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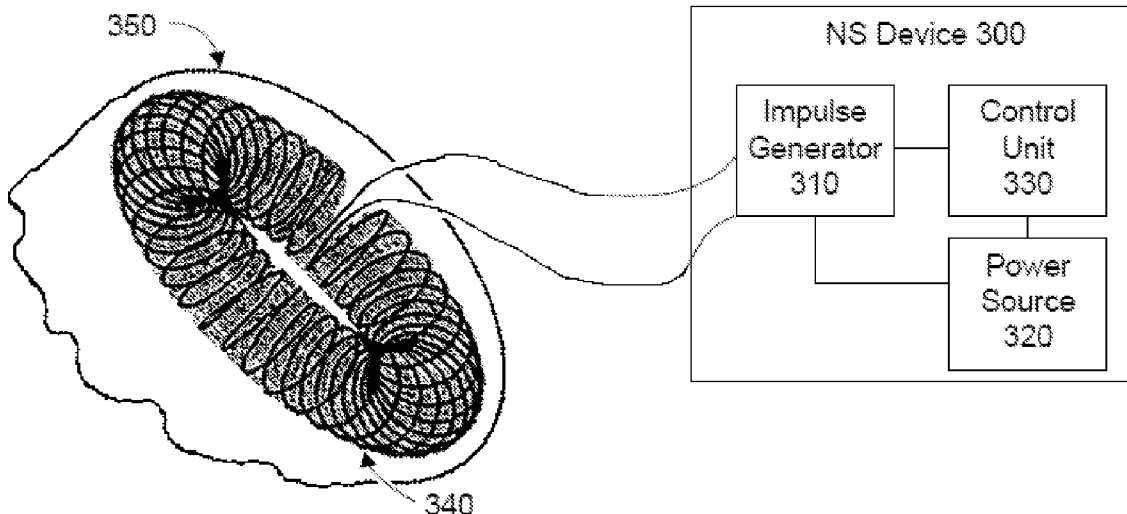
(19) **United States**(12) **Patent Application Publication**
Simon et al.(10) **Pub. No.: US 2011/0125203 A1**(43) **Pub. Date: May 26, 2011**(54) **MAGNETIC STIMULATION DEVICES AND
METHODS OF THERAPY**(75) Inventors: **Bruce Simon**, Mountain Lakes, NJ
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NJ (US)(21) Appl. No.: **12/964,050**(22) Filed: **Dec. 9, 2010****Related U.S. Application Data**

- (63) Continuation-in-part of application No. 12/859,568,
filed on Aug. 19, 2010, which is a continuation-in-part
of application No. 12/408,131, filed on Mar. 20, 2009.
- (60) Provisional application No. 61/415,469, filed on Nov.
19, 2010.

Publication Classification

- (51) **Int. Cl.**
A61N 1/36 (2006.01)
- (52) **U.S. Cl.** **607/2**
- (57) **ABSTRACT**

Devices and systems are disclosed for the non-invasive treatment of medical conditions through delivery of energy to target tissue, comprising a source of electrical power, a magnetically permeable toroidal core, and a coil that is wound around the core. The coil and core are embedded in a continuous electrically conducting medium, which is adapted to have a shape that conforms to the contour of an arbitrarily oriented target body surface of a patient. The conducting medium is applied to that surface by any of several disclosed methods, and the source of power supplies a pulse of electric charge to the coil, such that the coil induces an electric current and/or an electric field within the patient, thereby stimulating tissue and/or one or more nerve fibers within the patient. The invention shapes an elongated electric field of effect that can be oriented parallel to a long nerve. In one embodiment, the device comprises two toroidal cores that lie adjacent to one another.



