

[54] **RECHARGEABLE TISSUE STIMULATING SYSTEM**

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**Related U.S. Application Data**

[63] Continuation of Ser. No. 401,406, Sept. 27, 1973, abandoned.

[52] U.S. Cl. .... **128/419 PS**

[51] Int. Cl.<sup>2</sup> ..... **A61N 1/36**

[58] Field of Search ..... 128/2.05 S, 2.06 E, 2.1 A, 128/418, 419 C, 419 EP, 419 PG, 419 PS, 419 R, 420, 421, 422, 423, 419 PT; 307/91; 320/31, 32, 37, 39; 328/84; 336/84

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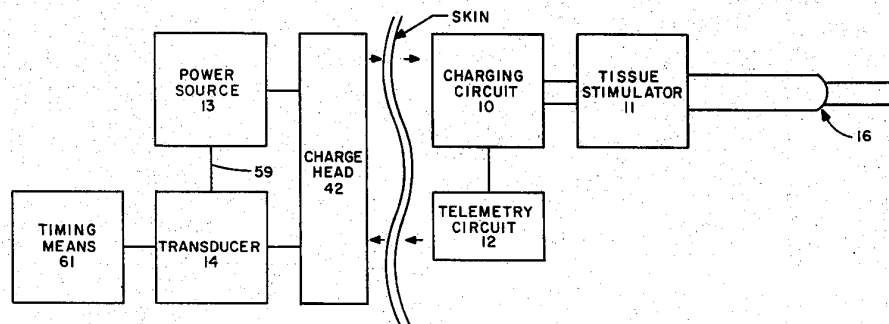
Evalenko et al., "Medical Instrumentation," Mar-Apr., 1967, pp. 13-16.

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[57] **ABSTRACT**

A rechargeable tissue stimulating system with a telemetry controlled power source. A constant current power source acting through an induction coil externally located with respect to a living patient is used to induce current flow in a charging circuit located beneath the skin of the patient. The charging circuit, in turn, recharges a battery which powers an electronic generator used for applying electrical pulses to stimulate living tissue in order to maintain bodily functions in the patient. A telemetry circuit connected to the charging circuit provides a magnetic output signal controlling externally located means associated with the power source. Such external means in response to this signal modulate the strength of the charging magnetic field, as well as provide visual or audio indication of proper charging as well as the proper positioning of the external power source with respect to the implanted charging circuit, completion of the proper charging interval to restore the amount of current used, and improper charging.

