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Ando et al.

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(54) ACTIVE MATRIX LIQUID CRYSTAL DISPLAY DEVICE

FOREIGN PATENT DOCUMENTS

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(57) ABSTRACT

An active matrix liquid crystal display device is provided for realizing a high uniformity of display luminance with lower power consumption, a higher contrast, and a wider viewing angle. In a common wire eliminated (common-less) IPS-type active matrix liquid crystal display device, an opposing electrode **107** is arranged above a signal wire **104** and a thin film transistor (TFT) through an insulating layer. The opposing electrode **107** and a scanning wire **101** shield the signal wire **104** or the TFT to prevent light from leaking from edge portions of the signal wire **104** as well as the TFT from malfunctioning due to a current generated by leaked light, thereby realizing the elimination of a black matrix (BM), a reduction in size of a black matrix, and planarized substrates, thus resulting in a higher aperture ratio and an improved uniformity of cell gap.

(21) Appl. No.: **09/427,626**

(22) Filed: **Oct. 27, 1999**

(30) Foreign Application Priority Data

Oct. 27, 1998 (JP) 10-305013

(51) **Int. Cl.⁷** **G02F 1/1343**; G02F 1/1333;
 G02F 1/1339

(52) **U.S. Cl.** **349/141**; 379/111; 379/156

