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United States Patent [19]

Utsugi et al.

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[45] Date of Patent: Sep. 23, 1997

[54] **CURRENT-CONTROLLED LUMINOUS ELEMENT ARRAY AND METHOD FOR PRODUCING THE SAME**

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[73] Assignee: **NEC Corporation**, Tokyo, Japan

[21] Appl. No.: **321,608**

[22] Filed: **Oct. 12, 1994**

[30] **Foreign Application Priority Data**

Oct. 12, 1993 [JP] Japan 5-253866

[51] **Int. Cl.**[6] **G09G 3/30**

[52] **U.S. Cl.** **257/59**; 257/40; 313/504; 313/505; 340/825.81; 345/76; 345/80; 345/206

[58] **Field of Search** 257/40, 59, 72; 313/504, 505; 345/206, 76, 91, 58, 80; 340/825.81

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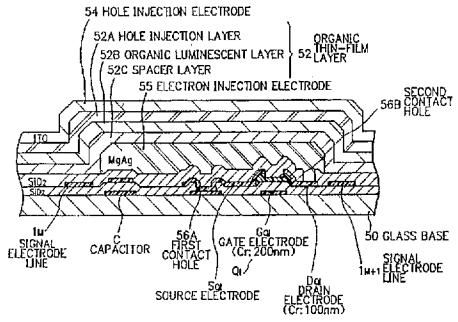
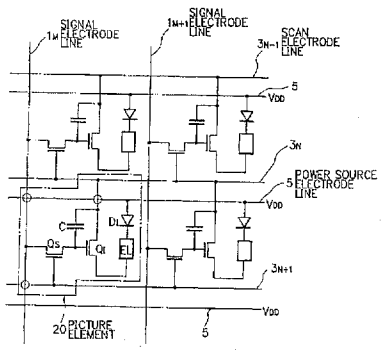
Assistant Examiner—John Guay
Attorney, Agent, or Firm—Whitham, Curtis, Whitham & McGinn

[57] **ABSTRACT**

In a current-controlled luminous element array, combinations of a luminous element of a current-controlled type, a current-controlling transistor for controlling the current of the luminous element, and a switching transistor are arranged in a matrix form between signal electrode lines and scan electrode lines such that the luminous element is connected at one terminal thereof to a power source electrode line and at the other terminal thereof to a drain electrode of the current-controlling transistor, a gate electrode of the current-controlling transistor and one signal electrode line have the switching transistor connected therebetween, and the current-controlling transistor in an arbitrary column of matrix has a source electrode thereof connected to one scan electrode line in another column.

14 Claims, 6 Drawing Sheets





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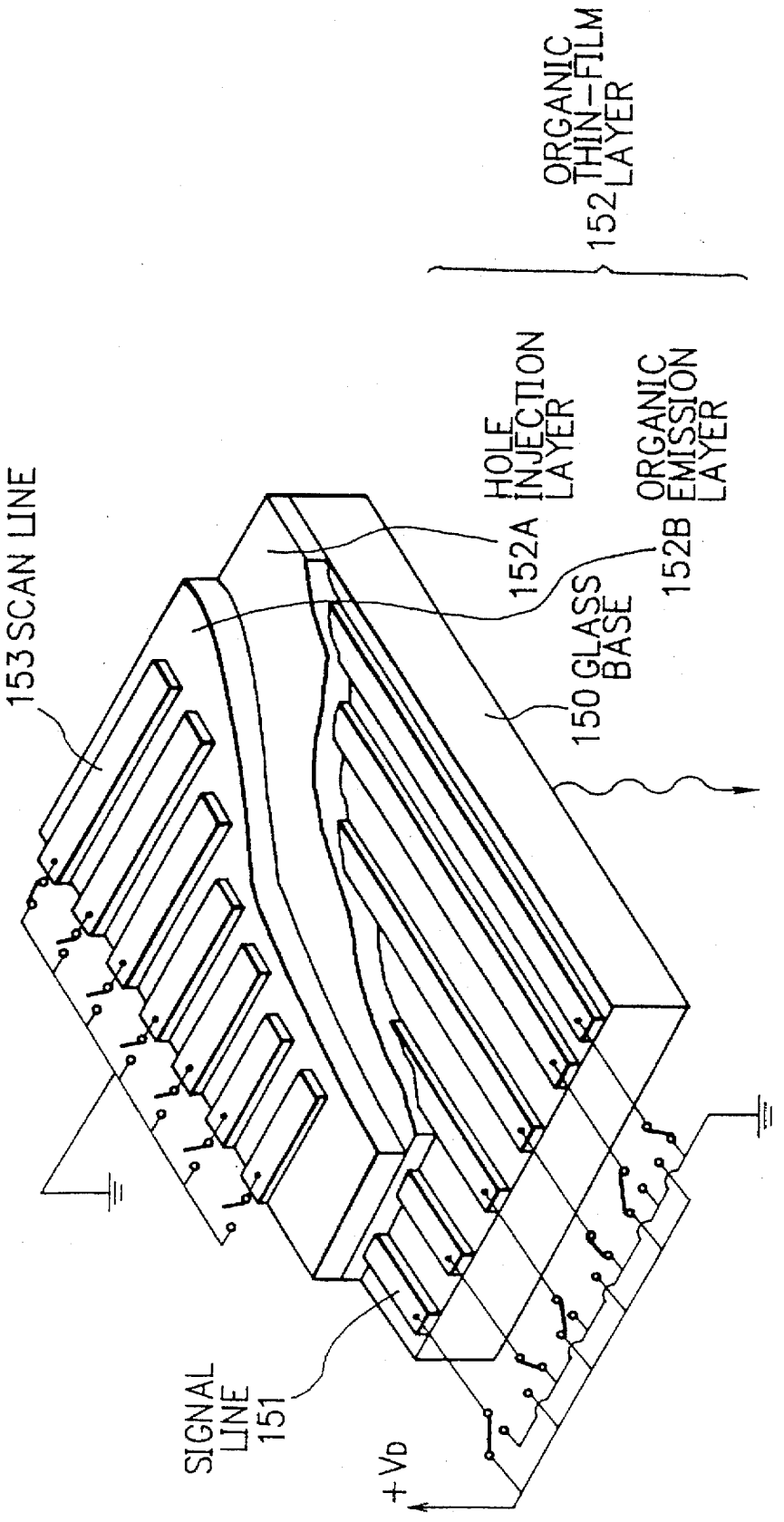

