UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/786,739	03/06/2013	Kevin L. Potucek	96964-01323	5140

159107 7590 12/19/2019

MCCARTER & ENGLISH, LLP / Hayward Industries, Inc.
Four Gateway Center
100 Mulberry Street
Newark, NJ 07102

EXAMINER	
TUMEBO, TSION M	

ART UNIT	PAPER NUMBER
2875	

MAIL DATE	DELIVERY MODE
12/19/2019	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KEVIN L. POTUCEK, JAMES CARTER, JAMES MURDOCK, JOE DIORIO, and STEVEN MITCHELL

Appeal 2019-002583
Application 13/786,739
Technology Center 2800

Before BRADLEY R. GARRIS, JEFFREY B. ROBERTSON, and JANE E. INGLESE, *Administrative Patent Judges.*

ROBERTSON, *Administrative Patent Judge.*

DECISION ON APPEAL[1]

STATEMENT OF THE CASE

Pursuant to 35 U.S.C. § 134(a), Appellant[2] appeals from the Examiner's decision to reject claims 1–5, 7, 9–15, 17, and 19–29. Appeal Br. 6. We have jurisdiction under 35 U.S.C. § 6(b).

We reverse.

[1] This Decision includes citations to the following documents: Specification filed March 6, 2013 ("Spec."); Final Office Action mailed August 15, 2017 ("Final Act."); Appeal Brief filed August 20, 2018 ("Appeal Br.") and Response to Notification of Non-Compliant Appeal Brief filed October 30, 2018 ("Corrected Claims App."); Examiner's Answers mailed December 10, 2018 and January 16, 2019 (collectively "Ans."); and Reply Brief filed February 11, 2019 ("Reply Br.").

[2] We use the word Appellant to refer to "applicant" as defined in 37 C.F.R. § 1.42(a). Appellant identifies the real party in interest as Hayward Industries, Inc. Appeal Br. 4.

CLAIMED SUBJECT MATTER

Appellant states the invention relates to an underwater light having a sealed polymer housing. Spec. 1, ll. 20–22. Claim 1, reproduced below, is illustrative of the claimed subject matter (Corrected Claims App. 3 (emphasis added)):

1. An underwater light, comprising:

a watertight housing including a lens and a rear housing component, ***the rear housing component*** being formed at least in part of a polymeric material that is both thermally conductive and electrically insulative and ***including a rear wall having an inner surface that includes one of an annular recess or an annular projection extending about a periphery thereof, the lens including the other of the annular recess or the annular projection extending about a periphery thereof, the lens being mounted to the rear housing component and forming a watertight seal therebetween***;

a circuit board assembly having a front surface and a rear surface, the front surface including at least one light-emitting element mounted thereto, the circuit board assembly being enclosed by the lens and the rear housing component;

a layer of thermally conductive material positioned between and in contact with the rear surface of the circuit board and the inner surface of the rear wall; and

a plurality of polymeric, heat-dissipating structures formed integrally with an exterior surface of the rear housing component;

wherein the annular recess and the annular projection surround the circuit board assembly, ***the annular recess receiving the annular projection to form the water tight seal between the rear housing component and the lens***,

wherein said layer transfers heat from said circuit board assembly to said rear housing component, said rear housing component dissipating the heat from the underwater light through at least the heat-dissipating structures.

Claims 11 and 21 are also independent and recite underwater lights including a lens mounted to a rear housing component to form a water tight

seal, each having either an annular recess or an annular projection.

Corrected Claims App. 5, 7.

REFERENCES

The prior art relied upon by the Examiner is:

Name	Reference	Date
Hochstein	US 5,785,418	July 28, 1998
Thrasher et al. hereinafter "Thrasher"	US 6,241,361 B1	June 5, 2001
Huang	US 7,914,162 B1	March 29, 2011
Thompson et al. hereinafter "Thompson"	US 2006/0087850 A1	April 27, 2006
Ahland, III et al. hereinafter "Ahland"	US 2009/0180281 A1	July 16, 2009

REJECTIONS

1. The Examiner rejected claims 1–5, 11–15, 21–25, and 29 under 35 U.S.C. § 103(a) as obvious over Ahland, Hochstein, and Huang. Final Act. 2–15.
2. The Examiner rejected claims 7, 17, and 26 under 35 U.S.C. § 103(a) as obvious over Ahland, Hochstein, Huang, and Thompson. Final Act. 15–16.
3. The Examiner rejected claims 9, 10, 19, 20, 27, and 28 under 35 U.S.C. § 103(a) as obvious over Ahland, Hochstein, Huang, and Thrasher. Final Act. 16–18.