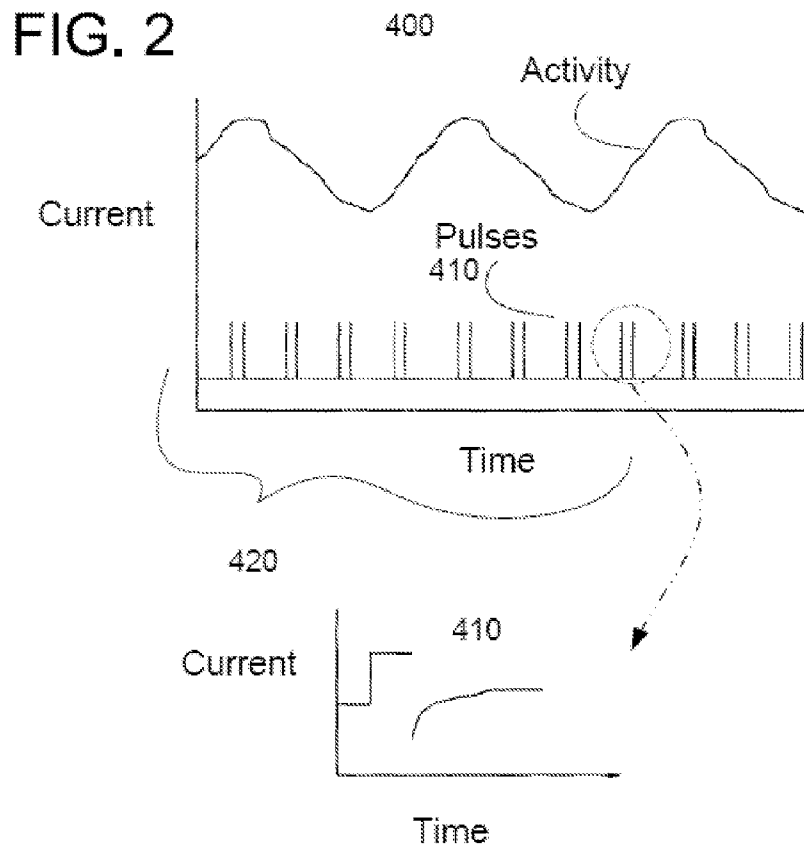
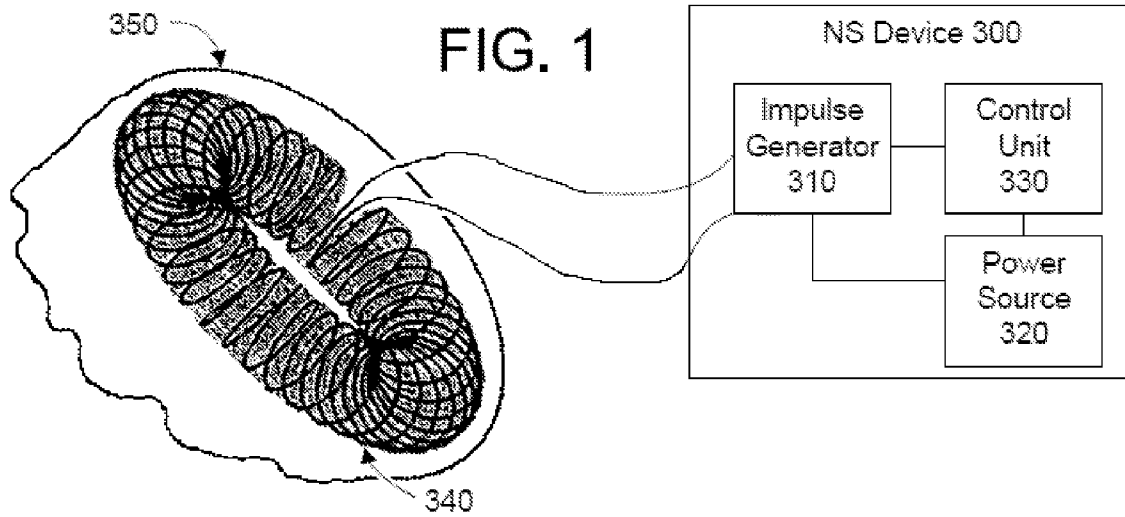


