The opinion in support of the decision being entered today is *not* binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ARTHUR J. EPSTEIN
and
YUNZHANG Z. WANG

Appeal 2007-1261
Application 10/196,523
Technology Center 1700

Decided: June 13, 2007

Before EDWARD C. KIMLIN, BRADLEY R. GARRIS, and CHUNG K. PAK, *Administrative Patent Judges*.

GARRIS, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the final rejection of claims 1, 5-7, 12, 13, 15, 17, 20, and 21. We have jurisdiction under 35 U.S.C. § 6.

The Appellants claim a method for preparing a layered composite capable of forming a light-emitting device. This method is adequately represented by claims 1 and 7, which read as follows:

1. A method for preparing a layered composite capable of forming a light-emitting device, said method comprising the steps:

(a) obtaining a substrate material, said substrate material comprising a layer of an electrode material;

(b) screen-printing at least one emitting layer on said substrate material, wherein said at least one emitting layer is comprised of alternating layers of electron transport material and hole transport material, said hole transport material selected from the group of poly(vinyl carbazole), poly(arylene vinylene), and starburst polyamines, said at least one emitting layer capable of functioning as a light-emitting layer in a light-emitting device; and

(c) applying a conductive paste material to said emitting layer, said conductive paste material comprising a layer of an electrode material.

7. A method according to claim 1 wherein at least one of said at least one emitting layer comprises a light emitting molecule selected from the group consisting of tris(8-quinolinolato)aluminum, bis(2-(2-hydroxyphenyl) pyridinato)beryllium, anthracene, tris(2-phenylpyridine)iridium doped in a host 4,4'-N,N'-dicarbazol-biphenyl, their derivatives and blends thereof.

The references set forth below are relied upon by the Examiner as evidence of obviousness:

Ohnishi	US 5,821,002	Oct. 13, 1998
Tanabe	US 5,844,362	Dec. 1, 1998
Rogers	US 6,081,071	Jun. 27, 2000
Jenekhe	US 6,605,904 B2	Aug. 12, 2003

Claim 7 is rejected under the first paragraph of 35 U.S.C. § 112 for failing to comply with the written description requirement.

Under 35 U.S.C. § 103(a):

claims 1, 5-7, 12, 13, 15, 20, and 21 are rejected over Tanabe in view of Ohnishi;

claim 12 is rejected over these references and further in view of Rogers; and

claim 17 is rejected over Tanabe in view of Ohnishi and Jenekhe.

OPINION

We will sustain these rejections for the reasons expressed in the Answer and below.

The § 112, first paragraph, rejection.

The written description requirement of § 112, first paragraph, mandates that the Specification must describe the invention sufficiently to convey to a person of skill in the art that the inventor had possession of the claimed invention at the time the application was filed. *Lizard Tech, Inc. v. Earth Resource Mapping, Inc*., 424 F.3d 1336, 1344-45, 76 USPQ2d 1724, 1731 (Fed. Cir. 2006).

Independent claim 1 is directed to the "second embodiment" described on page 10 of the Specification, wherein the emitting layer comprises alternating layers of electron transport material and hole transport material. For this "second embodiment," only two molecular electron transport layer materials are explicitly disclosed, one of which is tris(8-quinolinolato) aluminum. This last mentioned material is one of the light emitting molecules defined by dependent claim 7. In addition to tris(8-quinolinolato)

aluminum, claim 7 recites three other light emitting molecules as well as their derivatives and blends thereof. Because none of these other claim 7 light emitting molecules or the claimed derivatives and blends are disclosed on Specification page 10 as molecular electron transport layer materials of the "second embodiment" defined by independent claim 1, the Examiner considers claim 7 to violate the written description requirement with respect to each of the claim 7 light emitting molecules except tris(8-quinolinolato) (Answer 3).

The Appellants argue that the original claims and Specification disclosure provide written description support for the use of the claim 7 molecules or compounds as electron transport materials in the alternating layers of claim 1 (Br. 6-7). More specifically, the Appellants point out that Specification page 5 broadly discloses the emitting layer may comprise multiple layers and that Specification page 6 discloses the light emitting molecules which may be used in the emitting layer include those same molecules recited in claim 7 (Reply Br. 3). The Appellants believe these disclosures on pages 5 and 6, as well as the original claims, provide descriptive support for use of the claim 7 molecules in the alternating layer embodiment of claim 1 (*id.* at 4).

