

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 12

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte LAURENCE MULATIER,
GUNTHER HAAS,
and BRUNO MOUREY

Appeal No. 1998-2949
Application 08/608,042¹

ON BRIEF

Before KRASS, BARRETT, and BARRY, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

¹ Application for patent filed February 28, 1996, entitled "Liquid Crystal Screen With Enlarged Viewing Angle," which claims the foreign filing priority benefit of French Application 95-02776, filed March 9, 1995.

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This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 1-10.

We affirm-in-part.

BACKGROUND

The disclosed invention is directed to an electro-optic cell (pixel) having two liquid crystal domains which provides an enlarged viewing angle.

Claims 1 and 2 are reproduced below.

1. Electro-optic cell or pixel formed by two substrate layers, on one of which there is a pixel electrode and on the other a counter electrode, with a layer of liquid crystal molecules between these two electrodes, in which the counter electrode is divided into two parts by a groove, wherein a non-zero polarization voltage is applied between the electrode and the counter-electrode when the pixel is not addressed.

2. Electro-optic cell according to claim 1, wherein a pre-polarization voltage is between 0.8 to 1.3 times the value of a threshold polarisation [sic] voltage of said liquid crystal molecules in the presence of a uniform electric field.

No prior art is relied on in the rejection.

The specification stands objected to, and claims 1-10 stand rejected under 35 U.S.C. § 112, first paragraph, based on a lack of an enabling disclosure.

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We refer to the Final Rejection (Paper No. 8) (pages referred to as "FR__") and the Examiner's Answer (Paper No. 11) (pages referred to as "EA__") for a statement of the Examiner's position and to the Appeal Brief (Paper No. 10) for a statement of Appellants' arguments thereagainst.

OPINION

Objection to specification

Initially, we note that the objection to the specification based on 35 U.S.C. § 112, first paragraph, lack of enablement is an "objection" under 35 U.S.C. § 132, which the Board has no jurisdiction to review. Such matters are reviewable by petition to the Commissioner. The Board's jurisdiction is limited to those matters involving the rejection of claims. In re Hengehold, 440 F.2d 1395, 1404, 169 USPQ 473, 480 (CCPA 1971). Nevertheless, our decision regarding the § 112 rejection should govern the merits of the objection.

Enablement

Initially, we must determine what the rejection is because it is not clear from the Final Rejection. The Examiner stated in the Final Rejection (FR2): "Applicant has neither fully disclosed nor explained to one of ordinary skill in the art how the structure of two domains is maintained by having the polarization potential not equal to zero when the pixel is not addressed." In the Examiner's

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Answer, the Examiner added considerably to the reasoning

(EA3):

Applicant has neither fully disclosed nor explained to one of ordinary skill in the art how the structure of two domains is maintained by having a polarization potential not equal to zero when the pixel is not addressed, wherein the polarization potential disclosed by Applicant is 0.8-1.3 times the threshold voltage.

In the liquid crystal art, "threshold" voltage is defined such that the value of a driving voltage in an ON-state is above the threshold voltage and the value of a driving voltage in an OFF-state is below the threshold voltage. Therefore, it is contradictory with the definition and unclear how the potential in an OFF-state disclosed by Applicant can be greater than [the] threshold voltage, i.e., 1.0-1.3 times the threshold voltage.

The Examiner further states (EA3): "Since claim 1 recites a 'non-zero polarization voltage' being applied when the pixel is not addressed, and since the specification discloses 0.8-1.3 times the threshold voltage as the non-zero voltage, the claims are not enabled by the specification for 1.0-1.3 times the threshold voltage."

Therefore, the Examiner concludes that the claims are not enabled for pre-polarization voltages equal to or greater than the threshold polarization voltage (i.e., 1.0-1.3 times the threshold voltage) because the pixel would then be ON, not OFF (i.e., not addressed), as claimed.

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Because only dependent claim 2 contains the limitation of "between 0.8 and 1.3 times the value of the threshold polarisation [sic] voltage," and because enablement goes to the claimed invention, the rejection of claims 1 and 3-10 is summarily reversed.

The Examiner's reasoning is plausible, although it does not demonstrate a comprehension of the structure described in the specification and the language of claim 2 as discussed, infra. The reasoning applied by the Examiner is new in the Examiner's Answer and is not responded to by Appellants. Thus, we are left to sort out the enablement question without help from Appellants.

The specification discloses that the pixel structure creates two optical domains with a non-uniform distribution of the electric field E (page 5):

When a potential difference U is applied to the pixel electrodes 14 and counter-electrode 15, this groove creates a lateral component in the electric field E. The electric field E is then perpendicular to the electrodes in the areas where these are facing each other, and inclined in the areas of the edges of the pixel electrodes 14 and in the areas between the groove 18 and the electrode 14, as shown in figure 5. In this way, two optical domains each having different tilt angles are created by the non-uniform distribution of the electric field E resulting from the structure of

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the pixel according to the invention. [Emphasis added.]

The specification also states, as amended (page 6):

Owing to the relatively long delay for formation of the two domains, according to this invention, the polarization potential is not equal to zero when the pixel is not addressed (OFF state), in order to maintain the structure of the domains. The value of the polarization potential U is preferably between 0.8 and 1.3 times the value of the threshold voltage of the liquid crystal in the present [sic] of a uniform field. [Emphasis added.]

The pixel structure has two optical domains with a non-uniform electric field, whereas the limitation at issue refers to a pre-polarization voltage between 0.8 to 1.3 times the value of the threshold polarization voltage of the liquid crystal molecules in the presence of a uniform electric field.

The Examiner does not address this difference. It might be that applying a pre-polarization voltage greater than the threshold voltage in the presence of a uniform electric field does not produce an ON (dark) condition in the non-uniform electric field of the claimed pixel. However, absent some representation or argument from Appellant, we are reluctant to make such a finding. In the region where the electrodes face each other and the electric field is

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perpendicular to the electrodes, the electric field would seem to be more or less uniform and applying a pre-polarization potential greater than the threshold polarization potential would cause the pixel to turn ON. Thus, there is a reasonable basis to believe, in the absence of any counterargument, that the range 1.0-1.3 is not enabling for claim 2. Accordingly, the rejection of claim 2 is sustained.

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CONCLUSION

The rejection of claims 1 and 3-10 is reversed.

The rejection of claim 2 is sustained.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

	ERROL A. KRASS)	
	Administrative	Patent Judge)
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)	BOARD OF
PATENT)	
	LEE E. BARRETT)	APPEALS
	Administrative Patent Judge)	AND
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	LANCE LEONARD BARRY)	
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