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Shimoda et al.

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(54) **ELECTROPHORETIC DEVICE,
ELECTRONIC SHEET INCLUDING THE
SAME, ELECTRONIC BOOK INCLUDING
THE ELECTRONIC SHEET, AND
MANUFACTURING METHOD THEREOF**

(75) Inventors: **Tatsuya Shimoda, Suwa (JP);
Hideyuki Kawai, Suwa (JP); Satoshi
Inoue, Suwa (JP)**

(73) Assignee: **Seiko Epson Corporation (JP)**

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 149 days.

(21) Appl. No.: **09/999,160**

(22) Filed: **Nov. 30, 2001**

(65) **Prior Publication Data**

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(30) **Foreign Application Priority Data**

Dec. 1, 2000 (JP) 2000-367165

(51) **Int. Cl.⁷** **G09G 3/34**

(52) **U.S. Cl.** **345/107; 359/296**

(58) **Field of Search** 345/107, 105,
345/106, 204, 205, 206, 901, 903, 92, 87,
88, 89, 91; 359/296; 430/38; 349/38, 39,
42

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Primary Examiner—Xiao Wu

(74) *Attorney, Agent, or Firm*—Harness, Dickey & Pierce,
P.L.C.

(57) **ABSTRACT**

An electrophoretic device including a display region includ-
ing a plurality of pixels, each having an electrophoretic
dispersion layer, a capacitive element for storing charge for
maintaining the electrical polarization of the electrophoresis
dispersion, and an organic transistor for causing the capaci-
tive element to store charge when turned on, wherein the
electrophoretic dispersion layer has a electrophoresis disper-
sion. A driver region for optionally choosing pixels in the
display region to turn on the transistors of the pixels is
provided around the display region of the electrophoretic
device. An electronic sheet is achieved by transmitting
external signals to the driver region to freely change display
contents on the display region.

