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Fischer et al.

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(54) **MULTIFUNCTIONAL CHARGER SYSTEM AND METHOD**

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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.

This patent is subject to a terminal disclaimer.

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H01M 10/46 (2006.01)
(52) **U.S. Cl.**
USPC **320/111**
(58) **Field of Classification Search**
USPC 320/107, 111, 114, 140
See application file for complete search history.

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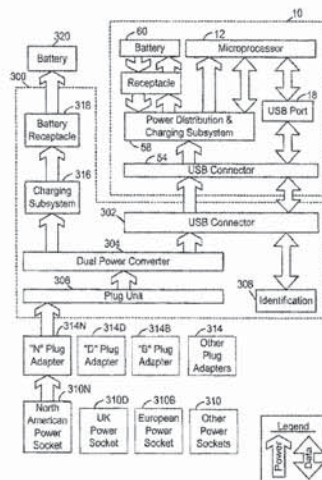
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(57) **ABSTRACT**

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 couple 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 operative 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.

18 Claims, 4 Drawing Sheets



Related U.S. Application Data

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| <p>(63) Oct. 15, 2010, now Pat. No. 7,986,127, which is a continuation of application No. 12/714,204, filed on Feb. 26, 2010, now Pat. No. 7,834,586, which is a continuation of application No. 12/268,297, filed on Nov. 10, 2008, now Pat. No. 7,737,657, which is a