

(19) United States

(12) Patent Application Publication (10) Pub. No.: US 2015/0165226 A1 Simon et al.

Jun. 18, 2015 (43) **Pub. Date:**

(54) MAGNETIC STIMULATION DEVICES AND METHODS OF THERAPY

(71) Applicant: Electrocore, LLC, Basking Ridge, NJ

Inventors: Bruce J. Simon, Mountain Lakes, NJ (US); Joseph P. Errico, Warren, NJ

(US); Jonn T. Raffle, Austin, TX (US)

Appl. No.: 14/636,498

(22) Filed: Mar. 3, 2015

Related U.S. Application Data

(60) Division of application No. 13/938,931, filed on Jul. 10, 2013, now Pat. No. 8,972,004, which is a division of application No. 12/964,050, filed on Dec. 9, 2010, said application No. 13/938,931 is a continuation-inpart 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, now Pat. No. 8,812,112, which is a continuation-in-part of application No. 11/591,340, filed on Nov. 1, 2006, now Pat. No. 7,747,324.

Provisional application No. 61/415,469, filed on Nov. 19, 2010, provisional application No. 60/814,313, filed on Jun. 16, 2006, provisional application No. 60/786,564, filed on Mar. 28, 2006, provisional application No. 60/772,361, filed on Feb. 10, 2006, provi-

sional application No. 60/736,002, filed on Nov. 10, 2005, provisional application No. 60/736,001, filed on Nov. 10, 2005.

Publication Classification

(51) Int. Cl. A61N 2/02

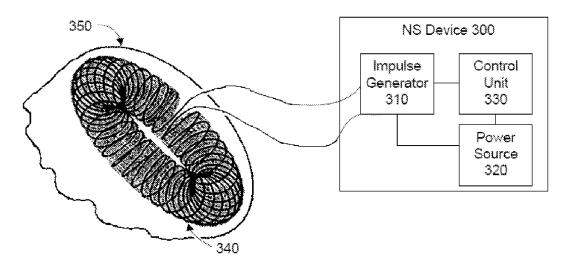
(2006.01)(2006.01)

A61N 2/00 (52) U.S. Cl.

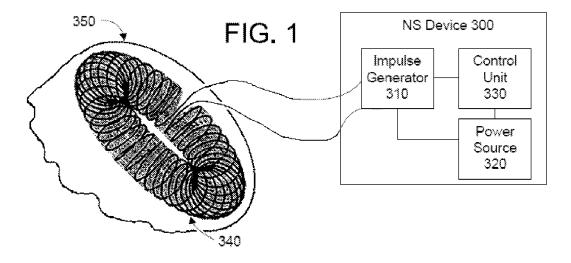
CPC . A61N 2/02 (2013.01); A61N 2/006 (2013.01)

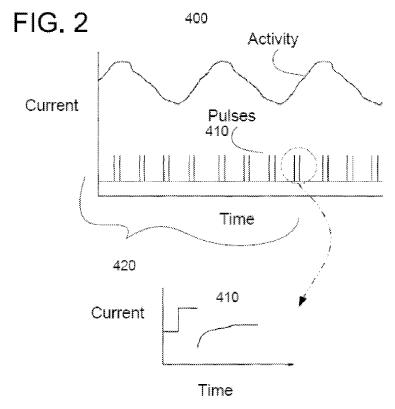
(57)ABSTRACT

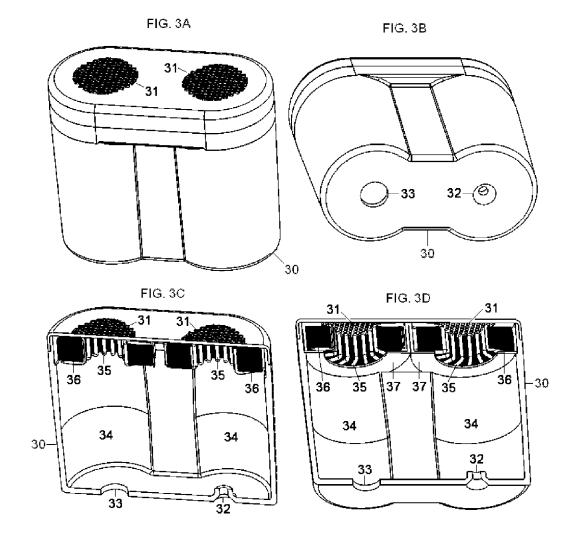
Devices and systems are disclosed for the non-invasive treatment of medical conditions through delivery of energy to target tissue, comprising a source of electrical power, a magnetically permeable toroidal core, and a coil that is wound around the core. The coil and core are embedded in a continuous 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.

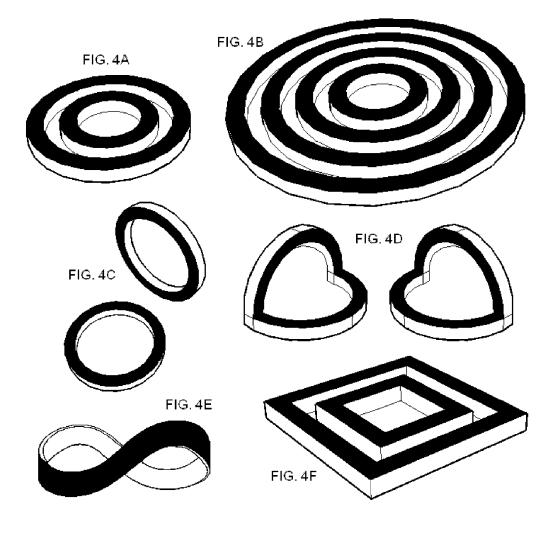




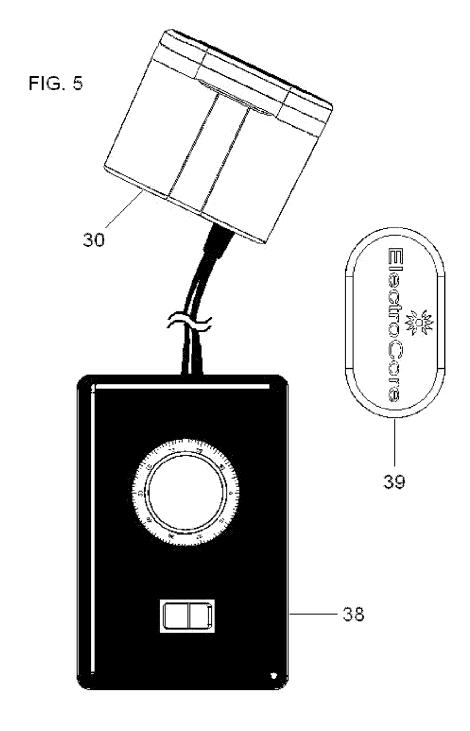














DOCKET A L A R M

Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time** alerts and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.

