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**Caulkins et al.**

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(54) **HYBRID SOLID STATE DISK DRIVE WITH CONTROLLER**

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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 240 days.

This patent is subject to a terminal disclaimer.

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**G06F 12/00** (2006.01)  
**G06F 12/16** (2006.01)

(52) **U.S. Cl.** ..... **711/165; 711/3; 711/4; 711/103; 711/113; 711/162**

(58) **Field of Classification Search** ..... **711/102, 711/103, 105, 111, 154, 165, 4, 5, 100, 101, 711/104, 170**

See application file for complete search history.

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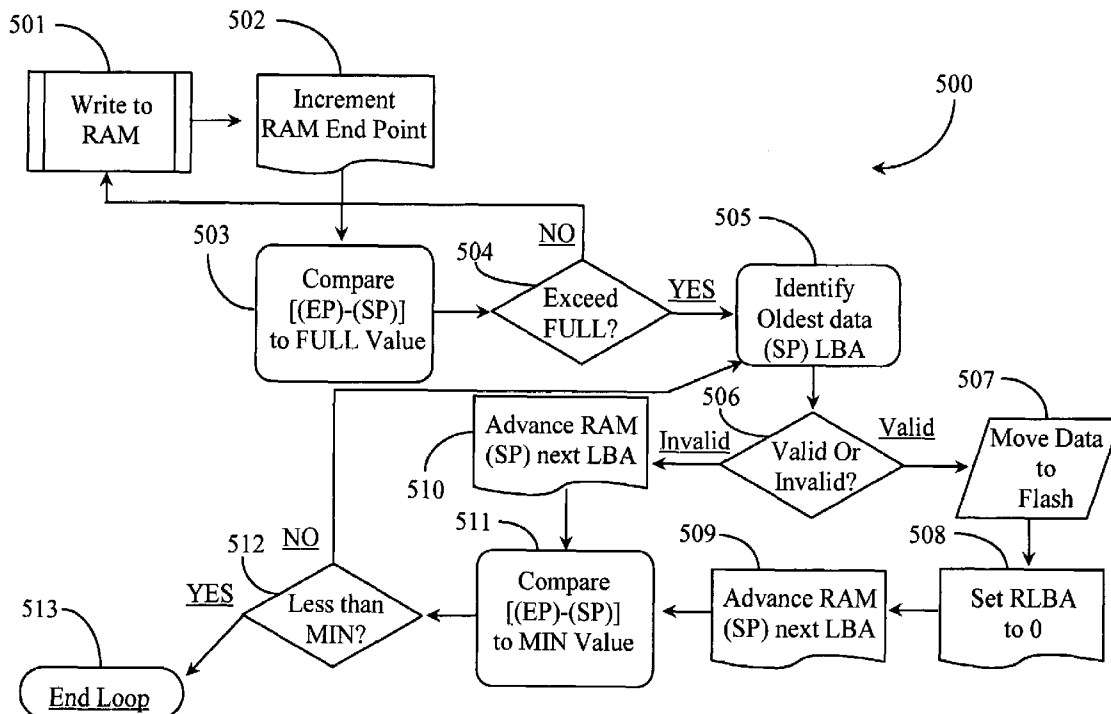
Primary Examiner—Jack A Lane

