



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.
12/440,470	10/21/2009	Francis Depez	2006P00987WOUS	3236
136186	7590	11/16/2016	EXAMINER	
Lumileds LLC 370 West Trimble Road San Jose, CA 95131			BREVAL, ELMITO	
			ART UNIT	PAPER NUMBER
			2875	
			NOTIFICATION DATE	DELIVERY MODE
			11/16/2016	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

nancy.glynn@philips.com
us-ip@patentlawgroup.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte FRANCIS DEPREZ and JOSEF MERX

Appeal 2015-004886
Application 12/440,470
Technology Center 2800

Before JEFFREY T. SMITH, JEFFREY R. SNAY, and
MICHAEL G. McMANUS, *Administrative Patent Judges*.

McMANUS, *Administrative Patent Judge*.

DECISION ON APPEAL

The Examiner finally rejected claims 1, 2, 6, 7, 9, 10 and 12 of Application 12/440,470 under 35 U.S.C. § 102 as anticipated, claims 5, 8 and 11 under 35 U.S.C. § 103(a) as obvious, and claim 12 under 35 U.S.C. § 112, second paragraph, as indefinite. Final Act. (April 29, 2014). Appellants¹ seek reversal of these rejections pursuant to 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6.

For the reasons set forth below, we AFFIRM.

¹ Koninklijke Philips Electronics N.V. is identified as the real party in interest. Appeal Br. 2.

BACKGROUND

The present application concerns a gas discharge lamp with a quartz glass envelope (bulb) that serves as a discharge space. Spec. 1. Two electrode rods project into the discharge space which may contain mercury and a halogen or other gas. *Id.* at 1, 4. A portion of each electrode rod is embedded in a sealed portion of the quartz envelope so that the two electrodes are positioned coaxially on opposite sides of the discharge space. *Id.* at 1. The portion of the electrode embedded in the sealed portion of the quartz envelope is characterized by irregularly shaped, hair-like protrusions which exhibit mechanical flexibility and deformability. *Id.* These protrusions contact the quartz glass and convey heat from the electrode to the quartz. *Id.* at 2. This has the effect of decreasing the difference between the expansion of the conductor and the surrounding quartz glass, thereby reducing the creation of stress and cracks in the surrounding quartz glass material. *Id.*

Claim 1 is representative of the pending claims and is reproduced below:

1. A lamp comprising a discharge space formed by an envelope (1) of a quartz glass material, wherein at least a part of a one-piece electric conductor (8) is in direct physical contact with the quartz glass material of the envelope (1), characterized in that at least a portion of the surface of said part of the conductor (8) comprises irregularly shaped, hair-like protrusions (15) forming a brush-like structure at said surface, wherein the protrusions (15) have such a height to cross-section ratio that the brush-like structure (15) has a mechanical flexibility and deformation potential which is substantially higher than that of a solid structure of the same material.

Appeal Br. 17 (Claims App.).

REJECTIONS

The Examiner maintains the following rejections:

1. Claims 12 is rejected under 35 U.S.C. § 112, second paragraph, as indefinite. Final Act. 2.
2. Claims 1–2, 6, 7, 9, 10 and 12 are rejected under 35 U.S.C. § 102 as anticipated by Kaneko et al. (US 2003/0042856 A1, pub. Mar. 6, 2003) (“Kaneko”). Final Act. 2–3.
3. Claims 5 and 8 are rejected under 35 U.S.C. § 103(a) as obvious over Kaneko. Final Act. 5.
4. Claim 11 is rejected under 35 U.S.C. § 103(a) as obvious over Claus et al. (WO 2006/082539 A2, pub. Aug. 10, 2006) (“Peter”)² in view of Kaneko. Final Act. 7.

DISCUSSION

Rejection 1.

The Examiner rejected claim 12 as indefinite pursuant to 35 U.S.C. § 112, second paragraph. In response, Appellants offered an amendment after final rejection. This amendment after final rejection was not entered by the Examiner. Appeal Br. 3; Advisory Action, July 28, 2014. Appellants have not included any argument regarding the rejection of claim 12 as

² Peter Claus is listed as the lead inventor of WO 2006/082539 A2. We will refer to this reference as “Peter” so as to conform to the designation used in the Final Office Action and Appeal Brief. *See* Appeal Br. 5 n. 1.

indefinite in their Appeal Brief or Reply Brief. Accordingly, this rejection is summarily affirmed.³

Rejection 2.

