US009409030B2

(12) **United States Patent**
Perryman et al.

(10) **Patent No.: US 9,409,030 B2**
(45) **Date of Patent: Aug. 9, 2016**

(54) **NEURAL STIMULATOR SYSTEM**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **13/551,050**

(22) Filed: **Jul. 17, 2012**

(65) **Prior Publication Data**

US 2012/0283800 A1 Nov. 8, 2012

Related U.S. Application Data

(63) Continuation of application No. PCT/US2012/023029, filed on Jan. 27, 2012.

(60) Provisional application No. 61/437,561, filed on Jan. 28, 2011, provisional application No. 61/513,397, filed on Jul. 29, 2011.

(51) **Int. Cl.**

A61N 1/36	(2006.01)
A61N 1/372	(2006.01)
A61N 1/37	(2006.01)
A61N 1/378	(2006.01)

(52) **U.S. Cl.**

CPC ***A61N 1/37235*** (2013.01); ***A61N 1/36142*** (2013.01); ***A61N 1/3708*** (2013.01); ***A61N 1/3727*** (2013.01); ***A61N 1/3787*** (2013.01); ***A61N 1/37241*** (2013.01); ***A61N 1/37247*** (2013.01); ***A61N 1/37258*** (2013.01)

(58) **Field of Classification Search**

None

See application file for complete search history.

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(57) **ABSTRACT**

An implantable neural stimulator includes one or more electrodes, a dipole antenna, and one or more circuits and does not include an internal power source. The one or more electrodes are configured to apply one or more electrical pulses to neural tissue. The dipole antenna is configured to receive an input signal containing electrical energy utilizing electrical radiative coupling (for example, in the frequency range form 300 MHz to 8 GHz). The one or more circuits are configured to create one or more electrical pulses using the electrical energy contained in the input signal; supply the electrical pulses to the electrodes such the electrical pulses are applied to neural tissue; generate a stimulus feedback signal; and send the feedback to the dipole antenna to transmit to the second antenna through electrical radiative coupling.

16 Claims, 13 Drawing Sheets