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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/015,431	01/27/2011	Gerard Harbers	XIC015 US	2611
34036	7590	11/16/2016	EXAMINER	
Silicon Valley Patent Group LLP 4010 Moorpark Avenue Suite 210 San Jose, CA 95117			PAYNE, SHARON E	
			ART UNIT	PAPER NUMBER
			2875	
			MAIL DATE	DELIVERY MODE
			11/16/2016	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte GERALD HARBERS, KELLY C. McGRODDY, and
CHRISTOPHER R. REED

Appeal 2015-002029
Application 13/015,431
Technology Center 2800

Before CHUNG K. PAK, KAREN M. HASTINGS, and
JEFFREY R. SNAY, *Administrative Patent Judges*.

HASTINGS, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants¹ appeal under 35 U.S.C. § 134(a) from the Examiner's rejections of claims 1–7 and 9–21. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm-in-part.

Claims 1, 12, and 17 are illustrative of the claimed subject matter (emphasis, some paragraphing and indentation added):

1. An apparatus comprising:
a light source sub-assembly *having a length dimension extending in a first direction, a width dimension extending in a second direction*

¹ The real party in interest is stated to be Xicato, Inc. (App. Br. 4).

perpendicular to the first direction, and a plurality of Light Emitting Diodes (LEDs) mounted in a first plane, wherein the width dimension is less than the length dimension; and

a light conversion sub-assembly mounted above the first plane and physically separated from the plurality of LEDs and configured to mix and color convert light emitted from the light source sub-assembly, the light conversion sub-assembly comprising an output window, wherein a first portion of a first interior sidewall surface of the light conversion sub-assembly is aligned with the first direction and extends generally in a third direction between the first plane and the output window and is coated with a first type of wavelength converting material, wherein an entirety of a second interior sidewall surface aligned with the second direction and extends generally in the third direction between the first plane and the output window reflects incident light without color conversion.

12. An apparatus comprising:

a plurality of Light Emitting Diodes (LEDs); and

a light mixing cavity mounted above and physically separated from the plurality of LEDs and configured to mix and color convert light emitted from the LEDs, wherein a first interior surface of the light mixing cavity comprises a non-transmissive replaceable, reflective insert, and *wherein the non-transmissive replaceable, reflective insert comprises a non-metallic, diffuse reflective layer* and a second reflective backing layer that is substantially in contact with substantially all of the non-metallic, diffuse reflective layer.

17. An apparatus comprising:

a mounting board having a plurality of raised pads;

a plurality of Light Emitting Diodes (LEDs) *mounted on submounts having a first thickness, the plurality of LEDs mounted on submounts being mounted on the plurality of raised pads* of the mounting board;

a light mixing cavity configured to reflect light emitted from the plurality of LEDs until the light exits through an output window, the light mixing cavity *comprising a bottom reflector having a second thickness that is greater than the first thickness of the submounts and having a plurality of holes, the plurality of LEDs are elevated by the plurality of raised pads above a top surface of the bottom reflector through the plurality of holes, wherein a first portion of the light mixing cavity is coated with a first type of*

wavelength converting material, and wherein a portion of the output window is coated with a second type of wavelength converting material.

The Examiner maintains the following rejections:

claims 12 and dependent claims 13-16 and 21 as unpatentable under 35 U.S.C. §102(b) over Harbers (US 2009/0103296 A1 published April 23, 1999);

claim 1 and 9-11 as unpatentable under 35 U.S.C. § 103(a) over Tsutsumi (US 7,726,856 B2 issued June. 1, 2010) in view of EP 1,548,851 A2 ("Stanley Electric") and Ramer (US 7,845,825 B2 issued December 7, 2010);

claims 2 and 7 are unpatentable under 35 U.S.C. §103(a) over Tsutsumi, Stanley Electric, Ramer, and Intrator (US 3,851,164 issued November 26, 1974);

claim 3 as unpatentable under 35 U.S.C. §103(a) over Tsutsumi in view of Stanley Electric and Ramer, Pashley (US 6,547,416 B2 issued April 15, 2003), and Intrator;

claims 4 and 5 as unpatentable under 35 U.S.C. §103(a) over Tsutsumi, Stanley Electric, Ramer, Pashley, Intrator, and Ikeda (US 7,555,194 B2 issued June 30, 2009);

claim 6 as unpatentable under 35 U.S.C. §103(a) over Tsutsumi, Stanley Electric, Ramer, and Bostonian (US 4,277,820 issued July 7, 1981);

claim 17 as unpatentable under 35 U.S.C. § 103(a) over Chen et al. (US 7,646,030 B2 issued January 12, 2010) ("Chen") in view of Tsutsumi.

claims 18-19 as unpatentable under 35 U.S.C. §103(a) over Chen, Tsutsumi, and JP 2008145942 A published June 26, 2008 to Komuro; and

claim 20 as unpatentable under 35 U.S.C. §103(a) over Chen, Tsutsumi and Intrator.

