US010786570B2

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

(10) **Patent No.: US 10,786,570 B2**
(45) **Date of Patent: Sep. 29, 2020**

(54) **FERRITIN NANOPARTICLE COMPOSITIONS AND METHODS TO MODULATE CELL ACTIVITY**

(71) Applicant: **The Rockefeller University**, New York, NY (US)

(72) Inventors: **Jeffrey Friedman**, New York, NY (US); **Sarah Stanley**, New York, NY (US)

(73) Assignee: **The Rockefeller University**, New York, NY (US)

(*) 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.: **16/049,102**

(22) Filed: **Jul. 30, 2018**

(65) **Prior Publication Data**

US 2018/0353605 A1 Dec. 13, 2018

Related U.S. Application Data

(60) Division of application No. 15/168,950, filed on May 31, 2016, now Pat. No. 10,064,941, which is a (Continued)

(51) **Int. Cl.**
A61K 41/00 (2020.01)
A61K 9/16 (2006.01)
(Continued)

(52) **U.S. Cl.**
CPC ***A61K 41/0052*** (2013.01); ***A61K 9/16*** (2013.01); ***A61K 9/167*** (2013.01); ***A61K 9/1611*** (2013.01);
(Continued)

(58) **Field of Classification Search**
CPC A61K 41/0052; A61K 41/0028; A61K 47/6929; A61K 38/1767; A61K 38/1709;
(Continued)

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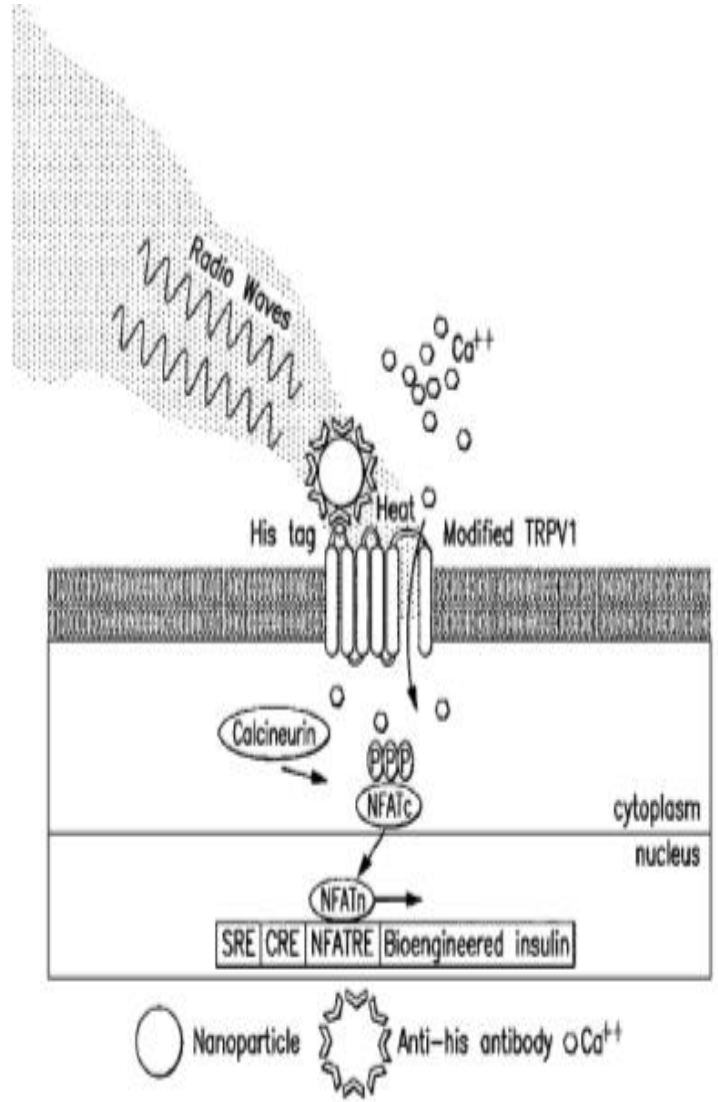
Huang et al (Nature Nanotechnology, Letters, pp. 602-606) (Year: 2010).*
(Continued)

Primary Examiner — Carlos A Azpuru
(74) *Attorney, Agent, or Firm* — Hoffmann & Baron, LLP

(57) **ABSTRACT**

The present invention provides methods and compositions for the remote control of cell function based on the use of radiofrequency waves to excite nanoparticles targeted to specific cell types. The nanoparticles may be applied to the target cell extracellularly and/or expressed intracellularly. The cell type of interest expresses a temperature sensitive channel wherein excitation of the nanoparticles results in a localized temperature increase that is transduced into a cellular response. Such cellular responses may include, for example, increases in gene expression resulting in production of one or more physiologically active proteins. The expression of such proteins can be used to treat a variety of different inherited or acquired diseases or disorders in a subject. Accordingly, the invention provides a generic approach for treatment of any disease associated with a protein deficiency.

14 Claims, 56 Drawing Sheets



US007051636B1

(12) United States Patent

Snow et al.

(10) Patent No.: US 7,051,636 B1
(45) Date of Patent: May 30, 2006

(54) **ELECTROMAGNETIC WEAPON**

(75) Inventors: **Jeffrey M. Snow**, Bloomington, IN (US); **Trevor M. Snow**, Bloomington, IN (US)

(73) Assignee: **The United States of America as represented by the Secretary of the Navy**, Washington, DC (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 121 days.

(21) Appl. No.: **10/945,573**

(22) Filed: **Sep. 21, 2004**

(51) **Int. Cl.**
B64D 1/04 (2006.01)

(52) **U.S. Cl.** **89/1.11**; 86/50; 250/341.1; 250/395

(58) **Field of Classification Search** 89/1.11; 86/50; 250/341.1, 395
See application file for complete search history.

(56) **References Cited**

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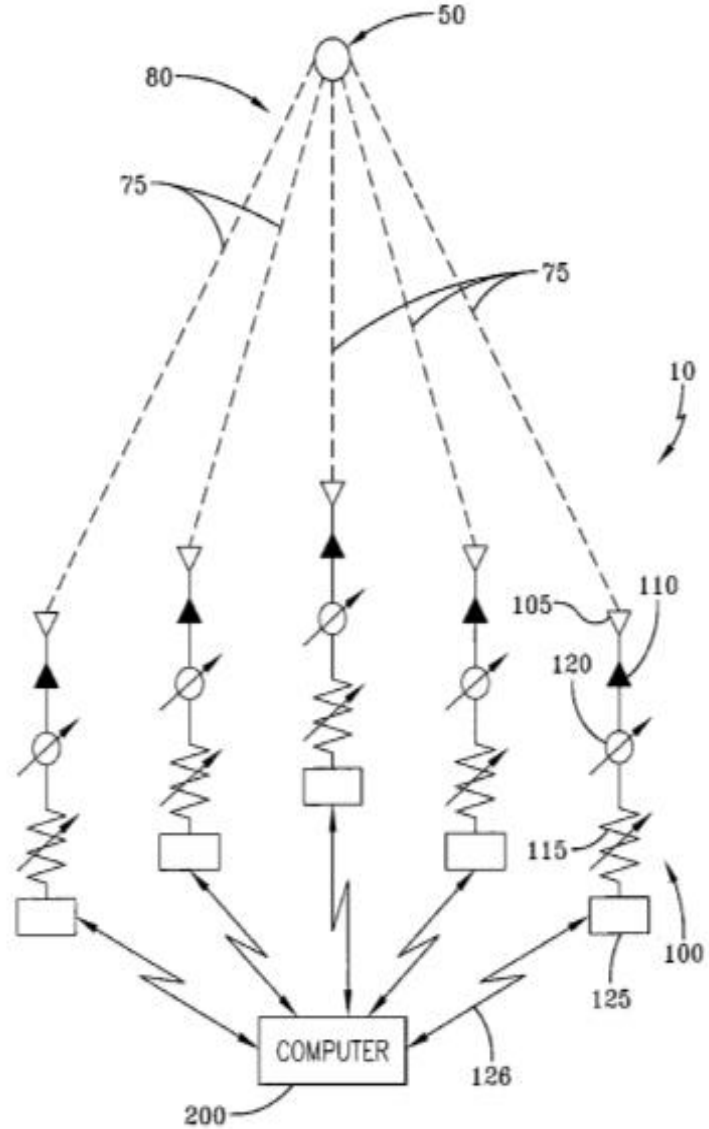
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Primary Examiner—J. Woodrow Eldred
(74) *Attorney, Agent, or Firm*—Mark O. Glut

(57) **ABSTRACT**

An electromagnetic weapon that includes semi-randomly arranged antenna elements and a central weapon computer. The antenna elements are coordinated to function as an active phased array capable of finding and executing a resonate mode of a target. The central weapon computer controls all the antenna elements, and is able to determine the location of all the antenna elements.

15 Claims, 2 Drawing Sheets



US007841989B2

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

(10) **Patent No.: US 7,841,989 B2**
(45) **Date of Patent: Nov. 30, 2010**

(54) **ELECTROMAGNETIC PERSONNEL INTERDICTION CONTROL METHOD AND SYSTEM**

(75) Inventors: **Karl F. Kiefer**, Conroe, TX (US); **Kevin Champaigne**, Conroe, TX (US); **Gulnara Ajupova**, Conroe, TX (US)

(73) Assignee: **Invocon, Inc.**, Conroe, TX (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1323 days.

(21) Appl. No.: **11/243,687**

(22) Filed: **Oct. 4, 2005**

(65) **Prior Publication Data**

US 2007/0249959 A1 Oct. 25, 2007

Related U.S. Application Data

(60) Provisional application No. 60/615,703, filed on Oct. 4, 2004.

(51) **Int. Cl.**

A61B 5/00	(2006.01)
A61B 5/103	(2006.01)
A61B 5/117	(2006.01)
F42B 8/00	(2006.01)
F42B 10/00	(2006.01)
F42B 12/00	(2006.01)
F42B 14/06	(2006.01)
F42B 30/00	(2006.01)
F41C 9/00	(2006.01)
H04B 1/02	(2006.01)

(52) **U.S. Cl.** **600/559**; 600/552; 600/587; 102/502; 42/1.08; 367/139

(58) **Field of Classification Search** 600/300, 600/372, 382, 383, 407, 437, 439, 544, 546, 600/547, 552, 554, 558, 559, 587, 595; 606/1, 606/32, 33, 34, 41, 42; 607/1, 2, 3, 45, 48, 607/53, 54, 55, 56, 154; 342/22; 367/137, 367/139, 199; 361/230, 232; 89/1.11; 42/1.08; 102/501, 502

See application file for complete search history.

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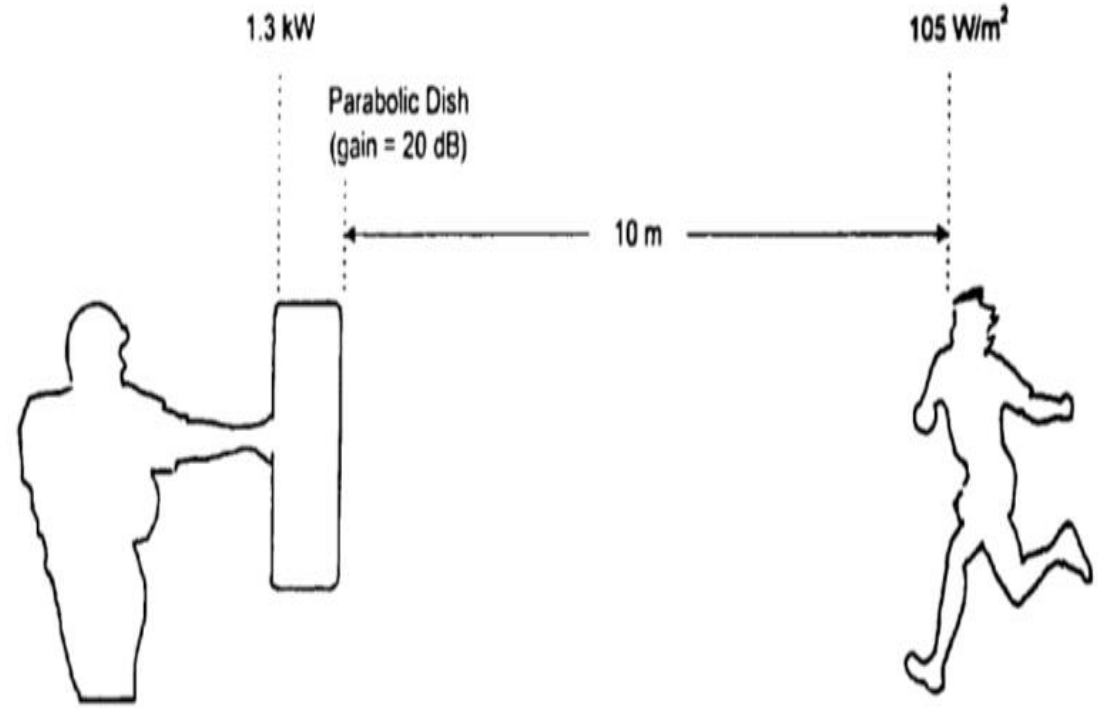
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Primary Examiner—Max Hindenburg
Assistant Examiner—Jeffrey G Hoekstra
(74) *Attorney, Agent, or Firm*—Kenneth A. Roddy

(57) **ABSTRACT**

A non-lethal and non-destructive electromagnetic personnel interdiction control stun type weapon system and method utilizes beamed radio frequency energy in a frequency range and modulated to impose a Lorentz force on the vestibular system or sensory cells of a remote human subject sufficient to disrupt the mechanical transduction process and/or the chemical engine by which sound, position and other sensory input are converted to messages by nerve cells and processed by the brain to produce complete disorientation, confusion, and incapacitation sufficient to temporarily render the subject powerless to resist arrest or subjugation. Removal of the electromagnetic energy leaves the nerve cells and surrounding tissues with no damage and second order effects of severe motion sickness and psychological effects of helplessness remains until the subject's body chemistry returns to normal.

6 Claims, 6 Drawing Sheets



US005455590A

United States Patent [19]

Collins et al.

[11] **Patent Number: 5,455,590**

[45] **Date of Patent: Oct. 3, 1995**

[54] **REAL-TIME HOLOGRAPHIC SURVEILLANCE SYSTEM**

[75] Inventors: **H. Dale Collins**; **Douglas L. McMakin**, both of Richland; **Thomas E. Hall**, Kennewick; **R. Parks Gribble**, Richland, all of Wash.

[73] Assignee: **Battelle Memorial Institute**, Richland, Wash.

[21] Appl. No.: **212,432**

[22] Filed: **Mar. 14, 1994**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 963,204, Nov. 23, 1992, abandoned, which is a continuation-in-part of Ser. No. 752,750, Aug. 30, 1991, abandoned.

