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(54) **NON-INVASIVE METHODS AND DEVICES FOR INDUCING EUPHORIA IN A PATIENT AND THEIR THERAPEUTIC APPLICATION**

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This patent is subject to a terminal disclaimer.

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

CPC .. ***A61N 1/40*** (2013.01); ***A61N 1/18*** (2013.01); *A61M 2021/0055* (2013.01); *A61N 1/36017* (2013.01); *A61N 1/36114* (2013.01)

(58) **Field of Classification Search**

CPC ... A61N 1/18; A61N 1/36014; A61N 1/0456; A61N 1/40; A61N 2/006; A61N 2/008

USPC 607/2, 45–46, 72, 75, 103; 600/9, 600/13–15

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,196,737	A	4/1980	Bevilacqua	
4,537,195	A *	8/1985	McDonnell	607/46

(Continued)

OTHER PUBLICATIONS

International Search Report and Written Opinion of the International Searching Authority dated Dec. 3, 2011, PCT application PCT/US11/47509, International Filing Date Aug. 12, 2011.

(Continued)

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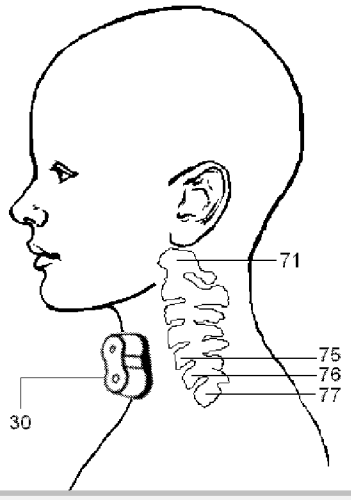
(57) **ABSTRACT**

A novel non-invasive magnetic stimulator is used to modulate electrical activity of a patient's vagus nerve. Parameters of the stimulation are selected in such a way as to induce a state of euphoria in the patient. The methods and devices may be used for anesthesia, or to treat insomnia, depression, or premenstrual syndromes. They may be used as substitution withdrawal tools for individuals who otherwise would depend on substances and behaviors to achieve a euphoric state of mind, particularly individuals who abusively consume drugs, alcohol or food, or who exhibit behavioral disorders such as compulsive gambling. The devices and methods may also be used to prevent, manage, or relieve stress.

27 Claims, 7 Drawing Sheets



Related U.S. Application Data

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, now Pat. No. 8,812,112, and a continuation-in-part of application No. 12/612,177, filed on Nov. 4, 2009, now Pat. No. 8,041,428.

(60) Provisional application No. 61/415,469, filed on Nov. 19, 2010.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,983,131	A	11/1999	Weaver et al.	
6,770,022	B2 *	8/2004	Mechlenburg et al.	600/9
7,658,704	B2 *	2/2010	Fox et al.	600/13
8,676,330	B2 *	3/2014	Simon et al.	607/46
8,868,177	B2 *	10/2014	Simon et al.	607/2
2005/0154426	A1 *	7/2005	Boveja et al.	607/45
2005/0261542	A1	11/2005	Riehl	
2006/0074284	A1	4/2006	Juola et al.	
2007/0123952	A1	5/2007	Strother et al.	
2007/0150024	A1	6/2007	Leyde et al.	
2007/0276449	A1	11/2007	Gunter et al.	
2008/0051852	A1 *	2/2008	Dietrich et al.	607/45
2008/0071329	A1	3/2008	Giuntoli et al.	
2008/0306325	A1	12/2008	Burnett et al.	
2009/0157149	A1 *	6/2009	Wahlgren et al.	607/66
2009/0204015	A1 *	8/2009	Phillips et al.	600/544
2009/0281593	A9	11/2009	Errico et al.	
2010/0004716	A1	1/2010	Zimmerling et al.	
2010/0152522	A1 *	6/2010	Roth et al.	600/13
2011/0046432	A1	2/2011	Simon et al.	
2011/0152967	A1 *	6/2011	Simon et al.	607/45
2011/0230701	A1 *	9/2011	Simon et al.	600/9
2013/0303828	A1 *	11/2013	Hargrove	600/13

OTHER PUBLICATIONS

International Search Report and Written Opinion of the International Searching Authority dated Dec. 22, 2011, PCT application PCT/US11/49844, International Filing Date Aug. 30, 2011.

