

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**

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(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.**⁷ **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**

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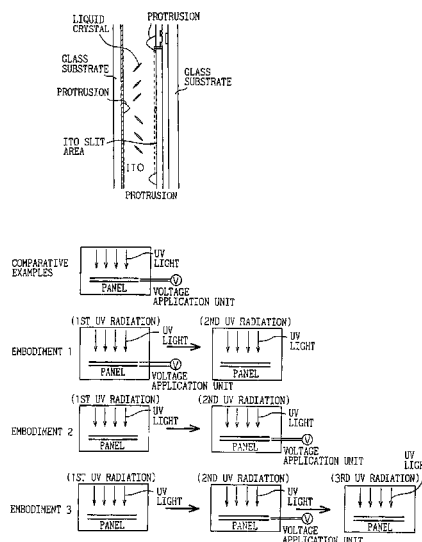
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(57) **ABSTRACT**

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



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Fig.1

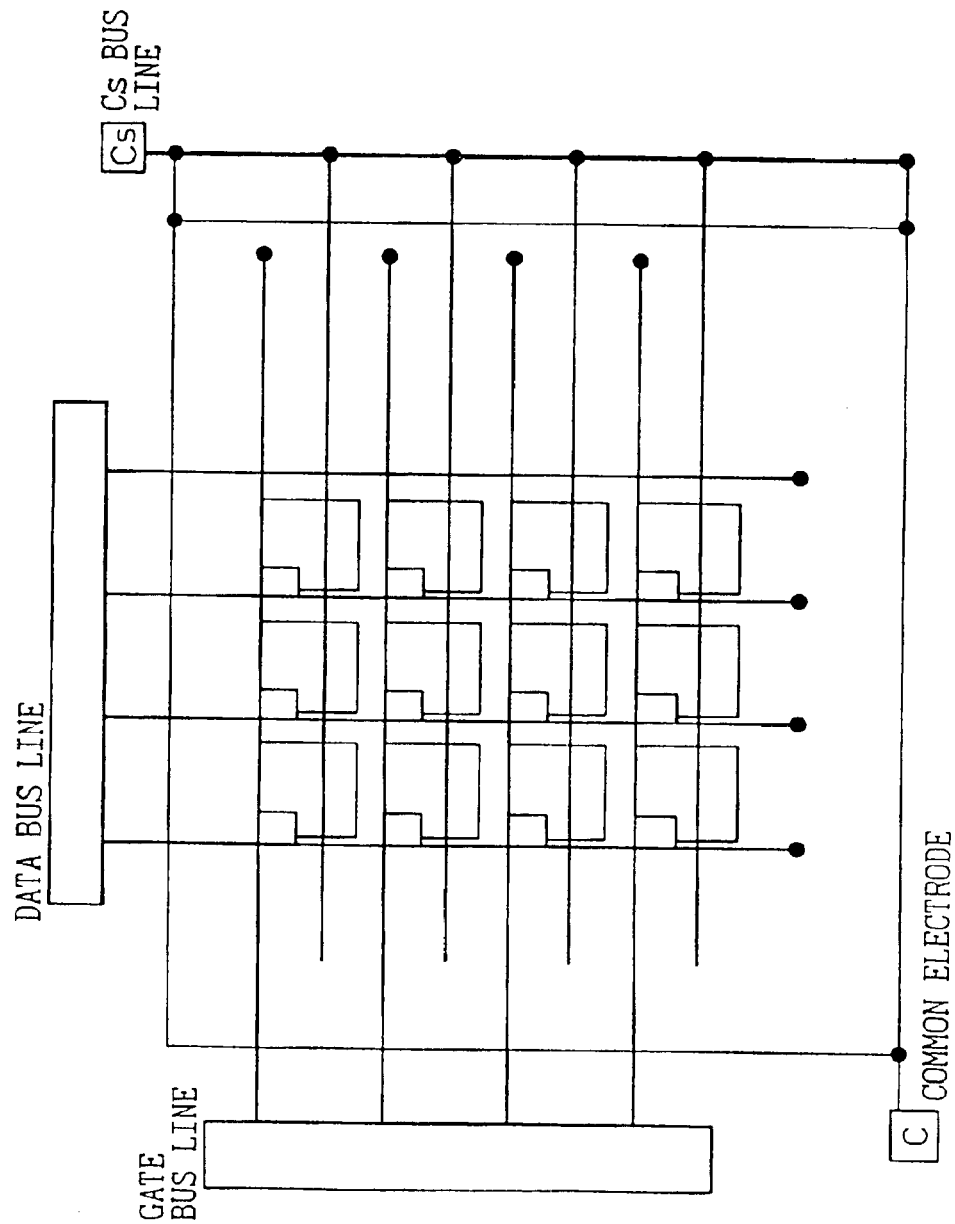
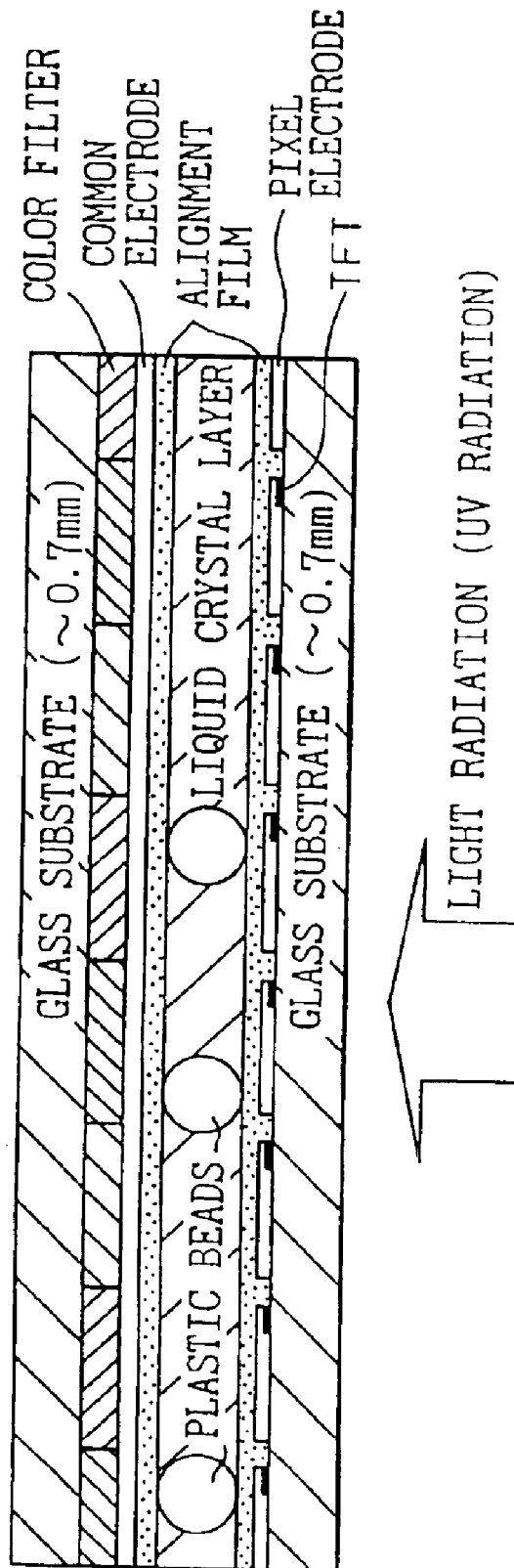
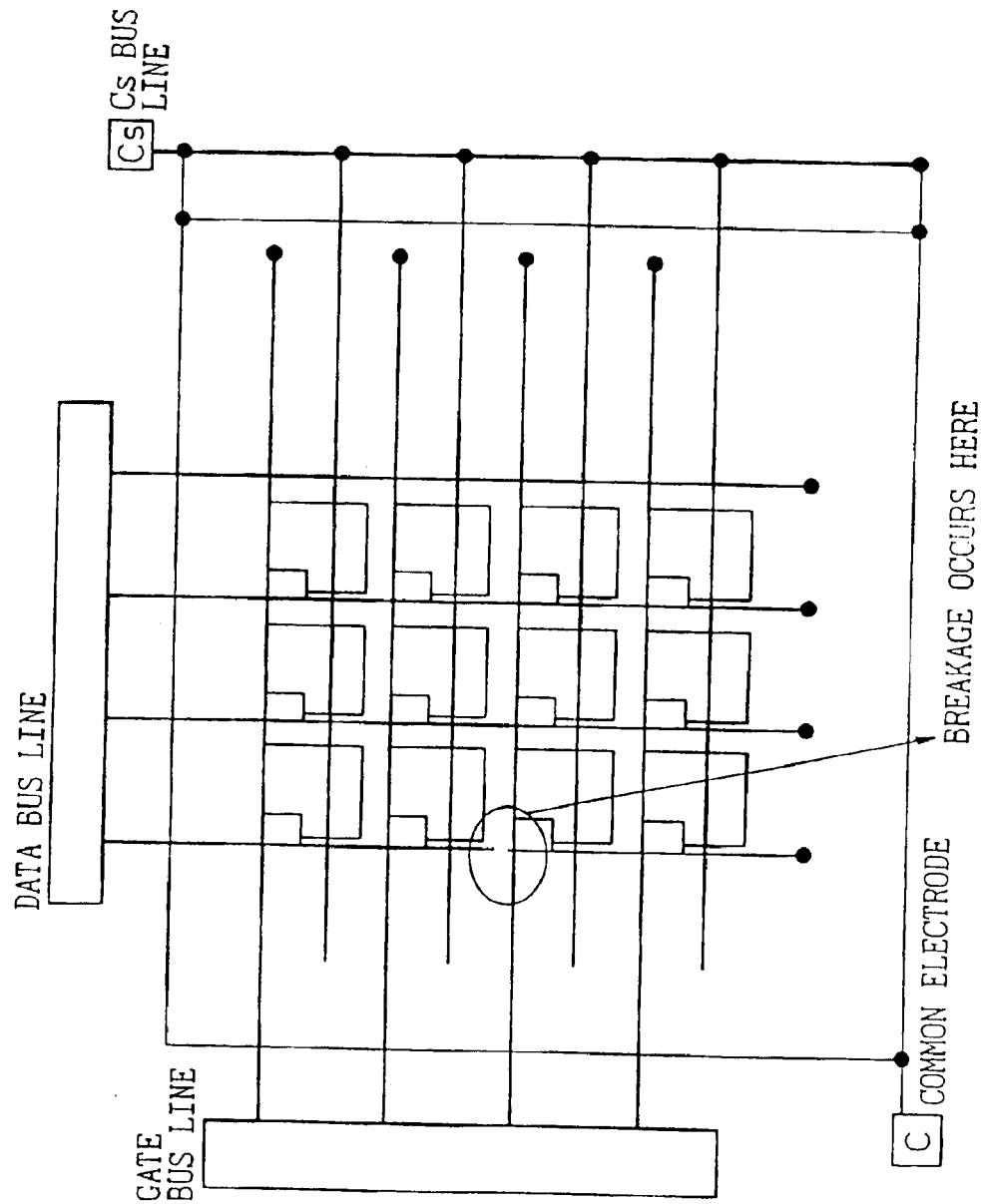


Fig. 2



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