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Multifunctional Charger System and Method

CROSS-REFERENCE TO RELATED APPLICATION

This application is related to the following prior application: System and
5 Method for Adapting a USB to Provide Power for Charging a Mobile Device,
United States Provisional Application No. 60/273021, filed March 1st, 2001. This
prior application, including the entire written description and drawing figures, is
hereby incorporated into the present application by reference.

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BACKGROUND

1. FIELD OF THE INVENTION

This invention relates generally to power adapters and battery chargers.
More particularly, the invention provides a USB (Universal Serial Bus) power
adapter and battery charger for charging a first battery at a mobile device and a
15 second battery at the charger simultaneously or independently. The invention is
particularly well suited for use in Personal Digital Assistants, mobile
communication devices, cellular phones, and wireless two-way e-mail
communication devices, which may have a USB interface (collectively referred to
herein as "mobile devices"). The invention provides utility, however, in any
20 device that may need to draw power via the USB interface and/or has a
rechargeable battery.

2. DESCRIPTION OF THE RELATED ART

Supplying power to a mobile device involves the participation of a mobile device on one hand, as well as the participation of a power source on the other.

5 On one hand, most mobile devices provide a first power interface for receiving power from a power source, for instance to recharge a battery, and a second data interface for communicating that is separate from the power interface. Although it is desirable to have a combined power and data interface, most combined interfaces are non-standard so that one mobile device provided by one manufacturer with one combined interface cannot cooperate with the combined
10 interfaces of other manufacturers.

Furthermore, many mobile devices now have USB (Universal Serial Bus) interfaces for communicating, although they still maintain a separate power interface, such as a barrel connector, for receiving power.

15 However, a USB chargeable mobile device provided according to System and Method for Adapting a USB to Provide Power for Charging a Mobile Device, United States Provisional Application No. 60/273021, filed March 1st, 2001, has a single USB interface for both communicating and recharging a battery. Given that USB connectors are popular widely supported in industry, a USB chargeable
20 device solves the problem of the combined interface at a USB chargeable mobile device.

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