FIG. 1
PRIOR ART

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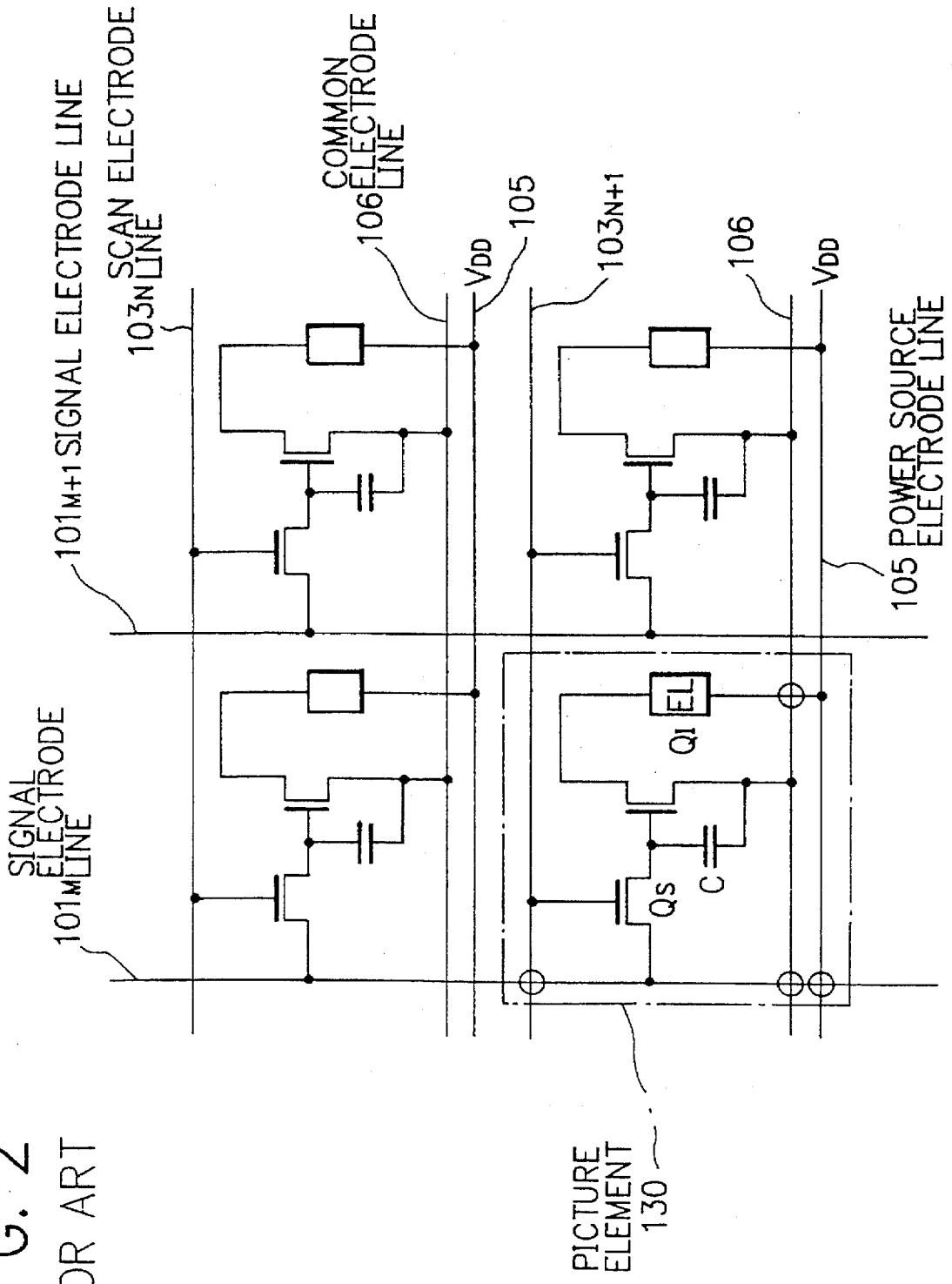