[51] **Int. Cl.**[6] **G01S 13/89**; G03H 5/00

[52] **U.S. Cl.** **342/179**; 367/8

[58] **Field of Search** 342/179; 367/8

[56] **References Cited**

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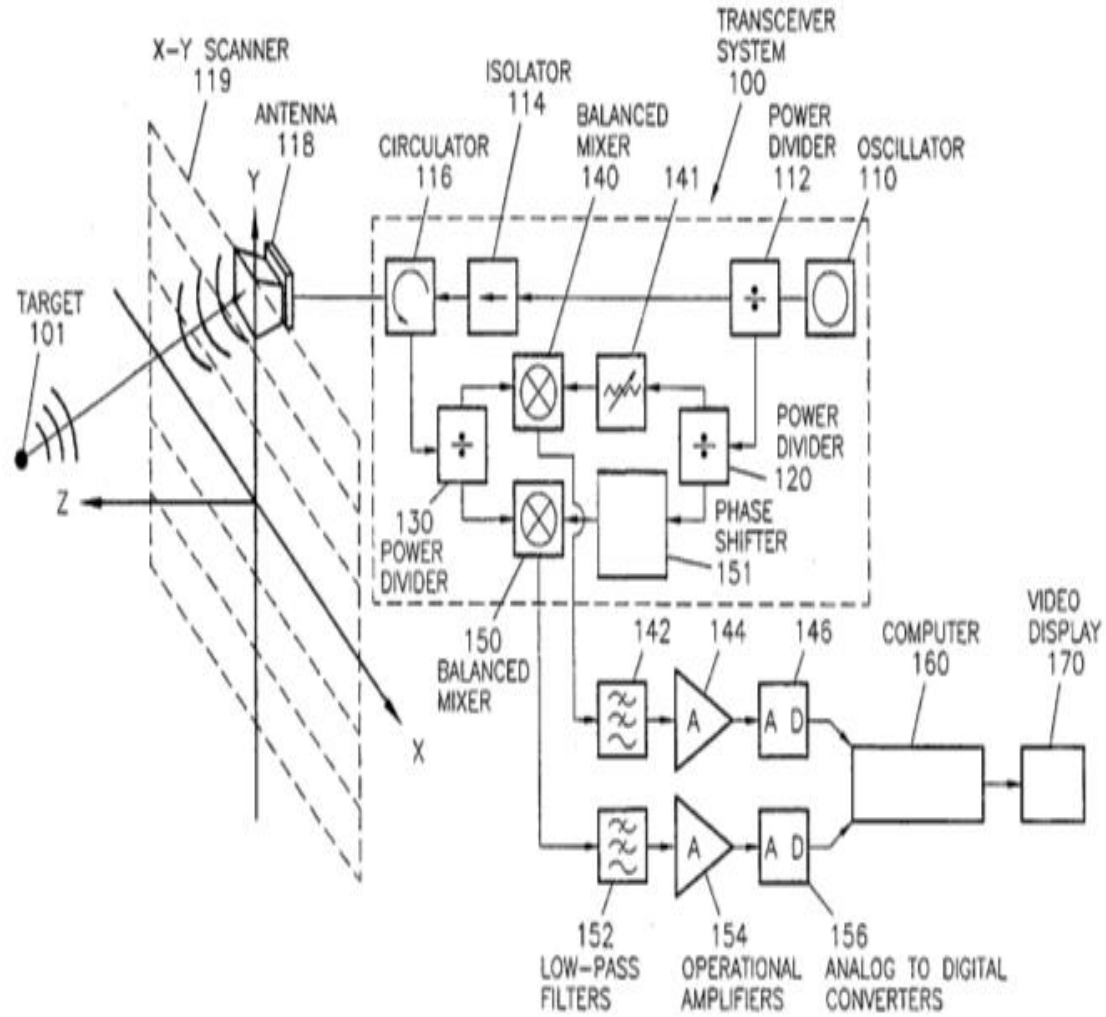
Primary Examiner—Ian J. Lobo
Attorney, Agent, or Firm—Paul W. Zimmerman

[57] **ABSTRACT**

A holographic surveillance system including means for generating electromagnetic waves; means for transmitting the electromagnetic waves toward a target at a plurality of predetermined positions in space; means for receiving and converting electromagnetic waves reflected from the target to electrical signals at a plurality of predetermined positions in space; means for processing the electrical signals to obtain signals corresponding to a holographic reconstruction of the target; and means for displaying the processed information to determine nature of the target.

The means for processing the electrical signals includes means for converting analog signals to digital signals followed by a computer means to apply a backward wave algorithm.

18 Claims, 10 Drawing Sheets



United States Patent [19]

Sullivan

[11] **4,345,220**

[45] **Aug. 17, 1982**

[54] **HIGH POWER MICROWAVE GENERATOR USING RELATIVISTIC ELECTRON BEAM IN WAVEGUIDE DRIFT TUBE**

[75] Inventor: **Donald J. Sullivan,** Albuquerque, N. Mex.

[73] Assignee: **The United States of America as represented by the Secretary of the Air Force,** Washington, D.C.

[21] Appl. No.: **120,809**

[22] Filed: **Feb. 12, 1980**

[51] **Int. Cl.**[3] **H03B 9/01**

[52] **U.S. Cl.** **331/79;** 331/90; 315/39

[58] **Field of Search** 331/79, 86, 90, 82; 315/39, 39.51, 39.53, 39.55, 39.61, 3.5, 5, 5.33, 5.53, 5.54

[56] **References Cited**

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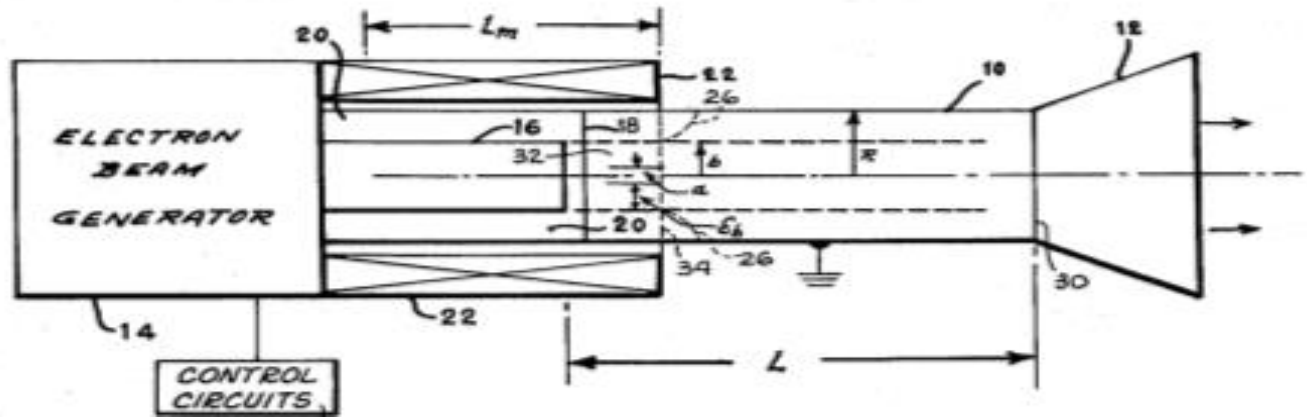
Primary Examiner—Siegfried H. Grimm

Attorney, Agent, or Firm—Donald J. Singer; William Stephanishen

[57] **ABSTRACT**

Coherent microwave radiation is generated in and transmitted through a waveguide/drift tube by means of an injected relativistic electron beam the parameters of which, in combination with the waveguide/drift tube geometry and dimensions effect a virtual cathode oscillation condition within the waveguide/drift tube. Tuning of the device is accomplished by manipulation of the relativistic electron beam parameters and/or waveguide/drift tube physical dimensions.

1 Claim, 1 Drawing Figure



US008194822B2

(12) United States Patent

Rothschild et al.

(10) Patent No.: US 8,194,822 B2
(45) Date of Patent: Jun. 5, 2012

(54) **X-RAY INSPECTION BASED ON SCATTER DETECTION**

(75) Inventors: **Peter Rothschild**, Newton, MA (US); **Jeffrey Schubert**, Somerville, MA (US); **Richard Schueller**, Chelmsford, MA (US)

(73) Assignee: **American Science and Engineering, Inc.**, Billerica, MA (US)

(*) 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.: **12/891,997**

(22) Filed: **Sep. 28, 2010**

(65) **Prior Publication Data**

US 2011/0075808 A1 Mar. 31, 2011

Related U.S. Application Data

(60) Division of application No. 12/368,736, filed on Feb. 10, 2009, now abandoned, which is a continuation-in-part of application No. 11/608,957, filed on Dec. 11, 2006, now Pat. No. 7,505,556, which is a continuation-in-part of application No. 11/238,719, filed on Sep. 29, 2005, now Pat. No. 7,218,704, which is a continuation of application No. 10/442,687, filed on May 21, 2003, now Pat. No. 7,099,434, which is a continuation-in-part of application No. 10/330,000, filed on Dec. 26, 2002, now abandoned, said application No. 12/368,736 is a continuation-in-part of application No. 11/551,991, filed on Oct. 23, 2006, now Pat. No. 7,551,715.

(60) Provisional application No. 60/424,357, filed on Nov. 6, 2002, provisional application No. 60/729,528, filed on Oct. 24, 2005, provisional application No. 60/729,548, filed on Oct. 24, 2005, provisional application No. 60/748,909, filed on Dec. 9, 2005.

(51) **Int. Cl.**
G01N 23/203 (2006.01)

(52) **U.S. Cl.** **378/88**; 378/86

(58) **Field of Classification Search** 378/57, 378/86, 88

See application file for complete search history.

(56) **References Cited**

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Primary Examiner — Glen Kao

(74) *Attorney, Agent, or Firm* — Sunstein Kann Murphy & Timbers LLP

(57) **ABSTRACT**

Systems and methods for inspecting an object with a scanned beam of penetrating radiation. Scattered radiation from the beam is detected, in either a backward or forward direction. Characteristic values of the scattered radiation are compared to expected reference values to characterize the object. Additionally, penetrating radiation transmitted through the inspected object may be combined with scatter information. In certain embodiments, the inspected field of view is less than 0.1 steradians, and the detector is separate from the source of penetrating radiation and is disposed, with respect to the object, such as to subtend greater than 0.5 steradians in the field of view of the object.

10 Claims, 22 Drawing Sheets

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
26 March 2020 (26.03.2020)

WIPO | PCT

(10) International Publication Number
WO 2020/060606 A1

(51) International Patent Classification:
G06Q 20/06 (2012.01) *G06Q 30/02* (2012.01)
G06Q 20/32 (2012.01) *G06N3/08* (2006.01)
H04L 9/32 (2006.01)

(21) International Application Number:
PCT/US20 19/038084

(22) International Filing Date:
20 June 2019 (20.06.2019)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
16/138,5 18 21 September 2018 (21.09.2018) US

(71) Applicant: MICROSOFT TECHNOLOGY LICENSING, LLC [US/US]; One Microsoft Way, Redmond, Washington 98052-6399 (US).

(72) Inventors: ABRAMSON, Dustin; Microsoft Technology Licensing, LLC, One Microsoft Way, Redmond, Washington 98052-6399 (US). FU, Derrick; Microsoft Technology Licensing, LLC, One Microsoft Way, Redmond, Washington 98052-6399 (US). JOHNSON, Joseph Edwin, JR.; Microsoft Technology Licensing, LLC, One Microsoft Way, Redmond, Washington 98052-6399 (US).

(74) Agent: MINHAS, Sandip S. et al.; Microsoft Technology Licensing, LLC, One Microsoft Way, Redmond, Washington 98052-6399 (US).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA,

(54) Title: CRYPTOCURRENCY SYSTEM USING BODY ACTIVITY DATA

US005123899A

United States Patent [19]

Gall

[11] Patent Number: 5,123,899

[45] Date of Patent: Jun. 23, 1992

[54] METHOD AND SYSTEM FOR ALTERING CONSCIOUSNESS

[76] Inventor: James Gall, 16621 E. Jacklin Dr., Fountain Hills, Ariz. 85268

[21] Appl. No.: 642,439

[22] Filed: Jan. 17, 1991

[51] Int. Cl.[5] A61M 21/00

[52] U.S. Cl. 600/28; 128/905

[58] Field of Search 600/26-28; 128/731-732, 905

[56] References Cited

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4,834,701	5/1989	Masaki	600/28

Primary Examiner—William E. Kamm

Assistant Examiner—J. P. Lacyk

Attorney, Agent, or Firm—Cahill, Sutton & Thomas

[57] ABSTRACT

A system for altering the states of human consciousness involves the simultaneous application of multiple stimuli, preferable sounds, having differing frequencies and wave forms. The relationship between the frequencies of the several stimuli is exhibited by the equation

$$g = s^{n/4} \cdot f$$

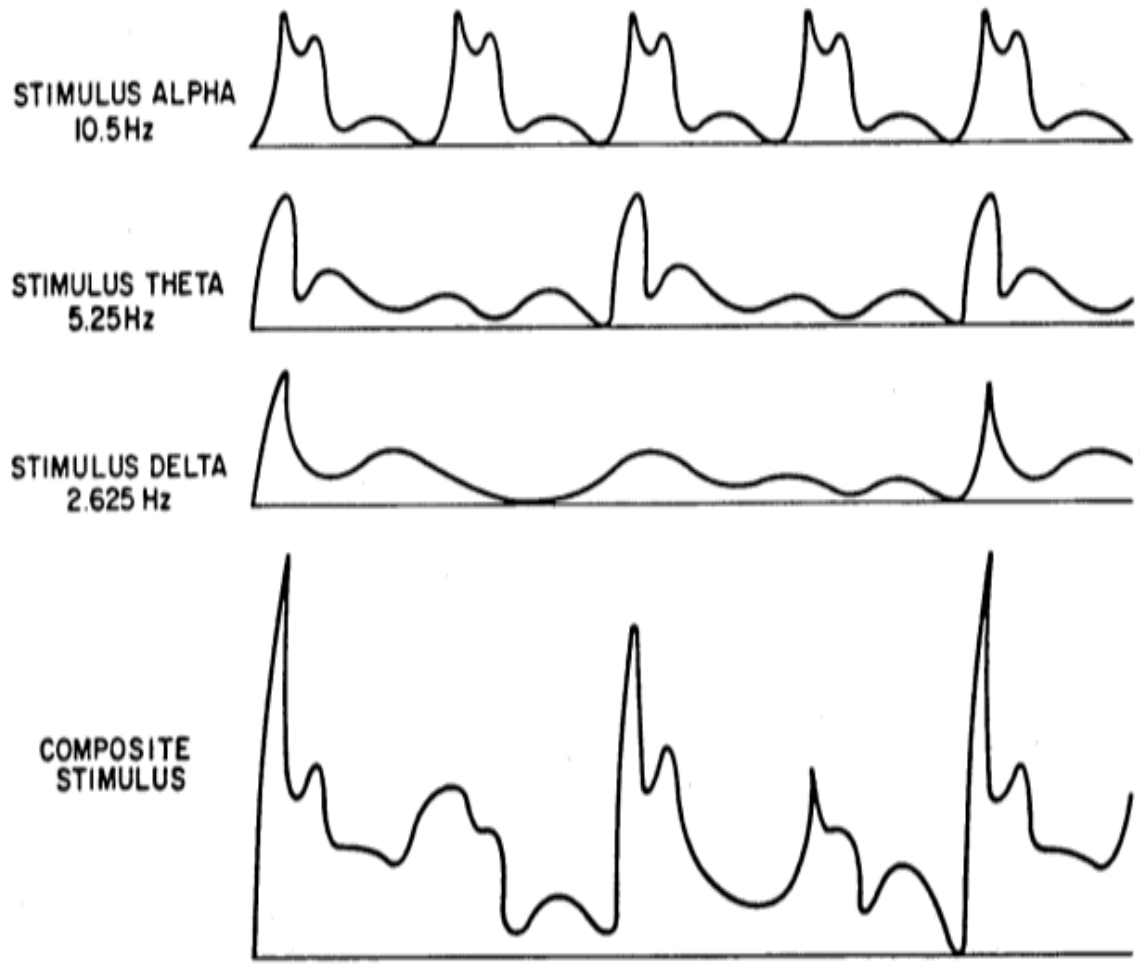
where:

f = frequency of one stimulus;

g = frequency of the other stimuli of stimulus; and

n = a positive or negative integer which is different for each other stimulus.

4 Claims, 1 Drawing Sheet



US005135468A

United States Patent [19]

Meissner

[11] Patent Number: 5,135,468

[45] Date of Patent: Aug. 4, 1992

[54] METHOD AND APPARATUS OF VARYING THE BRAIN STATE OF A PERSON BY MEANS OF AN AUDIO SIGNAL

[76] Inventor: **Juergen P. Meissner**, 551 Route 10, Randolph, N.J. 07869

[21] Appl. No.: **561,776**

[22] Filed: **Aug. 2, 1990**

[51] **Int. Cl.**[5] **A61M 21/00**
[52] **U.S. Cl.** **600/28**
[58] **Field of Search** 600/26-28; 128/731-732

[56] **References Cited**

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Primary Examiner—Lee S. Cohen
Assistant Examiner—John P. Lacyk
Attorney, Agent, or Firm—Richard M. Goldberg

[57] **ABSTRACT**

A method of varying the brain state of a person includes the steps of supplying the first audio signal to one ear of the person, supplying a second audio signal to the other ear of the person, and substantially continuously varying the frequency of at least one of the first and second audio signals to vary the brain state of the person.

57 Claims, 9 Drawing Sheets

US005213562A

United States Patent [19]

Monroe

[11] Patent Number: 5,213,562

[45] Date of Patent: May 25, 1993

[54] METHOD OF INDUCING MENTAL, EMOTIONAL AND PHYSICAL STATES OF CONSCIOUSNESS, INCLUDING SPECIFIC MENTAL ACTIVITY, IN HUMAN BEINGS

[75] Inventor: **Robert A. Monroe**, Nelson County, Va.

[73] Assignee: **Interstate Industries Inc.**, Faber, Va.

