

# EXHIBIT 4

(12) **United States Patent**  
**Quy**

(10) **Patent No.:** **US 8,277,377 B2**  
 (45) **Date of Patent:** **Oct. 2, 2012**

(54) **METHOD AND APPARATUS FOR MONITORING EXERCISE WITH WIRELESS INTERNET CONNECTIVITY**

(75) Inventor: **Roger J. Quy**, Mill Valley, CA (US)

(73) Assignee: **Q-Tec Systems LLC**, Wilmington, DE (US)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 32 days.

(21) Appl. No.: **12/211,033**

(22) Filed: **Sep. 15, 2008**

(65) **Prior Publication Data**  
 US 2009/0069643 A1 Mar. 12, 2009

**Related U.S. Application Data**

(63) Continuation of application No. 11/649,703, filed on Jan. 3, 2007, now abandoned, which is a continuation of application No. 11/184,274, filed on Jul. 18, 2005, now Pat. No. 7,156,808, which is a continuation of application No. 10/418,845, filed on Apr. 18, 2003, now Pat. No. 6,936,007, which is a continuation of application No. 09/738,270, filed on Dec. 15, 2000, now Pat. No. 6,602,191.

(60) Provisional application No. 60/172,486, filed on Dec. 17, 1999.

(51) **Int. Cl.**  
**A61B 5/00** (2006.01)

(52) **U.S. Cl.** ..... **600/300; 600/301; 128/903; 128/920**

(58) **Field of Classification Search** ..... None  
 See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,282,883	A	8/1981	Yerushalmy	
5,012,814	A	5/1991	Mills et al.	
5,307,263	A	4/1994	Brown	
5,357,427	A	10/1994	Langen et al.	
5,410,471	A *	4/1995	Alyfuku et al.	600/300
5,434,611	A	7/1995	Tamura	
5,441,047	A	8/1995	David et al.	
5,474,090	A *	12/1995	Begun et al.	600/520

(Continued)

FOREIGN PATENT DOCUMENTS

JP 9224917 9/1997

(Continued)

OTHER PUBLICATIONS

U.S. Appl. No. 60/264,739, filed Jan. 2011, Posa et al.

(Continued)

*Primary Examiner* — Sam Yao

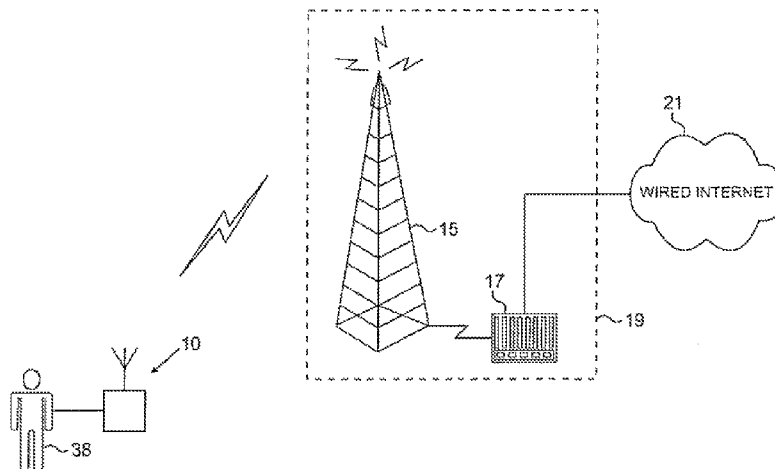
*Assistant Examiner* — Shirley Jian

(74) *Attorney, Agent, or Firm* — Mark D. Wiczorek; Mayer & Williams P.C.

(57) **ABSTRACT**

A method and apparatus are provided for wireless monitoring of exercise, fitness, or nutrition by connecting a web-enabled wireless phone to a device which provides exercise-related information, including physiological data and data indicating an amount of exercise performed. The connection may be by way of a wireless connection using protocols such as Bluetooth® or 802.11, or by way of a wired connection. An optional adaptor may be included if necessary. An application for receiving the exercise-related information and providing a user interface may be downloaded to the web-enabled wireless phone from an internet server. The exercise-related information may be transmitted to an internet server, and the server may calculate and return a response.

