

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
13 January 2005 (13.01.2005)

PCT

(10) International Publication Number
WO 2005/002663 A3

(51) International Patent Classification⁷: **A61N 1/00**,
1/18, 1/20, 1/22, 1/24, 1/26

(21) International Application Number:
PCT/US2004/020207

(22) International Filing Date: 24 June 2004 (24.06.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/480,890 24 June 2003 (24.06.2003) US

(71) Applicant (for all designated States except US):
HEALTHONICS, INC. [US/US]; 3106 Vinings Ridge
Drive, Atlanta, GA 30339 (US).

(72) Inventor; and

(75) Inventor/Applicant (for US only): **KRONBERG, James,
W.** [US/US]; 108 Independent Blvd., Aiken, SC 29803
(US).

(74) Agents: **PRATT, John, S.** et al.; Kilpatrick Stockton LLP,
Suite 2800, 1100 Peachtree Street, Atlanta, GA 30309
(US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, 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 receipt of
amendments

(88) Date of publication of the international search report:
18 August 2005

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: APPARATUS AND METHOD FOR BIOELECTRIC STIMULATION, HEALING ACCELERATION, PAIN RELIEF,
OR PATHOGEN DEVITALIZATION

(57) Abstract: An method and method for generating an electrical signal for use in biomedical applications, including two timing-
interval generators, each optionally driving a multistep sequencer; analog, digital or hybrid means for combining the resulting timed
signals into a complex electrical signal; optional filtering means for blocking direct current, removing selected frequency components
from the resulting signal, and/or providing voltage step-up if needed; and conductive means for coupling the resulting signal to a
human or animal body, food, beverage or other liquid, cell or tissue culture, or pharmaceutical material, in order to relieve pain,
stimulate healing or growth, enhance the production of specific biochemicals, or devitalize selected types of organisms.



WO 2005/002663 A3