[21] Appl. No.: **514,460**

[22] Filed: **Apr. 25, 1990**

[51] **Int. Cl.**[5] **A61M 21/00**
[52] **U.S. Cl.** **600/28**; 128/732
[58] **Field of Search** 600/26-28; 128/731-732, 905

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5,036,858	8/1991	Carter et al.	128/732

Primary Examiner—Lee S. Cohen
Assistant Examiner—John P. Lacyk
Attorney, Agent, or Firm—Sughrue, Mion, Zinn, Macpeak & Seas

[57] **ABSTRACT**

A method having applicability in replication of desired consciousness states; in the training of an individual to replicate such a state of consciousness without further audio stimulation; and in the transferring of such states from one human being to another through the imposition of one individual's EEG, superimposed on desired stereo signals, on another individual, by inducement of a binaural beat phenomenon.

6 Claims, 5 Drawing Sheets

US005289438A

United States Patent [19]

Gall

[11] Patent Number: 5,289,438

[45] Date of Patent: Feb. 22, 1994

[54] METHOD AND SYSTEM FOR ALTERING CONSCIOUSNESS

[76] Inventor: James Gall, 16621 E. Jacklin Dr., Fountain Hills, Ariz. 85268

[21] Appl. No.: 867,326

[22] Filed: Apr. 13, 1992

Related U.S. Application Data

[62] Division of Ser. No. 642,439, Jan. 17, 1991, Pat. No. 5,123,899.

[51] Int. Cl.[5] G10F 1/00

[52] U.S. Cl. 369/4; 600/28; 128/905

[58] Field of Search 369/4, 127, 15; 360/5, 360/1; 600/28, 26; 128/905

[56] References Cited

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Primary Examiner—Robert J. Pascal
Assistant Examiner—Tan Dinh
Attorney, Agent, or Firm—Cahill, Sutton & Thomas

[57] ABSTRACT

A system for altering the states of human consciousness involves the simultaneous application of multiple stimuli, preferable sounds, having differing frequencies and wave forms. The relationship between the frequencies of the several stimuli is exhibited by the equation

$$g=2^{n/4}f$$

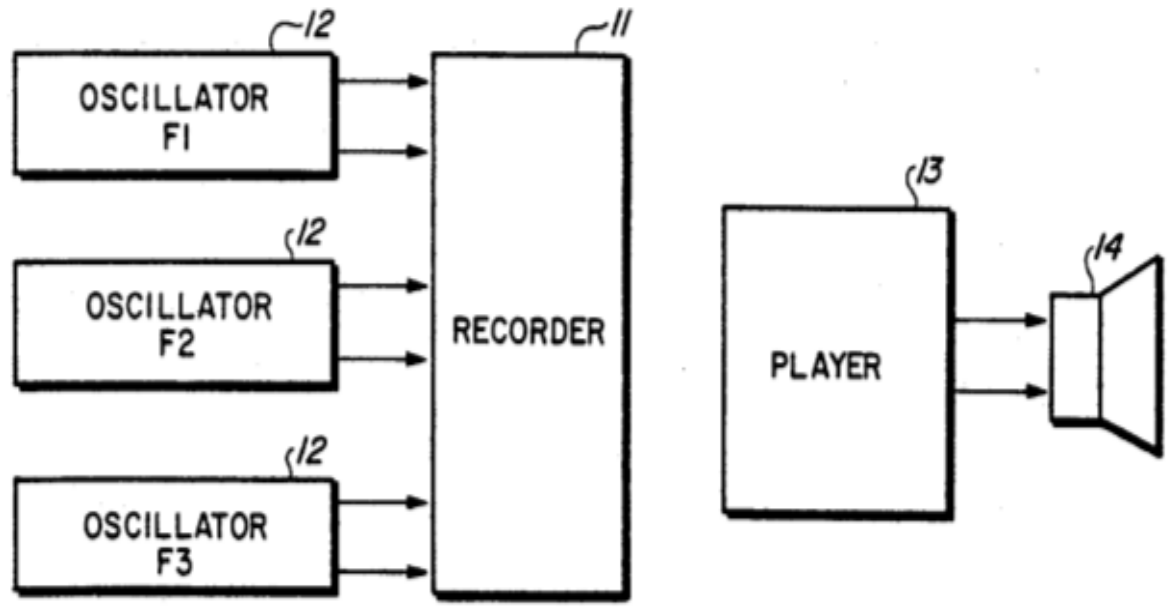
where:

f=frequency of one stimulus;

g=frequency of the other stimuli or stimulus; and

n=a positive or negative integer which is different for each other stimulus.

2 Claims, 1 Drawing Sheet



US005782874A

United States Patent [19]

Loos

[11] Patent Number: 5,782,874

[45] Date of Patent: Jul. 21, 1998

[54] **METHOD AND APPARATUS FOR MANIPULATING NERVOUS SYSTEMS**

[76] Inventor: **Hendricus G. Loos**, 3019 Cresta Way, Laguna Beach, Calif. 92651

[21] Appl. No.: **788,582**

[22] Filed: **Jan. 24, 1997**

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 447,394, May 23, 1995, abandoned, which is a continuation of Ser. No. 68,748, May 28, 1993, abandoned.

[51] **Int. Cl.**[6] **A61N 1/40**

[52] **U.S. Cl.** **607/2**

[58] **Field of Search** 607/1, 2, 39, 45, 607/46, 62, 75, 115, 152; 600/26; 602/2; 128/897, 908

[56] **References Cited**

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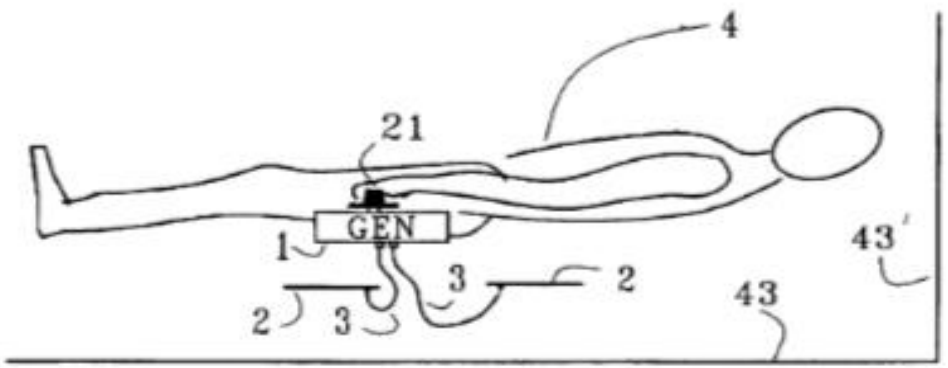
1,973,911 9/1934 Ruben 607/152

Primary Examiner—William E. Kamm

[57] **ABSTRACT**

Apparatus and method for manipulating the nervous system of a subject through afferent nerves, modulated by externally applied weak fluctuating electric fields, tuned to certain frequencies such as to excite a resonance in certain neural circuits. Depending on the frequency chosen, excitation of such resonances causes relaxation, sleepiness, sexual excitement, or the slowing of certain cortical processes. The weak electric field for causing the excitation is applied to skin areas away from the head of the subject, such as to avoid substantial polarization current densities in the brain. By exploiting the resonance phenomenon, these physiological effects can be brought about by very weak electric fields produced by compact battery-operated devices with very low current assumption. The fringe field of doublet electrodes that form a parallel-plate condenser can serve as the required external electric field to be administered to the subject's skin. Several such doublets can be combined such as to induce an electric field with short range, suitable for localized field administration. A passive doublet placed such as to face the doublet on either side causes a boost of the distant induced electric field, and allows the design of very compact devices. The method and apparatus can be used by the general public as an aid to relaxation, sleep, or arousal, and clinically for the control and perhaps the treatment of tremors and seizures, and disorders of the autonomic nervous system, such as panic attacks.

9 Claims, 5 Drawing Sheets



US 20130194092A1

(19) **United States**

(12) **Patent Application Publication**

Moriarty et al.

(10) **Pub. No.: US 2013/0194092 A1**

(43) **Pub. Date: Aug. 1, 2013**

(54) **UNLOCKING A BODY AREA NETWORK**

(75) Inventors: **Anthony Moriarty**, Sydney (AU); **Jessica M. Flanagan**, Ashfield (AU); **Cameron A. McDonald**, Queenscliff (AU)

(73) Assignee: **QUALCOMM Incorporated**, San Diego, CA (US)

(21) Appl. No.: **13/360,469**

(22) Filed: **Jan. 27, 2012**

Publication Classification

(51) **Int. Cl.**

G08B 1/08 (2006.01)

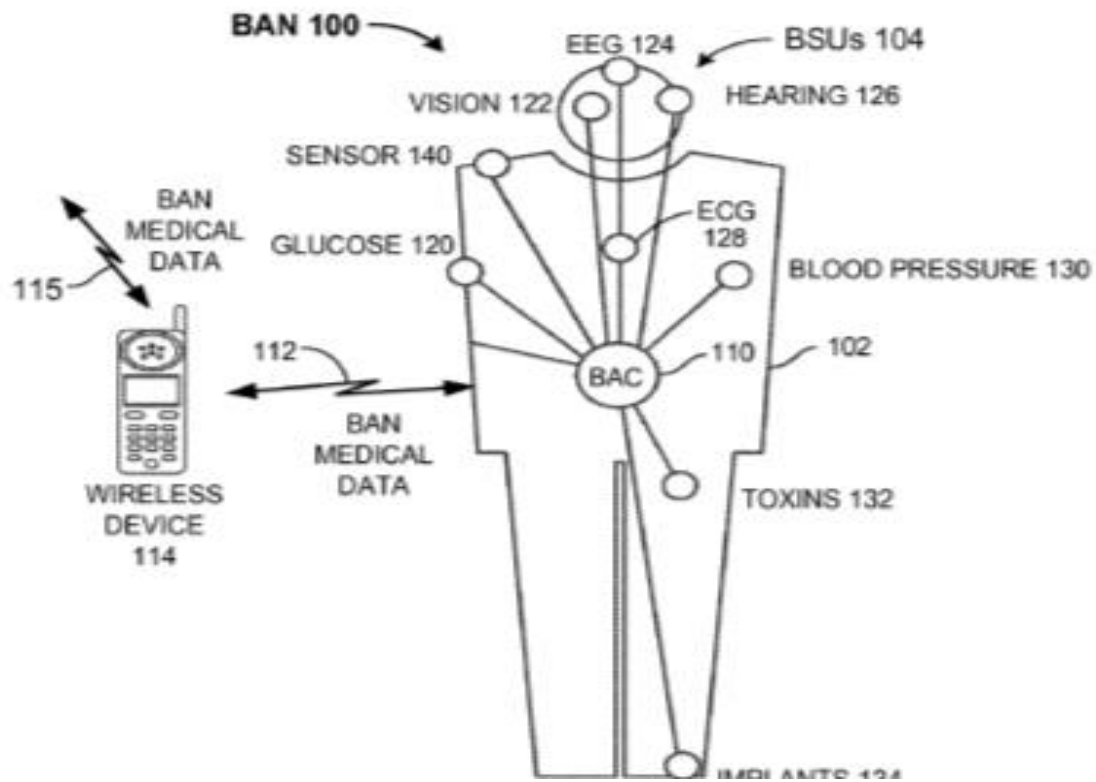
H04W 4/22 (2009.01)

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

USPC **340/539.12**

(57) **ABSTRACT**

Disclosed is an apparatus, system, and method to unlock a body area network (BAN) of a patient and to transmit medical data about the patient. The BAN, under the control of a body area controller (BAC), may be unlocked based upon a predefined patient action performed by the patient and the BAN may then be connected to a wireless device. The BAN medical data of the patient may then be transmitted by the wireless device.



US006017302A

United States Patent [19]

Loos

[11] Patent Number: 6,017,302

[45] Date of Patent: Jan. 25, 2000

[54] **SUBLIMINAL ACOUSTIC MANIPULATION OF NERVOUS SYSTEMS**

[76] Inventor: **Hendricus G. Loos**, 3019 Cresta Wy., Laguna Beach, Calif. 92651

[21] Appl. No.: **08/961,907**

[22] Filed: **Oct. 31, 1997**

[51] **Int. Cl.**[7] **A61B 5/00**

[52] **U.S. Cl.** **600/28**

[58] **Field of Search** 600/26–28; 128/897, 128/898

[56] **References Cited**

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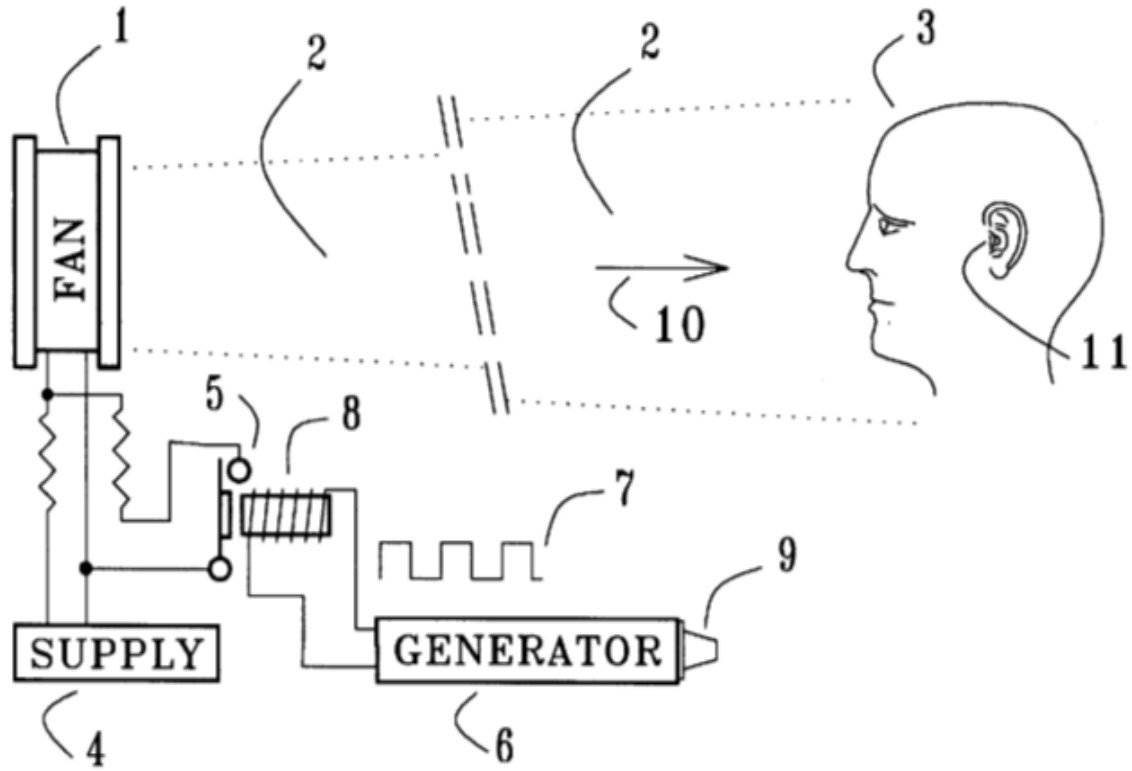
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Primary Examiner—Samuel Gilbert

[57] **ABSTRACT**

In human subjects, sensory resonances can be excited by subliminal atmospheric acoustic pulses that are tuned to the resonance frequency. The ½ Hz sensory resonance affects the autonomic nervous system and may cause relaxation, drowsiness, or sexual excitement, depending on the precise acoustic frequency near ½ Hz used. The effects of the 2.5 Hz resonance include slowing of certain cortical processes, sleepiness, and disorientation. For these effects to occur, the acoustic intensity must lie in a certain deeply subliminal range. Suitable apparatus consists of a portable battery-powered source of weak subaudio acoustic radiation. The method and apparatus can be used by the general public as an aid to relaxation, sleep, or sexual arousal, and clinically for the control and perhaps treatment of insomnia, tremors, epileptic seizures, and anxiety disorders. There is further application as a nonlethal weapon that can be used in law enforcement standoff situations, for causing drowsiness and disorientation in targeted subjects. It is then preferable to use venting acoustic monopoles in the form of a device that inhales and exhales air with subaudio frequency.

17 Claims, 5 Drawing Sheets



US006011991A

United States Patent [19]

Mardirossian

[11] **Patent Number: 6,011,991**

[45] **Date of Patent: Jan. 4, 2000**

[54] **COMMUNICATION SYSTEM AND METHOD INCLUDING BRAIN WAVE ANALYSIS AND/OR USE OF BRAIN ACTIVITY**

[75] Inventor: **Aris Mardirossian**, Germantown, Md.

