

# EXHIBIT 1

(12) **United States Patent**  
**Inoue et al.**

(10) **Patent No.:** **US 6,937,300 B2**  
(45) **Date of Patent:** **Aug. 30, 2005**

(54) **LIQUID CRYSTAL DISPLAY DEVICE AND METHOD OF FABRICATING THE SAME**

(75) Inventors: **Hiroyasu Inoue**, Kawasaki (JP); **Yuji Nakahata**, Kawasaki (JP); **Yoji Taniguchi**, Kawasaki (JP)

(73) Assignee: **Fujitsu Display Technologies Corporation**, Kawasaki (JP)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 64 days.

(21) Appl. No.: **10/892,766**

(22) Filed: **Jul. 16, 2004**

(65) **Prior Publication Data**

US 2004/0263719 A1 Dec. 30, 2004

**Related U.S. Application Data**

(60) Division of application No. 10/263,257, filed on Oct. 2, 2002, now Pat. No. 6,778,229, which is a continuation-in-part of application No. 10/107,989, filed on Mar. 27, 2002, now abandoned.

(30) **Foreign Application Priority Data**

Oct. 2, 2001 (JP) ..... 2001-306906  
May 10, 2002 (JP) ..... 2002-136128

(51) **Int. Cl.**<sup>7</sup> ..... **G02F 1/1333; G02F 1/13; G02F 1/1343; G02F 1/1335**

(52) **U.S. Cl.** ..... **349/93; 349/187; 349/143; 349/99**

(58) **Field of Search** ..... **349/187, 143, 349/93, 178, 99**

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

5,859,683 A	1/1999	Tagusa et al. ....	349/138
5,877,830 A	3/1999	Shimada et al. ....	349/110
5,929,960 A *	7/1999	West et al. ....	349/156
6,108,061 A	8/2000	Sako et al. ....	
6,396,077 B1	5/2002	Kubota et al. ....	
6,628,362 B2	9/2003	Seo et al. ....	349/141
6,657,686 B2	12/2003	Choi	
6,657,695 B1 *	12/2003	Song et al. ....	349/143
6,771,344 B2 *	8/2004	Lyu et al. ....	349/143
6,778,244 B2 *	8/2004	Song et al. ....	349/129

**FOREIGN PATENT DOCUMENTS**

JP	8-62606	3/1996
JP	11-95221	4/1999
JP	2001-91974	4/2001

\* cited by examiner

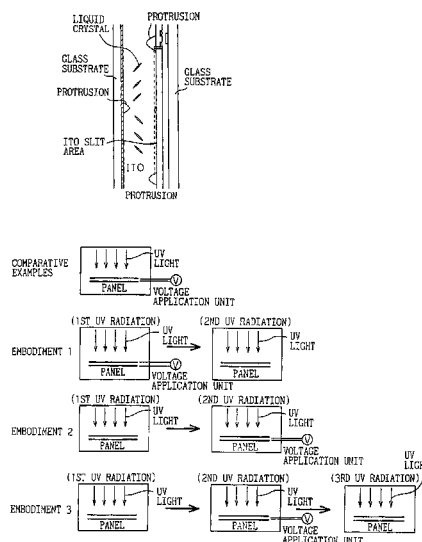
*Primary Examiner*—Toan Ton

(74) *Attorney, Agent, or Firm*—Greer, Burns & Crain, Ltd.

(57) **ABSTRACT**

When radiating light onto a liquid crystal composition containing a photosensitive material, the alignment of liquid crystal molecules is adjusted by applying a voltage to the liquid crystal composition layer, to achieve substantially orderly alignment of the liquid crystal molecules, or the alignment of the liquid crystal molecules is made uniform by adjusting the structure of the liquid crystal display device, or any display defect is driven out of the display area. When radiating light to the liquid crystal composition containing the photosensitive material, the alignment of the liquid crystal molecules can be adjusted so as to achieve substantially orderly alignment of the liquid crystal molecules, and the liquid crystal display device can thus be driven stably.

