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Harris et al.

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(54) **STAPLING CARTRIDGE ASSEMBLY WITH A COMPRESSIBLE ADJUNCT**

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USPC **D24/145**

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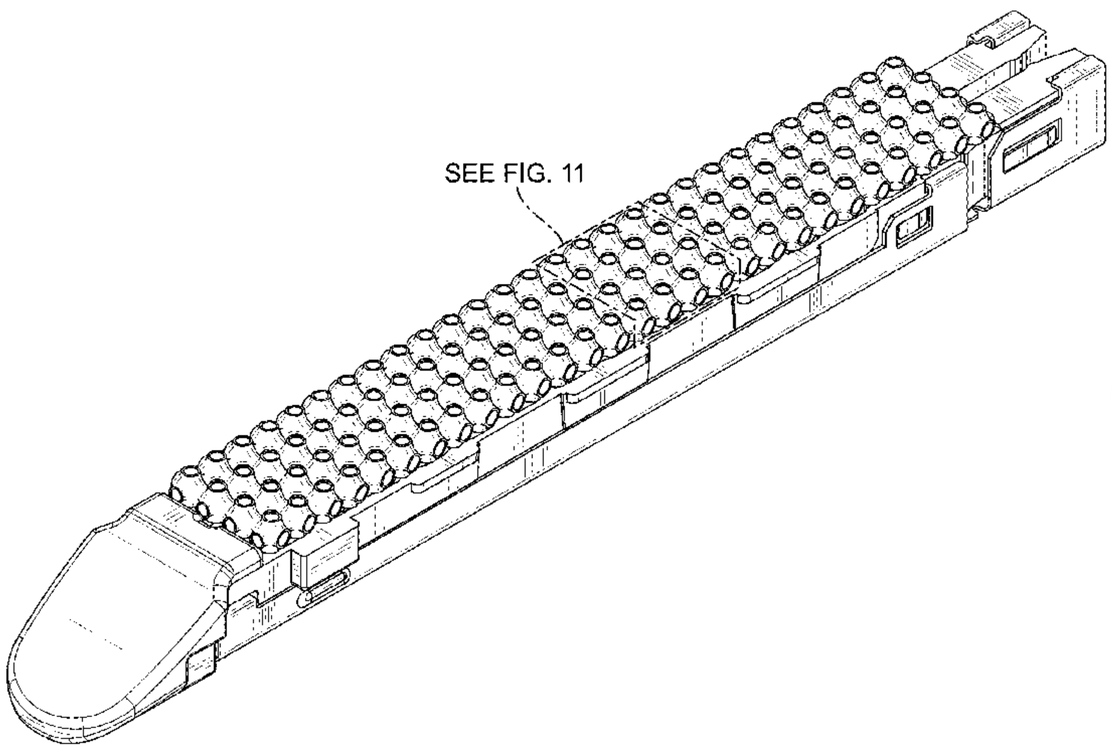
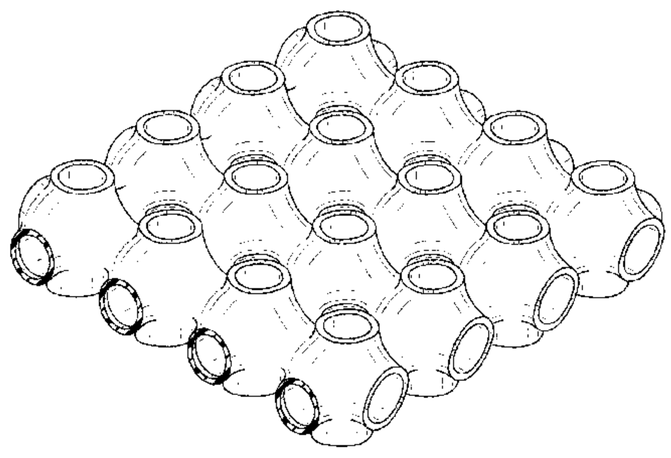
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,213,058	A	10/1965	Boyle et al.	
3,707,056	A	12/1972	Cole et al.	
D297,764	S	9/1988	Spreckelmeier et al.	
4,818,437	A	4/1989	Wiley	
4,892,244	A	1/1990	Fox et al.	
5,236,637	A	8/1993	Hull	
RE34,519	E	1/1994	Fox et al.	
5,391,072	A	2/1995	Lawton et al.	
5,468,253	A	11/1995	Bezwada et al.	
5,529,473	A	6/1996	Lawton et al.	
5,542,594	A	8/1996	Mckean et al.	
5,711,960	A	1/1998	Shikinami	
6,916,867	B2	7/2005	Gugumus	
7,157,586	B2	1/2007	Wood et al.	
7,195,640	B2	3/2007	Falotico et al.	
7,438,846	B2	10/2008	John	
7,641,091	B2	1/2010	Olson et al.	
7,695,643	B2	4/2010	Fritzsche et al.	
7,718,709	B2	5/2010	Ishikawa et al.	
7,892,474	B2	2/2011	Shkolnik et al.	
8,062,330	B2	11/2011	Prommersberger et al.	
8,110,135	B2	2/2012	El-siblani	
8,590,762	B2	11/2013	Hess et al.	
8,814,025	B2	8/2014	Miller et al.	
9,205,601	B2	12/2015	Desimone et al.	
9,211,120	B2	12/2015	Scheib et al.	
9,211,678	B2	12/2015	Desimone et al.	
9,216,546	B2	12/2015	Desimone et al.	
9,307,965	B2	4/2016	Ming et al.	
9,332,984	B2	5/2016	Weaner et al.	
9,453,142	B2	9/2016	Rolland et al.	
9,700,311	B2	7/2017	Shelton, IV et al.	
9,770,241	B2	9/2017	Rousseau et al.	
9,873,790	B1	1/2018	Andjelic et al.	
9,924,944	B2 *	3/2018	Shelton, IV	A61B 17/072
9,999,408	B2	6/2018	Boudreaux et al.	
10,004,496	B2	6/2018	Shelton, IV et al.	
10,028,744	B2	7/2018	Shelton, IV et al.	
10,052,104	B2	8/2018	Shelton, IV et al.	
D831,209	S	10/2018	Huitema et al.	
10,085,745	B2	10/2018	Dalessandro et al.	
10,111,661	B2	10/2018	Widenhouse et al.	
D836,198	S	12/2018	Harris et al.	
10,149,753	B2	12/2018	Chen et al.	
10,166,026	B2	1/2019	Shelton, IV et al.	
10,172,616	B2	1/2019	Murray et al.	
10,271,849	B2	4/2019	Vendely et al.	
D847,989	S *	5/2019	Shelton, IV	A61B 17/07207 D24/145
10,285,692	B2	5/2019	Widenhouse et al.	
10,335,150	B2	7/2019	Shelton, IV	
10,349,939	B2	7/2019	Shelton et al.	
D882,782	S	4/2020	Shelton et al.	
D885,574	S	5/2020	Shelton et al.	
D896,379	S *	9/2020	Shelton, IV	A61B 17/07207 D24/145
10,779,817	B2	9/2020	Shelton, IV et al.	
10,799,237	B2	10/2020	Shelton, IV et al.	
10,835,216	B2	11/2020	Stevenson et al.	
10,835,246	B2	11/2020	Shelton et al.	
D920,513	S *	5/2021	Shelton, IV	A61B 17/07292 D24/145
11,446,027	B2	9/2022	Harris et al.	
11,446,032	B2 *	9/2022	Harris	A61B 17/072
11,490,890	B2 *	11/2022	Harris	A61B 17/064
11,540,833	B2 *	1/2023	Harris	A61B 17/072
11,642,130	B2 *	5/2023	Harris	A61B 17/0686 227/175.1