[73] Assignee: **Technology Patents, LLC**, Derwood, Md.

[21] Appl. No.: **09/206,365**

[22] Filed: **Dec. 7, 1998**

[51] **Int. Cl.**[7] **A61N 5/00**

[52] **U.S. Cl.** **600/544**; 600/545

[58] **Field of Search** 600/300, 544–545; 128/897–898, 904, 905

[56] **References Cited**

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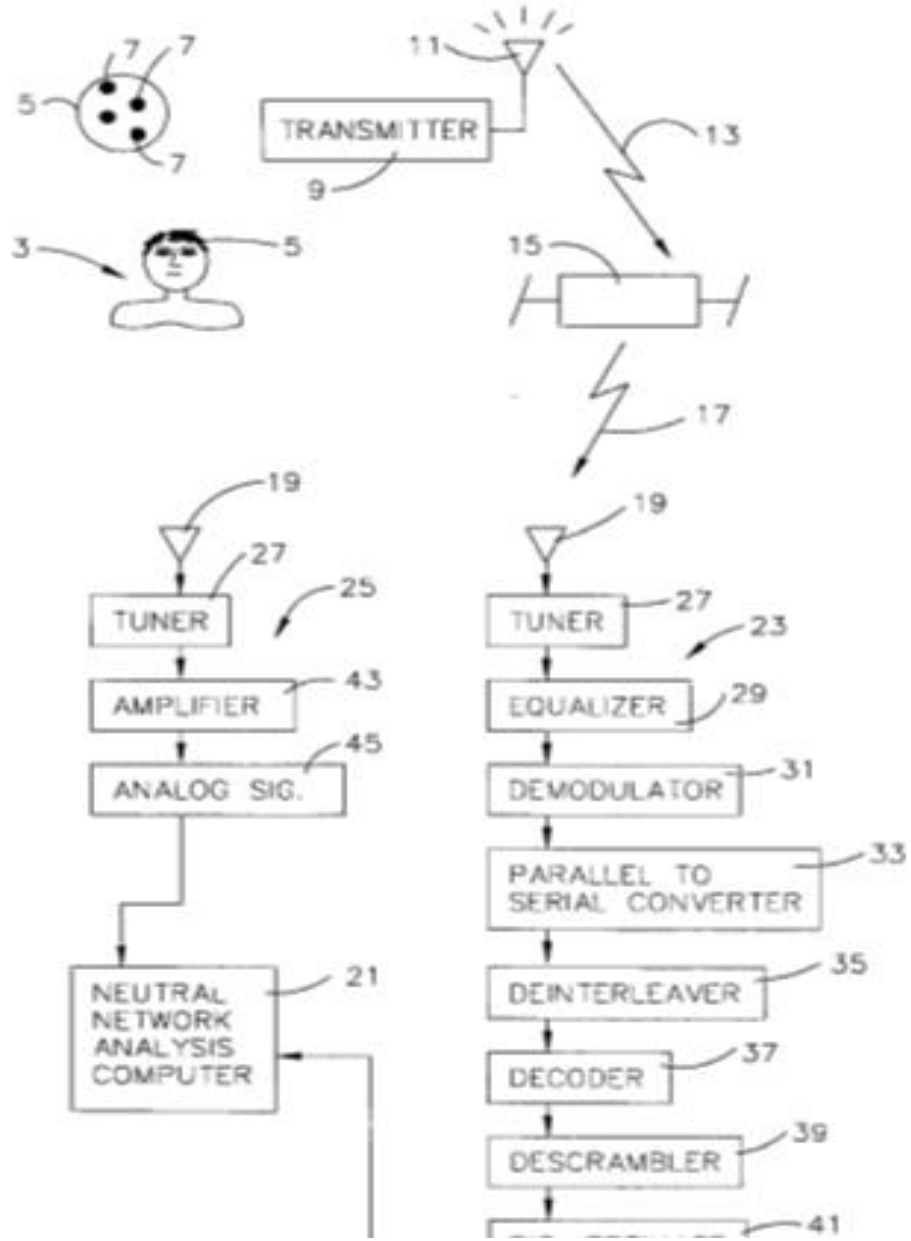
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Primary Examiner—Cary O'Connor
Assistant Examiner—Michael Astorino
Attorney, Agent, or Firm—Joseph A. Rhoa

[57] **ABSTRACT**

A system and method for enabling human beings to communicate by way of their monitored brain activity. The brain activity of an individual is monitored and transmitted to a remote location (e.g. by satellite). At the remote location, the monitored brain activity is compared with pre-recorded normalized brain activity curves, waveforms, or patterns to determine if a match or substantial match is found. If such a match is found, then the computer at the remote location determines that the individual was attempting to communicate the word, phrase, or thought corresponding to the matched stored normalized signal.

8 Claims, 3 Drawing Sheets



US005507291A

United States Patent [19]

Stirbl et al.

[11] Patent Number: 5,507,291

[45] Date of Patent: Apr. 16, 1

[54] **METHOD AND AN ASSOCIATED APPARATUS FOR REMOTELY DETERMINING INFORMATION AS TO PERSON'S EMOTIONAL STATE**

[76] Inventors: **Robert C. Stirbl**, 247 Wadsworth Ave., New York, N.Y. 10033; **Peter J. Wilk**, 185 W. End Ave., New York, N.Y. 10023

[21] Appl. No.: **222,835**

[22] Filed: **Apr. 5, 1994**

[51] **Int. Cl.**[6] **A61B 5/04**

[52] **U.S. Cl.** **128/653.1**; 128/661.08; 128/691; 128/745; 128/660.02

[58] **Field of Search** 128/653.1, 660.01, 128/660.02, 661.08, 691, 736, 745, 664

[56] **References Cited**

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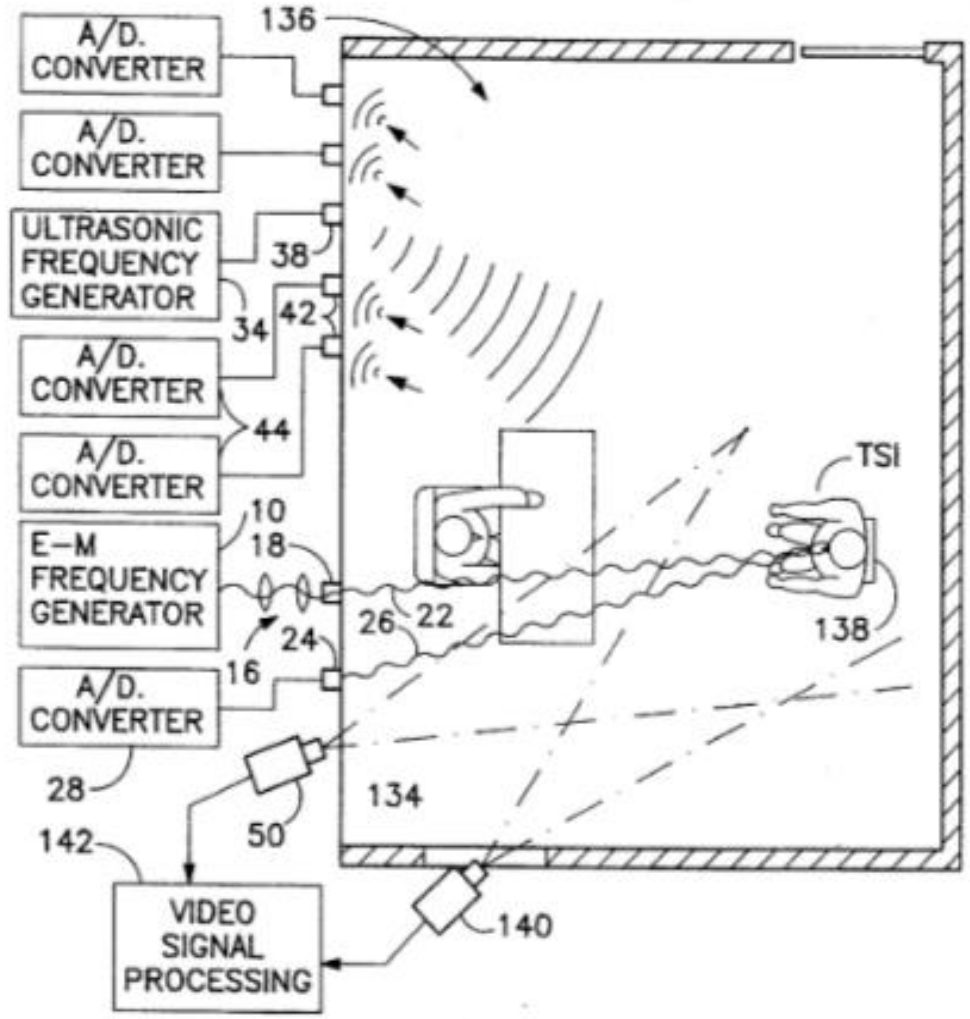
Primary Examiner—Krista M. Zele

Attorney, Agent, or Firm—R. Neil Sudol; Henry D. Col

[57] **ABSTRACT**

In a method for remotely determining information relati a person's emotional state, an waveform energy hav predetermined frequency and a predetermined intens generated and wirelessly transmitted towards a rem located subject. Waveform energy emitted from the su is detected and automatically analyzed to derive inform relating to the individual's emotional state. Physiologi physical parameters of blood pressure, pulse rate, pupil respiration rate and perspiration level are measured compared with reference values to provide inform utilizable in evaluating interviewee's responses or pos criminal intent in security sensitive areas.

33 Claims, 4 Drawing Sheets



United States Patent [19]

Malech

[11] **3,951,134**

[45] **Apr. 20, 1976**

[54] **APPARATUS AND METHOD FOR REMOTELY MONITORING AND ALTERING BRAIN WAVES**

[75] Inventor: **Robert G. Malech**, Plainview, N.Y.

[73] Assignee: **Dorne & Margolin Inc.**, Bohemia, N.Y.

[22] Filed: **Aug. 5, 1974**

[21] Appl. No.: **494,518**

[52] **U.S. Cl.** ..... **128/2.1 B**

[51] **Int. Cl.²** **A61B 5/04**

[58] **Field of Search** ..... 128/1 C, 1 R, 2.1 B, 128/2.1 R, 419 R, 422 R, 420, 404, 2 R, 2 S, 2.05 R, 2.05 V, 2.05 F, 2.06 R; 340/248 A, 258 A, 258 B, 258 D, 229

[56] **References Cited**

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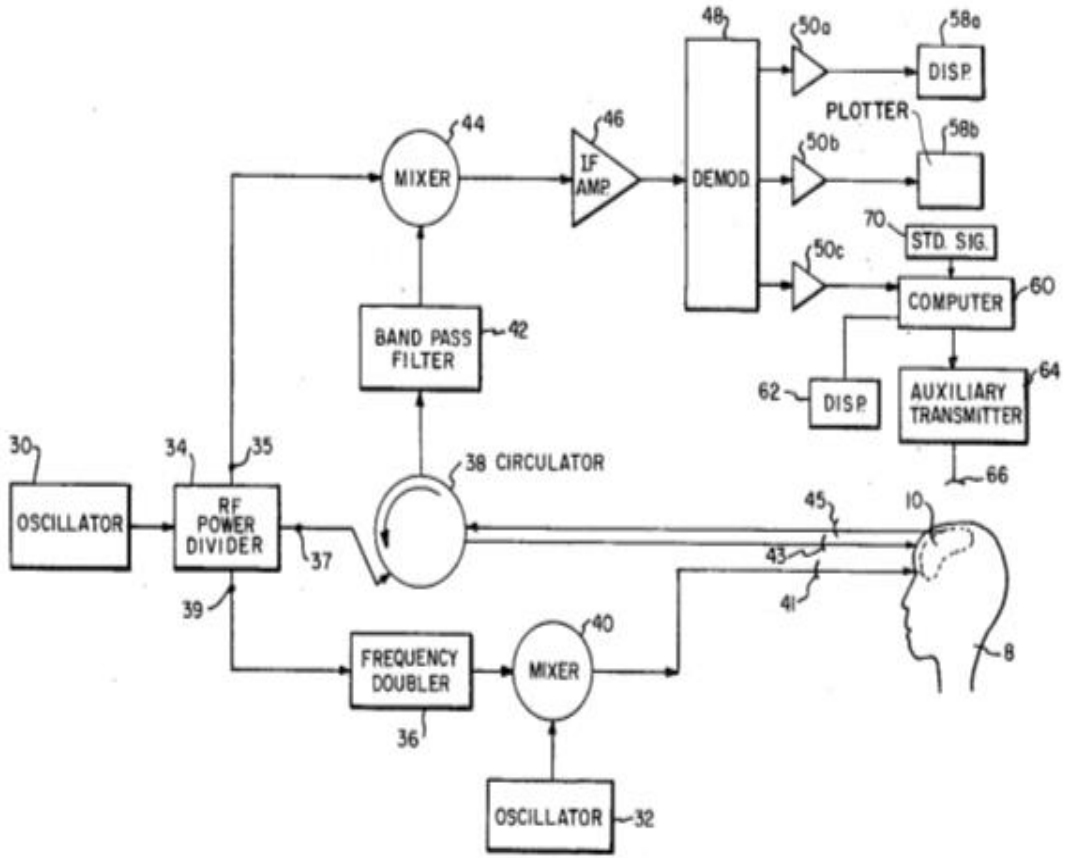
Primary Examiner—William E. Kamm

Attorney, Agent, or Firm—Darby & Darby

[57] **ABSTRACT**

Apparatus for and method of sensing brain waves at a position remote from a subject whereby electromagnetic signals of different frequencies are simultaneously transmitted to the brain of the subject in which the signals interfere with one another to yield a waveform which is modulated by the subject's brain waves. The interference waveform which is representative of the brain wave activity is re-transmitted by the brain to a receiver where it is demodulated and amplified. The demodulated waveform is then displayed for visual viewing and routed to a computer for further processing and analysis. The demodulated waveform also can be used to produce a compensating signal which is transmitted back to the brain to effect a desired change in electrical activity therein.

11 Claims, 2 Drawing Figures



US007629918B2

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

(10) **Patent No.: US 7,629,918 B**
(45) **Date of Patent: Dec. 8, 200**

(54) **MULTIFUNCTIONAL RADIO FREQUENCY DIRECTED ENERGY SYSTEM**

(75) Inventors: **Kenneth W. Brown**, Yucaipa, CA (US); **David J. Canich**, Upland, CA (US); **Russell F. Berg**, Upland, CA (US)

(73) Assignee: **Raytheon Company**, Waltham, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 300 days.

(21) Appl. No.: **11/300,876**

(22) Filed: **Dec. 15, 2005**

(65) **Prior Publication Data**

US 2007/0139247 A1 Jun. 21, 2007

(51) **Int. Cl.**
G01S 13/66 (2006.01)
G01S 7/38 (2006.01)

(52) **U.S. Cl.** **342/13**; 342/67; 342/74; 342/90; 342/97; 89/1.11

(58) **Field of Classification Search** 244/54–61, 244/3.11–3.3; 342/13, 67, 74, 54, 90, 43, 342/729, 61, 14

See application file for complete search history.

