

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

TIANMA MICRO-ELECTRONICS CO., LTD.,
Petitioner,

v.

JAPAN DISPLAY INC. and
PANASONIC LIQUID CRYSTAL DISPLAY CO., LTD.,
Patent Owner.

Case IPR2016-00991
Patent 8,758,871 B2

Before JO-ANNE M. KOKOSKI, KRISTINA M. KALAN, and
ELIZABETH M. ROESEL, *Administrative Patent Judges*.

KALAN, *Administrative Patent Judge*.

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

Tianma Micro-electronics Co., Ltd. (“Petitioner”) filed a Petition requesting *inter partes* review of claims 1–14 of U.S. Patent No. 8,758,871 B2 (Ex. 1004, “the ’871 patent”). Paper 2 (“Pet.”). Japan Display Inc. and Panasonic Liquid Crystal Display Co., Ltd. (collectively, “Patent Owner”) did not file a Preliminary Response. On October 31, 2016, the Board instituted trial to review the patentability of claims 1–14 of the ’871 patent. Paper 7 (“Dec.”). In the Scheduling Order, we cautioned that any arguments for patentability not raised in the Patent Owner Response will be deemed waived. Paper 8, 4. Patent Owner did not file a Response. During a call with the Board to discuss Patent Owner’s failure to file a Response, and to discuss Petitioner’s request to move for adverse judgment or for the Board to issue a show cause order, Patent Owner affirmatively stated that it was not abandoning the contest. Paper 9, 2–3. Petitioner filed a Statement Regarding Oral Hearing indicating that it did not seek oral argument. Paper 15. Patent Owner did not request oral argument. We determined that an oral hearing was not necessary. Paper 16.

We have jurisdiction under 35 U.S.C. § 6, and we issue this Final Written Decision pursuant to 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. We conclude that Petitioner has established by a preponderance of the evidence that claims 1–14 of the ’871 patent are unpatentable.

A. *Related Proceedings*

The parties do not identify any other proceedings related to the ’871 patent. A patent related to the ’871 patent, U.S. Patent No. 7,718,234 B2 (“the ’234 patent”) is the subject of IPR2016-00990, also filed by Petitioner.

B. The '871 Patent

The '871 patent, titled “Liquid Crystal Display and Method for Manufacturing Same,” issued on June 24, 2014. Ex. 1004, at [54], [45]. The '871 patent relates to a liquid crystal display capable of reducing the “occurrence of defective display due to variations in the initial alignment direction of a liquid crystal alignment control film in a liquid crystal display of an [In-Plane Switching (“IPS”)] scheme, realizing the stable liquid crystal alignment, providing excellent mass productivity, and having high image quality with a higher contrast ratio.” *Id.* at [57]. Specifically, the patent relates to a liquid crystal display of an IPS scheme in which an electric field substantially in parallel with a substrate is applied to a liquid crystal layer for operation, and a production process thereof. *Id.* at 1:15–19.

By way of background, the '871 patent explains that the “uniformity of alignment is a very important factor in the IPS scheme, and problems in the currently used rubbing technique have become apparent.” *Id.* at 4:1–3. According to the '871 patent, problems associated with the rubbing process technique include “TFT [thin film transistor] breakage due to static electricity produced by friction, unfavorable display due to misalignment from disordered fiber ends of a rubbing cloth or dust, and the need for frequent exchanges of rubbing cloths.” *Id.* at 4:5–9. Consequently, “a so-called ‘rubbing-less’ alignment technique for aligning liquid crystal molecules has been studied and various processes thereof have been proposed” in the prior art, such as aligning the liquid crystal molecules in a predetermined direction through irradiation of polarized light. *Id.* at 4:10–17.

The '871 patent teaches that the photo-alignment process using light irradiation has several problems “from a practical standpoint.” *Id.* at 4:59–63. For example, the '871 patent teaches that “a polymeric material obtained by introducing a photoreactive group in the side chain of a polymer represented by polyvinylcinnamate” provides insufficient heat stability of alignment and unsatisfactory reliability. *Id.* at 4:64–67.

To address the problems in the prior art, the '871 patent provides a liquid crystal display comprising a pair of substrates with a liquid crystal layer disposed between the two substrates, an alignment control film disposed between the liquid crystal layer and at least one of the pair of substrates, and optical means on at least one of the pair of substrates “for changing the optical property of the liquid crystal layer in accordance with an alignment state of molecules” in the liquid crystal layer. *Id.* at 5:40–52. The '871 patent teaches that “at least one of the alignment control films is an alignment control film comprising photoreactive polyimide and/or polyamic acid provided with an alignment control ability by irradiation of substantially linearly polarized light.” *Id.* at 5:52–56. Regarding the composition of the alignment control films, the '871 patent further teaches that “it is desirable that the photoreactive alignment control film is polyamic acid or polyimide comprising at least cyclobutanetetracarboxylic acid dianhydride as acid anhydride and at least aromatic diamine as diamine.” *Id.* at 5:61–64.

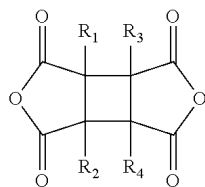
C. Challenged Claims

Of challenged claims 1–14, claims 1 and 8 are independent. Claims 2–7 depend directly from claim 1. Claims 9–14 depend directly from claim 8.

Claim 1 is representative of the challenged claims, and recites:

1. An alignment control film, adapted to be an alignment control film of a liquid crystal display to drive a liquid crystal with an electric field arising between a pair of electrodes formed on a substrate, comprising a polyamic acid or polyimide that includes cyclobutanetetracarboxylic acid dianhydride and/or its derivative and aromatic diamine; and

wherein the cyclobutanetetracarboxylic acid dianhydride and/or its derivative is a compound represented by a formula [1]:



[1]

where R_1 , R_2 , R_3 and R_4 of the compound of the formula [1] each independently represent a hydrogen atom, a fluorine atom, an alkyl group or alkoxy group with a carbon number of 1 to 6, with the proviso that at least one of R_1 , R_2 , R_3 and R_4 of the compound of formula [1] is not hydrogen,

wherein the alignment control film has a thickness of from 1 nm to 100 nm, and

wherein the aromatic diamine compound contains at least one of compounds selected from a group of compounds consisting of ones represented by formulas [2] to [16]:

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.