11,648,007	B2	5/2023	Harris et al.	
11,678,883	B2 *	6/2023	Harris	A61B 17/07292 227/176.1
2004/0260315	A1	12/2004	Dell et al.	
2006/0013863	A1	1/2006	Shalaby et al.	
2006/0147332	A1	7/2006	Jones et al.	
2006/0271104	A1	11/2006	Viola et al.	
2007/0131732	A1	6/2007	Holsten et al.	
2008/0226870	A1	9/2008	Sypeck et al.	
2009/0048423	A1	2/2009	Stopek	
2009/0090763	A1	4/2009	Zemlok et al.	
2009/0093550	A1	4/2009	Rolfes et al.	
2011/0125284	A1	5/2011	Gabbrielli et al.	
2011/0276125	A1	11/2011	Walker et al.	
2011/0282444	A1	11/2011	Liu et al.	
2012/0080336	A1	4/2012	Shelton et al.	
2012/0080344	A1	4/2012	Shelton, IV	
2012/0080493	A1	4/2012	Shelton et al.	
2012/0241491	A1	9/2012	Aldridge et al.	
2012/0241497	A1	9/2012	Mandakolathur Vasudevan et al.	
2012/0241502	A1	9/2012	Aldridge et al.	
2012/0241505	A1	9/2012	Alexander et al.	
2012/0253298	A1	10/2012	Henderson et al.	
2012/0318842	A1	12/2012	Anim et al.	
2013/0068816	A1	3/2013	Mandakolathur Vasudevan et al.	
2013/0075449	A1	3/2013	Schmid et al.	
2013/0161374	A1	6/2013	Swayze et al.	
2013/0161375	A1	6/2013	Huitema et al.	
2013/0172929	A1	7/2013	Hess et al.	
2013/0253661	A1	9/2013	D'agostino et al.	
2013/0256365	A1	10/2013	Shelton, IV et al.	
2013/0256375	A1	10/2013	Shelton et al.	
2013/0292862	A1	11/2013	Joyce	
2013/0295081	A1	11/2013	Guelcher et al.	
2013/0295212	A1	11/2013	Chen et al.	
2013/0317526	A1	11/2013	Mortarino	
2014/0155916	A1	6/2014	Hodgkinson et al.	
2014/0166721	A1	6/2014	Stevenson et al.	
2014/0166724	A1	6/2014	Schellin et al.	
2014/0166726	A1	6/2014	Schellin et al.	
2014/0224857	A1	8/2014	Schmid	
2014/0252674	A1	9/2014	Hundley et al.	
2014/0291379	A1	10/2014	Schellin et al.	
2015/0010919	A1	1/2015	Feinberg et al.	
2015/0034696	A1	2/2015	Shelton et al.	
2015/0133995	A1	5/2015	Shelton et al.	
2015/0134077	A1	5/2015	Shelton, IV et al.	
2015/0136831	A1	5/2015	Baxter, III et al.	
2015/0245841	A1	9/2015	Linder et al.	
2015/0250475	A1	9/2015	Ek	
2015/0297222	A1	10/2015	Huitema et al.	
2015/0297236	A1	10/2015	Harris et al.	
2015/0313594	A1	11/2015	Shelton et al.	
2015/0331402	A1	11/2015	Lin et al.	
2015/0351754	A1	12/2015	Harris et al.	
2015/0351758	A1	12/2015	Shelton et al.	
2015/0351858	A9	12/2015	Kubiak et al.	
2015/0360419	A1	12/2015	Willis et al.	
2016/0000430	A1	1/2016	Ming et al.	
2016/0034696	A1	2/2016	Jooste et al.	
2016/0066914	A1	3/2016	Baber et al.	
2016/0100933	A1	4/2016	Linder et al.	
2016/0106426	A1	4/2016	Shelton et al.	
2016/0106427	A1	4/2016	Shelton et al.	
2016/0174974	A1	6/2016	Schmid et al.	
2016/0213395	A1	7/2016	Anim	
2016/0249919	A1	9/2016	Savage et al.	
2016/0278764	A1	9/2016	Shelton, IV et al.	
2016/0278765	A1	9/2016	Shelton et al.	
2016/0278777	A1	9/2016	Shelton, IV et al.	
