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United States Patent [19]

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Gliner et al.

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[54] **ELECTROTHERAPY METHOD UTILIZING PATIENT DEPENDENT ELECTRICAL PARAMETERS**

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[73] Assignee: **Heartstream, Inc.**, Seattle, Wash.

[*] Notice: The term of this patent shall not extend beyond the expiration date of Pat. No. 5,601,612.

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[21] Appl. No.: **690,529**

[57] ABSTRACT

[22] Filed: **Jul. 31, 1996**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 103,837, Aug. 6, 1993, abandoned, and Ser. No. 227,553, Sep. 14, 1994, Pat. No. 5,607,454.

The invention provides a method for delivering electrotherapy to a patient through electrodes connected to a plurality of capacitors, including the steps of discharging at least one of the capacitors across the electrodes to deliver electrical energy to the patient, monitoring a patient-dependent electrical parameter (such as voltage, current or charge) during the discharging step, and adjusting energy delivered to the patient based on a value of the electrical parameter. The adjusting step may include selecting a serial or parallel arrangement for the capacitors based on a value of the electrical parameter.

[51] **Int. Cl.⁶** **A61N 1/39**
[52] **U.S. Cl.** **607/7; 607/74**
[58] **Field of Search** **607/5-7, 74**

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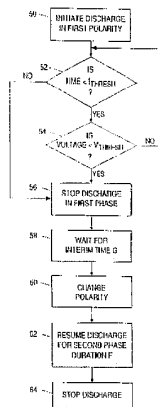
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In another embodiment, the invention provides a method for delivering electrotherapy to a patient through electrodes connectable to a plurality of capacitors including the steps of discharging at least one of the capacitors across the electrodes to deliver electrical energy to the patient in a waveform having at least a first phase and a second phase, monitoring a patient-dependent electrical parameter (such as voltage, current or charge) during the discharging step, and modifying second phase initial voltage based on a value of the electrical parameter. The adjusting step may include selecting a serial or a parallel arrangement for the capacitors based on a value of the electrical parameter.

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17 Claims, 10 Drawing Sheets



