

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

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(54) **LIQUID CRYSTAL DISPLAY**

6,160,601 A * 12/2000 Sato 349/138

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* cited by examiner

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 99 days.

(57) **ABSTRACT**

A liquid crystal display device which can prevent light leaks due to the influence of signal lines includes, in each pixel area on a liquid-crystal-side surface of one of substrates disposed in opposition to each other with a liquid crystal interposed therebetween, a switching element to be driven by supply of a scanning signal from a gate signal line, a pixel electrode to be supplied with a video signal from a drain signal line via the switching element, and a counter electrode which causes an electric field to be generated between the counter electrode and the pixel electrode. The counter electrode is formed in a layer overlying the pixel electrode with an insulating film interposed between the counter electrode and the pixel electrode, and a conductive layer is formed in the same layer as the counter electrode and over a signal line which is at least one of the drain signal line and the gate signal line which lie in a layer underlying the insulating film, the conductive layer being superposed on the signal line.

(21) Appl. No.: **09/977,352**

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(65) **Prior Publication Data**

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(30) **Foreign Application Priority Data**

Oct. 27, 2000 (JP) 2000-328666

(51) **Int. Cl.**⁷ **G02F 11/1336**

(52) **U.S. Cl.** **349/141; 349/111**

(58) **Field of Search** **349/141, 111**

(56) **References Cited**

U.S. PATENT DOCUMENTS

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20 Claims, 10 Drawing Sheets