FIG. 2
PRIOR ART

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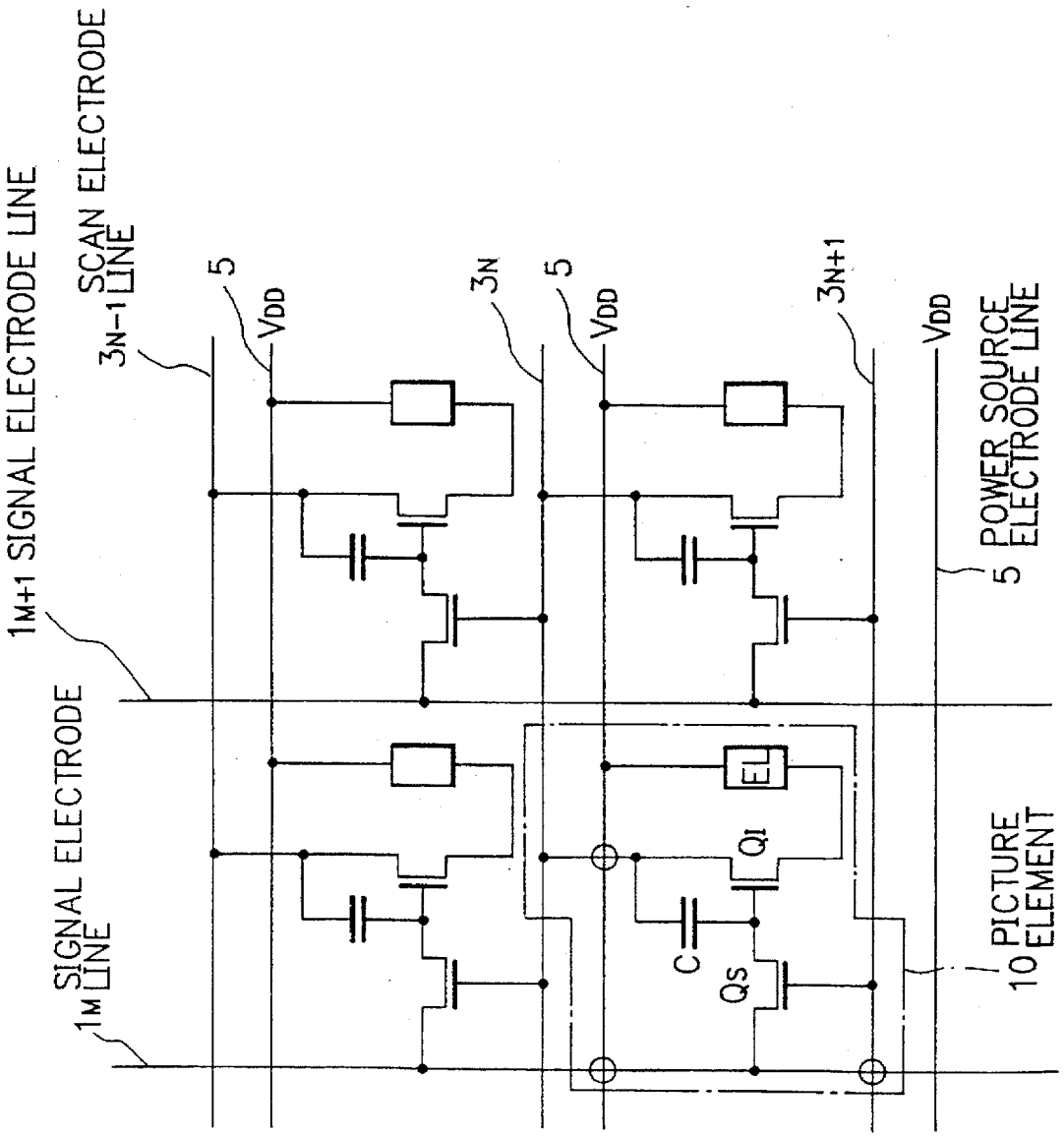

