US006178514B1

(12) **United States Patent**
Wood

(10) **Patent No.:** **US 6,178,514 B1**
(45) **Date of Patent:** **Jan. 23, 2001**

(54) **METHOD AND APPARATUS FOR CONNECTING A DEVICE TO A BUS CARRYING POWER AND A SIGNAL**

(76) Inventor: **Bradley C. Wood**, 6738 Independence Ave. Apt. 102, Canoga Park, CA (US) 91303

(*) Notice: Under 35 U.S.C. 154(b), the term of this patent shall be extended for 0 days.

(21) Appl. No.: **09/127,642**

(22) Filed: **Jul. 31, 1998**

(51) Int. Cl.^{7} **G06F 1/26**
(52) **U.S. Cl.** **713/300**; 713/340; 713/320; 710/129
(58) **Field of Search** 713/300, 320, 713/340, 310, 330, 322–24; 710/126, 129

(56) **References Cited**

U.S. PATENT DOCUMENTS

|				
5,655,138	*	8/1997	Kikinis	395/800
5,675,813	*	10/1997	Holmdahl	713/300
5,799,196	*	8/1998	Flannery	713/300
5,841,268	*	11/1998	Mednik	323/222

* cited by examiner

Primary Examiner—Ario Etienne

(57) **ABSTRACT**

The object of the invention is to interface a device to a bus carrying power and a signal while simultaneously complying with bus-standard current draw limits, storing power for the device in an energy storage device located in the interface apparatus, and conditioning the bus signal as a function of the energy level of the signal received by the interface device from the bus and the level of energy measured in the energy storage device in the interface apparatus. As shown in FIG. **29**, according to one aspect of the invention the interface apparatus (**472**) includes an input filter (**480**), a current limiter (**482**), a power converter (**483**), an energy storage device (**484**), a signal decoder/controller (**486**) and a signal conditioner (**488**). In operation, power flows from the bus through input filter (**480**) through the current limiter (**482**) to the power converter (**483**), which converts the power to a form suitable for charging the energy storage device (**484**). The output of the energy storage device provides power to the device. The bus signal is received by the signal decoder/controller (**486**), which performs any necessary decoding before sending the signal onto the signal conditioner (**488**). Signal decoder/controller (**486**) also is connected to and controls power converter **483**. Signal conditioner (**488**) measures the level of energy stored in energy storage device (**484**) then generates and conveys to the signal input of the device an output signal that is a function of the energy level of the bus signal and the measured level of energy in the energy storage device (**484**).
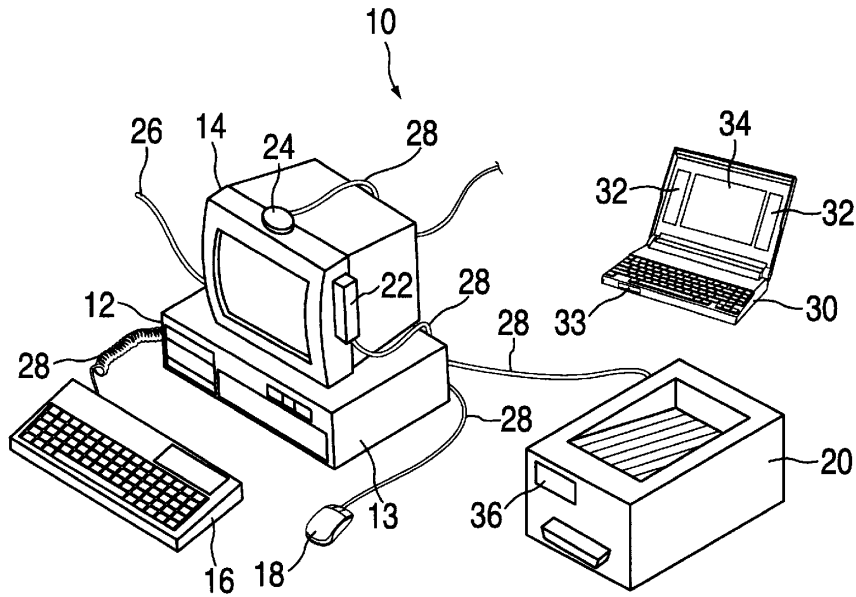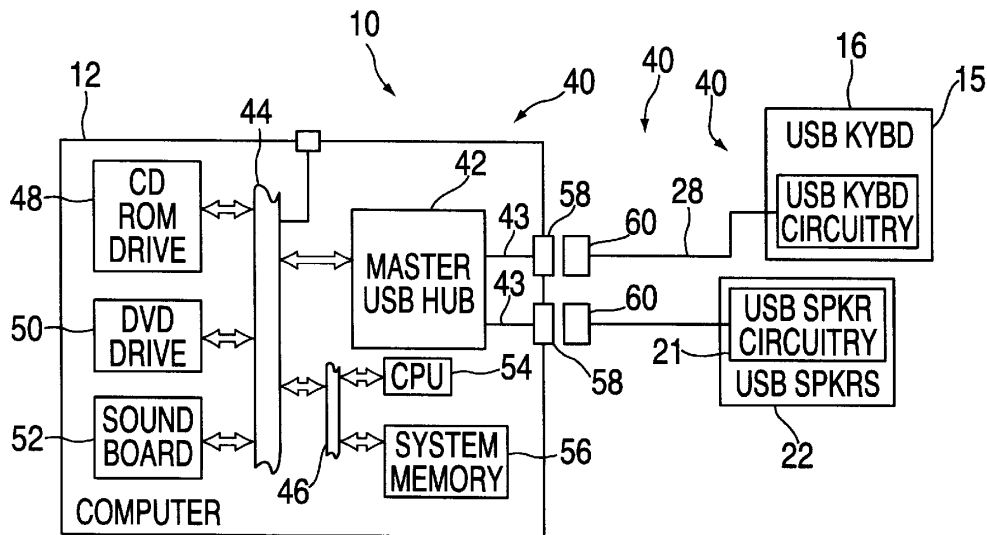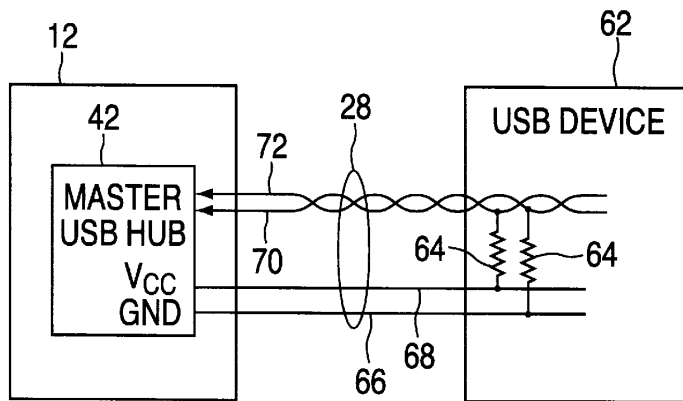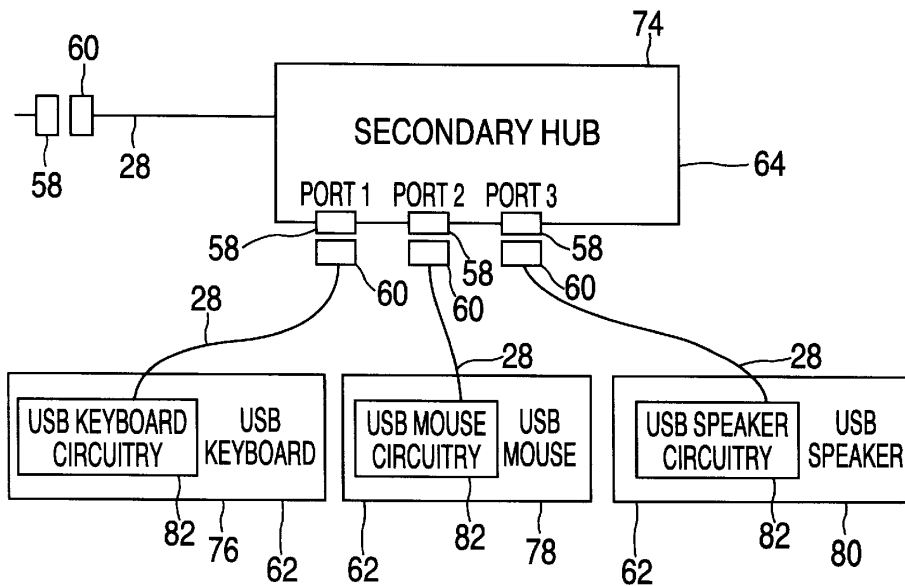
23 Claims, 19 Drawing Sheets
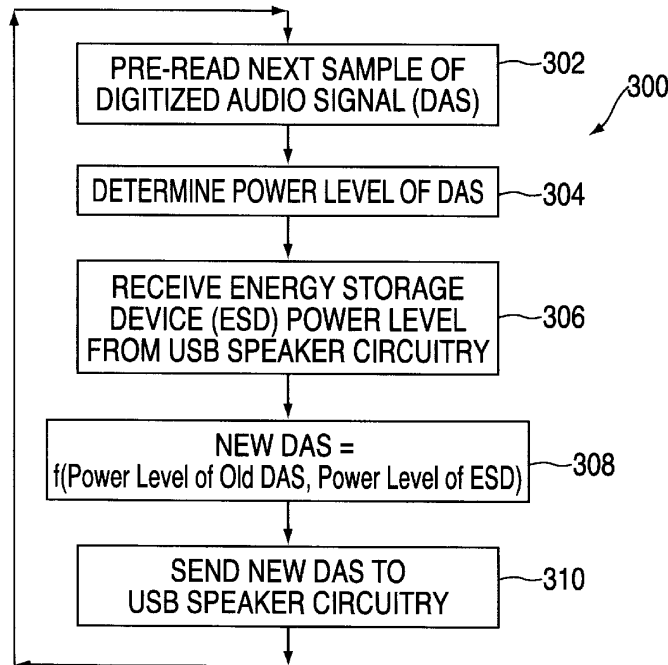
FIG. 1

FIG. 2

FIG. 3

FIG. 4
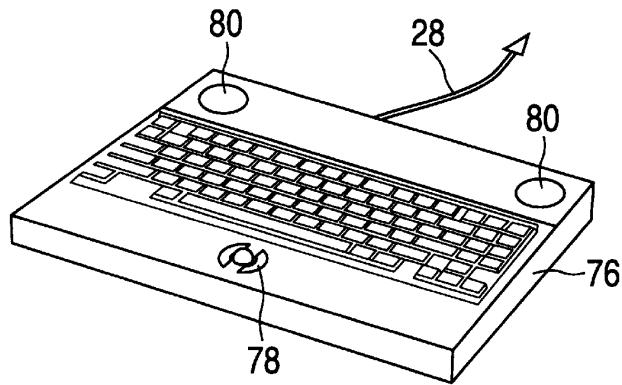
FIG. 5

FIG. 6

FIG. 19

FIG. 7

DOCKET ALARM
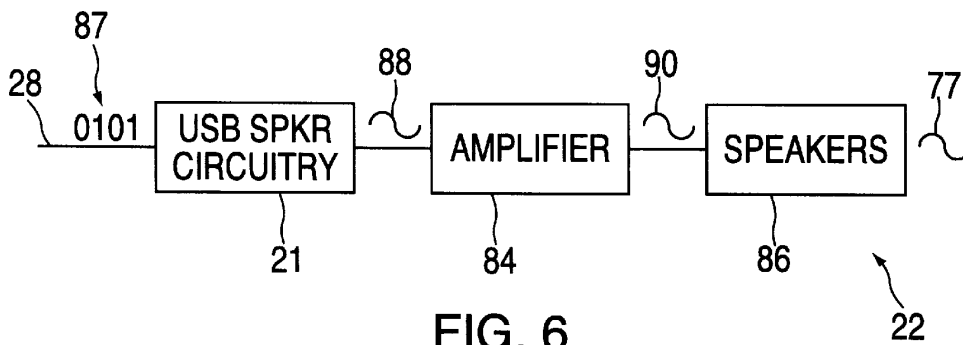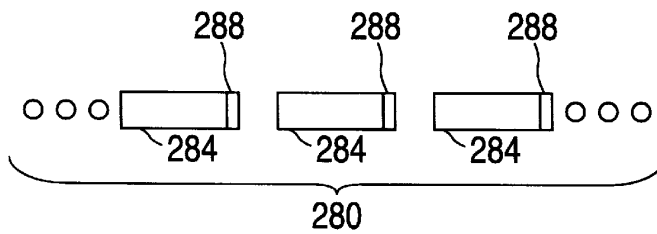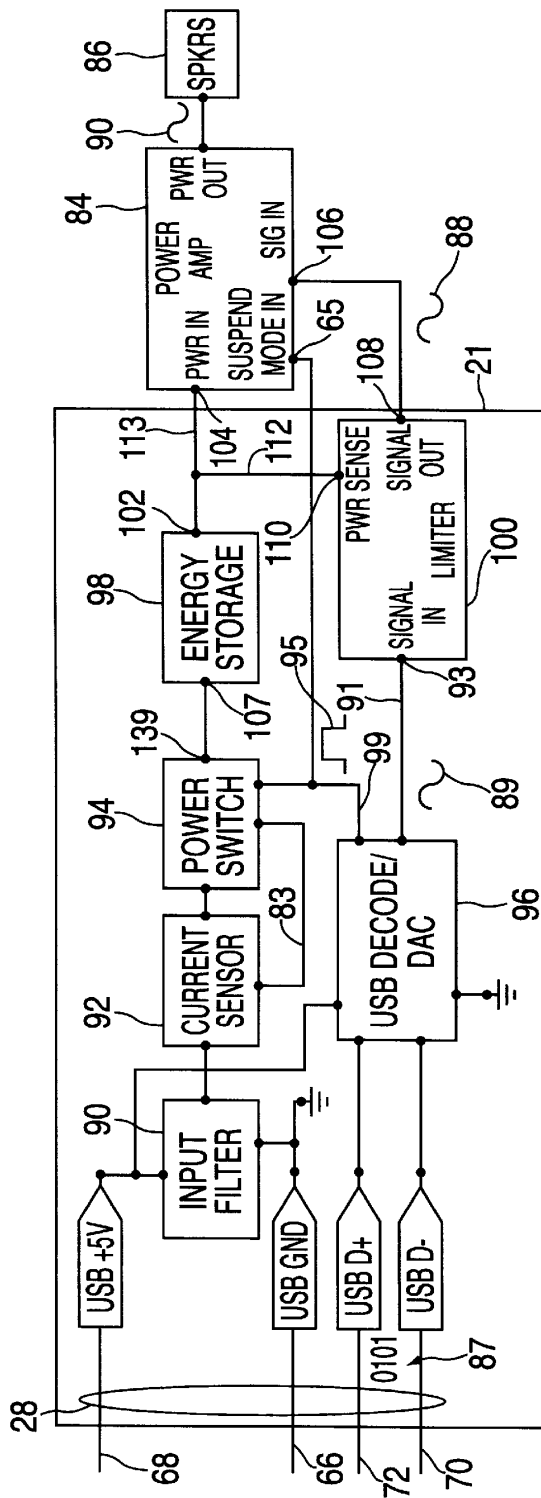
Explore Litigation Insights

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.

fastcase®
Smarter legal research.