US 20200400595A1

(19) United States

(12) Patent Application Publication

Kamen et al.

(10) Pub. No.: US 2020/0400595 A1

(43) Pub. Date: Dec. 24, 2020

(54) **SENSOR APPARATUS SYSTEMS, DEVICES AND METHODS**

(71) Applicant: **DEKA Products Limited Partnership**, Manchester, NH (US)

(72) Inventors: **Dean Kamen**, Bedford, NH (US); **N. Christopher Perry**, Manchester, NH (US); **Jason A. Demers**, Manchester, NH (US); **Brian D. Tracey**, Litchfield, NH (US); **Arun D. Chawan**, San Francisco, CA (US); **Kevin L. Grant**, Litchfield, NH (US)

(73) Assignee: **DEKA Products Limited Partnership**, Manchester, NH (US)

(21) Appl. No.: **16/916,039**

(22) Filed: **Jun. 29, 2020**

Related U.S. Application Data

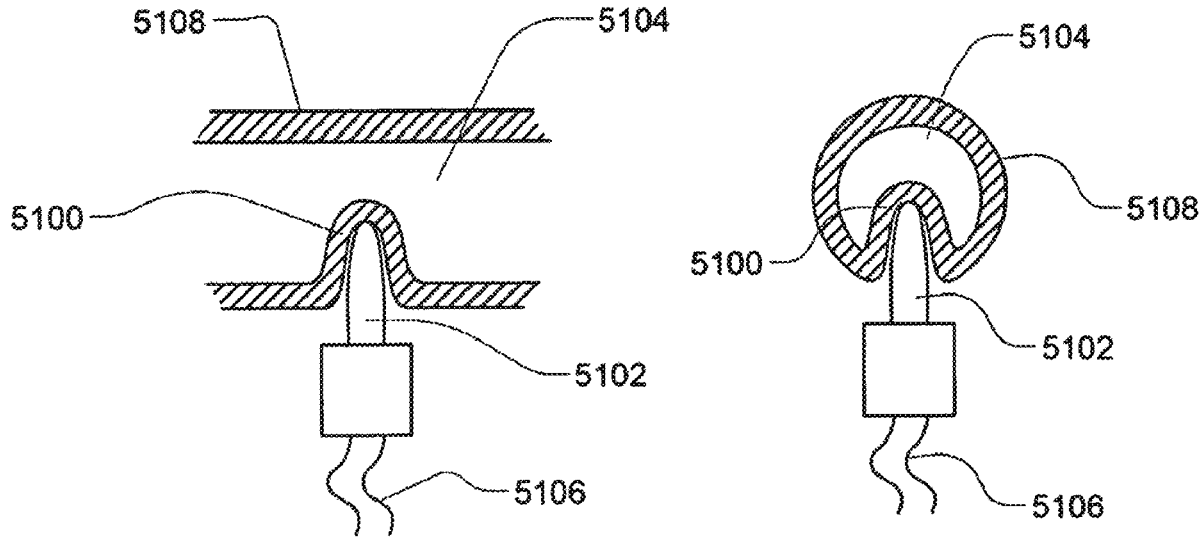
(63) Continuation of application No. 16/112,375, filed on Aug. 24, 2018, now Pat. No. 10,697,913, which is a continuation of application No. 15/393,994, filed on Dec. 29, 2016, now Pat. No. 10,060,867, which is a continuation of application No. 14/672,764, filed on Mar. 30, 2015, now Pat. No. 9,535,021, which is a continuation of application No. 13/619,266, filed on Sep. 14, 2012, now Pat. No. 8,992,075, which is a continuation of application No. 12/038,474, filed on Feb. 27, 2008, now Pat. No. 8,491,184, which is a continuation-in-part of application No. 11/871,821, filed on Oct. 12, 2007, now abandoned.

(60) Provisional application No. 60/921,314, filed on Apr. 2, 2007, provisional application No. 60/904,024, filed on Feb. 27, 2007.

Publication Classification

(51) **Int. Cl.**
G01N 25/18 (2006.01)

(52) **U.S. Cl.**
CPC *G01N 25/18* (2013.01)

(57) **ABSTRACT**

A sensor apparatus and sensor apparatus system for use in conjunction with a cassette, including a disposable or replaceable cassette. In some embodiments, the cassette includes a thermal well for permitting the sensing of various properties of a subject media. The thermal well includes a hollow housing of a thermally conductive material. In other embodiments, the cassette includes sensor leads for sensing of various properties of a subject media. The thermal well has an inner surface shaped so as to form a mating relationship with a sensing probe. The mating thermally couples the inner surface with a sensing probe. In some embodiments, the thermal well is located on a disposable portion and the sensing probe on a reusable portion.