**11 Claims, 12 Drawing Figures**



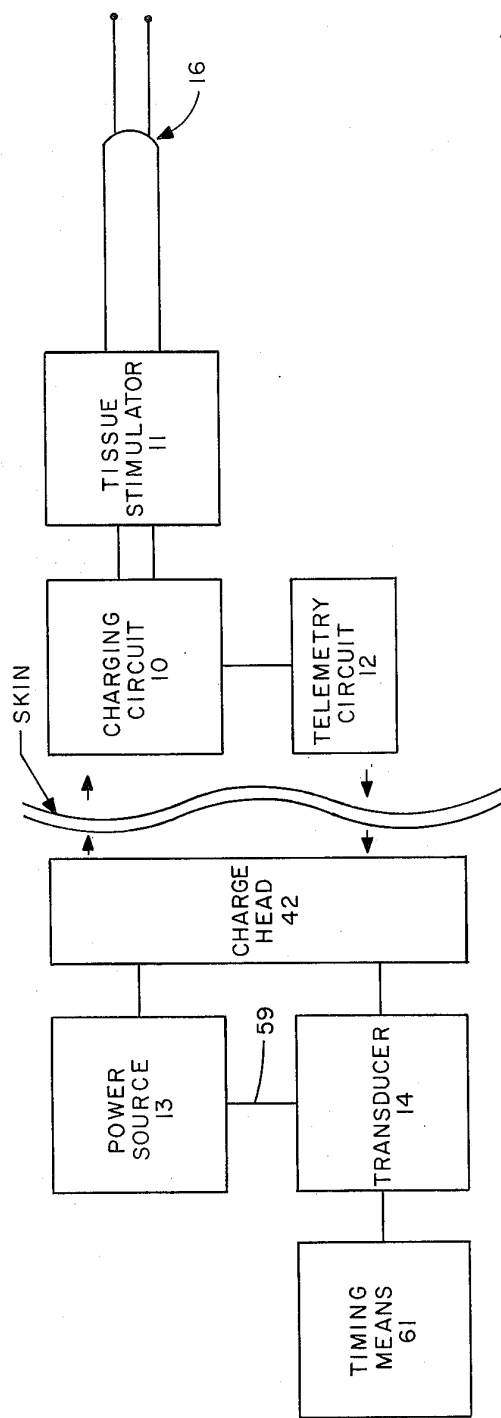


FIG. 1

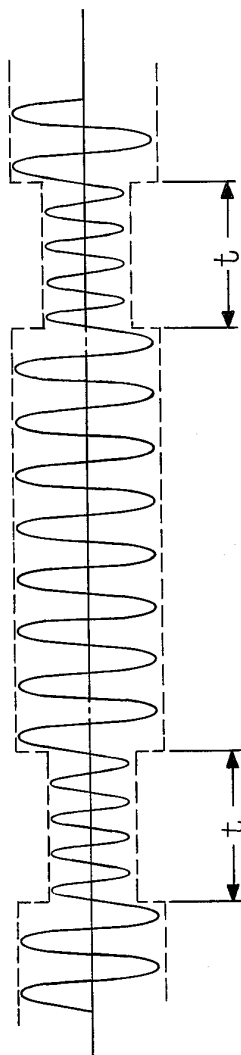


FIG. 9

