

US006347379B

## (12) United States Patent Dai et al.

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(54)	REDUCING POWER CONSUMPTION OF AN
	ELECTRONIC DEVICE

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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.
- (21) Appl. No.: **09/161,076**
- (22) Filed: **Sep. 25, 1998**

710/320, 323, 324, 330, 340; 365/207; 327/538, 540, 544

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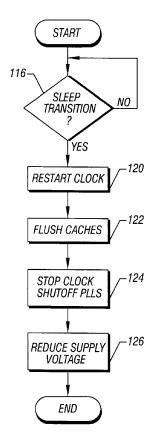
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#### (57) ABSTRACT

Leakage power consumption may be reduced in computers and other devices by providing a state where clocks are off and a low supply voltage is provided to the processor. This voltage may be sufficiently low to prevent adverse consequences while dramatically reducing leakage current. In addition, caches may be flushed to reduce the soft error rate.

#### 17 Claims, 4 Drawing Sheets





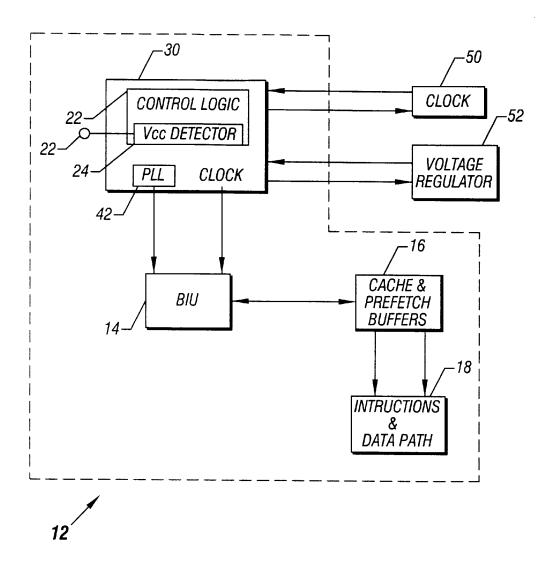
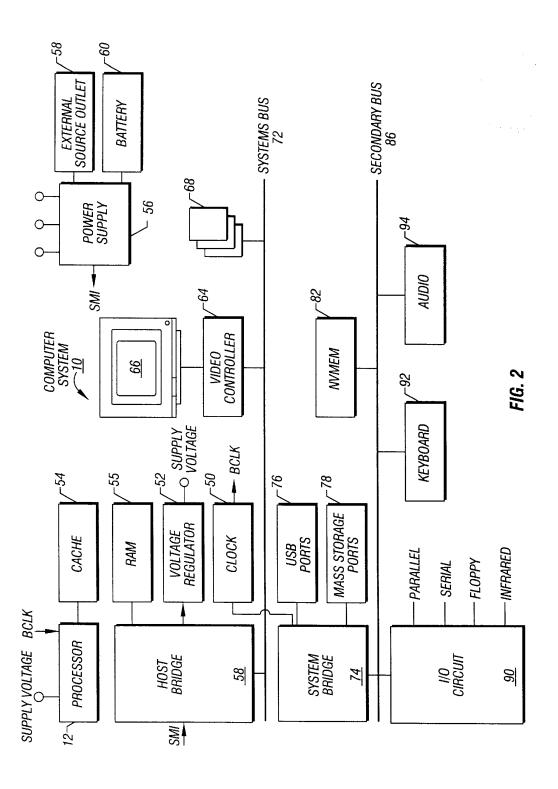
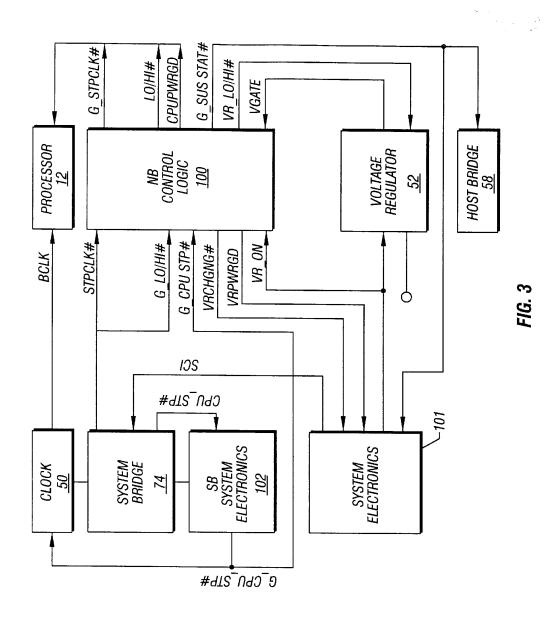


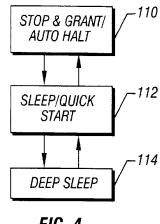
FIG. 1





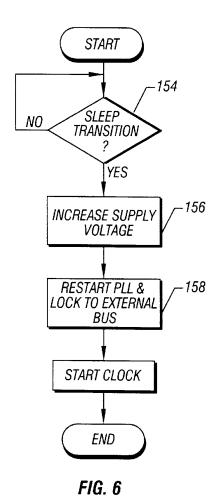






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FIG. 4 (PRIOR ART)



START 116-**SLEEP** NO **TRANSITION** YES -120 RESTART CLOCK -122 FLUSH CACHES -124 STOP CLOCK SHUTOFF PLLS -126 REDUCE SUPPLY **VOLTAGE END** 

FIG. 5



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