Rejection 1

We limit our discussion to claim 1, which is sufficient for disposition of this rejection.

OPINION

The Examiner's Rejection

The Examiner found, *inter alia*, Ahland discloses an underwater light with a water tight housing including a window (54, 84) and a rear housing component having a rear wall with an inner surface (shroud 68 and heat sink 70). Final Act. 2–3 citing Ahland Figs. 3, 9, and 10. The Examiner found Ahland discloses the window is mounted to the rear housing component forming a water tight seal. *Id.* at 3, citing Ahland ¶¶ 35, 44, 46, and 54; Figs. 1, 3, and 10. The Examiner found Ahland fails to disclose the rear wall (70, 68) including one of an annular recess or annular projection, and the window is a lens that includes the other of the annular recess or the annular projection, where the annular recess receives the annular projection to form a water tight seal between the rear housing component and the lens. *Id.* at 3–4. The Examiner found Huang discloses a light assembly having a top cover 20 and a bottom cover 60 where the top cover includes a peripheral collar 25 and inner collar 26 creating an annular recess, which receives an annular projection 63 in the bottom cover. *Id.* at 4–5, citing Huang, col. 7, ll. 43–51, col. 8, ll. 1–24, Figs. 3–5.

The Examiner determined it would have been obvious to have modified Ahland by including an annular recess on the lens to be formed on the external rear housing so that the annular projection inserted into the annular recess forms a tight seal between the external rear housing component and the lens, because "it is merely the use of one of obvious alternative designs which a person skilled in the art would immediately recognize as analogous and interchangeable arrangements providing identical benefit in the form of providing a watertight seal." *Id.* at 5–6.

The Examiner relied on Hochstein for disclosing a thermally conductive material between and in contact with the rear surface of the electronic assembly. *Id.* at 4–5; Ans. 5.

Appellant's Contentions

Appellant argues that the references, either taken alone or in combination, fail to render obvious the lens and rear housing component features recited in claim 1. Appeal Br. 11. In particular, Appellant contends the window of Ahland is not mounted to the rear housing component, rather Ahland discloses the window is mounted onto the reflector (44, 74), and then sealing frame (60, 90) is positioned over the window (54, 84) and coupled to heat sink (22, 70). *Id.* at 12–15. Appellant contends Huang discloses a close fitting or friction fitting between the peripheral collar 25 and inner collar 26 of the top cover 20 and the rim 64 of the circumferential wall 63 of the bottom cover 60, which is not a water tight seal as required in claim 1. *Id.* at 23–26. Thus, Appellant argues the prior art fails to render the lens and rear housing components recited in claim 1 obvious.

Issue

The dispositive issue is:

Has Appellant identified reversible error in the Examiner's determination that an underwater light including a lens mounted to a rear housing component each having either an annular recess or an annular projection and forming a water tight seal between the rear housing component and the lens would have been obvious over the combined teachings of Ahland and Huang?

Discussion

We are persuaded that the Examiner has not provided sufficient rationale in order to establish that the arrangement between the lens and rear housing component recited in claim 1 would have been obvious over Ahland and Huang.

Figure 3 of Ahland is reproduced below:

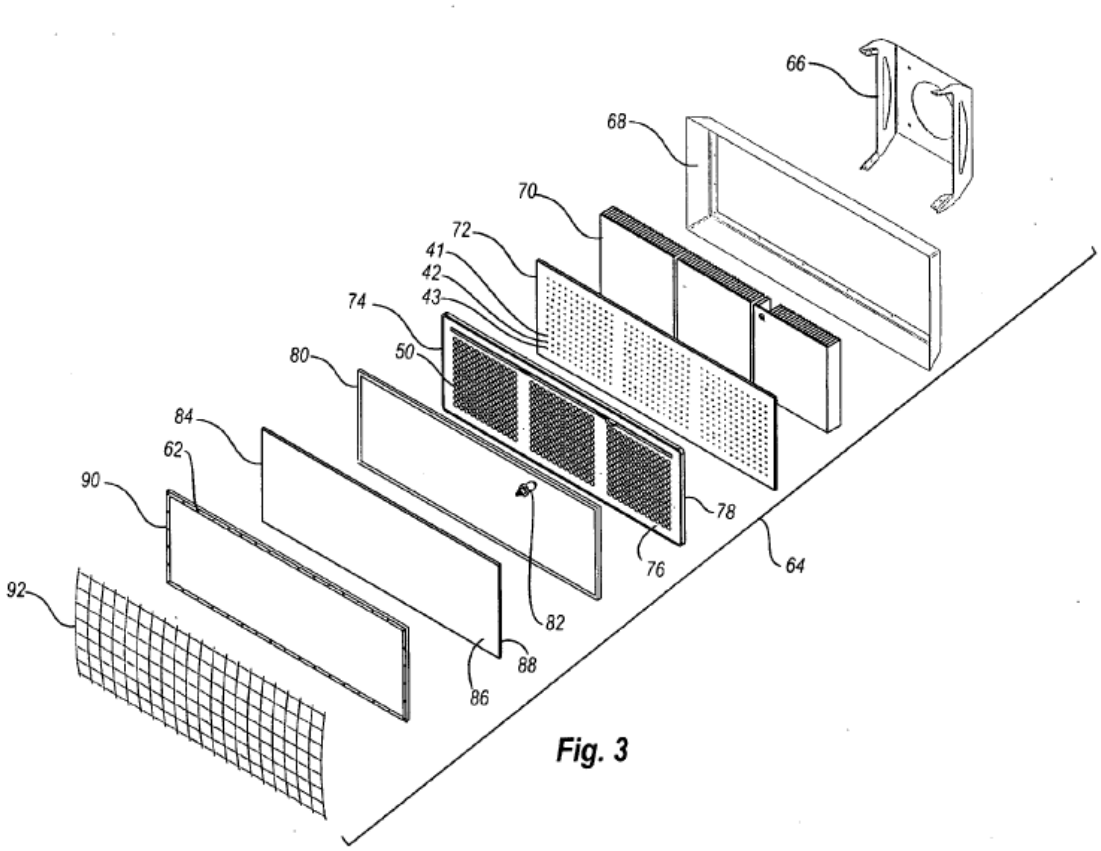

Fig. 3

Figure 3 depicts an exploded perspective view of a submersible LED light source. Ahland ¶ 21. Ahland discloses window 84 is placed over reflector 74 where gasket 80 is positioned about a perimeter of reflector 74 and upon positioning sealing frame 90 over window 84, the sealing frame 90 is coupled with heat sink 70 via mounting holes 62 on sealing frame 90, mounting holes 32 on heat sink 70 via fasteners (not shown), thus forming a

watertight seal via compression of gasket 80 between window 84 and reflector 74. *Id.* at ¶ 54. Ahland discloses that a rear surface printed circuit board 72 may be coupled with a front surface of heat sink 70 through use of a thermal paste. *Id.* at 51. Ahland discloses that after modular unit 64 is sealed, a user may couple the unit with shroud 68 and mounting bracket 66. *Id.* at ¶ 56.

Thus, as Appellant points out, Ahland discloses window 84 is coupled with *reflector 74*, and not heat sink 70 and shroud 68, which, as discussed above, were identified by the Examiner as corresponding to the rear wall having an inner surface recited in claim 1.

As discussed above, the Examiner relied on Huang to provide the annular projection and annular recess arrangement recited in claim 1.

Figure 5 of Huang is reproduced below:

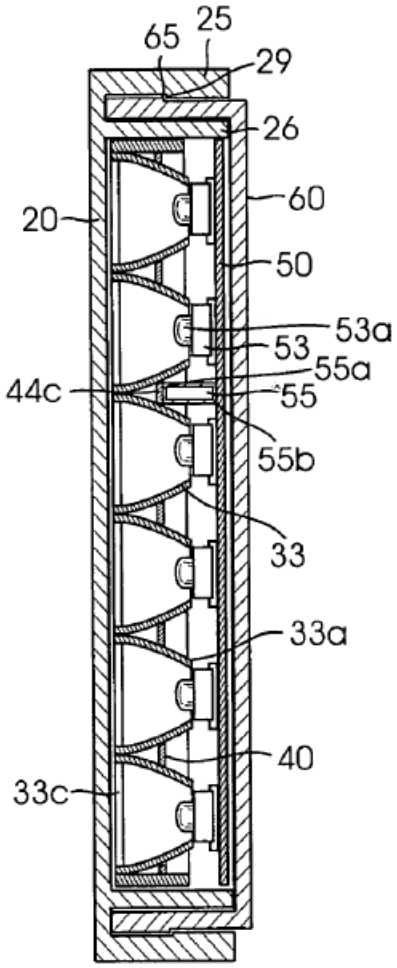

FIG. 5

Figure 5 is a cross-sectional view of a light assembly including a top cover 20, heating board, 40, LED board 50, and bottom cover 60. Huang, col. 6, l. 64 – col. 7, l. 2, col. 10, ll. 55–59. The top cover 20 has a face of transparent material and includes a peripheral collar 25 and an inner collar 26 creating a narrow channel between them, which releasably secures the top cover 20 to the bottom cover 60 by a snap fit using spine 29 that snaps over a ridge 65 that runs along the exterior surface of the circumferential wall of the bottom cover 60. Huang, col. 7, ll. 51–53, l. 65 – col. 8, l. 24.

Thus, although Huang discloses a snap fit mechanism for attachment of the top cover 20 to bottom cover 60, we are of the view the Examiner has not provided sufficient reasoning to explain how one of ordinary skill in the art would have modified Ahland in view of Huang to reach the claimed arrangement where the lens and rear housing component form a water tight seal through the interaction of an annular recess and annular projection. That is, the Examiner has not sufficiently explained how or why the window 84 of Ahland, which is disclosed as being attached to reflector 74 to form a water tight seal, would be modified to have either an annular recess or an annular projection, to cooperate with either an annular recess or projection on heat sink 70 or shroud 68 to form a water tight seal, where Huang does not disclose the snap fit connection is water tight. Huang, col. 7, l. 65 – col. 8, l. 24.

Although we agree with the Examiner that in the event Huang's snap fit arrangement does not provide a water tight seal, in view of Ahland's disclosure that gaskets can be used to create a water tight seal (*see* Ahland ¶¶ 55, 61), it would have been obvious to render the snap fit arrangement in Ahland water tight (Ans. 8), we are of the view that the Examiner has not provided sufficient rationale for modifying Ahland to arrive at the arrangement between the lens and rear wall recited in claim 1. While we agree with the Examiner that the test for obviousness does not depend on the specific teaching of the references or bodily incorporation of one prior art structure into another (Ans. 6–7), there still must be some articulated reasoning with rational underpinning to support the legal conclusion of obviousness. *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007) ("'[R]ejections on obviousness grounds cannot be sustained by mere

conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)). In addition, "[a] factfinder should be aware . . . of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning." *KSR*, 550 U.S. at 421.

In this case, as discussed above, in view of the arrangement of the LED light to provide a water tight seal disclosed in Ahland where the window 84 is attached to the reflector 74, the Examiner does not provide sufficient explanation to indicate how it would have been merely an "obvious alternative design" to apply the arrangement of Huang to the arrangement of Ahland in a manner that would arrive at the water tight structure recited in claim 1.

As a result we reverse the Examiner' rejection of claim 1. Because claims 11 and 21 contain similar limitations, we reverse the Examiner's decision to reject those claims as well. Because claims 2–5, 12–15, 22–25, and 29 all depend from claims 1, 11, or 21, we reverse the Examiner's decision to reject those claims as well.

Rejections 2 and 3

Dependent claims 7, 17, and 26, the subject of Rejection 2, and dependent claims 9, 10, 19, 20, 27, and 28, the subject of Rejection 3, are rejected based on the same combination of Ahland and Huang as applied to independent claims 1, 11, and 21. Final Act. 15–18. Thompson, which is cited for disclosing a flexible latch including a living hinge and Thrasher, which is cited for disclosing annular fins (*id.*), fail to make up for the

deficiencies identified above with respect to Ahland and Huang. Accordingly, we reverse Rejections 2 and 3 for similar reasons as Rejection 1.

CONCLUSION

The Examiner's rejections of claims 1–5, 7, 9–15, 17, and 19–29 under 35 U.S.C. § 103 are reversed.

DECISION SUMMARY

In summary:

Claims Rejected	35 U.S.C. §	Reference(s)/Basis	Affirmed	Reversed
1–5, 11–15, 21–25, 29	103(a)	Ahland, Hochstein, Huang		1–5, 11–15, 21–25, 29
7, 17, 26	103(a)	Ahland, Hochstein, Huang, Thompson		7, 17, 26
9, 10, 19, 20, 27, 28	103(a)	Ahland, Hochstein, Huang, Thrasher		9, 10, 19, 20, 27, 28
Overall Outcome				1–5, 7, 9–15, 17, 19–29

REVERSED