

US008646172B2

## (12) United States Patent

#### Kuzma et al.

#### (54) ELECTRODE ARRAY ASSEMBLY AND METHOD OF MAKING SAME

- (75) Inventors: Janusz A. Kuzma, Parker, CO (US); Anne M. Pianca, Valencia, CA (US)
- (73) Assignee: Boston Scientific Neuromodulation Corporation, Valencia, CA (US)
- (\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 315 days.
- (21) Appl. No.: 13/013,599
- (22) Filed: Jan. 25, 2011

#### (65) **Prior Publication Data**

US 2011/0118815 A1 May 19, 2011

#### **Related U.S. Application Data**

- (63) Continuation of application No. 11/329,907, filed on Jan. 11, 2006, now Pat. No. 7,891,085.
- (60) Provisional application No. 60/643,093, filed on Jan. 11, 2005.
- (51) Int. Cl.

)6.01)
)6.01)

#### (56) **References Cited**

#### U.S. PATENT DOCUMENTS

3,769,984	Α	*	11/1973	Muench	607/122
5,410,797	Α	*	5/1995	Steinke et al.	. 29/435
5,555,618	Α	*	9/1996	Winkler	. 29/825
6,055,456	А	*	4/2000	Gerber	607/117
6,205,361	Β1	*	3/2001	Kuzma et al.	607/116

#### (10) Patent No.: US 8,646,172 B2

#### (45) **Date of Patent:** Feb. 11, 2014

6,216,045 6,249,708 6,551,302 6,598,280 6,909,918 7,047,081 7,184,840 2004/0024440	B1 * B1 * B1 * B2 * B2 * B2 * A1 *	6/2001 4/2003 7/2003 6/2005 5/2006 2/2007 2/2004	Black et al. 607/122   Nelson et al. 607/122   Rosinko et al. 604/505   Giba et al. 29/447   Stypulkowski 607/117   Kuzma 607/122   Cole 607/122
			Cole 607/122 Moody et al 600/3
2004/0024440			

(Continued)

#### OTHER PUBLICATIONS

U.S. Appl. No. 11/329,907, Official Communication mailed Nov. 17, 2008.

U.S. Appl. No. 11/329,907, Official Communication mailed Apr. 2, 2009.

U.S. Appl. No. 11/329,907, Official Communication mailed Jul. 1, 2009.

U.S. Appl. No. 11/329,907, Official Communication mailed Mar. 31, 2010.

U.S. Appl. No. 11/329,907, Notice of Allowance mailed Nov. 15, 2010.

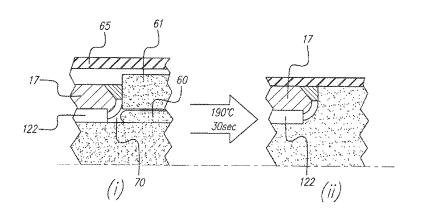
Primary Examiner — David Angwin

(74) Attorney, Agent, or Firm—Frommer Lawrence & Haug LLP; Bruce E. Black

#### (57) **ABSTRACT**

A method of manufacturing a stimulation lead includes providing a lead body having an insulation section that defines a central lumen extending along the insulation section and conductor lumens extending along the insulation section and arranged around, and external to, the central lumen. The lead body also includes conductive contacts located along an axial end of the lead body and conductor wires with each conductor wire disposed within one of the conductor lumens and each of the conductor lumens having at least one of the conductor wires disposed therein. After providing the lead body, conductively at least one of the conductor wires to each of the conductive contacts; and placing non-conductive material into a portion of at least one of the conductor lumens of the lead body. A portion of the conductor lumens and at least a portion of the non-conductive material are disposed radially beneath the conductive contacts.

