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United States Patent [19]

Henry et al.

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[54] **FUSE ARRAY CONTROL FOR SMART FUNCTION ENABLE**

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[51] **Int. Cl.^{6}** **G06F 15/00**
[52] **U.S. Cl.** **364/488**; 364/490
[58] **Field of Search** 395/800.01, 181, 395/182.01, 182.08; 364/488, 489, 490, 491

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[57] **ABSTRACT**

An apparatus and method for smart configuration of functional blocks within a semiconductor device is provided. A fuse array contains a plurality of fuses that are blown in manufacturing to enable/disable functional blocks on the semiconductor device. A control unit reads the state of the fuses, and logically merges the fuse states with a default configuration for the functional blocks. The result of the merge operation is stored in a feature control register that individually enables/disables the functional blocks. The control unit also receives a write command from an external source that modifies the feature control register, after the device is shipped from the manufacturer. The control unit selectively blocks writes to the feature control register that attempt to enable/disable functional blocks that should not modified.

47 Claims, 4 Drawing Sheets
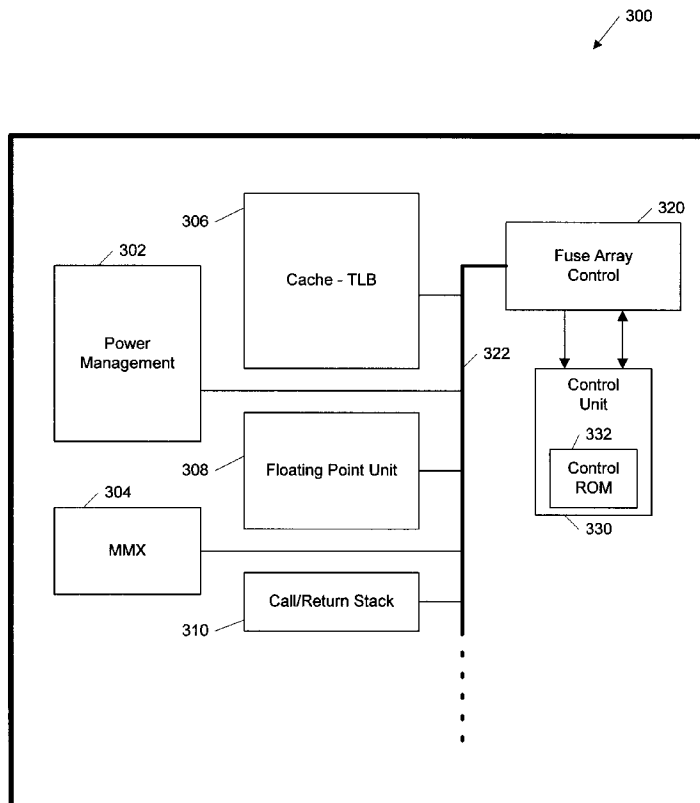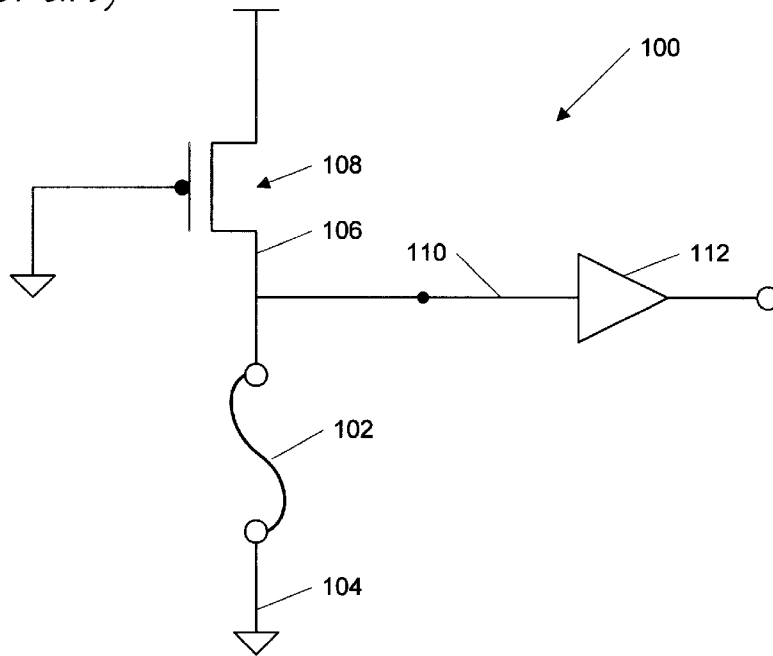
FIG. 1 (Prior art)