"Patient's Manual. For Vagus Nerve Stimulation with the VNS Therapy™ System. Mar. 2004". Publication REF 26/0005-6000/1. Cyberonics, Inc., Houston, Texas (Table 1 and pp. 16-21).

Abosch et al. Biological basis for the surgical treatment of depression. Neurosurg Focus 25 (1, 2008):E2 (pp. 1-12,DOI: 10.3171/FOC/2008/25/7/E2).

Albert, et al. Deep brain stimulation, vagal nerve stimulation and transcranial stimulation: An overview of stimulation parameters and neurotransmitter release. Neuroscience and Biobehavioral Reviews 33 (2009) 1042-1060.

Al-Mutawaly, et al. The Effects of Pulse Configuration on Magnetic Stimulation. Journal of Clinical Neurophysiology 20(5):361-370, 2003.

Anderson, et al. Decreasing Procedural Pain Over Time of Left Prefrontal rTMS forDepression: Initial Results from the Open-Label Phase of a Multisite Trial (OPT-TMS). Brain Stimul. Apr. 1, 2009; 2(2): 88-92.

Anonymous. Vagus Nerve Stimulation for Treatment-Resistant Depression. TEC Assessment Program 21 (7, 2006).

Arul-Anandam et al. Induction of Hypomanic Episode With Transcranial Direct Current Stimulation. Journal of ECT 26(1,2010): 68-69.

Aziz et al. Magnetic Stimulation of Efferent Neural Pathways to the Human Oesophagus. Gut 33: S53-S70 (Poster Session F218) (1992).

Aziz, Q. et al. Esophageal myoelectric responses to magnetic stimulation of the human cortex and the extracranial vagus nerve. Am. J. Physiol. 267 (Gastrointest. Liver Physiol. 30): G827-G835, 1994.

Basham, et al. Magnetic Stimulation of Neural Tissue: Techniques and System Design. pp. 293-352, In: Implantable Neural Prostheses

Berridge et al. Affective neuroscience of pleasure: reward in humans and animals. Psychopharmacology (2008) 199:457-480.

Blood et al. Intensely pleasurable responses to music correlate with activity in brain regions implicated in reward and emotion. PNAS 98 (20,2001): 11818-11823.

Bodkin et al. Buprenorphine treatment of refractory depression. Journal of Clinical Psychopharmacology 15(1, 1995): 49-57.

Boecker, et al.The Runner's High: Opioidergic Mechanisms in the Human Brain. Cerebral Cortex 18(2008): 2523-2531.

Borckardt, et al. Reducing Pain and Unpleasantness During Repetitive Transcranial Magnetic Stimulation. Journal of ECT 2006; 22:259-264.

Bejjani et al. Transient acute depression induced by high-frequency deep-brain stimulation. The New England Journal of Medicine 340(19, 1999) 1476-1480.

Bowtell et al. Analytic Calculations of the E-Fields Induced by Time-Varying Magnetic Fields Generated by Cylindrical Gradient Coils. Magnetic Resonance in Medicine 44:782-790 (2000).

Burgdorf et al. The neurobiology of positive emotions. Neuroscience and Biobehavioral Reviews 30 (2006): 173-187.

Carbunaru et al. Toroidal coil models for transcutaneous magnetic stimulation of nerves. IEEE Transactions on Biomedical Engineering. 48 (No. 4, Apr. 2001): 434-441.

Castle et al. Autonomic brainstem nuclei are linked to the hippocampus. Neuroscience 134 (2005) 657-669.

Chae et al. A review of functional neuroimaging studies of vagus nerve stimulation (VNS). Journal of Psychiatric Research 37 (2003) 443-455.