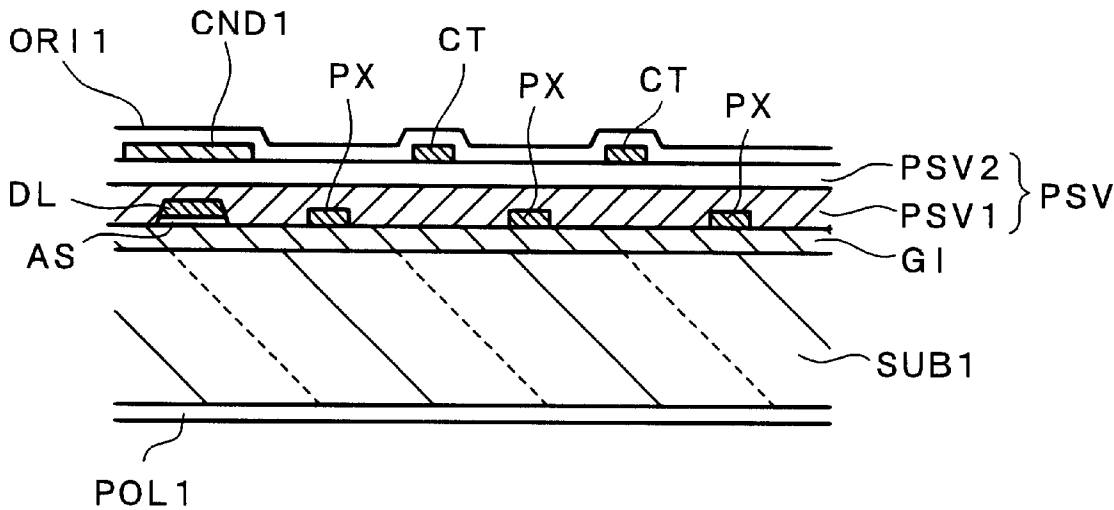


FIG. 1

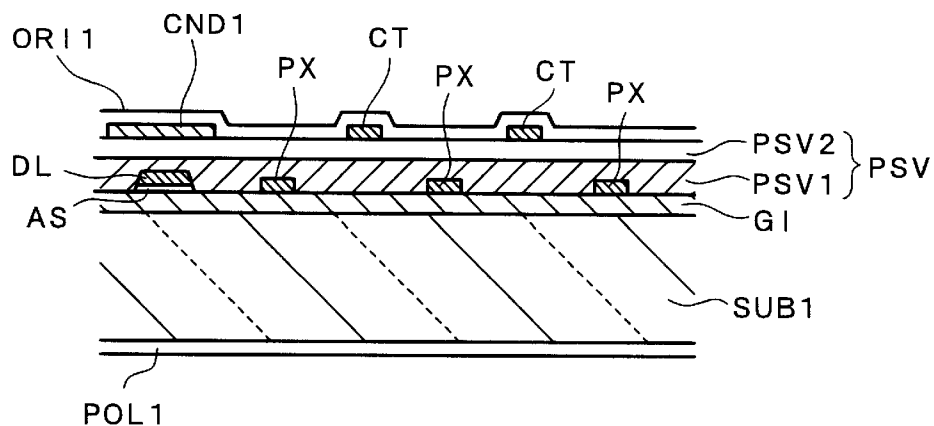
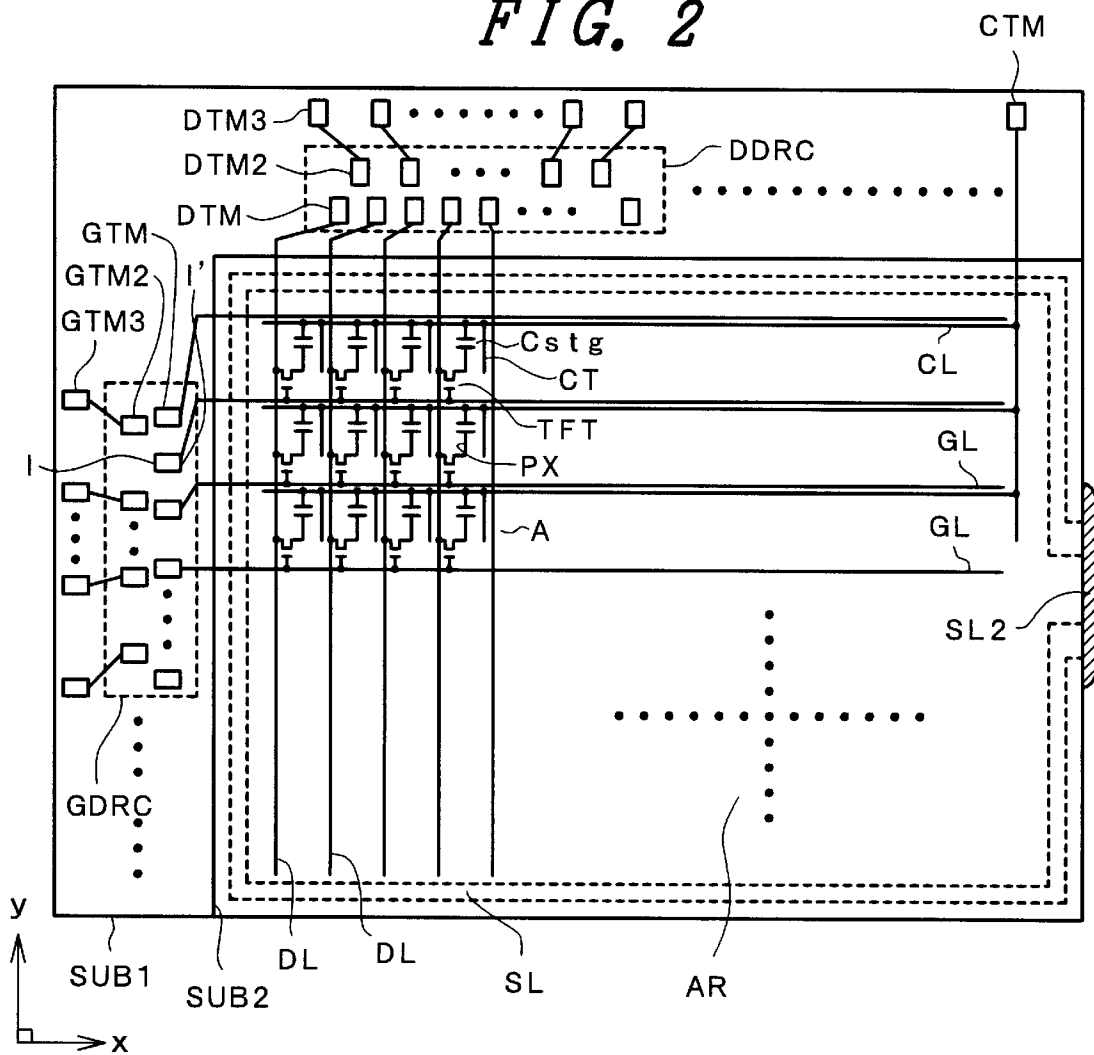


FIG. 2



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