FIG. 2 (Prior art)

FIG. 3

FIG. 4

420

52   422   424   0

fuse array

426   TEMP

428   FCR.default

FPU
MMX
Cache-TLB's
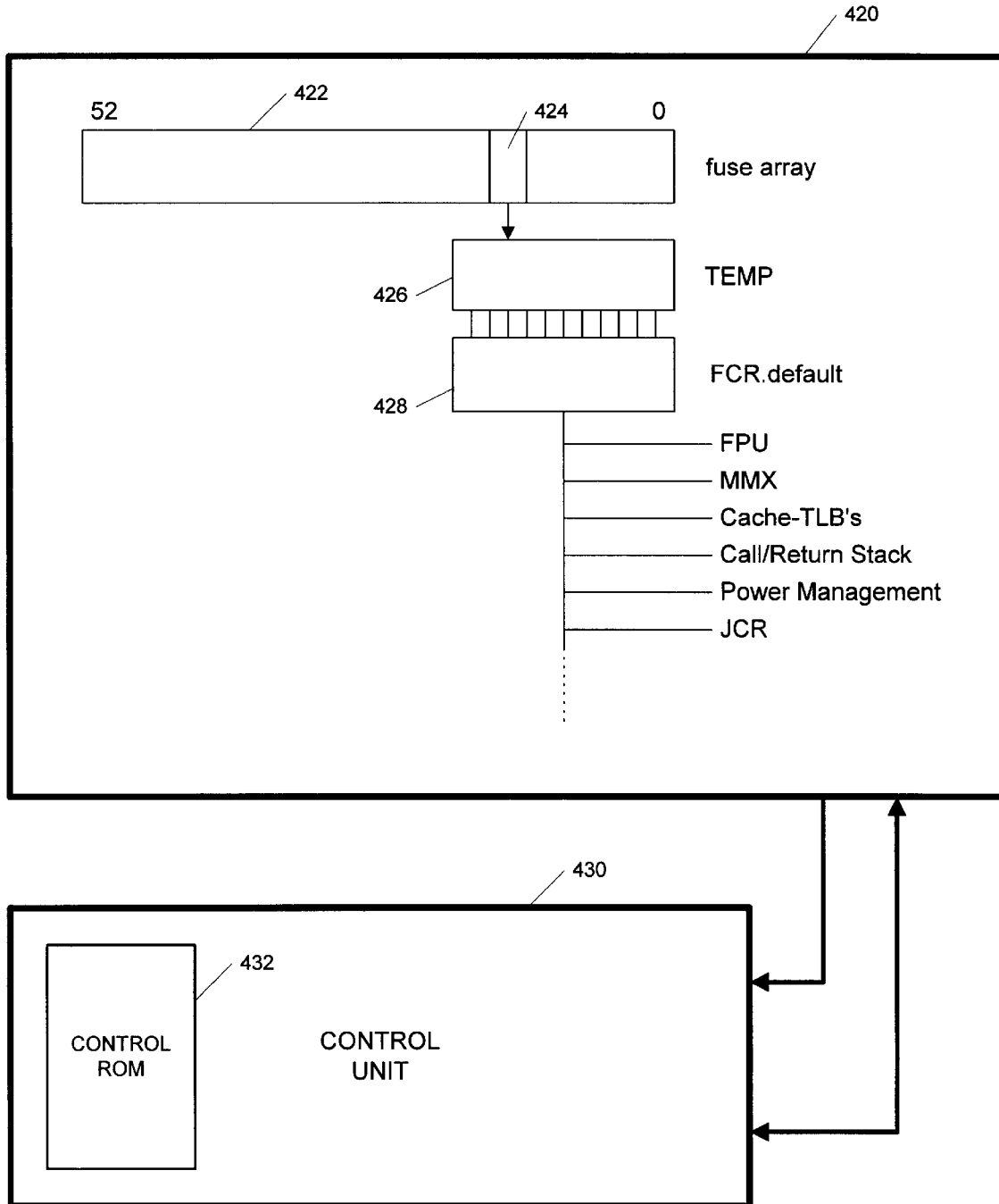Call/Return Stack
Power Management
JCR

