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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte CURT PROGL

Appeal 2018-003119
Application 13/622,763
Technology Center 2800

Before LINDA M. GAUDETTE, KAREN M. HASTINGS, and
JANE E. INGLESE, *Administrative Patent Judges*.

GAUDETTE, *Administrative Patent Judge*.

DECISION ON APPEAL¹

Appellant² appeals under 35 U.S.C. § 134(a) from the Examiner’s decision finally rejecting claims 1–5 and 7–28. We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM-IN-PART.

According to the Specification, at the time of the invention, it was well known in the art that light emitting diodes (LEDs) generate heat during the generation of light. Spec. 6:35. This heat is “measured by a ‘junction temperature’,

¹ This Decision includes citations to the following documents: Specification filed Sept. 19, 2012 (“Spec.”); Final Office Action dated Apr. 13, 2016 (“Final”); Appeal Brief filed Mar. 1, 2017 (“Appeal Br.”); Examiner’s Answer dated Nov. 28, 2017 (“Ans.”); and Reply Brief filed Jan. 29, 2018 (“Reply Br.”).

² The Appellant is the Applicant, Cree, Inc., also identified as the real party in interest. Appeal Br. 1.

i.e., the temperature of the semiconductor junction of the light emitting diode.” *Id.* at 6:36–7:1. According to the Specification, many LED light sources have average operating lifetimes of decades (as opposed to just months or 1–2 years for many incandescent bulbs), but this lifetime can be significantly shortened if the LEDs are operated at elevated junction temperatures. *Id.* at 7:2–6. The intensity of emitted light may also vary with junction temperature. *Id.* at 7:16–17.

The present invention is directed to providing a means of improved heat dissipation in lighting devices that comprise one or more LEDs. *See, e.g., id.* at 7:36–8:1. A lighting device in accordance with the invention is illustrated in Figure 3, reproduced below.

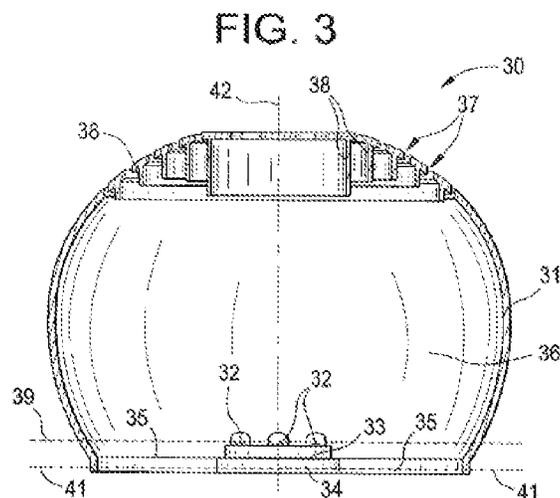


Figure 3, above, is a sectional view of lighting device 30. Spec. 41:31. Lighting device 30 comprises shield element 31, portions of which define space 36. *Id.* at 41:32–33, 42:4. A plurality of LEDs 32 are within space 36. *Id.* at 42:9. LEDs 32 are mounted on circuit board 33. *Id.* at 41:33–42:1. Circuit board 33 is mounted on support 34. *Id.* at 42:1. Shield element 31 comprises a plurality of vents 37 through which fluid can exit space 36, and a plurality of shield members 38 which assist in shielding LEDs 32 from potential lines of vision through vents 37. *Id.* at 42:4–7.

Shield element 31 thus blocks LEDs 32 from direct view from all locations outside shield element 31 that are above plane 39 that extends through, and is an emission plane of, LEDs 32. *Id.* at 42:9–12. Shield element 31 also blocks LEDs 32 from direct view from all outside locations that are above plane 41, defined by opening 40 (*see* Fig. 4). *Id.* at 42:21–23. In the Figure 3 embodiment, plane 41 is substantially parallel to the emission planes of each of LEDs 32. *Id.* at 42:23–24.

Of the appealed independent claims, claims 1, 8, and 20–27 are directed to “[a] lighting device,” and claims 16 and 28 are directed to “[a] shield element.” *See* Appeal Br. A1–A6. Claim 1 is representative of the appealed claims, and is reproduced below.

