PCT WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : A61N 1/34 — A1

(11) International Publication Number: **WO 97/02861**

(43) International Publication Date: 30 January 1997 (30.01.97)

(21) International Application Number: PCT/US96/10589

(22) International Filing Date: 19 June 1996 (19.06.96)

(30) Priority Data:

60/000,317	19 June 1995 (19.06.95)	US
60/000,300	19 June 1995 (19.06.95)	US
60/000,299	19 June 1995 (19.06.95)	US
60/000,318	19 June 1995 (19.06.95)	US
60/001,012	10 July 1995 (10.07.95)	US

(71)(72) Applicant and Inventor: HOLCOMB, Robert, R. [US/US]; Suite 1150, 2100 West End Avenue, Nashville, TN 37203 (US).

(74) Agents: SMITH, Gregory, C. et al.; Pravel, Hewitt, Kimball & Krieger, 10th floor, 1177 West Loop South, Houston, TX 77027 (US).

(81) Designated States: AL, AM, AT, AT (Utility model), AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), EE, EE (Utility model), ES, FI, FI (Utility model), GB, GE, HU, IL, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (KE, LS, MW, SD, SZ, UG), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).

Published

With international search report.

Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: METHOD OF IMPROVING EFFICACY AND SENSORY TOLERANCE WITH A CONTINUOUS PULSE, NON-MODULATED NON-BURST MODE NERVE STIMULATOR

(57) Abstract

This invention relates to an apparatus for treating human pain by application of an electrical stimulus with the proper current density to the body surface and the response modulated by a magnetic field to allow manipulation of the firing rate of peripheral neurons of the A-fiber and C-fiber mechanoreceptor such that chronic and acute pain may be consistently controlled without discomfort from the stimulation. The treatment device electrode (10) includes an adhesive means (11) for holding the electrodes (12) and a magnetic flux generator (13) in contact with the human body. The electrode (12) preferably comprises four electrodes, two of positive polarity and two of negative polarity defining opposite diagonal vertices of a quadrilateral shape.

