

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Chongqing HKC Optoelectronics Technology Co., Ltd.,

Petitioner

v.

138 East LCD Advancements Limited

Patent No. 7,116,390
Case No. IPR2023-00475

REQUEST FOR REHEARING

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Respectfully, rehearing of the Decision Denying Institution of *Inter Partes* Review (“ID,” Paper 9) is requested under 37 C.F.R. § 42.71(d) because the Board’s construed claims completely lacks any support in the specification and, under the given claim construction, the claims of the ’390 patent would be indefinite/invalid under 35 U.S.C. §112.

I. The ID

While neither party argued for a specific claim construction, the ID *sua sponte* construed the language of the ’390 patent to require the claimed “counter electrode potential line” to have to be connected to a peripheral circuit. The ID reaches this conclusion based solely on the claim of the patent, without considering the disclosures in the specification. In particular, the ID finds:

Claim 1 recites “in a peripheral region of the image display region on the element substrate, a plurality of external circuit connection terminals, a plurality of main wiring lines . . . and peripheral driving circuits.” Ex. 1001, 21:55–60. The plain and ordinary meaning of this phrase includes that the plurality of main wiring lines and peripheral driving circuits are formed on the element substrate. Claim 1 further recites, for the main wiring lines, “each having one end coupled to each of the plurality of external circuit connection terminals, and peripheral driving circuits coupled to the other ends of the main wiring lines.” Id. at 21:57–59. The plain and ordinary meaning of this phrase is that each main wiring line is connected at one end to an external circuit connection terminal and, at the other end, to the peripheral driving circuits; this is how Petitioner addresses “a plurality of main wiring lines” as to this portion of claim 1 in accordance with the plain and ordinary meaning.

ID, at 13 (citing Pet. 15). Based on this reading, the ID determines that the “counter electrode potential line”, which the claims state is one of the main wiring lines, must also be connected to a peripheral circuit. ID, at 14.

Based on this construction, the ID rejected the Petition on the basis that the Petition did not identify a counter electrode potential line that connects to a peripheral circuit located on the element substrate. ID, 14-15.

II. Rehearing Should Be Granted Because Board’s Construed Claims Are Not Supported by the Specification Under 35 U.S.C. § 112

Claim 1 states:

1. An electro-optical device, comprising:

a plurality of pixel portions provided in an image display region on an element substrate;

in a peripheral region of the image display region on the element substrate, a plurality of external circuit connection terminals, a plurality of main wiring lines each having one end coupled to each of the plurality of external circuit connection terminals, and peripheral driving circuits coupled to the other ends of the main wiring lines, the peripheral driving circuits driving the pixel portions based on electric signals supplied from the external circuit connection terminals through the main wiring lines,

a counter electrode provided in the peripheral region on a counter substrate that is arranged to face the element substrate;

a counter electrode potential line that supplies counter electrode potential to the counter electrode, which is at least one of the plurality of main wiring lines,

upper and lower conduction terminals that are provided in the peripheral region on the element substrate, and that are connected to the counter electrode potential line,

the plurality of main wiring lines being made of a same conductive film and being planarly laid out so as not to intersect each other in the peripheral region; and

the counter electrode potential line being closest to edges of the element substrate, among the plurality of main wiring lines.

As set forth in the Petition and supporting declaration, as shown in Figure 1 of the '390 patent (below), the patent describes a TFT array substrate 10, and a counter electrode potential line LCCOM, which is one of the main wiring lines 108. Sechen, ¶¶20-24; '390 patent, col. 12:61-13:5.

