

(12) **United States Patent**
Reid

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(54) **METHOD AND APPARATUS FOR HIGH SPEED CACHE FLUSHING IN A NON-VOLATILE MEMORY**

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(21) Appl. No.: **12/040,782**

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(57) **ABSTRACT**

An invention is provided for performing flush cache in a non-volatile memory. The invention includes maintaining a plurality of free memory blocks within a non-volatile memory. When a flush cache command is issued, a flush cache map is examined to obtain a memory address of a memory block in the plurality of free memory blocks within the non-volatile memory. The flush cache map includes a plurality of entries, each entry indicating a memory block of the plurality of free memory blocks. Then, a cache block is written to a memory block at the obtained memory address within the non-volatile memory. In this manner, when a flush cache command is received, the flush cache map allows cache blocks to be written to free memory blocks in the non-volatile memory without requiring a non-volatile memory search for free blocks or requiring erasing of memory blocks storing old data.

(65) **Prior Publication Data**
US 2009/0222627 A1 Sep. 3, 2009

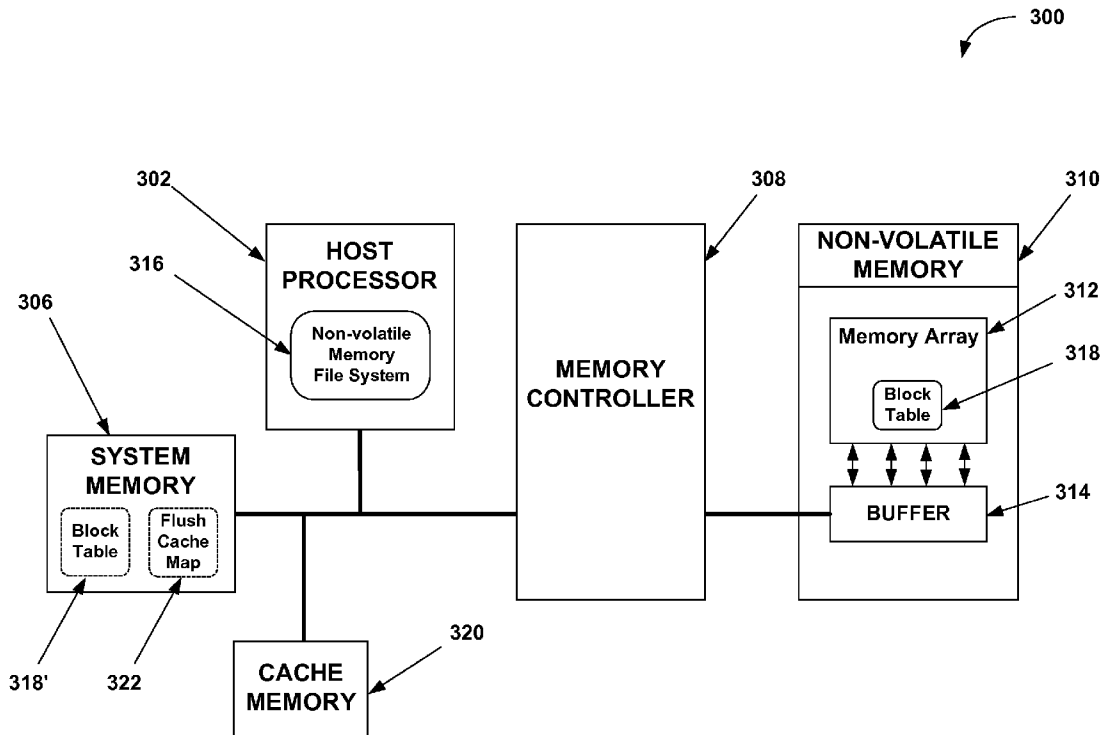
(51) **Int. Cl.**
G06F 12/00 (2006.01)
(52) **U.S. Cl.** **711/135; 711/144**
(58) **Field of Classification Search** **711/135**
See application file for complete search history.