FIG. 3A

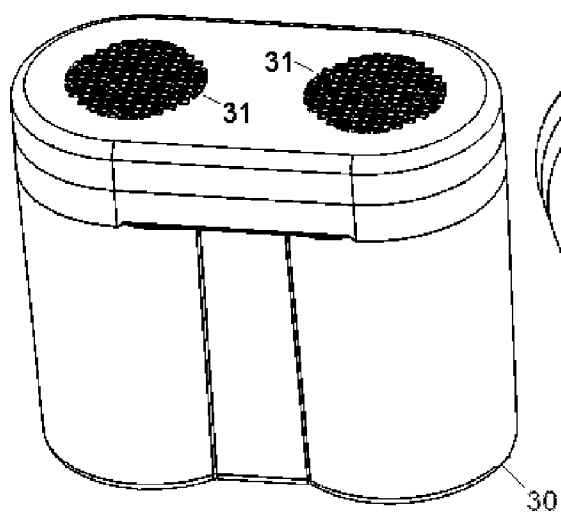


FIG. 3B

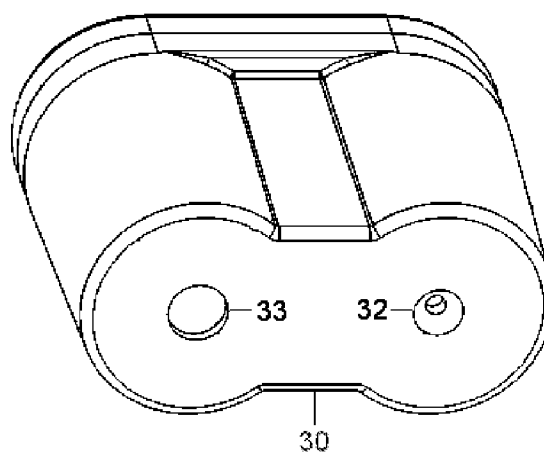


FIG. 3C

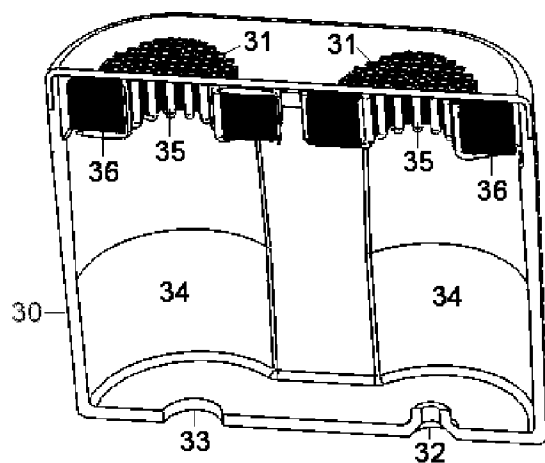
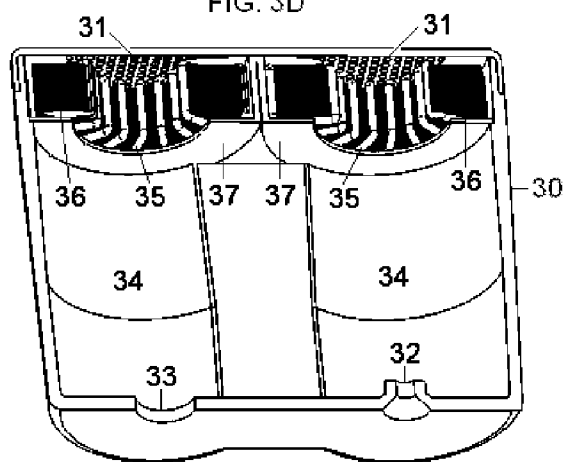