Clarke et al. Early carbon monoxide intoxication: happy to be poisoned? Emerg Med J 2005 ;22:754-755.

Coenen et al. Medial forebrain bundle stimulation as a pathophysiological mechanism for hypomania in subthalamic nucleus deep brain stimulation for Parkinson's disease. Neurosurgery. Jun. 2009;64(6):1106-14.

Dalgleish. The emotional brain. Nat Rev Neurosci. 5(7,2004):583-589.

Davey. Magnetic Stimulation Coil and Circuit Design. IEEE Transactions on Biomedical Engineering, vol. 47 (No. 11, Nov. 2000): 1493-1499.

Ekman et al. The Duchenne smile: Emotional expression and brain physiology II. Journal of Personality and Social Psychology. 1990;58:342-353.

Delitto et al. A Study of Discomfort with Electrical Stimulation. Phys. Ther. 1992; 72:410-424.

Drevets et al. Amphetamine-induced dopamine release in human ventralstriatum correlates with euphoria. Biol Psychiatry 49(2,2001):81-96.

Endicott. PMDD criteria. Diagnostic and Statistical Manual of Mental Disorders, American Psychiatric Association, 2000.

Engineer et al. Reversing pathological neural activity using targeted plasticity. Nature (2011): published online doi:10.1038/nature09656.].

Angstj. The emerging epidemiology of hypomania and bipolar II disorder. Journal of Affective Disorders 50 (1998) 143-151.

Esselle et al. Neural stimulation with magnetic fields: Analysis of induced electric fields, IEEE T11111rans. Biomed. Eng., 39 (Jul. 1992), pp. 693-700.

Faierstein et al. Coil Designs for Localized and Efficient Magnetic Stimulation of the Nervous System. Ph.D. Dissertation, Department of Biomedical Engineering, Case Western Reserve, May 1999. (UMI Microform No. 9940153, UMI Company, Ann Arbor MI).

Faierstein. Coil Designs for Localized and Efficient Magnetic Stimulation of the Nervous System. Ph.D. Dissertation, Department of Biomedical Engineering, Case Western Reserve, May 1999, p. 117 (UMI Microform No. 9940153, UMI Company, Ann Arbor MI).

Feynman et al. The Feynman Lectures on Physics. Volume II. Addison-Wesley Publ. Co. (Reading MA, 1964), p. 15-15.

Fibiger et al. Reward, motivation, cognition: psychobiology of esotelencephalic dopamine systems. In: Mountcastle VB, Bloom FE, Geyer SR, eds. Handbook of physiology: the nervous system IV. Bethesda, MD: American Physiological Society, 1986:647-675.

