

US006936936B2

## (12) United States Patent

Fischer et al.

(10) Patent No.: US 6,936,936 B2

(45) **Date of Patent:** Aug. 30, 2005

# (54) MULTIFUNCTIONAL CHARGER SYSTEM AND METHOD

(75) Inventors: Daniel M. Fischer, Waterloo (CA);

Dan G. Radut, Waterloo (CA);

Michael F. Habicher, Cambridge (CA); Quang A. Luong, Kitchener (CA); Jonathan T. Malton, Kitchener (CA)

(73) Assignee: Research In Motion Limited, Waterloo

(CA)

(\*) Notice: Subject to any disclaimer, the term of this

patent is extended or adjusted under 35 U.S.C. 154(b) by 464 days.

(21) Appl. No.: 10/087,629

(22) Filed: Mar. 1, 2002

(65) **Prior Publication Data** 

US 2003/0052547 A1 Mar. 20, 2003

(Under 37 CFR 1.47)

### Related U.S. Application Data

(60) Provisional application No. 60/330,486, filed on Oct. 23, 2001, and provisional application No. 60/273,021, filed on Mar. 1, 2001.

(51)	Int. Cl.	H0	2M 1/00
(52)	U.S. Cl.		307/151

### (56) References Cited

### U.S. PATENT DOCUMENTS

3,775,659 A	11/1973	Carlsen, II
4,433,251 A	2/1984	Banks et al.
4,510,431 A	4/1985	Winkler
5,173,855 A	12/1992	Neilsen et al.
5,229,649 A	7/1993	Nielsen et al.
5,272,475 A	12/1993	Eaton et al.
5,444,378 A	8/1995	Rogers
5,631,503 A	5/1997	Cioffi
5,638,540 A	6/1997	Aldous
5,651,057 A	7/1997	Blood et al.
5,769,877 A	6/1998	Barreras, Sr.
5,850,113 A	12/1998	Weimer et al.

5,939,860	Α	8/1999	William
6,006,088	Α	12/1999	Couse
6,104,162	Α	8/2000	Sainsbury et al.
6,104,759	Α	8/2000	Carkner et al.
6,130,518	Α	10/2000	Gabehart et al.
6,138,242	Α	10/2000	Massman et al.
6,184,652	B1	2/2001	Yang
6,211,649	<b>B</b> 1	4/2001	Matsuda
6,252,375	B1	6/2001	Richter et al.
6,255,800	<b>B</b> 1	7/2001	Bork
6,283,789	B1	9/2001	Tsai
6,668,296	<b>B</b> 1	* 12/2003	Dougherty et al 710/303
6,738,856	B1	* 5/2004	Milley et al 710/315

### FOREIGN PATENT DOCUMENTS

WO WO 0101330 A1 1/2001

#### OTHER PUBLICATIONS

Electric Double-Layer Capacitors, vol. 2, Oct. 25, 1996 (Japan, Tokin Corp., Cat. No. EC-200E).

Supercapacitor: User's Manual, vol. 2 (Japan, Tokin Corp., date unknown).

Charging Big Supercaps, Portable Design, p. 26, Mar. 1997.

\* cited by examiner

Primary Examiner-Edward H. Tso

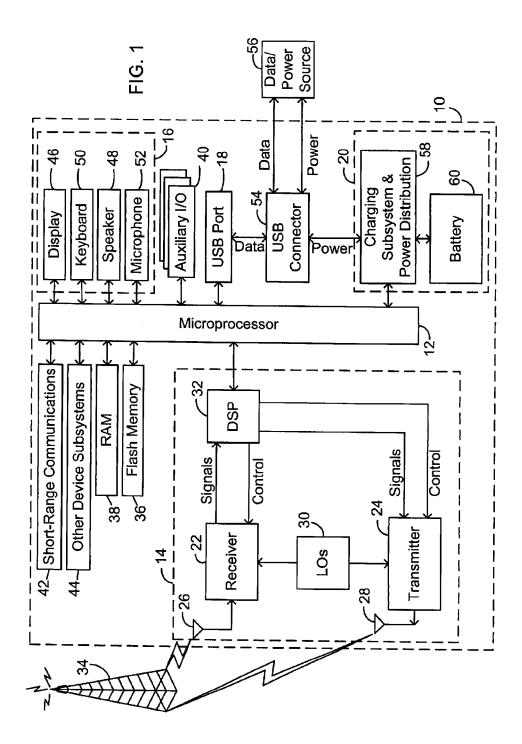
(74) Attorney, Agent, or Firm—Jones Day; Krishna K. Pathiyal; Robert C. Liang

### (57) ABSTRACT

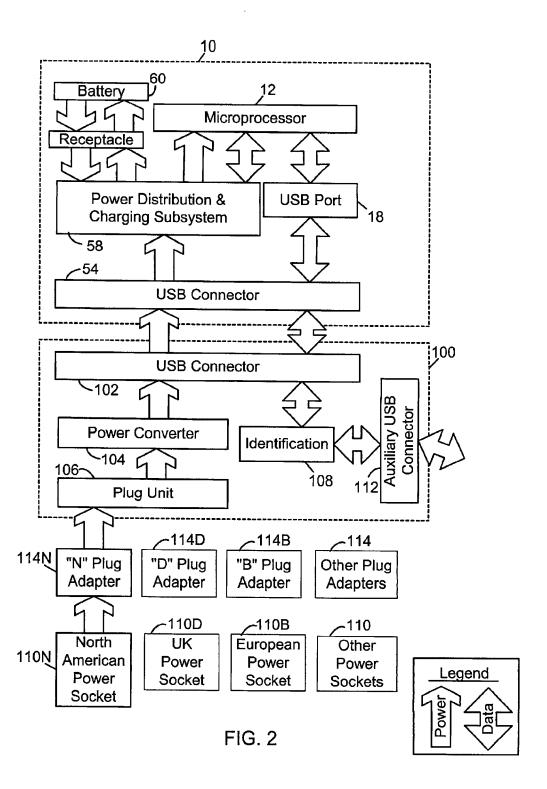
An adapter for providing a source of power to a mobile device through an industry standard port is provided. In accordance with one aspect of the invention, the adapter comprises a plug unit, a power converter, a primary connector, and an identification subsystem. The plug unit is operative to coupled the adapter to a power socket and operative to receive energy from the power socket. The power converter is electrically coupled to the plug unit and is operable to regulate the received energy from the power socket and to output a power requirement to the mobile device. The primary connector is electrically coupled to the power converter and is operative to couple to the mobile device and to deliver the outputted power requirement to the mobile device. The identification subsystem is electrically coupled to the primary connector and is operative to provide an identification signal.

104 Claims, 4 Drawing Sheets











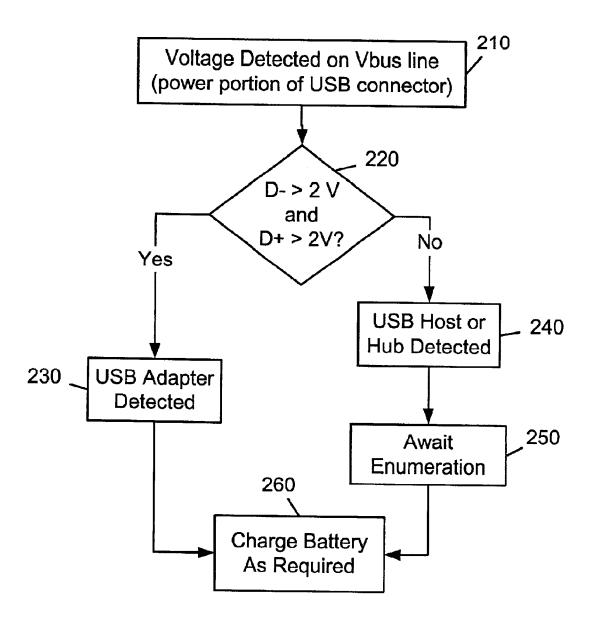
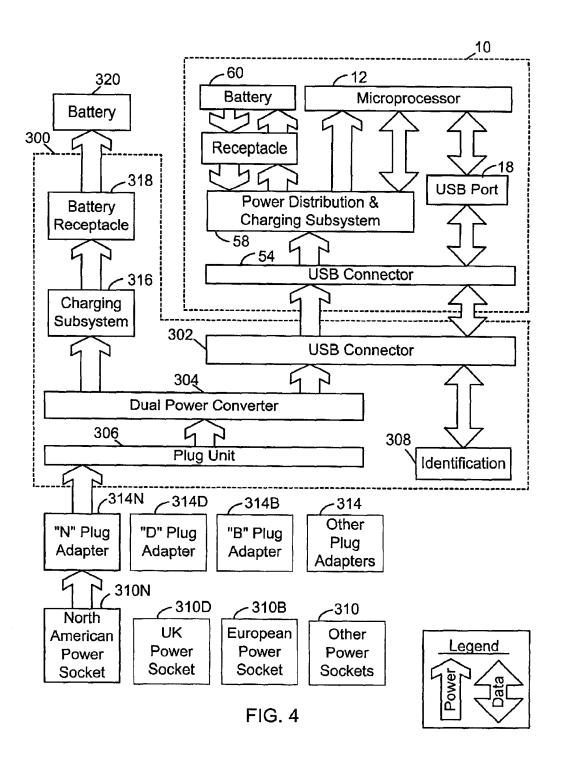


FIG. 3





# DOCKET A L A R M

# 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.

