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United States Patent [19]

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Lee et al.

[45] Date of Patent: **Oct. 27, 1998**

[54] **PORTABLE HAND HELD DOPPLER FETAL HEART RATE PROBE WITH SELECTIVE POWER SETTINGS**

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[73] Assignee: **MedaSonics, Inc.**, Newark, Calif.

[21] Appl. No.: **662,049**

[22] Filed: **Jun. 12, 1996**

[51] Int. Cl.⁶ **A61B 8/06**

[52] U.S. Cl. **73/627; 073/861.25; 600/455**

[58] Field of Search **128/661.07, 661.09, 128/698; 073/627, 861.25; 364/413.25, 413.02; 600/453, 455, 446, 457**

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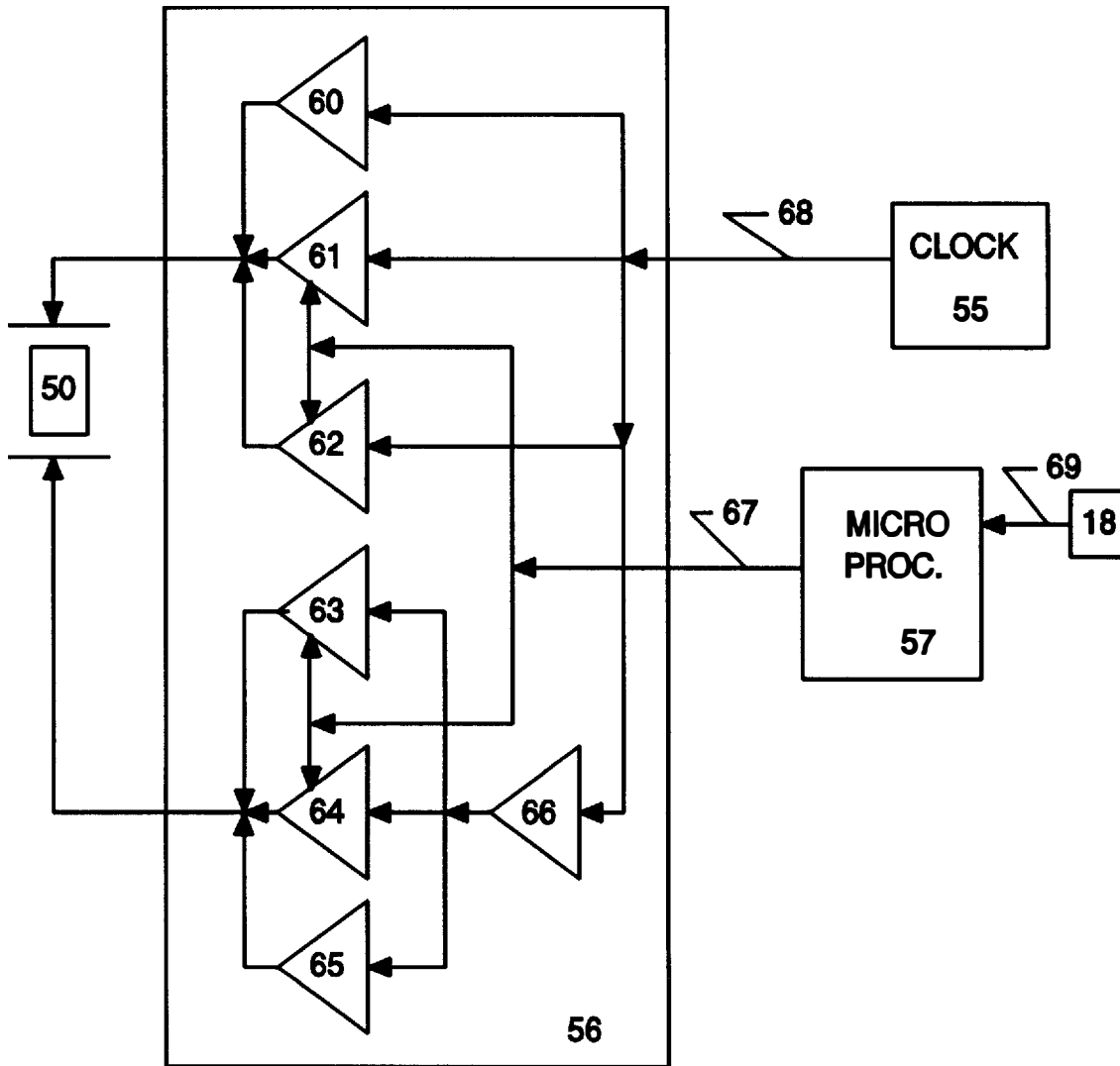
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Primary Examiner—Christine K. Oda
Attorney, Agent, or Firm—Fliesler, Dubb, Meyer & Lovejoy

