



US005862393A

United States Patent [19]

[11] Patent Number: 5,862,393

Davis

[45] Date of Patent: Jan. 19, 1999

- [54] SYSTEM FOR MANAGING POWER OF A COMPUTER WITH REMOVABLE DEVICES 5,606,704 2/1997 Pierce et al. 395/750
- 5,655,148 8/1997 Richman et al. 395/828
- 5,671,368 9/1997 Chan et al. 395/282
- 5,727,221 3/1998 Walsh et al. 395/750
- 5,754,869 5/1998 Holzhammer et al. 395/750.01
- 5,754,870 5/1998 Pollard et al. 395/750.05
- 5,758,171 5/1998 Ramamurthy et al. 395/750.01
- 5,784,628 7/1998 Reneris 395/750.01

[75] Inventor: Brett Allen Davis, Duluth, Ga.

[73] Assignee: LXE, Inc., Norcross, Ga.

[21] Appl. No.: 727,715

[22] Filed: Oct. 7, 1996

[51] Int. Cl.⁶ G06F 1/32; G06F 1/26

[52] U.S. Cl. 395/750.01; 395/750.03; 395/750.05; 395/750.06; 395/282

[58] Field of Search 395/750.01, 750.02, 395/750.05, 750.06, 282

[56] References Cited

U.S. PATENT DOCUMENTS

- 4,835,737 5/1989 Herrig et al. .
- 5,167,024 11/1992 Smith et al. .
- 5,204,964 4/1993 Bowden, III et al. .
- 5,230,074 7/1993 Canova Jr., et al. .
- 5,237,692 8/1993 Raasch et al. .
- 5,239,652 8/1993 Seibert et al. .
- 5,304,987 4/1994 Brunson et al. 340/654
- 5,319,751 6/1994 Garney 395/200
- 5,367,697 11/1994 Barlow et al. .
- 5,379,437 1/1995 Celi Jr., et al. .
- 5,408,668 4/1995 Tornai .
- 5,410,712 4/1995 Okuno .
- 5,410,714 4/1995 Yorimoto et al. .
- 5,412,798 5/1995 Garney 395/500
- 5,440,748 8/1995 Sekine et al. .
- 5,467,469 11/1995 Saito et al. .
- 5,475,271 12/1995 Shibasaki et al. .
- 5,477,476 12/1995 Schanin et al. .
- 5,486,726 1/1996 Kim et al. 307/120
- 5,491,804 2/1996 Heth et al. 395/275
- 5,501,534 3/1996 Mizoguchi .
- 5,504,909 4/1996 Webster et al. 395/750
- 5,511,013 4/1996 Tokieda et al. .
- 5,546,590 8/1996 Pierce 395/750
- 5,560,022 9/1996 Dunstan et al. 395/750
- 5,560,024 9/1996 Harper et al. 395/750
- 5,589,719 12/1996 Fiset 307/131

OTHER PUBLICATIONS

"Miniature Card Specification" Intel Corporation, Jul. 29, 1996, Release 1.1.

"Advanced Power Management" (APM), BIOS Interface Specification, Intel Corporation and Microsoft Corporation, Sep. 1993, Revision 1.1.

Primary Examiner—Meng-Ai T. An

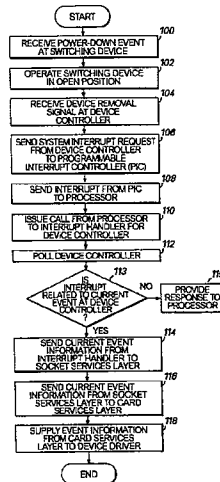
Assistant Examiner—Valerie Darbe

Attorney, Agent, or Firm—Jones & Askew LLP

[57] ABSTRACT

A system for managing power consumption of a computer by communicating power management events to a removable device of the computer. A device removal signal is transmitted to a device controller for the removable device in response to a power management event and while the device is installed within a socket of the computer. This device removal signal can provide notice of a power state change for the device, such as the interruption of electrical power to that device. This power state change is communicated by the device controller to a device driver in response to the device removal signal. Electrical power to the device is terminated in response to the power management event. A device insertion signal is transmitted to the device controller in response to another power management event and while the device remains installed within the socket. This device insertion signal provides notice of another state change for the device. Electrical power is reapplied to the device in response to this power management event. In addition, the device is configured by supplying device information from the device driver to the device in response to the device insertion signal and after electrical power is applied to the device.