1. A lighting device, comprising:
 - a shield element; and
 - at least a first light source,
 - the first light source within a space defined by portions of the shield element,
 - the shield element comprising at least a first vent through which gas can pass to exit from the space,
 - the shield element blocking the first light source from direct view from at least all locations outside the shield element that are to a light emission side of an emission plane of the first light source, the emission plane extending through the first light source, the first vent to the light emission side of the emission plane.

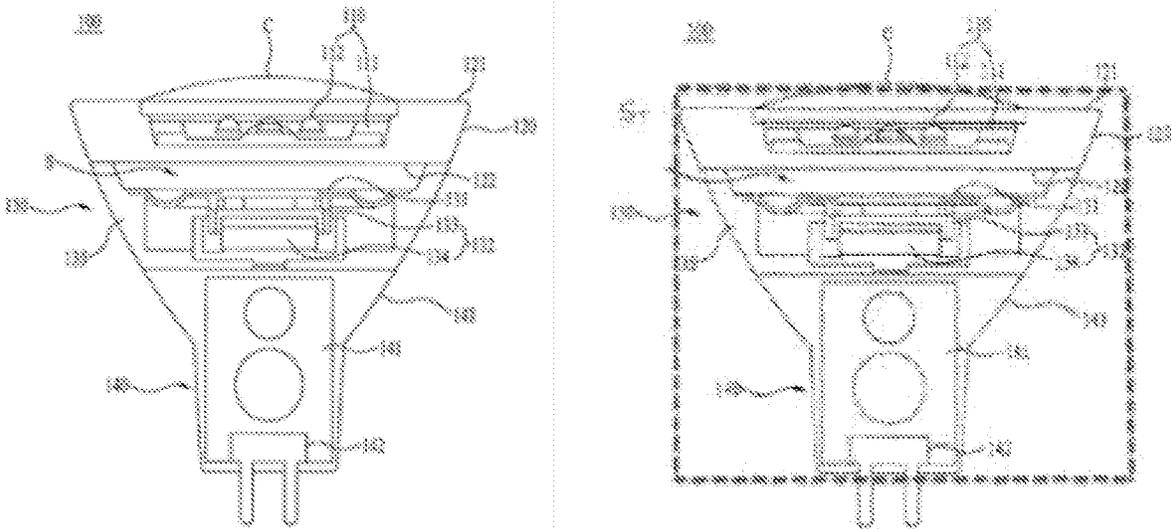
Appeal Br. A-1.

The Examiner maintains the following grounds of rejection on appeal:

1. claims 1, 3–5, 8, 9, 11–14, 16, 17, and 19–28 under 35 U.S.C. § 102(e) as anticipated by Jung (US 2012/0300474, pub. Nov. 29, 2012);
 2. claims 2, 10, and 18 under 35 U.S.C. § 103(a) as obvious over Jung;
- and

3. claims 7 and 15 under 35 U.S.C. § 103(a) as obvious over Jung in view of Premysler (US 2010/0314985 A1, pub. Dec. 16, 2010).

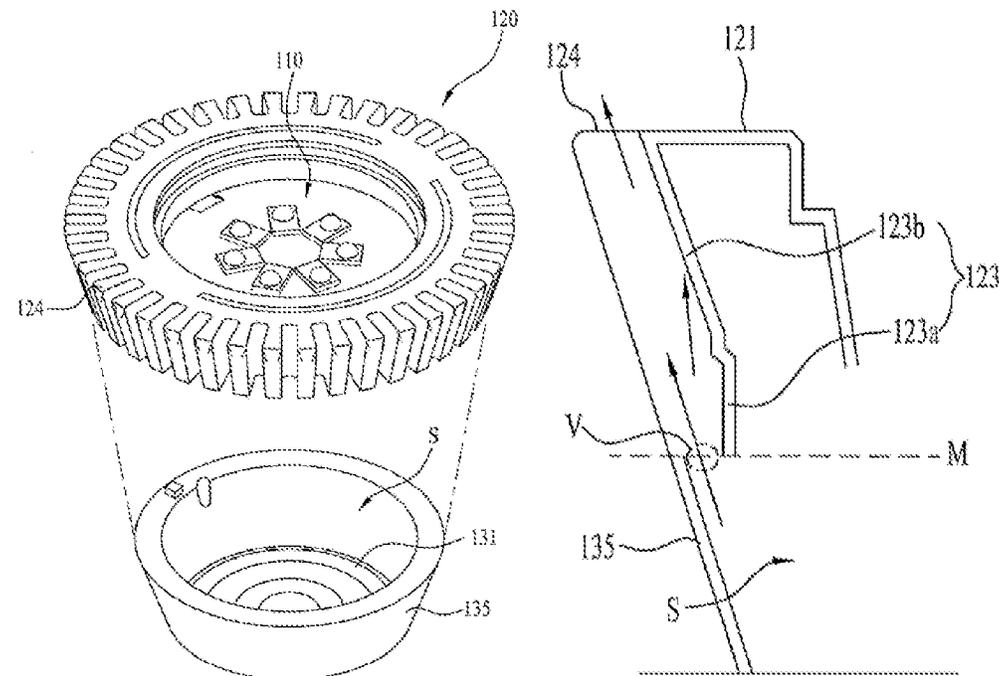
Jung discloses a lighting apparatus comprising a cooling system that dissipates heat generated by LEDs. Jung ¶ 7. Jung Figure 3 and the Examiner's first annotated version thereof from page 3 of the Answer are reproduced below on the left- and right-hand sides of the page, respectively.



