[0013] **FIG. 6** is an isometric view illustrating a mobile communication device, specifically a mobile telephone configured to be worn as a necklace about the neck of a user in accordance with a second exemplary embodiment of the present invention;

[0014] **FIGS. 7 and 8** are isometric views of the mobile communication device shown in **FIG. 6**, further illustrating exemplary positioning of electrodes of the electrode assembly of the mobile communication device;

[0015] **FIG. 9** is an isometric view of the communication device shown in **FIG. 6**, further illustrating detachment of the necklace assembly from the housing of the mobile communication device;

[0016] **FIGS. 10 and 11** are isometric views illustrating a mobile communication device, specifically a mobile telephone having a belt clip, in accordance with a third exemplary embodiment of the present invention; and

[0017] **FIGS. 12 and 13** are rear elevation views of the mobile communication device shown in **FIGS. 10 and 11**, further illustrating exemplary positioning of electrodes of the communication device.

DETAILED DESCRIPTION OF SPECIFIC EMBODIMENTS

[0018] Reference will now be made in detail to the presently preferred embodiments of the invention, examples of which are illustrated in the accompanying drawings.

[0019] **FIGS. 1A and 1B** illustrate a mobile communication device **100** in accordance with an exemplary embodiment of the present invention. The mobile communication device **100** employs electrical stimulation via mild electroshocks applied to the body of a user of the communication device **100** for silently alerting the user that information such as a telephone call, a text message, a voice message, a page, a warning message, or the like, has been received by the communication device **100** from an external source. In this manner, electrical stimulation is used in place of mechanical vibration to provide a silent alert function for the mobile communication device **100**. The mobile communication device **100** may also employ electrical stimulation to convey various other information, in particular, internally generated information including, for example, a low battery indication, an indication that the mobile communication device **100** is out of range of a cellular communication system tower or base station, an indication that the silent alert function has been switched on or off, or the like. In embodiments of the invention, the mobile communication device **100** may further vary the electrical stimulation communicated to the user to distinguish the type of information received or provided. Thus, for example, the mobile communication device **100** may communicate different electrical stimulations to its user to indicate that the mobile communication device **100** has received a telephone call, a text message or a voice mail message, or to indicate that the battery of the mobile communication device **100** is low, or that the mobile communication device **100** is out of range of a cellular communication system tower.

[0020] In the past, electrical stimulation of the body has been used primarily for therapeutic purposes in applications such as Transcutaneous Electrical Nerve Stimulation (TENS) and Electronic Muscle Stimulation (EMS). TENS units electrically stimulate sensory nerves to block pain signals, and to stimulate endorphin production to help normalize sympathetic function. EMS systems electrically stimulate motor nerves to cause a muscle contraction and are used to prevent or reduce muscle atrophy after surgeries or injuries. However, such devices utilize electrical stimulation over long periods of time and employ voltages and currents intended to effect therapeutic changes to the body, and not to communicate information to their users. In contrast, the present invention employs electrical stimulation comprising pulses of relatively short duration that are generally non-therapeutic, but which are non-harmful to the user.

[0021] As illustrated in **FIGS. 1A and 1B**, the mobile communication device **100** includes an electrical power source **102** for furnishing an electrical signal suitable for providing electrical stimulation to the body of a user of the mobile communication device **100**. In exemplary embodiments of the invention, the electrical power source **102** comprises a controllable high voltage power source such as capacitor based electrical storage assembly, or the like, furnishing electrical signals having high voltages and low currents, preferably of alternating wave forms. As shown in **FIG. 1**B, the electrical power source **102** may draw power or be charged from a second electrical power source or storage device **104** within the mobile communication device **100**. In exemplary embodiments, this second electrical power source **104** may comprise a battery providing power for the mobile communication device **100**, or, alternatively, a charging system for charging the battery of the mobile communication device **100**, a second battery dedicated to providing power to the electrical power source **102**, or the like.

[0022] The electrical power source **102** is coupled to an electrode assembly **106** for communicating the electrical signal furnished by the electrical power source **102** to the body of the user. The electrode assembly **106** includes two or more electrodes furnished in the housing of the mobile communication device **100**, or, alternatively, in a wristband, wrist strap, necklace, belt clip, or the like, coupled to the housing of the mobile communication device **100**. In exemplary embodiments, these electrodes may be galvanically coupled to the body of the user (i.e., the conducting metal of the electrodes are placed in direct contact with the skin of the user). Alternatively, the electrodes may be capacitively coupled to the body of the user so that the electrical signal is passed through a thin insulator such as the clothing of the user.

[0023] In preferred embodiments, the mobile communication device **100** employs an electrical signal having a voltage and current selected to provide a distinguishable sensation to the user, but which is not uncomfortable or harmful to the user. For example, in one embodiment, the mobile communication device **100** employs an electrical signal comprising pulses of alternating high voltage/low current electricity. When communicated to the body, the electrical signal provides a brief, localized electrical stimulation to sensory nerves of the body near the electrodes of the electrode assembly **106**.

[0024] A controller **108** is coupled to the electrical power source **102** for controlling communication of the electrical signal to the body of the user via the electrode assembly **106**. As shown in **FIG. 1**B, the controller **108** may further