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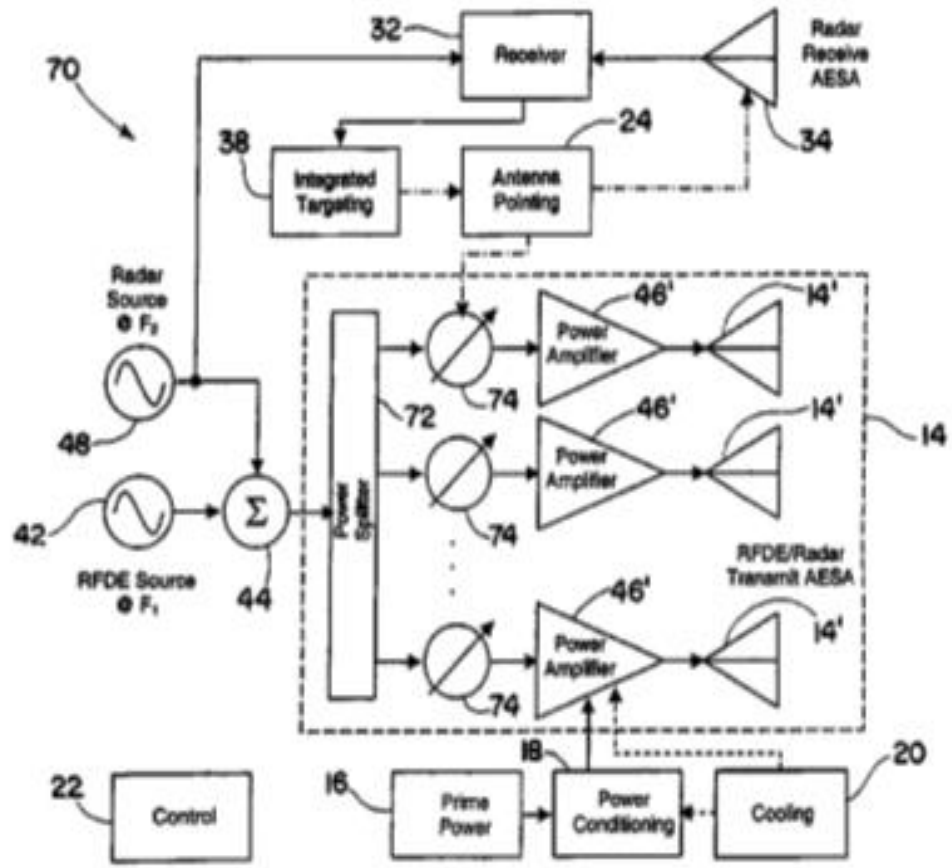
International Search Report for corresponding Application No. PC US2007/001831 dated Oct. 29, 2007.

Primary Examiner—Thomas H Tarcza
Assistant Examiner—Matthew M Barker
(74) *Attorney, Agent, or Firm*—Renner, Otto, Boisselle Sklar, LLP

(57) **ABSTRACT**

An RFDE system includes an RFDE transmitter and at le one RFDE antenna. The RFDE transmitter and antenna dir high power electromagnetic energy towards a target sufficie to cause high energy damage or disruption of the target. T RFDE system further includes a targeting system for locati the target. The targeting system includes a radar transmit and at least one radar antenna for transmitting and receivi electromagnetic energy to locate the target. The RFDE sy tem also includes an antenna pointing system for aiming t at least one RFDE antenna at the target based on the locati of the target as ascertained by the targeting system. Moreov at least a portion of the radar transmitter or the at least o radar antenna is integrated within at least a portion of the RFDE transmitter or the at least one RFDE antenna.

22 Claims, 8 Drawing Sheets



United States Patent [19]

Brunkan

[11] **Patent Number: 4,877,027**

[45] **Date of Patent: Oct. 31, 1989**

[54] **HEARING SYSTEM**

[76] Inventor: **Wayne B. Brunkan**, P.O. Box 2411, Goleta, Calif. 93118

[21] Appl. No.: **202,679**

[22] Filed: **Jun. 6, 1988**

[51] **Int. Cl.**[4] **A61N 5/00**

[52] **U.S. Cl.** **128/420.5**

[58] **Field of Search** ..... 128/420.5, 804, 419 R, 128/421, 422, 746; 381/68

[56] **References Cited**

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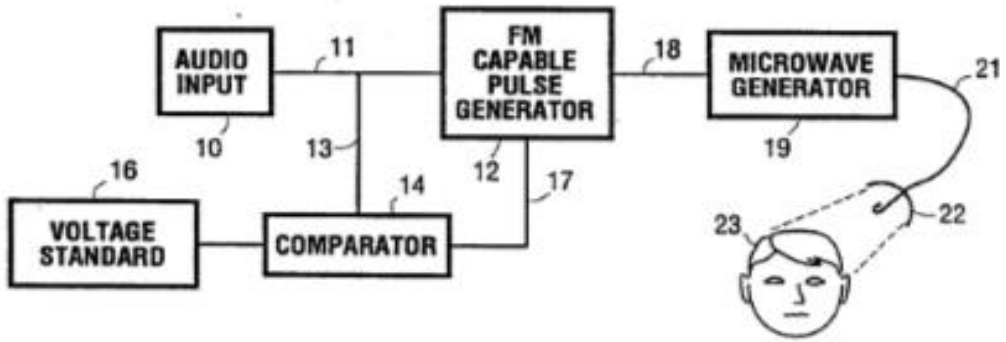
Primary Examiner—Lee S. Cohen

Attorney, Agent, or Firm—Harry W. Brelsford

[57] **ABSTRACT**

Sound is induced in the head of a person by radiating the head with microwaves in the range of 100 megahertz to 10,000 megahertz that are modulated with a particular waveform. The waveform consists of frequency modulated bursts. Each burst is made up of ten to twenty uniformly spaced pulses grouped tightly together. The burst width is between 500 nanoseconds and 100 microseconds. The pulse width is in the range of 10 nanoseconds to 1 microsecond. The bursts are frequency modulated by the audio input to create the sensation of hearing in the person whose head is irradiated.

8 Claims, 1 Drawing Sheet



(19) **United States**

(12) **Patent Application Publication**

Goldberg

(10) **Pub. No.: US 2016/0375220 A1**

(43) **Pub. Date: Dec. 29, 2016**

(54) **METHOD TO MAINTAIN PEACE THROUGH ELECTROMAGNETIC ENERGY TARGETED TO THE BRAIN**

(71) Applicant: **Joel Steven Goldberg**, Hillsborough, NC (US)

(72) Inventor: **Joel Steven Goldberg**, Hillsborough, NC (US)

(21) Appl. No.: **15/057,146**

(22) Filed: **Mar. 1, 2016**

Publication Classification

(51) **Int. Cl.**

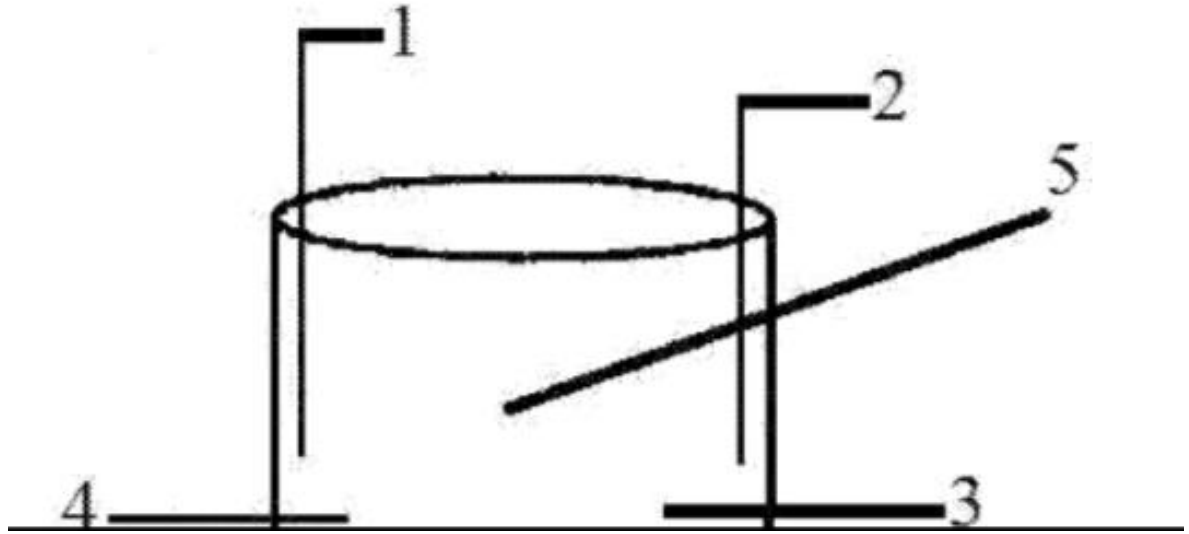
A61M 21/02	(2006.01)
A61N 2/02	(2006.01)
A61N 2/00	(2006.01)

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

CPC ***A61M 21/02*** (2013.01); ***A61N 2/006*** (2013.01); ***A61N 2/02*** (2013.01); *A61M 2021/0055* (2013.01)

(57) **ABSTRACT**

World peace and resolution of conflicts depends upon methods to deter use of weapons of mass destruction. Negotiations are the primary method to resolve conflicts. Pain, especially non-tissue sources of pain, is ubiquitous in the minds of humans and is an impediment to successful conflict resolution. It is proposed that leaders who are at peace with themselves are more likely to negotiate win-win resolutions of conflicts. When negotiations fail and deployment of weapons of mass destruction by a country is imminent, targeting the brain of its leaders to change their intentions may be reasonable and necessary. Concentrated extremely low frequency (ELF) electromagnetic waves can penetrate the cranium in the most conductive portion of the skull, the pterion-temporal lobe intersection, and produce effects in the anterior temporal lobe that contains the amygdala. Remote stimulation of the temporal lobe may cause lethal or incapacitating seizures. Stimulation of the amygdala produces fear in a high percentage of humans and in some instances respiratory depression. Using the Belousov-Zhabotinsky (B-Z) reaction as a model of brain activity, an early prototype of this weapon was developed. In order to prevent another arms race this technology should be assigned to the United Nations.



US006488617B1

(12) **United States Patent**
Katz

(10) **Patent No.: US 6,488,617 B1**
(45) **Date of Patent: Dec. 3, 2002**

(54) **METHOD AND DEVICE FOR PRODUCING A DESIRED BRAIN STATE**

(75) Inventor: **Bruce F. Katz**, Haverford, PA (US)

(73) Assignee: **Universal Hedonics**, Haverford, PA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 6 days.

(21) Appl. No.: **09/687,599**

(22) Filed: **Oct. 13, 2000**

(51) **Int. Cl.**[7] **A61M 21/00**; A61B 5/04

(52) **U.S. Cl.** **600/26**; 600/544

(58) **Field of Search** 600/9–15, 300, 600/544, 545, 26–27, 409; 128/897; 607/45

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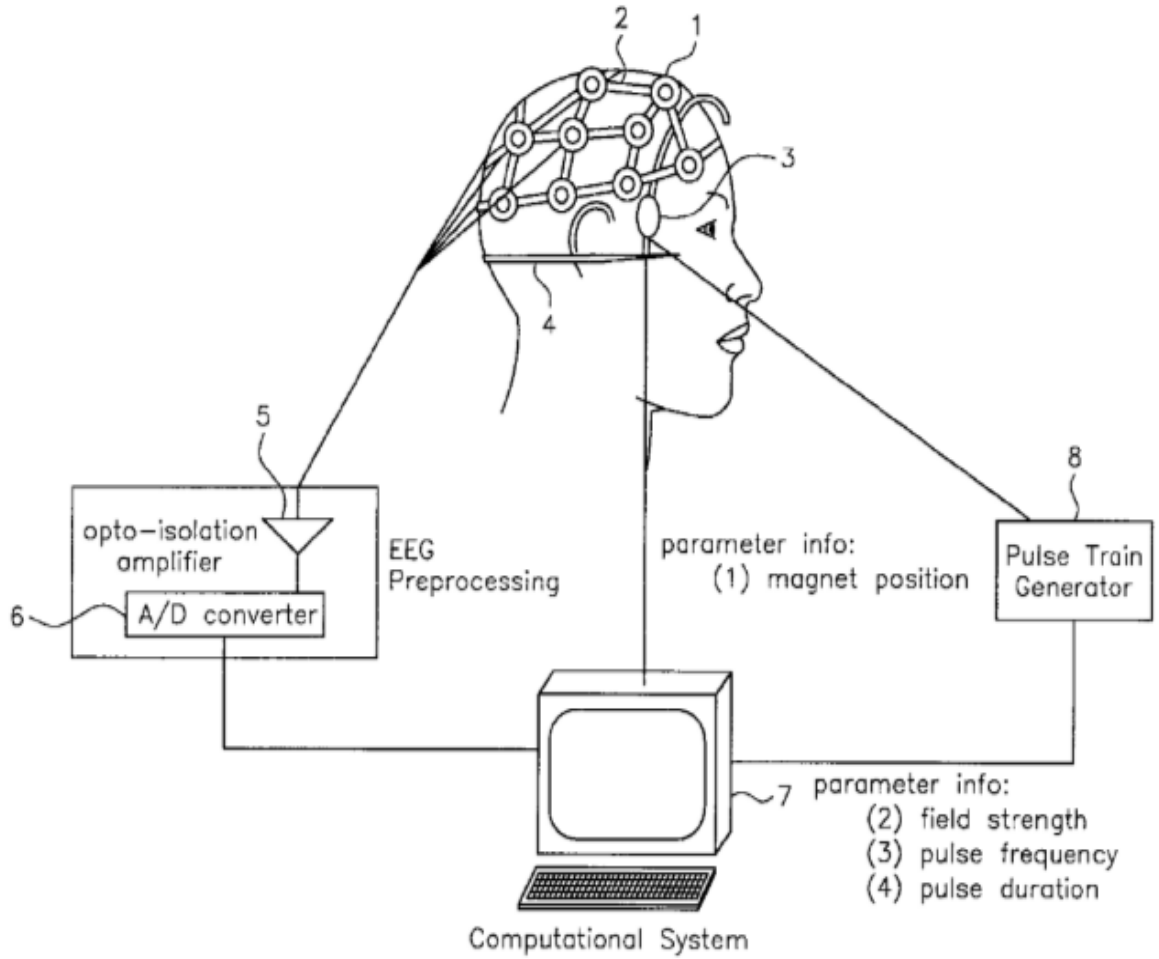
* cited by examiner

Primary Examiner—Kevin Shaver
Assistant Examiner—Nikita R Veniaminov
(74) *Attorney, Agent, or Firm*—Wolf, Block, Schorr an Solis-Cohen LLP; Robert F. Zielinski; Eric A. Dichter

(57) **ABSTRACT**

A method and device for the production of a desired brai state in an individual contain means for monitoring an analyzing the brain state while a set of one or more magnet produce fields that alter this state. A computational systen alters various parameters of the magnetic fields in order t close the gap between the actual and desired brain state. This feedback process operates continuously until the gap is minimized and/or removed.

30 Claims, 2 Drawing Sheets



US007150715B2

(12) United States Patent

Collura et al.

(10) Patent No.: US 7,150,715 B2
(45) Date of Patent: Dec. 19, 2006

(54) **NETWORK ENABLED BIOFEEDBACK ADMINISTRATION**

(76) Inventors: **Thomas F. Collura**, P.O. Box 24450, Mayfield Heights, OH (US) 44124; **Theresia Mrklas**, 715 High St., Bedford, OH (US) 44146

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 922 days.

(21) Appl. No.: **09/777,107**

(22) Filed: **Feb. 5, 2001**

(65) **Prior Publication Data**

US 2002/0107454 A1 Aug. 8, 2002

(51) **Int. Cl.**
A61B 5/00 (2006.01)
A61B 5/04 (2006.01)

(52) **U.S. Cl.** **600/300**; 128/905; 600/545; 600/546

(58) **Field of Classification Search** ..... 600/545, 600/300 X, 301, 546; 128/904, 905 X, 920; 705/2

See application file for complete search history.

(56) **References Cited**

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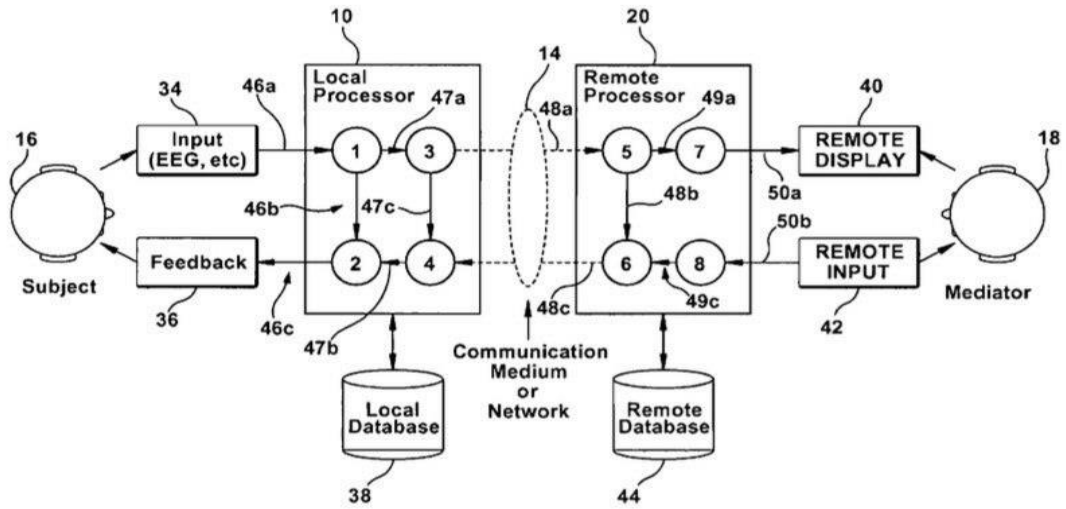
* cited by examiner

Primary Examiner—Max F. Hindenburg
Assistant Examiner—Jonathan Foreman

(57) **ABSTRACT**

An apparatus and method for controlling a biofeedback session. The system utilizes distributed processing that includes localized processing capability allowing a user to initiate a self-controlled biofeedback session and additionally includes remote processing capabilities enabling simultaneous remote analysis and monitoring of the session.

