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(54) **STENT WITH COMMISSURE ATTACHMENTS**

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(**) Term: **14 Years**

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(52) **U.S. Cl.**
USPC **D24/155**

(58) **Field of Classification Search**
USPC D24/155, 156, 133, 152, 154, 135, 141, D24/144–146, 151; 606/194, 198; 623/23.54, 23.7, 1.16, 903, 1.29, 2.18; 604/1.02, 103.02; 128/204.18
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,657,744	A	4/1972	Ersek
4,922,905	A	5/1990	Strecker
5,084,064	A	1/1992	Barak et al.
5,100,429	A	3/1992	Sinofsky et al.
5,163,953	A	11/1992	Vince
5,411,552	A	5/1995	Andersen et al.
5,480,423	A	1/1996	Ravenscroft et al.
5,500,016	A	3/1996	Fisher
D380,266	S	6/1997	Boatman et al.
D380,831	S	7/1997	Kavteladze et al.
D390,957	S	2/1998	Fontaine
5,843,167	A	12/1998	Dwyer et al.
5,855,601	A	1/1999	Bessler et al.
5,924,424	A	7/1999	Stevens et al.
5,961,549	A	10/1999	Nguyen et al.
5,968,068	A	10/1999	Dehdashtian et al.

(Continued)

FOREIGN PATENT DOCUMENTS

DE	19857887	A1	7/2000
DE	10121210	A1	11/2002

(Continued)

OTHER PUBLICATIONS

Ruiz et al., Overview of the Pre-CE Mark Transcatheter Aortic Valve Technologies, Lenox Hill Heart and Vascular Institute of New York, 14pages, May 26, 2010.

(Continued)

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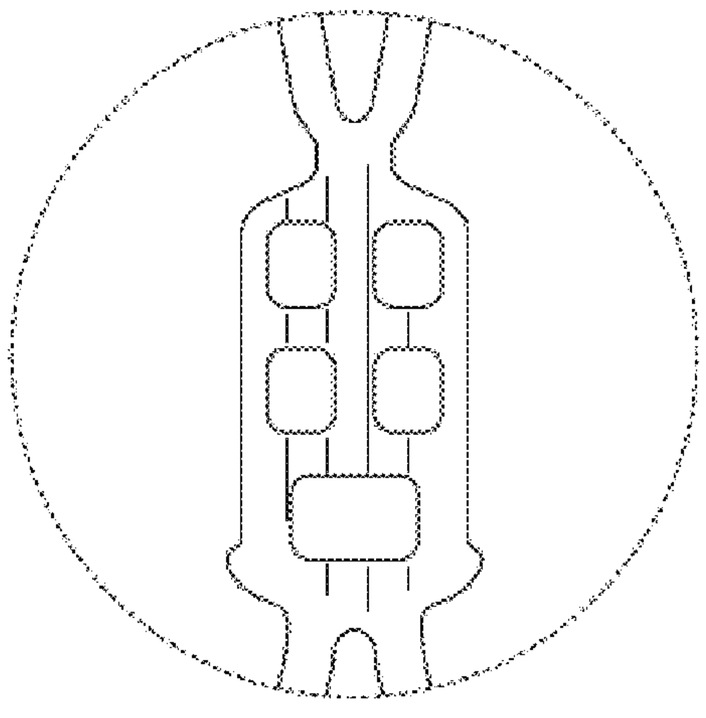
(57) **CLAIM**

The ornamental design for a stent with commissure attachments, as shown and described.

DESCRIPTION

FIG. **1** is a top perspective view of the stent with commissure attachments showing our design;
FIG. **2** is a front side elevational view thereof;
FIG. **3** is a rear side elevational view thereof;
FIG. **4** is a right side elevational view thereof, the left side elevational view being a mirror image of the right side; and,
FIG. **5** is an enlarged front elevational view of a portion of the stent with commissure attachments shown in FIG. **2**.
It is noted that any broken line illustration of environmental structure in the drawing is not part of the claimed design.

