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(54) LIQUID CRYSTAL DISPLAY DEVICE

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patent is extended or adjusted under 35

U.S.C. 154(b) by 176 days.

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(51) Int. Cl.

G02F 1/133 (2006.01) **G02F 1/1335** (2006.01)

(52) U.S. Cl. 349/114; 349/33

(56) References Cited

(10) **Patent No.:**

U.S. PATENT DOCUMENTS

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(57) ABSTRACT

A liquid crystal display device includes an upper electrode and a lower electrode interposing an insulation layer therebetween, wherein an electric field opening part for passing an electric field is formed in the upper electrode and liquid crystal molecules are driven by applying a voltage between the lower electrode and the upper electrode, wherein a window-shaped opening part formed by partially removing the lower electrode for connecting an upper electrode wiring and the upper electrode, which interpose an interlayer insulation film therebetween, together is disposed in a lower part of the lower electrode, and wherein one end portion of the electric field opening part in the longitudinal direction around the window-shaped opening part is disposed to be overlapped with the window-shaped opening part in a plan view.

9 Claims, 7 Drawing Sheets

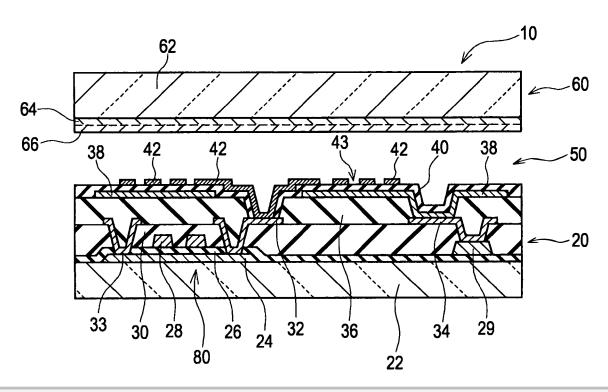
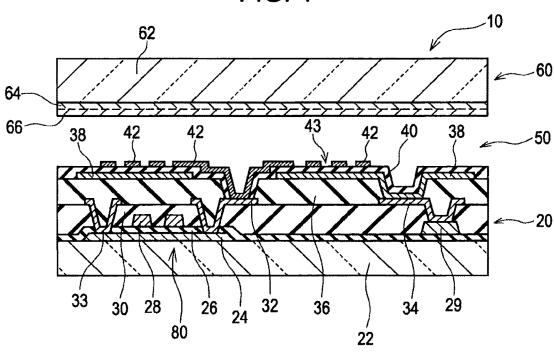




FIG. 1

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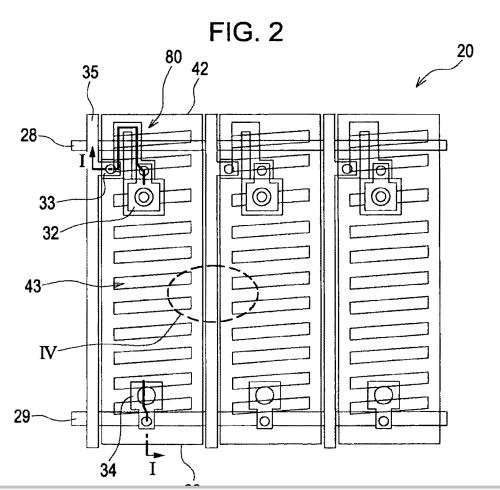




FIG. 3

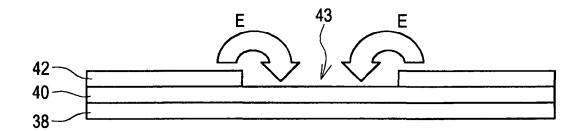
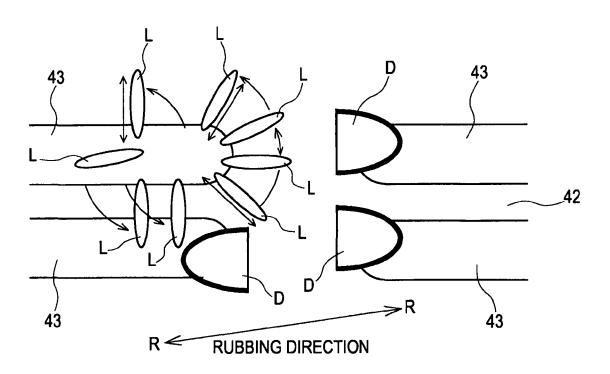


FIG. 4





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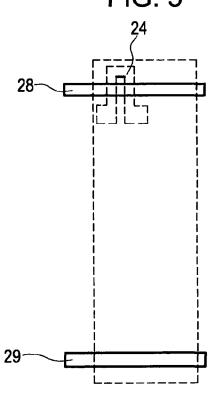


FIG. 6

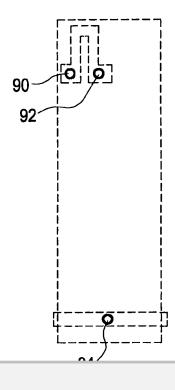
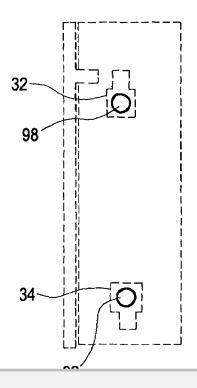




FIG. 7
35
92
32
90
34

FIG. 8





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