**19 Claims, 8 Drawing Sheets**



## US 8,277,377 B2

Page 2

## U.S. PATENT DOCUMENTS

5,544,649	A	8/1996	David et al.	
5,544,661	A	8/1996	Davis et al.	
5,549,117	A	8/1996	Tacklind et al.	
5,553,609	A	9/1996	Chen et al.	
5,576,952	A	11/1996	Stutman et al.	
5,601,435	A	2/1997	Quy	
5,626,144	A	5/1997	Tacklind et al.	
5,678,562	A	10/1997	Sellers	
5,701,904	A	12/1997	Simmons et al.	
5,704,366	A	1/1998	Tacklind et al.	
5,724,025	A	3/1998	Tavori	
5,732,709	A	3/1998	Tacklind et al.	
5,735,285	A	4/1998	Albert et al.	
5,752,917	A	5/1998	Fuchs	
5,772,586	A	6/1998	Heinonen et al.	
5,791,342	A	8/1998	Woodard	
5,931,791	A	8/1999	Saltzstein et al.	
5,933,136	A	8/1999	Brown	
5,935,060	A	8/1999	Iliff	
5,941,829	A	8/1999	Saltzstein et al.	
5,951,300	A	9/1999	Brown	
5,959,533	A	9/1999	Layson et al.	
5,964,701	A	10/1999	Asada et al.	
5,967,975	A	10/1999	Ridgeway	
5,987,352	A	11/1999	Klein et al.	
5,987,519	A	11/1999	Peifer et al.	
5,997,476	A *	12/1999	Brown	600/300
6,013,007	A *	1/2000	Root et al.	482/8
6,022,315	A	2/2000	Iliff	
6,024,699	A	2/2000	Surwit et al.	
6,050,940	A	4/2000	Braun et al.	
6,055,506	A	4/2000	Frasca, Jr.	
6,057,758	A	5/2000	Dempsey et al.	
6,059,692	A *	5/2000	Hickman	482/8
6,083,156	A	7/2000	Leseicki	
6,093,146	A	7/2000	Filangeri	
6,101,478	A	8/2000	Brown	
6,139,494	A *	10/2000	Cairnes	600/300
6,144,837	A	11/2000	Quy	
6,160,478	A	12/2000	Jacobsen et al.	
6,168,563	B1	1/2001	Brown	
6,190,324	B1	2/2001	Kieval et al.	
6,266,645	B1	7/2001	Simpson	
6,309,342	B1 *	10/2001	Blazey et al.	600/26
6,319,199	B1	11/2001	Sheehan et al.	
6,336,900	B1	1/2002	Alleckson et al.	
6,353,839	B1 *	3/2002	King et al.	715/236
6,375,614	B1	4/2002	Braun et al.	
6,386,882	B1	5/2002	Linberg	
6,416,471	B1	7/2002	Kumar et al.	
6,418,346	B1	7/2002	Nelson et al.	
6,440,068	B1	8/2002	Brown et al.	
6,450,955	B1	9/2002	Brown et al.	
6,458,080	B1	10/2002	Brown et al.	
6,478,736	B1	11/2002	Mault	
6,524,189	B1 *	2/2003	Rautila	463/40
6,529,771	B1	3/2003	Kieval et al.	
6,602,191	B2	8/2003	Quy	
6,610,012	B2	8/2003	Mault	
6,736,759	B1 *	5/2004	Stubbs et al.	482/8
6,790,178	B1 *	9/2004	Mault et al.	600/300
6,856,832	B1	2/2005	Matsumura et al.	
6,936,007	B2	8/2005	Quy	
6,976,958	B2	12/2005	Quy	
2001/0005830	A1 *	6/2001	Kuroyanagi	705/2
2002/0016719	A1	2/2002	Nemeth et al.	
2002/0019584	A1	2/2002	Schultze et al.	
2002/0026223	A1	2/2002	Riff et al.	
2002/0072785	A1	6/2002	Nelson et al.	
2002/0082480	A1	6/2002	Riff et al.	
2002/0120310	A1	8/2002	Linden et al.	
2003/0004554	A1	1/2003	Riff et al.	
2003/0072424	A1	4/2003	Evans et al.	

## FOREIGN PATENT DOCUMENTS

JP	11047101	2/1999
JP	11122369	4/1999
JP	11259783	9/1999
JP	2002/344660 A	11/2002
WO	WO 95/32480	11/1995
WO	WO 97/28736	8/1997
WO	WO 97/28737	8/1997
WO	WO 98/24358	6/1998
WO	WO 98/38909	9/1998
WO	WO 99/04687	2/1999
WO	WO 99/14882	3/1999
WO	WO 99/41682	8/1999
WO	WO 99/44494	9/1999
WO	WO 99/46718	9/1999
WO	WO 00/36900	6/2000
WO	WO 00/40145	7/2000
WO	WO 00/54205	9/2000
WO	WO 00/54206	9/2000
WO	WO 00/62662	10/2000
WO	WO 01/24038	4/2001

## OTHER PUBLICATIONS

U.S. Appl. No. 60/264,739, filed Jan. 2001, Posa et al.

