixture. For example, the body of claim 1 does not recite that the light panel of the retrofit kit is configured to reside between the tombstones of the fixture. Rather, the body of claim 1 recites “the light panel residing . . . between” the tombstones, which indicates that the kit has already been mounted with the fixture. Similarly, the body of claim 1 does not recite that the light panel of the retrofit kit is configured to define a raceway below the fixture. Rather, the body of the claim recites “the light panel defining a raceway . . . below the previously-installed light fixture.”

Any proposed construction of the preamble should address the tension between the preamble's apparent intended use of the retrofit kit as "for mounting" with a fixture, and the body's apparent actual use of the retrofit kit as already mounted with the fixture. In particular, the proposed construction of the preambles should address whether the claim requires a retrofit kit actually mounted to a fixture, such that the components of the fixture recited in the body of the claim are entitled to patentable weight.

To the extent necessary to address the parties' unpatentability arguments, constructions of additional claim terms are addressed below in the context of the unpatentability analysis. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Matal*, 868 F.3d 1013, 1017 (Fed. Cir. 2017) (only terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy).

B. Asserted Obviousness over Dowling

Petitioner contends that claims 1, 2, 5–10, 12, 18–20, 22–26, and 28 would have been obvious over Dowling. Pet. 10–40.

1. Dowling (Ex. 1007)

Dowling discloses an LED-based lighting retrofit apparatus for fluorescent lighting fixtures. Ex. 1007, at [54], [57]. Figure 3 of Dowling is shown below:

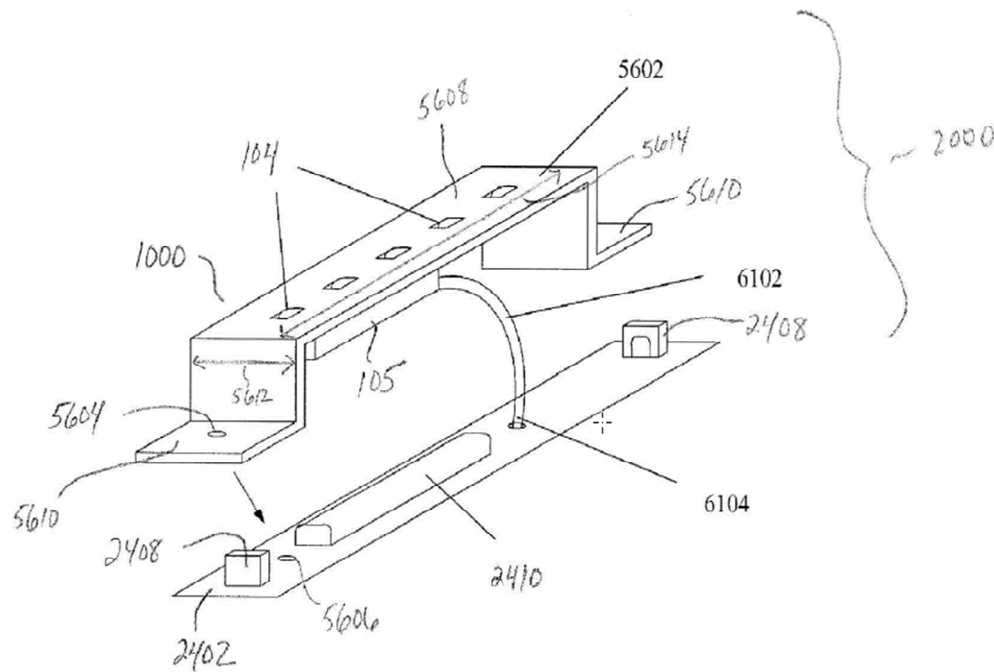


FIG. 3

Figure 3 above shows modified conventional fluorescent lighting fixture 2000 retrofitted with an LED-based retrofit subassembly 1000. Ex. 1007 ¶ 106. Ballast 2410 and fluorescent bulb connectors 2408 are mounted on fluorescent fixture housing 2402. *Id.* ¶ 107. Retrofit subassembly 1000 is attachable to housing 2402. *Id.* Subassembly 1000 includes mechanical support 5602, to which one or more LEDs 104 are coupled. *Id.* ¶ 108. Mechanical support 5602 is configured as a U-shaped member having elevated portion 5608 and two flanking portions 5610 on opposing sides of the elevated portion. *Id.* ¶ 111. The mechanical support provides clearance between elements of the lighting apparatus included in subassembly 1000, such as controller 105, and original components of the fixture, such as ballast 2410. *Id.*