**1 Claim, 43 Drawing Sheets**



U.S. Patent

Aug. 30, 2005

Sheet 1 of 43

US 6,937,300 B2

Fig.1

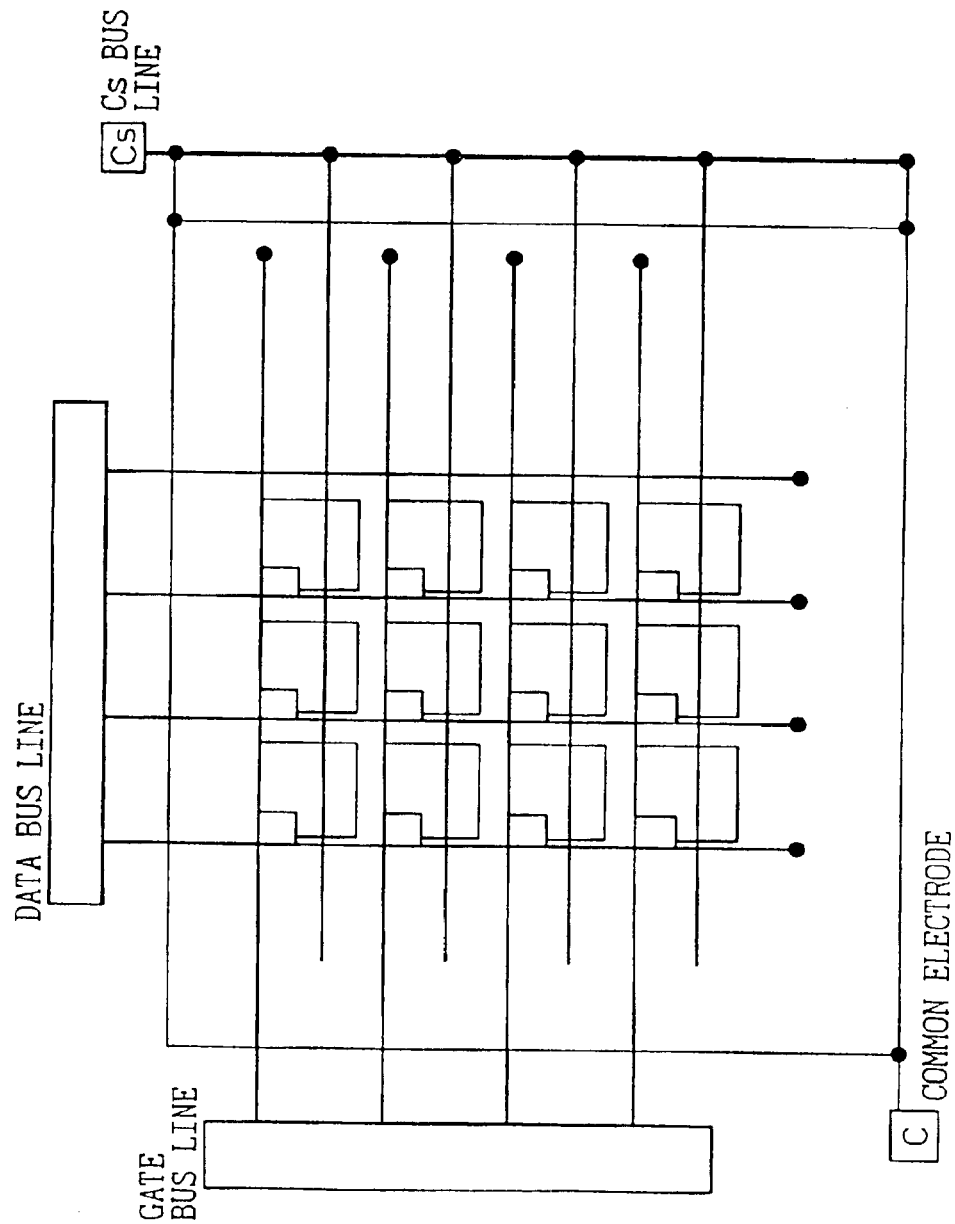


Fig. 2