FIG. 3D



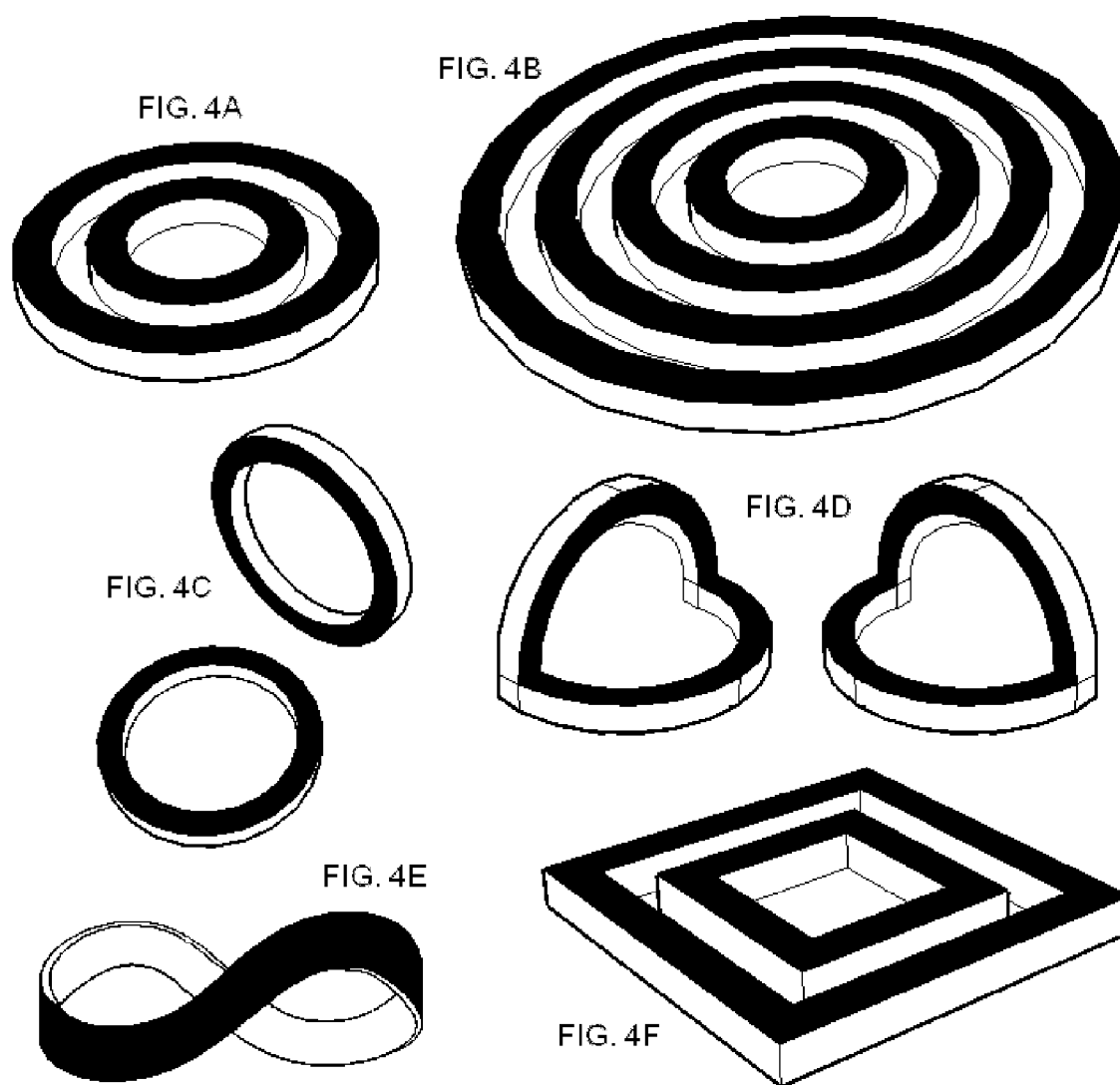
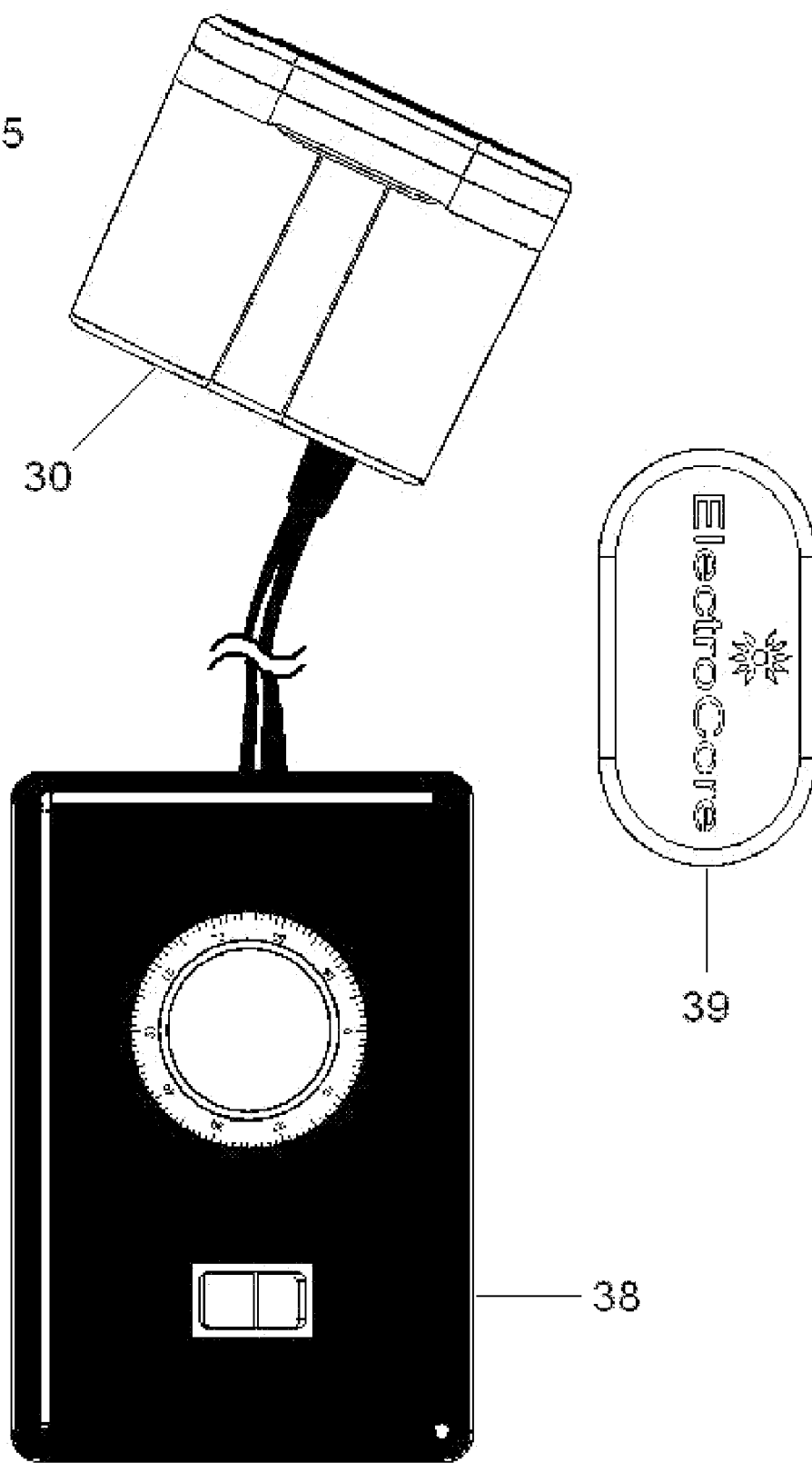


FIG. 5



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