2. Dowling in View of the Knowledge of a Person of Ordinary Skill

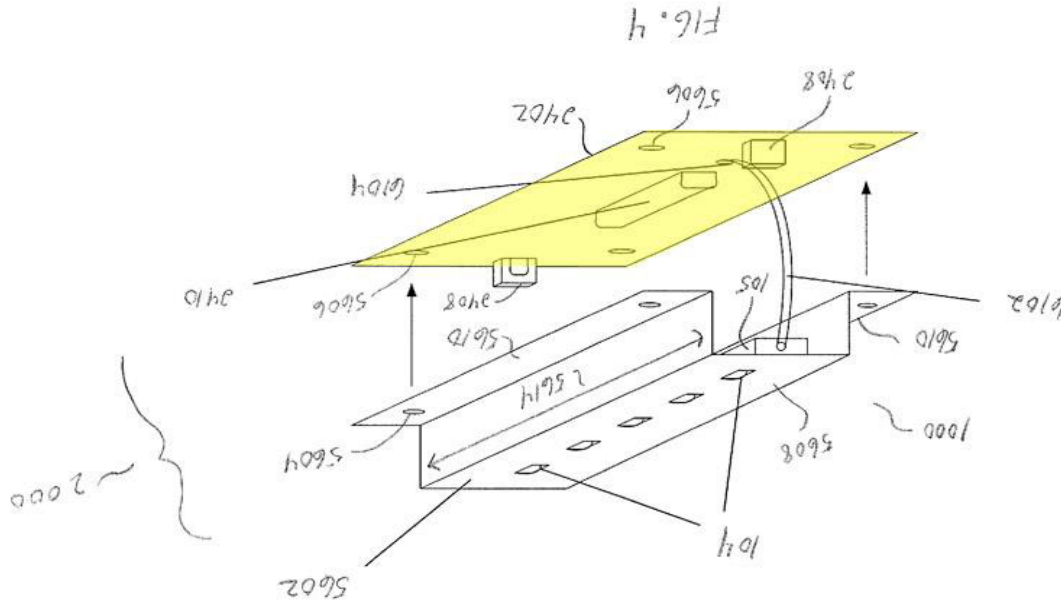
Disputed limitation of claim 1¹

Claim 1 recites “the light panel defining a raceway external to and above the light panel and below the previously-installed light fixture.”

Petitioner contends that Dowling’s conventional lighting fixture shown in Figure 1 would be inverted when attached to a ceiling. Pet. 10–11.

Petitioner contends that Dowling’s retrofit kit shown in Figures 3 and 4 would also be inverted when attached to the ceiling fixture. *Id.* at 11–14.

Inverted Figure 4 of Dowling as shown in the Petition is reproduced below:



¹ Patent Owner contends generally that the Petition relies primarily on figures from the cited prior art references in addressing claims 1, 4, 5, 8, 11, 12, 18, 19, 23, and 24, which places an undue burden on the Board and does not address meaningfully the scope and content of the prior art and any differences between the claimed subject matter and the prior art. Prelim. Resp. 13–17. We have analyzed Petitioner’s allegations and evidence as to these claims, and we find them sufficient at this stage.

Petitioner contends that inverted Figure 4 above shows housing 2402 of the conventional lighting fixture attached to a ceiling and retrofit kit 1000 attached to the fixture. Pet. 11–12. Petitioner contends that inverted Figure 4 teaches the claimed “raceway” above light panel 5608 of retrofit subassembly 1000 and below housing 2402 of modified fixture 2000. Pet. 14 (citing Ex. 1007 ¶¶ 111–112, Figs. 3 and 4; Ex. 1003 ¶¶ 127–129).

Patent Owner contends that Figures 3 and 4 of Dowling, as actually shown in Dowling, disclose the raceway below the light panel and above the light fixture. Prelim. Resp. 18. Patent Owner contends that neither the Petition nor Dr. Ducharme’s testimony explains why a person of ordinary skill in the art would invert the fixture shown in Figures 3 and 4 of Dowling. *Id.* at 19. According to Patent Owner, Dowling discloses that the light fixture has “an outer shell or housing that *supports and/or protects the light source(s)*,” and therefore would not be inverted. *Id.* at 19–20 (citing Ex. 1007 ¶¶ 7–8). Patent Owner contends that inverting the fixture of Dowling would require substantial reconstruction and redesign of the elements of Dowling and would change a basic principle under which Dowling was intended to operate. *Id.*

We disagree with Patent Owner. Dowling discloses that modified fixture 2000 could be recessed, such that housing 2402 is concealed behind a ceiling. Ex. 1007 ¶ 9; *see id.* ¶¶ 11–12, 106–107, 114. On this record, we are sufficiently persuaded that when modified conventional lighting fixture 2000 of Dowling is recessed as taught by Dowling, a person of ordinary skill would have inverted the fixture as contended by Petitioner, such that fixture housing 2402 is concealed behind a ceiling. We are also persuaded that a person of ordinary skill would have recognized that LEDs 104 of the retrofit kit would be more effective when facing an area that the LEDs are intended

to illuminate, such as the area under the ceiling as shown in inverted Figure 4. *See* Pet. 28–29; Ex. 1003 ¶ 175. On this record, the Petition and supporting evidence sufficiently shows that Dowling, in view of the knowledge of a person of ordinary skill, teaches “the light panel defining a raceway external to and above the light panel and below the previously-installed light fixture” which is “attached to the ceiling of a building” as recited in claim 1.

Disputed limitation of claim 18

Claim 18 recites “a light panel disposed between the first profile and the second profile, the light panel having a first side for facing the second side of the base of the light fixture and an opposite second side for illuminating the area underneath the light panel when the retrofit kit is mounted onto the ceiling light fixture and electrical power is supplied to the light panel.” Petitioner contends that Dowling discloses a light panel with a first side that faces the bottom side of the base of the light fixture and a second opposite side that contains LEDs for illuminating the area below when power is supplied. Pet. 28–29 (citing Ex. 1007, Fig. 4; Ex. 1003 ¶¶ 174–176).

Patent Owner contends that the claim requires the second side of the light panel to illuminate the area directly below the light panel when the retrofit kit is mounted to the ceiling light fixture. Prelim. Resp. 21. Patent Owner contends that Dowling teaches that the second side of the light panel illuminates the area above, not below, the light panel when the retrofit kit is mounted to the ceiling light fixture, as shown in Figure 4 of Dowling. *Id.* at 21–22.

