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EXAMINER

LINGARAJU, NAVIN B

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte SEIKO INOUE and HIROYUKI MIYAKE

Appeal 2016-006248
Application 13/547,128
Technology Center 2600

Before ST. JOHN COURTENAY III, JENNIFER S. BISK, and
JOYCE CRAIG, *Administrative Patent Judges*.

CRAIG, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants¹ appeal under 35 U.S.C. § 134(a) from the Examiner's Final Rejection of claims 1–10, which constitute all of the claims pending in this application. We have jurisdiction under 35 U.S.C. § 6(b).

An oral hearing was held on February 6, 2018.

We reverse.

¹ According to Appellants, the real party in interest is Semiconductor Energy Laboratory Co., Ltd. App. Br. 3.

INVENTION

Appellants' invention relates to a light-emitting device in which variation in luminance of pixels is suppressed. Abstract. Claim 1 reads as follows:

1. (Previously Presented) A light-emitting device comprising:
 - a first wiring;
 - a second wiring; and
 - a pixel comprising:
 - a transistor;
 - a first switch;
 - a second switch;
 - a third switch;
 - a fourth switch;
 - a capacitor; and
 - a light-emitting element,wherein the first wiring and a first electrode of the capacitor are electrically connected to each other through the first switch,
 - wherein a second electrode of the capacitor is electrically connected to a first terminal of the transistor,
 - wherein the second wiring and a gate of the transistor are electrically connected to each other through the second switch,
 - wherein the first electrode of the capacitor and the gate of the transistor are electrically connected to each other through the third switch,
 - wherein the first terminal of the transistor is directly connected to a first terminal of the fourth switch, and
 - wherein an anode of the light-emitting element is directly connected to a second terminal of the fourth switch.

REJECTIONS

Claims 1, 3, 4, and 6–9 stand rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over the combination of Jeong (US 2006/0077194

A1; published Apr. 13, 2006) and Chou (US 2006/0028407 A1; published Feb. 9, 2006).

Claim 2 stands rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over the combination of Jeong, Chou, and Miwa et al. (US 2013/0021228 A1; published Jan. 24, 2013) (“Miwa”).

Claims 5 and 10 stand rejected under pre-AIA 35 U.S.C. § 103(a) as unpatentable over the combination of Jeong, Chou, and Kimura (US 2007/0126665 A1; published June 7, 2007).

ANALYSIS

In rejecting independent claim 1, the Examiner found Jeong teaches or suggests all of the recited limitations except “wherein an anode of the light-emitting element is directly connected to a second terminal of the fourth switch,” for which the Examiner relied on Chou. Final Act. 2–4. The Examiner proposed modifying Jeong’s common anode arrangement of Figure 8 with the teachings of Chou Figure 4 to move the OLED away from driving transistor M4 in Jeong so it is driven instead by transistor M5 of Jeong, creating a common cathode configuration. *See id.*; *see also* Ans. 20–24. The Examiner concluded it would have been obvious to one of ordinary skill in the art to implement the pixel circuit in Figure 8 of Jeong using a common-cathode configuration, as suggested by Chou, in order to form pixel circuits using common cathode arrangements instead of common anode arrangements, which are more difficult to fabricate. Final Act. 4.

Appellants contend the Examiner erred in combining the cited teachings of Jeong and Chou because there is no proper or sufficient reason, either in the references themselves or in the knowledge generally available

to one of ordinary skill in the art, to do so. App. Br. 6. Appellants argue Jeong teaches a common cathode arrangement in the embodiment of Figure 3, and Jeong teaches how to compensate for threshold voltage variation of the driving transistor M4 in Figure 3. *Id.* at 7–8 (citing Jeong ¶ 52). Appellants argue an artisan of ordinary skill would not have overlooked Figure 3 in favor of the “more difficult” common anode arrangement of Figure 8, and then looked to a second reference, Chou, to create a common cathode configuration from Figure 8. *See* Reply Br. 1–2.

Appellants further argue Jeong teaches away from the proposed modification of connecting the cathode of the OLED to Vss and the anode of the OLED to the bottom terminal of M5, as the Examiner proposed. App. Br. 8. Appellants also argue the modification would render the invention of Jeong unsatisfactory for its intended purpose and change its principle of operation. *Id.*

Appellants have persuaded us that the Examiner erred. In the Answer, the Examiner did not address Appellants’ concerns regarding the reason for combining Jeong and Chou, focusing instead on Appellants’ “teaching away” and “principle of operation” arguments. *See* Ans. 20–28. Thus, we find the Examiner looked to Chou to modify Jeong to solve a problem that is not found in Jeong. Because there is no apparent problem in Jeong in need of a solution, we find the Examiner’s proffered reasoning evidences impermissible hindsight reconstruction. Therefore, on this record, we agree with Appellants that the Examiner has not established a prima facie case of obviousness by providing the requisite articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418 (2007).

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Accordingly, on the record before us, we reverse the Examiner's 35 U.S.C. § 103(a) rejection of independent claims 1 and 6. Because we have reversed the obviousness rejection of each independent claim on appeal, we also reverse the rejection of each dependent claim.

DECISION

We reverse the Examiner's decision to reject claims 1–10.

REVERSED