Jung Figure 3 is a sectional view of a lighting apparatus. Jung ¶ 11. The Examiner's first annotated version of Figure 3 identifies a space (S_T) that surrounds substantially the entire lighting apparatus. *See* Ans. 3. Lighting apparatus 100 includes heat sink 120 having first surface 121 where light emitting module 110 is mounted, second surface 122 is located opposite first surface 121. Jung ¶ 45. Active cooling device 130 is mounted to surface 122 of heat sink 120. *Id.* ¶ 34. Light emitting module 110 is mounted in heat sink 120, and includes substrate 111 on which at least one LED 112 is mounted. *Id.* ¶¶ 34, 36. Diffusion cover (C) is configured to diffuse a light radiated from light emitting module 110 or to guide a path of the emitted light. *Id.* ¶ 37. A space (S) is formed between heat sink 120 and active cooling device 130. *Id.* ¶ 34. Active cooling device 130

generates fluid movement, e.g., airflow, used to dissipate the heat of heat sink 120 by means of diaphragm 131, arranged in housing 135. *Id.* ¶¶ 35, 53.

Jung Figures 6 and 7, reproduced below, illustrate the structures that enable fluid movement into and out of active cooling device 130.



Jung Figure 6 (left-hand side of the page) is an exploded perspective view illustrating heat sink 120 and active cooling device 135. *Id.* ¶ 14. Jung Figure 7 (right-hand side of the page) is a sectional view illustrating the Figure 6 parts when coupled to each other, and the fluid flow out of space (S). *Id.* ¶¶ 15, 44. In the embodiment illustrated in Figures 6 and 7, heat sink 120 comprises a cylindrical-shaped body and a plurality of radiation fins 124 formed at outer circumferential surface 123 of the body. *Id.* ¶ 45. As shown in Figure 7, outer circumferential surface 123 may include slope portion 123b to deflect the air discharged outside via vent (V) from space (S) of the housing 135. *Id.* ¶ 48. When diaphragm 131 moves toward light emitting module 110, the volume of space (S) decreases, and

pressure difference between space (S) and the outside discharges the air in space (S) to the outside via a space formed between vent (V) and two neighboring radiation fins 124. *Id.* ¶ 63; *see* Figure 13A. When diaphragm 131 moves toward an opposite direction of light emitting module 110, the volume of space (S) increases, a pressure difference between space (S) and the outside draws outside air into space (S) via two radiation fins 124 and vent (V). *Id.* ¶ 63; *see* Figure 13B.