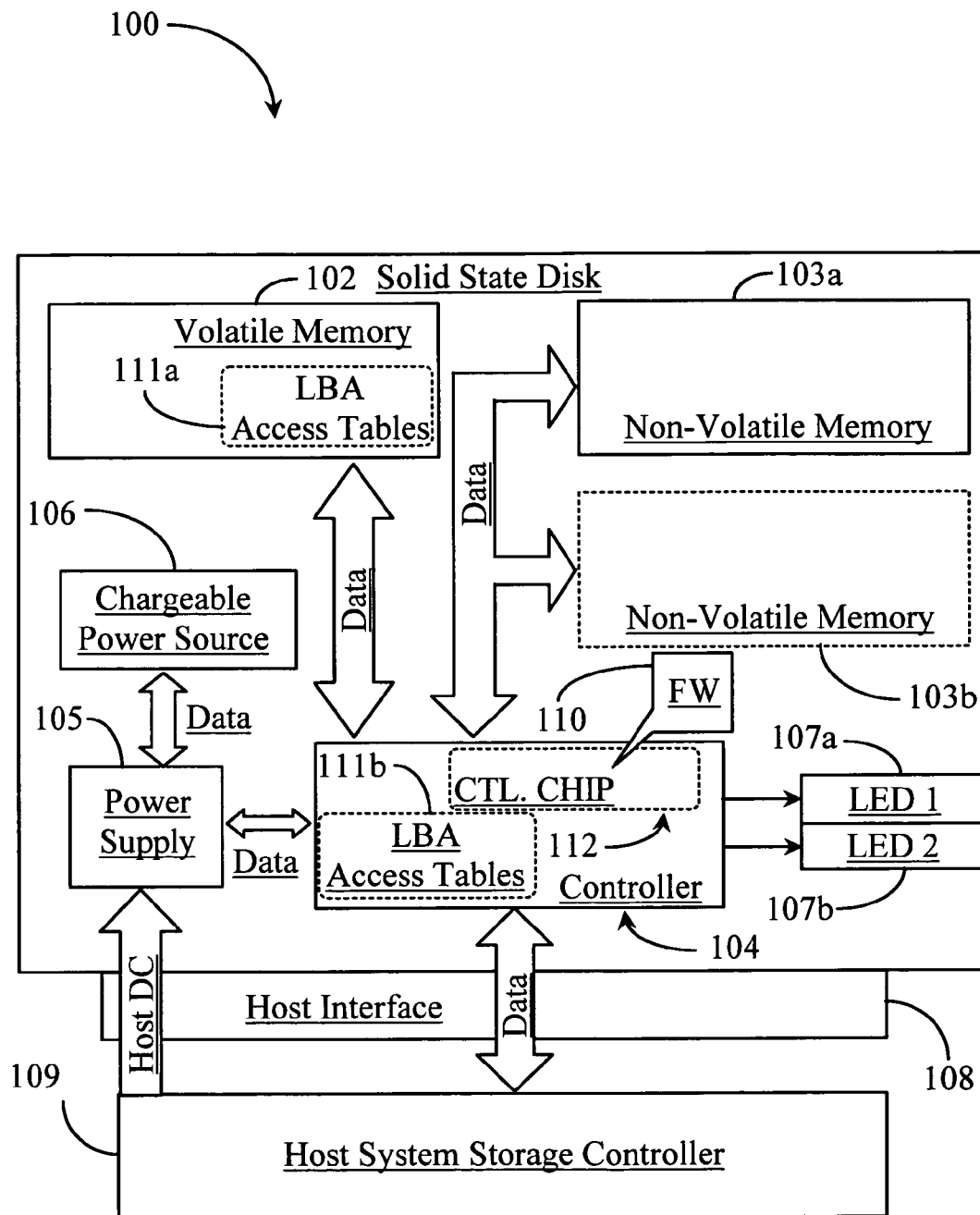
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(57) **ABSTRACT**

A solid-state disk drive includes a first portion of solid-state memory of a volatile nature, a second portion of solid-state memory of a non-volatile nature, a controller for managing the memories, and a power subsystem for protecting data in volatile memory in the event of loss of power.