continuation of application No. 11/749,680, filed on May 16, 2007, now Pat. No. 7,453,233, which is a continuation of application No. 11/175,885, filed on Jul. 6, 2005, now Pat. No. 7,239,111, which is a continuation of application No. 10/087,629, filed on Mar. 1, 2002, now Pat. No. 6,936,936.</p> <p>(60) Provisional application No. 60/273,021, filed on Mar. 1, 2001, provisional application No. 60/330,486, filed on Oct. 23, 2001.</p> | <table border="0"> <tr><td>7,834,586</td><td>B2</td><td>11/2010</td><td>Fischer et al.</td></tr> <tr><td>7,884,570</td><td>B2</td><td>2/2011</td><td>Purdy et al.</td></tr> <tr><td>7,986,127</td><td>B2*</td><td>7/2011</td><td>Fischer et al. 320/111</td></tr> <tr><td>2001/0003205</td><td>A1</td><td>6/2001</td><td>Gilbert</td></tr> <tr><td>2003/0034898</td><td>A1</td><td>2/2003</td><td>Shamoon et al.</td></tr> <tr><td>2004/0063464</td><td>A1</td><td>4/2004</td><td>Akram et al.</td></tr> <tr><td>2004/0251878</td><td>A1</td><td>12/2004</td><td>Veselic</td></tr> <tr><td>2005/0269883</td><td>A1</td><td>12/2005</td><td>Drader et al.</td></tr> <tr><td>2006/0181241</td><td>A1</td><td>8/2006</td><td>Veselic</td></tr> <tr><td>2007/0108938</td><td>A1</td><td>5/2007</td><td>Veselic</td></tr> <tr><td>2009/0128091</td><td>A1</td><td>5/2009</td><td>Purdy et al.