13 Claims, 4 Drawing Sheets



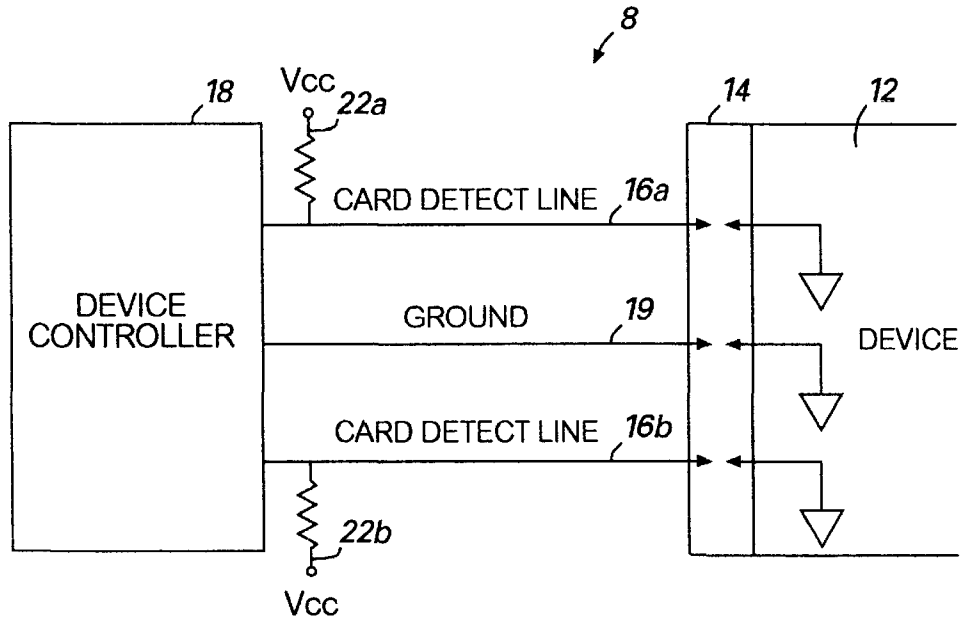


FIG. 1