1 Claim, 5 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

6,077,297	A	6/2000	Robinson et al.	
6,083,257	A	7/2000	Taylor et al.	
6,214,036	B1	4/2001	Letendre et al.	
6,267,783	B1	7/2001	Letendre et al.	
6,306,141	B1	10/2001	Jervis	
6,488,702	B1	12/2002	Besselink	
6,533,810	B2	3/2003	Hankh et al.	
6,623,518	B2	9/2003	Thompson et al.	
D484,979	S	1/2004	Fontaine	
6,716,241	B2	4/2004	Wilder et al.	
6,719,789	B2	4/2004	Cox	
6,730,118	B2	5/2004	Spenser et al.	
6,790,230	B2	9/2004	Beyersdorf et al.	
6,814,746	B2	11/2004	Thompson et al.	
6,830,584	B1	12/2004	Seguin	
6,893,460	B2	5/2005	Spenser et al.	
6,896,695	B2	5/2005	Mueller et al.	
6,908,481	B2	6/2005	Cribier	
7,018,406	B2	3/2006	Seguin et al.	
7,137,184	B2	11/2006	Schreck	
7,267,686	B2	9/2007	DiMatteo et al.	
D553,747	S	10/2007	Fliedner	
7,326,237	B2	2/2008	DePalma et al.	
D568,476	S	5/2008	Cottone, Jr. et al.	
D569,976	S	5/2008	Raj et al.	
7,381,218	B2 *	6/2008	Schreck	623/1.26
7,452,371	B2	11/2008	Pavcnik et al.	
7,500,988	B1 *	3/2009	Butaric et al.	623/1.16
7,510,572	B2	3/2009	Gabbay	
RE40,816	E	6/2009	Taylor et al.	
D597,671	S	8/2009	Cottone, Jr. et al.	
7,585,321	B2	9/2009	Cribier	
7,641,687	B2	1/2010	Chinn et al.	
D612,499	S	3/2010	Ondracek et al.	
7,682,390	B2	3/2010	Seguin	
7,731,742	B2	6/2010	Schlick et al.	
D622,387	S	8/2010	Igaki	
D622,388	S	8/2010	Igaki	
7,803,185	B2	9/2010	Gabbay	
7,846,203	B2	12/2010	Cribier	
7,846,204	B2	12/2010	Letac et al.	
7,862,609	B2 *	1/2011	Butaric et al.	623/1.29
7,875,068	B2	1/2011	Mangiardi et al.	
7,887,579	B2	2/2011	Mangiardi et al.	
D635,261	S	3/2011	Rossi	
D635,262	S	3/2011	Rossi	
7,914,569	B2	3/2011	Nguyen et al.	
D648,854	S *	11/2011	Braido	D24/155
D652,926	S *	1/2012	Braido	D24/155
D653,342	S *	1/2012	Braido et al.	D24/155
D654,170	S *	2/2012	Braido et al.	D24/155
D660,432	S *	5/2012	Braido	D24/155
D660,433	S *	5/2012	Braido et al.	D24/155
D660,967	S *	5/2012	Braido et al.	D24/155
8,219,229	B2 *	7/2012	Cao et al.	700/98
D684,692	S *	6/2013	Braido	D24/155
8,628,571	B1 *	1/2014	Hacohen et al.	623/2.2
2003/0050694	A1	3/2003	Yang et al.	
2003/0130726	A1	7/2003	Thorpe et al.	
2004/0049262	A1	3/2004	Obermiller et al.	
2004/0093075	A1	5/2004	Kuehne	
2004/0210304	A1	10/2004	Seguin et al.	
2005/0096726	A1	5/2005	Sequin et al.	
2005/0137695	A1	6/2005	Salahieh et al.	
2005/0137697	A1	6/2005	Salahieh et al.	
2006/0004436	A1	1/2006	Amarant et al.	
2006/0074484	A1	4/2006	Huber	
2006/0122692	A1	6/2006	Gilad et al.	