10 Claims, 4 Drawing Sheets



US005406957A

United States Patent [19]

Tansey

[11] **Patent Number: 5,406,957**
[45] **Date of Patent: Apr. 18, 1995**

[54] **ELECTROENCEPHALIC NEUROFEEDBACK APPARATUS FOR TRAINING AND TRACKING OF COGNITIVE STATES**

[76] Inventor: **Michael A. Tansey**, 194 Bywater, Somerville, N.J. 08876

[21] Appl. No.: **121,373**

[22] Filed: **Sep. 14, 1993**

Related U.S. Application Data

[63] Continuation of Ser. No. 940,190, Sep. 3, 1992, abandoned, which is a continuation-in-part of Ser. No. 831,182, Feb. 5, 1992, abandoned.

[51] **Int. Cl.**[6] **A61B 5/00**
[52] **U.S. Cl.** **128/732**; 128/731; 364/413.05
[58] **Field of Search** 128/731, 732, 746; 364/413.03, 413.02, 572, 576, 413.04, 413.05, 413.13, 413.2

[56] **References Cited**

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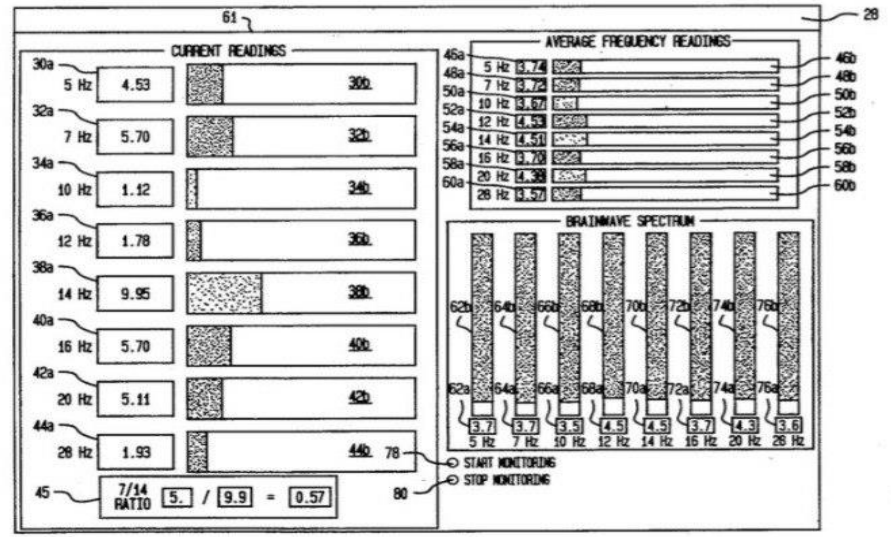
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Bricolo. "Automatic Detection of Sleep Spindles . . . Components" *Med. and Biol. Engng.* vol. 8, No. 5, pp. 517-519 (1970).

Primary Examiner—Stephen C. Pellegrino
Assistant Examiner—Guy V. Tucker
Attorney, Agent, or Firm—Mathews, Woodbridge & Collins

[57] **ABSTRACT**

A biofeedback system provides measurement of bioelectric signals in up to about a 1 hertz window of particular bandwidths. A bioelectric signal is amplified by a preamplifier. The composite amplitude of the signal is determined by performing a fast Fourier transform on the amplified signal. Particular bandwidths can be displayed and monitored on a computer. The display permits training of the person being monitored with audio or verbal feedback.

12 Claims, 7 Drawing Sheets

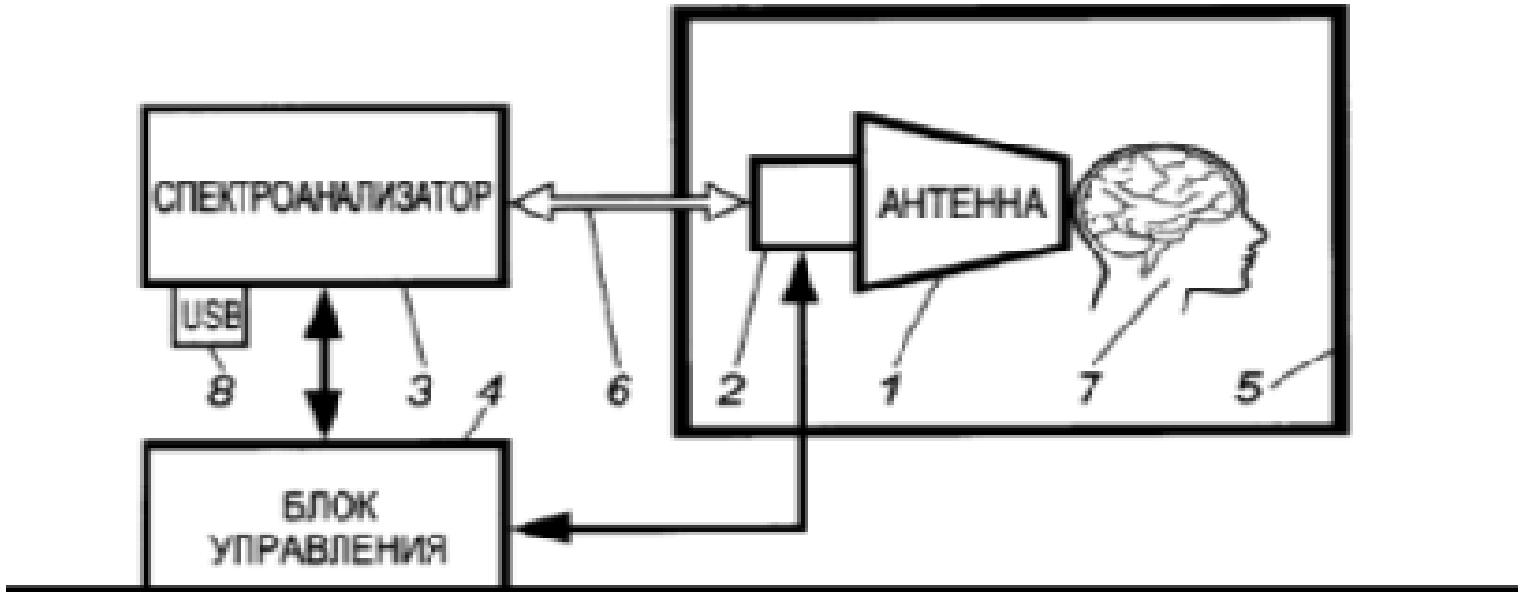


RU 2708040 C2

(54) СПОСОБ РЕГИСТРАЦИИ МИКРОВОЛНОВОЙ ЭЛЕКТРОМАГНИТНОЙ АКТИВНОСТИ ГОЛОВНОГО МОЗГА ЧЕЛОВЕКА

(57) Реферат:

Изобретение относится к медицинской технике и используется для проведения нейрофизиологических исследований микроволновой электромагнитной активности разных участков головного мозга (ГМ) человека путем транскраниальной регистрации амплитудно-частотных характеристик (АЧХ) слабых электромагнитных волн (сЭМВ) в диапазоне ультравысоких (УВЧ) и сверхвысоких (СВЧ) частот от 1,5 до 5,0 ГГц. Способ включает в себя транскраниальное исследование головного мозга путем регистрации сЭМВ ГМ с помощью логопериодической антенны УВЧ/СВЧ-диапазонов со встроенным малошумящим усилителем, приемную часть которой располагают в непосредственной близости от исследуемого мозгового отдела черепа испытуемого, и определения АЧХ сЭМВ с помощью высокочувствительного анализатора спектра УВЧ/СВЧ-диапазонов с низкими собственными и фазовыми шумами, подключенного к выходу антенны посредством радиочастотного кабеля, причем регистрацию сЭМВ ГМ проводят при нахождении по меньшей мере испытуемого и антенны в безэховой экранированной камере. 2 з.п. ф-лы, 5 ил.



WO 2020/060606 A1

(54) Title: CRYPTOCURRENCY SYSTEM USING BODY ACTIVITY DATA

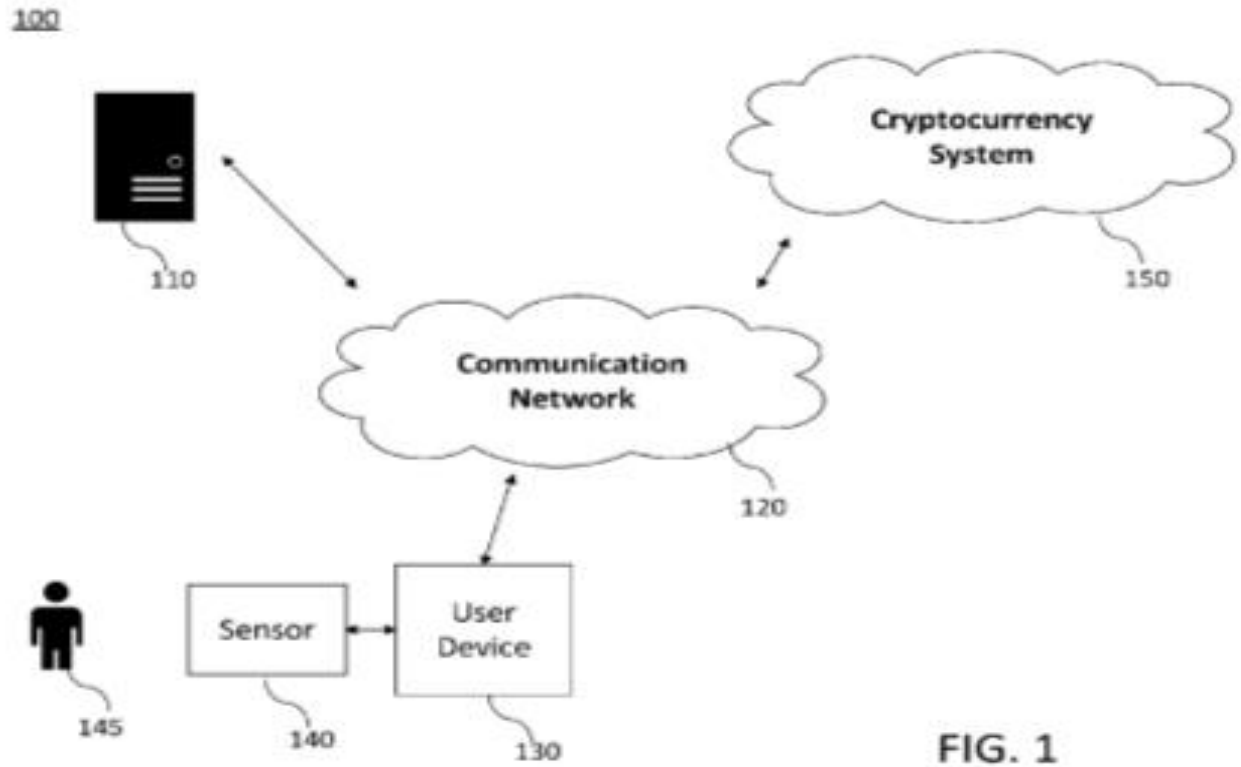


FIG. 1

(57) Abstract: Human body activity associated with a task provided to a user may be used in a mining process of a cryptocurrency system. A server may provide a task to a device of a user which is communicatively coupled to the server. A sensor communicatively coupled to or comprised in the device of the user may sense body activity of the user. Body activity data may be generated based on the sensed body activity of the user. The cryptocurrency system communicatively coupled to the device of the user may verify if the body activity data satisfies one or more conditions set by the cryptocurrency system, and award cryptocurrency to the user whose body activity data is verified.

US 20210138249A1

(19) **United States**

(12) **Patent Application Publication**

Howard

(10) **Pub. No.: US 2021/0138249 A1**

(43) **Pub. Date: May 13, 2021**

(54) **SYSTEM AND METHOD FOR NEURAL STIMULATION USING SPIKE FREQUENCY MODULATION**

(71) Applicant: **Newton Howard**, Providence, RI (US)

(72) Inventor: **Newton Howard**, Providence, RI (US)

(21) Appl. No.: **16/944,963**

(22) Filed: **Jul. 31, 2020**

Related U.S. Application Data

(63) Continuation-in-part of application No. 15/988,315, filed on May 24, 2018, which is a continuation-in-part of application No. 15/495,959, filed on Apr. 24, 2017, Continuation-in-part of application No. 16/545,205, filed on Aug. 20, 2019, Continuation-in-part of application No. 16/785,969, filed on Feb. 10, 2020.

(60) Provisional application No. 62/326,007, filed on Apr. 22, 2016, provisional application No. 62/353,343, filed on Jun. 22, 2016, provisional application No. 62/397,474, filed on Sep. 21, 2016, provisional application No. 62/511,532, filed on May 26, 2017, provisional application No. 62/534,671, filed on Jul. 19, 2017, provisional application No. 62/560,750, filed on Sep. 20, 2017, provisional application No. 62/658,764, filed on Apr. 17, 2018, provisional application No. 62/665,611, filed on May 2, 2018, provisional application No. 62/719,849, filed on Aug. 20, 2018, provisional application No. 62/783,050, filed on Dec. 20, 2018, provisional application No. 62/726,699, filed on Sep. 4, 2018, provisional application No. 62/881,220, filed on Jul. 31, 2019, provisional application No. 62/883,983, filed on Aug. 7, 2019, provisional application No. 62/896,563, filed on Sep. 5, 2019, provisional application No. 62/896,571, filed on Sep. 5, 2019, provisional application No. 62/912,515, filed on Oct. 8, 2019.

Publication Classification

(51) **Int. Cl.**

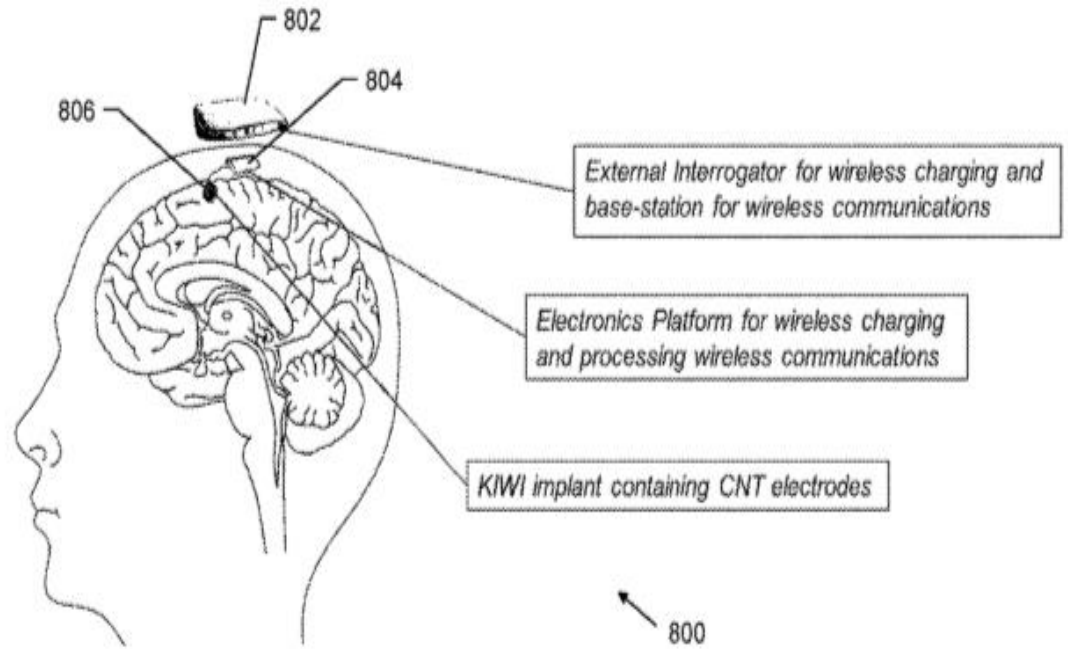
A61N 1/36	(2006.01)
A61N 5/06	(2006.01)
A61N 1/372	(2006.01)
G16H 20/30	(2006.01)

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

CPC ***A61N 1/36139*** (2013.01); ***A61N 5/0622*** (2013.01); ***A61N 1/36067*** (2013.01); ***G16H 20/30*** (2018.01); ***A61N 1/36071*** (2013.01); ***A61N 1/37252*** (2013.01); ***A61N 1/36082*** (2013.01)

(57) **ABSTRACT**

Embodiments may comprise receiving electrical and optical signals from electrophysiological neural signals of neural tissue from at least one read modality, wherein the electrophysiological neural signals are at least one of Spike frequency modulated or Spike frequency demodulated, encoding the received electrical and optical signals using a Fundamental Code Unit, automatically generating at least one machine learning model using the Fundamental Code Unit encoded electrical and optical signals, generating at least one optical or electrical signal to be transmitted to the brain tissue using the generated at least one machine learning model, wherein the generated signals are at least one of Spike frequency modulated or Spike frequency demodulated, and transmitting the generated at least one optical or electrical signal to the neural tissue to provide electrophysiological stimulation of the neural tissue using at least one write modality.