FIG. 3

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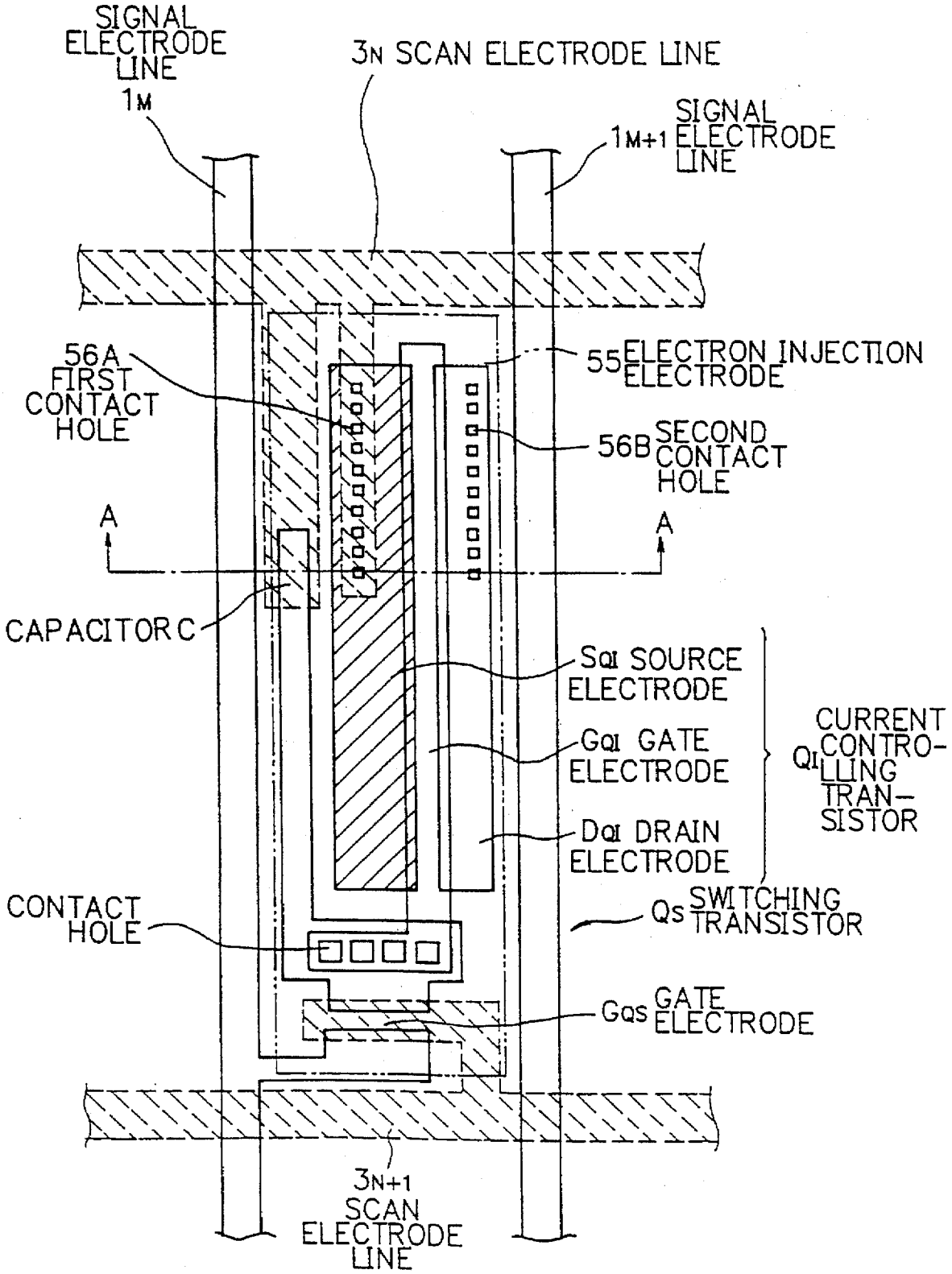
FIG. 4



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