Patent Owner’s contention is based on the premises that the fixture shown in Figure 4 of Dowling would not be inverted when mounted to a

ceiling and that the retrofit kit would not be inverted when mounted to the ceiling fixture. We disagree with Patent Owner for the reasons discussed in our analysis of claim 1 above. On this record, the Petition and supporting evidence sufficiently show that Dowling, in view of the knowledge of a person of ordinary skill, teaches a “light panel having a first side for facing . . . the light fixture and an opposite second side for illuminating the area underneath the light panel when the retrofit kit is mounted onto the ceiling light fixture” as recited in claim 18.

Disputed limitation for claim 24

Claim 24 recites “b) disconnecting electrical connections to the fluorescent lighting ceiling fixture.” Petitioner contends that a person of ordinary skill would have understood that when disconnecting any existing lighting fixture, or when installing any new lighting fixture or retrofit, the lighting fixture of Dowling would be disconnected from the power source for safety reasons. Pet. 34 (citing Ex. 1003 ¶¶ 193–194).

Patent Owner does not dispute Petitioner’s contention that a person of ordinary skill would disconnect the lighting fixture from the power source when disconnecting an old fixture or installing a new fixture or retrofit. Rather, Patent Owner contends that this limitation requires permanently disconnecting electrical connections to the fluorescent lighting ceiling fixture. Prelim. Resp. 25. According to Patent Owner, the plain and ordinary meaning of “disconnecting” as claimed means “to sever the connection of or between.” *Id.* at 26 (citing Ex. 2005). Patent Owner contends that severing the electrical connection to the fluorescent lighting fixture of Dowling would prevent existing connectors from being used after the retrofit assembly is installed. *Id.* at 27.

We do not agree with Patent Owner that the scope of “disconnecting electrical connections” as claimed is limited to “sever.” Looking at the intrinsic evidence, claim 24 does not recite “permanently disconnecting.” Further, the specification does not define disconnecting electrical connections as limited to permanently disconnecting the connections. Although the specification gives an example of a de-energized ballast, the specification does not disclose that the electrical connections to the ballast must remain permanently disconnected. *See* Ex. 1001, 5:60–63. Further, the specification does not indicate that the claim is limited to this disclosed embodiment, and we decline to read this embodiment into the claim.

Dealertrack, Inc. v. Huber, 674 F.3d 1315, 1327 (Fed. Cir. 2012) (“[I]t is improper to read limitations from a preferred embodiment described in the specification – even if it is the only embodiment – into the claims absent a clear indication in the intrinsic record that the patentee intended the claims to be so limited.”); *Phillips v. AWH Corp.*, 415 F.3d 1303, 1323 (Fed. Cir. 2005) (en banc) (“[C]laims may embrace ‘different subject matter than is illustrated in the specific embodiments in the specification.’”).

Turning to the extrinsic evidence, we do not agree with Patent Owner, that the dictionary definition of “disconnect” cited by Patent Owner is conclusive. The American Heritage Dictionary of the English Language defines “disconnect” as “to sever *or interrupt* the connection of or between,” and in the context of electricity, as “to shut off the current in (an appliance) by removing its connection from a power source.” Ex. 3001. The Cambridge English Dictionary defines disconnect as “to break the connection between a supply of electricity . . . and a device,” and “to stop supplying electricity.” Ex. 3002. Collins English Dictionary defines “to disconnect a piece of equipment” as “to separate it from its source of power

or to break a connection that it needs in order to work,” for example, “the device automatically disconnects the ignition when the engine is switched off.” Ex. 3003.

Thus, the scope of “disconnecting” as claimed in the electrical context is not limited to permanently disconnecting or severing, but encompasses at least removing a connection from a power source, interrupting a connection, breaking a connection, stopping supply of electricity, and separating a piece of equipment from its source of power. *See Phillips*, 415 F.3d at 1322 (“[A] general usage dictionary cannot overcome art-specific evidence of the meaning of a claim term.”). Our construction of “disconnecting electrical connections to the fluorescent lighting ceiling fixture” is not final, and we invite the parties to present arguments and evidence in support of or in opposition to our construction.

Furthermore, we do not agree with Patent Owner’s assertion that the “disconnecting” step is not dealing with the power supply to the light fixture. *See* Prelim. Resp. 26. Claim 24 recites “disconnecting electrical connections to the fluorescent lighting ceiling fixture,” but it does not specify which electrical connections. We are persuaded on this record by Petitioner’s contention that the connections from the power source to the lighting fixture are “electrical connections.” *See* Pet. 34.

On this record, the Petition and supporting evidence sufficiently shows that Dowling, in view of the knowledge of a person of ordinary skill, teaches “(b) disconnecting electrical connections to the fluorescent lighting ceiling fixture” as recited in claim 24.

As to the remaining subject matter recited in claims 1, 18, and 24, we have reviewed Petitioner’s contentions, which Patent Owner does not presently dispute, and we are sufficiently persuaded by them. *See* Pet. 10–

16, 26–31, 33–37. Based on this preliminary record, Petitioner has demonstrated a reasonable likelihood that it would prevail in showing that the subject matter of independent claims 1, 18, and 24 would have been obvious over Dowling. Petitioner has set forth contentions regarding the challenged dependent claims. Pet. 16–40. We have analyzed Petitioner’s allegations as to these claims, and we find them sufficient at this stage.

C. Asserted Obviousness over Burrow

Petitioner contends that claims 1, 5–9, 10–12, 18, 20, 22–24, and 26 would have been obvious over Burrow. Pet. 40–64.

