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(54) **HIGH DENSITY CATHETER TIP**

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(56)	References Cited	
	U.S. PATENT DOCUMENTS	
4,522,212 A	6/1985	Gelinas et al.
4,699,147 A	10/1987	Chilson et al.
4,963,128 A *	10/1990	Daniel A61N 5/1007 600/7
5,044,368 A	9/1991	Putz
5,156,151 A	10/1992	Imran
5,450,846 A	9/1995	Goldreyer
5,702,438 A	12/1997	Avitall
5,772,590 A	6/1998	Webster, Jr.
5,836,947 A	11/1998	Fleischman et al.
5,846,196 A	12/1998	Siekmeyer et al.
5,879,295 A	3/1999	Li et al.
5,964,757 A	10/1999	Ponzi
6,029,091 A	2/2000	de la Rama et al.
6,071,282 A	6/2000	Fleischman
6,120,476 A	9/2000	Fung et al.
6,123,699 A	9/2000	Webster, Jr.
6,171,277 B1	1/2001	Ponzi
6,183,463 B1	2/2001	Webster, Jr.
6,198,974 B1	3/2001	Webster, Jr.
6,210,407 B1	4/2001	Webster
6,216,043 B1	4/2001	Swanson et al.
6,267,746 B1	7/2001	Bumbalough
6,415,187 B1	7/2002	Kuzma et al.
6,430,426 B2	8/2002	Avitall
6,477,423 B1	11/2002	Jenkins
6,522,932 B1	2/2003	Kuzma et al.
6,652,515 B1	11/2003	Maguire et al.
6,658,302 B1	12/2003	Kuzma et al.
6,741,878 B2	5/2004	Fuimaono et al.
6,961,602 B2	11/2005	Fuimaono et al.
7,027,851 B2	4/2006	Mejia
7,089,045 B2	8/2006	Fuimaono et al.
7,099,712 B2	8/2006	Fuimaono et al.
7,228,164 B2	6/2007	Fuimaono et al.
7,257,435 B2	8/2007	Plaza
7,412,274 B2	8/2008	Mejia
7,429,261 B2	9/2008	Kunis et al.
7,561,907 B2	7/2009	Fuimaono et al.
8,019,442 B1	9/2011	Swanson
8,157,848 B2	4/2012	Zhang et al.
8,271,099 B1	9/2012	Swanson
8,391,947 B2	3/2013	Urman et al.
8,486,063 B2	7/2013	Werneth et al.
8,565,894 B2	10/2013	Vetter et al.
8,603,069 B2	12/2013	Selkee
8,744,599 B2	6/2014	Tegg
8,771,207 B2	7/2014	O'Dea et al.
8,903,508 B2	12/2014	Feler