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14 Claims, 7 Drawing Sheets



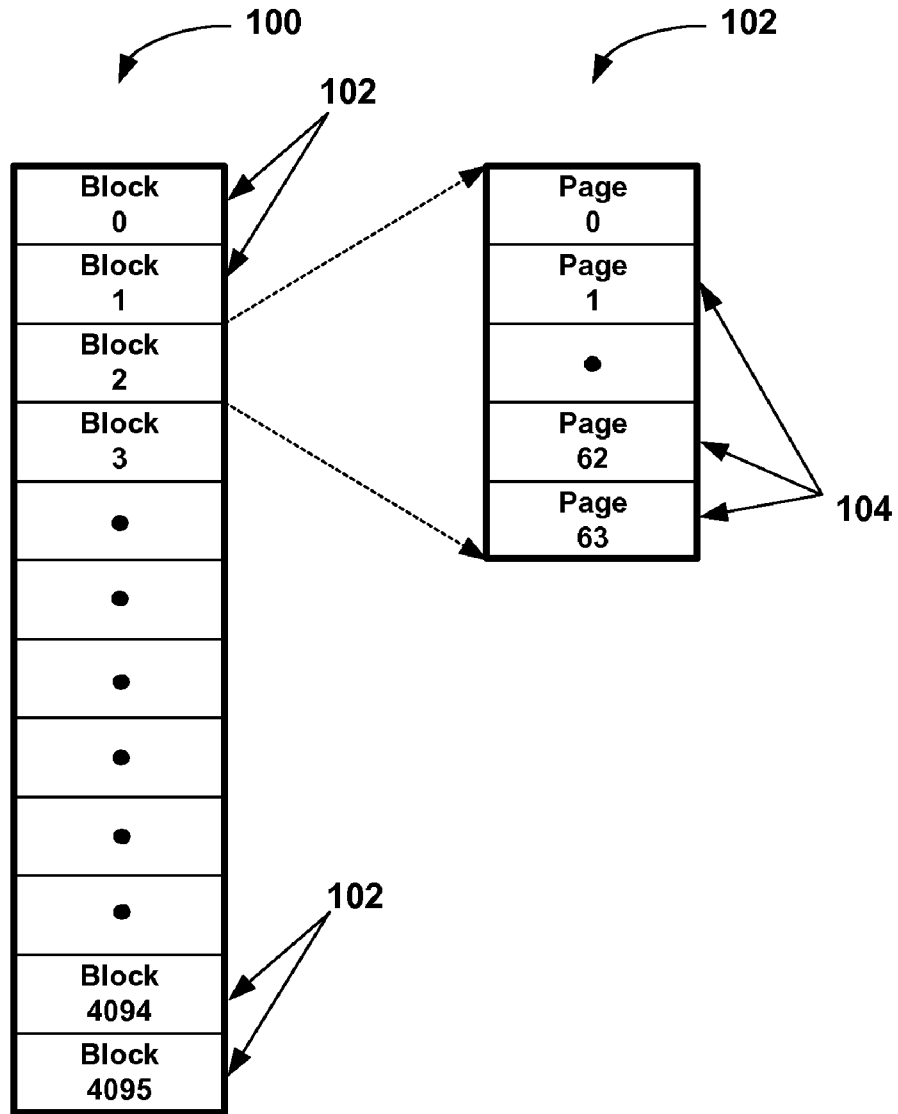


FIG. 1
(Prior Art)