2006/0173532	A1	8/2006	Flagle et al.	
2006/0206202	A1	9/2006	Bonhoeffer et al.	
2006/0241744	A1	10/2006	Beith	
2006/0259120	A1	11/2006	Vongphakdy et al.	
2006/0259137	A1	11/2006	Artof et al.	
2006/0265056	A1	11/2006	Nguyen et al.	
2006/0276813	A1	12/2006	Greenberg	
2007/0010876	A1	1/2007	Salahieh et al.	
2007/0027534	A1	2/2007	Bergheim et al.	
2007/0043435	A1	2/2007	Seguin et al.	
2007/0055358	A1	3/2007	Krolik et al.	
2007/0073391	A1	3/2007	Bourang et al.	
2007/0088431	A1	4/2007	Bourang et al.	
2007/0093890	A1	4/2007	Eliasen et al.	
2007/0100435	A1	5/2007	Case et al.	
2007/0112422	A1	5/2007	Dehdashtian	
2007/0168013	A1	7/2007	Douglas	
2007/0203575	A1	8/2007	Forster et al.	
2007/0213813	A1	9/2007	Von Segesser et al.	
2007/0239271	A1	10/2007	Nguyen	
2007/0244545	A1	10/2007	Birdsall et al.	
2007/0244552	A1	10/2007	Salahieh et al.	
2007/0288087	A1	12/2007	Fearnot et al.	
2008/0039934	A1	2/2008	Styrc	
2008/0125853	A1	5/2008	Bailey et al.	
2008/0140189	A1	6/2008	Nguyen et al.	
2008/0147182	A1	6/2008	Righini et al.	
2008/0147183	A1	6/2008	Styrc	
2008/0154355	A1	6/2008	Benichou et al.	
2008/0154356	A1	6/2008	Obermiller et al.	
2008/0243245	A1	10/2008	Thambar et al.	
2008/0255662	A1	10/2008	Stacchino et al.	
2008/0262602	A1	10/2008	Wilk et al.	
2008/0269879	A1	10/2008	Sathe et al.	
2008/0275540	A1 *	11/2008	Wen	623/1.26
2009/0054975	A1	2/2009	del Nido et al.	
2009/0112309	A1	4/2009	Jaramillo et al.	
2009/0138079	A1	5/2009	Tuval et al.	
2009/0204202	A1 *	8/2009	Dierking et al.	623/1.16
2010/0004740	A1	1/2010	Seguin et al.	
2010/0036484	A1	2/2010	Hariton et al.	
2010/0049306	A1	2/2010	House et al.	
2010/0087907	A1	4/2010	Lattouf	
2010/0131055	A1	5/2010	Case et al.	
2010/0168778	A1	7/2010	Braido	
2010/0168839	A1	7/2010	Braido et al.	
2010/0185277	A1	7/2010	Braido et al.	
2010/0191326	A1	7/2010	Alkhatib	
2010/0204781	A1	8/2010	Alkhatib	
2010/0204785	A1	8/2010	Alkhatib	
2010/0217382	A1	8/2010	Chau et al.	
2010/0249911	A1	9/2010	Alkhatib	
2010/0249923	A1	9/2010	Alkhatib et al.	
2010/0256737	A1	10/2010	Pollock et al.	
2010/0274346	A1	10/2010	Chouinard et al.	
2010/0286768	A1	11/2010	Alkhatib	
2010/0298931	A1	11/2010	Quadri et al.	
2011/0071613	A1	3/2011	Wood et al.	
2011/0098802	A1 *	4/2011	Braido et al.	623/1.26
2012/0071969	A1	3/2012	Li et al.	
2012/0283820	A1 *	11/2012	Tseng et al.	623/1.23
2014/0005776	A1 *	1/2014	Braido et al.	623/2.18
2014/0005777	A1 *	1/2014	Anderl et al.	623/2.18

