

**Petitioner Bluehouse Global Ltd.**

**Ex. 1005**



US008169558B2

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

(10) **Patent No.:** **US 8,169,558 B2**  
(45) **Date of Patent:** **May 1, 2012**

(54) **LIQUID CRYSTAL DISPLAY DEVICE**

(56) **References Cited**

(75) Inventors: **Masateru Morimoto**, Mobarra (JP);  
**Junji Tanno**, Chiba (JP)

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(73) Assignees: **Hitachi Displays, Ltd.**, Chiba (JP);  
**Panasonic Liquid Crystal Display Co., Ltd.**, Hyogo-ken (JP)

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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 482 days.

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*Primary Examiner* — David Nelms  
*Assistant Examiner* — David Chung

(21) Appl. No.: **12/495,899**

(74) *Attorney, Agent, or Firm* — Antonelli, Terry, Stout & Kraus, LLP.

(22) Filed: **Jul. 1, 2009**

(57) **ABSTRACT**

(65) **Prior Publication Data**

US 2010/0002162 A1 Jan. 7, 2010

A liquid crystal display device includes pixels A and pixels B, wherein a width BB of the pixel B is smaller than a width AA of the pixel A. A pixel electrode formed in the pixel B is smaller than a pixel electrode formed in the pixel A in area and hence, capacitance formed between the pixel electrode and a counter electrode which is formed below the pixel electrode with an insulation film sandwiched therebetween becomes small. To eliminate this difference in capacitance, a first branch electrode and a second branch electrode are formed on the pixel electrode of the pixel B thus increasing capacitance between the pixel electrode and the counter electrode. Due to such a constitution, it is possible to prevent the deterioration of image quality attributed to imbalance of capacitance.

(30) **Foreign Application Priority Data**

Jul. 1, 2008 (JP) ..... 2008-172426

(51) **Int. Cl.**  
**G02F 1/1343** (2006.01)

(52) **U.S. Cl.** ..... **349/38; 349/39; 349/139**

(58) **Field of Classification Search** ..... 349/38,  
349/39, 139

See application file for complete search history.