430

432

CONTROL
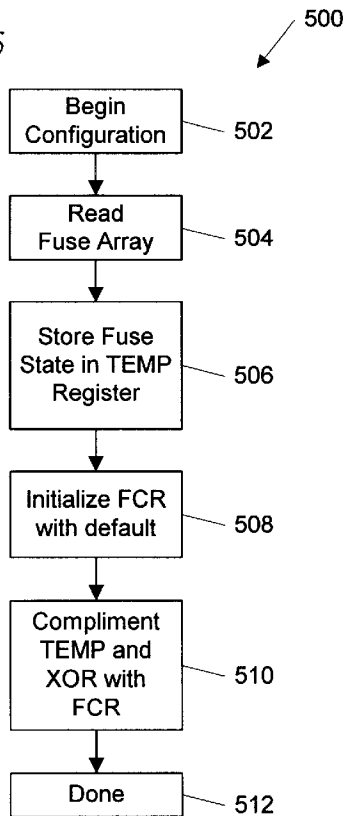ROM

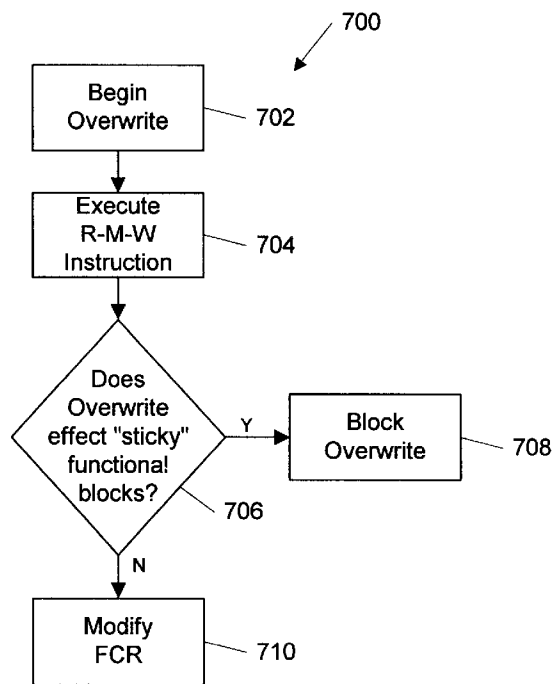CONTROL