FOREIGN PATENT DOCUMENTS

DE	202008009610	U1	12/2008
EP	0850607	A1	7/1998
EP	1000590	A1	5/2000
EP	1129744	A1	9/2001
EP	1157673	A2	11/2001
EP	1360942	A1	11/2003
EP	1584306	A1	10/2005
EP	1598031	A2	11/2005
FR	2847800	A1	6/2004
WO	9117720	A1	11/1991
WO	9716133	A1	5/1997
WO	9832412	A2	7/1998
WO	9913801	A1	3/1999
WO	0128459	A1	4/2001
WO	0149213	A2	7/2001
WO	0154625	A1	8/2001
WO	0156500	A2	8/2001
WO	0176510	A2	10/2001
WO	0236048	A1	5/2002
WO	0247575	A2	6/2002

(56) **References Cited**

FOREIGN PATENT DOCUMENTS

WO	03047468	A1	6/2003
WO	2006073626	A2	7/2006
WO	2007071436	A2	6/2007
WO	2008070797	A2	6/2008
WO	2010008548	A2	1/2010
WO	2010008549	A1	1/2010
WO	2010051025	A1	5/2010
WO	2010087975	A1	8/2010
WO	2010096176	A1	8/2010
WO	2010098857	A1	9/2010

OTHER PUBLICATIONS

U.S. Appl. No. 29/375,235.

U.S. Appl. No. 29/375,238.

U.S. Appl. No. 29/375,239.

U.S. Appl. No. 29/375,245.

U.S. Appl. No. 29/375,251.

U.S. Appl. No. 29/375,252.

U.S. Appl. No. 29/375,253.

U.S. Appl. No. 29/375,254.

U.S. Appl. No. 29/375,257.

U.S. Appl. No. 29/375,258.

U.S. Appl. No. 29/375,260.

U.S. Appl. No. 13/781,201, filed Feb. 28, 2013.