OPINION

The § 102 Rejection of claims 12-16 and 21

We have reviewed Appellants' arguments. However, we determine that a preponderance of the evidence supports the Examiner's finding that

the claimed subject matter of representative independent claim 12 is anticipated within the meaning of § 102 in view of Harbers. Accordingly, we will sustain the Examiner's rejection for essentially those reasons expressed in the Answer and we add the following for emphasis.

Appellants argue that Harbers only teaches that a sidewall, and not a sidewall insert, may have the recited non-metallic diffuse reflective layer (App. Br. 17; Reply Br. 8). However, Harbers explicitly states that its reflective sidewall surface may be achieved via the use of a sidewall insert (Harbers ¶ 31 (“the reflective surface of the side walls 110 may be achieved using a separate insert”)).

Thus, a preponderance of the evidence supports the Examiner's position that one of ordinary skill would reasonably infer from Harbers' disclosure a sidewall insert having the recited non-metallic diffuse reflective layer (e.g., white paint as pointed out by the Examiner (e.g., Ans. 4)). *In re Preda*, 401 F.2d 825, 826 (CCPA 1968) (In determining whether a reference anticipates the subject matter recited in a claim, “it is proper to take into account not only specific teachings of the reference but also the inferences which one skilled in the art would reasonably be expected to draw therefrom.”) Appellants have not directed our attention to any persuasive reasoning or credible evidence to establish that the Examiner's interpretation of Harbers' disclosure is unreasonable.

The Examiner's § 102 rejection of claims 12-16 and 21 is affirmed.
The 103 Rejections of claims 1-7, 9-11, and 17-20

The Examiner has the initial burden of establishing a prima facie case of obviousness based on an inherent or explicit disclosure or suggestion of the claimed subject matter under 35 U.S.C. § 103. *In re Oetiker*, 977 F.2d

1443, 1445 (Fed. Cir. 1992) (“[T]he examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a *prima facie* case of unpatentability.”). To establish a *prima facie* case of obviousness, the Examiner must show that each and every limitation of the claim is described or suggested by the prior art or would have been obvious based on the knowledge of those of ordinary skill in the art or the inferences and creative steps a person of ordinary skill in the art would have employed. *In re Fine*, 837 F.2d 1071, 1074 (Fed. Cir. 1988); *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 417 (2007).

For the reasons set out by Appellants in their briefs, we reverse the 103 rejections of claims 1-8 and 9-11.

A preponderance of the evidence supports Appellants’ position that the Examiner has not pointed to any evidence to adequately establish that the applied prior art teaches or suggests the required relationships of the first interior sidewall and second interior sidewalls being perpendicular to one another with each extending in the third direction towards the output window as recited in claim 1. The Examiner has not offered any reasoning based on the skilled artisan’s knowledge or inferences and creativity employed that would support an obviousness conclusion. The Examiner’s position that the claimed relationships encompasses the applied prior art of Tsutsumi are at best based on a flawed interpretation of the claim language (e.g., Ans. 3 “the first and second sidewall orientations are shown in Tsutsumi”). As Appellants point out

The "lamp cover" 20 of Tsutsumi is mounted at the top of the housing 10. See, Fig. 2. The lamp cover 20 does not extend in the "third direction" as defined in the claim. In fact, the lamp cover 20 serves as the "output window" for the device in

Tsutsumi and, therefore, cannot "extend[] generally in a third direction between the first plane [in which the LEDs are mounted] and the output window" as required by claim 1.

Appellant notes that the Examiner ignores the requirement that the first interior sidewall surface extends in the third direction and Tsutsumi does not teach or suggest such a feature. Accordingly, the Examiner is in error and a prima facie case of obviousness has not been met.

Reply Br. 6.

The Examiner does not adequately explain how any other of the applied references remedy this deficiency (Ans. 2, 3). Thus, we reverse for the reasons explained by Appellants (Reply Br. 5-7; App. Br. 12-14).

Likewise, with respect to independent claim 17, the Examiner has not shown that Chen with Tsutsumi teaches or suggests the required limitations of LEDs mounted on submounts which are mounted on the raised pads, nor that the bottom reflector has a plurality of holes through which the LEDs are elevated by the raised pads above a top surface of the bottom reflector. (Reply Br. 9, 10; App. Br. 19, 20; Ans. 5; Non Final Rejection 11).

On the record before us, the Examiner has not shown that each and every limitation of either of claims 1 or 17 is either described or suggested by the prior art or would have been obvious based on the knowledge or inferences and creativity of the ordinary artisan. *See In re Fine*, 837 F.2d at 1074; *see also In re Warner*, 379 F.2d 1011, 1017 (CCPA 1967) ("A rejection based on section 103 clearly must rest on a factual basis, and these facts must be interpreted without hindsight reconstruction of the invention from the prior art"). Thus, the proposed modification of Ikeda with Yamauchi and "design choice" is based on improper hindsight

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reconstruction. The fact finder must be aware “of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. at 421 (citing *Graham v. John Deere Co.*, 383 U.S. 1, 36 (1966) (warning against a “temptation to read into the prior art the teachings of the invention in issue”)).

Accordingly, we reverse the appealed § 103 rejections of claims 1-7, 9-11, and 17-20.

ORDER

It is ordered that the Examiner’s decision is affirmed-in-part.

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-IN-PART