Fig. 1

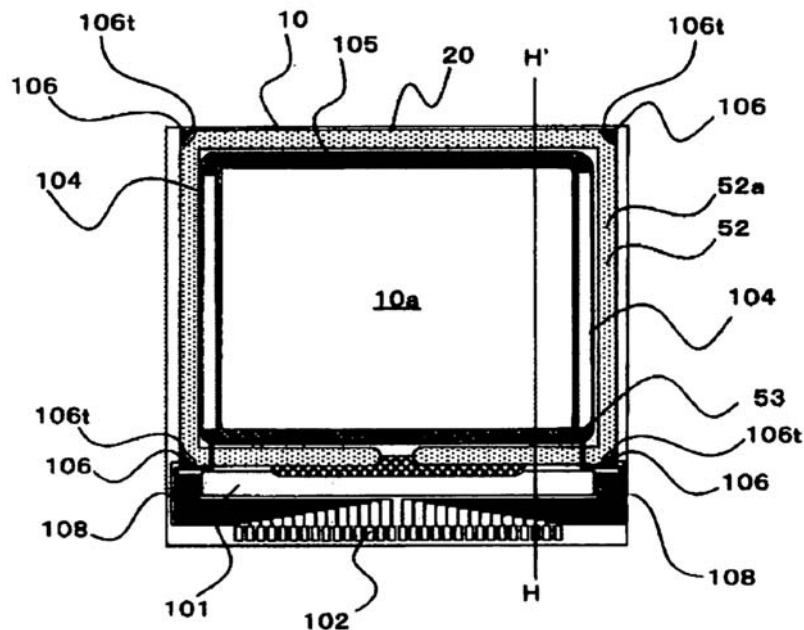
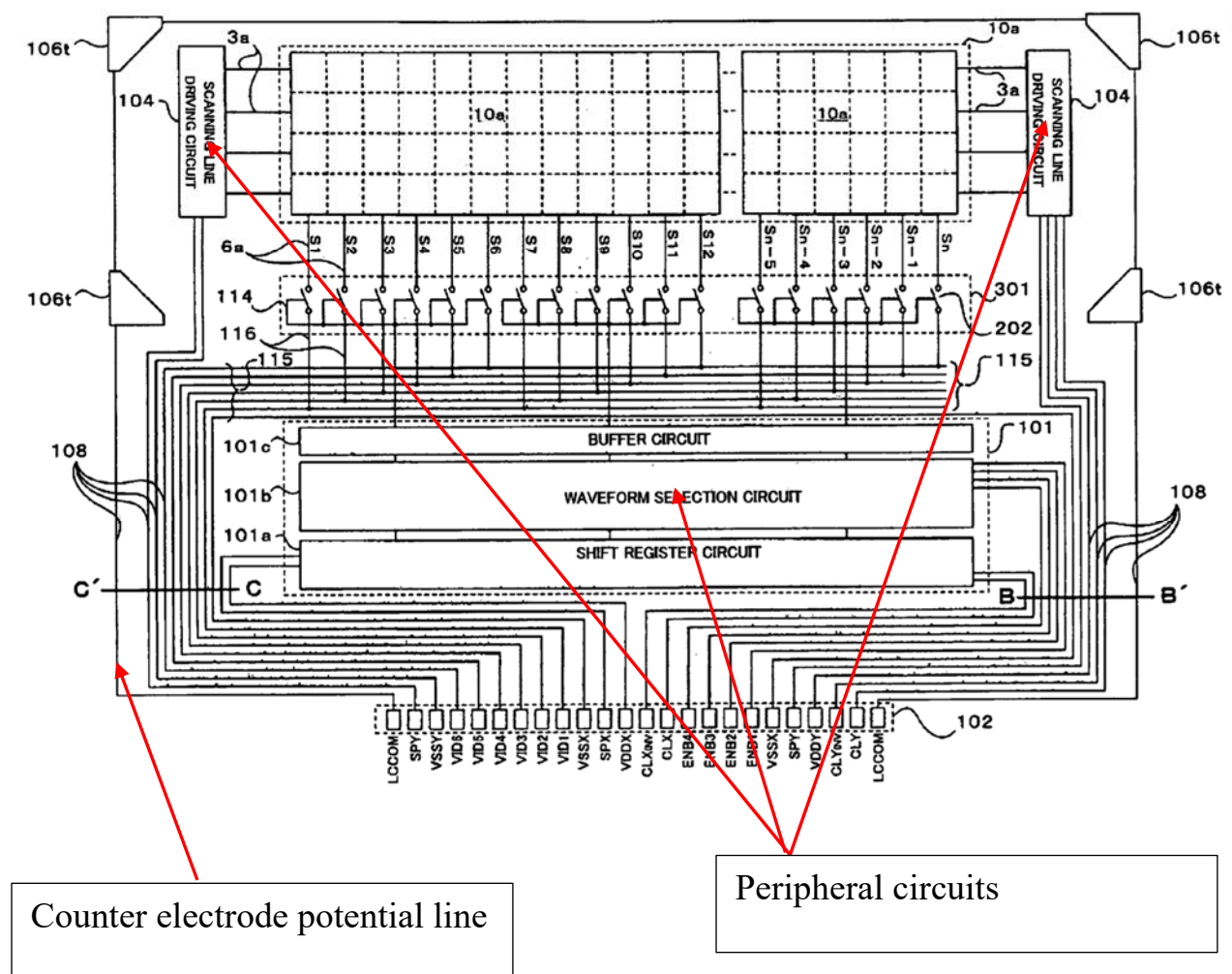


Figure 4 of the '390 patent (below), further illustrates the arrangement of the counter electrode potential lines LCCOM in relation to the scanning line driving circuits 104. As shown, the scanning line driving circuits 104 are arranged to be closer to the center of the TFT array substrate 10 than the counter electrode

potential lines LCCOM provided along the edges of the TFT array substrate 10. Counter electrode potential line LCCOM passes through the four corners of the TFT array substrate 10 while being connected to the upper and lower conduction terminals 106t and surrounds the image display region 10a and various driving circuits. Sechen, ¶¶25-27; '390 patent, col. 13:6-19; Figs. 1, 4.