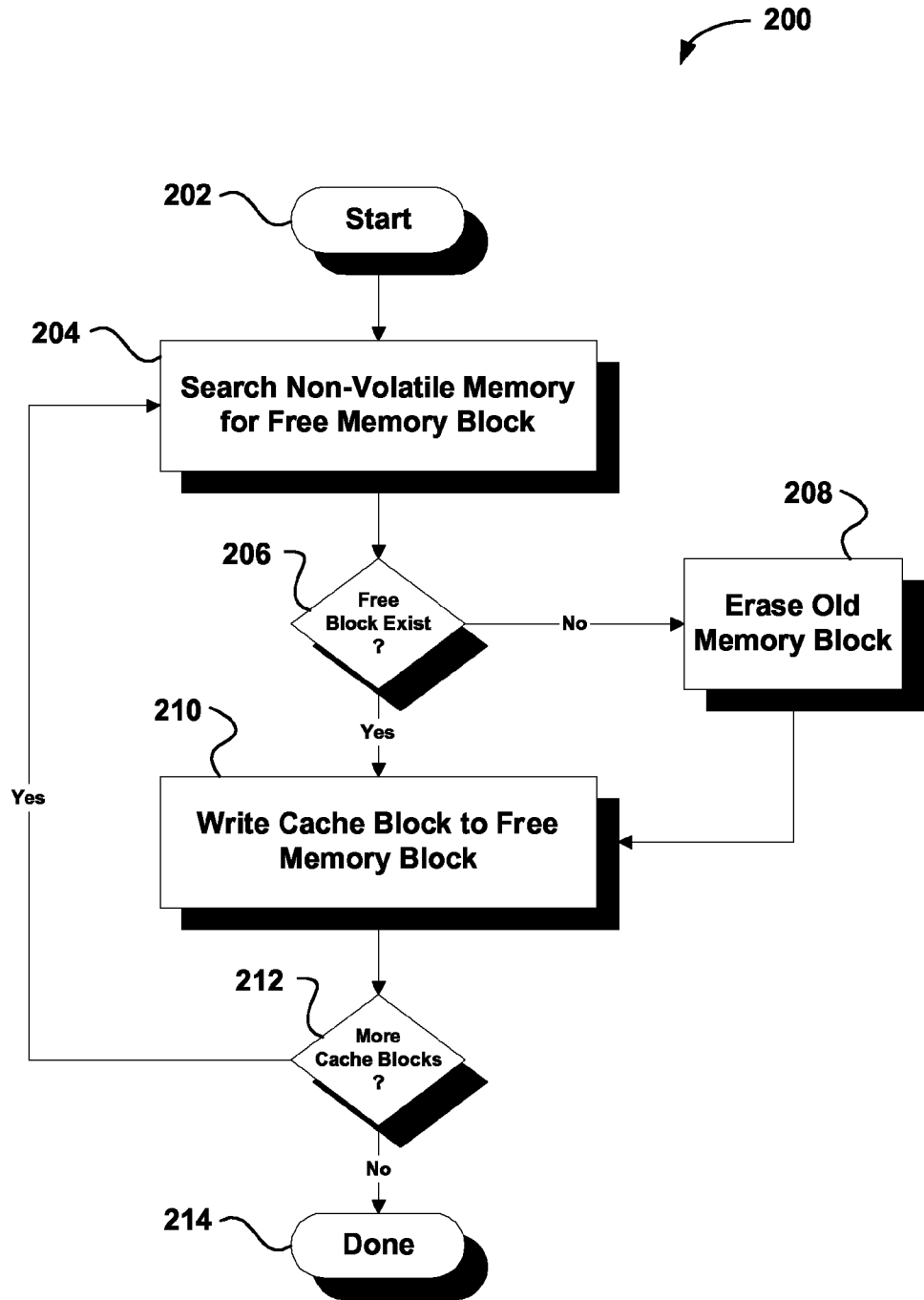


FIG. 2
(Prior Art)