1. Burrow (Ex. 1008)

Burrow discloses a light emitting diode retrofit conversion kit for a fluorescent light fixture that includes a housing adapted to be secured to a troffer, a power supply carried by the housing, and a plurality of light emitting diodes carried by the housing. Ex. 1008, at [54], [57]. Figure 13 of Burrow is shown below:

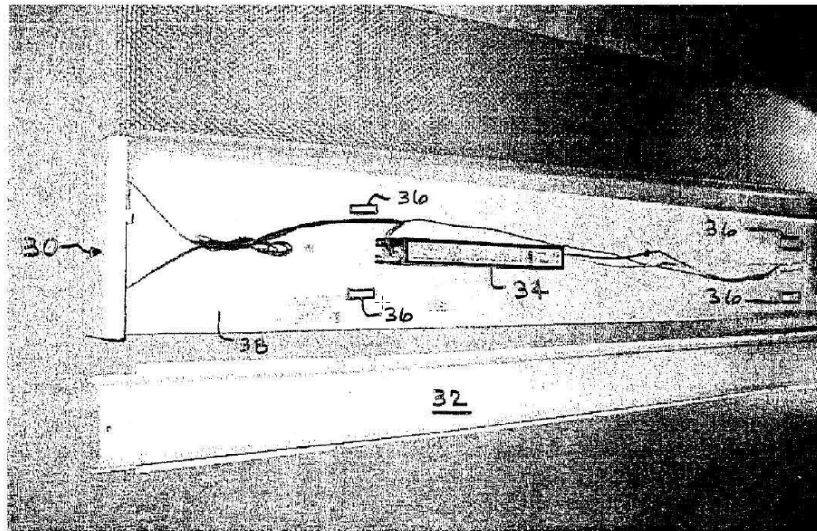


FIG. 13
(PRIOR ART)

Figure 13 above shows an existing fluorescent fixture, including troffer 30, ballast cover 32, ballast 34, tube sockets (not shown), and snap tabs 36 located along mounting surface 38 of troffer 30. Ex. 1008 ¶ 37.

Figure 1 of Burrow is reproduced below:

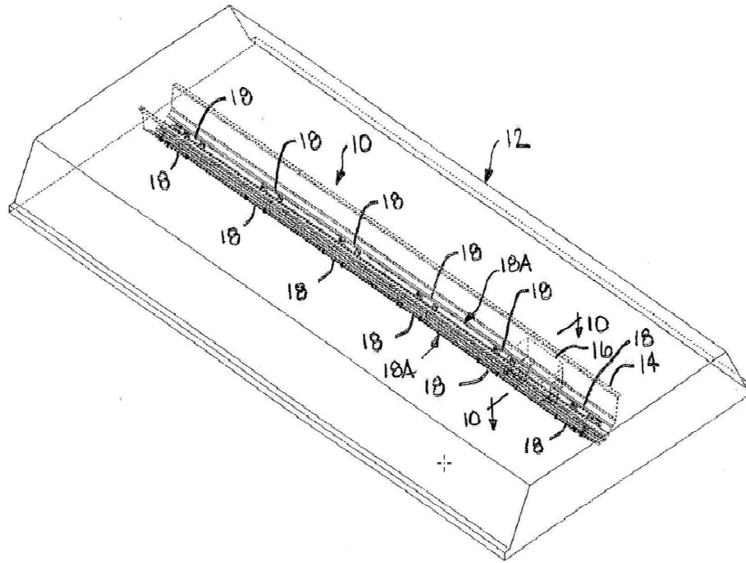


FIG. 1

Figure 1 above shows a perspective view of light emitting diode retrofit kit 10 adapted for use in fluorescent light fixture 12. Ex. 1008 ¶ 25. Kit 10 includes housing 14, power supply 16, and LEDs 18 coupled to the power supply by suitable means. *Id.* ¶ 26. Housing 14 is formed as an extrusion and can be cut to any length. *Id.* ¶¶ 26, 38.

Figure 11 of Burrow is reproduced below:

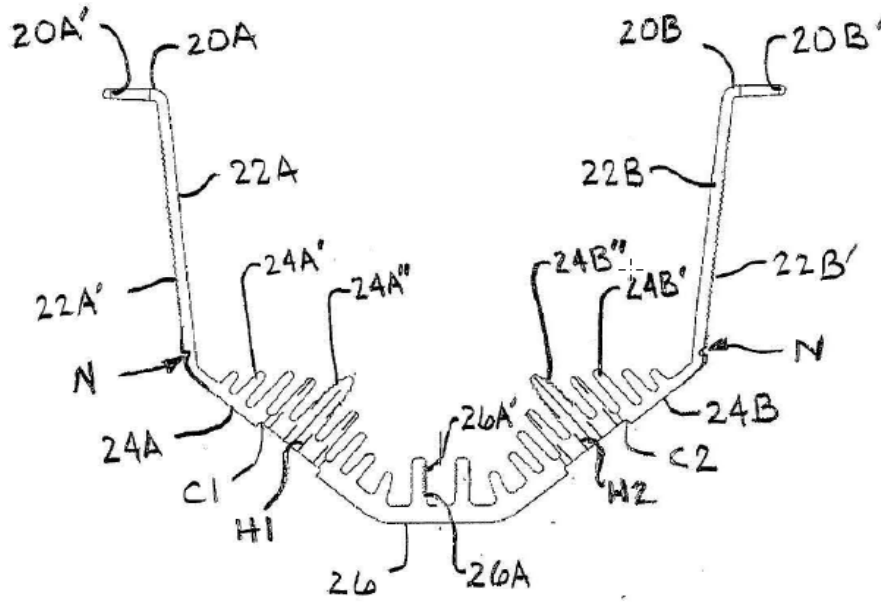


FIG. 11

Figure 11 above shows a portion of the housing of the light emitting diode retrofit kit. Ex. 1008 ¶ 22. Figure 11 shows a U-shaped embodiment of the housing including mounting flanges 20A, 20B, mounting holes 20A' and 20B', first pair of angled side walls 22A, 22B, second pair of angled side walls 24A, 24B, and bottom wall 26. Ex. 1008 ¶¶ 27, 31.