(56) **References Cited**

OTHER PUBLICATIONS

Fishman et al. Construct Validity and Frequency of Euphoria Sclerotica in Multiple Sclerosis. The Journal of Neuropsychiatry and Clinical Neurosciences 16 (2004): 350-356.
Follesa P et al. Vagus nerve stimulation increases norepinephrine concentration and the gene expression of BDNF and bFGF in the rat brain. Brain Research 1179(2007): 28-34.
Fried et al. Electric current stimulates laughter. Nature 391(1998): 650.
Froehlich. Opioid peptides. Alcohol health and research world. 132-136, (1997).
Fuchs. The Production of Pleasure by Stimulation of the Brain: An Alleged Conflict Between Science and Philosophy. Philosophy and Phenomenological Research, 36 (4, 1976): 494-505.
George et al. Mechanisms of action of vagus nerve stimulation (VNS). Clinical Neuroscience Research 4 (2004) 71-79.
George et al. Noninvasive techniques for probing neurocircuitry and treating illness: vagus nerve stimulation (VNS), transcranial magnetic stimulation (TMS) and transcranial direct current stimulation (tDCS). Neuropsychopharmacology Reviews (2010) 35, 301-316.
Grant et al. Multicenter Investigation of the Opioid Antagonist Nalmefene in the Treatment of Pathological Gambling. Am J Psychiatry 163(2006):303-312.
Green et al. Conducting polymer-hydrogels for medical electrode applications. Sci. Technol. Adv. Mater. 11 (2010) 014107 (13pp).
Griffin. Perispinal etanercept: Potential as an Alzheimer therapeutic. Journal of Neuroinflammation 2008, 5:3.
Groves et al. Vagal nerve stimulation: a review of its applications and potential mechanisms that mediate its clinical effects. Neurosci Biobehav Rev (2005) 29:493-500.
Haertzen et al. Addiction Research Center Inventory (ARCI): Measurement of euphoria and other drug effects. In M.A. Bozarth (Ed.), Methods of assessing the reinforcing properties of abused drugs (pp. 489-524). New York: Springer-Verlag, (1987).
Hakkinen et al. Which structures are sensitive to painful transcranial stimulation? Electromyogr. clin. Neurophysiol. 1995, 35:377-383.
Hamdy et al. Long-term reorganization of human motor cortex driven by short-term sensory stimulation. Nature Neuroscience 1 (issue 1, May 1998):64-68.
Hamilton. A Rating Scale for Depression. Journal of Neurology, Neurosurgery, and Psychiatry. 23(1960):56-62.
Heimburg et al. On soliton propagation in biomembranes and nerves. PNAS vol. 102 (No. 28, Jul. 12, 2005): 9790-9795.
Hennenlotter et al. The Link between Facial Feedback and Neural Activity within Central Circuitries of Emotion—New Insights from Botulinum Toxin—Induced Denervation of Frown Muscles. Cerebral Cortex 19(2009):537-542.
Henry. Therapeutic mechanisms of vagus nerve stimulation. Neurology 59(6,2002): S3-S14.
Holstege et al. Brain Activation during Human Male Ejaculation. The Journal of Neuroscience 23(27,2003):9185-9193.
Horgan. The forgotten era of brain chips. Scientific American 293(4,2005):66-73.
House, et al. Mood disorders after stroke and their relation to lesion location. A CT scan study. Brain 113(4, 1990):1113-1129.
Hovey et al. The Guide to Magnetic Stimulation, The Magstim Company Ltd, Spring Gardens, Whitland, Carmarthenshire, SA34 0HR, United Kingdom, 2006.
Hsu et al. Analysis of efficiency of magnetic stimulation. IEEE Trans Biomed Eng. Nov. 2003; 50 (11):1276-85.
Jean A. The nucleus tractus solitarius: neuroanatomic, neurochemical and functional aspects. Arch Int Physiol Biochim Biophys 1991;99(5):A3-A52.
Kennedy et al. Dysregulation of Endogenous Opioid Emotion Regulation Circuitry in Major Depression in Women. Arch Gen Psychiatry. 2006;63:1199-1208.
Khedr et al. Aref Electrophysiological study of vocal-fold mobility
Khedr et al. Dysphagia and hemispheric stroke: A transcranial magnetic study. Neurophysiologie Clinique/Clinical Neurophysiology (2008) 38, 235-242).
