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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/378,799	03/16/2006	Jong-Hyun Seo	21ST01553 US	7322

90323 7590 02/11/2013

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EXAMINER	
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ART UNIT	PAPER NUMBER
2894	

NOTIFICATION DATE	DELIVERY MODE
02/11/2013	ELECTRONIC

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte JONG-HYUN SEO, MUN-PYO HONG, and NAM-SEOK ROH

Appeal 2011-005820
Application 11/378,799
Technology Center 2800

Before JOSEPH L. DIXON, ST. JOHN COURTENAY III, and CARLA M. KRIVAK, *Administrative Patent Judges*.

COURTENAY, *Administrative Patent Judge*.

DECISION ON APPEAL

The Patent Examiner finally rejected claims 1, 3, and 4. Appellants appeal therefrom under 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6(b). We reverse.

STATEMENT OF THE CASE

INVENTION

This invention "relates to a thin film transistor (TFT) substrate for use in a liquid crystal display (LCD) device and a method of manufacturing the TFT substrate. More particularly, the present invention relates to a TFT substrate for an LCD device having improved corrosion resistance, and a method of manufacturing the TFT substrate." (Spec. 1). Claim 1, reproduced below, is illustrative of the claimed subject matter:

> 1. A display device comprising: a substrate;
>
> a metal layer formed on the substrate and including a top surface and a side
>
> surface, wherein the metal layer comprises aluminum or an aluminum alloy;
>
> an insulating layer covering the metal layer; and
>
> an aluminum complex oxide layer disposed between the top and side surfaces of
>
> the metal layer and the insulating layer, wherein the aluminum complex oxide layer is formed by applying to the metal layer a coating solution that comprises at least one selected from the group consisting of zirconium, tungsten, chromium and molybdenum.

REJECTION

Claims 1, 3, and 4 stand rejected under 35 U.S.C. § 103 (a) as being unpatentable over Appellants' Admitted Prior Art, herein referred to as "AAPA," in view of Doushita (US Patent No. 6,156,409).

CONTENTIONS

Appellants contend, inter alia:

> The primary purpose of the Doushita article is to provide an anti-fogging article which has alleged excellent durability, wear resistance, anti-fogging, or a hydrophilic property, etc. (column 1, lines 16-17).
>
> Applicants fail to understand how the problem of anti-fogging of window glass, mirrors, and lens is reasonably pertinent to the problem of protecting a metal layer 212 of a semiconductor from corrosion with an aluminum complex oxide layer 213.
>
> As such, Doushita is neither in the field of the inventor's endeavor or reasonably pertinent to the specific problem with which the inventor was involved.
>
> Even if Doushita was deemed a proper reference, Doushita discloses an anti-fogging article which is excellent in durability, wear resistance, anti-fogging property and antifogging substainability property, wherein the same is the anti-fogging article in which a film having a metal oxide fine particles having a grain size from 4 through 300 nm and having metal oxides used as its matrix is coated on a substrate and dents and projections having an arithmetical mean roughness (Ra) from 1.5 to 80 nm and their mean interval (Sm) from 4 to 300 nm are formed on the abovementioned film surface.
>
> In this regard, Doushita simply discloses an aluminum oxide used as an anti-fogging article. Nowhere does Doushita disclose the structural relationship of the aluminum oxide layer relative to any other layer(s). Doushita fails to disclose the aluminum complex oxide layer is disposed between the top and side surfaces of the metal layer and the insulating layer. As such, without more structure specifics, Applicants submit the complex oxide of Doushita is functionally and structurally

> different from Applicants' aluminum complex oxide layer used to prevent a corrosion of the metal layer.
>
> Therefore, there is no suggestion to combine AAPA and Doushita with each other so as to obtain the technical features of Applicants' claimed subject matter.

(App. Br. 6-7).