**6 Claims, 4 Drawing Sheets**

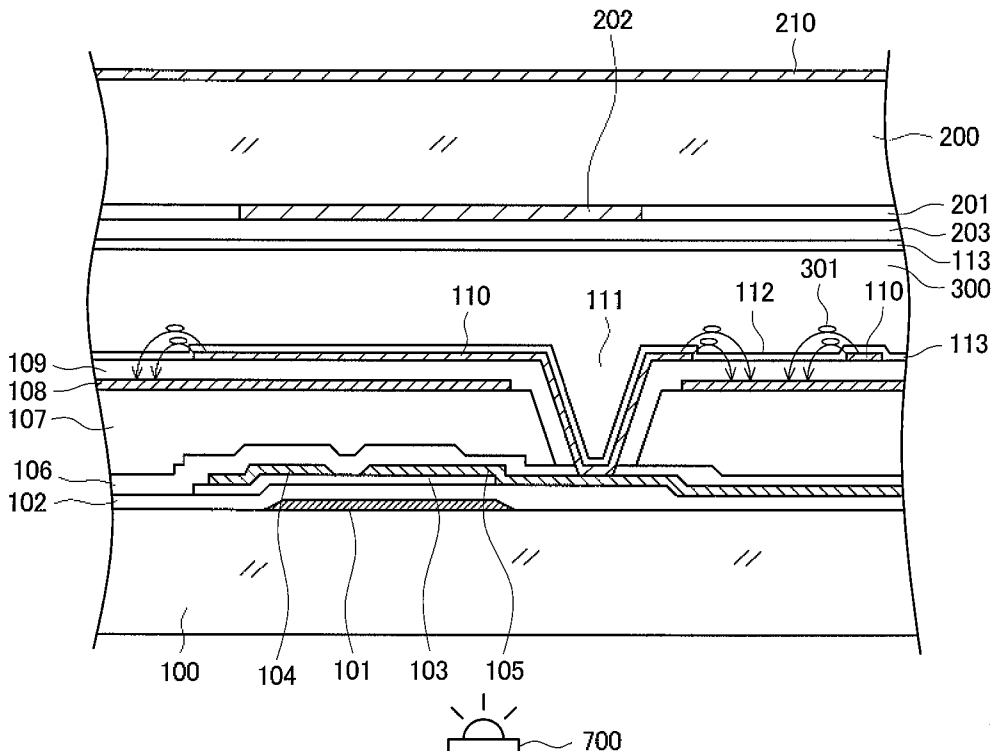


FIG. 1