2016/0288376	A1	10/2016	Sun et al.	
2016/0345976	A1	12/2016	GonzÁlez et al.	
2017/0056000	A1	3/2017	Nalagatla et al.	
2017/0056002	A1 *	3/2017	Nalagatla	A61B 17/072
2017/0086829	A1	3/2017	Vendely et al.	
2017/0086837	A1	3/2017	Vendely et al.	
2017/0106151	A1	4/2017	Schmidt et al.	
2017/0129167	A1	5/2017	Castanon	
2017/0129169	A1	5/2017	Batchelder et al.	
2017/0231633	A1	8/2017	Marczyk et al.	
2017/0355815	A1	12/2017	Becker et al.	
2018/0103952	A1	4/2018	Aronhalt et al.	
2018/0126630	A1	5/2018	Panzer et al.	
2018/0132845	A1	5/2018	Schmid et al.	
2018/0147327	A1	5/2018	Joyce	
2018/0168634	A1 *	6/2018	Harris	A61B 17/07207
2018/0168637	A1 *	6/2018	Harris	A61B 17/072
2018/0208735	A1	7/2018	Nash et al.	
2018/0235615	A1	8/2018	Landgrebe et al.	
2018/0235616	A1	8/2018	Shelton, IV et al.	
2018/0235621	A1	8/2018	Shelton, IV et al.	
2018/0235624	A1	8/2018	Shelton, IV et al.	
2018/0235626	A1	8/2018	Shelton, IV et al.	
2018/0243976	A1	8/2018	Feller	
2018/0290374	A1	10/2018	Willis et al.	
2018/0333186	A1	11/2018	Leuck et al.	
2018/0361510	A1	12/2018	Stamp et al.	
2018/0369785	A1	12/2018	Fee et al.	
2019/0059889	A1	2/2019	Shelton et al.	
2019/0133578	A1	5/2019	Kriksunov et al.	
2019/0240385	A1	8/2019	Hartwell et al.	
2019/0254654	A1	8/2019	Shelton et al.	
2019/0254655	A1	8/2019	Shelton et al.	
2019/0254656	A1	8/2019	Shelton et al.	
2019/0254657	A1	8/2019	Shelton et al.	
2019/0254658	A1	8/2019	Shelton et al.	
2019/0254659	A1	8/2019	Harris et al.	
2019/0254660	A1	8/2019	Shelton et al.	
2019/0254661	A1	8/2019	Shelton et al.	
2019/0254664	A1	8/2019	Vendely et al.	
2019/0254665	A1	8/2019	Vendely et al.	
2019/0254666	A1	8/2019	Vendely et al.	
2019/0254667	A1	8/2019	Vendely et al.	
2019/0254668	A1	8/2019	Vendely et al.	
2019/0254669	A1	8/2019	Shelton et al.	
2019/0254670	A1	8/2019	Shelton et al.	
2019/0269400	A1	9/2019	Mandakolathur Vasudevan et al.	
2019/0269817	A1	9/2019	Williams et al.	
2020/0000469	A1	1/2020	Shelton et al.	
2020/0190278	A1	6/2020	Gardner et al.	
2020/0392301	A1	12/2020	Zhang et al.	
2021/0077094	A1	3/2021	Harris et al.	
2021/0077095	A1	3/2021	Harris et al.	
2021/0077096	A1	3/2021	Harris et al.	
2021/0077097	A1	3/2021	Harris et al.	
2021/0077098	A1	3/2021	Harris et al.	
2021/0077103	A1	3/2021	Harris et al.	
2021/0077104	A1	3/2021	Harris et al.	
2021/0077105	A1	3/2021	Harris et al.	
2021/0077106	A1	3/2021	Harris et al.	
2021/0077107	A1	3/2021	Harris et al.	
2021/0077108	A1	3/2021	Harris et al.	
2021/0077109	A1	3/2021	Harris et al.	
2022/0079579	A1	3/2022	Shelton, IV et al.	
2022/0079590	A1 *	3/2022	Harris	A61B 17/072
2022/0160359	A1 *	5/2022	Harris	A61B 17/07292
2022/0160360	A1 *	5/2022	Harris	A61B 17/07292
2022/0296243	A1 *	9/2022	Nalagatla	A61B 17/072

