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Tai et al.

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(54) **METHOD OF CONSTRUCTING AN IMPLANTABLE MICROELECTRODE ARRAY**

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See application file for complete search history.

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(57) **ABSTRACT**

An implantable electrode array assembly configured to apply electrical stimulation to the spinal cord. A substantially electrically nonconductive layer of the device has a first portion positionable alongside the spinal cord that includes a plurality of first openings. The layer has a second portion that includes a plurality of second openings. Electrodes and traces are positioned inside a peripheral portion of a body portion of the device and alongside the layer. At least one of the first openings is adjacent each of the electrodes to provide a pathway through which the electrode may provide electrical stimulation to the spinal cord. At least one of the second openings is adjacent each of the traces to provide a pathway through which the trace may receive electrical stimulation. At least one trace is connected to each electrode and configured to conduct electrical stimulation received by the trace(s) to the electrode.

12 Claims, 9 Drawing Sheets