Kjelsås et al. Antecendent and consequences of binge eating episodes in women with an eating disorder. Eat Weight Disord. 9 (1, 2004):7-15.
Klein et al. A case report of hypomania following vagus nerve stimulation for refractory epilepsy .J Clin Psychiatry. Apr. 2003;64(4):485.
Klemenc-Ketis et al. The effect of carbon dioxide on near-death experiences in out-of-hospital cardiac arrest survivors: a prospective observational study. Critical Care 2010, 14:R56.
Koneru et al. Endogenous Opioids: Their Physiological Role and Receptors. Global Journal of Pharmacology, 3 (3,2009): 149-153.
Koob et al. Neuroscience of Addiction. Neuron, vol. 21 (2008), 467-476.
Koutroumanidis. Euphoric (hedonic) theta hypersynchrony in early childhood. Epileptic Disord 2006; 8 (4): 299-304.
Krack et al. Mirthful Laughter Induced by Subthalamic Nucleus Stimulation. Movement Disorders 16 (5, 2001): 867-875].
Lemerrer et al. Reward Processing by the Opioid System in the Brain. Physiol Rev 89(2009): 1379-1412.
Liboff. Signal shapes in electromagnetic therapies: a primer. pp. 17-37 in: Bioelectromagnetic Medicine (Paul J. Rosch and Marko S. Markov, eds.). New York: Marcel Dekker (2004).
Liu et al. On the Induced Electric Field Gradients in the Human Body for Magnetic Stimulation by Gradient Coils in MRI, IEEE Transactions on Biomedical Engineering 50: (No. 7, Jul. 2003) pp. 804-815.
Ma. Neurobiology of Acupuncture: Toward CAM. eCAM 2004;1(1)41-47.
Man et al. Magnetic stimulation for the measurement of respiratory and skeletal muscle function. Eur Respir J 2004; 24: 846-860.
Manji et al. Enhancing Neuronal Plasticity and Cellular Resilience to Develop Novel, Improved Therapeutics for Difficult-to-Treat Depression. Biol Psychiatry 53 (2003):707-742.
Masand et al. Use of stimulants in the medically ill. Psychiatric Clinics of North America 19(3, 1996): 515-547.
Mason et al. A Double-blind, Placebo-Controlled Study of Oral Nalmefene for Alcohol Dependence. Arch Gen Psychiatry 56(1999):719-724.
McAuliffe et al. A Test of Lindesmith's Theory of Addiction: The Frequency of Euphoria Among Long-Term Addicts. The American Journal of Sociology 79 (4,1974): 795-840. See pp. 800-803.
Mega et al. The limbic system: an anatomic, phylogenetic, and clinical perspective. Journal of Neuropsychiatry and Clinical Neurosciences 9 (1997):315-330.
Melville. Bolus Dose of Ketamine Offers Fast-Acting Alleviation of Acute Depression in ED Setting. Medscape Medical News (2010): Article 729622.
Moncrieff et al. Active placebos versus antidepressants for depression. Cochrane Database of Systematic Reviews 2004, Issue 1. Art. No. CD003012.
Montgomery et al. A new depression scale designed to be sensitive to change. Br J Psychiatry 134(1979):382-389.
Nemeroff et al. VNS Therapy in Treatment-Resistant Depression: Clinical Evidence and Putative Neurobiological Mechanisms. Neuropsychopharmacology (2006) 31, 1345-1355.
Nestler et al. Neurobiology of Depression. Neuron 34(2002), 13-25.
Nicoll et al. The Brain's Own Marijuana. Sci Am. 291(6,2004):68-75.
Nilsson et al. Determining the site of stimulation during magnetic stimulation of the peripheral nerve, Electroencephalographs and clinical neurophysiology. vol. 85, pp. 253-264, 1992.
Nutt et al. Development of a rational scale to assess the harm of drugs of potential misuse. Lancet 369 (2007): 1047-1053.
Okun et al. What's in a "Smile?" Intra-operative Observations of Contralateral Smiles Induced by Deep Brain Stimulation. Neurocase, 10(4): 271-279, 2004.
Olney et al. A comparison of magnetic and electric stimulation of peripheral nerves. Muscle Nerve 1990:13:957-963.
Pacher et al.The Endocannabinoid System as an Emerging Target of