UNIT
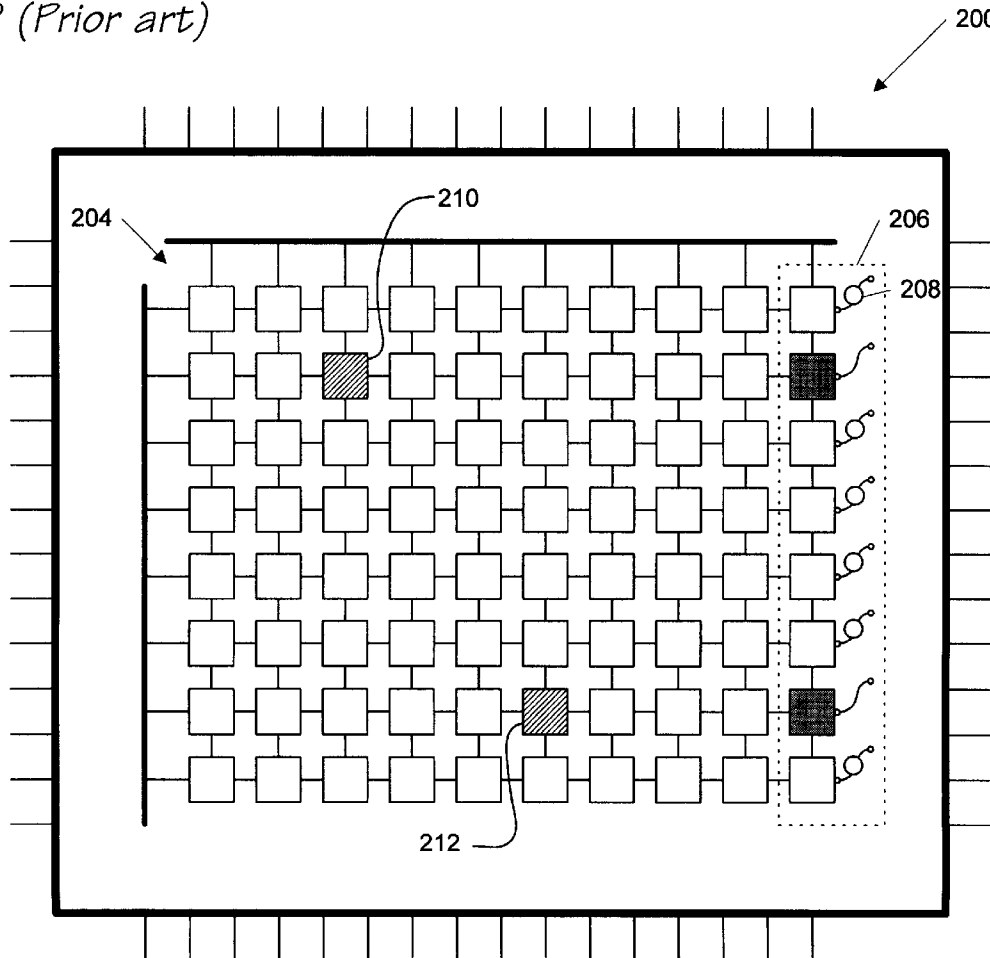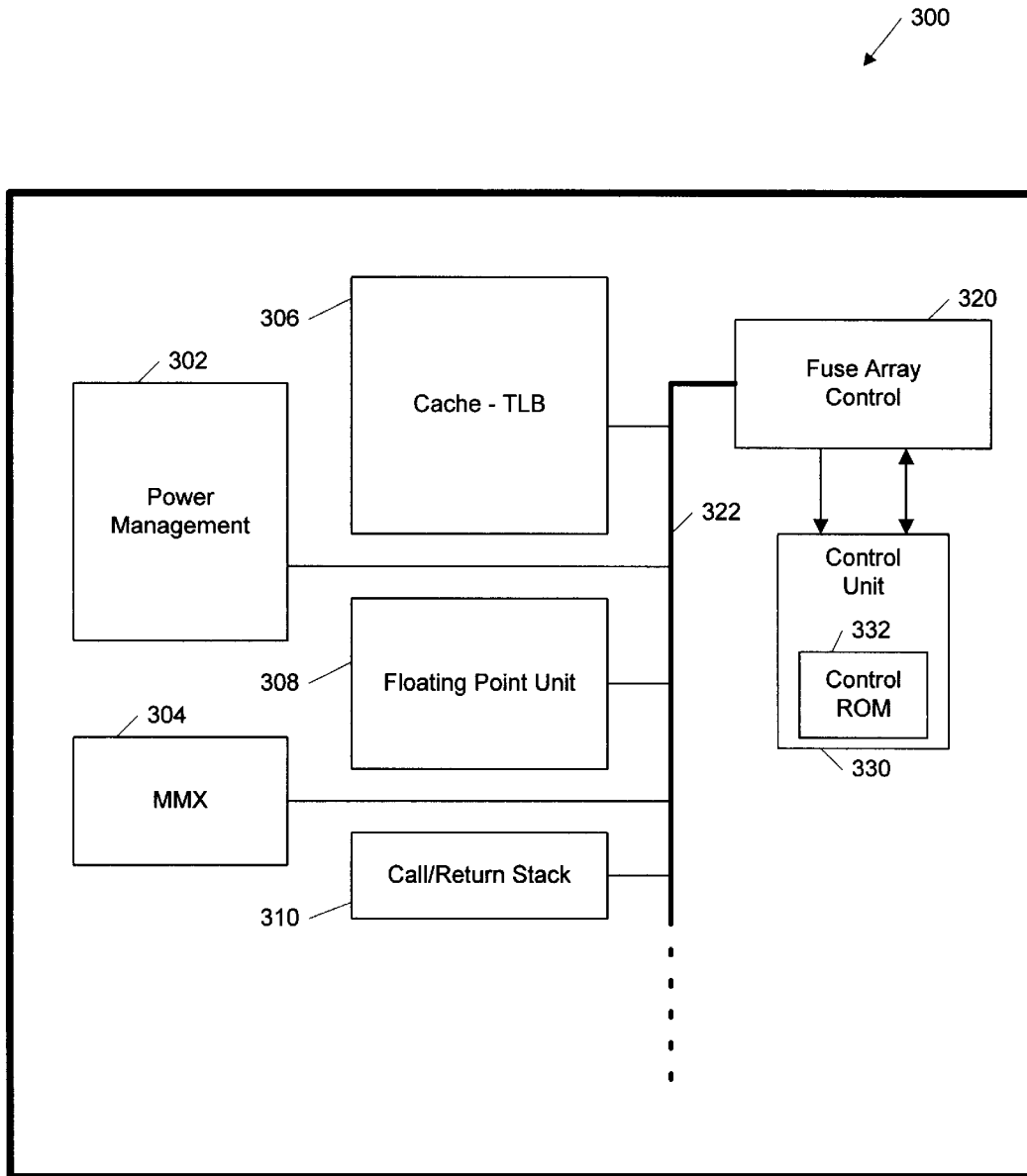
FIG. 5