*GROUND 1: Rejection of claims 1, 3–5, 8, 9, 11–14, 16, 17, and 19–28
under 35 U.S.C. § 102(e) as anticipated by Jung*

Claims 1 and 3–5

The Examiner finds the claimed “shield element” reads on Jung’s diffusion cover C and heat sink 120. Final 3. The Examiner finds the claim recitation “the first light source within a space defined by portions of the shield element” reads on Jung’s LEDs 112 that are within lighting apparatus 100, i.e., a space defined by diffusion cover C and heat sink 120. *Id.* With reference to the annotated version of Jung Figure 3, reproduced above, the Examiner clarifies that the claimed “space” reads on the entire portion of Jung’s lighting apparatus that is within space (S_T). Ans. 3. The Examiner finds the claim limitation “at least a first vent through which gas can pass to exit from the space” reads on the area in Jung that extends from boundary (M) to the uppermost edges of the area formed between adjacent neighboring fins 124. *Id.* at 4 (providing an annotated copy of Figure 7); *see also* Final 3.

Appellant argues claims 1 and 3–5 as a group. *See* Appeal Br. 14–20. Appellant’s arguments raise the following two issues:

(1) Did the Examiner apply an unreasonably broad interpretation of the claim limitation “space” in finding Jung discloses a “first light source within a space defined by portions of the shield element, the shield element comprising at least a first vent through which gas can pass to exit from the space”? Reply Br. 2.

(2) Did the Examiner apply an unreasonably broad interpretation of the claim limitation “vent” in finding Jung discloses a vent located on the light emission side of the emission plane of the light source? Reply Br. 2.

As to the first issue, Appellant argues claim 1 requires that a first light source and a vent through which gas can exit are located within the same, undivided area, and that the claim language does not read on Jung’s apparatus wherein there is a physical separation (second surface 122 of heat sink 120) between the area in which the light source is located (heat sink 120) and the area in which the vent is located (housing 135). *See* Appeal Br. 20; Reply Br. 2.

During prosecution, claim terms are given their broadest reasonable construction consistent with the Specification. *In re ICON Health & Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007).

Turning first to the claims, we do not find any language that supports a construction of the term “space” in claim 1 as limited to a single, undivided area. We next look to the written description, which expressly defines

“the first light source within a space defined by portions of the shield element” (and any similar expressions), as . . . an imaginary shape that is of a maximum volume and that has outer surfaces that comprise (1) imaginary line segments between selected points on the shield element and (2) imaginary surfaces extending between respective said imaginary line segments, such that no point on the shield element lies outside the imaginary shape, the imaginary shape completely surrounds a space, and the first light source is within such space.

Spec. 13:14–20.

We find the Examiner’s identification of a space in Jung, i.e., the entire interior portion of Jung’s lighting apparatus that is within space (S_T) in annotated Figure 3 (Ans. 3), is consistent with the above definition which expressly defines the “space” as an imaginary shape comprising imaginary line segments. Both Jung’s LEDs 112 and Jung’s vent (V) are positioned within the space surrounded

by the imaginary shape. Accordingly, we determine the Examiner applied the broadest reasonable interpretation of the term “space” in finding Jung discloses a “first light source within a space defined by portions of the shield element, the shield element comprising at least a first vent through which gas can pass to exit from the space” (claim 1).

As to the second issue, Appellant argues Jung’s vent is located at boundary (M), which is on the side opposite the light emission side of the emission plane of LEDs 112. Appeal Br. 16–19; Reply Br. 2–3. The Examiner contends Appellant is applying an overly narrow interpretation of the claim language as requiring that the entire vent is located on the light emission side of the emission plane. Ans. 4. The Examiner contends the claim limitation is met because at least a portion of the vent, i.e., the area in Jung that extends from boundary (M) to the uppermost edges of the area formed between adjacent neighboring fins 124, is located on the light emission side of the emission plane. *Id.*

The Examiner appears to misapprehend Appellant’s argument, which is based on a contention that the claimed vent reads only on the opening located at boundary (M) between Jung’s housing 135 and heat sink 120. *See* Appeal Br. 17 (citing Jung Figures 3 and 7 and the corresponding description thereof, e.g., Jung ¶¶ 47, 48); Reply Br. 3 (“No reasonable interpretation of a vent through which gas can exit from a space would encompass the region between external surfaces of fins 124 in Jung ’474.”). Appeal Br. 17. Appellant does not dispute the Examiner’s determination that the claims encompass a structure wherein only a portion of the vent is located on a light emission side of the emission plane. Rather, Appellant’s argument is based on a disagreement over the scope of the claim term “vent.”

Turning first to the claims, we note that they do not recite a particular structure for the vent. The written description does not define the term “vent.”