16 Claims, 8 Drawing Sheets

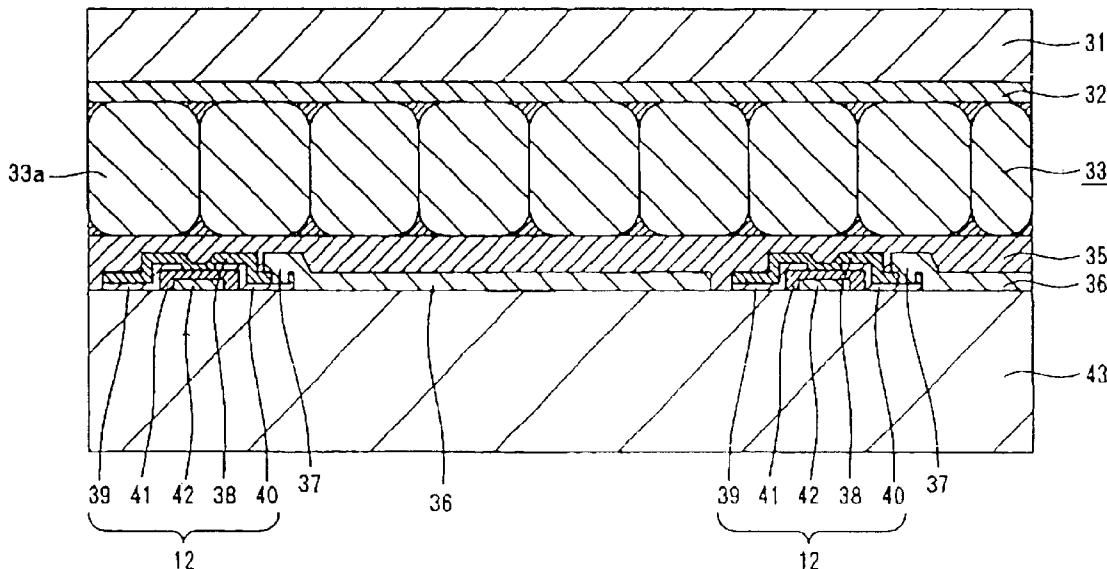


FIG. 3

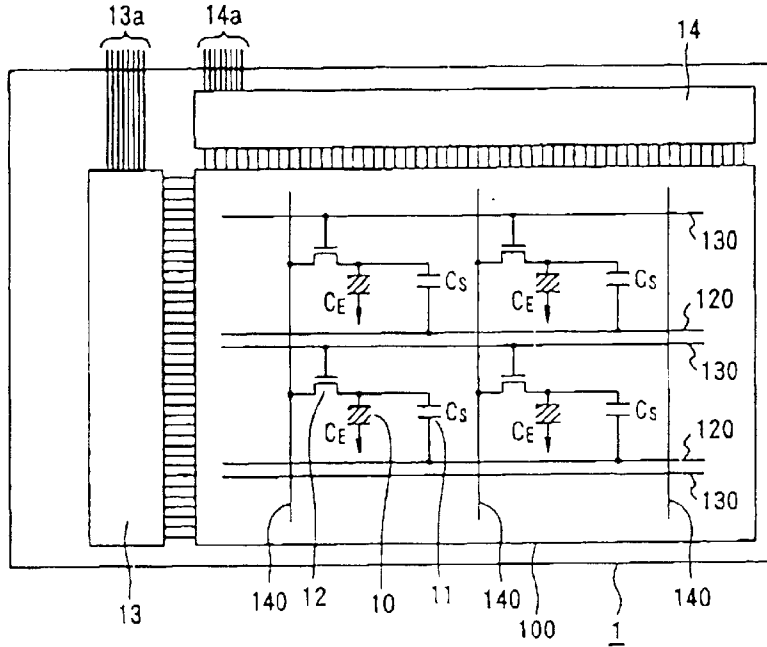


FIG. 4

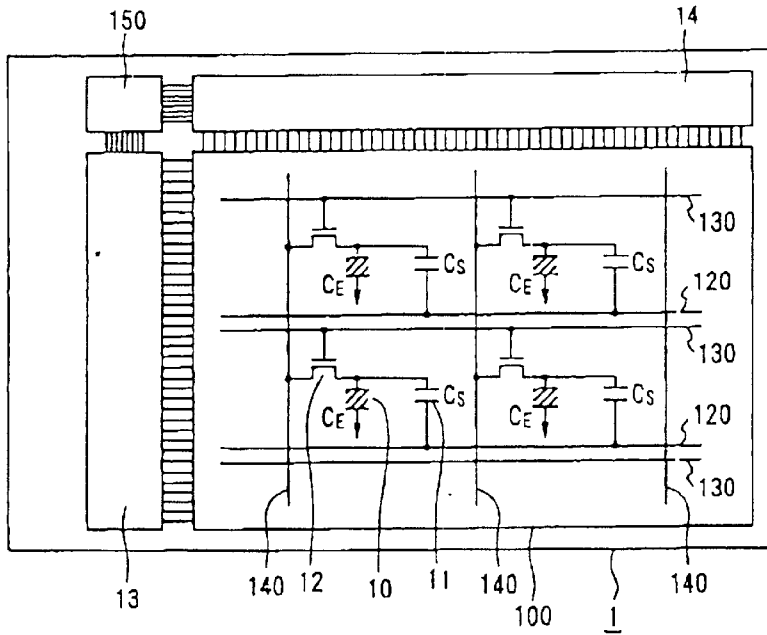