FOREIGN PATENT DOCUMENTS

CN	104321025	A	1/2015
CN	104582591	A	4/2015
CN	104971438	A	10/2015
EP	0449431	A2	10/1991
EP	0594148	A1	4/1994
EP	1815804	A2	8/2007
EP	2090248	A2	8/2009
EP	2764824	A1	8/2014
EP	2764827	A2	8/2014
EP	2783640	A2	10/2014
EP	2954857	A1	12/2015
EP	3087931	A2	11/2016
EP	3132811	A1	2/2017
EP	3132812	A1	2/2017
EP	3135222	A1	3/2017
EP	3135317	A1	3/2017
EP	3135318	A1	3/2017

EP	3150134	A1	4/2017
EP	3150137	A1	4/2017
EP	3150138	A2	4/2017
EP	3150142	A2	4/2017
EP	3150144	A1	4/2017
EP	3162388	A1	5/2017
EP	3363382	A1	8/2018
EP	3363386	A1	8/2018
EP	3634272	A1	4/2020
JP	2014521384	A	8/2014
JP	2020520723	A	7/2020
RU	2629239	C2	8/2017
WO	2006088946	A2	8/2006
WO	2017058599	A1	4/2017

OTHER PUBLICATIONS

Extended European Search Report issued in European Application No. 20196517.5, dated Apr. 23, 2021, 13 pages.
Extended European Search Report issued in European Application No. 20196519.1, dated Apr. 20, 2021, 20 pages.
European Search Report and Written Opinion for EP Application No. 19158219 dated Apr. 9, 2019, 10 pages.
European Search Report and Written Opinion for EP Application No. 19158301 dated Mar. 27, 2019, 7 pages.
European Search Report and Written Opinion for EP Application No. 19158186 dated Jul. 5, 2019, 9 pages.
European Search Report and Written Opinion for EP Application No. 19158306 dated May 8, 2019, 19 pages.
International Search Report and Written Opinion for PCT/IB2019/050402, dated Apr. 30, 2019, 14 pages.
International Search Report and Written Opinion for PCT/IB2019/050408, dated Jun. 5, 2019, 12 pages.
International Search Report and Written Opinion for PCT/IB2019/050500, dated May 17, 2019, 16 pages.
International Preliminary Report on Patentability issued in International Patent Application No. PCT/IB2019/050363, dated Aug. 27, 2020, 8 pages.
International Preliminary Report on Patentability issued in International Patent Application No. PCT/IB2019/050400, dated Aug. 27, 2020, 8 pages.
International Preliminary Report on Patentability issued in International Patent Application No. PCT/IB2019/050402, dated Aug. 27, 2020, 10 pages.
International Preliminary Report on Patentability issued in International Patent Application No. PCT/IB2019/050500, dated Aug. 27, 2020, 12 pages.
International Preliminary Report on Patentability issued in International Patent Application No. PCT/IB2019/050403, dated Aug. 27, 2020, 22 pages.
International Preliminary Report on Patentability issued in International Patent Application No. PCT/IB2019/050404, dated Aug. 27, 2020, 9 pages.
International Preliminary Report on Patentability issued in International Patent Application No. PCT/IB2019/050406, dated Aug. 27, 2020, 8 pages.
International Preliminary Report on Patentability issued in International Patent Application No. PCT/IB2019/050407, dated Aug. 27, 2020, 12 pages.
International Preliminary Report on Patentability issued in International Patent Application No. PCT/IB2019/050408, dated Aug. 27, 2020, 8 pages.
International Search Report and Written Opinion for PCT/IB2019/050363, dated Jul. 15, 2019, 11 pages.
Partial European Search Report and Written Opinion for EP Application No. 19158223 dated Apr. 25, 2019, 10 pages.
Partial European Search Report and Written Opinion for EP Application 19158306 dated May 8, 2019, 21 pages.
Baker et al. (2004) "The Science of Stapling and Leaks", Obesity Surgery, 14;1290-1298.
Janusziewicz et al. (2016) "Layerless Fabrication with Continuous Liquid Interface Production", Proceedings of the National Academy of Sciences, 113(42);11703-11708.
U.S. Appl. No. 15/689,198 entitled "Endocutter Control System", filed Aug. 29, 2017, 60 pages.
Tumbleston et al. (2015) "Continuous Liquid Interface Production of 3D Objects", Science, 347(6228);1349-1352.
Wismans et al.(2009) "Characterization of Polymeric Foams", Eindhoven University of Technology, 35 pages.
Ye et al.(2008) "Development of the Warp Knitted Spacer Fabrics for Cushion Applications", Journal of Industrial Textiles, 37(3);213-223.
Yo et al.(2006) "Buttressing of the Staple Line in Gastrointestinal Anastomoses: Overview of New Technology Designed to Reduce Perioperative Complications", Digestive Surgery, 23;283-291.
Elomaa et al.(2011) "Preparation of Poly(e-caprolactone)-based Tissue Engineering Scaffolds", Acta Biomaterialia, 7;3850-3856.
Melchels et al.(2010) "Effects of The Architecture of Tissue Engineering Scaffolds On Cell Seeding and Culturing", Acta Biomater., 6(11):4208-4217.
Extended European Search Report and Written Opinion for EP Application No. 20196533.2, dated Oct. 30, 2020, 10 pages.
Almeida Henrique De A. (2013) "Smart Design of Scaffolds Obtained by Biofabrication for Tissue Engineering Applications", 248 pages.
Array (2022) "Definition by Merriam-Webster", URL https://www.merriam-webster.com/dictionary/array as retrieved on Feb. 4, 2022, 15 pages.
Schwarz Hermann (2019) "Schwarz Minimal Surface", Wikipedia, 4 pages.
Wikipedia (2013) "Gyroid", Wikipedia Retrieved from URL https://en.wikipedia.org/w/index.php?title=Gyroid&oldid=914209926, 4 pages.
Extended European Search Report for European Application No. 20196541.5, dated Nov. 25, 2020, 10 pages.

* cited by examiner

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(57) **CLAIM**

The ornamental design for a stapling cartridge assembly with a compressible adjunct, as shown and described.