**8 Claims, 10 Drawing Sheets**



*Fig. 1*

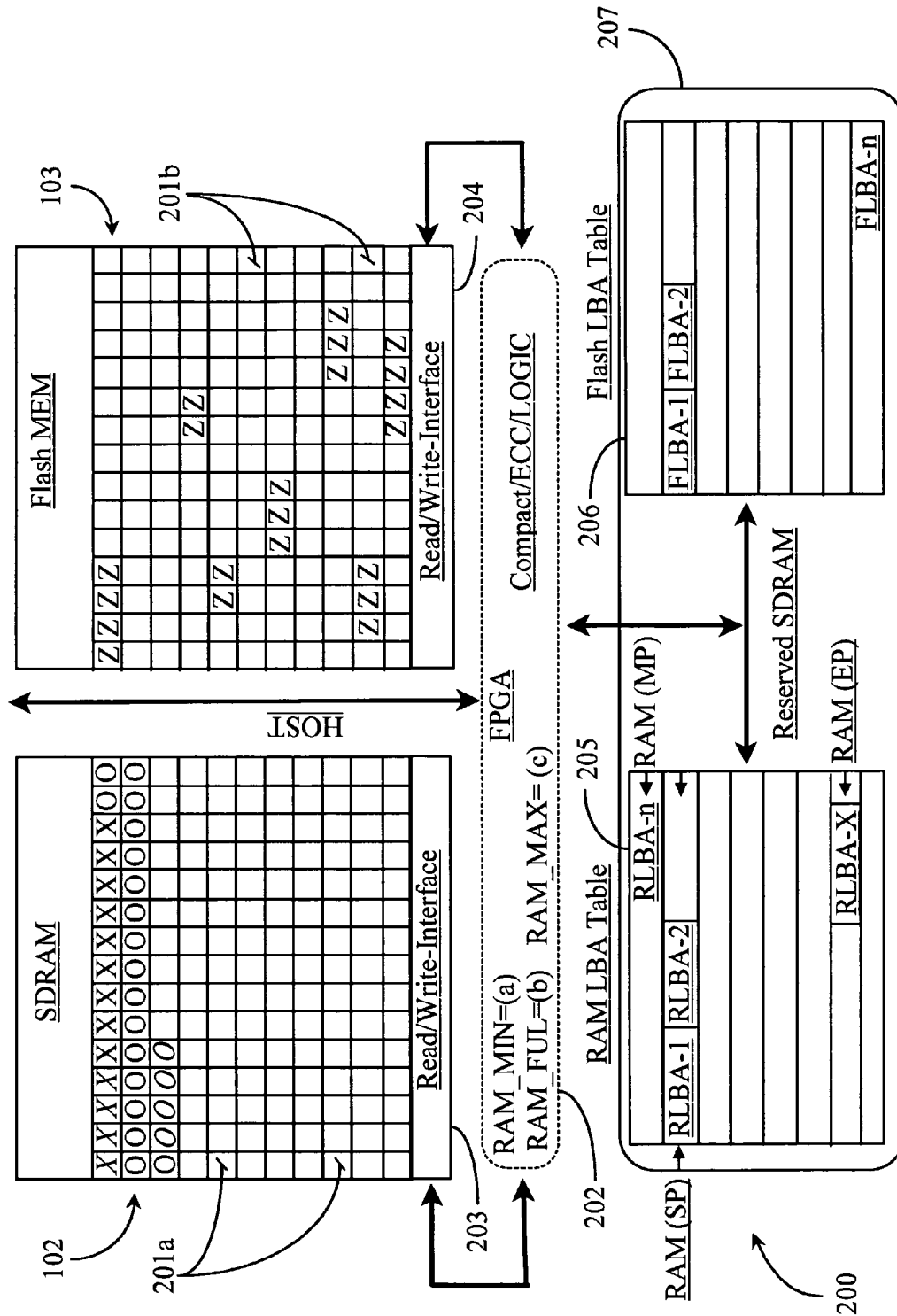
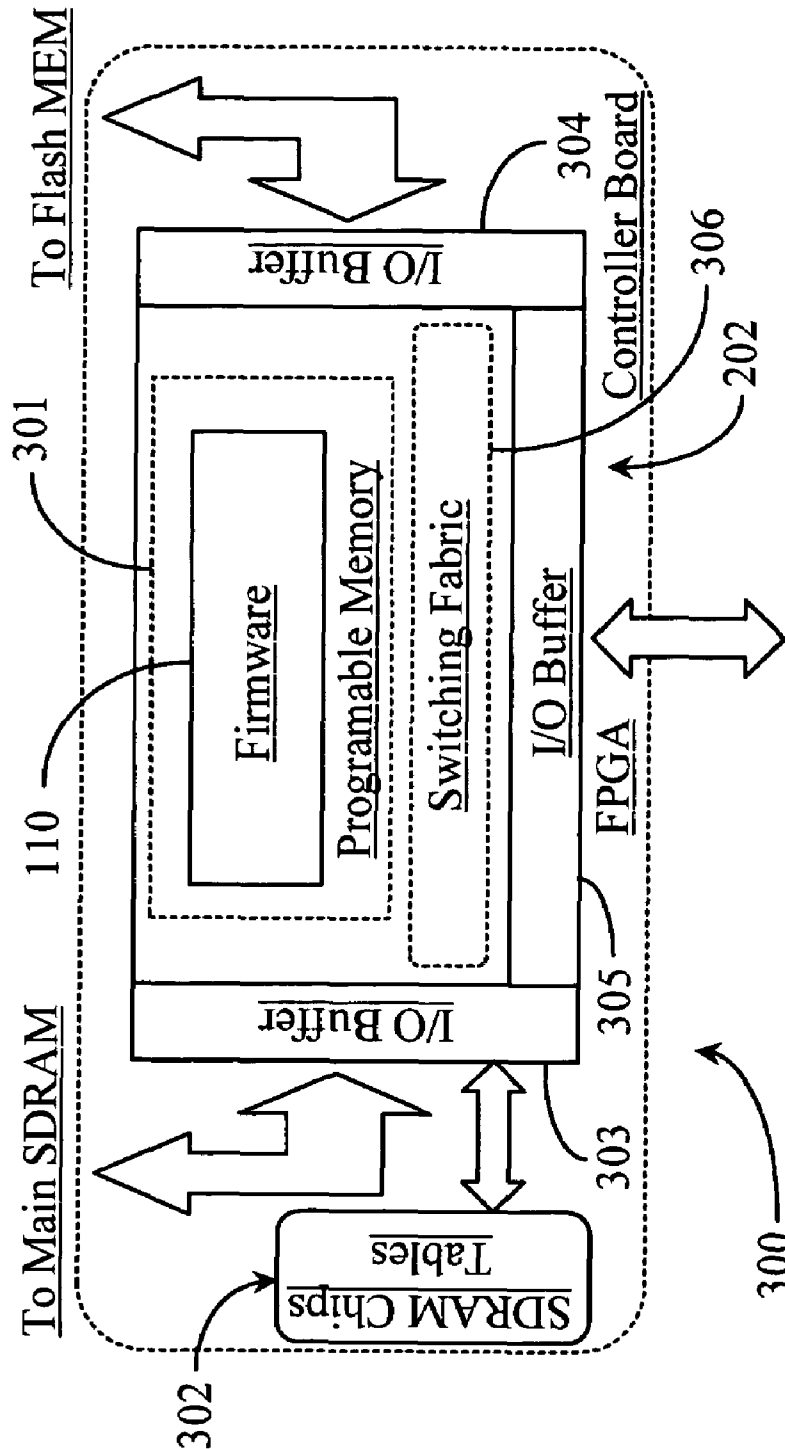