#### 11 Claims, 6 Drawing Sheets



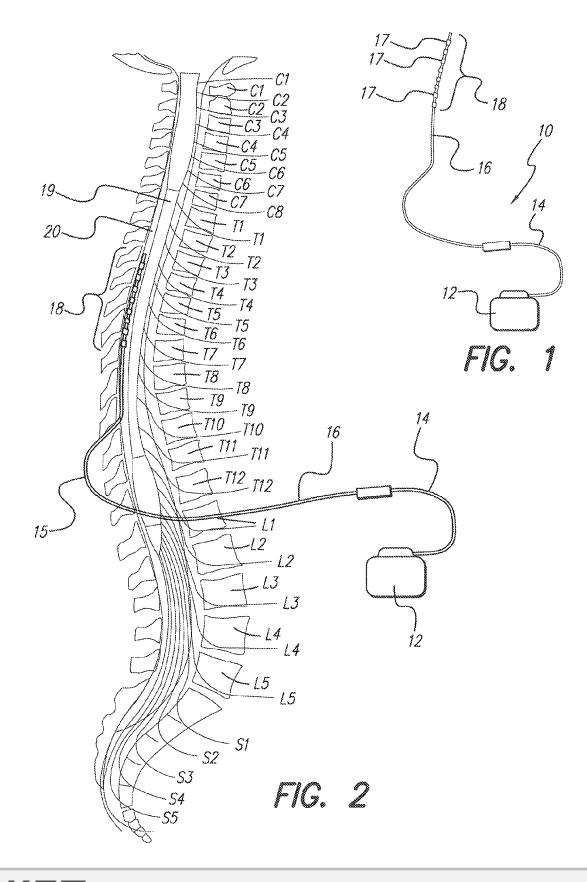
Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

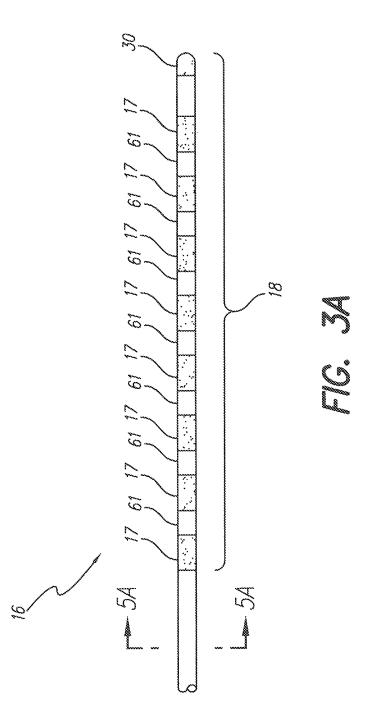
#### (56) **References Cited**

#### U.S. PATENT DOCUMENTS

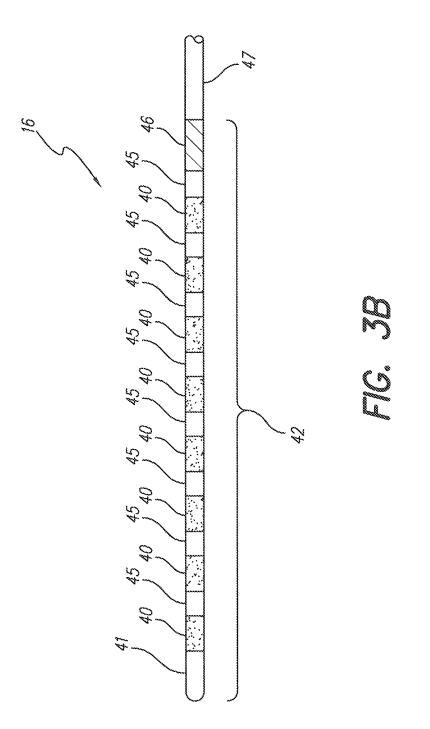
2005/0215945	A1*	9/2005	Harris et al 604/66
2006/0036218	A1*	2/2006	Goodson et al 604/264
2007/0021771	A1*	1/2007	Oepen et al 606/194

\* cited by examiner





**DOCKET A L A R M** Find authenticated court documents without watermarks at <u>docketalarm.com</u>.



DOCKET A L A R M Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

## 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.