US010461421B1

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

(10) **Patent No.: US 10,461,421 B1**
(45) **Date of Patent: Oct. 29, 2019**

(54) **CELLULAR SYSTEM**

(71) Applicant: **Bao Tran**, Saratoga, CA (US)

(72) Inventors: **Bao Tran**, Saratoga, CA (US); **Ha Tran**, Saratoga, CA (US)

(*) 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.: **16/404,853**

(22) Filed: **May 7, 2019**

(51) **Int. Cl.**
H01Q 3/46 (2006.01)

(56) **References Cited**

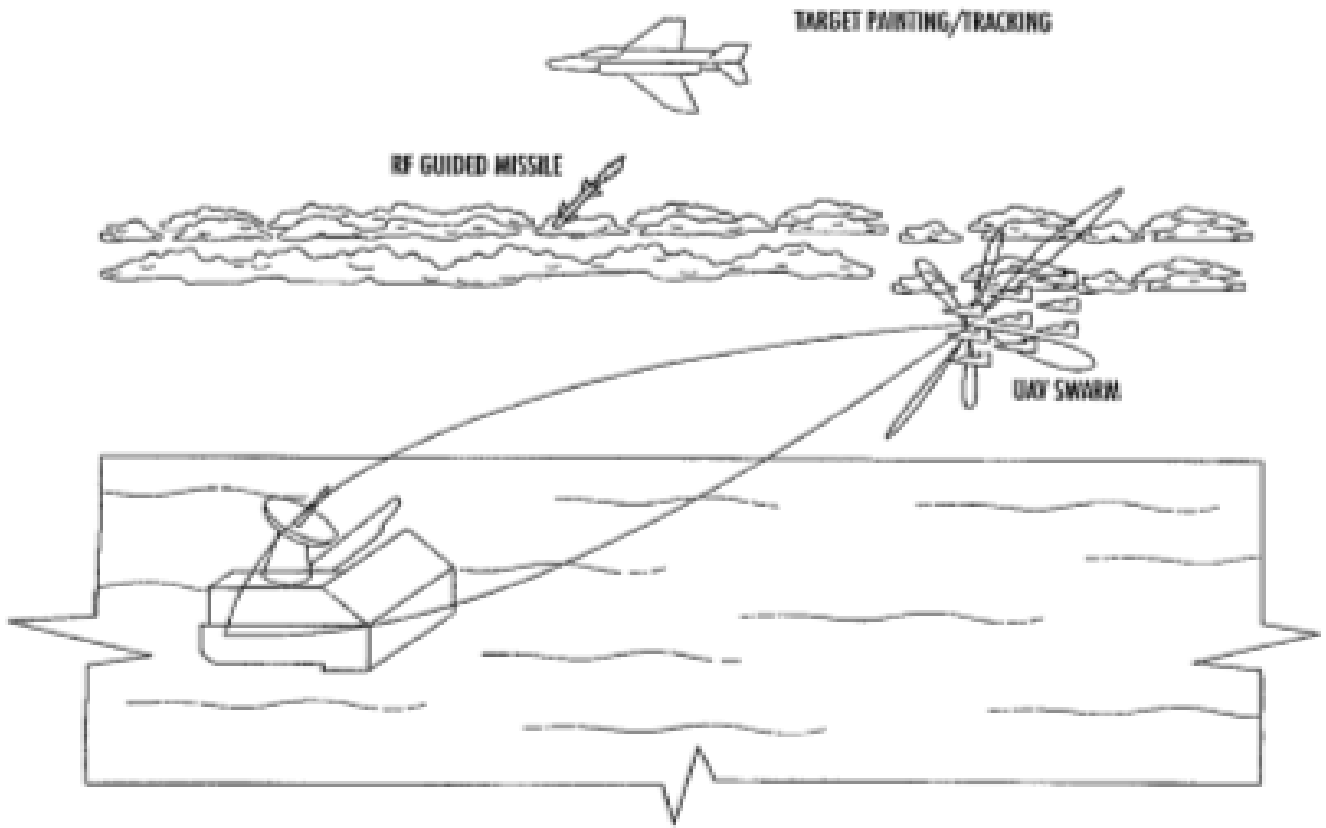
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WO 2007/059508 A1

(54) Title: TIME REVERSAL ANTENNA NETWORK BASED DIRECTED ENERGY SYSTEMS



(57) Abstract: A directed energy system is provided. The system includes one or more sources for generating high power broadband microwave radiation and coupled to an array of antenna elements. The system further includes one or more computers or processors communicably connected to the array of antenna elements and the source of radiation. At least one antenna in the array of antennas transmits broadband microwave radiation toward a target. Backscattered radiation emanating from the target is time gated by the computer or processor to form time- gated signals. The computer or processor calculates an adaptive weight factor for each of the antennas in the array of antennas to beamform a time reversed signal for transmission to the target. The computer or processor triggers the source of radiation to transmit a high power time reversed signal using the beamform toward the target.

(19) Deutsches Patent- und Markenamt

(10) **DE 10 2020 004 012 A1** 2022.01.05

(12) # Offenlegungsschrift

(21) Aktenzeichen: **10 2020 004 012.8**
(22) Anmeldetag: **03.07.2020**
(43) Offenlegungstag: **05.01.2022**

(51) Int Cl.: ***A61B 5/24*** (2021.01)
A61B 5/00 (2006.01)
A61M 21/00 (2006.01)

(71) Anmelder:
Simon, Hanna, 57644 Hattert, DE; Simon, Pal, 57644 Hattert, DE

(72) Erfinder:
Simon, Pal, 57644 Hattert, DE; Simon, Hanna, 57644 Hattert, DE

(56) Ermittelter Stand der Technik:

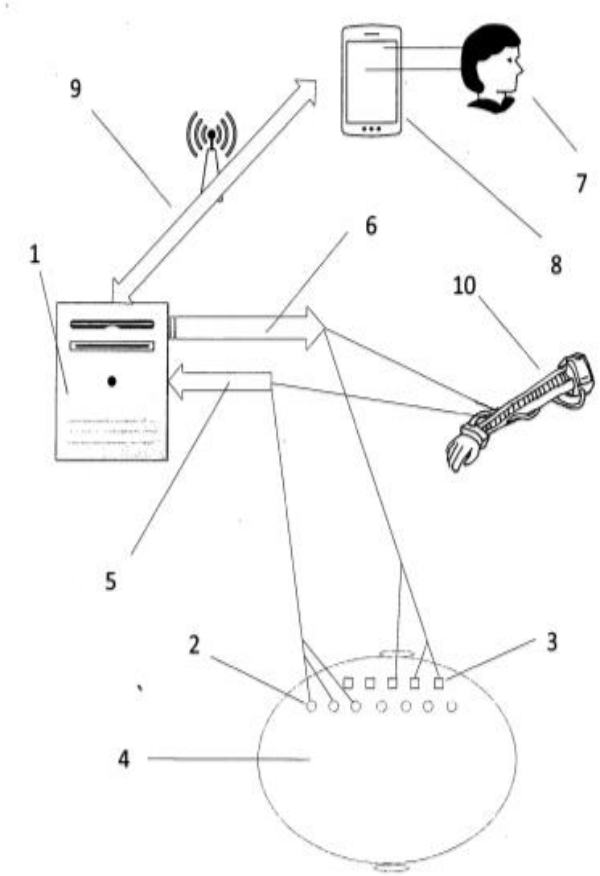
DE **102 53 433** **A1**

Prüfungsantrag gemäß § 44 PatG ist gestellt.

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen.

(54) Bezeichnung: **Verfahren zu dynamischer und differenzierter Steuerung von psychischenFunktionen mit künstlichen neuronalen Netzen**

(57) Zusammenfassung: Die vorliegende Erfindung betrifft ein Verfahren, welches ermöglicht, mit dem Bewusstsein des Menschen komplex zu interagieren, den psychischen Prozess des Menschen vielseitig, dynamisch, auch gegenseitig zu beeinflussen. Auch Geräte können in dieses Steuerungssystem integriert werden. Die Prozesse werden durch am Gehirn angelegter, und durch maschinelles Lernen gesteuerter, komplexer elektromagnetischer Felder und elektromagnetischer Sensoren verwirklicht. Die Verbindungen können auch kabellos hergestellt werden.



(19) Bundesrepublik Deutschland
Deutsches Patent- und Markenamt

(10) **DE 102 53 433 A1** 2004.05.27

(12) # Offenlegungsschrift

(21) Aktenzeichen: **102 53 433.0**
(22) Anmeldetag: **11.11.2002**
(43) Offenlegungstag: **27.05.2004**

(51) Int Cl.[7]: **A61M 21/00**
H04B 7/00

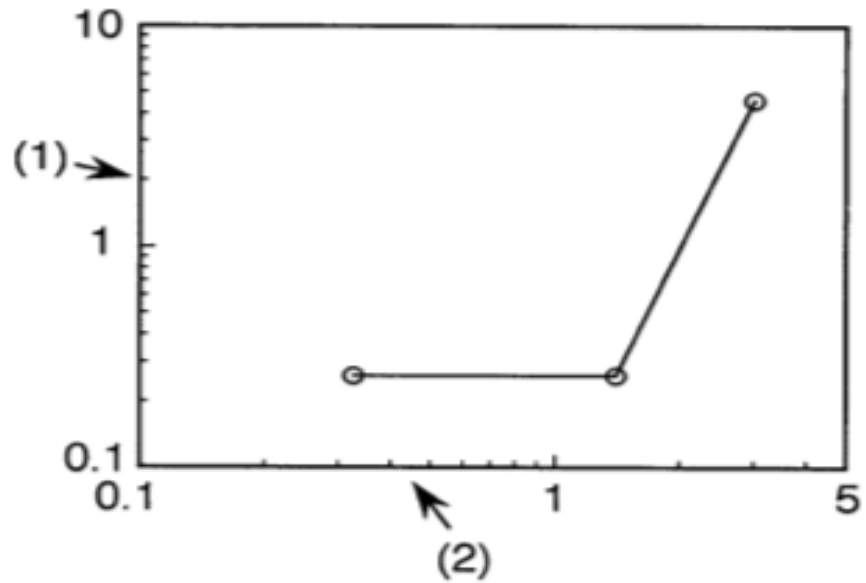
(71) Anmelder:
Nölting, Bengt, Dr., 13187 Berlin, DE

(72) Erfinder:
gleich Anmelder

Die folgenden Angaben sind den vom Anmelder eingereichten Unterlagen entnommen

(54) Bezeichnung: **Gedankenübertragung**

(57) Zusammenfassung: Die Erfindung betrifft Einrichtungen und Verfahren zur Übertragung von Informationen über größere Entfernungen mittels elektromagnetischer Strahlung ohne Notwendigkeit elektronischer Hilfsmittel seitens des Empfängers zur Umwandlung der elektromagnetischen Strahlung in akustische oder optische Signale, wie z. B. Radio, Fernseher oder Mobilfunkgerät. Erfindungsgemäß wird gebündelte modulierte elektromagnetische Strahlung in den Organismus des Empfängers derart gesendet, daß bei diesem Reaktionen ausgelöst werden, die einer beabsichtigten Gedankenübertragung entsprechen. Die Erfindung kann Anwendung finden z. B. (a) zur Unterstützung der Kommunikation mit Personen in Bunkern und verschütteten Personen nach Erdbeben, (b) zur unauffälligen Nachrichtenübertragung an Sicherheitspersonal, (c) zur Unterstützung von wichtigen Verhandlungen und in der Öffentlichkeit vortragenden Personen, (d) zur Sensibilisie-



US010163055B2

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

(10) **Patent No.: US 10,163,055 B2**
(45) **Date of Patent: Dec. 25, 2018**

(54) **ROUTING POLICIES FOR BIOLOGICAL HOSTS**

(71) Applicant: **AT&T Intellectual Property I, L.P.**, Atlanta, GA (US)

(72) Inventors: **Kevin A. Li**, New York, NY (US); **Troy C. Meuninck**, Newnan, GA (US); **Robert Raymond Miller, II**, Convent Station, NJ (US); **James H. Pratt**, Round Rock, TX (US); **Horst J. Schroeter**, New Providence, NJ (US); **Behzad Shahraray**, Holmdel, NJ (US)

(73) Assignee: **AT&T Intellectual Property I, L.P.**, Atlanta, GA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 850 days.

(21) Appl. No.: **14/690,431**

(22) Filed: **Apr. 19, 2015**

(65) **Prior Publication Data**

US 2015/0220830 A1 Aug. 6, 2015

Related U.S. Application Data

(63) Continuation of application No. 13/647,422, filed on Oct. 9, 2012, now Pat. No. 9,015,087.

(56) **References Cited**

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(Continued)

Primary Examiner — Alan Chen
(74) *Attorney, Agent, or Firm* — Hartman & Citrin LLC

Oct. 9, 2012, now Pat. No. 9,015,087.

(51) **Int. Cl.**
G06N 3/06 (2006.01)
G06F 3/01 (2006.01)

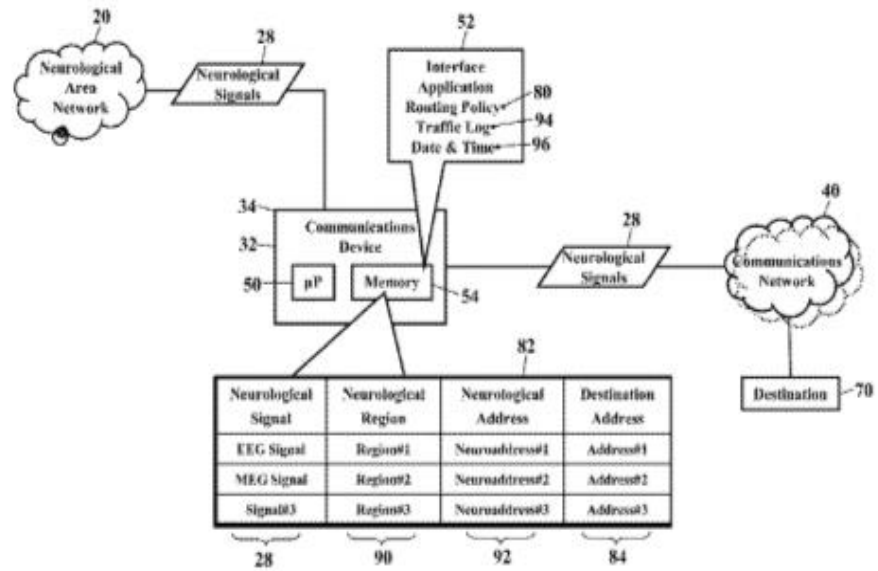
(52) **U.S. Cl.**
CPC ***G06N 3/061*** (2013.01); ***G06F 3/015*** (2013.01)

(58) **Field of Classification Search**
None
See application file for complete search history.

(57) **ABSTRACT**

Methods, systems, and products provide interfaces between intrahost networks and interhost networks within biological hosts. Neuroregional translations are performed to route communications to and from the biological hosts. Bioregional translations may also be performed to route communications to and from the biological hosts.

19 Claims, 19 Drawing Sheets



US 20210082583A1

(19) **United States**

(12) **Patent Application Publication**

EHRLICH et al.