However, claim 1 requires that the vent is part of the shield element and allows gas to exit from *the space*. As discussed above, the broadest reasonable interpretation of the claim term “space” encompasses Jung’s entire lighting apparatus within space (S_T) in the Examiner’s annotated Figure 3. Jung discloses that portion 123b of heat sink 120’s outer circumferential surface 123 deflects the fluid discharged from space (S) through vent (V). Jung ¶ 48. Figure 7 depicts portion 123b as extending to the uppermost edges of the area formed between adjacent fins 124 surrounding vent (V). As space (S_T) encompasses this area, we agree with the Examiner that the claim term “vent” reads on the entire structure extending from Jung’s vent (V) at boundary (M) to the uppermost edges of the area formed between adjacent neighboring fins 124. *See* Ans. 4. Although Appellant argues this interpretation is unreasonable (Reply Br. 3), Appellant has not directed us to evidence that supports the narrower interpretation it relies upon in support of patentability of the appealed claims. Accordingly, we determine the Examiner applied the broadest reasonable interpretation of the claim limitation “vent” in finding Jung discloses a vent located on the light emission side of the emission plane of the light source.

Because Appellant has not persuaded us of error in the Examiner’s rejection of claim 1, we sustain the rejection of claim 1 and its dependent claims 3–5.

Claims 8, 9, and 11–14

Appellant argues claims 8, 9, and 11–14 as a group. *See* Appeal Br. 20–22. Similar to the arguments advanced in support of patentability of claim 1, Appellant’s arguments in support of patentability of claim 8 are based on a contention that the Examiner applied an unreasonably broad interpretation of the claim term “space.” Appeal Br. 20–22; Reply Br. 3–4. These arguments are not

persuasive for the reasons discussed above. Accordingly, we sustain the rejection of claim 8 and its dependent claims 9 and 11–14.

Claims 16, 17, and 19

Appellant does not make separate arguments in support of patentability of claim 16 or its dependent claims 17 and 19. We, therefore, sustain the rejection of these claims. *See* 37 C.F.R. § 41.37(c)(iv).

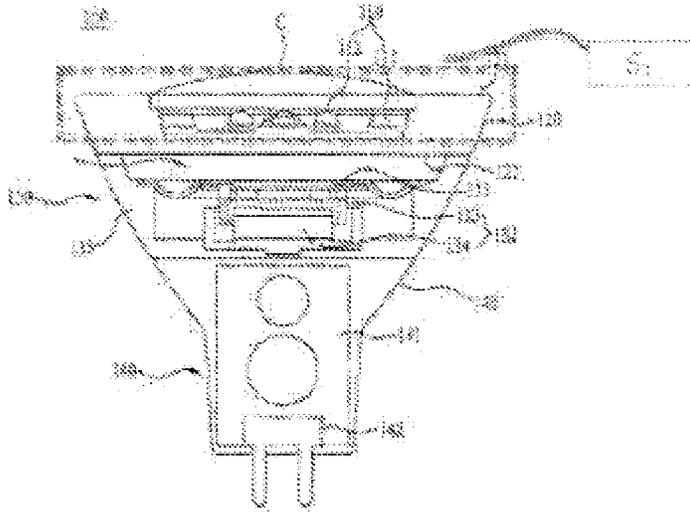
Claim 20

Claim 20 includes the following limitations:

the first light source within *a space defined by portions of the shield element*, . . . the shield element blocking the first light source from direct view from at least all locations outside the shield element that are to a first side of an emission plane of the first light source, the emission plane extending through the first light source, *an entirety of the space to the first side of the emission plane*.

Appeal Br. A-3–A-4 (emphasis added).

The Examiner determines that because “the reference to the entirety of space employs the indefinite article ‘an’ in place of the definite article ‘the,’” the recitation “a space defined by portions of the shield element” does not provide antecedent basis for “the space” in the recitation “an entirety of the space to the first side of the emission plane.” Ans. 6. The Examiner determines the broadest reasonable interpretation of the claim language encompasses a space that is “subdivided into any number of portions, with an entirety of one of those portions being ‘to the first side of the emission plane.’” *Id.* The Examiner provides a second annotated version of Jung Figure 3, reproduced below, to support a finding of anticipation of claim 20.