DESCRIPTION

FIG. **1** is a perspective view of one embodiment of a new design of a stapling cartridge assembly with a compressible adjunct;
FIG. **2** is an enlarged view of a section of the stapling cartridge assembly with a compressible adjunct of FIG. **1**;
FIG. **3** is a top view of the stapling cartridge assembly with a compressible adjunct of FIG. **1**;
FIG. **4** is an enlarged view of a section of the stapling cartridge assembly with a compressible adjunct of FIG. **3**;
FIG. **5** is a bottom view of the stapling cartridge assembly with a compressible adjunct of FIG. **1**;
FIG. **6** is an enlarged view of a section of the stapling cartridge assembly with a compressible adjunct of FIG. **5**;
FIG. **7** is a left view of the stapling cartridge assembly with a compressible adjunct of FIG. **1**, the right view being a mirror image thereof;
FIG. **8** is a front view of the stapling cartridge assembly with a compressible adjunct of FIG. **1**;
FIG. **9** is a back view of the stapling cartridge assembly with a compressible adjunct of FIG. **1**;
FIG. **10** is a perspective view of another embodiment of a new design of a stapling cartridge assembly with a compressible adjunct;
FIG. **11** is an enlarged view of a section of the stapling cartridge assembly with a compressible adjunct of FIG. **10**;

FIG. **12** is a top view of the stapling cartridge assembly with a compressible adjunct of FIG. **10**;
FIG. **13** is an enlarged view of a section of the stapling cartridge assembly with a compressible adjunct of FIG. **12**;
FIG. **14** is a bottom view of the stapling cartridge assembly with a compressible adjunct of FIG. **10**;
FIG. **15** is an enlarged view of a section of the stapling cartridge assembly with a compressible adjunct of FIG. **14**;
FIG. **16** is a left view of the stapling cartridge assembly with a compressible adjunct of FIG. **10**, the right view being a mirror image thereof;
FIG. **17** is a front view of the stapling cartridge assembly with a compressible adjunct of FIG. **10**;
FIG. **18** is a back view of the stapling cartridge assembly with a compressible adjunct of FIG. **10**;
FIG. **19** is a perspective view of another embodiment of a new design of a stapling cartridge assembly with a compressible adjunct;
FIG. **20** is an enlarged view of a section of the stapling cartridge assembly with a compressible adjunct of FIG. **19**;
FIG. **21** is a top view of the stapling cartridge assembly with a compressible adjunct of FIG. **19**;
FIG. **22** is an enlarged view of a section of the stapling cartridge assembly with a compressible adjunct of FIG. **21**;
FIG. **23** is a bottom view of the stapling cartridge assembly with a compressible adjunct of FIG. **19**;
FIG. **24** is an enlarged view of a section of the stapling cartridge assembly with a compressible adjunct of FIG. **23**;
FIG. **25** is a left view of the stapling cartridge assembly with a compressible adjunct of FIG. **19**, the right view being a mirror image thereof;
FIG. **26** is a front view of the stapling cartridge assembly with a compressible adjunct of FIG. **19**; and,
FIG. **27** is a back view of the stapling cartridge assembly with a compressible adjunct of FIG. **19**.
The broken lines in the drawings are for purpose of illustrating portions of the stapling cartridge assembly with a compressible adjunct and form no part of the claimed design.

