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Cameron et al.

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[54] **ELECTROTHERAPY METHOD AND APPARATUS**

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WO94/22530 10/1994 WIPO .

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

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Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 103,837, Aug. 6, 1993.

[51] **Int. Cl.⁶** **A61N 1/39**

[52] **U.S. Cl.** **607/5; 607/7; 607/6; 607/74; 607/62**

[58] **Field of Search** **607/2, 4, 5-7, 607/62, 74**

[57] **ABSTRACT**

An electrotherapy method and apparatus for delivering a multiphasic waveform from an energy source to a patient. The preferred embodiment of the method comprises the steps of charging the energy source to an initial level; discharging the energy source across the electrodes to deliver electrical energy to the patient in a multiphasic waveform; monitoring a patient-dependent electrical parameter during the discharging step; shaping the waveform of the delivered electrical energy based on a value of the monitored electrical parameter, wherein the relative duration of the phases of the multiphasic waveform is dependent on the value of the monitored electrical parameter. The preferred apparatus comprises an energy source; two electrodes adapted to make electrical contact with a patient; a connecting mechanism forming an electrical circuit with the energy source and the electrodes when the electrodes are attached to a patient; and a controller operating the connecting mechanism to deliver electrical energy from the energy source to the electrodes in a multiphasic waveform the relative phase durations of which are based on an electrical parameter monitored during delivery of the electrical energy. The preferred defibrillator apparatus weighs less than 4 pounds and has a volume less than 150 cubic inches, and most preferably, weighs approximately three pounds or less and has a volume of approximately 141 cu. in.

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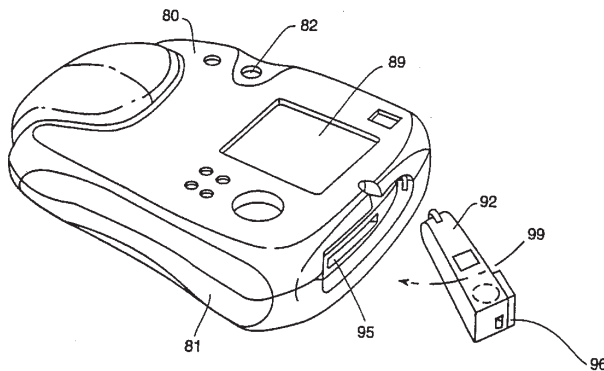
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59 Claims, 4 Drawing Sheets



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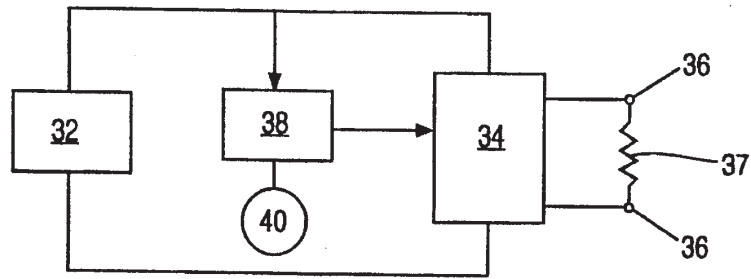
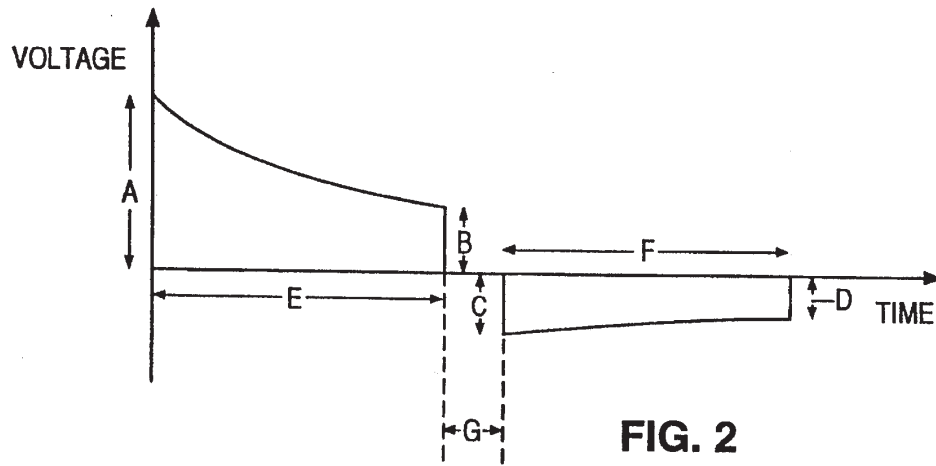
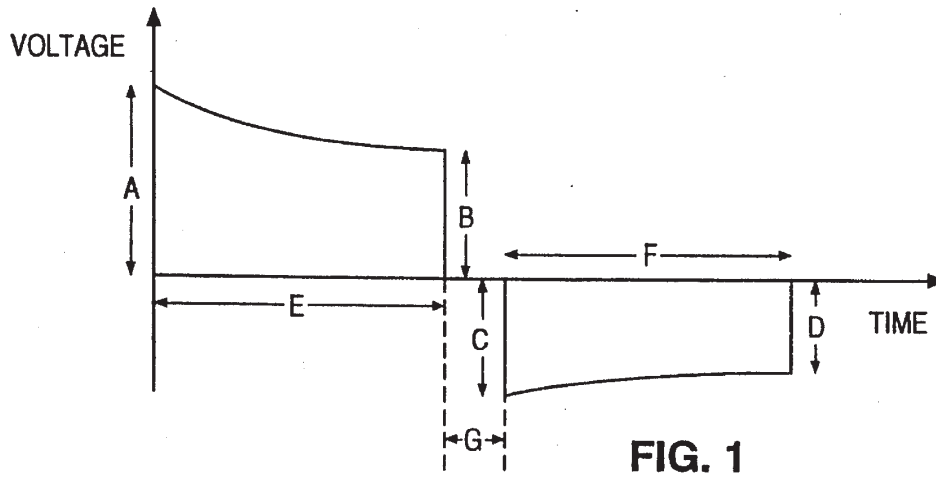