(10) **Pub. No.: US 2021/0082583 A1**

(43) **Pub. Date: Mar. 18, 2021**

(54) **METHODS AND SYSTEMS OF PRIORITIZING TREATMENTS, VACCINATION, TESTING AND/OR ACTIVITIES WHILE PROTECTING THE PRIVACY OF INDIVIDUALS**

(71) Applicants: **Gal EHRLICH**, Ramat-Gan (IL); **Maier FENSTER**, Petach-Tikva (IL)

(72) Inventors: **Gal EHRLICH**, Ramat-Gan (IL); **Maier FENSTER**, Petach-Tikva (IL)

(21) Appl. No.: **17/106,279**

(22) Filed: **Nov. 30, 2020**

(30) **Foreign Application Priority Data**

Aug. 11, 2020	(IL)	276648
Aug. 11, 2020	(IL)	276665
Sep. 1, 2020	(IL)	277083

Publication Classification

(51) **Int. Cl.**

G16H 50/80	(2006.01)
H04W 4/02	(2006.01)
H04W 4/029	(2006.01)
G06N 7/00	(2006.01)
G16H 50/30	(2006.01)

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

CPC ***G16H 50/80*** (2018.01); ***H04W 4/023*** (2013.01); ***G16H 50/30*** (2018.01); ***G06N 7/005*** (2013.01); ***H04W 4/029*** (2018.02)

(57) **ABSTRACT**

An aspect of some embodiments of the invention relates to system and methods for anonymously selecting subjects for treatment against an infectious disease caused by a pathogen, comprising: 1. a plurality of electronic devices configured with instructions to generate an ID, when in proximity of another such electronic device, one or both of transmit said ID to said another electronic device and receive an ID from said another electronic device, generating a score based on a plurality of such received IDs, receiving information from a server, displaying relevant treatment instructions to said subjects based on received information; 2. at least one server comprising instructions for sending to said plurality of electronic devices information to display said relevant treatment instructions; where said at least one server or said electronic devices comprise instructions to generate a prediction of likelihood of a subject transmitting said pathogen, based on a score of the subject.

US011107588B2

(12) **United States Patent**

Ehrlich et al.

(10) **Patent No.: US 11,107,588 B2**

(45) **Date of Patent: Aug. 31, 2021**

(54) **METHODS AND SYSTEMS OF PRIORITIZING TREATMENTS, VACCINATION, TESTING AND/OR ACTIVITIES WHILE PROTECTING THE PRIVACY OF INDIVIDUALS**

(71) Applicants: **Gal Ehrlich**, Ramat-Gan (IL); **Maier Fenster**, Petach-Tikva (IL)

(72) Inventors: **Gal Ehrlich**, Ramat-Gan (IL); **Maier Fenster**, Petach-Tikva (IL)

(*) 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.: **17/106,279**

(22) Filed: **Nov. 30, 2020**

(65) **Prior Publication Data**

US 2021/0082583 A1 Mar. 18, 2021

(30) **Foreign Application Priority Data**

Aug. 11, 2020	(IL)	276648
Aug. 11, 2020	(IL)	276665
Sep. 1, 2020	(IL)	277083

(51) **Int. Cl.**

G06Q 10/00	(2012.01)
G16H 50/80	(2018.01)

(Continued)

CPC ***G16H 50/80*** (2018.01); ***G06N 7/005*** (2013.01); ***H04W 4/023*** (2013.01); ***H04W 4/029*** (2018.02)

(58) **Field of Classification Search**

CPC G16H 50/80; G16H 50/30; G16H 10/60; H04W 4/023; H04W 4/029; H04W 12/069; H04W 4/80; G06N 7/005; G08B 21/02; G07C 9/28; G07C 9/22; G06F 1/163; G06F 3/14; G09G 5/36;

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Primary Examiner — Anh V La

(57) **ABSTRACT**

System and methods for anonymously selecting subjects for treatment against an infectious disease caused by a pathogen. The system comprises a plurality of electronic devices comprising instructions to generate an ID and, when in proximity of another such electronic device, one or both electronic devices transmit/receive the ID to/from the other electronic device. Then, a score is generated based on a plurality of such received IDs. Additionally, based on information received from a server, relevant treatment instructions are displayed to the subjects based on the received information and the score. The server comprises instructions for sending to the plurality of electronic devices the information, additionally the server and/or the electronic devices of a subject transmitting the pathogen, based on the score o

17 Claims, 12 Drawing Sheets

This Pfizer patent application was approved August 31st, 2021, and is the very first patent that shows up in a list of over 18500 for the purpose of remote contact tracing of all vaccinated humans worldwide who will be or are now connected to the “internet of things" by a quantum link of pulsating microwave frequencies of 2.4 gHz or higher from cell towers and satellites directly to the graphene oxide held in the fatty tissues of all persons who’ve had the death-shot.

US006754472B1

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

(10) **Patent No.: US 6,754,472 B1**
(45) **Date of Patent: Jun. 22, 2004**

(54) **METHOD AND APPARATUS FOR TRANSMITTING POWER AND DATA USING THE HUMAN BODY**

(75) Inventors: **Lyndsay Williams**, Cambridge (GB); **William Vablais**, Woodinville, WA (US); **Steven N. Bathiche**, Bellevue, WA (US)

(73) Assignee: **Microsoft Corporation**, Redmond, WA (US)

(*) 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.: **09/559,746**

(22) Filed: **Apr. 27, 2000**

(51) **Int. Cl.**[7] **H04Q 7/20**
(52) **U.S. Cl.** **455/100**; 455/95; 455/41
(58) **Field of Search** 455/40, 41, 95, 455/100, 106; 340/333; 379/55.1; 341/33

(56) **References Cited**

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Primary Examiner—Jean Gelin
(74) *Attorney, Agent, or Firm*—Amin &Turocy, LLP

(57) **ABSTRACT**

Methods and apparatus for distributing power and data to devices coupled to the human body are described. The human body is used as a conductive medium, e.g., a bus, over which power and/or data is distributed. Power is distributed by coupling a power source to the human body via a first set of electrodes. One or more devise to be powered, e.g., peripheral devices, are also coupled to the

US011536543B2

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

(10) **Patent No.: US 11,536,543 B2**
(45) **Date of Patent: Dec. 27, 2022**

(54) **DIRECTED ENERGY (DE) WEAPON AND PASSIVE MILLIMETER WAVE (PMMW) IMAGER FOR TARGET TRACKING**

(71) Applicant: **Raytheon Company**, Waltham, MA (US)

(72) Inventors: **Gerald P. Uyeno**, Tucson, AZ (US); **Sean D. Keller**, Tucson, AZ (US); **Benn Gleason**, Tucson, AZ (US)

(73) Assignee: **Raytheon Company**, Waltham, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 411 days.

(21) Appl. No.: **16/773,257**

(22) Filed: **Jan. 27, 2020**

(65) **Prior Publication Data**

US 2021/0231413 A1 Jul. 29, 2021

(51) **Int. Cl.**
F41H 13/00 (2006.01)
G01S 17/10 (2020.01)
(Continued)

(52) **U.S. Cl.**
CPC ***F41H 13/0062*** (2013.01); ***G01S 3/043*** (2013.01); ***G01S 3/48*** (2013.01);
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Primary Examiner — Arman B Fallahkhair
(74) *Attorney, Agent, or Firm* — Schwegman Lundberg & Woessner, P.A.

(57) **ABSTRACT**

A DE energy weapon and tracking system includes a passive millimeter wave (PmmW) imaging receiver on a common gimbaled telescope to sense natural electromagnetic radiation from a mmW scene. The PmmW imaging receiver operates in a portion of the electromagnetic spectrum distinct from the IR bands associated with thermal blooming or the HEL laser. In the case of a HPM source, the reflected energy is either in a different RF band and/or of diminished amplitude such as to not interfere with operation of the PmmW imaging receiver. Although lower resolution than traditional optical imaging, PmmW imaging provides a

US011354666B1

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

(10) **Patent No.: US 11,354,666 B1**
(45) **Date of Patent: Jun. 7, 2022**

(54) **SMART DUST USAGE**

(71) Applicant: **Wells Fargo Bank, N.A.**, San Francisco, CA (US)

(72) Inventors: **Rameshchandra Bhaskar Ketharaju**, Hyderabad (IN); **Sarath Chava**, Hyderabad (IN); **Prasad N. Sivalanka**, SeriLingampally (IN); **Madhu V. Vempati**, Hyderabad (IN)

(73) Assignee: **Wells Fargo Bank, N.A.**, San Francisco, CA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 330 days.

(21) Appl. No.: **15/165,749**

(22) Filed: **May 26, 2016**

(51) **Int. Cl.**

G06Q 20/40	(2012.01)
G06Q 20/32	(2012.01)
H04L 9/40	(2022.01)
G06Q 20/36	(2012.01)

(52) **U.S. Cl.**
CPC ***G06Q 20/40145*** (2013.01); ***G06Q 20/322*** (2013.01); ***G06Q 20/36*** (2013.01); ***H04L 63/102*** (2013.01)

(58) **Field of Classification Search**
CPC G06Q 20/322; G06Q 20/36; G06Q 20/40145; H04L 63/102
USPC 705/50
See application file for complete search history.

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Primary Examiner — James D Nigh
Assistant Examiner — Yin Y Choi
(74) *Attorney, Agent, or Firm* — Womble Bond Dickinson (US) LLP

(57) **ABSTRACT**

Systems and methods that facilitate authenticating a user making a payment using microelectromechanical systems (MEMs) devices (i.e., smart dust). The MEMs devices may have sensors that collect data and transfer it to a base station device. The MEMs devices can collect sensor data, including biometric data and/or capture images of the person. The MEMs can also collect sensor data such as audio data, optical data, temperature data, pressure data, and motion data and compare it to data associated with a user profile to determine that the person making the payment is the same person associated with the user profile. Once the person's identity has been confirmed, and thus authenticated, the payment request can be confirmed and payment made, via either the mobile device or credit card.

17 Claims, 10 Drawing Sheets

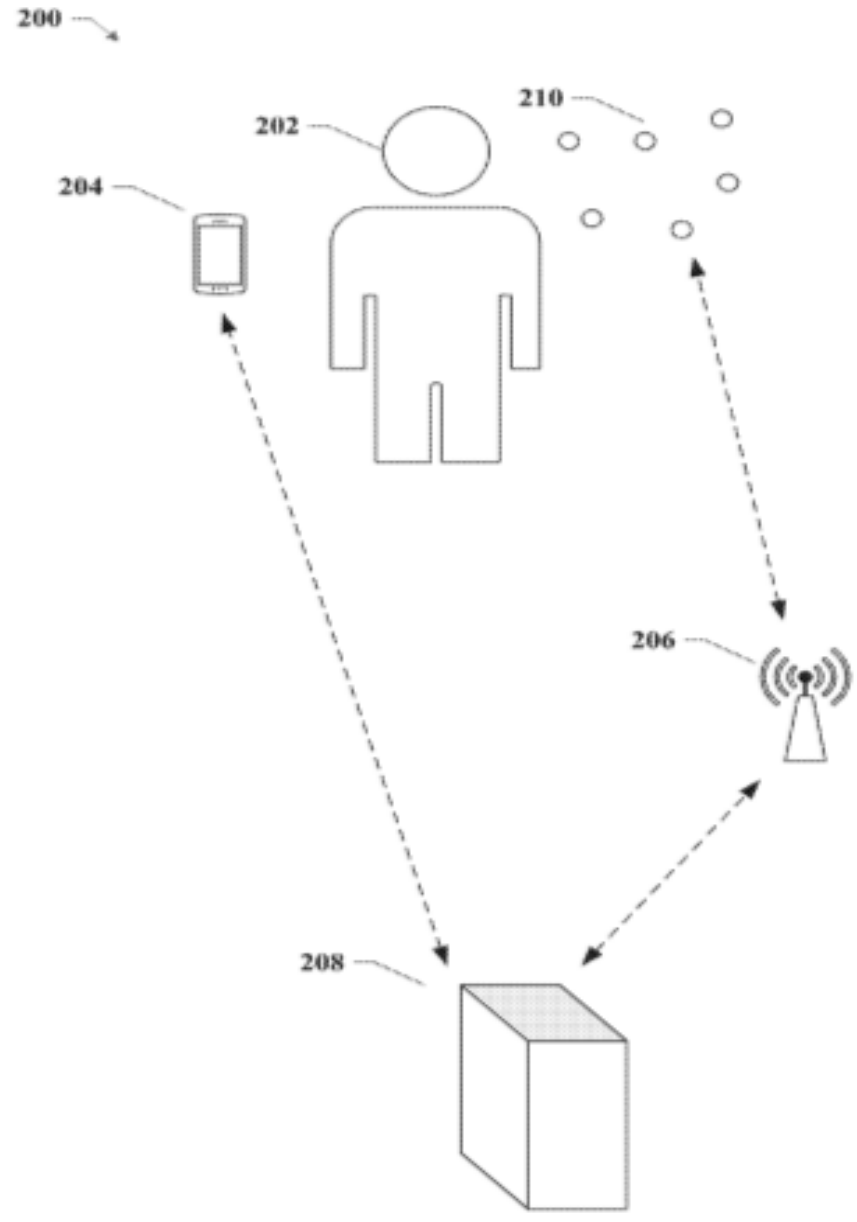


FIG. 2

US 20120104282A1

(19) **United States**

(12) **Patent Application Publication**
Gallivan

(10) **Pub. No.: US 2012/0104282 A1**
(43) **Pub. Date: May 3, 2012**

(54) **TARGET TRACKING SYSTEM AND METHOD WITH JITTER REDUCTION SUITABLE FOR DIRECTED ENERGY SYSTEMS**

(76) Inventor: **James R. Gallivan**, Pomona, CA (US)

(21) Appl. No.: **12/474,483**

(22) Filed: **May 29, 2009**

Related U.S. Application Data

(60) Provisional application No. 61/056,905, filed on May 29, 2008.

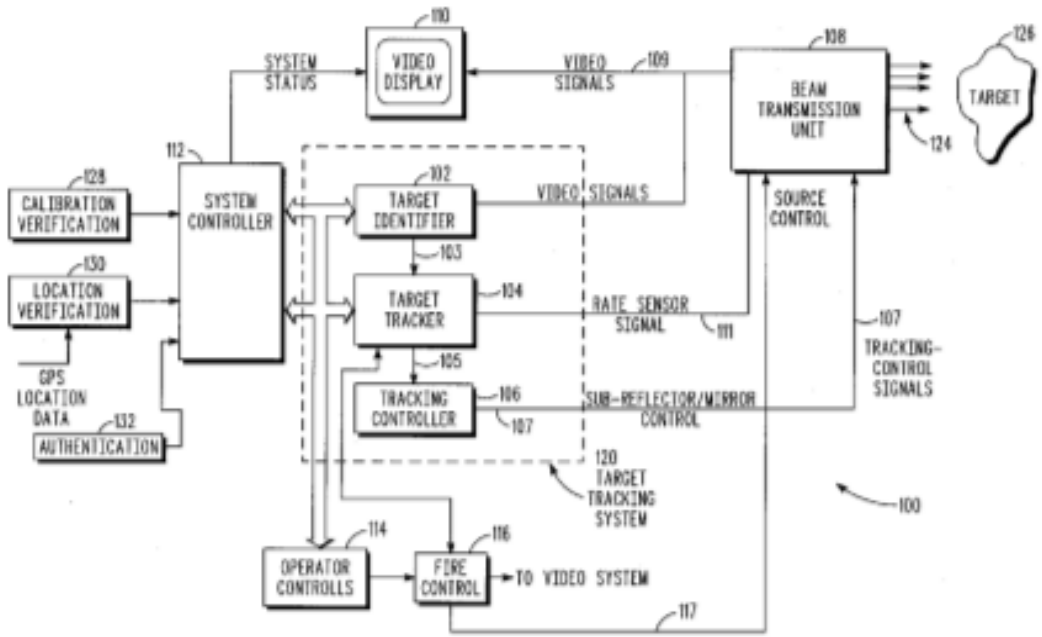
Publication Classification

(51) **Int. Cl.**
B01J 19/12 (2006.01)
G01S 13/86 (2006.01)
H04N 5/225 (2006.01)

(52) **U.S. Cl.** .. **250/492.1**; 348/169; 342/67; 348/E05.024

(57) **ABSTRACT**

Embodiments of a target tracking system and method with jitter reduction suitable for directed energy systems are generally described herein. In some embodiments, the directed energy system includes a target tracking system to track one or more track points on a moving target, and a beam transmission unit to maintain a directed energy beam on a selected one of the track points in response to tracking control signals provided by the target tracking system. The track points may be smaller than a spot size of the directed energy beam maintained on the target.



DIRECTED ENERGY SYSTEM

Amateur presentation
created by: Kizim Artem