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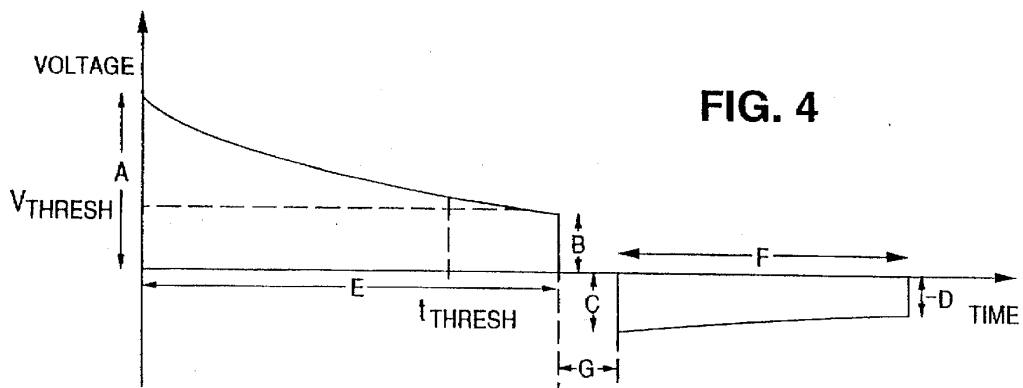
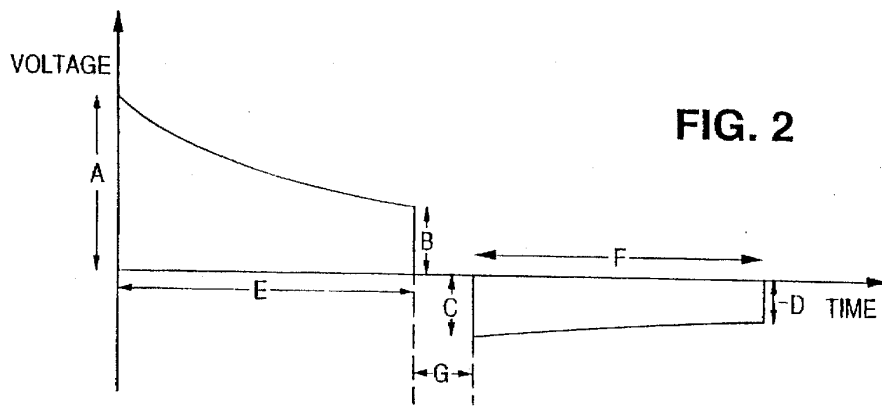
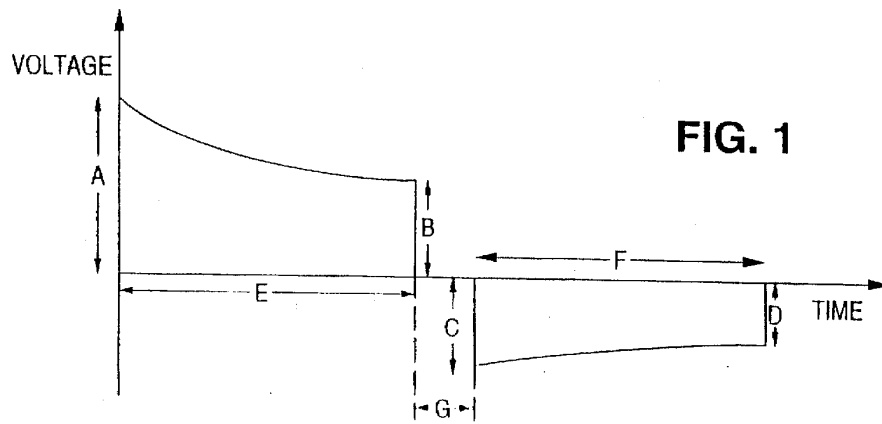
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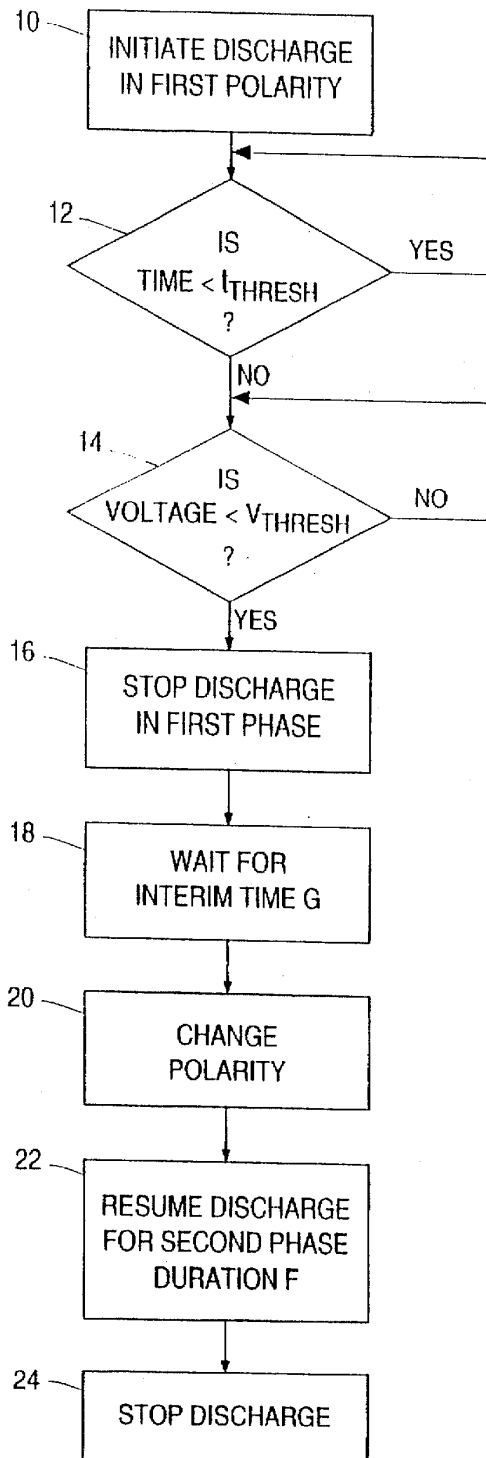


FIG. 3

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