FIG. 7

FIG. 6

DOCKET ALARM
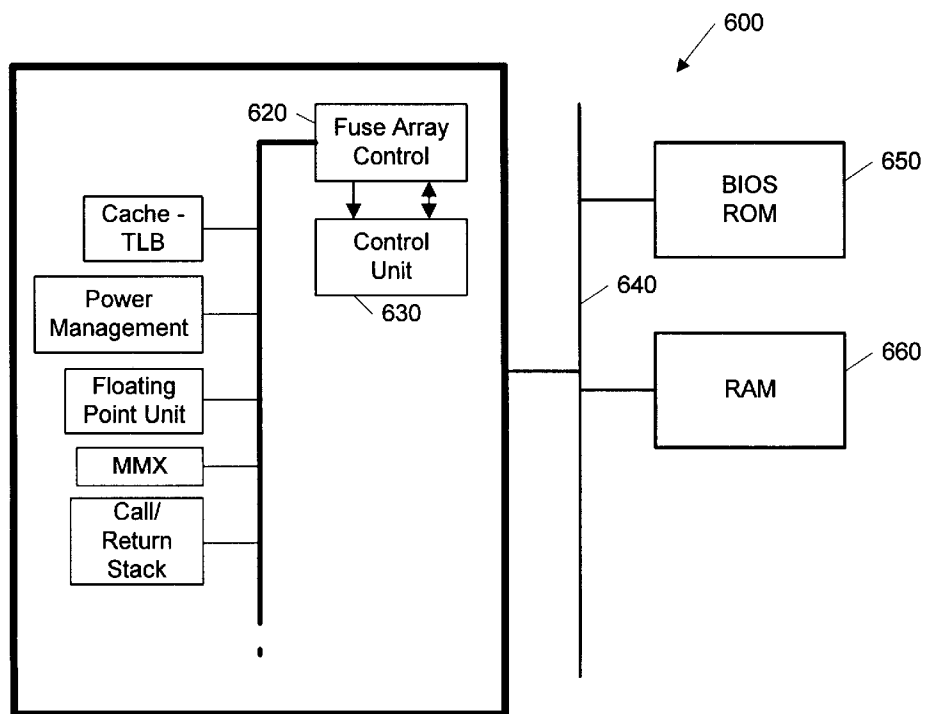
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