In the second annotated version of Jung Figure 3 (a sectional view of a lighting apparatus), the Examiner identifies a space (S_1): an area surrounding LEDs 112 (a first light source), diffusion cover C and heat sink 120 (a shield element), and extending from boundary M to the uppermost edges of a region formed between adjacent neighboring fins 124 (a vent) (*see* Jung Figure 7 *supra* p. 5). *See* Ans. 5. The Examiner contends the “space” recited in the claim 20 recitations “the first light source within a space defined by portions of the shield element, the shield element comprising at least one vent through which gas can pass to exit from the space” reads on space (S_T) in the second annotated version of Jung Figure 3 (*see supra* p. 4). Ans. 6. The Examiner finds space (S_1) is a subdivision of space (S_T). *Id.* The Examiner finds the claim 20 limitation “an entirety of the space to the first side of the emission plane” reads on space (S_1). Ans. 6.

Appellant contends the Examiner’s rejection is based on an erroneous interpretation of “an entirety of the space” as not referring to the previously-recited “space defined by portions of the shield element.” Reply Br. 5. Appellant argues “[t]he article ‘an’ is used in introducing the term ‘entirety’ because the term

‘entirety’ does not appear previously in claim 20.” *Id.* Appellant argues the article “the” precedes the term “space,” and, therefore, clearly refers to the prior recitation of “a space.” *Id.*

We agree with Appellant that the broadest *reasonable* interpretation of “an entirety of the space to the first side of the emission plane” is that all, as opposed to a portion, of the “space defined by portions of the shield element” is positioned to the first side of the emission plane. We further agree with Appellant that the entirety of space (S_T) in the Examiner’s first-annotated version of Jung Figure 3 (*supra* p. 4) is not located on the first side of the emission plane. Reply Br. 5; *see* Appeal Br. 22–23.

Because Appellant has identified reversible error in the Examiner’s rejection of claim 20, we do not sustain the rejection of this claim.

Claim 21

Claim 21 recites a shield element comprising regions that define an opening and at least one vent. Appeal Br. A-4. Claim 21 further recites a first light source within a space defined by portions of the shield element and requires that the shield element block the first light source from direct view from “at least all locations outside the shield element that are to a first side of a plane defined by at least portions of the opening.” *Id.* Claim 21 recites “an entirety of the space to the first side of the plane, the plane and the vent on opposite sides of the space.” *Id.*

The Examiner’s rejection of claim 21 is based on the same, erroneous interpretation of “an entirety of the space” discussed above in connection with the rejection of claim 20. *See* Ans. 6–7. Appellant has persuasively argued that the entirety of space (S_T) in the Examiner’s first-annotated version of Jung Figure 3 (*supra* p. 4) is not located on the first side of the plane defined by at least portions

of the opening defined by regions of the shield element, as required by claim 21.
Reply Br. 6.

Because Appellant has identified reversible error in the Examiner's rejection of claim 21, we do not sustain the rejection of this claim.

Claims 22 and 24

Claim 22 recites that "the light source [is] shielded from direct view through the vent from a position outside the space by at least a portion of the shield element." Appeal Br. A-4. Claim 24 requires that "the shield element block[] the first light source from direct view from at least all locations outside the shield element that are to a first side of an emission plane of the first light source . . . [that] extend[s] through the first light source." *Id.* at A-5.

As to claim 22, Appellant argues the Examiner has not identified a disclosure in Jung of "any vent through which light from the LEDs 112 passes." Appeal Br. 26. Appellant contends "a person of skill in the art would not characterize Jung '474 as having structure that 'blocks' any of the LEDs 112 from direct view through the boundary between the housing 135 and the heat sink 120." Reply Br. 6–7.

Appellant's arguments are not persuasive of error in the Examiner's rejection. As to Appellant's argument that the Examiner has not identified a disclosure in Jung of a vent through which light passes, we note that claim 22 does not include such limitation. The Examiner has identified a teaching in Jung of a lighting device comprising "a space defined by portions of the shield element" (claim 22) and a "vent though which gas can pass to exit from the space" (*id.*). See Final 7–8; Ans. 3–4, 7; discussion of the rejection of claim 1 *supra* pp. 6–9. Appellant has not explained persuasively why the Examiner erred in finding Jung's heat sink 120 (the shield), a portion of which is positioned between Jung's vent and

LEDs 112 (*see* Ans. 4, Examiner’s annotated version of Jung Figure 7), would shield Jung’s LEDs 112 from direct view through the vent. In this regard, we note that claim 22 merely requires that the light source is shielded from direct view through the vent at some non-specific, single location outside the space. *See* Spec. 14:4–9 (“In the sense that the shield element blocks the first light source from direct view from at least some locations, the shield element ‘shields’ the first light source from direct view from such locations (or would he capable of ‘shielding’ a light source from direct view from some locations if such a light source were located in a certain position or positions relative to the shield element).”).