2. *Burrow in View of the Knowledge of a Person of Ordinary Skill*

Disputed limitation of claim 1

Claim 1 recites “the light panel residing at least partially between the first tombstone and the second tombstone.” Petitioner contends that a person of ordinary skill would have recognized that the pre-existing fluorescent fixtures used to install Burrow’s LED retrofit kit would have included tombstones for the fluorescent bulbs. Pet. 42. Petitioner contends that a person of ordinary skill would have left the tombstones within the pre-

existing fluorescent fixtures because removing the tombstones could be time-consuming or difficult. *Id.* at 42–43. Petitioner contends that with the tombstones not removed, the light panel of Burrow would reside at least partially between a first tombstone and a second tombstone. *Id.* at 43 (citing Ex. 1008, Figs. 1 and 10; Ex. 1003 ¶¶ 229–237).

Patent Owner contends that Burrow teaches that its retrofit mounting method requires removing the prior art tombstones because Burrow uses the mandatory term “require,” not “may” or “sometimes.” Prelim. Resp. 30–31 (citing Ex. 1008 ¶ 37). We disagree. Burrow discloses that the “retrofit will normally,” not always, require removing the existing tombstones. Ex. 1008 ¶ 37. Dr. Ducharme testifies that “a skilled artisan would have understood removal would only be required if Burrow’s retrofit extended to each end of the existing fluorescent lighting fixture.” Ex. 1003 ¶ 232. Dr. Ducharme testifies that a “skilled artisan would have also understood it would be a design choice to not extend completely to each end of the existing fluorescent lighting fixture such that the prior art sockets (i.e., tombstones) would not need to be removed.” *Id.*; *see id.* at ¶¶ 77–79. On this record, we are persuaded by Dr. Ducharme’s testimony and supporting evidence that a person of ordinary skill would have left the tombstones of Burrow in place, in order to yield the predictable benefits of avoiding the time, labor, and disposal costs of removing the tombstones. *See* Ex. 1003 ¶¶ 232–235.

Patent Owner contends that Burrow discloses snapping the housing of the LED conversion kit into place in the troffer. Prelim. Resp. 31. Patent Owner contends that if the tombstones of Burrow’s pre-existing light fixture are not removed, then the housing may not fit in the pre-existing troffer, or the tombstones may prevent the installer from snapping the LED conversion kit into place in the troffer. *Id.* Burrow, however, discloses an “advantage

of the present invention is that . . . the housing 14 can be cut to any length.” Ex. 1008 ¶ 38. Burrow further discloses that one method of mounting the housing is snapping the housing 14 into place using existing snap tabs 36 (shown in Figure 1) and mounting flanges 20A and 20B (shown in Figures 10A and 11). *Id.* ¶¶ 27, 37. Burrow also discloses that another method of mounting uses preformed holes 20A’ and 20B’ (shown in Figure 11) as a template to drill corresponding mounting holes in the existing troffer, so that housing 14 can be fastened in place using screws. *Id.* On this record, the Petition and supporting evidence sufficiently show that a person of ordinary skill would have cut the housing of Burrow to not extend completely to each end of the lighting fixture in order to yield the benefits of avoiding the time, labor, and disposal costs of removing the tombstones. *See* Ex. 1003 ¶¶ 229–236. We are also sufficiently persuaded that a person of ordinary skill would have mounted the cut housing using one of the mounting methods taught by Burrow, such as snap tabs or screws, and would have had a reasonable expectation of success in doing so.

Patent Owner contends that the testimony of Dr. Ducharme is conclusory and factually unsupported, and is entitled to little or no weight. Prelim. Resp. 29–30 (citing Ex. 1003 ¶¶ 231–237). We disagree with Patent Owner. Dr. Ducharme testifies that “as I explained in the State of the Art section . . . it is a simple design choice as to whether to remove . . . the tombstone sockets or ballast, or to leave them in place.” Ex. 1003 ¶ 233. In the State of the Art section, he testifies that this “choice is informed by factors such as . . . the difficulty of removal of old parts, installation time, labor costs, and disposal costs,” and that this choice “has existed since the first retrofit lights were developed for fluorescent lights.” *Id.* ¶ 72. Dr. Ducharme then cites several patents that teach leaving the previous

tombstones in place to decrease installation time and costs and to minimize disposal issues. Ex. 1003 ¶¶ 77 (Plunk discloses “a retrofit kit for fluorescent lighting fixtures that left the previous tombstones . . . in place, thereby decreasing installation time and costs and minimizing the disposal issues.”), 78 (“Robertson disclosed retrofit bulbs . . . designed to engage with the standard tombstone sockets . . .”), 79 (“Oksengendler disclosed an LED retrofit for fluorescent fixtures in which . . . the previous tombstones are retained and used as guides to align the new LED fixture.”). Dr. Ducharme’s testimony is sufficiently supported by evidence showing that a person of ordinary skill would have designed a retrofit kit that retains previous tombstones in order to yield the benefits avoiding the time, labor, and disposal costs of removing the tombstones.