The Examiner rejected claims 1, 2, 6, 7, 9, 10 and 12 as anticipated by Kaneko.⁴ Appellants seek review on the basis that Kaneko does not teach “irregularly shaped, hair-like protrusions,” Appeal Br. 6–8, or a one-piece electric conductor “in direct physical contact with the quartz glass material of the envelope,” *id.* at 8–11.

Irregularly Shaped, Hair-Like Protrusions

The Examiner finds that Kaneko teaches formation of an irregularly shaped, hair-like protrusion. Final Act. 3. In support of such finding the Examiner cites to a figure (Fig. 5) depicting protrusions having a triangular cross-section and a portion of the Specification which provides that “[t]he shape of the roughness is a threaded structure having a cross-section of a triangle.” Kaneko, ¶ 93. The Examiner finds that the triangle-shaped protrusions are irregular because “the top corrugated portion of the electrode is irregularly shaped with [respect to] the bottom corrugated portion of the electrode.” Final Act. 3.

³ Manual of Patent Examining Procedure (MPEP) § 1205.02 (9th ed. Mar. 2014) (“If a ground of rejection stated by the examiner is not addressed in the appellant’s brief, appellant has waived any challenge to that ground of rejection and the Board may summarily sustain it, unless the examiner subsequently withdrew the rejection in the examiner’s answer.”).

⁴ Appellants do not separately argue claims 2, 6, 7, 9, 10 and 12. App. Br. 3–10. Accordingly, we select independent claim 1 as representative of the subject matter before us on appeal.

Appellants note the same portion of the Specification and argue that it does not amount to a teaching of “irregularly shaped, hair-like protrusions.” Appeal Br. 6. In addition, Appellants argue that such protrusions would be incompatible with a tightly wound tungsten coil. *Id.*

In the Answer, the Examiner further articulates a basis for finding that the protrusions of Kaneko are “irregular” as follows:

the protrusions in the upper portion of the electrode rod are not [in] symmetry with the protrusions of the lower portion of the electrode rod. Also, the protrusions of the electrode rod are not equiangular (i.e. all angles are equal in measure) and equilateral (i.e. all sides have the same length).

Answer 2. The Examiner additionally cites to the teaching of Kaneko that the protrusions may have a trapezoidal cross-section. Answer 2; Kaneko ¶ 96.

We must construe “irregularly shaped, hair-like protrusions,” in order to determine whether such features are disclosed by Kaneko. “[D]uring examination proceedings, claims are given their broadest reasonable interpretation consistent with the specification.” *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000).

The term “irregularly shaped” does not appear in the Specification. Appellants point to the Specification’s description of a brush-like structure having a “dendritic, fibrous and/or conical shape,” Spec. 5, as providing support for the term. Reply 3. With regard to the term “hair-like protrusions,” the Specification provides that a portion of the electrode has a “bristly or brush-like appearance, with the protrusions arising from the surface of the conductor like the hairs or spikes of a brush.” Spec. 2. Construing “irregularly shaped, hair-like protrusions” in view of these teachings, and giving the phrase its broadest reasonable interpretation, it

may include “conical” structures and “spikes.” Accordingly, it is reasonable to view the “rough” triangular and/or trapezoidal structures taught by Kaneko as irregularly shaped, hair-like protrusions as required by the claimed invention. Kaneko ¶¶ 93, 96, Figure 5.

*One-Piece Electric Conductor in Direct Contact
with the Quartz Envelope*

Appellants additionally argue that the electrode of Kaneko does not contact the quartz envelope because there is an intervening structure referred to as “sealing portion glass 9.” *Id.* at 9. Kaneko teaches to reduce stress and cracking by the use of a quartz glass that differs from the quartz envelope in its thermal coefficient. This sealing portion is taught to have “a thermal expansion coefficient between those of the coil 6 and the side tube portion (quartz glass) 2.” Kaneko, ¶ 74.