As to claim 24, Appellant’s arguments in support of patentability are based on an underlying contention that the Examiner applied unreasonably broad interpretations of the claim terms “space” and “vent.” *See* Appeal Br. 26–27. These arguments are not persuasive for the same reasons discussed above in connection with the rejection of claim 1.

Because Appellant has not persuaded us of error in the Examiner’s rejection of claims 22 and 24, we sustain the rejection of these claims.

Claims 23 and 27

Claim 23 recites “at least some light directly from the light source passing through the first shield member and the first vent.” Appeal Br. A-5. The Examiner cites Jung Figures 1–3, without explanation, in support of a finding that Jung discloses this feature. Final 8. In the Appeal Brief, Appellant disagrees with this finding, contending the Examiner has not explained how light directly from LEDs 112 would pass through a vent in Jung’s apparatus. Appeal Br. 25–26. The Examiner does not address this argument in the Answer. *See* Ans. 7; Reply Br. 7; Examiner’s explanation of how refracted light enters the vent in Jung’s apparatus *infra* p. 15.

Accordingly, because the Examiner has not met the burden to identify a teaching of all features recited in claim 23, we do not sustain the rejection of this claim.

Claim 27 recites “at least some light emitted by the first light source passes through a portion of the shield element before passing through the first vent.” Appeal Br. A-6. The Examiner cites Jung Figure 2, without explanation, in support of a finding that Jung discloses this feature. Final 10. In the Answer, however, the Examiner explains that the structure in Jung that forms a vent includes outer surface 123 of heat sink 120, and that slope portion 123b of outer surface 123 deflects air discharged from the space (i.e., the entire interior portion of Jung’s lighting apparatus that is within space (S_T) in annotated Figure 3 (*see* Ans. 3)). *Id.* at 7; *see* Jung Fig. 7 *supra* p. 5. The Examiner finds outer surface 123 and slope portion 123b are located on the same plane as part of Jung’s shield element (i.e., diffusion cover C and heat sink 120). Ans. 7. The Examiner finds that light from LEDs 112 will first pass through translucent, diffusion cover C, and then “a portion of said light will be refracted back onto the first vent because of the difference in indices of refraction between the shield element and air (i.e., Snell’s law operates at the boundary).” *Id.* at 7–8.

Appellant contends there is no support for the Examiner’s findings and explanation and that the Examiner’s interpretation of the claim language as reading on Jung’s structure is unreasonable. Reply Br. 8. As discussed above in connection with the rejection of claim 1, we determine the Examiner applied the broadest reasonable interpretation of “a space defined by portions of the shield element” and “a first vent through which gas can pass to exit from the space” in rejecting claim 27. Appellant has not explained, with sufficient detail, why, when applying the broadest reasonable constructions of the claim terms “space” and “vent,” the

Examiner erred in finding Jung’s lighting device is capable of operating in a manner that would result in “at least some light emitted by the first light source pass[ing] through a portion of the shield element before passing through the first vent” (claim 27). *See In re Kunzmann*, 326 F.2d 424, 425 n.3 (CCPA 1964) (“[T]he examiner appears to have considered thoroughly [appellant’s] assertion, and to have found otherwise. Since appellant has not shown this finding to be clearly erroneous, we accept it as fact.”).

Because Appellant has not identified reversible error in the Examiner’s rejection of claim 27, we sustain the rejection of this claim.

Claims 25 and 26

Appellant’s arguments in support of patentability of claims 25 and 26 are based on a contention that the Examiner applied unreasonably broad interpretations of the claim terms “space” and “vent.” Appeal Br. 27–28. These arguments are not persuasive for the same reasons discussed above in connection with the rejection of claim 1. Therefore, we sustain the rejections of claims 25 and 26.