FIG. 5

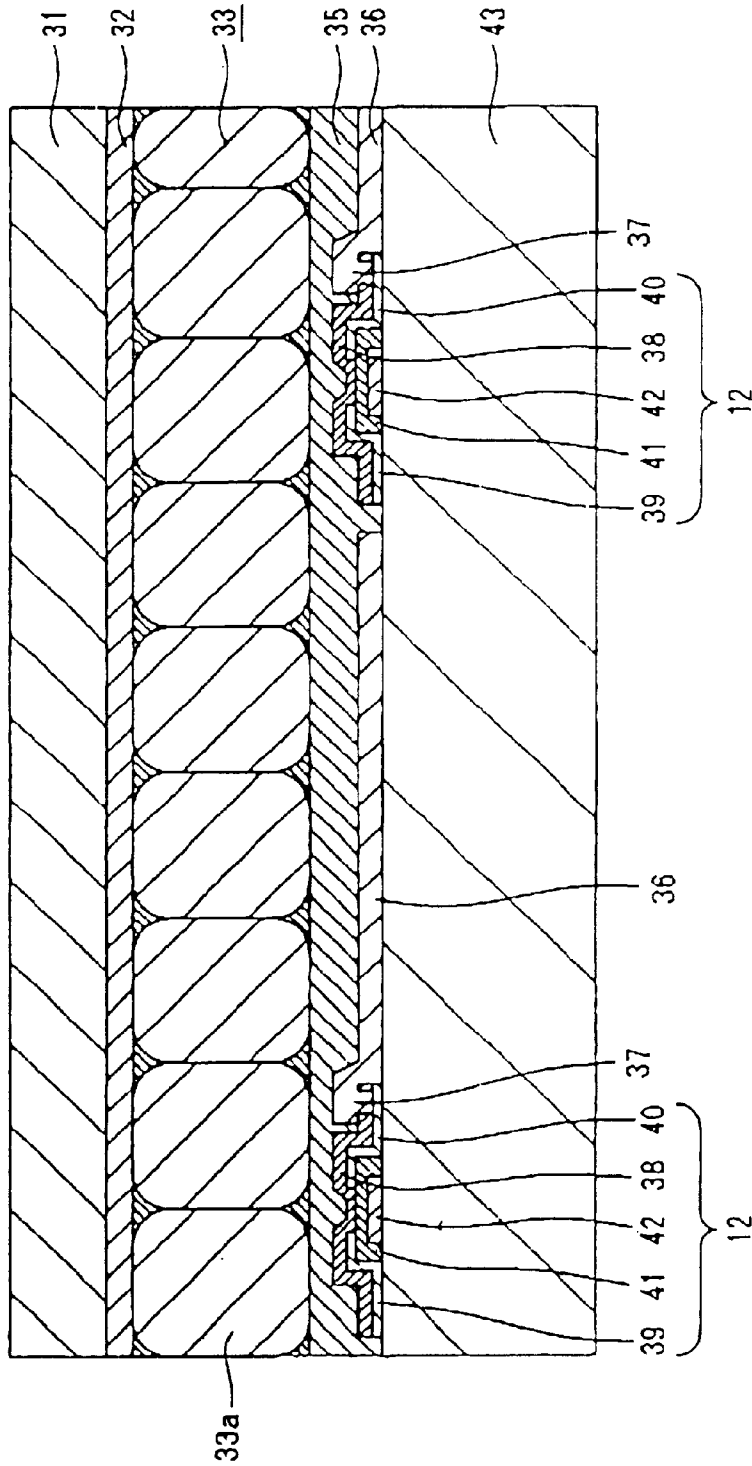
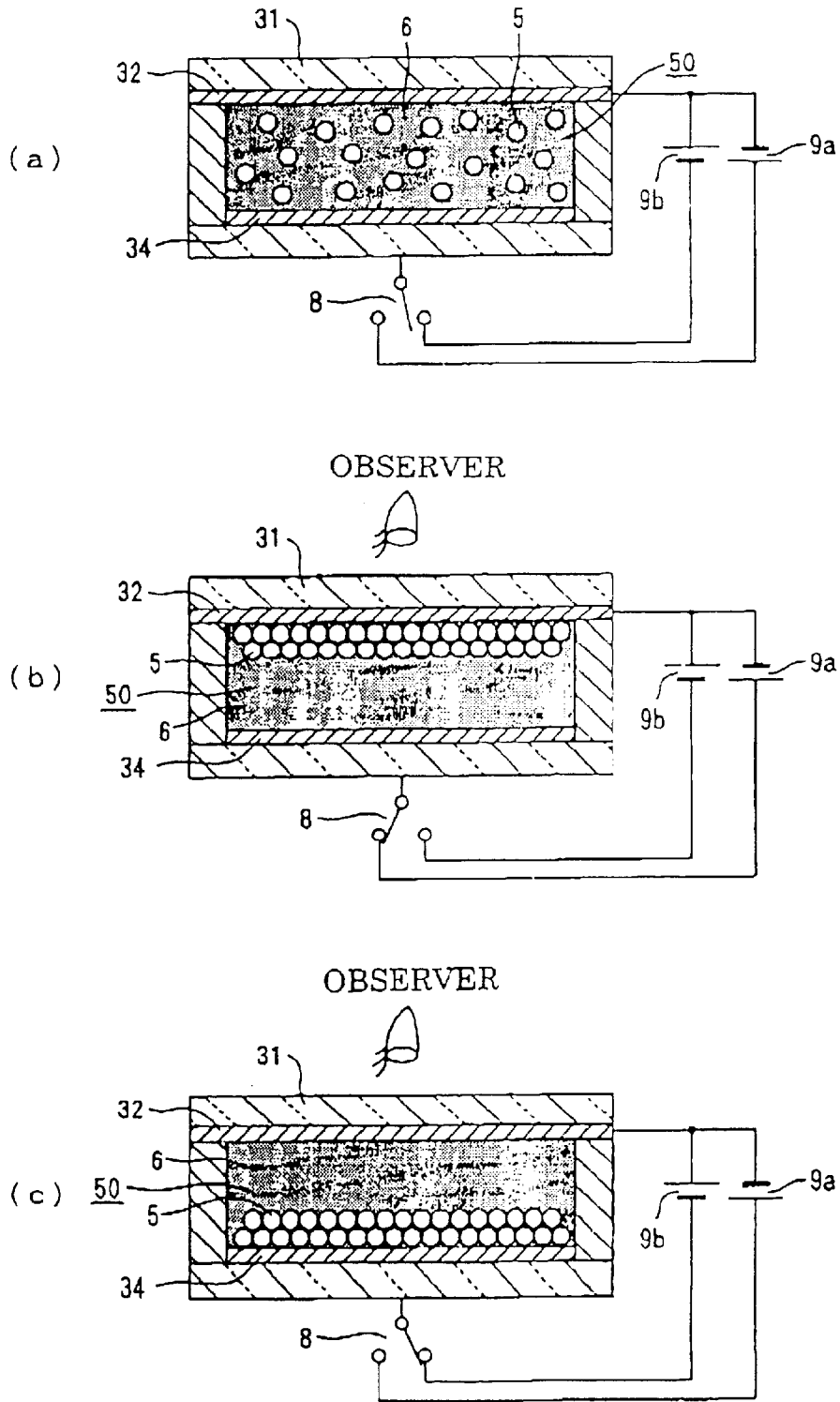


FIG. 6



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