1 Claim, 24 Drawing Sheets

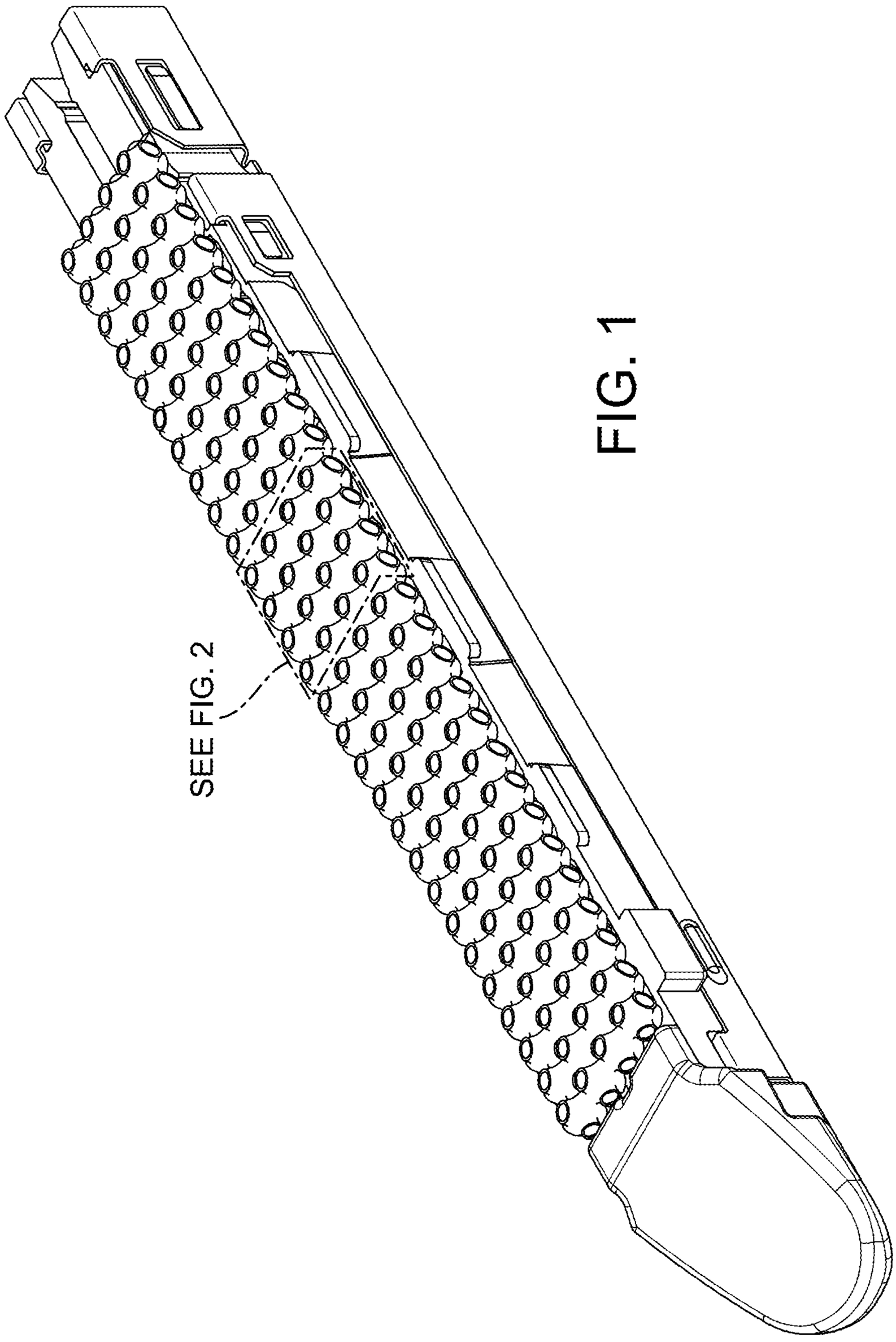

FIG. 1

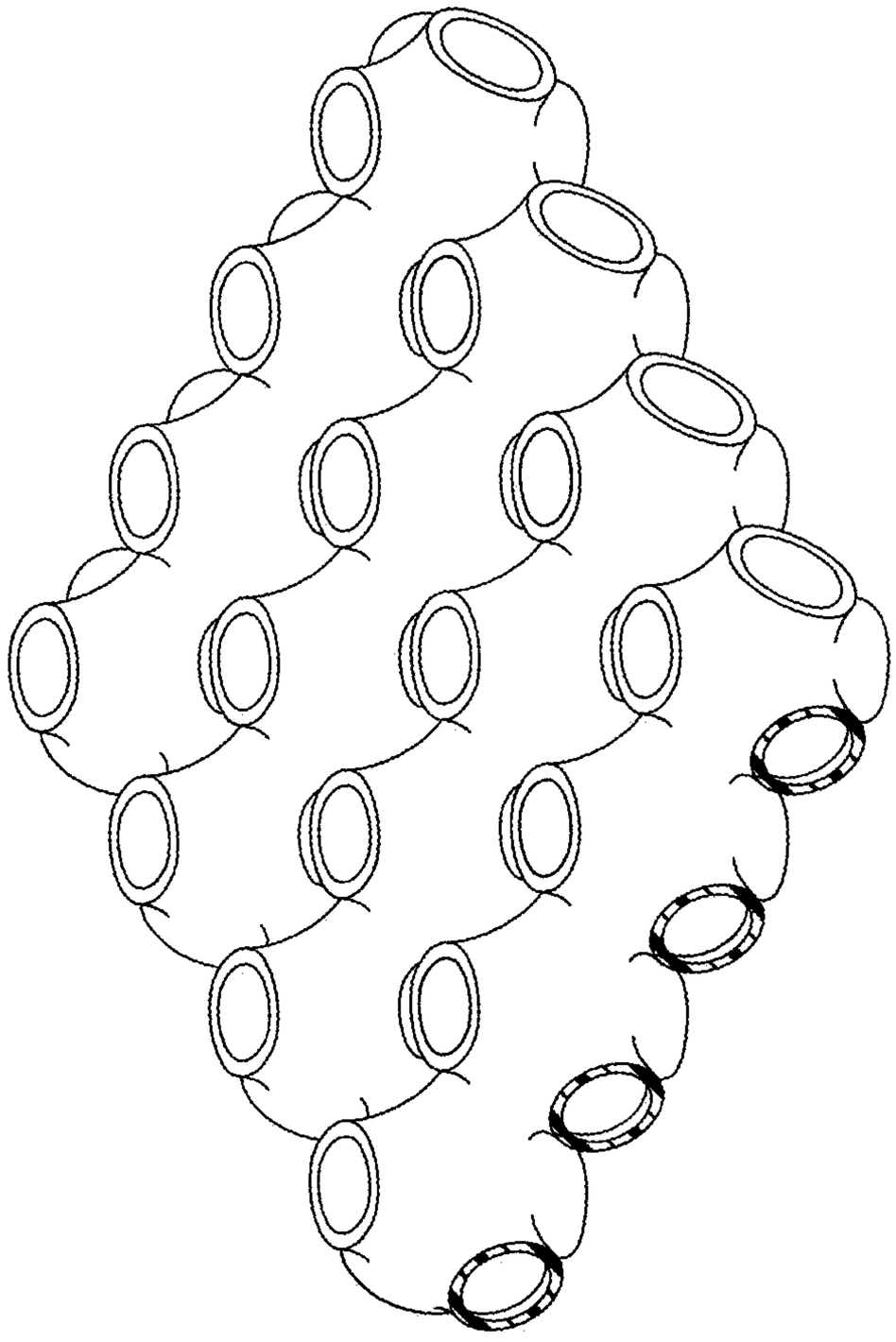