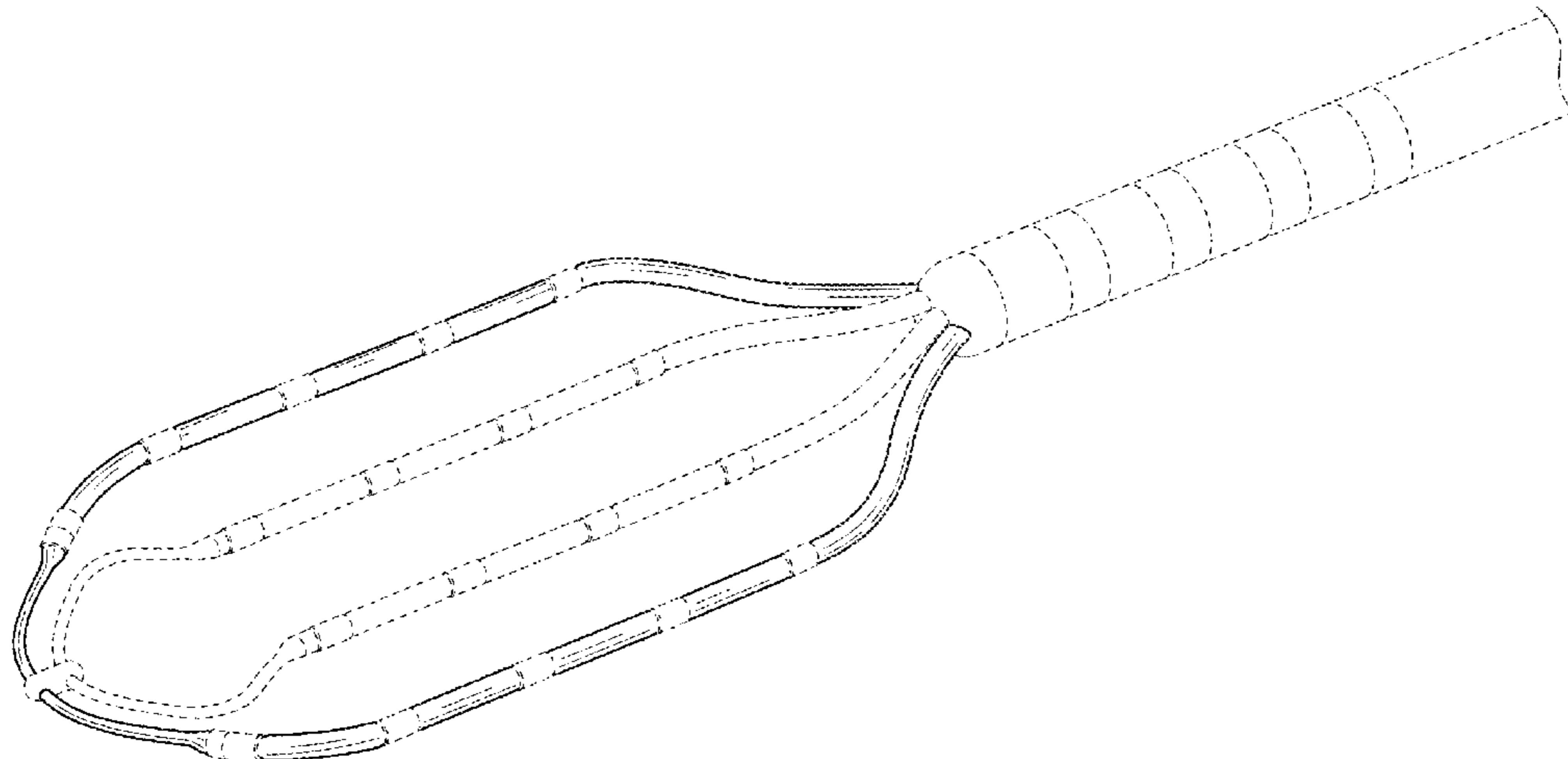
Related U.S. Application Data

(60) Division of application No. 29/759,860, filed on Nov. 25, 2020, now abandoned, which is a continuation of application No. 16/670,678, filed on Oct. 31, 2019, which is a continuation of application No. 14/760,682, filed as application No. PCT/US2014/011940 on Jan. 16, 2014, now Pat. No. 10,492,729.

(51) **LOC (13) Cl.** **24-02**

(52) **U.S. Cl.**
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(58) **Field of Classification Search**
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CPC .. A61M 25/065; A61M 5/42; A61M 25/0612; A61M 25/00; A61M 39/00; A61M 27/00; A61M 25/0043; A61M 25/0067; A61M 25/0097; A61F 2/958; A61B 2018/0016; A61B 5/24; A61B 5/6876
See application file for complete search history.