(58) **Field of Search** 349/141, 111,
 349/110, 191, 156

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13 Claims, 8 Drawing Sheets

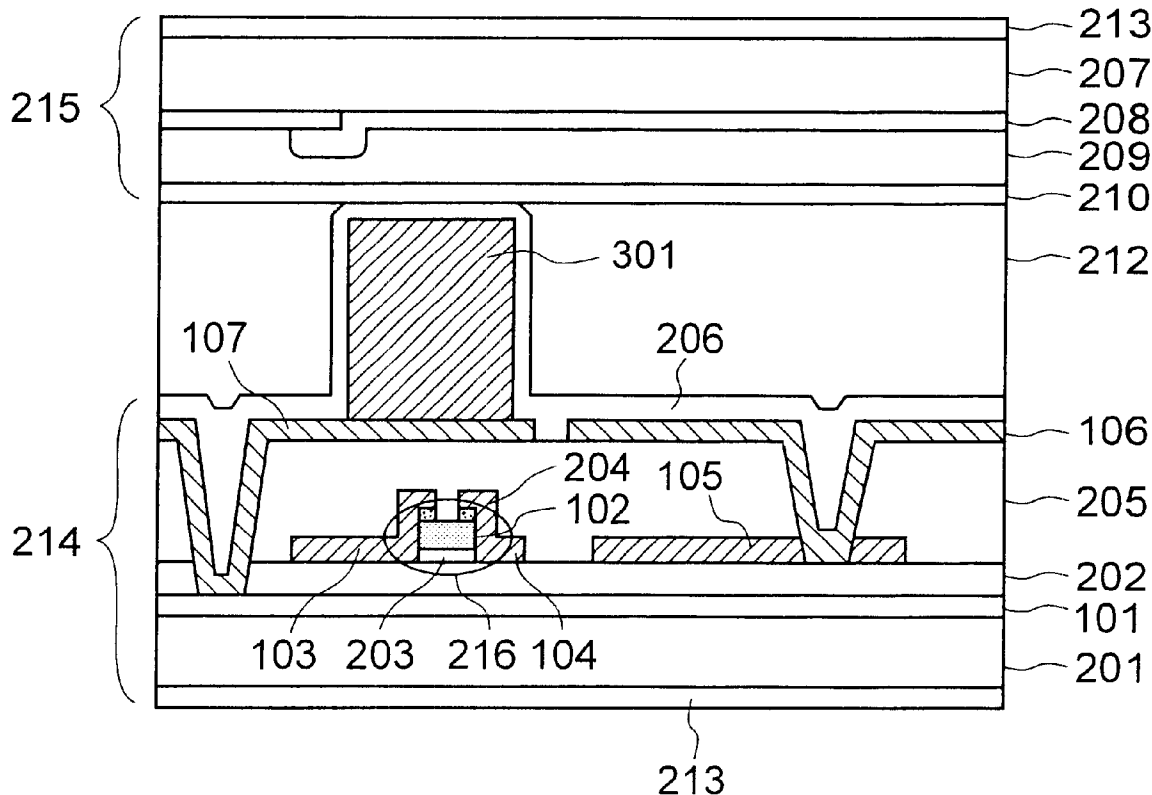


FIG. 1

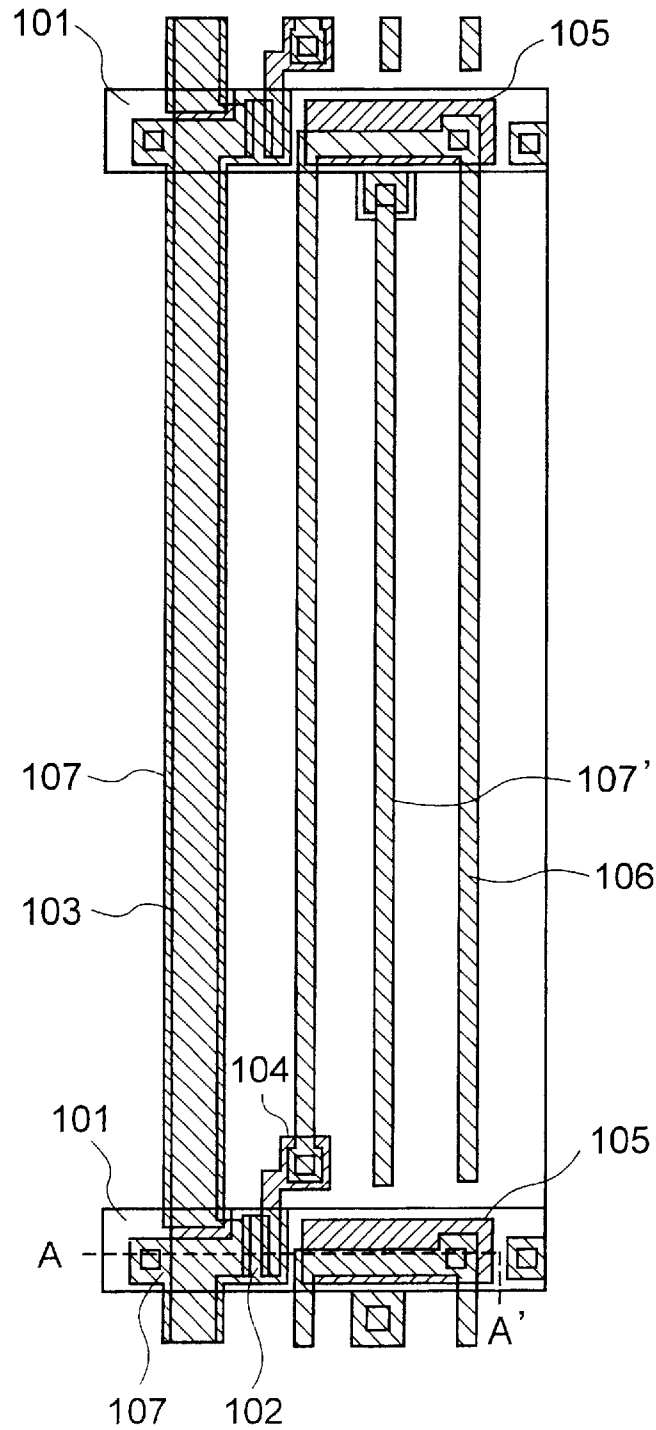


FIG. 2

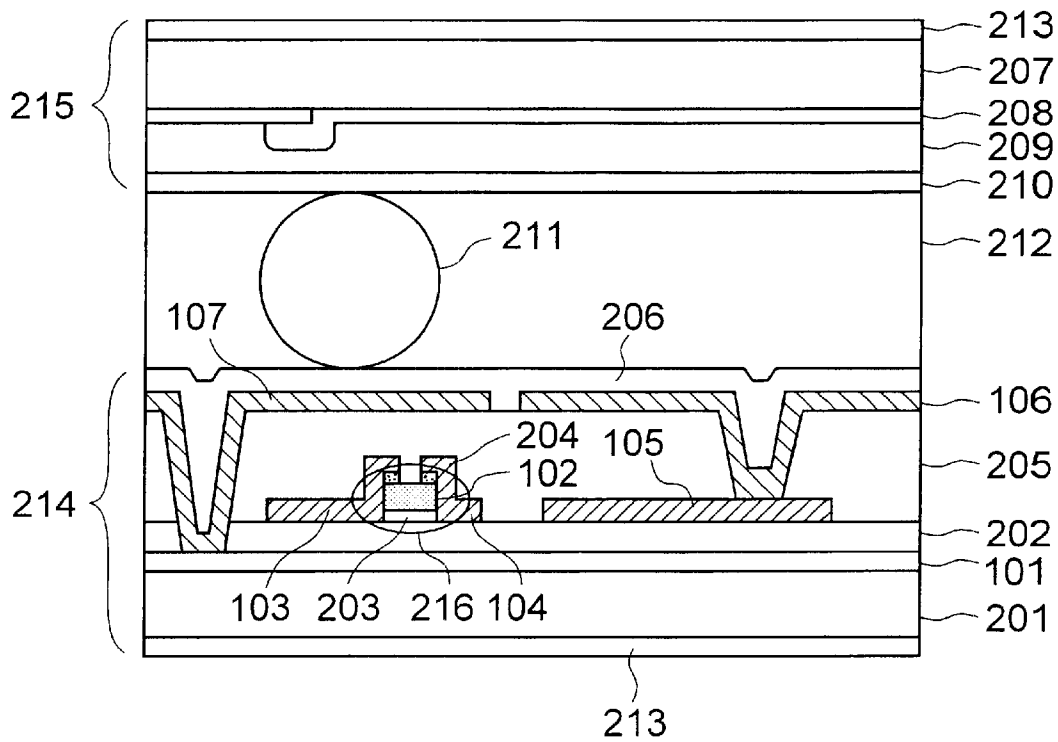


FIG. 3

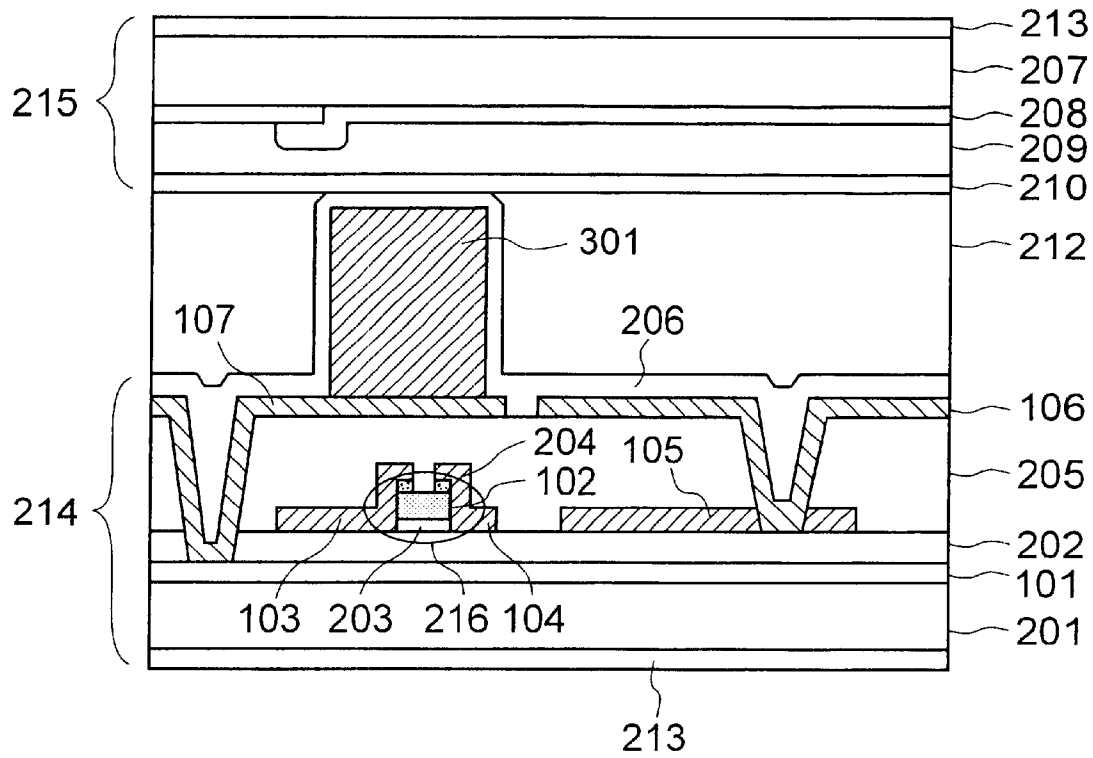
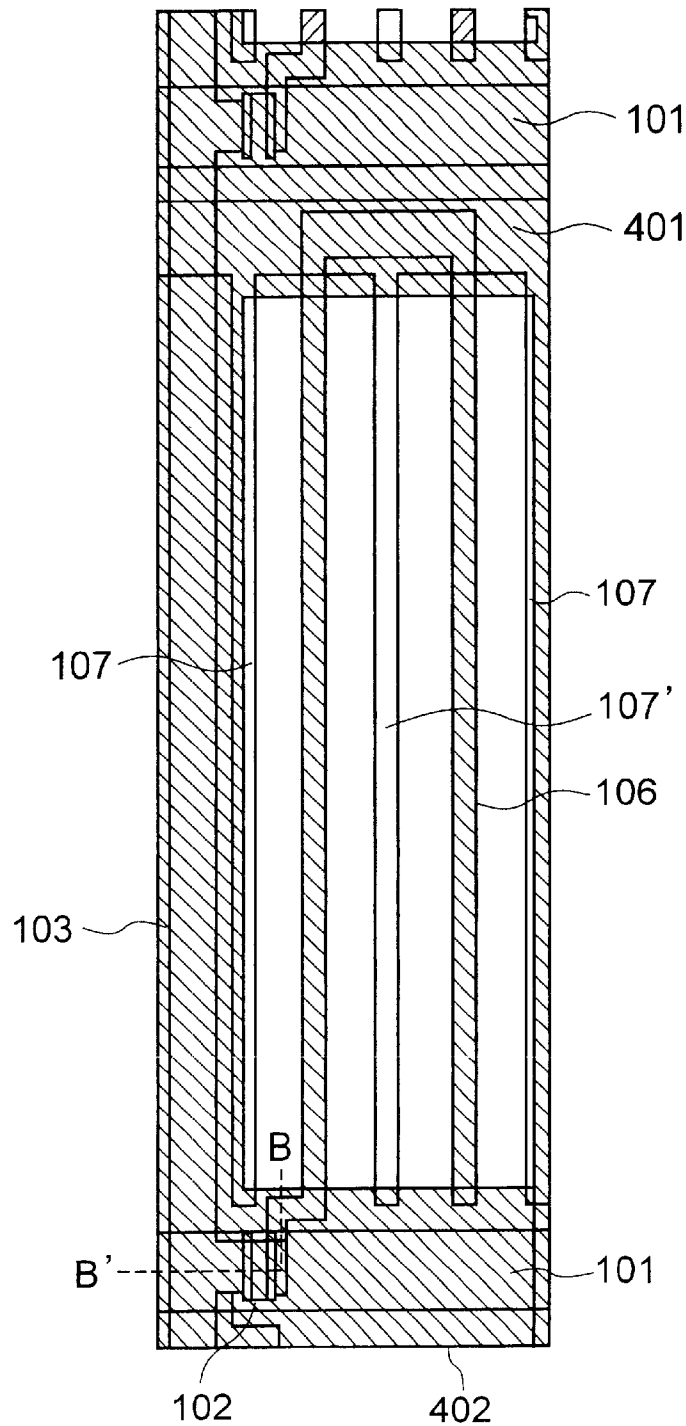


FIG. 4 PRIOR ART



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