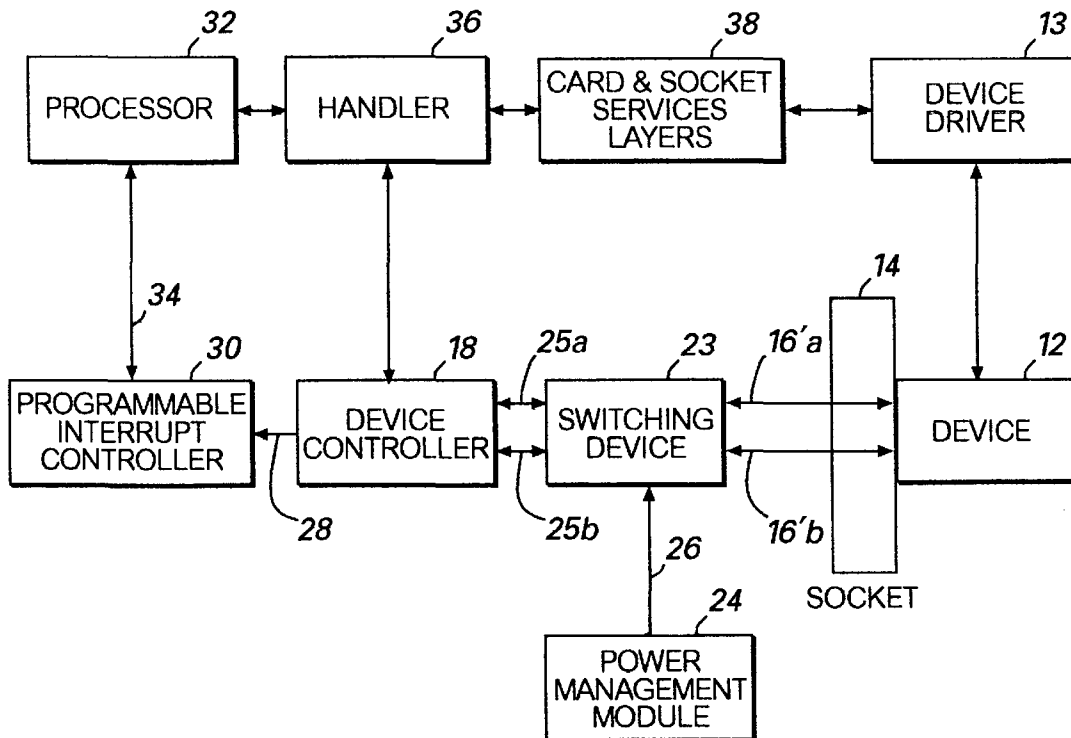


FIG. 2

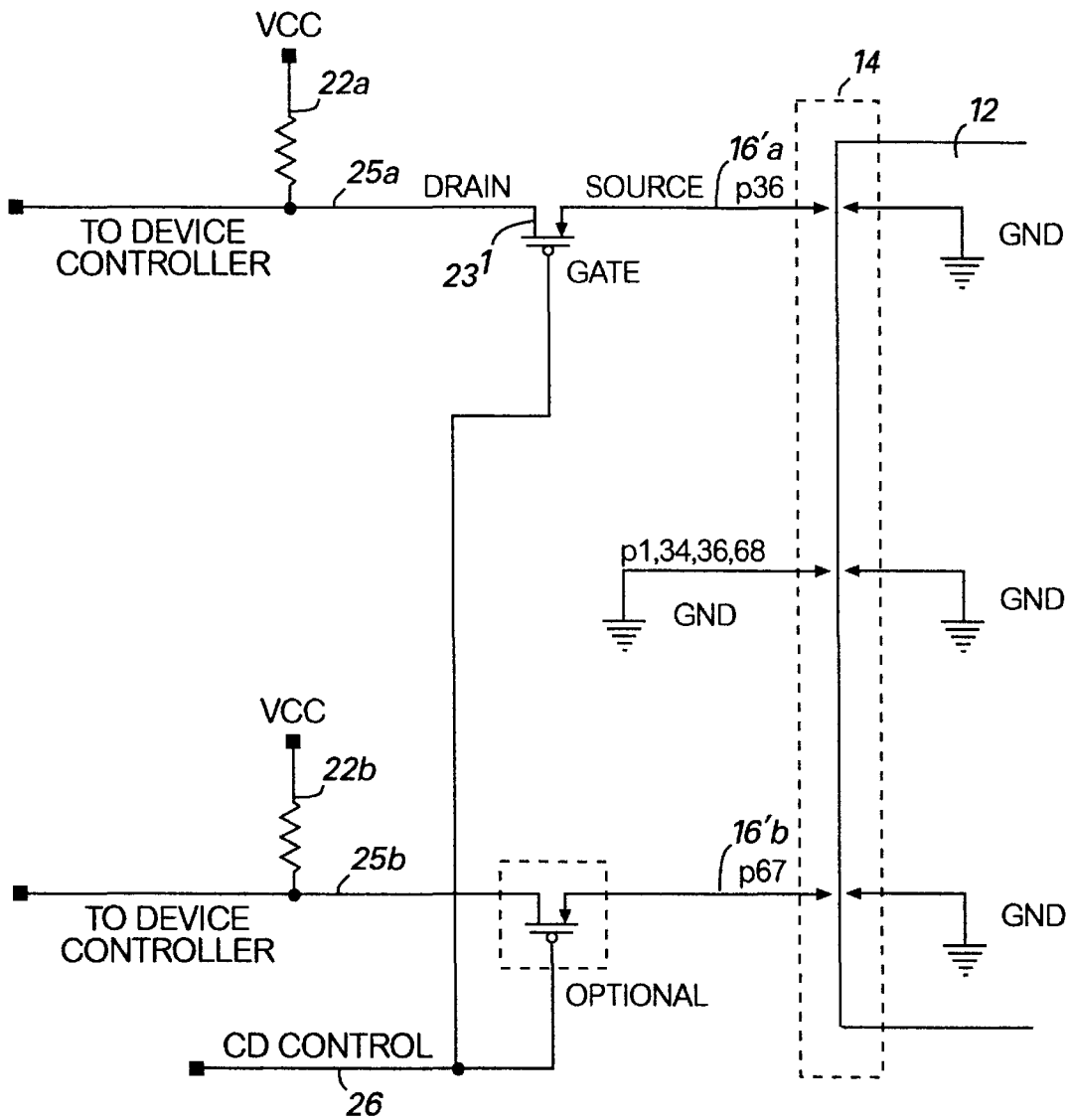