FIG. 3

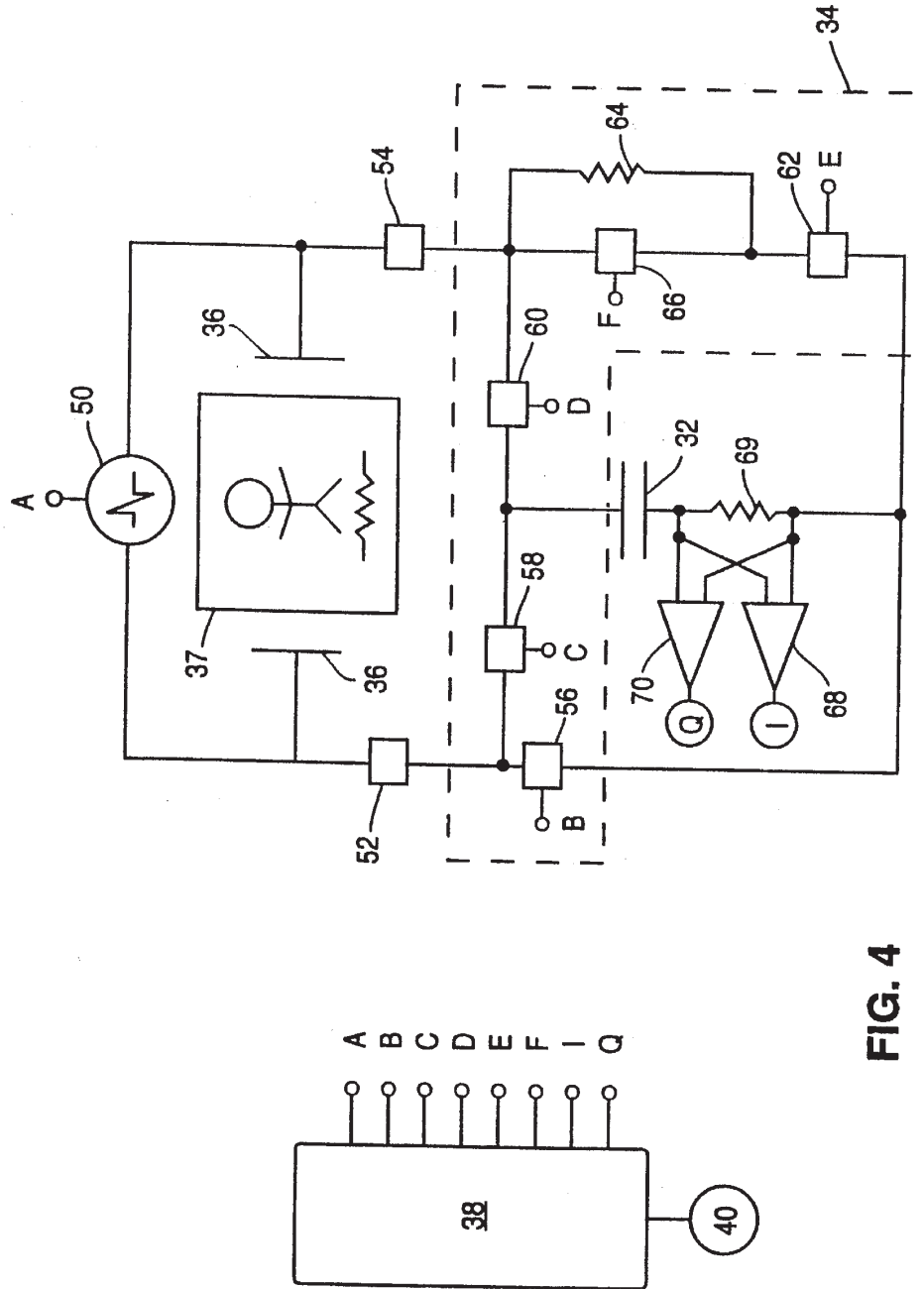


FIG. 4

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