

(51) International Patent Classification:
G06F 19/00 (2006.01) *A61M 5/00* (2006.01)(21) International Application Number:
PCT/US2009/039421(22) International Filing Date:
3 April 2009 (03.04.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
61/042,487 4 April 2008 (04.04.2008) US
61/060,645 11 June 2008 (11.06.2008) US(71) Applicant (for all designated States except US): **HY-GIEIA, INC.** [US/US]; 330 East Liberty, Lower Level, Ann Arbor, MI 48104 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BESHAN, Eran** [IL/US]; 3614 Weeburn, Ann Arbor, MI 48104 (US). **HODISH, Israel** [IL/US]; 3236 Monument St., Ann Arbor, MI 48108 (US).(74) Agent: **MITCHELL, Christopher, A.**; Butzel Long, 350 S. Main Street, Suite 300, Ann Arbor, MI 48104 (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, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

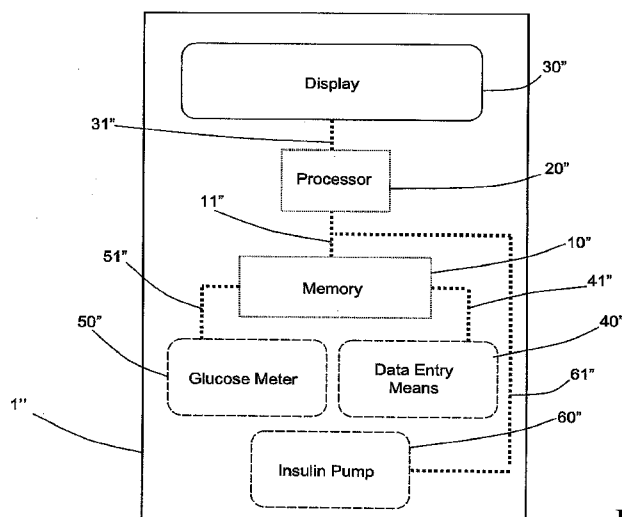
(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, 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 (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:
21 January 2010

(54) Title: APPARATUS FOR OPTIMIZING A PATIENT'S INSULIN DOSAGE REGIMEN

**FIG. 8/12**

(57) Abstract: An apparatus for optimizing a patient's insulin dosage regimen over time, comprising: at least a first computer-readable memory for storing data inputs corresponding at least to one or more components in a patient's present insulin dosage regimen and the patient's blood-glucose-level measurements determined at a plurality of times; a processor operatively connected to the at least first computer-readable memory, the processor programmed at least to determine from the data inputs corresponding to the patient's blood-glucose-level measurements determined at a plurality of times whether and by how much to vary at least one of the one or more components of the patient's present insulin dosage regimen in order to maintain the patient's future blood-glucose-level measurements within a predefined range; and a display operative to display information corresponding to at least the patient's present insulin dosage regimen.

A. CLASSIFICATION OF SUBJECT MATTER**G06F 19/00(2006.01)i, A61M 5/00(2006.01)i**

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC A61B, G06F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & keyword: insulin, dosage

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 2005/0177398 A1(MOTOKAZU WATANABE, TOSHIHIKO YOSHIOKA) 11 AUGUST 2005 See abstract; paragraphs 62-85; figs.2,4,10,11,13,14; claims 1-12.	1-8, 21-23 9-20
X Y	WO 2005/110222 A1(OKTO MEDICAL APPLIANCE CO., LTD., JEUN, HYOUNG-SOO) 24 NOVEMBER 2005 See abstract; paragraphs 15,23-28; figs.1,3-5; claims 1-7.	1-8, 21-23 9-20
Y	US 2005/0192494 A1(BARRY H. GINSBERG) 1 SEPTEMBER 2005 See abstract; paragraphs 31-35; figs.1,2,5; claims 5,9.	9-20
Y	US 2003/0028089 A1(PAUL J. GALLEY et al.) 6 FEBRUARY 2003 See abstract; paragraphs 23-27; fig.1; claims 1,2.	9-20



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

17 NOVEMBER 2009 (17.11.2009)

Date of mailing of the international search report

18 NOVEMBER 2009 (18.11.2009)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seo-
gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

PARK, Bong Ser

Telephone No. 82-42-481-5585



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/US2009/039421

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2005/0177398 A1	11.08.2005	CN 1516562 A EP 1498067 A1 JP 2004-000555 A WO 2003-090614 A1	28.07.2004 19.01.2005 08.01.2004 06.11.2003
WO 2005/110222 A1	24.11.2005	KR 10-2005-0110722 A	23.11.2005
US 2005/0192494 A1	01.09.2005	CA 2498682 A1 EP 1571582 A2 EP 1571582 A3 JP 2005-315855 A US 07404796 B2 US 2008-0269585 A1	01.09.2005 07.09.2005 26.04.2006 10.11.2005 29.07.2008 30.10.2008
US 2003/0028089 A1	06.02.2003	AT 413654 T CA 2394900 A1 CA 2394900 C DE 60229693 D1 EP 1281351 A2 EP 1281351 A3 EP 1281351 B8 EP 1281351 B1 JP 04-231253 B2 JP 2003-079723 A JP 2006-175227 A US 06544212 B2	15.11.2008 31.01.2003 14.02.2006 18.12.2008 05.02.2003 24.03.2004 04.03.2009 05.11.2008 12.12.2008 18.03.2003 06.07.2006 08.04.2003