8,909,316	B2 *	12/2014	Ng	A61B 5/0215 600/381
8,979,839	B2	3/2015	de La Rama et al.	
9,044,245	B2	6/2015	Condie et al.	
9,289,132	B2	3/2016	Ghaffari et al.	
9,351,789	B2	5/2016	Novichenok et al.	
9,757,044	B2	9/2017	Scharf et al.	
9,820,664	B2	11/2017	Hotlink et al.	
9,833,608	B2	12/2017	Masson	
D840,027	S *	2/2019	Cochran	D24/127
11,040,202	B2 *	6/2021	Marnfeldt	A61N 1/371
2001/0047129	A1	11/2001	Hall et al.	
2002/0161361	A1 *	10/2002	Sherman	A61B 18/1206 606/34
2003/0120328	A1	6/2003	Jenkins et al.	
2004/0186546	A1	9/2004	Mandrusov et al.	
2005/0159741	A1	7/2005	Paul et al.	
2007/0123852	A1	5/2007	Deem et al.	
2007/0219546	A1	9/2007	Mody et al.	
2008/0243214	A1	10/2008	Koblish	
2008/0319418	A1	12/2008	Chong	
2009/0198300	A1	8/2009	Zhang et al.	
2009/0240248	A1	9/2009	Deford et al.	
2010/0016848	A1	1/2010	Desai	
2010/0286684	A1	11/2010	Hata et al.	
2011/0106074	A1	5/2011	Kunis et al.	
2011/0118726	A1	5/2011	de la Rama et al.	
2011/0160721	A1	6/2011	Wang et al.	
2011/0190732	A1	8/2011	Majercak et al.	
2011/0313417	A1	12/2011	de la Rama et al.	
2012/0172697	A1	7/2012	Urman et al.	
2012/0271302	A1	10/2012	Behl et al.	
2012/0296232	A1	11/2012	Ng	
2012/0296329	A1 *	11/2012	Ng	A61B 5/6853 606/41
2013/0012938	A1	1/2013	Asirvatham et al.	
2013/0041436	A1 *	2/2013	Ruse	A61B 18/1477 607/99
2013/0253504	A1	9/2013	Fang	
2013/0274582	A1	10/2013	Afonso et al.	
2014/0025069	A1	1/2014	Willard et al.	
2014/0296902	A1	10/2014	Huszar et al.	
2014/0316496	A1	10/2014	Masson et al.	
2014/0350553	A1	11/2014	Okuyama	
2014/0350564	A1	11/2014	Huszar et al.	
2015/0159741	A1	6/2015	Versteyhe et al.	
2017/0007158	A1 *	1/2017	Gross	A61B 5/7246
2017/0319269	A1 *	11/2017	Oliverius	A61M 39/12
2018/0050190	A1	2/2018	Masson	
2018/0056038	A1 *	3/2018	Aujla	A61B 5/6859
2019/0009052	A1 *	1/2019	Oliverius	A61M 25/0074
2019/0110750	A1 *	4/2019	Dahlen	A61B 18/1492
2019/0290206	A1 *	9/2019	Jung	A61B 5/6858
2020/0345262	A1 *	11/2020	Selkee	A61B 5/287

FOREIGN PATENT DOCUMENTS

AU	2015202258	5/2015
CA	2934209	12/2016
CN	202069688	12/2011
CN	101797181	12/2015
EP	0779059	6/1997
EP	2752153	9/2014
EP	2732843	1/2016
EP	2664295	12/2019
JP	2009500052	1/2009
JP	2010057943	3/2010
JP	2012130392	7/2012
WO	2007001981	1/2007
WO	2011075328	6/2011
WO	2012092016	7/2012
WO	2015/057521	4/2015

* cited by examiner

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(57) CLAIM

The ornamental design for a high density catheter tip, as shown and described.