At the bottom of the figure, the outside most line is marked “LCCOM,” which is depicted as running outside of the other lines and connecting to the conduction

terminals 106t. Sechen, ¶¶25-27. There is no connection between the counter electrode potential line and any of the peripheral circuits.

Notably the Sechen declaration specifically quotes the '390 patent: “on the TFT array substrate 10, counter electrode potential line LLCCOM which is one of the main wiring lines 108 passes through the four corners of the TFT array substrate 10 while being connected to the upper and lower conduction terminals 106t. A predetermined electric potential is supplied to the counter electrodes 21 through the upper and lower conduction materials 106, the upper and lower conduction terminals 106t, and the counter electrode potential line LLCCOM.” Sechen, ¶26 (quoting col. 12:61-13:5).

Thus, while the patent specification explicitly defines the counter electrode potential line as being one of the main wiring lines, the patent specification describes that “counter electrode potential line” as connecting to the counter electrodes via upper and lower conduction terminals, without connecting to any driving circuits in the peripheral region of the element substrate. This is clearly shown in Figure 4 as well.

As indicated in the ID, Petitioner did not identify the counter electrodes as a peripheral circuit, and the counter electrodes clearly are not the peripheral circuit in this case. ID, at 14. Thus, the determinative reason for not instituting an *inter partes* review on the '390 patent is the Board's claim construction of the claimed

“counter electrode potential line” as requiring that it must connect to a peripheral circuit on the element substrate. ID, at 13-15. However, the ID did not cite to any embodiment in the patent that corresponds to its construction of the claims, nor could it have. As explained above and clearly shown in Figure 4, the “counter electrode potential line” is arranged to only provide the electric potential to the electrodes on the counter substrate, without connecting to any peripheral circuit on the element substrate. That is, there is no support in the patent specification for such claim construction of requiring the “counter electrode potential line” to be connected with the peripheral circuit.¹ The patent specification also does not explain any reason why the counter electrode potential line providing electrical potential to the electrodes on the counter substrate from the external terminal has to connect to any peripheral circuit (*i.e.*, the driving circuit), because there is none. Therefore, under the ID’s claim construction, claim 1 is invalid under §112 for lack of written description, indefiniteness, and lack of enablement.

The Petition more than sufficiently shows that the ’390 patent is unpatentable in light of the prior art (in addition to any §112 invalidity). For

¹ Petitioner only asserts that the Board’s claim construction is not supported by the specification of the ’390 patent, but expresses no opinion on whether such claim construction is correct or not under the U.S. patent laws. Under whichever claim construction, the challenged claims lack patentability (unable to be construed under §112 and/or unpatentable in view of prior art).

example, as shown in the Sechen Declaration, the *Muraide* prior art, which was also relied upon by the examiner, contains a virtually identical disclosure to the '390 patent. Sechen, ¶¶44-45; 51-69. The only difference was the location of the counter electrode potential line as not being the line closest to the edge of the element substrate. This difference was the ground upon which the patent was allowed. Sechen, ¶¶30-37 (discussing prosecution history).

The Petition demonstrates that several prior art references disclose a counter electrode potential line that is located nearest to the edge of the element substrate. For example, in regard to *Muraide*, the Petition argues that the placement of the counter electrode potential line was a design choice and identifies *Sunao* and *Komeno* as prior art references that disclose the claimed location of the counter electrode potential line. Sechen, ¶¶70-77. The Petition identifies other combinations with *Sunao* and *Komeno* as well as *Fujikawa*, which all identify a counter electrode potential line consistent with the disclosures of the '390 patent, *i.e.*, a counter electrode potential line on the element substrate that connects via conduction terminals to the counter electrode on the opposite substrate and that is located closest to the edge in relation to the main wiring lines. Thus, despite the construed claims likely are indefinite, to the extent that those claims can be interpreted in view of the patent specification, those claims are more-likely-than-not unpatentable in view of the prior art presented in the Petition.

Therefore, Petitioner's rehearing request should be granted and the Petition for IPR should be granted.

Alternatively, if the Board maintains the above claim construction in the ID, the above claims should be declared as indefinite and/or invalid under 35 U.S.C. §112, because the construed claims are not supported by the Specification of the '390 Patent.

III. CONCLUSION

Petitioner requests rehearing be granted and its Petition be instituted.

Dated: September 27, 2023

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned certifies that the foregoing Request for Rehearing is being served electronically on September 27, 2023, by filing this document through the P-TACTS system and by emailing the following counsel of record for Patent

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