Claim 28

Claim 28 requires that substantially all portions of the shield element are translucent or transparent. Appeal Br. A-6. Appellant argues Jung does not disclose this feature. *Id.* at 29. The Examiner contends the term “substantially” is a relative term, and that this claim limitation is met by diffusion cap C, which is transparent. Ans. 8. Appellant argues the Examiner’s finding is unreasonable because diffusion cap C does not comprise substantially all of the structures identified by the Examiner as corresponding to the shield element, i.e., diffusion cap C and heat sink 120.

When a word of degree is used we look to the specification to determine a standard for measuring that degree. *Seattle Box Co. v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 826 (Fed. Cir. 1984).

The Specification defines several terms that include the word “substantially”: a “substantially transparent” structure “means that the structure . . . allows passage of at least 90 % of incident visible light”; a “substantially symmetrical” shape or structure “means that the shape or structure is symmetrical or could be made symmetrical by removing [and/or by adding] a specific region or regions which in total comprise not more than about 10 percent of its volume (and/or its surface area)”; “‘substantially parallel,’ . . . when referring to two planes, means that the two planes do not diverge from each other by more than five degrees.” Spec. 14:23–32; *see also id.* at 33:34–34:13 (describing a temperature that does not vary substantially as not more than a 2 degree C variation where temperature is 25-35 degrees C). The Specification discloses that “[i]n some embodiments . . . at least part of the shield element is substantially transparent (and in some embodiments, a substantial entirety of the shield element is substantially transparent).” Spec. 16:12–15.

Based on the use of the term “substantially” in the Specification, we determine the claim 28 phrase “substantially all portions of the shield element” means at least 90% or more of the shield element.

The Examiner cites Jung Figures 1–3 and paragraph 37 in support of a finding that Jung discloses a shield element wherein “substantially all portions . . . [are] translucent or transparent.” Final 10. We agree with Appellant that the evidence relied on by the Examiner is insufficient to support a finding that substantially all portions (i.e., 90% or more) of Jung’s shield element, a

combination of translucent or transparent diffusion cover C (Jung ¶ 37) and metal heat sink 120 (*id.* ¶ 46), are translucent or transparent.

Because Appellant has identified reversible error in the Examiner's rejection of claim 28, we do not sustain the rejection of this claim.

*GROUND 2: Rejection of claims 2, 10, and 18
under 35 U.S.C. § 103(a) as obvious over Jung*

Appellant argues the Examiner erred in rejecting claims 2 and 10 for the same reasons discussed in connection with independent claims 1 and 8 from which claims 2 and 10 depend, respectively. Appeal Br. 30. Appellant's arguments in support of patentability of claims 1 and 8 were found unpersuasive. *See supra* pp. 6–10. Accordingly, we likewise are unpersuaded of error in the Examiner's rejection of claims 2 and 10. Appellant does not present arguments in support of patentability of claim 18 or claim 16 from which claim 18 depends. *See supra* p. 10; Appeal Br. 30. Accordingly, we sustain the rejections of claims 2, 10, and 18.

*GROUND 3: Rejection of claims 7 and 15
under 35 U.S.C. § 103(a) as obvious over Jung and Premysler*

Appellant argues Premysler fails to cure the deficiencies in the Examiner's rejection of claims 1 and 8 from which claims 7 and 15 depend, respectively. Appeal Br. 30–33. Appellant's arguments in support of patentability of claims 1 and 8 were found unpersuasive. *See supra* pp. 6–10. Accordingly, we likewise are unpersuaded of error in the Examiner's rejection of claims 7 and 15. The rejection of claims 7 and 15 is sustained.

ORDER

Claims Rejected	Basis	Reference(s)	Affirmed	Reversed
1, 3–5, 8, 9, 11–14, 16, 17, and 19–28	§ 102(e)	Jung	1, 3–5, 8, 9, 11–14, 16, 17, 19, 22, and 24–27	20, 21, 23, and 28
2, 10, and 18	§ 103(a)	Jung	2, 10, and 18	
7 and 15	§ 103(a)	Jung and Premysler	7 and 15	
Summary			1–5, 7–19, 22, and 24–27	20, 21, 23, and 28

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART