

**(12) United States Patent
Juang**

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**(54) CONSTANT CURRENT DRIVER WITH
AUTO-CLAMPED PRE-CHARGE FUNCTION**

5,886,566 * 3/1999 Park et al. 327/536
6,043,525 * 3/2000 Chen 257/292

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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 0 days.

(57) ABSTRACT

A constant current driver with auto-clamped pre-charge function includes a reference bias generator and a plurality of constant current driver cells, each being connected to the reference bias generator to form a respective current mirror. Each constant current driver cell has a switch transistor, a current output transistor and a pre-charge transistor. When a constant current is outputted from the current output transistor for driving an organic light emitting diode, the pre-charge transistor is turned on to provide a drain to source current as an additional large current for rapidly pre-charging the organic light emitting diode until the gate to source voltage of the pre-charge transistor is smaller than the threshold voltage.

(21) Appl. No.: 09/761,685

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(51) Int. Cl.⁷ G05F 1/40

(52) U.S. Cl. 323/315

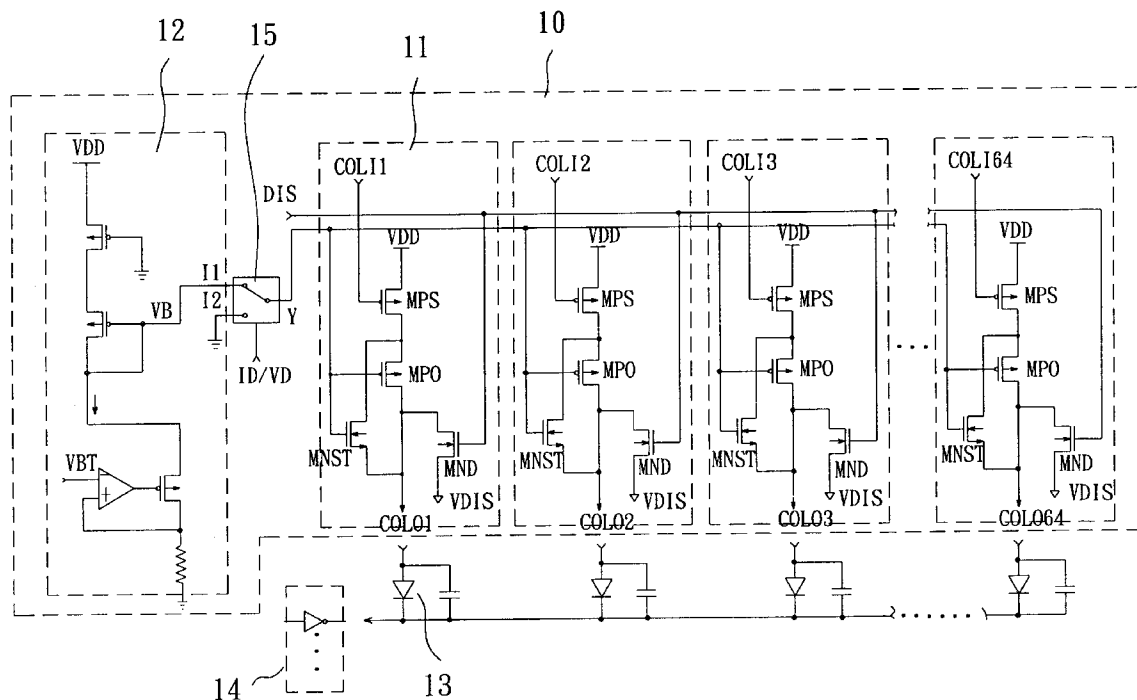
**(58) Field of Search 323/312-315;
327/535, 537, 538**

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U.S. PATENT DOCUMENTS

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14 Claims, 12 Drawing Sheets