The Examiner disagrees:

> The examiner does not agree because the Doushita et al. reference discloses an aluminum **complex** oxide layer "which is excellent in durability and wear resistance." Since this is the same purpose as the claimed invention, it is reasonably pertinent and has enough motivation to be considered.
>
> Appellant argues that "the subject matter of Doushita is classified under Class 428" which is different from "Appellant's claimed subject matter, classified under Class 438". This is not persuasive. Class 428 has the title of "Stock material or miscellaneous articles." In this case, the "miscellaneous articles" has been considered or cross-referenced. Further, "optical component" is a semiconductor device; and Class 438 "Semiconductor device manufacturing: Process" deals with this device formation. Furthermore, the claims are of device and would be classified in Class 257. Lastly, the "arithmetical mean roughness (Ra) from 1.5 to 80 nm and their mean interval (Sm) from 4 to 300 nm" provided by Doushita et al. would fit nowadays in the nano-technology of Semiconductor devices.

(Ans. 6).

***Issue*:** Under § 103, did the Examiner err in combining Appellants' Admitted Prior Art (AAPA) with Doushita?

ANALYSIS

The test for analogous art "requires the PTO to determine the appropriate field of endeavor by reference to explanations of the invention's subject matter in the patent application, including the embodiments,

function, and structure of the claimed invention." *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004). A reference is analogous art if "even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem." *In re Clay*, 966 F.2d 656, 659 (Fed. Cir. 1992); *see also KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, 420 (2007) ("[F]amiliar items may have obvious uses beyond their primary purposes.").

Here, we find the weight of the evidence supports Appellants' principal contention that the problem of fogging of window glass, mirrors, and lens (as addressed by Doushita) is not reasonably pertinent to the problem addressed by the invention on appeal of protecting a metal layer 212 of a semiconductor from *corrosion* with an aluminum complex oxide layer 213. (App. Br. 6).

Doushita teaches an

> anti-fogging article according to the invention is used for buildings, vehicles, optical components, industrial applications, agriculture, daily-living articles, house materials, and medical equipment. The abovementioned anti-fogging article according to the invention is suitable, for example, for window glass, mirrors, lenses, fins of air conditioner heat exchanger, biomaterials, film sheets, showcases, etc. which are excellent in durability, wear resistance, anti-fogging, or hydrophilic property, etc.

(Col. 1, ll. 9-17).

Although the Examiner proffers that Doushita's aforementioned teaching of "optical components" broadly includes semiconductor devices (Ans. 6), we disagree, given that the anti-fogging properties of Doushita's

aluminum oxide-based film would have little utility on a semiconductor device. Thus, we agree that the Examiner has not established how Doushita's film would have been seen by an artisan as being combinable or even relevant to the semiconductor AAPA proffered by the Examiner. (*See* Ans. 3-4).[1]

We find the anti-fogging properties of Doushita's film would not have logically attracted the attention of an artisan possessing knowledge of Appellants' Admitted Prior Art (AAPA). (*See* Doushita, col. 1, ll. 9-17). Therefore, we agree with Appellants that Doushita's anti-fogging properties are not reasonably pertinent to the particular problem with which the inventor was concerned. *See In re Oetiker*, 977 F.2d 1443, 1447 (Fed. Cir. 1992).

Even assuming *arguendo* that the cited references could be combined, we also agree with Appellants' second contention:

> Doushita fails to disclose the aluminum complex oxide layer is disposed between the top and side surfaces of the metal layer and the insulating layer. As such, without more structure specifics, Applicants submit the complex oxide of Doushita is functionally and structurally different from Applicants' aluminum complex oxide layer used to prevent a corrosion of the metal layer.

(App. Br. 7).

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[1] The Examiner concludes that "[i]t would have been obvious to one of ordinary skill in the art at the time of the invention to provide applicant's admitted prior art with a coating of the complex oxide of Doushita et al. because the coating of Doushita et al. would provide the structure of applicant's admitted prior art with 'excellent in durability, wear resistance, anti-fogging property and anti-fogging substainability property.'" (Ans. 5).

For these reasons, on this record, we are persuaded that the Examiner erred. We reverse the obviousness rejection of claim 1, and associated dependent claims 3 and 4.

DECISION

We reverse the Examiner's rejection of claims 1, 3, and 4 under §103.

ORDER

REVERSED

Vsh