FIG. 2

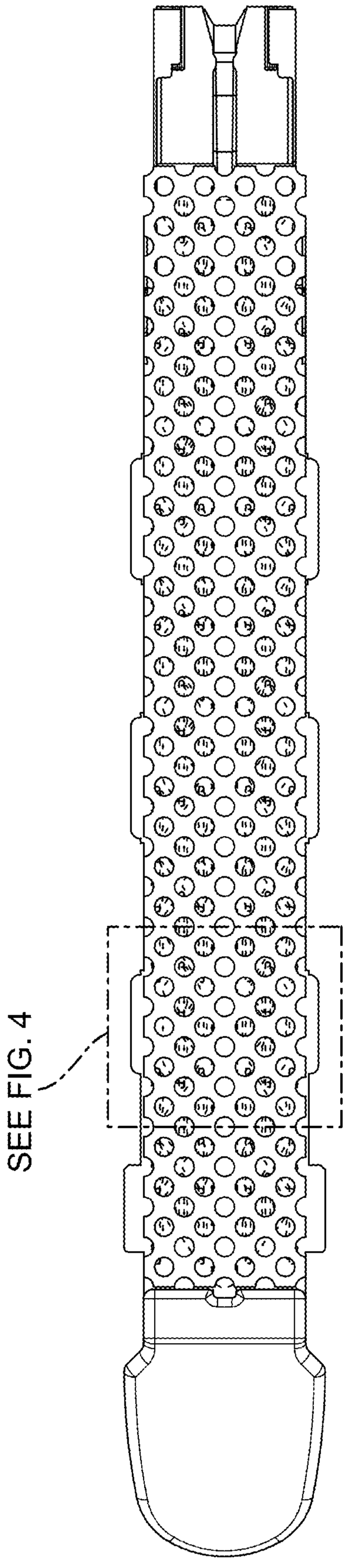

FIG. 3

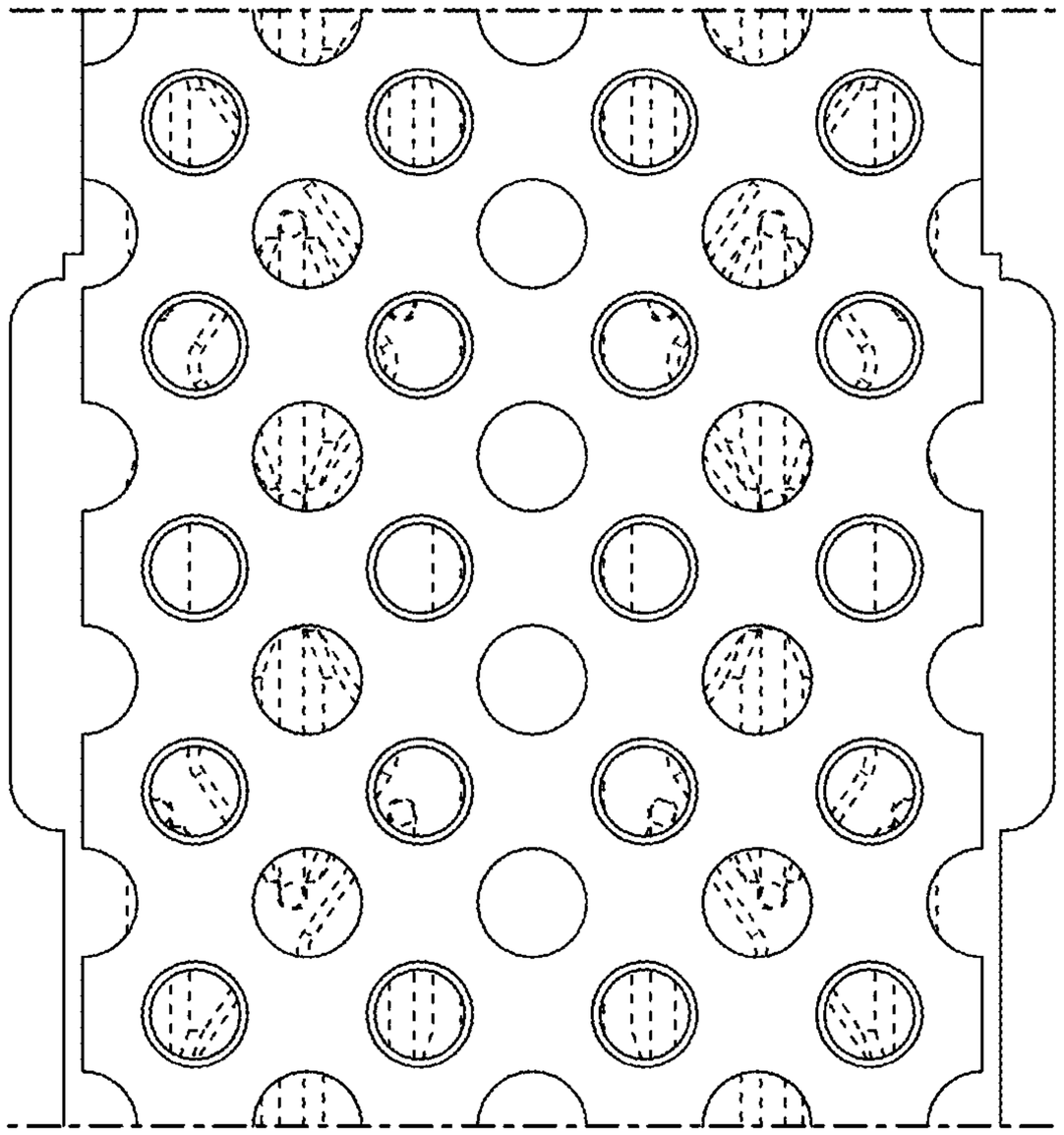