Patent Owner contends that the Petition does not provide an articulated explanation with rational underpinnings to support its conclusion of obviousness. Prelim. Resp. 29. We disagree. The Supreme Court has recognized that the use of evidence of the skilled artisan’s background knowledge is foundational to a proper obviousness analysis. *See KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 401 (2007) (“To determine whether there was an apparent reason to combine the known elements in the way a patent claims, it will often be necessary to look . . . to the background knowledge possessed by a person having ordinary skill in the art.”). “[T]he inquiry into whether any ‘differences’ between the invention and the prior art would have rendered the invention obvious to a skilled artisan necessarily depends on such artisan’s knowledge.” *Koninklijke Philips N.V. v. Google LLC*, 948 F.3d 1330, 1337 (Fed. Cir. 2020). On this record, we are sufficiently persuaded that the Petition and Dr. Ducharme’s testimony properly rely on the background knowledge of a person of ordinary skill in the art to show a

reason to combine the known elements as claimed. Petitioner and Dr. Ducharme have sufficiently shown that a person of ordinary skill would have modified the retrofit kit of Burrow to retain the tombstones of the previously installed fixture to yield the benefits of avoiding the time, labor, and disposal costs of removing the tombstones, and that such benefits were known to a person of ordinary skill. Ex. 1003 ¶¶ 72, 77–79, 233; Ex. 1005, 1:61–2:32, Fig. 11; Ex. 1013, Abstract; Ex. 1014 ¶¶ 6–7, Fig. 1.

Based on this preliminary record, Petitioner has demonstrated a reasonable likelihood that it would prevail in showing that the subject matter of claim 1 would have been obvious over Burrow and the knowledge of a person of ordinary skill. Petitioner has set forth contentions regarding remaining challenged claims 5–9, 10–12, 18, 20, 22–24, and 26. Pet. 40–64. We have analyzed Petitioner’s allegations as to these claims, and we find them sufficient at this stage.

D. Asserted Obviousness over Shew

Petitioner contends that claims 1, 4, 18, 21, 24, and 27 would have been obvious over Shew. Pet. 64–89.

1. Shew (Ex. 1016)

Shew relates to light assemblies that incorporate a night-light or an emergency light within an LED light assembly. Ex. 1016, 1:16–18. Figure 3 of Shew is reproduced below:

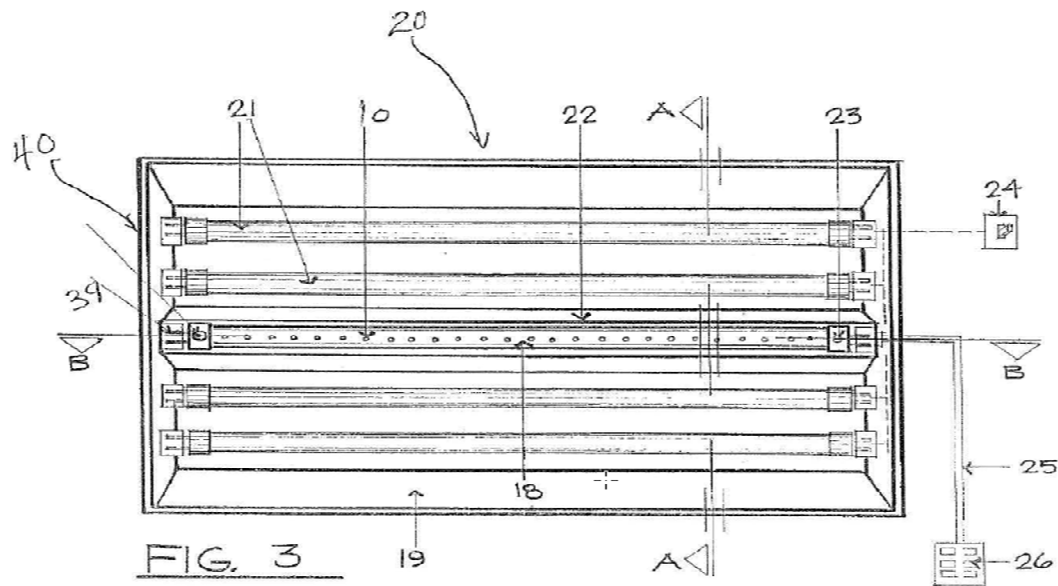


Figure 3 above shows a light assembly within a conventional fluorescent troffer assembly. Ex. 1016, 2:18–19. Troffer or housing 20 contains fluorescent tubes 21. *Id.* at 4:31–34. Figure 7 of Shew is reproduced below:

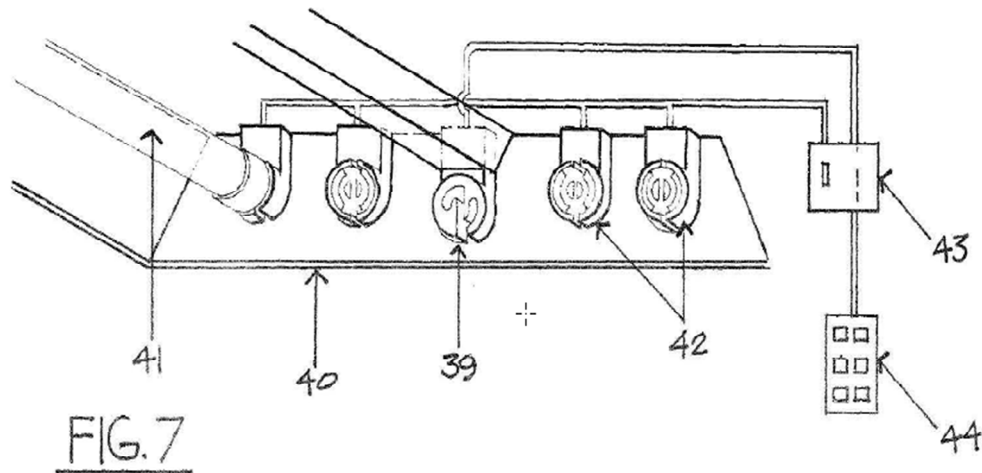


Figure 7 above shows one end 40 of troffer or housing 20 of Figure 3. Ex. 1016, 4:62–63. Sockets 42 are configured to receive conventional solid state lighting units such as fluorescent or LED tubes. *Id.* at 4:63–64, 4:31–34. The housing or troffer may contain either tubeless or tubular lighting units. *Id.* at 6:41–62.