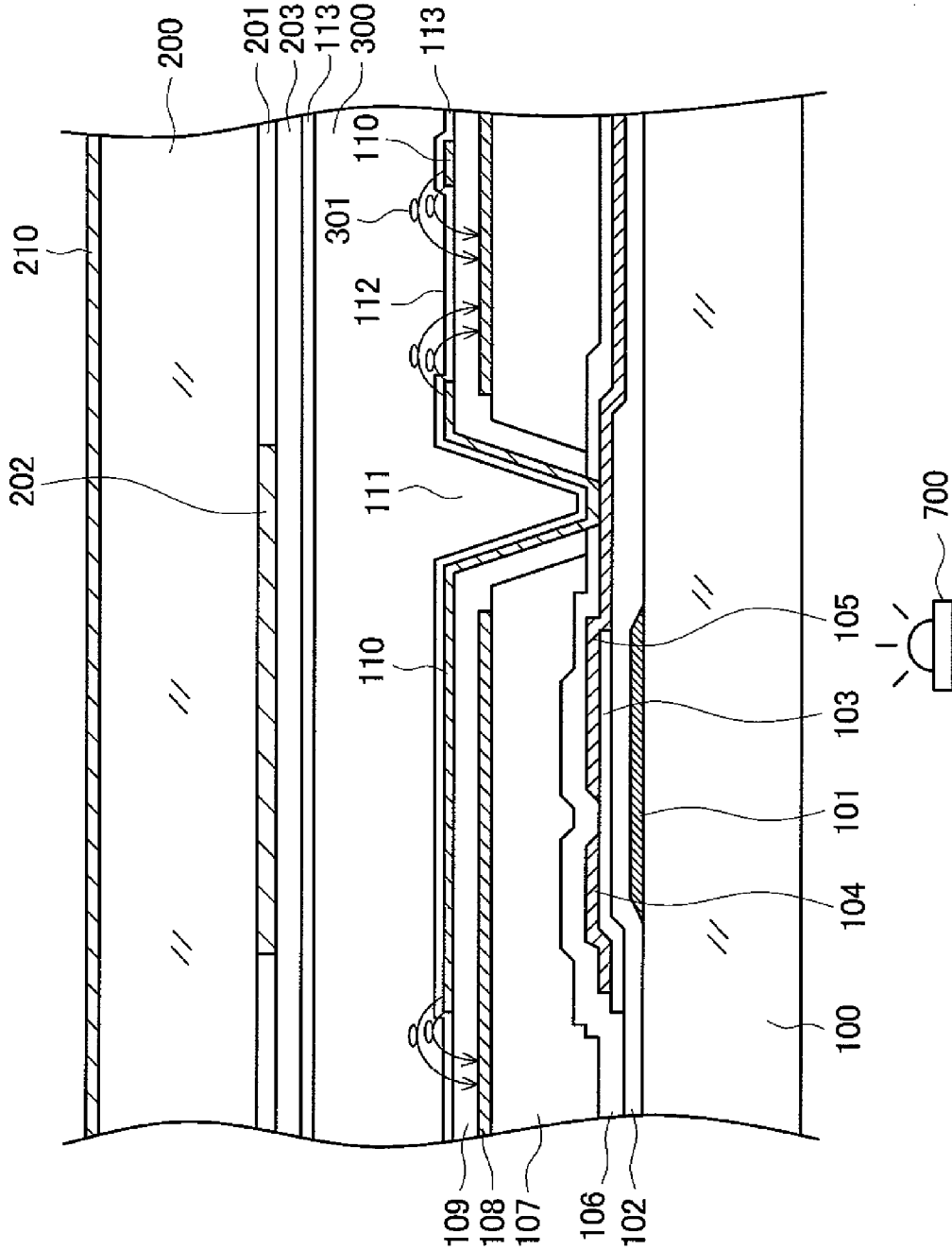


FIG. 2

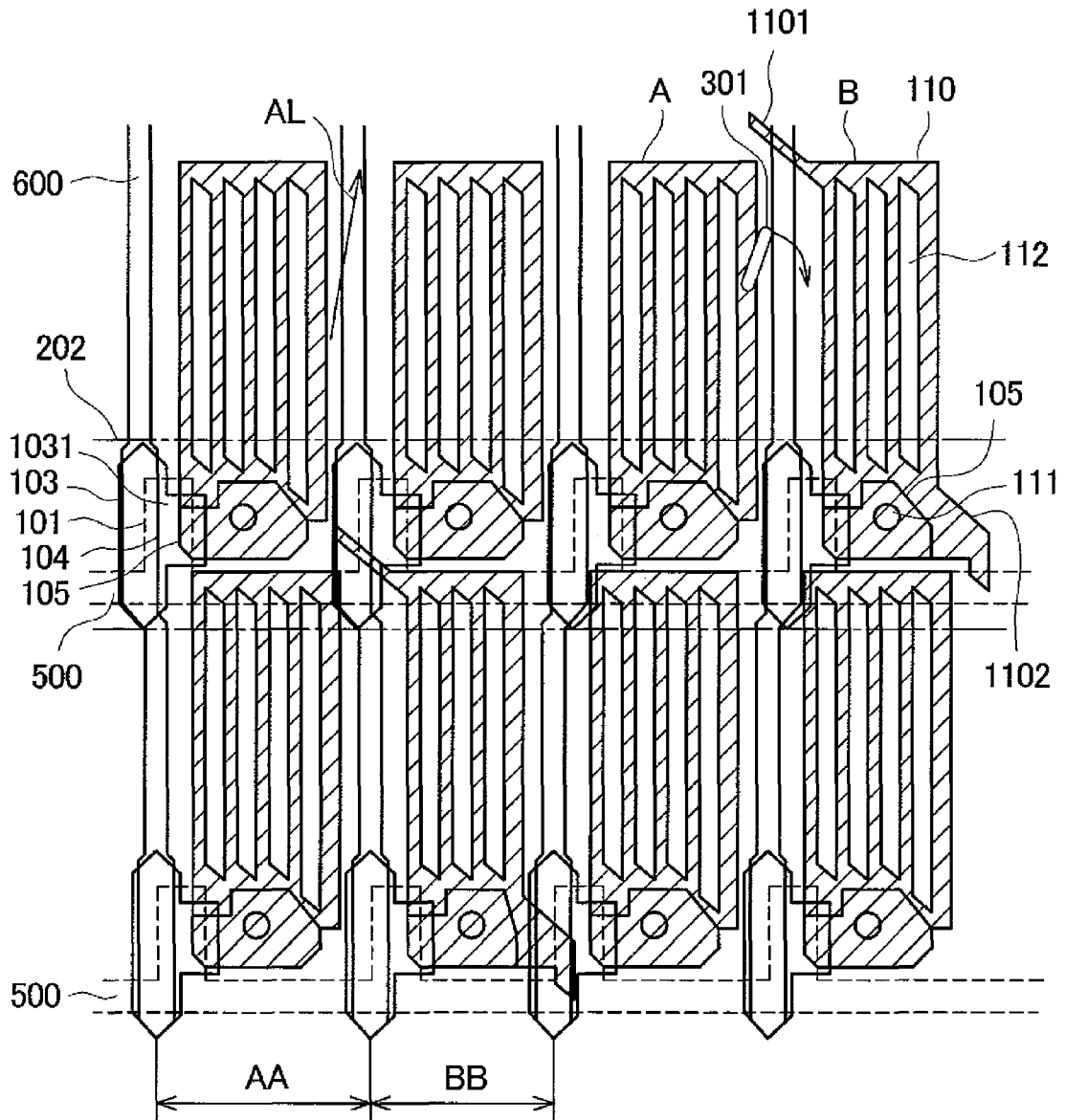