(56) **References Cited**

OTHER PUBLICATIONS

Pecina et al.Hedonic Hot Spots in the Brain. Neuroscientist 12(6,2006):500-511.
Polak T. et al. Far field potentials from brain stem after transcutaneous vagus nerve stimulation: optimization of stimulation and recording parameters. J Neural Transm. Oct. 2009; 116(10):1237-42.
Price et al. Neurocircuitry of Mood Disorders. Neuropsychopharmacology Reviews 35(2010), 192-216.
Rada et al. Opioids in the hypothalamus control dopamine and acetylcholine levels in the nucleus accumbens. Brain Research 1312(2010) 1-9.
Rafferty et al. Magnetic phrenic nerve stimulation to assess diaphragm function in children following liver transplantation. Pediatr Crit Care Med 2001, 2:122-126.
Rainforth et al. Stress Reduction Programs in Patients with Elevated Blood Pressure: A Systematic Review and Meta-analysis. Curr Hypertens Rep. 9(6,2007):520-528].
Rattay. The basic mechanism for the electrical stimulation of the nervous system. Neuroscience vol. 89, No. 2, pp. 335-346, 1999.
Ressler et al. Role of serotonergic and noradrenergic systems in the pathophysiology of depression and anxiety disorders. Depression and Anxiety 12 (Supplement 1, 2000):2-19.
Richardson. Hypomania: A brief review of conceptual and diagnostic issues. The New Zealand Medical Student Journal No. 10 (2009): 25-28.
Saver et al. The neural substrates of religious experience. The Journal of Neuropsychiatry and Clinical Neurosciences 9 (1997):498-510.
Sawicki et al. Mathematical Modelling of Vagus Nerve Stimulation. pp. 92-97 in: Krawczyk, A. Electromagnetic Field, Health and Environment: Proceedings of EHE'07. Amsterdam, IOS Press, 2008.
Sayette. Does drinking reduce stress? Alcohol Research and Health 23 (4,1999):250-255.
Schachter. Vagus nerve stimulation: mood and cognitive effects. Epilepsy & Behavior 5 (2004) S56-S59.
Schlaepfer et al. Site of Opioid Action in the Human Brain: Mu and Kappa Agonists' Subjective and Cerebral Blood Flow Effects. Am J Psychiatry 155(1998):470-473.
Shafik, A. Functional magnetic stimulation of the vagus nerve enhances colonic transit time in healthy volunteers. Tech Coloproctol (1999) 3:123-12.
Shah et al. Selective Serotonin Reuptake Inhibitors for Premenstrual Syndrome and Premenstrual Dysphoric Disorder: A Meta-Analysis. Obstet Gynecol. 111(5,2008): 1175-1182.
Similowski, T. et al. Cervical magnetic stimulation: a new painless method for bilateral phrenic nerve stimulation in conscious humans. J. Appl. Physiol. 67(4): 1311-1318, 1989.
Sims et al. Assessing the clinical utility of the magnetic stimulator for measuring response latencies in the laryngeal muscles. Otolaryngol Head Neck Surg 1996; 114:761-7.
Skolnick et al. Current perspectives on the development of non-biogenic amine-based antidepressants. Pharmacological Research 43(5,2001):411-422.
Starkstein, Sergio E and Robinson, Robert G. Mechanism of Disinhibition After Brain Lesions. The Journal of Nervous & Mental Disease 185(2,1997): 108-114.
Suihko. Modelling the response of scalp sensory receptors to transcranial electrical stimulation. Med. Biol. Eng. Comput., 2002, 40, 395-401.
Terry. Vagus nerve stimulation: a proven therapy for treatment of epilepsy strives to improve efficacy and expand applications. Conf Proc IEEE Eng Med Biol Soc. 2009;2009:4631-4.
Voruganti et al. Brain imaging research on subjective responses to psychotropic drugs. Acta Psychiatr Scand 2005: 111 (Suppl. 427): 22-28].
Walsh et al. VNS and depression: current status and future directions. Expert Rev. Medical Devices 1(1,2004):155-160.
Wang et al. A three-dimensional finite element method for computing magnetically induced currents in tissues. IEEE Transactions on Magnetics. 30 (Nov. 6, 1994): 5015-5023.
White. Dexamphetamine substitution in the treatment of amphetamine abuse: an initial investigation. Addiction 95(2,2000), 229-238.
Wise. Opiate reward: sites and substrates. Neurosci Biobehav Rev. 13(2-3,1989): 129-33.
Zarate et al. A Randomized Trial of an N-methyl-D-aspartate Antagonist in Treatment-Resistant Major Depression. Arch Gen Psychiatry. 2006;63:856-864.
Zeki. The neurobiology of love. FEBS Letters 581 (2007): 2575-2579.
Zobel et al. Changes in regional cerebral blood flow by therapeutic vagus nerve stimulation in depression: An exploratory approach. Psychiatry Research: Neuroimaging 139 (2005) 165-179.