FIG. 3

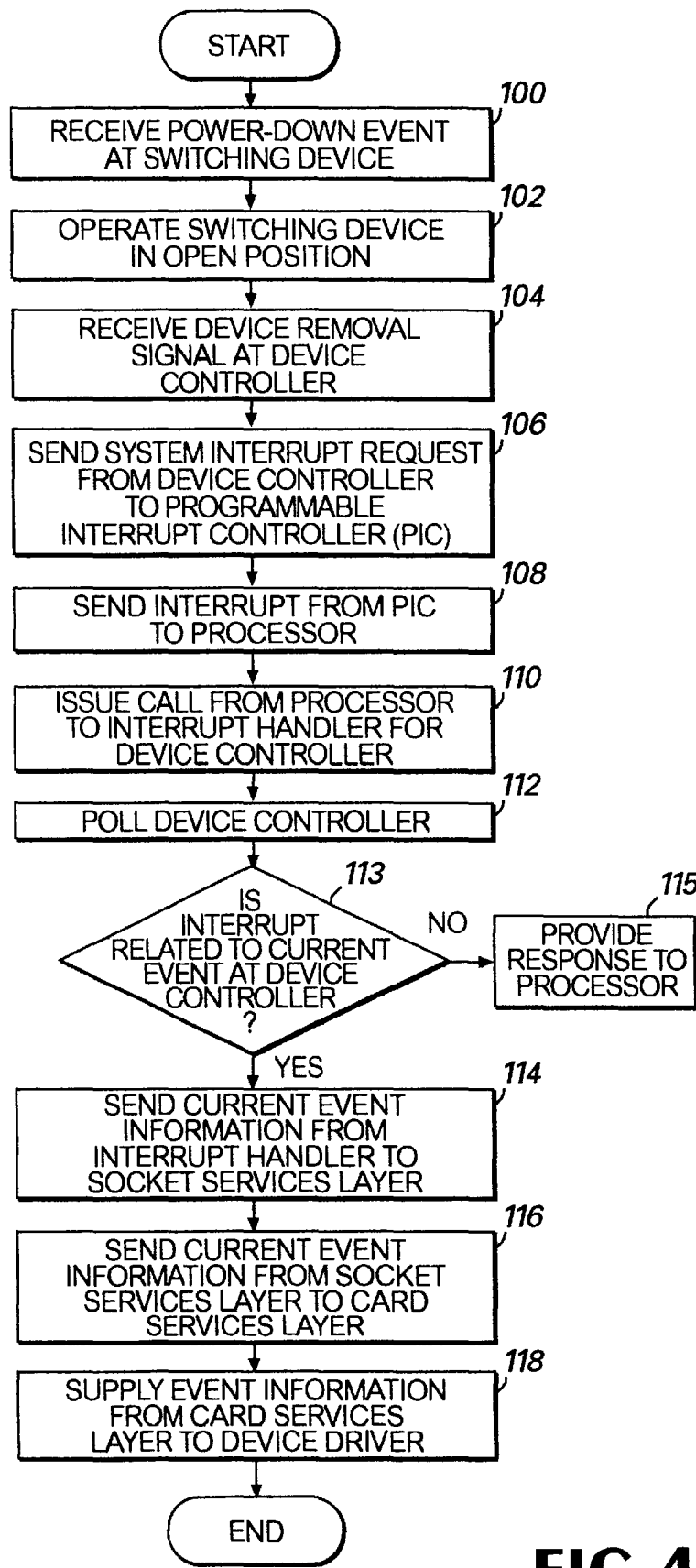


FIG.4