[57] **ABSTRACT**

A probe in a hand held ultrasonic Doppler fetal heart beat detector and monitoring system comprising a crystal for transmitting ultrasonic energy, a variable power source connected to said crystal for driving the crystal at a selected power setting and a microprocessor for selecting a power setting for the variable power source.

16 Claims, 5 Drawing Sheets



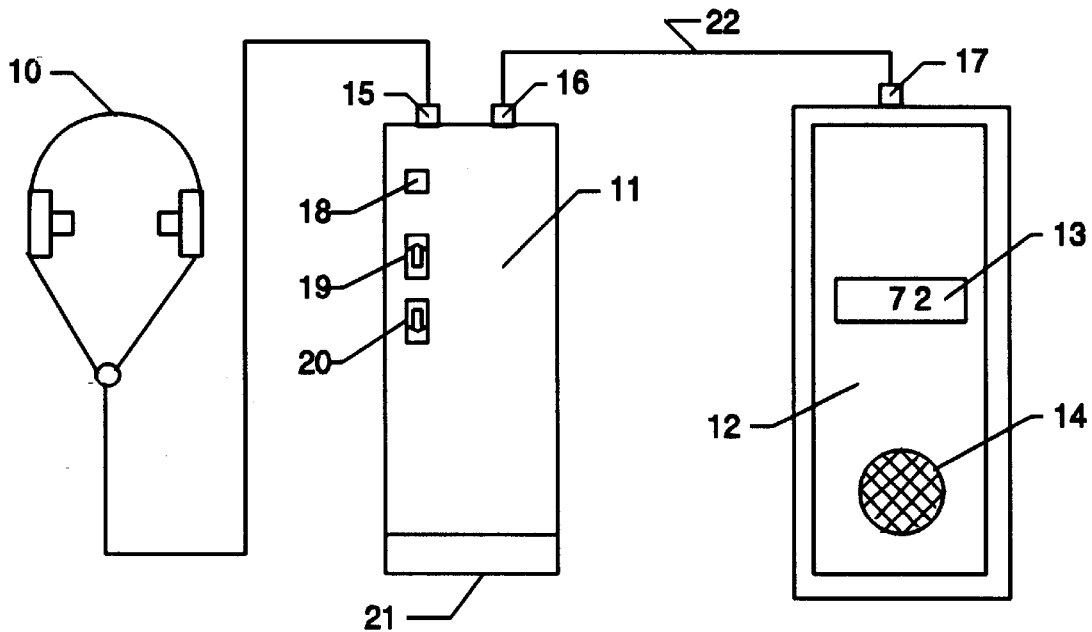


FIG. 1

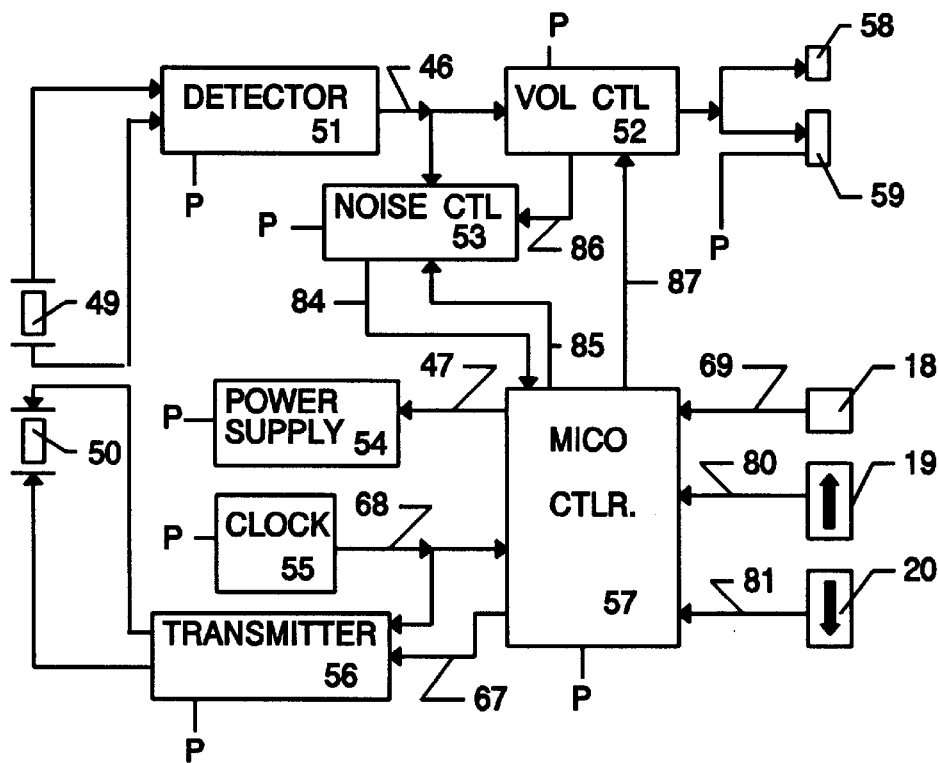


FIG. 2

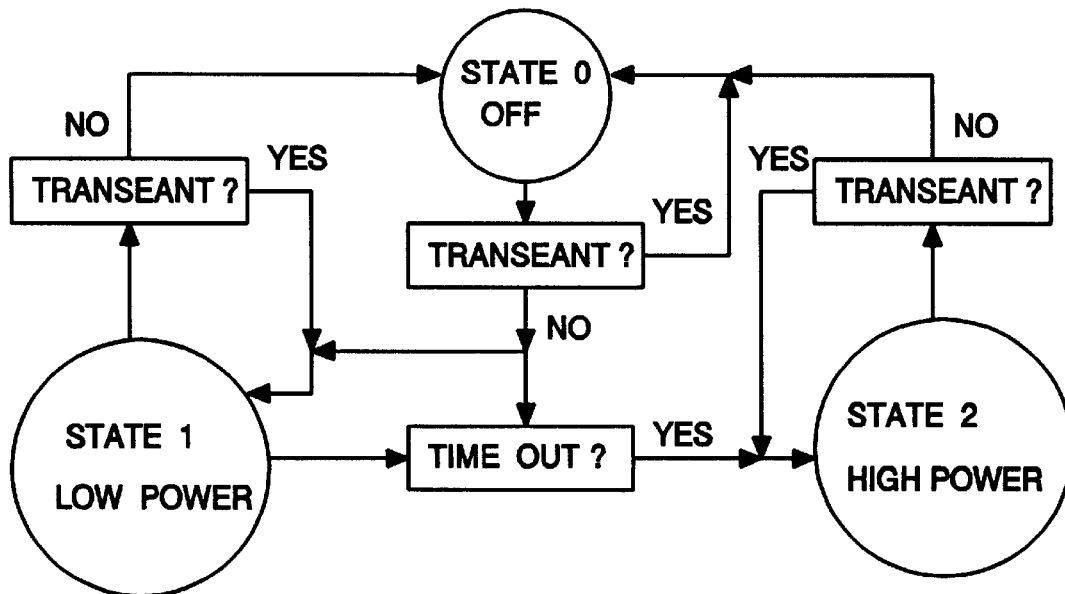
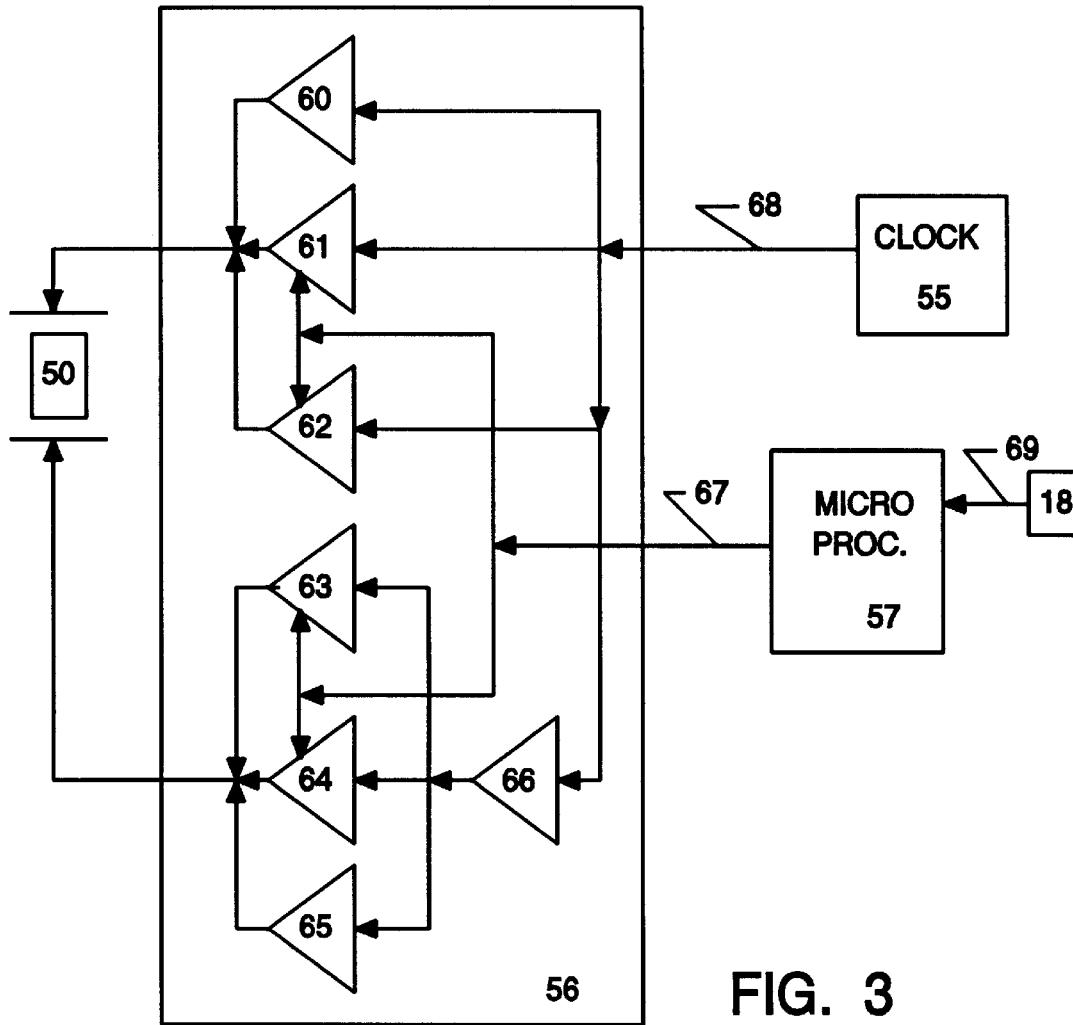