* cited by examiner

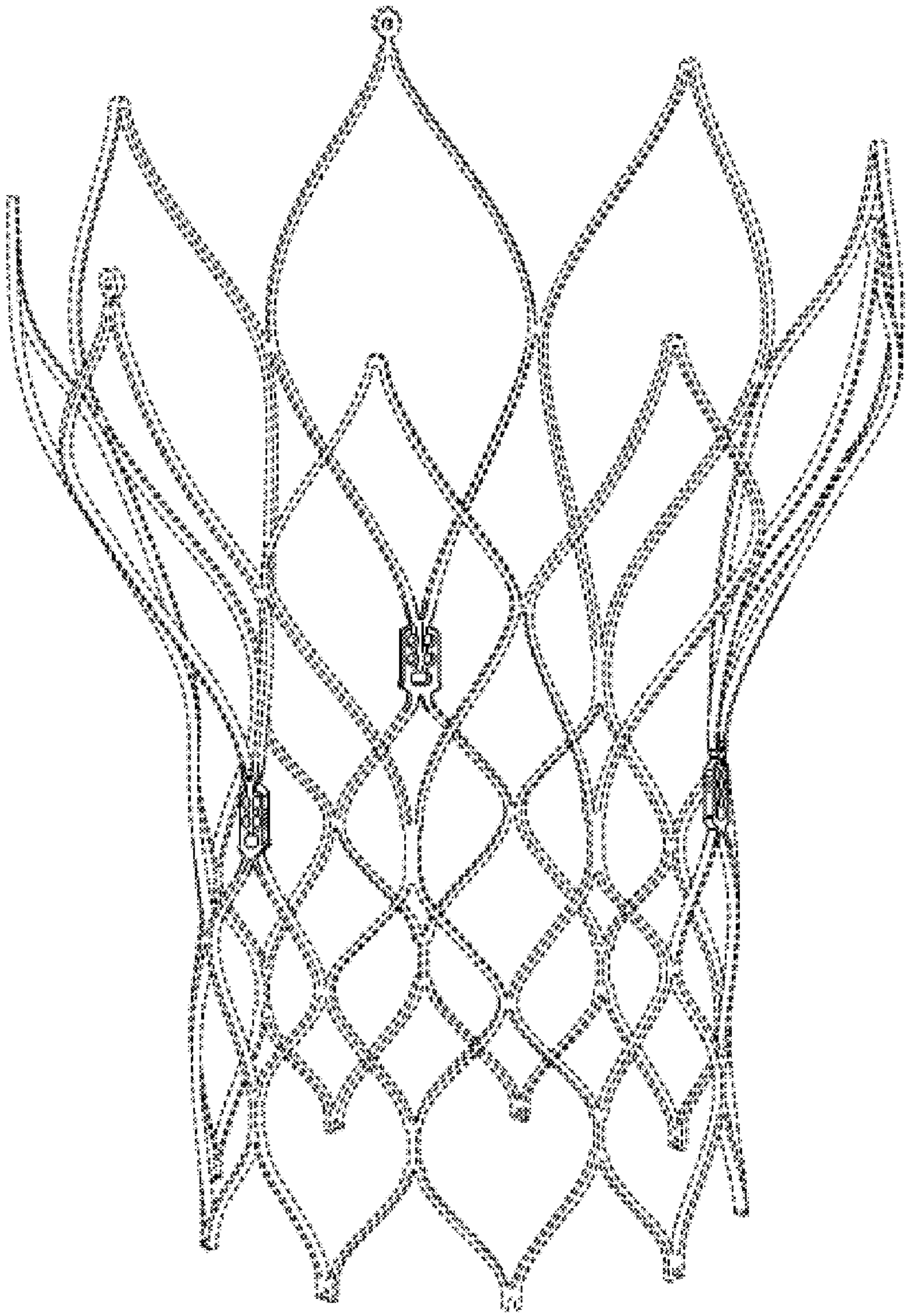


FIG. 1

