US009364199B2

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

(10) **Patent No.: US 9,364,199 B2**
(45) **Date of Patent: Jun. 14, 2016**

(54) **MEDICAL DEVICES**

(71) Applicant: **Covidien LP**, Mansfield, MA (US)

(72) Inventors: **Roland Ostapoff**, East Haven, CT (US); **Timothy Sargeant**, Guilford, CT (US)

(73) Assignee: **Covidien LP**, Mansfield, MA (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 451 days.

(21) Appl. No.: **13/826,368**

(22) Filed: **Mar. 14, 2013**

(65) **Prior Publication Data**

US 2014/0276387 A1 Sep. 18, 2014

(51) **Int. Cl.**

A61B 17/08	(2006.01)
A61B 17/00	(2006.01)
A61L 27/54	(2006.01)
A61L 27/58	(2006.01)
A61L 31/14	(2006.01)
A61L 31/16	(2006.01)
A61L 17/00	(2006.01)
A61M 37/00	(2006.01)

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

CPC ***A61B 17/00*** (2013.01); ***A61L 17/005*** (2013.01); ***A61L 27/54*** (2013.01); ***A61L 27/58*** (2013.01); ***A61L 31/148*** (2013.01); ***A61L 31/16*** (2013.01); ***A61M 37/00*** (2013.01)

(58) **Field of Classification Search**

CPC A61L 27/54; A61L 27/58; A61L 31/148; A61L 17/005; A61L 31/16; A61M 37/00; A61B 17/00

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,490,675	A	1/1970	Green et al.
4,300,565	A	11/1981	Rosensaft et al.
4,681,588	A	7/1987	Ketharanathan
5,040,715	A	8/1991	Green et al.
5,157,111	A	10/1992	Pachence
5,307,976	A	5/1994	Olson et al.
5,312,023	A	5/1994	Green et al.
5,318,221	A	6/1994	Green et al.
5,326,013	A	7/1994	Green et al.
5,332,142	A	7/1994	Robinson et al.
5,468,253	A	11/1995	Bezwada et al.
5,707,385	A	1/1998	Williams
5,810,855	A	9/1998	Rayburn et al.
5,874,500	A	2/1999	Rhee et al.
5,915,616	A	6/1999	Viola et al.
5,964,394	A	10/1999	Robertson
6,083,522	A	7/2000	Chu et al.
6,165,201	A	12/2000	Sawhney et al.
6,241,139	B1	6/2001	Milliman et al.
6,273,897	B1	8/2001	Dalessandro et al.
6,330,965	B1	12/2001	Milliman et al.

(Continued)

FOREIGN PATENT DOCUMENTS

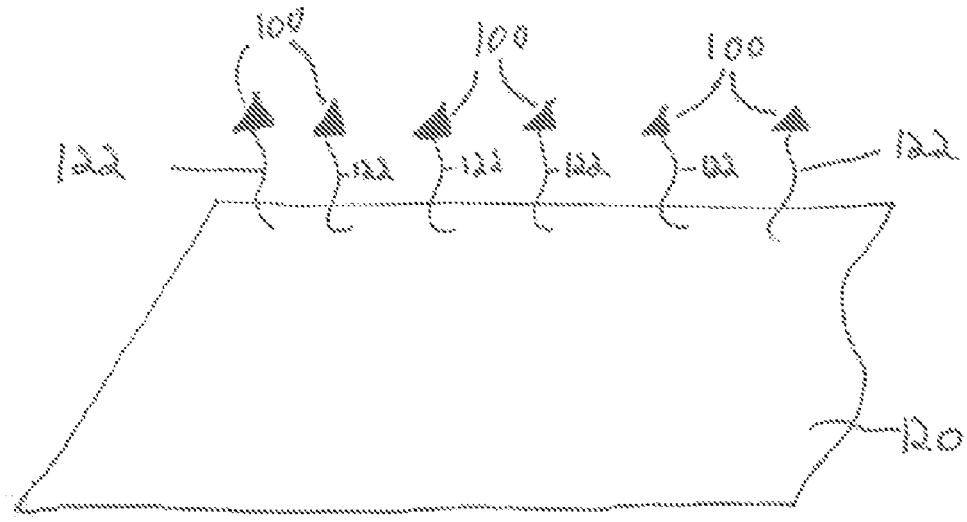
EP	2386321	A2	11/2011
WO	WO 2008/109123	A2	9/2008
WO	2011067569	A1	6/2011

OTHER PUBLICATIONS

Extended European Search Report from Application No. EP 14159420.0 dated Jan. 5, 2015.

Primary Examiner — Gregory Anderson
Assistant Examiner — Son Dang

(57) **ABSTRACT**

The present disclosure provides medical devices possessing reactants thereon, which further promote adherence of the device to tissue in vivo and/or release of bioactive agents from the device.

12 Claims, 4 Drawing Sheets