US007554045B2

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

(10) **Patent No.: US 7,554,045 B2**
(45) **Date of Patent: Jun. 30, 2009**

(54) **LINEAR PRESSURE SENSOR**

(75) Inventors: **David Lee Sandbach**, London (GB); **Stuart Mark Walkington**, Hertfordshire (GB)

(73) Assignee: **Peratech Limited**, Durham (GB)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 560 days.

(21) Appl. No.: **10/566,089**

(22) PCT Filed: **Feb. 2, 2005**

(86) PCT No.: **PCT/GB2005/000358**

§ 371 (c)(1),
(2), (4) Date: **Jan. 27, 2006**

(87) PCT Pub. No.: **WO2005/073685**

PCT Pub. Date: **Aug. 11, 2005**

(65) **Prior Publication Data**

US 2007/0289859 A1 Dec. 20, 2007

(30) **Foreign Application Priority Data**

Feb. 2, 2004 (GB) 0402191.1

(51) **Int. Cl.**
H01H 3/16 (2006.01)

(52) **U.S. Cl.** **200/61.43**; 338/99; 341/22; 400/491

(58) **Field of Classification Search** ..... 200/61.43, 200/52 R, 17 R; 338/99, 101, 114, 210, 47; 341/20, 22; 400/491, 581
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,659,873	A *	4/1987	Gibson et al.	178/18.05
4,794,365	A *	12/1988	Dunbar	338/99
4,922,083	A *	5/1990	Springs et al.	219/549
6,452,479	B1 *	9/2002	Sandbach	338/208
6,714,117	B2 *	3/2004	Sandbach	338/101
2003/0119391	A1	6/2003	Swallow et al.	

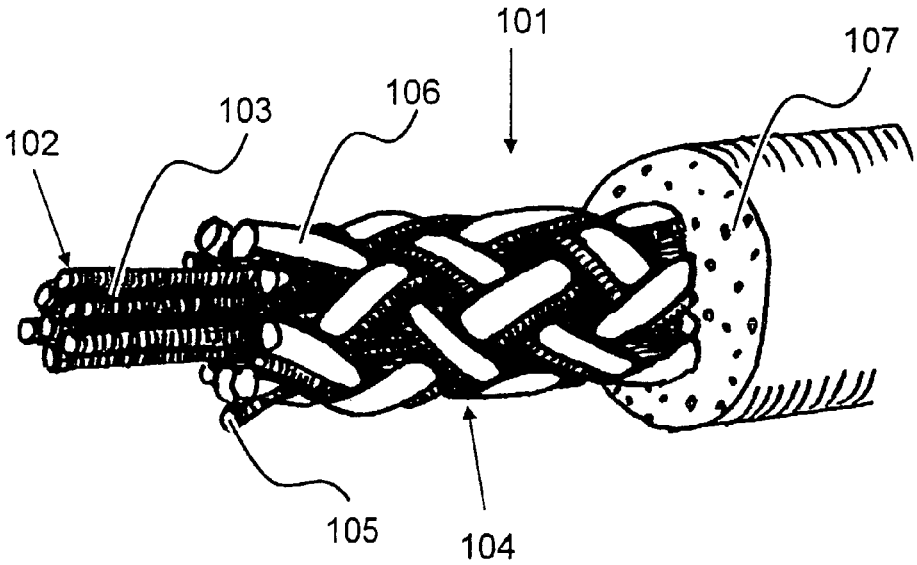
FOREIGN PATENT DOCUMENTS

EP	0 653 810	A	5/1995
EP	0 913 844	A	5/1999
EP	1 052 485	A	11/2000
WO	WO-00/72239	A	11/2000

* cited by examiner

Primary Examiner—Kyung Lee
(74) *Attorney, Agent, or Firm*—Harness, Dickey & Pierce, P.L.C.

(57) **ABSTRACT**

A linear sensor (**101**, **201**) comprising electrically conductive textile fibers (**103**, **105**, **205**, **207**) and electrically insulating textile fibers (**106**, **208**). The sensor comprises at least two conductive elements (**102**, **104**, **204**, **206**) having electrically conductive textile fibers (**103**,**105**, **205**, **207**). The sensor also has electrically insulating textile fibers (**106**, **208**) spaced to separate the two electrically conductive elements when no pressure is applied to said sensor, and to allow electrical conduction between the two conductive elements under the application of pressure.

15 Claims, 2 Drawing Sheets