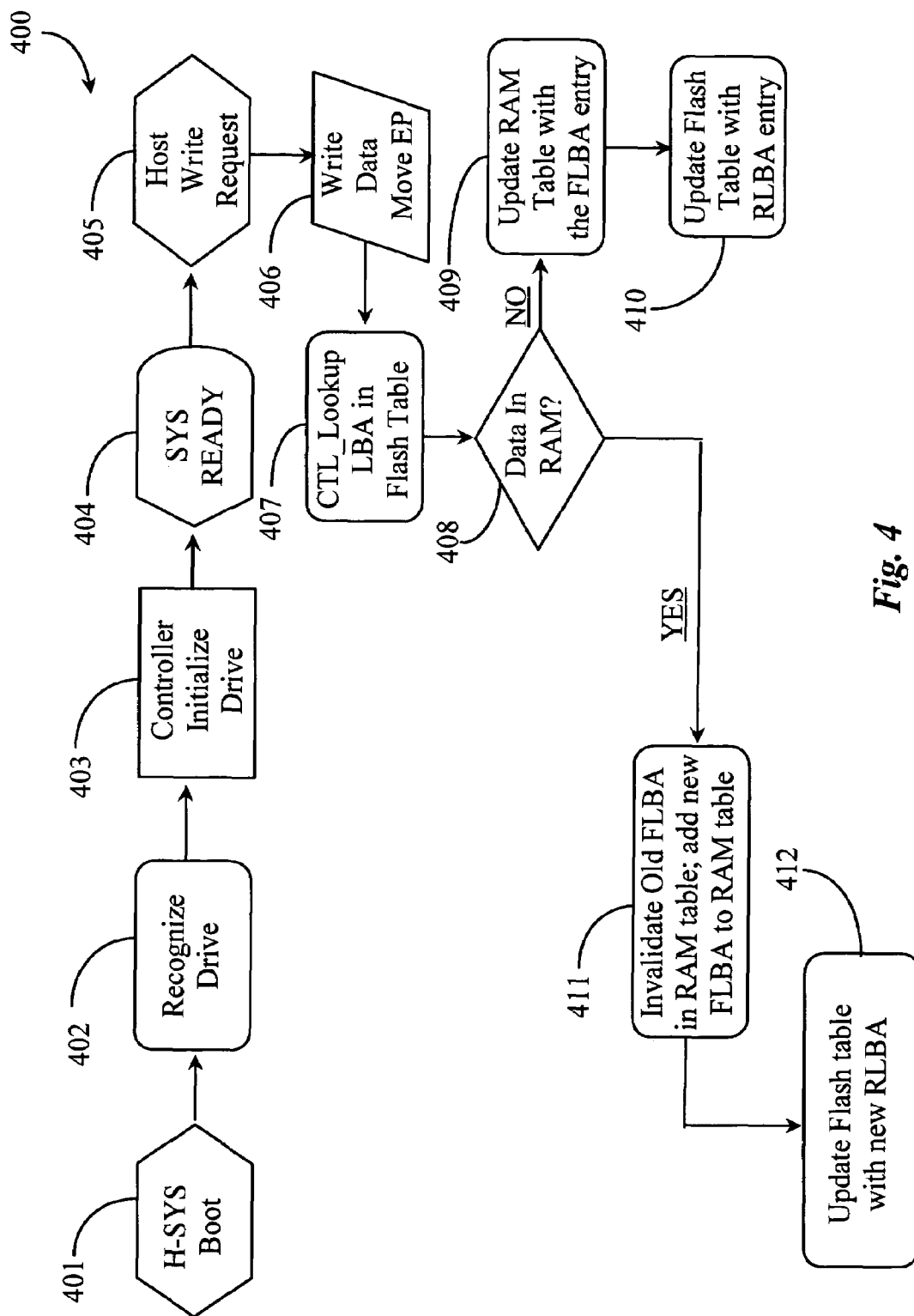


Fig. 2



**Fig. 3**





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