DESCRIPTION

This application is related to U.S. provisional application No. 60/939,799, filed May 23, 2007; U.S. application ser. No. 11/853,759, filed Sep. 11, 2007, now U.S. Pat. No. 8,187,267, issued May 29, 2012; U.S. provisional application No. 60/947,791, filed Jul. 3, 2007; U.S. application Ser. No. 12/167,736, filed Jul. 3, 2008, now U.S. Pat. No. 8,206,404, issued Jun. 26, 2012; U.S. application Ser. No. 12/667,338, filed Jan. 20, 2011 (371 date), published as U.S. patent application No. U.S. 2011/0118582 A1, now U.S. Pat. No. 8,827,910, issued Sep. 9, 2014; U.S. application Ser. No. 12/651,074, filed Dec. 31, 2009, published as U.S. patent application No. U.S. 2010/0152731 A1, now U.S. Pat. No. 8,979,837, issued March 17, 2015; U.S. application Ser. No. 12/436,977, filed May 7, 2009, published as U.S. patent application Ser. No. U.S. 2010/0286684 A1; U.S. application Ser. No. 12/723,110, filed Mar. 12, 2010, published as U.S. patent application Ser. No. U.S. 2011/0174177 A1, now U.S. Pat. No. 8,734,440, issued May 27, 2014; U.S. provisional application No. 61/355,242, filed June 16, 2010; U.S. application Ser. No. 12/982,715, filed Dec. 30, 2010, published as U.S. patent application Ser. No. U.S. 2011/0288392 A1, now U.S. Pat. No. 8,974,454, issued Mar. 10, 2015; U.S. application Ser. No. 13/159,446, filed Jun. 14, 2011, published as U.S. patent application Ser. No. U.S. 2011/0313417 A1; U.S. application Ser. No. 13/162,392, filed Jun. 16, 2011, published as U.S. patent application No. U.S. 2012/0010490 A1; and U.S. application Ser. No. 13/704,619, filed Dec. 16, 2012 (371 date).

Each of these applications is hereby incorporated by reference as though fully set forth herein. It is understood that any material in these applications which is not present in this application forms no part of the claimed design.

FIG. 1 is a top plan view of a high density catheter tip showing our new design according to a seventh embodiment;

FIG. 2 is a side perspective view thereof; and,

FIG. 3 is a side elevation view thereof in a flexed position. The dashed broken lines and stipple shading shown in the side elevation view in FIG. 3 illustrates a surface that forms no part of the claimed design. The dot-dash broken lines in the drawings define the boundaries of the claimed design and form no part thereof. The remaining dashed broken lines in the figures depict portions of the catheter tip that form no part of the claimed design.