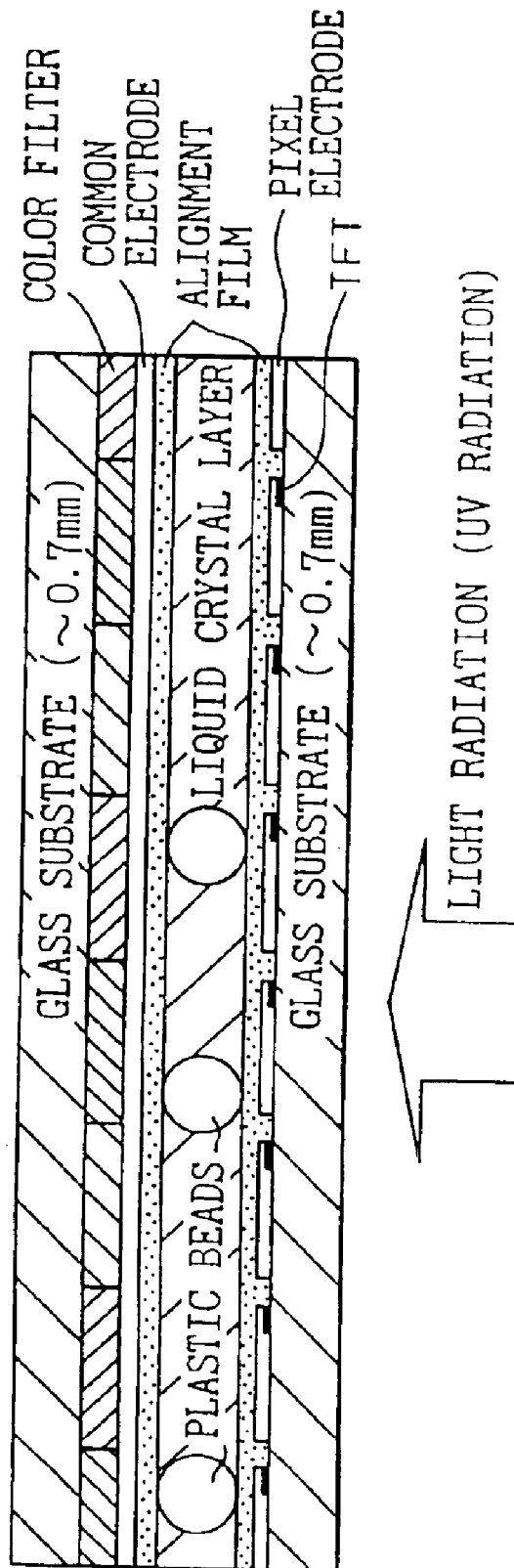
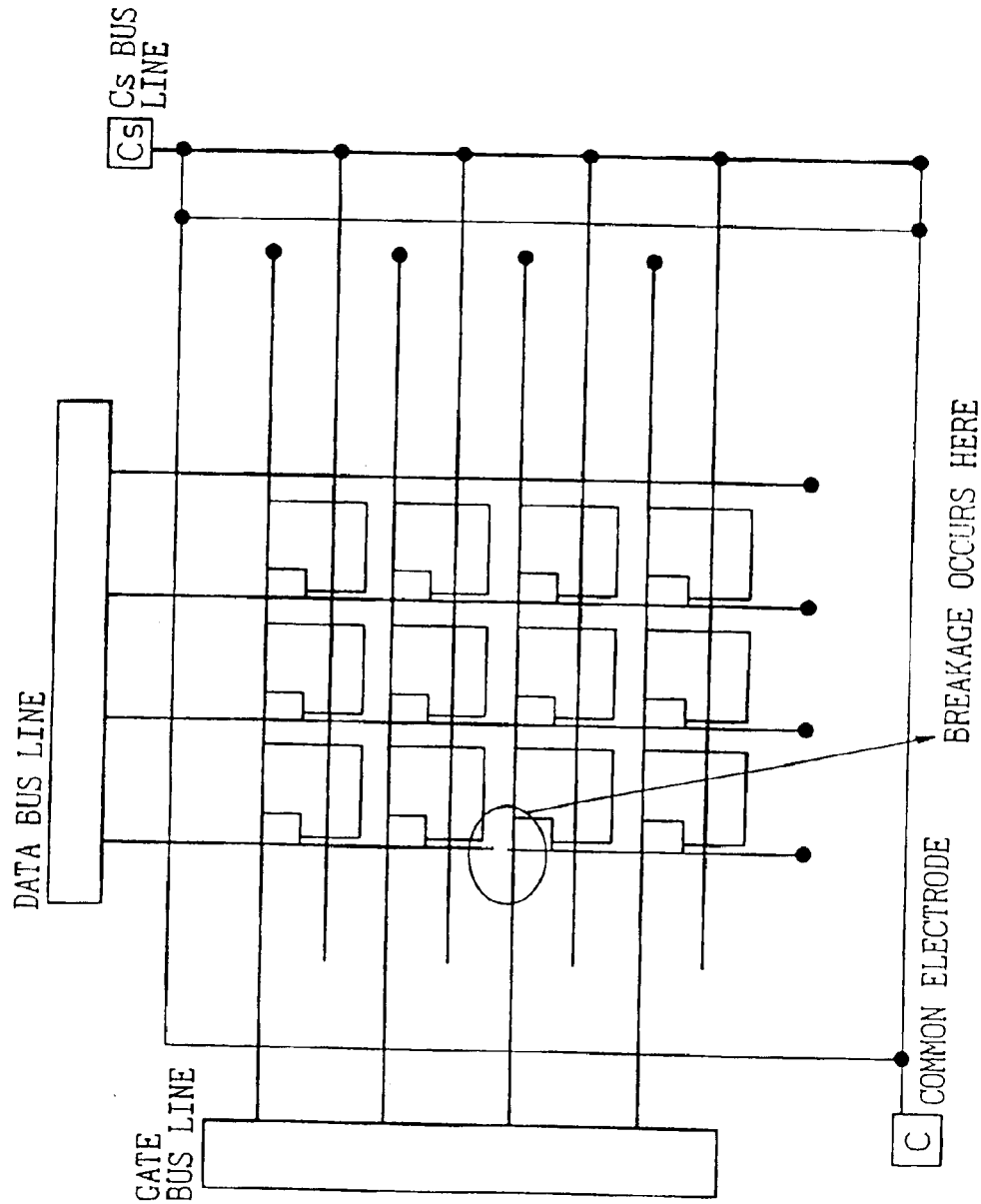


Fig. 3



# 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.