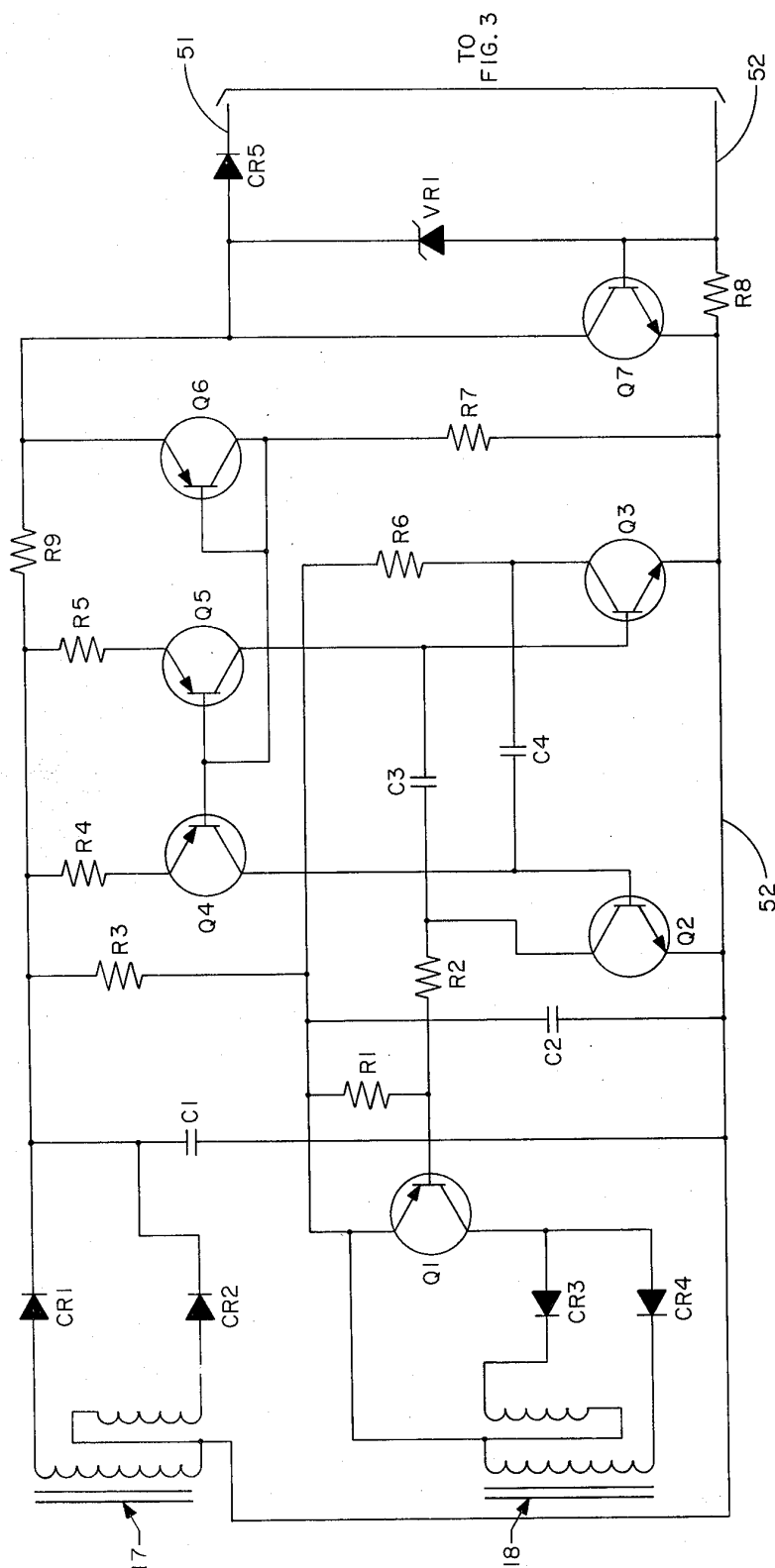
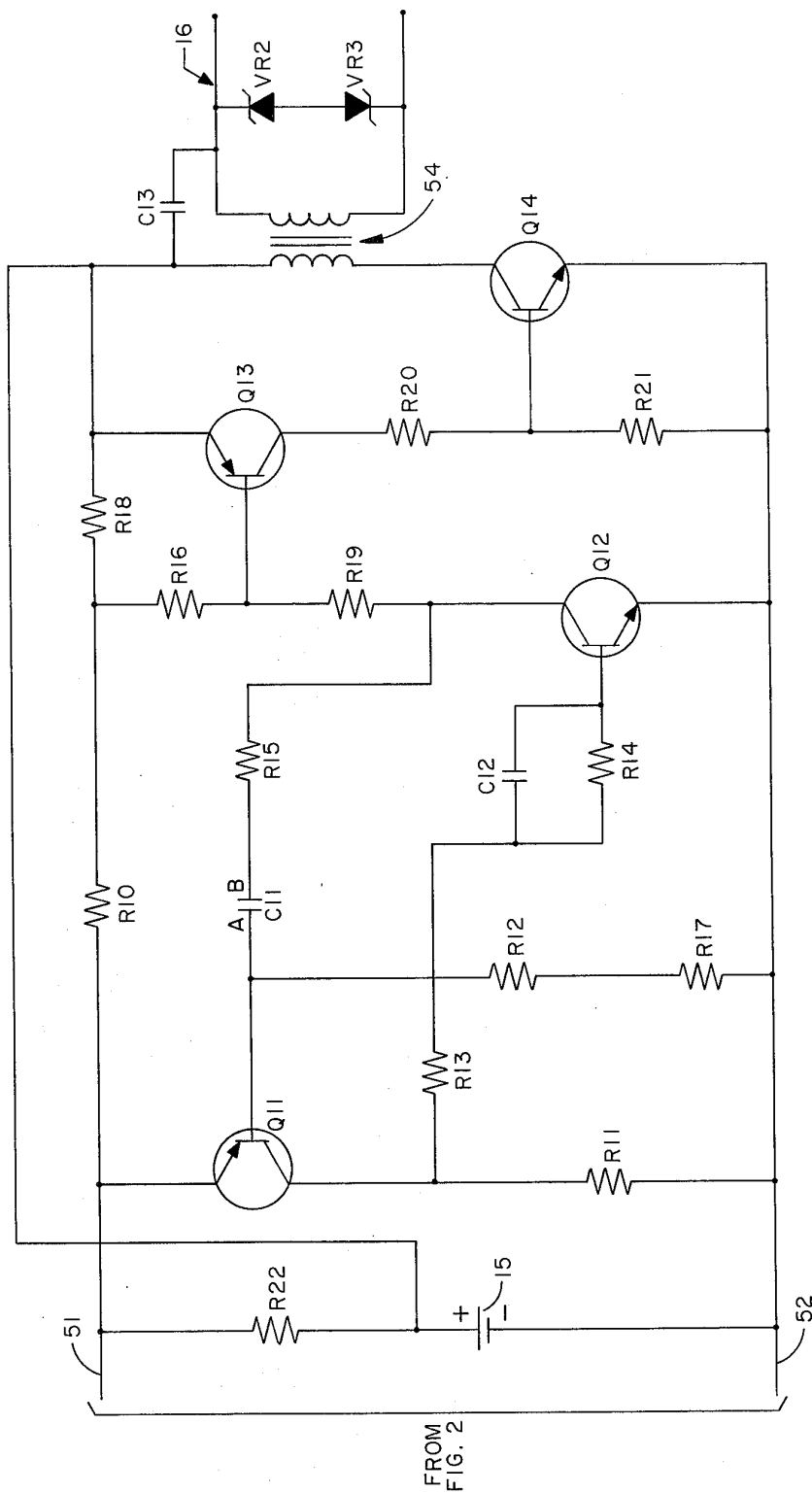


FIG. 2



TISSUE STIMULATOR

FIG. 3



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