1 Claim, 3 Drawing Sheets

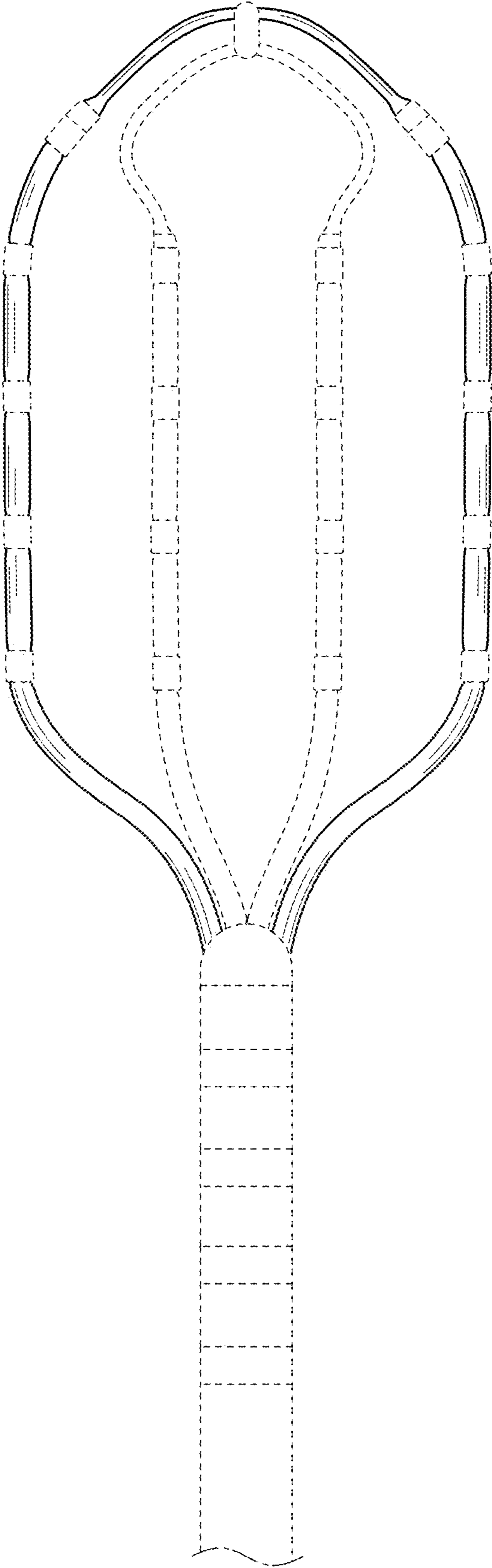


FIG. 1