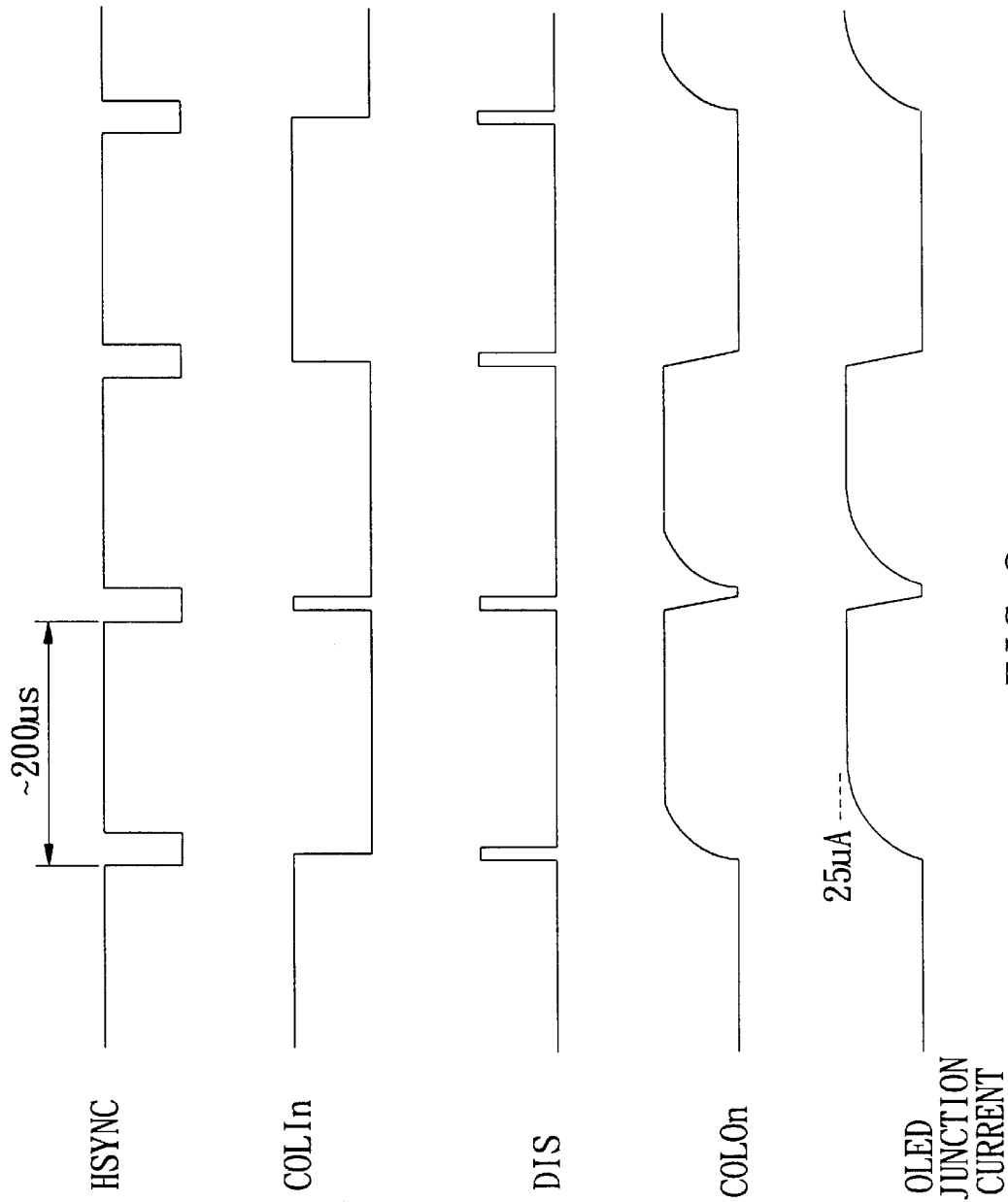


FIG. 2

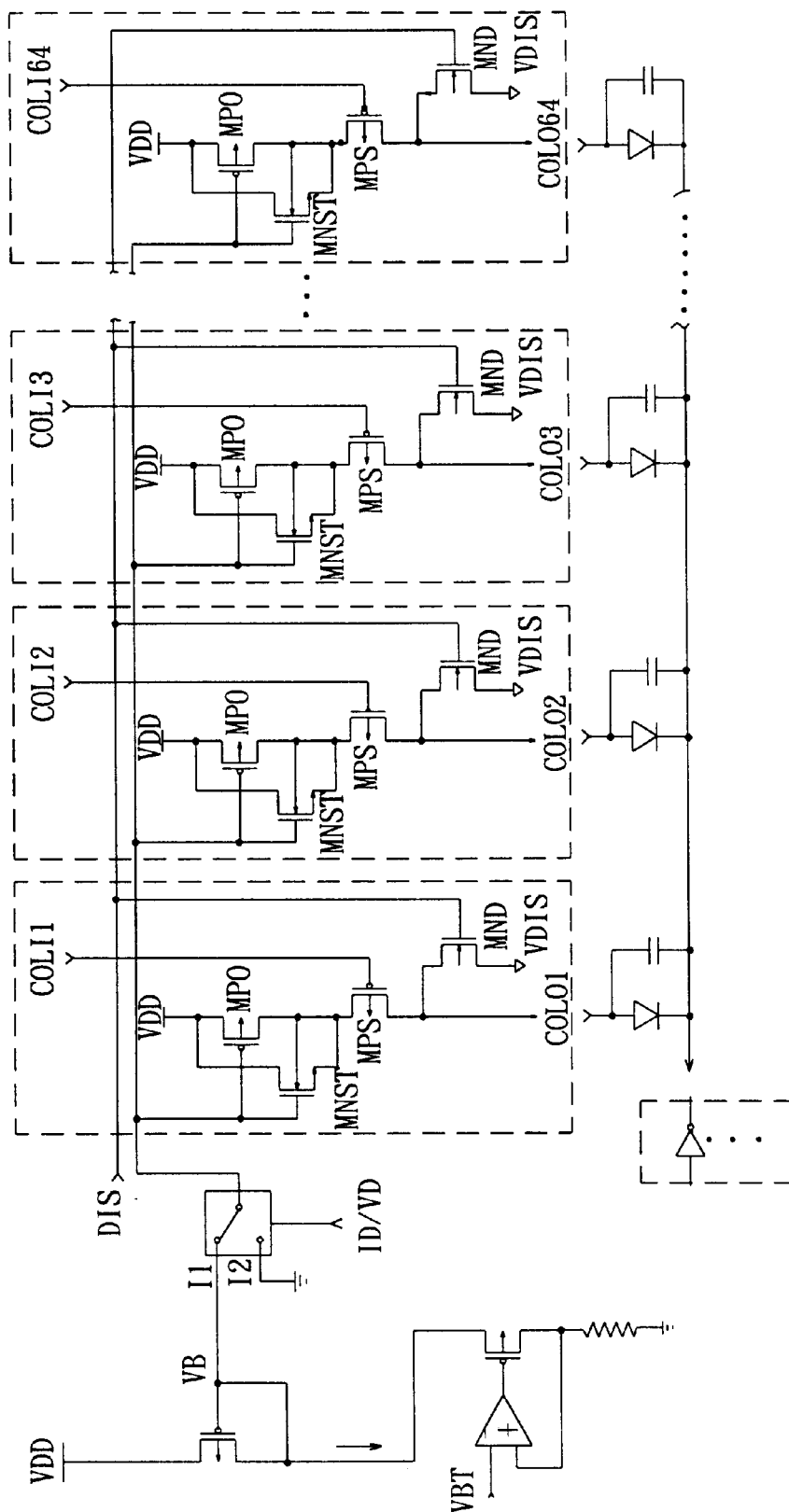


FIG. 3

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