The Examiner, however, finds that one of the figures (Figure 17) shows direct contact between the electrode and the quartz envelope. Answer 3 (“[a]s noted in at least figure 17 below, Kaneko discloses at least a part of the one-piece electrode (3) is in direct physical contact with the quartz glass material (abstract) of the envelope (1).”). The Examiner further notes that the Abstract provides “[t]he electrode rod has a surface area increase structure . . . for increasing a surface area in at least a part of a portion buried in the side tube portion.” Answer at 3–4.

Appellants argue that reliance upon Figure 17 is misplaced because that figure shows a tungsten coil (6), which surrounds the electrode, in contact with the quartz rather than the electrode in direct contact with the quartz envelope. Reply 4. Kaneko, however, teaches a coil structure and a threaded structure as two alternative “surface area increase structures.” Kaneko ¶¶ 18, 19. This “surface area increase structure,” which

encompasses both the coil structure and the threaded structure, is designated by the numeral 6. *See, e.g.*, Kaneko ¶ 74 (“The electrode rod 3 has a surface area increase structure 6 for increasing the surface area in at least a part of the portion that is buried in the side tube portion 2.”). Thus, one of skill in the art would understand that the structure indicated by the numeral 6 in the figures may be either a tungsten coil or threaded structure as depicted in Figure 5.

Accordingly, we are not persuaded of reversible error in the Examiner’s finding that Figure 17 of Kaneko teaches an electrode in direct contact with the quartz envelope. Thus, Appellants have not adequately distinguished the claimed lamp with a quartz glass envelope from the lamp of Kaneko.

Rejection 3.

The Examiner rejected claims 5 and 8 as obvious over Kaneko. Final Act. 5. Appellants have not included any argument regarding the rejection of claims 5 and 8 as obvious in their Appeal Brief or Reply Brief. Accordingly, this rejection is summarily affirmed. MPEP § 1205.02 (9th ed. Mar. 2014).

Rejection 4.

The Examiner rejected claim 11 as obvious over Peter in view of Kaneko. Appellants argue that neither Peter nor Kaneko teach “irregularly shaped, hair-like protrusions,” and that one of skill in the art would not combine the teachings of Peter and Kaneko. Appeal Br. 11–15. Appellants’ contentions regarding the absence of a teaching of “irregularly shaped, hair-like protrusions” lack merit as explained above.

Appellants further contend that one teaching of Peter, the placement of longitudinal grooves along the electrode, is incompatible with the threaded structure of Kaneko. Specifically, Appellants assert that irregularly shaped, hair-like protrusions would not permit the roughness ratio (ratio of circumferential roughness to longitudinal roughness) taught by Peter, *id.* at 12, and that the rotation step required by claim 11 is incompatible with longitudinal grooves, *id.* at 13–14.

The Examiner finds that “one of ordinary skill in the art would have found it obvious at the time the invention was made to rotate the electrode rod in order to accurately form the protrusions in the desired location.”

Answer 6.

Appellants appear to be correct that rotation of the electrode to form hair-like protrusions is incompatible with the longitudinal grooves of Peter. The Examiner, however, does not rely on the teaching of Peter relating to longitudinal grooves. Nor can Peter be said to “teach away” from the circumferential or helical (“threaded”) grooves of Kaneko. References teach away where their disclosures “criticize, discredit, or otherwise discourage the solution claimed.” *In re Fulton*, 391 F.3d 1195, 1201 (Fed. Cir. 2004). Peter does not criticize or discredit helical grooves. One of skill in the art would have understood that both orientations were known in the art and suitable for use to mitigate the effects of thermal expansion.

For the foregoing reasons and those set forth in the Answer, based on the totality of the record, we determine that the preponderance of evidence weighs in favor of obviousness, giving due weight to Appellants’ arguments. Accordingly, the Examiner’s rejection of claim 11 is affirmed.

CONCLUSION

The rejection of claims 1, 2, 6, 7, 9, 10 and 12 as anticipated by Kaneko is affirmed. The rejection of claims 5 and 8 as obvious over Kaneko is affirmed. The rejection of claim 11 as obvious over Peter in view of Kaneko is affirmed. The rejection of claim 12 on the basis of indefiniteness is affirmed.

TIME PERIOD FOR RESPONSE

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

AFFIRMED