</td></tr> <tr><td>2009/0130874</td><td>A1</td><td>5/2009</td><td>Englund</td></tr> <tr><td>2010/0052620</td><td>A1</td><td>3/2010</td><td>Wong</td></tr> <tr><td>2010/0060233</td><td>A1</td><td>3/2010</td><td>Kung et al.</td></tr> <tr><td>2010/0201308</td><td>A1</td><td>8/2010</td><td>Lindholm</td></tr> </table> | 7,834,586 | B2 | 11/2010 | Fischer et al. | 7,884,570 | B2 | 2/2011 | Purdy et al. | 7,986,127 | B2* | 7/2011 | Fischer et al. 320/111 | 2001/0003205 | A1 | 6/2001 | Gilbert | 2003/0034898 | A1 | 2/2003 | Shamoon et al. | 2004/0063464 | A1 | 4/2004 | Akram et al. | 2004/0251878 | A1 | 12/2004 | Veselic | 2005/0269883 | A1 | 12/2005 | Drader et al. | 2006/0181241 | A1 | 8/2006 | Veselic | 2007/0108938 | A1 | 5/2007 | Veselic | 2009/0128091 | A1 | 5/2009 | Purdy et al. | 2009/0130874 | A1 | 5/2009 | Englund | 2010/0052620 | A1 | 3/2010 | Wong | 2010/0060233 | A1 | 3/2010 | Kung et al. | 2010/0201308 | A1 | 8/2010 | Lindholm |
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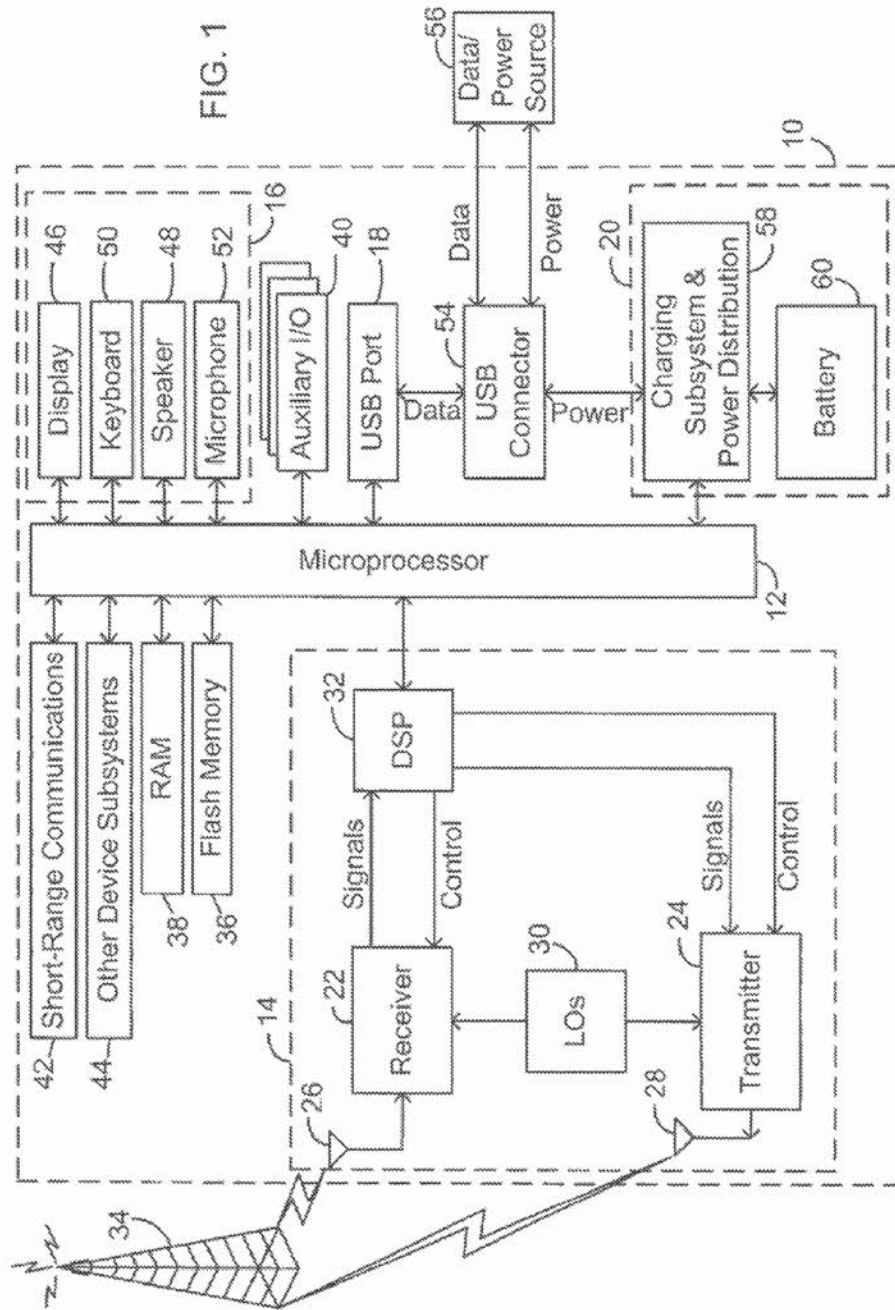
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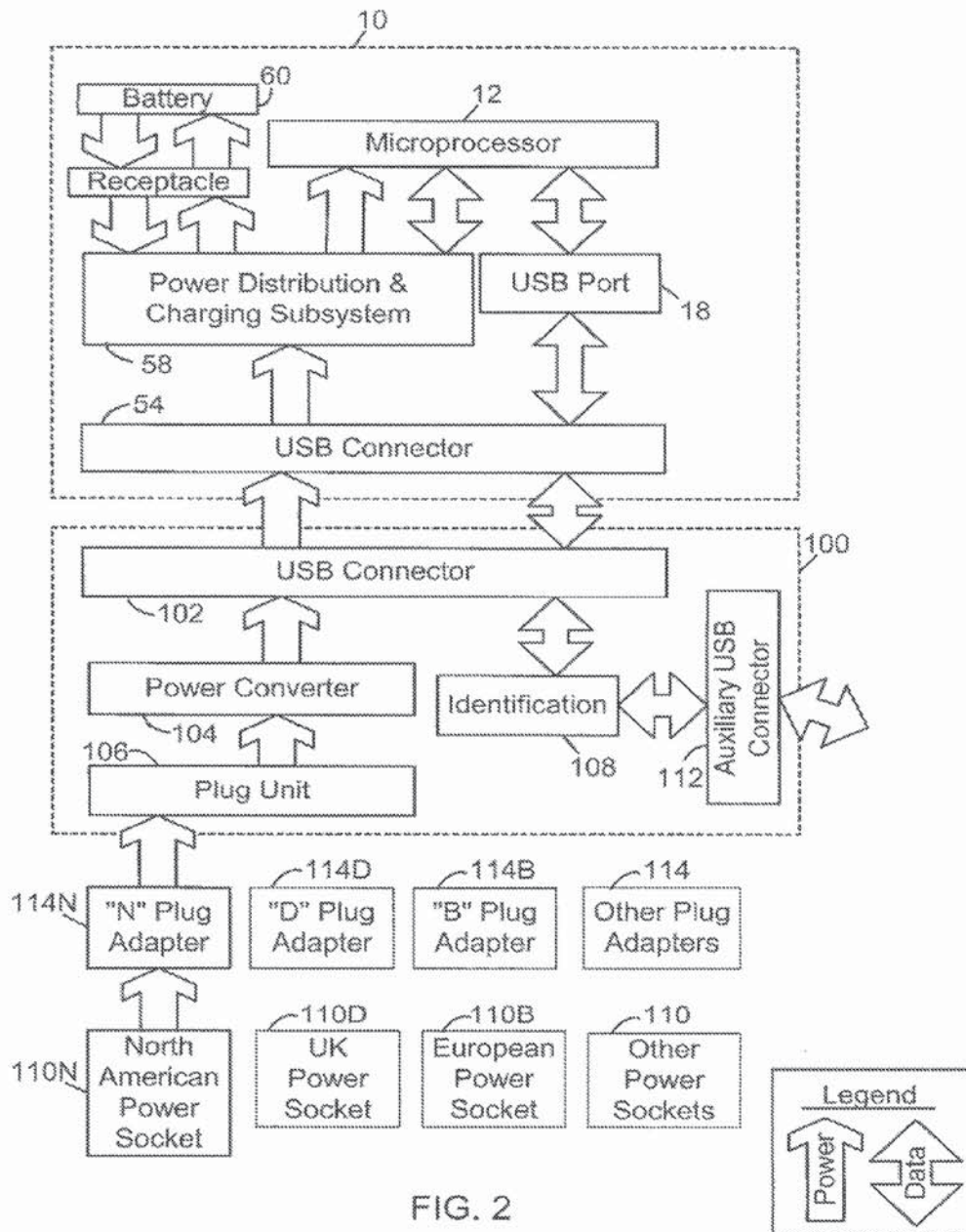
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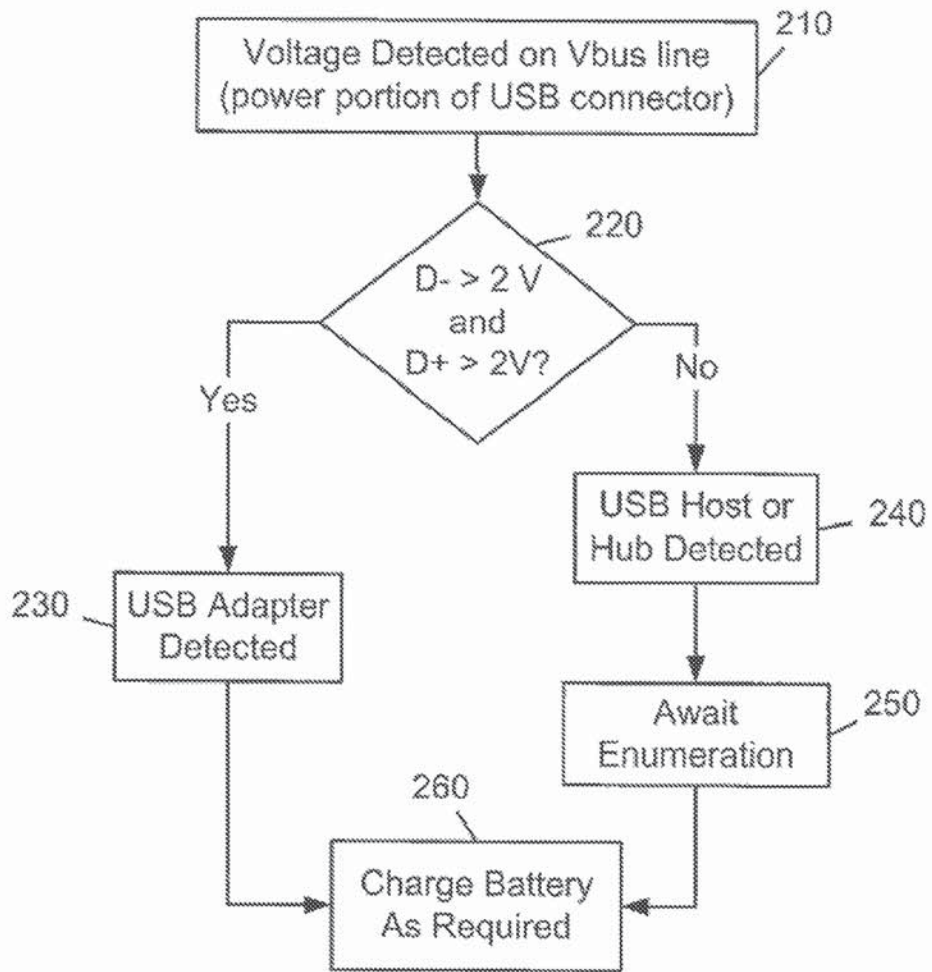


FIG. 3

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