Jyrki Oraskari; "Bluetooth versus WLAN IEEE 802.11X"; Helsinki University of Technology (Department of Computer Science and Engineering) Nov. 2000.

Jack Smith; Your Personal Health Buddy; ABCNews.com; <http://abcnews.go.com/sections/tech/CuttingEdge/cuttingedge990225.html>; 3 pages (Nov. 24, 2000).

The Health Hero Communications Platform; The Health Hero Network Online Services; <http://www.hhn.com/products/Index.html>; 2 pages (Nov. 24, 2000).

"Cell Phones Cameras Put Doctors in the Picture", Feb. 21, 2005, 1 page, <http://news.healingwell.com/index.php?p=news1&id=524118>.

Painless Blood-Glucose Monitoring; Kumertrix Technology Overview; <http://www.kumertrix.com/technology.html>; 2 pages; Nov. 24, 2000.

Technology & Clinical Results-Simple Solutions Through Technology-Progression of Glucose Monitoring Technology; Amira; [http://amira.com/tech/te\\_tech.htm](http://amira.com/tech/te_tech.htm); 2 pages; Nov. 24, 2000.

Wired for Wellness; LifeChart.com; <http://www.lifechart.com>; 2 pages; Nov. 24, 2000.

About Data Critical Corporation; Yahoo—Data Critical to Provide Mallincrodt with Wireless Connectivity for Ventilators; [http://biz.yahoo.com/prnews/001012/mo\\_mallinc.html](http://biz.yahoo.com/prnews/001012/mo_mallinc.html); 1 page; Nov. 24, 2000.

Bluetooth wireless technology-bridging the gap between computing and communication; Bluetooth Technology; <http://www.intel.com/mobile/bluetooth/>; 2 pages; Nov. 28, 2000.

Bluetooth resource center; What is Bluetooth?; palowireless.com; <http://www.palowireless.com/infotooth/watis.asp>; 3 pages; Nov. 28, 2000.

Bluetooth Tutorial; palowireless.com—bluetooth resource center; <http://www.palowireless.com/infotooth/tutorial.asp>; 4 pages; Nov. 28, 2000.

Bluetooth Profiles; palowireless.com—bluetooth resource center; <http://www.palowireless.com/infotooth/tutorial/profiles.asp>; 4 pages; Nov. 28, 2000.

Nick Hunt; Bluetooth Venus 802.11; TDK Systems; [http://www.cellular.com.za/bluetooth\\_versus\\_802.htm](http://www.cellular.com.za/bluetooth_versus_802.htm); 4 pages; Nov. 28, 2000.

Bluetooth vs. Airport (802.11 Network); palowireless.com—Bluetooth resource center; <http://www.palowireless.com/infotooth/knowledge/othernetworks/15.asp>; 3 pages; Nov. 28, 2000.

Personal Digital Assistants; A2 Anytime/Anywhere—A Weekly on Wireless Infrastructure and Data Services; Thomas Weisel Partners (Merchant Banking); 5 pages; Nov. 29, 2000.

Ashlee Vance; Ericsson and Intel Make Bluetooth Pact; InfoWorld.com; <http://www.infoworld.com/articles/hn/xml/00/12/04/0011204hnericintel.xml?T.../printarticle.htm>; 1 page; Dec. 4, 2000.

US 8,277,377 B2

Page 3

Pui-Wing Tam; Handspring Homes; Article from the Wall Street Journal; Section B; Nov. 2000.

Author unknown; Articles on Phones and New Technologies; Article from the Wall Street Journal; Nov. 2000.

David Pringle; Sagen to Launch Hand-held Computer that Doubles as Top-End Mobile Phone; Article from the Wall Street Journal; Nov. 2000.

Svensson, Peter; "Cisco Launches WiFi Phone" Article from Australian IT; Apr. 29, 2003.

"Breakthrough Devices Shown At ADA" published in Diabetes News for Jul. 1, 2001 at <http://www.diabetesnet.com/news/news070101.php>.

