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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Ex parte KAZUNORI OKUMOTO

Appeal 2015-004954
Application 13/781,404
Technology Center 2800

Before KAREN M. HASTINGS, N. WHITNEY WILSON, and
MICHAEL G. McMANUS, *Administrative Patent Judges*.

McMANUS, *Administrative Patent Judge*.

DECISION ON APPEAL

The Examiner finally rejected claims 1–7 and 9–15 of Application 13/781,404 under 35 U.S.C. § 103(a) as obvious. Final Act. (May 19, 2014). Appellant¹ seeks 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 reverse.

BACKGROUND

The present application relates to a wiring structure for use with a thin film transistor display. It is stated that certain prior art wiring suffered from

¹ Mitsubishi Electric Corporation is identified as the real party in interest. Appeal Br. 2.

a phenomenon known as “film peeling” or “film floating” where an insulating layer separates from a transparent conductive film layer. Spec. 2. The wiring structure of the present invention is intended to reduce the likelihood of such separation while also providing preferable electrical connectivity between the transparent conductive film and a metal film, a thin film transistor (“TFT”) array substrate including the same, and a liquid crystal display device. Spec. 4.

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

1. A wiring structure comprising:
 - a first insulating film;
 - a first conductive film formed on and over said first insulating film; and
 - a first transparent conductive film formed on and over said first conductive film, wherein
 - said first transparent conductive film covers at least one part of an end surface of said first conductive film and extends from the end surface toward the first insulating film to make contact with the first insulating film, and
 - an angle formed at a corner part of said first transparent conductive film in a region where said first transparent conductive film makes contact with said first insulating film is larger than 90 degrees and smaller than 270 degrees or the corner part has an arc shape.

Appeal Br. (Claims App.) 11.

REJECTIONS

On appeal, the Examiner maintains the following rejections:

1. Claims 1–3, 7, 13 and 15 are rejected under 35 U.S.C. § 103(a) as obvious over Nagano et al. (US 2010/0187532 A1, pub. July 29, 2010)

(“Nagano”) in view of Hata et al. (US 6,936,861 B2, iss. Aug. 30, 2005) (“Hata”). Final Act. 2.

2. Claims 4–6 are rejected under 35 U.S.C. § 103(a) as obvious over Nagano and Hata in view of Masutani et al. (US 2008/0131668 A1, pub. June 5, 2008) (“Masutani”). *Id.* at 5.

3. Claims 9 and 14 are rejected under 35 U.S.C. § 103(a) as obvious over Nagano and Hata in view of Hayashi et al. (US 2012/0113376 A1, pub. May 10, 2012). *Id.* at 6.

4. Claims 10–12 are rejected under 35 U.S.C. § 103(a) as obvious over Nagano, Hata, and Hayashi in view of Masutani. *Id.* at 8.

DISCUSSION

Rejection 1. The Examiner rejected claims 1–3, 7, 13 and 15 as obvious. *Id.* at 2. In support of such rejection, the Examiner finds that Nagano teaches a device where a first transparent conductive film covers an end surface of a conductive film and extends to contact an insulating film and that Hata teaches a first transparent conductive film which makes contact with a first insulating film and has an arc shape. *Id.* at 3; Answer 3–4.

Appellant argues that Hata's translucent electrode (7), which the Examiner equates to the recited "first transparent conductive film," does not cover any part of an end surface of the conductive film nor extend from the end surface to contact an insulating film. Appeal Br. 7. Rather, Appellant contends, the translucent electrode (7) covers an aluminum nitride (AlN) buffer layer (2) which acts as an insulating layer. *Id.* Further, Appellant

asserts, the translucent electrode (7) extends to semiconductor layer (3) rather than an insulating film as required by the claims.² *Id.*

In response, the Examiner finds that the limitation requiring that the transparent conductive film make contact with the insulating film is met as Hata teaches and depicts translucent electrode (7) that “makes direct physical contact with insulating film 2/16.” Answer 2; *see* Hata, Fig. 1. The Examiner further clarifies that the limitation “said first transparent conductive film covers at least one part of an end surface of said first conductive film” is met by Nagano rather than Hata. *Id.* at 3. Appellant has failed to show error in these findings.