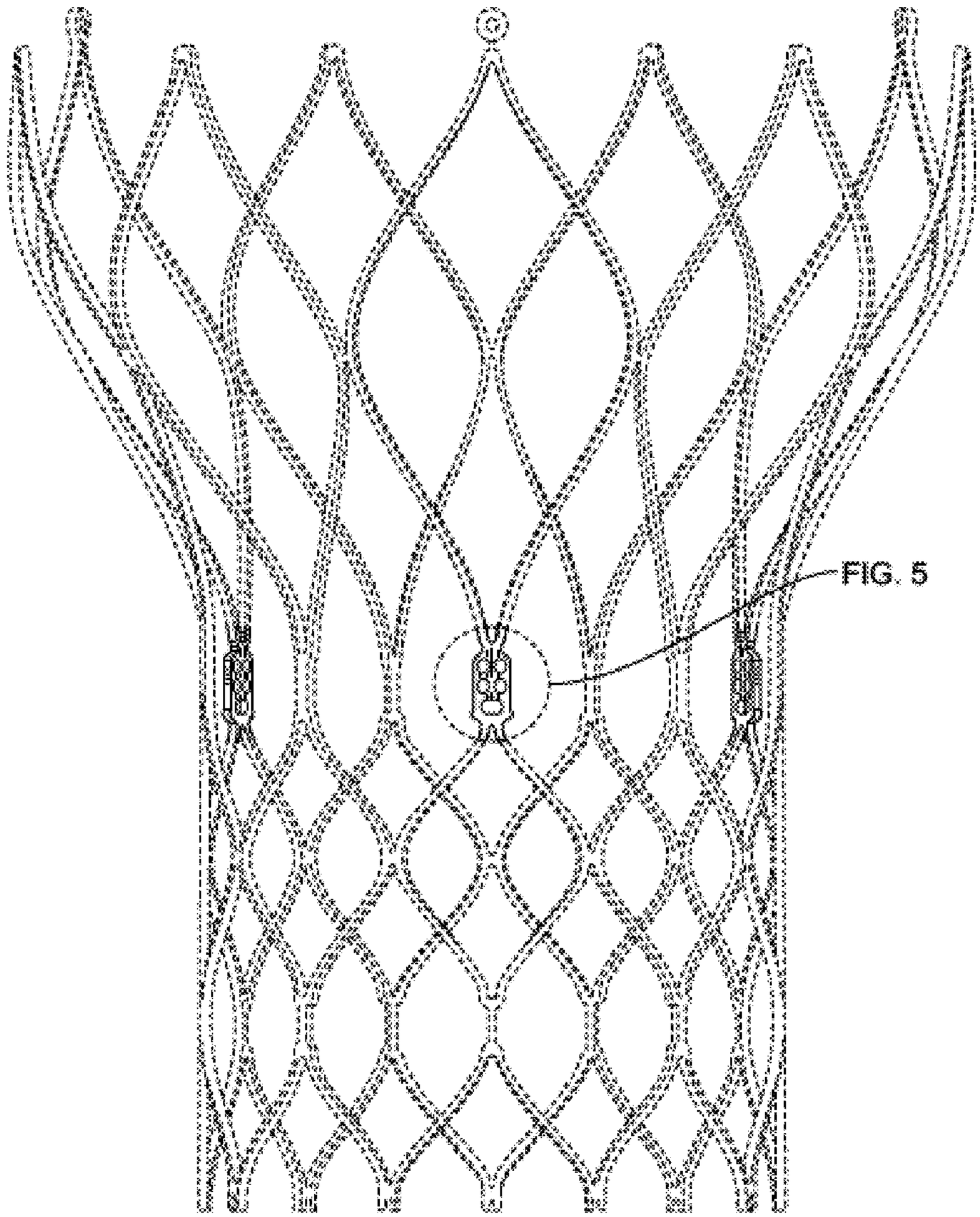


FIG. 2