The record before us contains no evidence the Appellants' original disclosure would have conveyed to an artisan that Appellants had possession of the claim 7/1 invention at the time the application was filed. Certainly, possession is not evinced by the broad disclosure that the light emitting layer may comprise multiple layers (Specification 5) and that the light emitting molecules which may be used in the emitting layer include those recited in

claim 7 (Specification 6). This is because these light emitting molecules include only one which is explicitly disclosed on Specification page 10 as a suitable molecular electron transport layer material in the "second embodiment" of alternating layers to which claim 1 is directed.

Stated differently, the molecular electron transport layer materials of the second, alternating layer, embodiment disclosed on Specification page 10 and the light emitting molecules of the Appellants' non-alternating layer embodiment disclosed on Specification page 6 (as well as Specification 7) include a total of five distinct compounds plus an unknown number of derivatives and blends. However, only a single one of these compounds is disclosed as useful in both the alternating layer embodiment and the non-alternating layer embodiment disclosed by Appellants. This very limited degree of overlap would have led an artisan to believe that effective light emitting molecules for the non-alternating layer embodiment would not necessarily be effective molecular electron transport layer materials for the alternating layer embodiment, and vice versa.

Under these circumstances, the record before us supports a determination that claim 7 fails to comply with the written description requirement in the manner discussed above. We hereby sustain, therefore, the § 112, first paragraph, rejection of claim 7.

The § 103 rejections

The Appellants advance only a single argument against the § 103 rejections. Specifically, the Appellants assert error in the Examiner's finding that the prior art method discussed by Tanabe (Figures 6-8; col. 1, ll. 24-65) includes the here claimed step of "applying a conductive paste to said

emitting layer" (claim 1 (c)). According to Appellants, the prior art method applies a dielectric layer 104 between light emitting layer 103 and electrode layer 105 (Tanabe, Figure 7) such that it is impossible to apply the conductive paste material of electrode layer 105 to light emitting layer 103. (Brief 9-12; Reply Br. 4-6). Thus, it is the Appellants' essential position that claim 1 requires applying a conductive paste material *directly,* rather the indirectly, to the emitting layer.

This position is not well taken. In addition to teaching that conductive paste material is applied to the emitting layer (Specification 6) as recited in independent claim 1, the application disclosure also teaches that Appellants' "layered composite may additionally comprise an appropriate buffer layer between the emitting layer and the conductive paste material" (id. at sentence bridging 6-7; see also Fig. 2 and original dependent claim 2/1). Indeed, the Specification explicitly teaches that, "without a buffer layer such as the SPAN layer, it would be difficult to fabricate any working devices when the conducting paste is in *direct* contact with the emitting layer" (Specification 11; emphasis added).

It is axiomatic that claims are to be given their broadest reasonable interpretation consistent with the Specification and that claim language should be read in light of the Specification as it would be interpreted by one of ordinary skill in the art. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364, 70 USPQ2d 1827, 1830 (Fed. Cir. 2004). In light of the above discussed disclosures, an artisan would understand that direct contact of conductive paste material with the emitting layer (i.e., the claim interpretation urged by Appellants) would be undesirable and that claim 1

includes the expressly disclosed embodiment wherein an intermediate layer is disposed between the conductive paste material and the emitting layer (i.e., the claim interpretation urged by the Examiner). Therefore, when properly interpreted, step (c) of claim 1 does not exclude the prior art method disclosed by Tanabe wherein an intermediate (i.e., dielectric) layer 104 is disposed between electrode layer (i.e., conductive paste material) 105 and emitting layer 103.

Because the appealed claims do not distinguish over the prior art in the one and only manner urged by Appellants, we hereby sustain each of the § 103(a) rejections before us.

CONCLUSION

The decision of the Examiner is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(iv)(effective Sept. 13, 2004).

AFFIRMED

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