* cited by examiner

FIG. 1

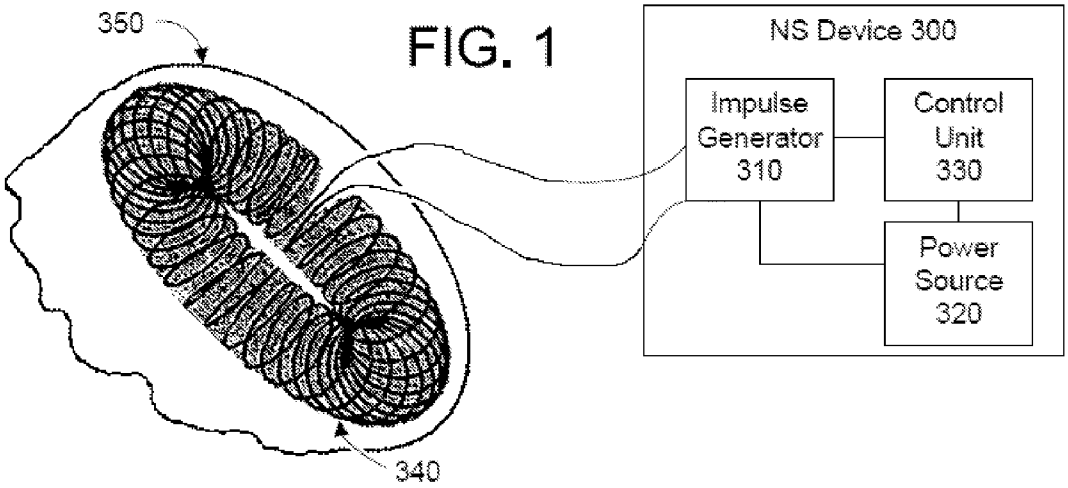
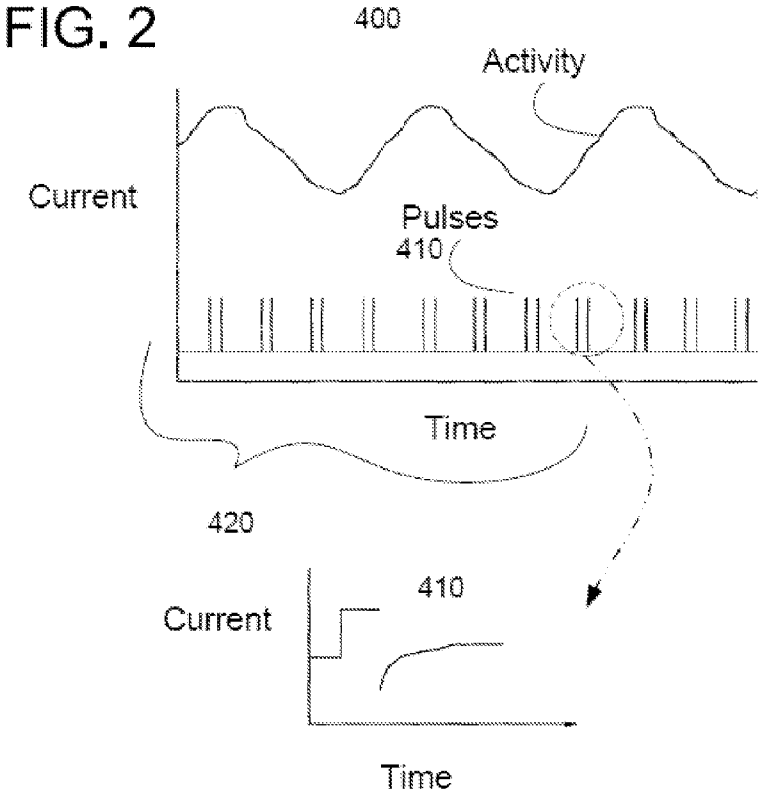


FIG. 2



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