FIG. 4

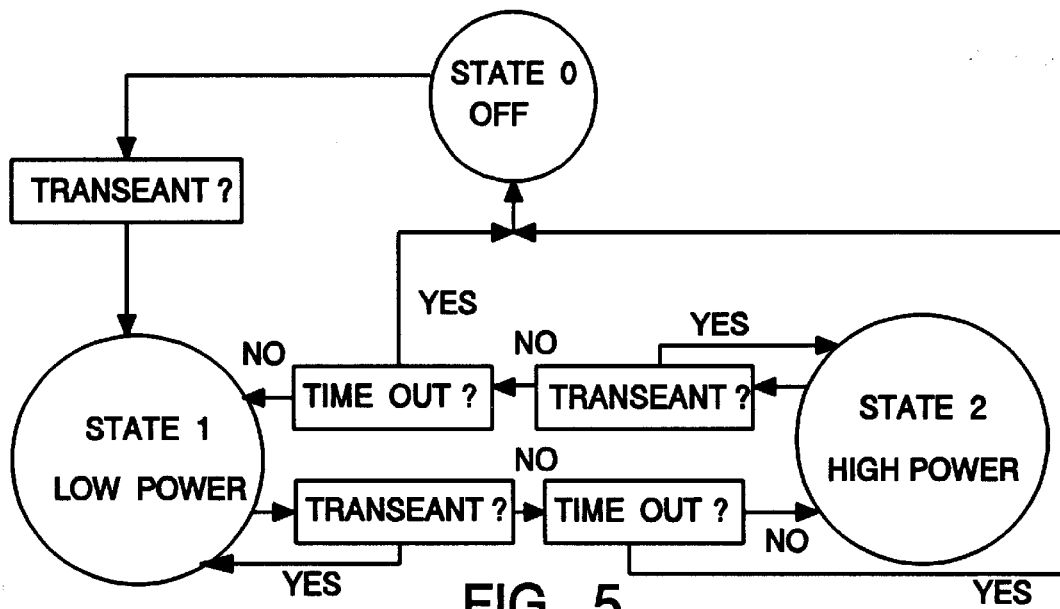


FIG. 5

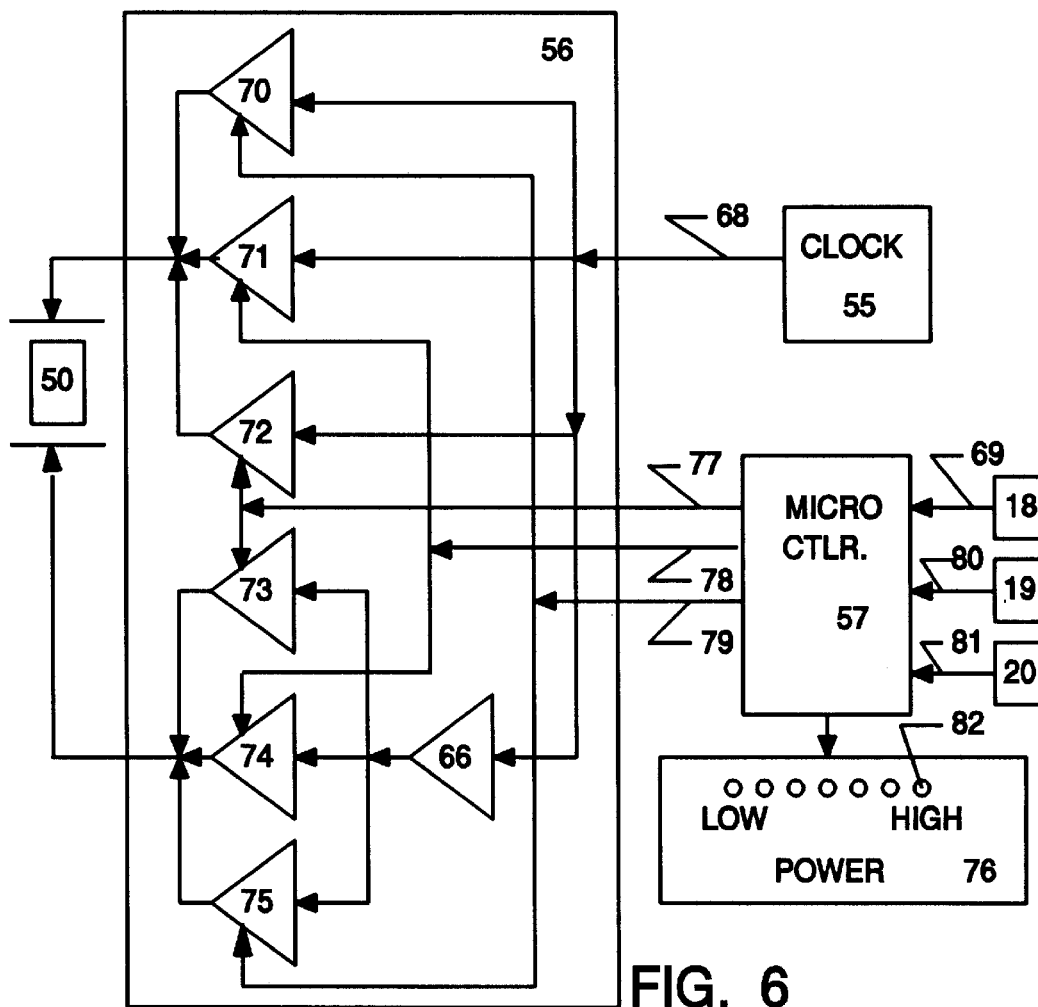


FIG. 6

