



US009510991B2

(12) **United States Patent**  
**Stockmaster et al.**

(10) **Patent No.:** **US 9,510,991 B2**

(45) **Date of Patent:** **Dec. 6, 2016**

(54) **MEDICAL REHAB LIFT SYSTEM AND METHOD WITH HORIZONTAL AND VERTICAL FORCE SENSING AND MOTION CONTROL**

(71) Applicant: **Gorbel, Inc.**, Fishers, NY (US)

(72) Inventors: **James G. Stockmaster**, Sodus, NY (US); **Brian G. Peets**, Fairport, NY (US); **Benjamin A. Strohman**, Rochester, NY (US); **Alexander Z. Chernyak**, Pittsford, NY (US); **Blake Reese**, Honeoye Falls, NY (US); **Dean C. Wright**, Fairport, NY (US); **Yi Luo**, Shenzhen (CN); **Li-Te Liu**, Taipei (TW)

(73) Assignee: **Gorbel, Inc.**, Fishers, NY (US)

(\* ) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/160,613**

(22) Filed: **Jan. 22, 2014**

(65) **Prior Publication Data**

US 2014/0206503 A1 Jul. 24, 2014

**Related U.S. Application Data**

(60) Provisional application No. 61/755,007, filed on Jan. 22, 2013.

(51) **Int. Cl.**

**A63B 24/00** (2006.01)

**A47D 13/04** (2006.01)

(Continued)

(52) **U.S. Cl.**

CPC ..... **A61H 3/008** (2013.01); **A61H 2201/1215** (2013.01); **A61H 2201/5038** (2013.01);

(Continued)

(58) **Field of Classification Search**

USPC ..... 482/1, 4, 6-7, 69, 142-143; 5/81.1 R; 73/379.09, 862.393, 862.392

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,961,119 A 5/1934 Ettinger  
2,590,739 A 3/1952 Hugo

(Continued)

FOREIGN PATENT DOCUMENTS

EP 2402279 4/2012  
GB 1207697 10/1970  
JP 11-004858 1/1999

OTHER PUBLICATIONS

PCT/US14/12434—An International Search Report and Written Opinion dated Jun. 18, 2014 for PCT/US14/12434 filed Jan. 22, 2014; Inventor James G. Stockmaster.

(Continued)

*Primary Examiner* — Oren Ginsberg

*Assistant Examiner* — Shila Jalalzadeh Abyan

(74) *Attorney, Agent, or Firm* — Duane C. Basch; Basch & Nickerson LLP

(57) **ABSTRACT**

A body-weight support system is disclosed, including an improved lift system and method. The system enables not only the support of patients undergoing rehab therapies, but including exercise modes that are both customizable and dynamic in nature, as well as a track system, wherein the system is capable of providing alternative functionality at differing locations. Other features disclosed include a system by which a movable support unit tracks or follows a patient, adjustable and variable supportive forces for users based upon, for example, a percentage of sensed body weight, and a user-interface that may be employed in a mobile, wired or wireless manner and will allow the use of multiple lift systems on a single, looped track system.

**18 Claims, 24 Drawing Sheets**