2. *Shew in View of the Knowledge of a Person of Ordinary Skill*

Disputed limitations

The preamble of claim 1 recites “first and second tombstones configured to energize a fluorescent light tube, the previously-installed light fixture being devoid of a fluorescent light tube.” The preamble of claim 18 recites “a first tombstone and a second tombstone configured to receive therebetween a linear fluorescent light tube.” Claim 24 recites “first and second tombstones disposed to receive between them a fluorescent lighting tube.”

Petitioner contends that Shew discloses tombstones, referred to as “sockets 42,” designed to energize a fluorescent light tube. Pet. 64–65 (citing Ex. 1016, 4:31–34; Ex. 1003 ¶¶ 326–329), 77–78, 84–85. Patent Owner contends that claims 1, 18, and 24 recite “a fluorescent light tube.” Prelim. Resp. 33. Patent Owner contends that Petitioner relies on Shew’s description of a tubeless housing, rather than Shew’s description of the tubular housing, as disclosing the “fluorescent light tube” of claims 1, 18, and 24. *Id.* at 31–34.

We disagree with Patent Owner’s contention that claims 1, 18, and 24 claim “a fluorescent light tube.” The preamble of claim 1 recites tombstones “configured to energize a fluorescent light tube, the previously-installed light fixture being devoid of a fluorescent light tube.” This preamble term, even if given weight, indicates that the light fixture is “devoid of a fluorescent light tube.” The preamble of claim 18 recites tombstones “configured to receive . . . a linear fluorescent light tube.” Even if given weight, the preamble of claim 18 does not require a fluorescent light tube. Similarly, claim 24 recites tombstones “disposed to receive” a fluorescent

lighting tube. Patent Owner's contention is based on an incorrect construction of the claims.

We are sufficiently persuaded on this record that both the tubular and tubeless sub-housings for the LEDs of Shew are energized by “tombstones configured to energize a fluorescent light tube” as recited in the preamble of claim 1, by tombstones “configured to receive . . . a linear fluorescent light tube” as recited in the preamble of claim 18, and by tombstones “disposed to receive” a fluorescent lighting tube as recited in claim 24. Ex. 1016, 4:31–39, 4:63–66 (disclosing that sockets 42 are configured to receive conventional fluorescent tubes), 6:41–62 (“As shown in FIG. 11, a sub-housing 124 is formed as a tubeless” housing that “may be elongated and co-extensive with the length of a conventional fluorescent tube.” “It will be appreciated that other embodiments as disclosed in FIGS. 1–9, for example, may be presented in tubular housings or bulbs.”), 7:14–19 (“The elongated nature of the [tubeless] sub-housing 124 . . . perhaps coextensive with a conventional fluorescent tube, makes the present light unit 110 a suitable and fit replacement insert for a conventional fluorescent tube assembly within a conventional troffer.”).

Based on this preliminary record, Petitioner has demonstrated a reasonable likelihood that it would prevail in showing that the subject matter of claim 1 would have been obvious over Shew in view of the knowledge of a person of ordinary skill. Petitioner has set forth contentions regarding remaining claims 4, 18, 21, 24, and 27. Pet. 72–89. We have analyzed Petitioner's allegations as to the remaining claims, and we find them sufficient at this stage.

E. Asserted Obviousness over Oksengendler

Petitioner contends that claims 1, 4, 18, 21, 24, and 27 would have been obvious over Oksengendler.

1. Oksengendler (Ex. 1014)

Oksengendler discloses a retrofit system for a luminaire including a tombstone socket, an integrated holder, and a tombstone socket receptacle. Ex. 1014, at [57]. The tombstone socket receptacle interfaces with the tombstone socket of the luminaire, aligning a light engine in the same place as a fluorescent lamp within the luminaire. *Id.* Figure 1 of Oksengendler is reproduced below:

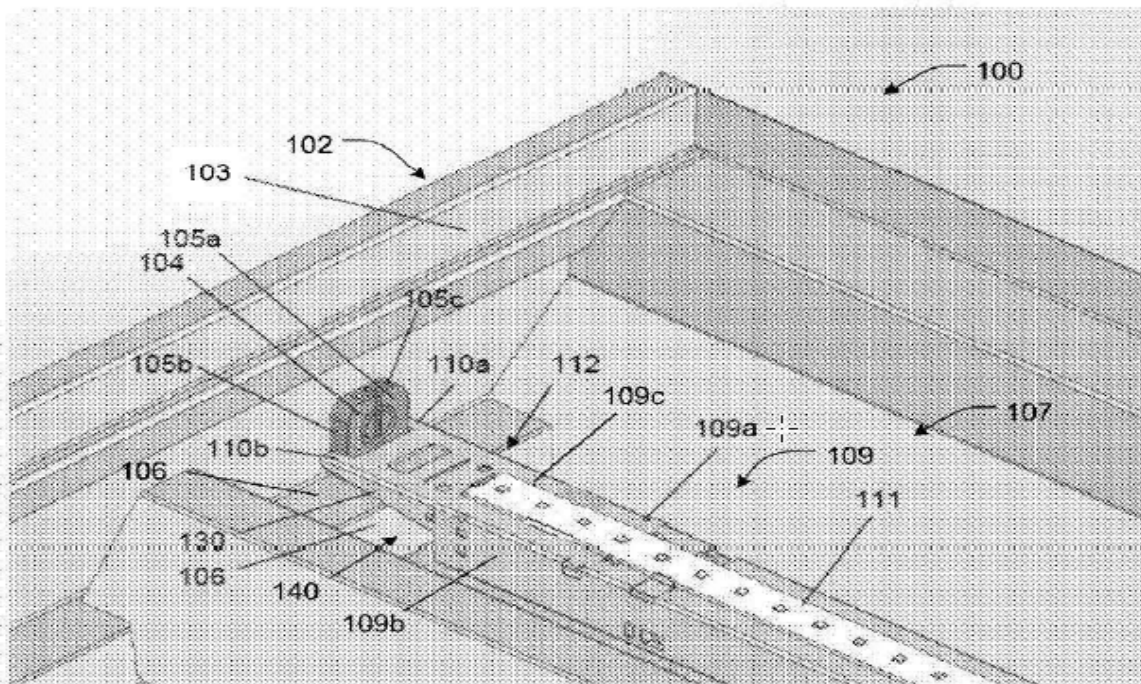


FIG. 1

Figure 1 above shows lighting system 100 including retrofit system 107 for luminaire 102. Ex. 1014 ¶ 36. Luminaire 102 includes fluorescent lamp fixture 103 having tombstone socket 104 shown in Figure 1, and a

corresponding tombstone socket on the opposite side of fluorescent lamp fixture 103 of luminaire 102 (not shown). *Id.* ¶ 37. Face 105a of tombstone socket 104 receives pins of a fluorescent lamp. *Id.* Integrated holder 109 of retrofit system 107 includes a first set of protrusions 110, including first protrusion 110a and second protrusion 110b on first end portion 112. *Id.* ¶ 42. A second set of protrusions is located on the second end portion. *Id.* Retrofit system 107 is aligned between tombstone sockets 104, such that light engine 111 is arranged in the same location as a fluorescent lamp that retrofit system 107 is replacing. *Id.*

2. *Oksengendler in View of the Knowledge of a Person of Ordinary Skill*
Patent Owner's contentions

Patent Owner contends that the Petition does not explain why a person of ordinary skill in the art would modify the teachings of Oksengendler to solve the problems recognized by the '628 patent. Prelim. Resp. 37. In particular, Patent Owner contends that the retrofits of Oksengendler cannot be “disposed end to end in electrical series, for [the] particular advantages” disclosed by the '628 patent. *Id.* (quoting Ex. 1001, 5:24–26). Patent Owner also contends that the retrofit of Oksengendler does not conceal the pre-existing light fixture as disclosed by the '628 patent. *Id.* (citing Ex. 1001, 3:43–45; Ex. 1014 ¶ 8).

Patent Owner's contentions are not commensurate with the scope of the claim. In particular, claim 1 does not recite retrofits disposed end to end in electrical series, nor a retrofit that conceals the pre-existing light fixture. Even though such features are disclosed in the specification, we do not read the disclosed embodiments into the claim. The Federal Circuit has held that “it is improper to read limitations from a preferred embodiment described in the specification – even if it is the only embodiment – into the claims absent

a clear indication in the intrinsic record that the patentee intended the claims to be so limited.” *Dealertrack*, 674 F.3d at 1327; *Phillips* 415 F.3d at 1323.

The specification discloses that “[g]enerally,” not always, “retrofit kit 30 is adapted to conceal or obscure the pre-installed base.” Ex. 1001, 3:43–44. The specification discloses that the retrofit kit *may* include a light panel, the light panel *may* define a first side, *in some embodiments* the light panel *may* include angled wings, *in certain embodiments* it *may* be found that disposing a light emitting diode on an angled wing provides a benefit, and the retrofit kit *may* include a power supply. Ex. 1001, 3:45–55. Thus, the specification describes the features of the retrofit kit adapted to conceal or obscure the pre-installed base using non-exclusive language such as “generally,” “may,” and “some embodiments.” Similarly, the specification describes disposing a plurality of light panels end to end using non-exclusive language such as “[i]n some applications” and “[i]n this embodiment.” *Id.* at 5:24–32. Contrary to Patent Owner’s contention, the scope of the claims encompass embodiments that do not conceal or obscure the pre-installed base embodiments that are not disposed end to end in electrical series.

Based on this preliminary record, Petitioner has demonstrated a reasonable likelihood that it would prevail in showing that the subject matter of claim 1 would have been obvious over Oksengendler in view of the knowledge of a person of ordinary skill. Petitioner has set forth contentions regarding the remaining claims 4, 18, 21, 24, and 27. Pet. 95–108). We have analyzed Petitioner’s allegations as to these claims, and we find them sufficient at this stage.

III. ORDER

It is hereby:

ORDERED that, pursuant to 35 U.S.C. § 314(a), an *inter partes* review of claims 1, 2, 4–12, and 18–28 of the '628 patent is instituted with respect to all grounds set forth in the Petition;

FURTHER ORDERED that, pursuant to 35 U.S.C. § 314(c) and 37 C.F.R. § 42.4(b), *inter partes* review of the '628 patent shall commence on the entry date of this Decision, and notice is hereby given of the institution of a trial.

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