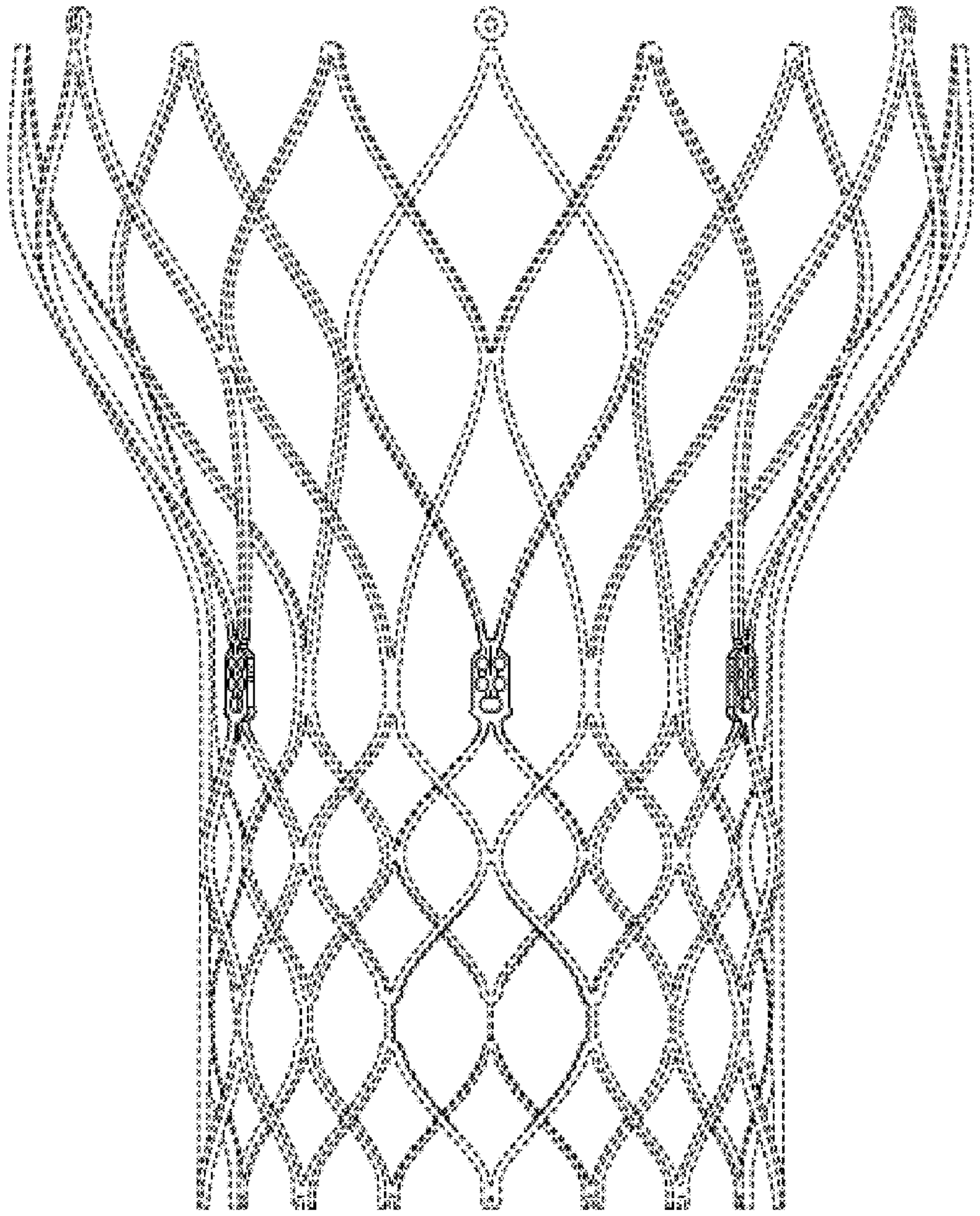


FIG. 3

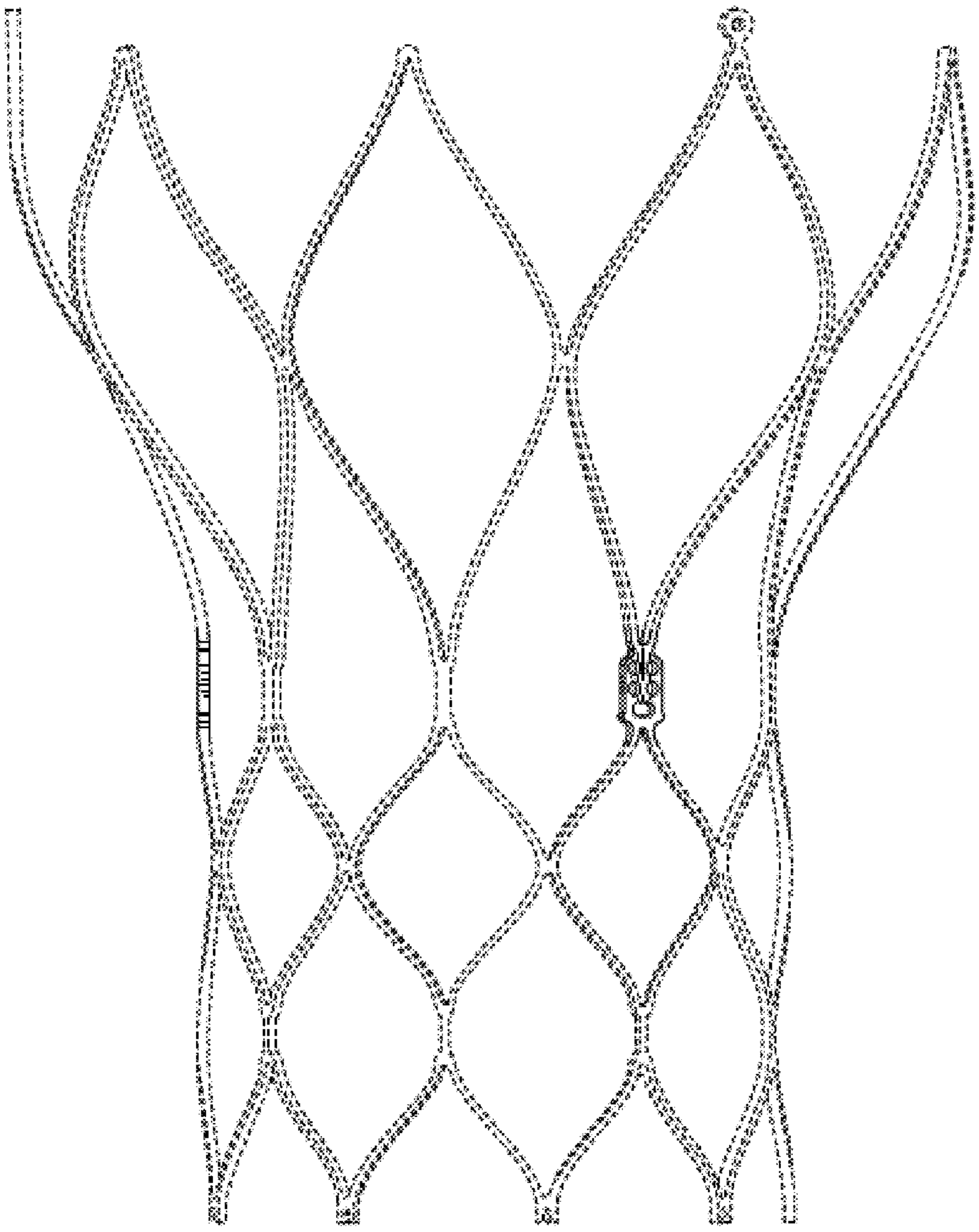