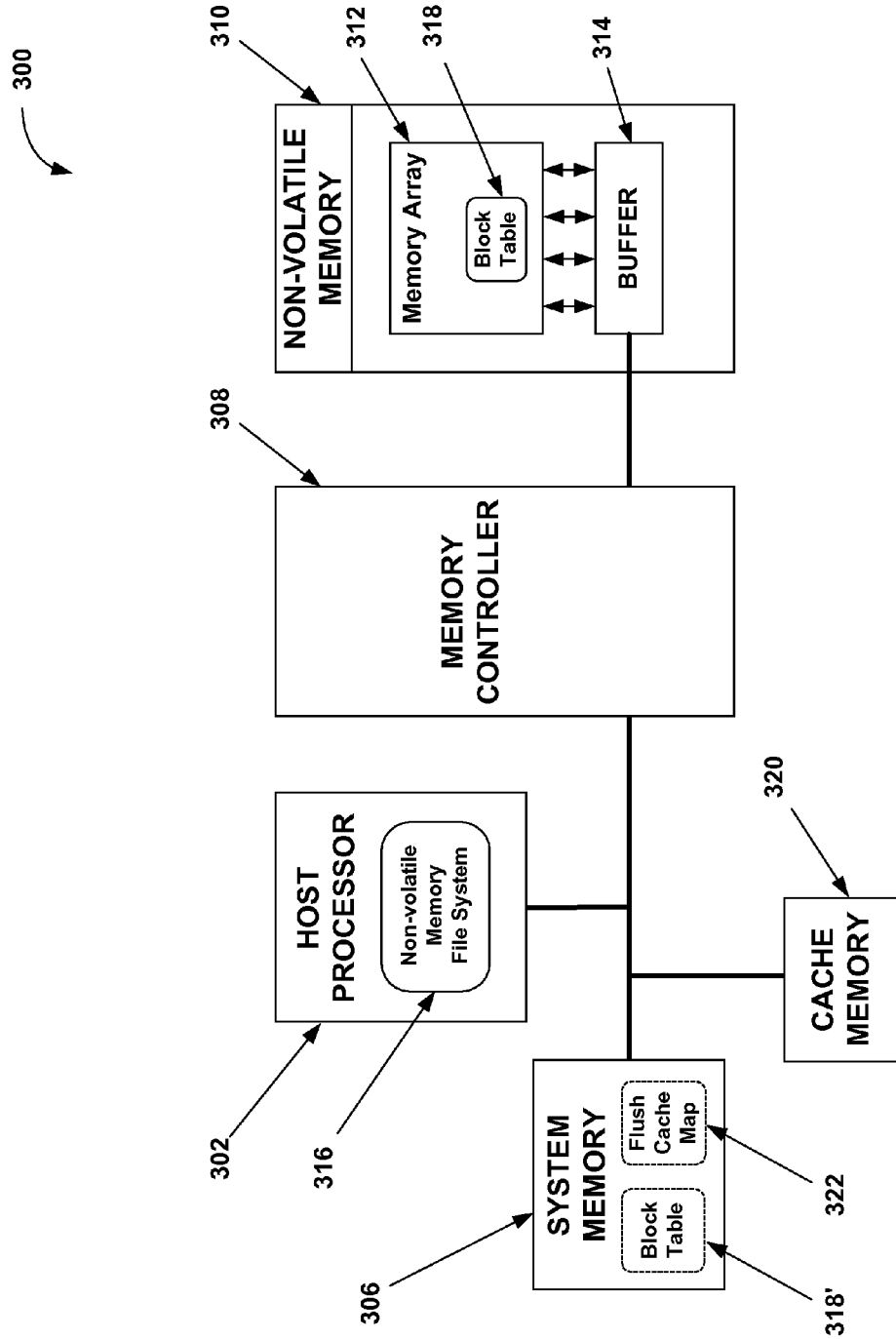


FIG. 3

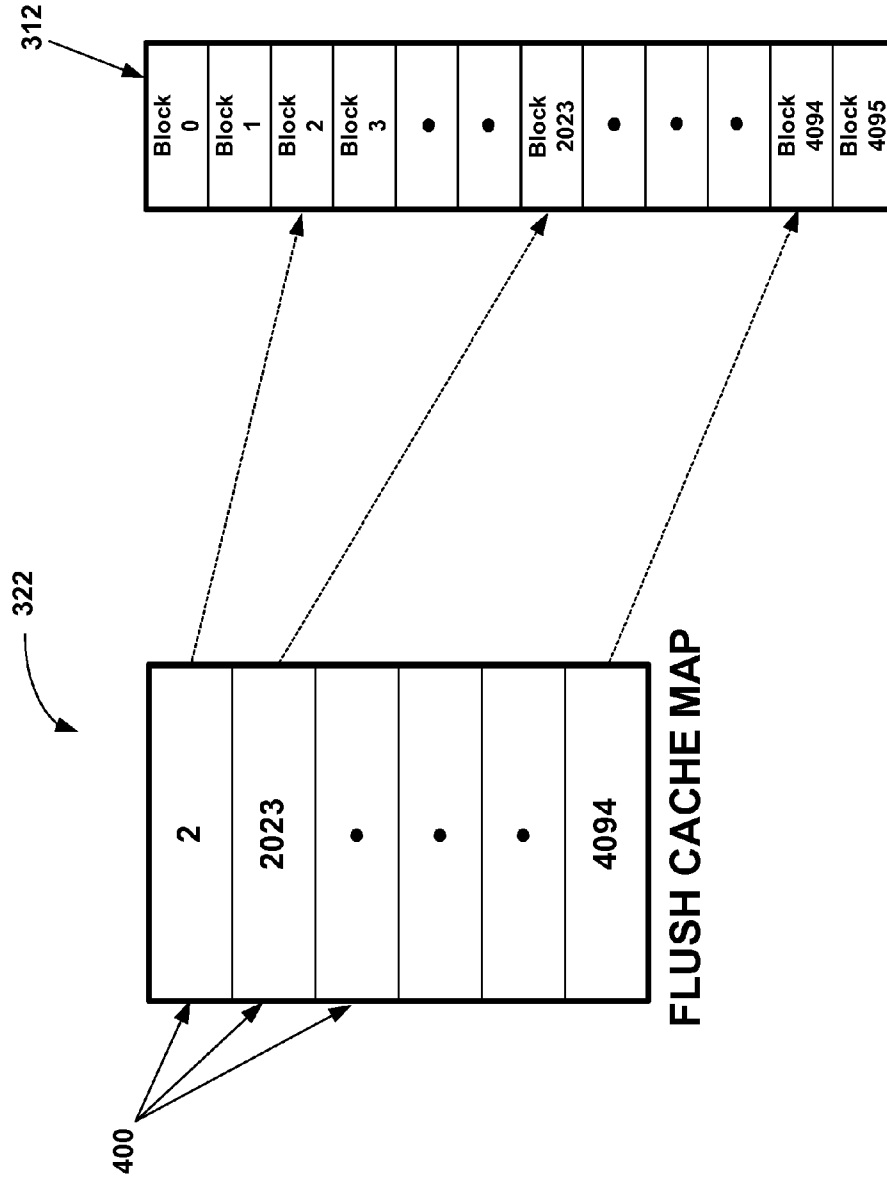


FIG. 4

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