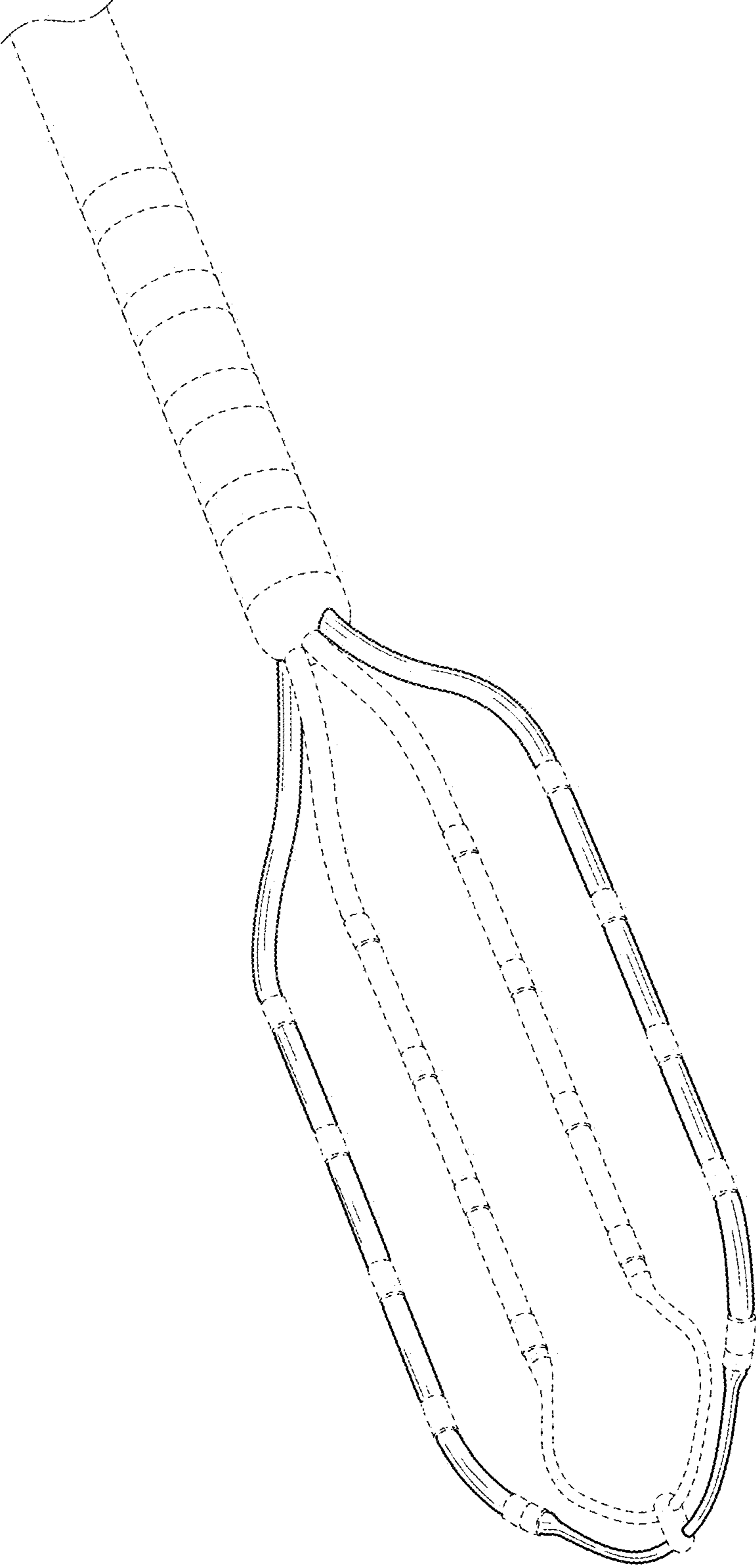


FIG. 2

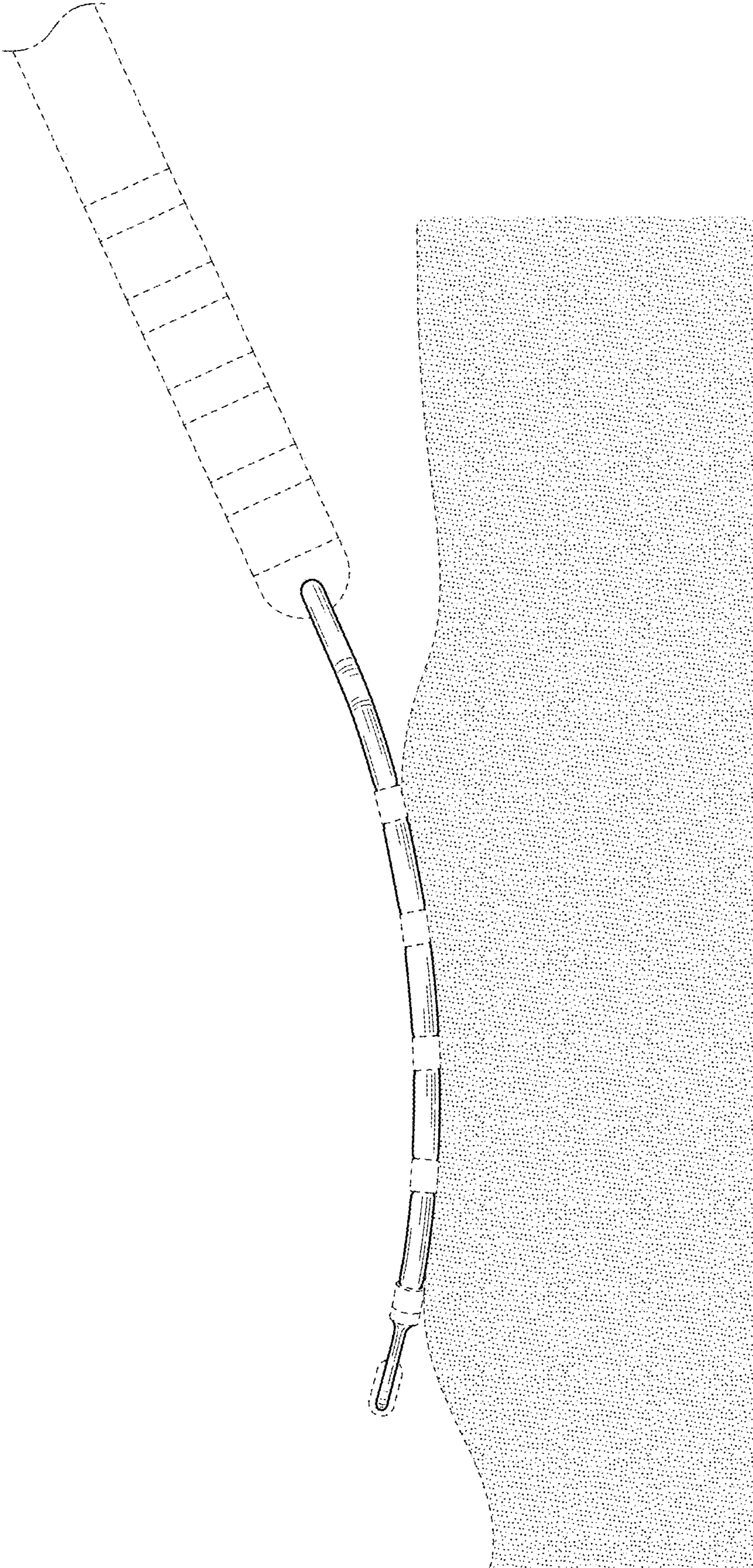


FIG. 3