Appellant additionally notes that the claims require a transparent conductive film that **both** covers a conductive film and makes contact with an insulating film. Appeal Br. 8; Reply 2. Appellant argues that the rejection articulated by the Examiner “disregard[s] some limitations” because the Examiner did not cite to a structure in a single reference that meets both limitations. Reply 2 (citing MPEP 2141.02(II) (providing that one may not distill invention to its “gist” or “thrust”). This argument is unavailing. The Examiner addressed each limitation in the rejection, thus no limitation was “disregarded.”

² In the Reply, Appellant presents the new argument that the electrode of Hata is not transparent. Reply 1–2. An argument omitted from the Appeal Brief will not be considered when filed in a Reply Brief, absent a showing of good cause explaining why the argument could not have been presented in the Appeal Brief. *See Ex parte Borden*, 93 USPQ2d 1473, 1477 (BPAI 2010) (informative) as well as 37 C.F.R. § 41.37 and § 41.41. Here, there is no such showing.

The Appellant also argues that the Examiner has not articulated a proper basis why a person of ordinary skill in the art would have combined the relevant teachings of Nagano and Hata. Specifically, Appellant asserts that Hata teaches to prevent the cracking of the semiconductor layer by placing a buffer layer between the pad electrode and semiconductor layer. Appeal Br. 9; Hata, col. 7:54–63. Appellant argues that such teaching is not relevant to Nagano because “the structures at issue of Nagano do not include contact pads.” Appeal Br. 9. In the Answer, the Examiner finds as follows:

In this case, the primary reference, Nagano, does disclose a reliability problem ("the occurrence of a break") with the metallic source line 44, which is cited as "the first conductive film" in claims 1, 13 and 15 **It is conceivable** that the reliability problem for Nagano's source lines was **somehow related** to the electrical connection of the source lines 44 to the external wiring 49. . . . **It would not be unreasonable to assume** that one or more conventional wire bonding operations were performed to electrically connect the external wiring 49 to the display driving circuit 46.

Answer 5 (emphasis added). The rejection as stated is speculative. “The Patent Office has the initial duty of supplying the factual basis for its rejection. It may not . . . resort to speculation, unfounded assumptions or hindsight reconstruction to supply deficiencies” in the cited references. *In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967).

Moreover, Nagano indicates that its structure will **reduce** the likelihood of loss of signal. That is, Nagano purports to identify a solution rather than a problem. Specifically, Nagano provides that its structure “offers an advantage of suppressing the occurrence of a break of the source line 44,” and that “[i]t is thereby possible to prevent the disruption of the display signal in the event that the source line 44 is broken.” Nagano, ¶ 62.

This teaching would seem to lead one of skill in the art to employ the structure of Nagano rather than Hata. Accordingly, we find that Appellant has demonstrated reversible error in the Examiner's finding a person of skill in the art would have combined the teachings of Nagano and Hata in the manner necessary for the rejection. . *In re Kahn*, 441 F.3d 977, 986 (Fed. Cir. 2006)

In view of the foregoing, we need not reach Appellant's argument regarding whether an apparatus that embodies the teachings of Nagano and Hata would be operable. Appeal Br. 9–10.

Rejections 2 – 4. The Examiner rejected claims 4–6, 9–12 and 14 over Nagano in view of Hata and further in view of certain other cited references as noted above. Each of these combinations relies upon the combination of Nagano and Hata. As we find no adequate statement of a motivation to combine the teachings of these references, we are constrained to reverse Rejections 2–4 for the reasons set forth above.

CONCLUSION

The rejections of claims 1–7 and 9–15 as obvious are reversed.

REVERSED