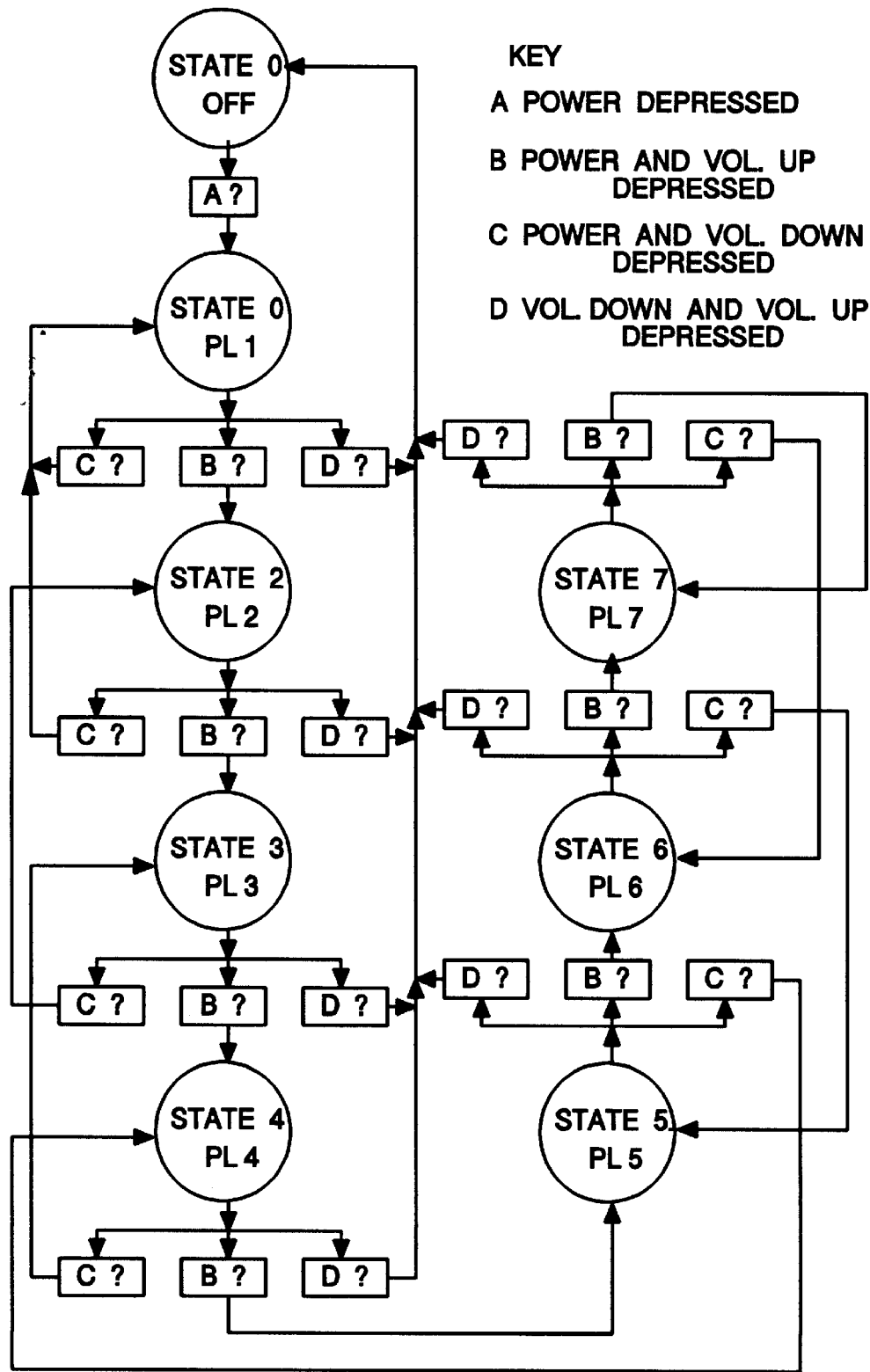


FIG. 7

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