FIG. 4

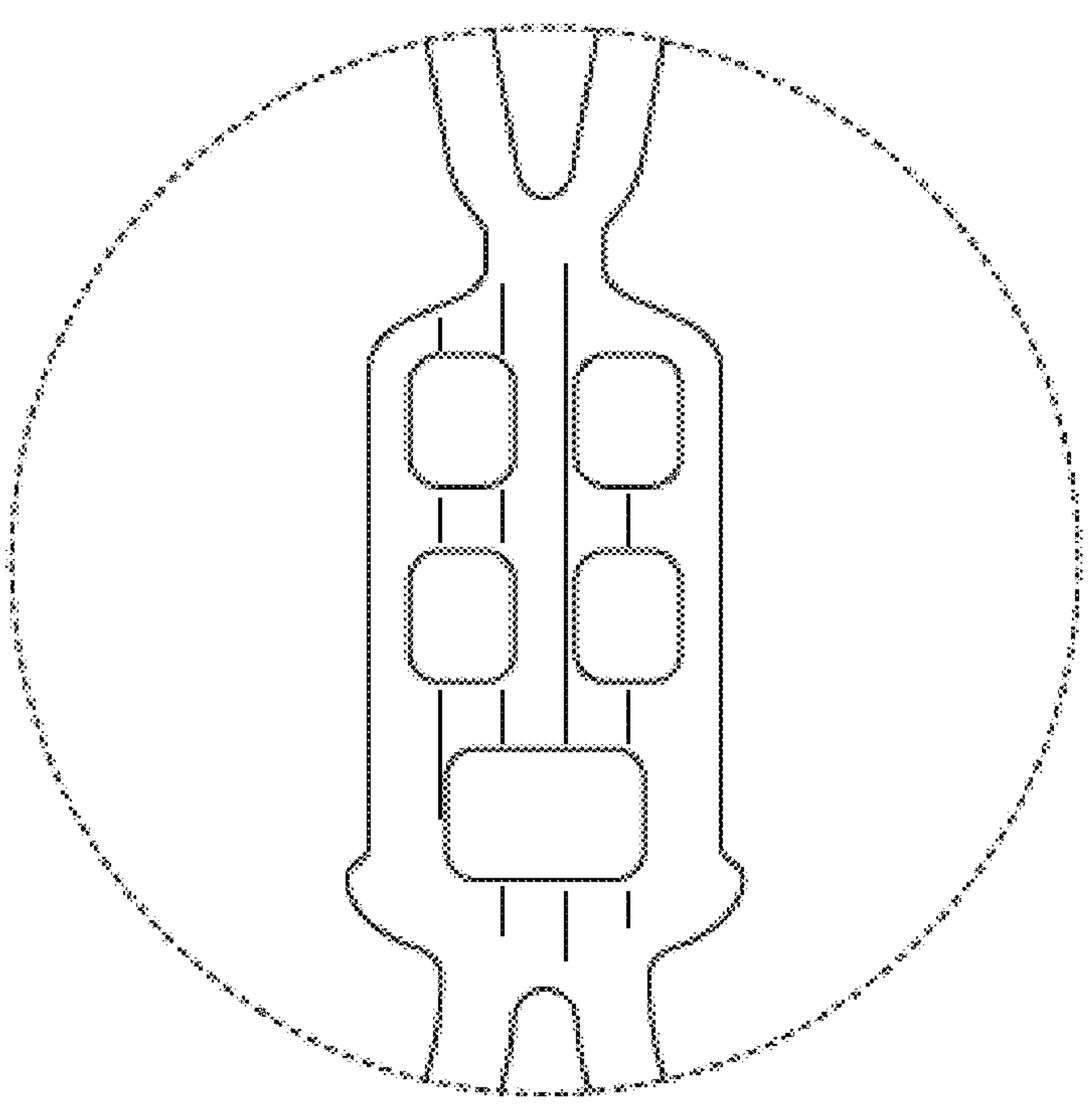


FIG. 5