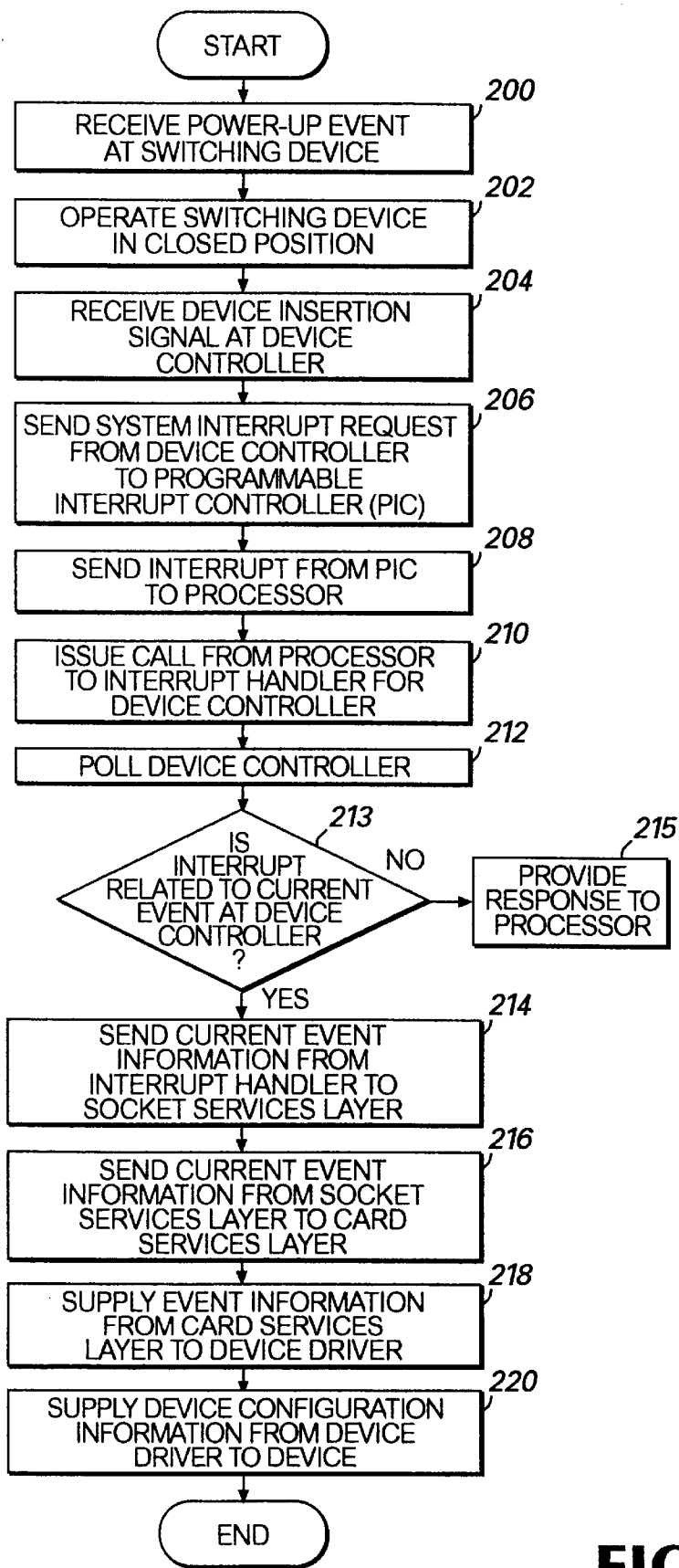


FIG. 5

Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.