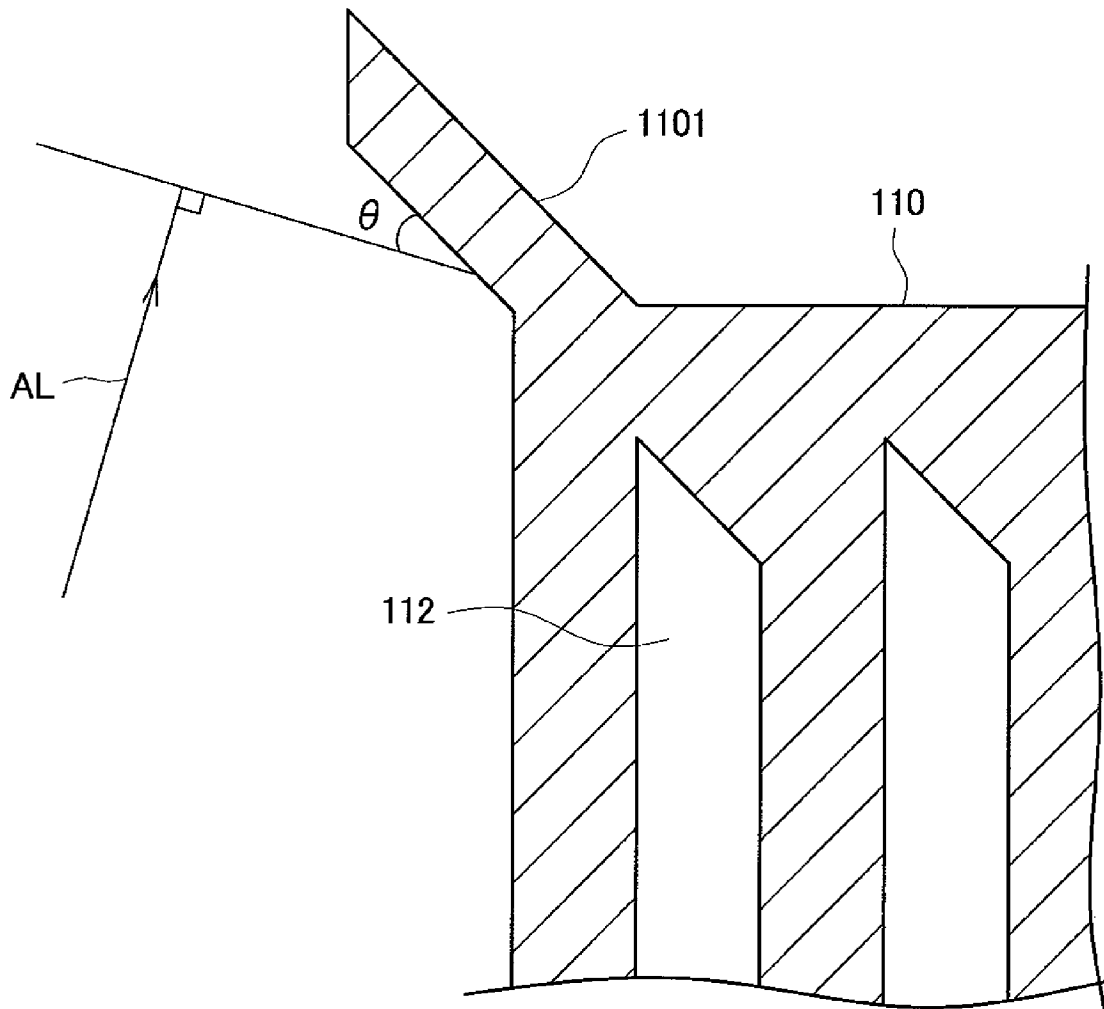


FIG. 3



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