"iMetrikus" published at [http://www.qualcomm.com/qwbs/resource/resourcelib\\_casestdy.shtml](http://www.qualcomm.com/qwbs/resource/resourcelib_casestdy.shtml).

"Applications of MedStar" published on Apr. 27, 2003 by Cybernet Medical, 16 pages.

"HIPAA & WiFi: Regulatory Tangles for Wireless Health Care Networks Analyzed" published at <http://www.hipaadvisory.com/tech/wireless.htm>.

"Medtronic CareLink Network, How it Works" published at <http://www.medtronic.com/carelink/features.html>.

"FDA Approves Medtronic CareLink™ Monitor and Software, Opening a New Chapter in Patient Management Using Internet Technology", Medtronic News Release dated Jan. 2, 2002.

"The MedStar System, How the MedStar System Works" brochure published by Cybernet Medical.

"iMetrikus Mobile Solutions" brochure by iMetrikus, Inc.

"Instromedix—Products" published at [www.instromedix.com/pages/products.asp](http://www.instromedix.com/pages/products.asp). 7 Pages.

Joseph Finkelstein, et al., "Web-Based Monitoring of Asthma Severity: A New Approach to Ambulatory Management". Proc. 1998 IEEE Int'l Conf. on Info Tech. Applications in Biomedicine, 1998, pp. 139-143.

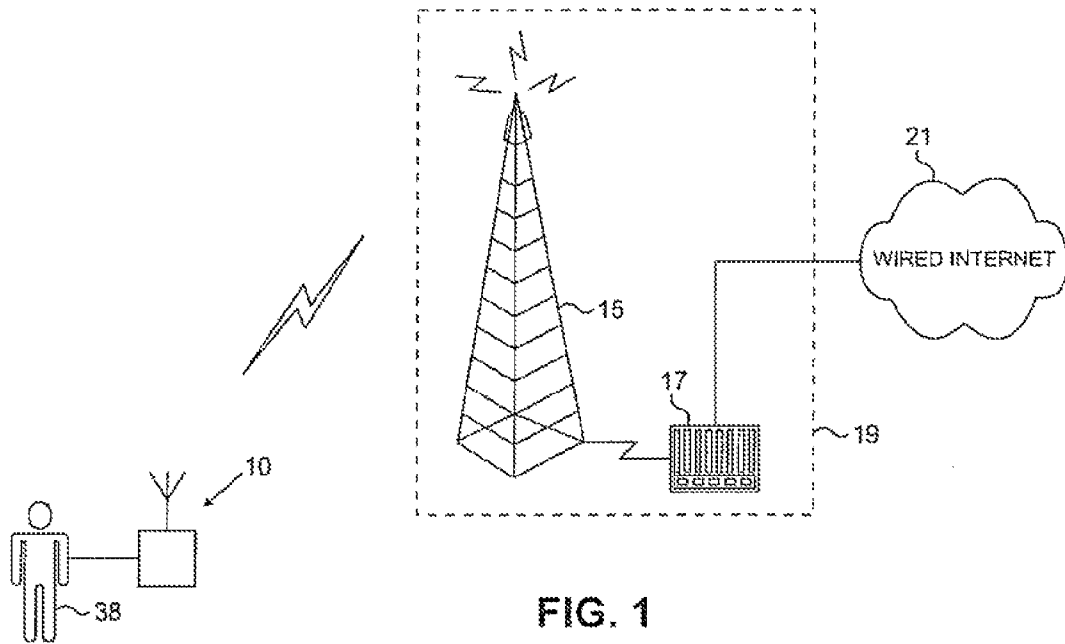
Yan Xiao, PhD. et al., "Design and Evaluation of a Real-Time Mobile Telemedicine System for Ambulance Transport", *Proceedings of the 1998 American Medical Informatics Association Annual Fall Symposium*, 1998, pp. 1102-1103.

Yan Xiao, PhD. et al., "Design and Evaluation of a Real-Time Mobile Telemedicine System for Ambulance Transport", *The Journal of High Speed Networks*, 2000, vol. 9 (1), pp. 47-56.

EFI Framework Draft Version 0.8 (Jun. 3, 2000); External Functionality Interface Framework; pp. 1-35.

Internet Press Release: New York Business Wire (Sep. 25, 2000); MedSearch Technologies, Inc. Develops a Revolutionary Home-Care Wireless Technology Utilizing PSA's-Personal Organizers-as Patient Monitors.

\* cited by examiner



# 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.