FIG. 4

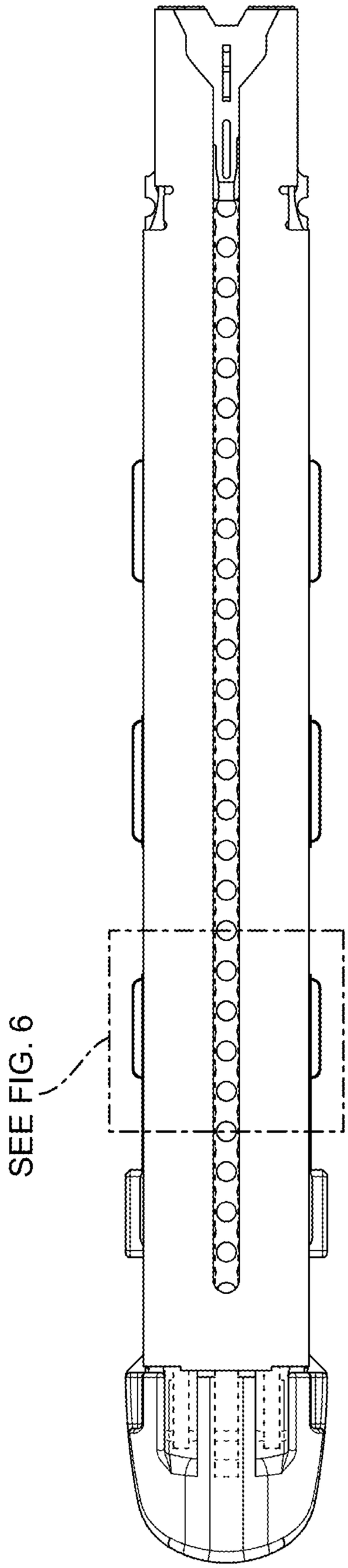

FIG. 5

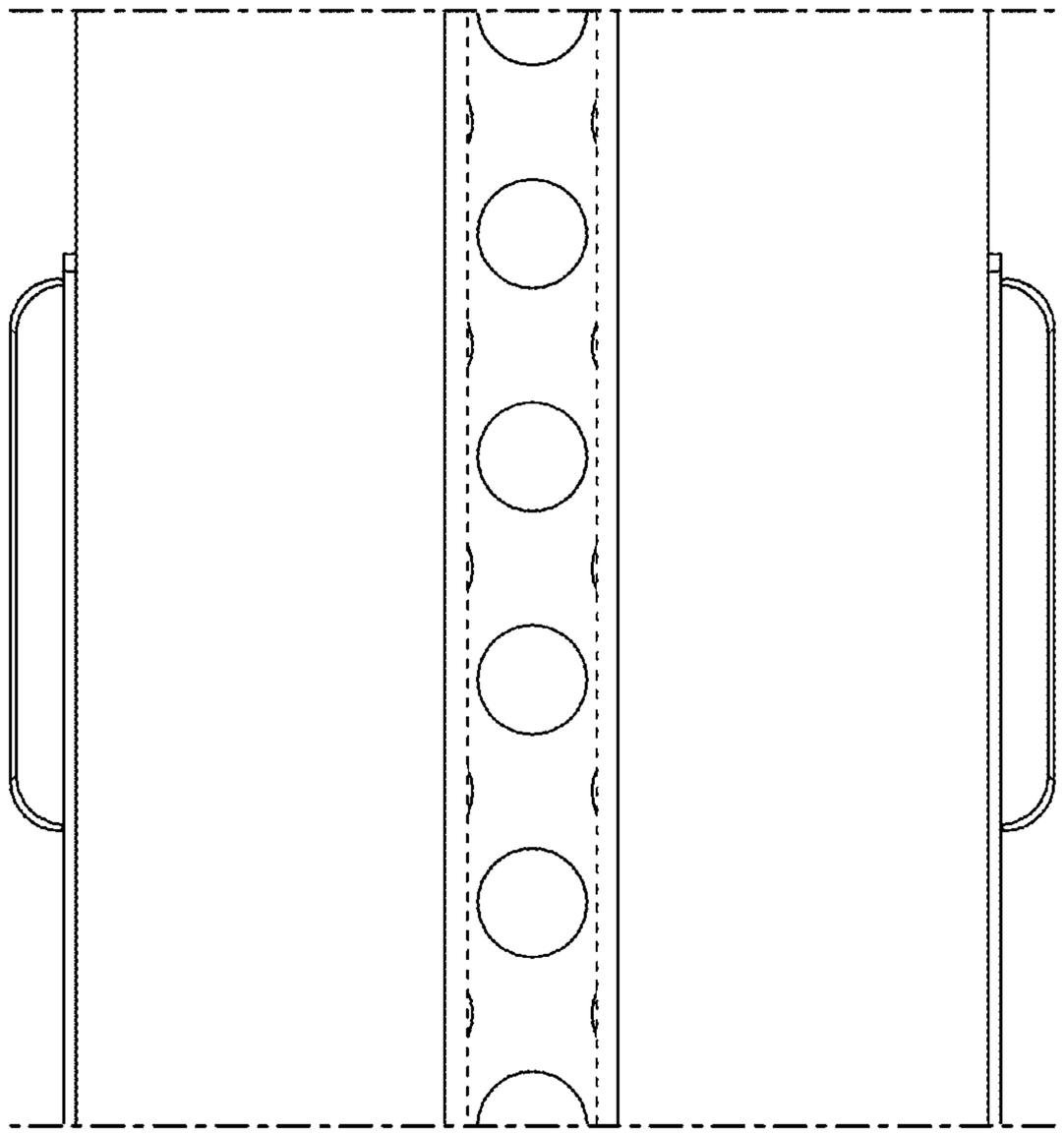

FIG. 6

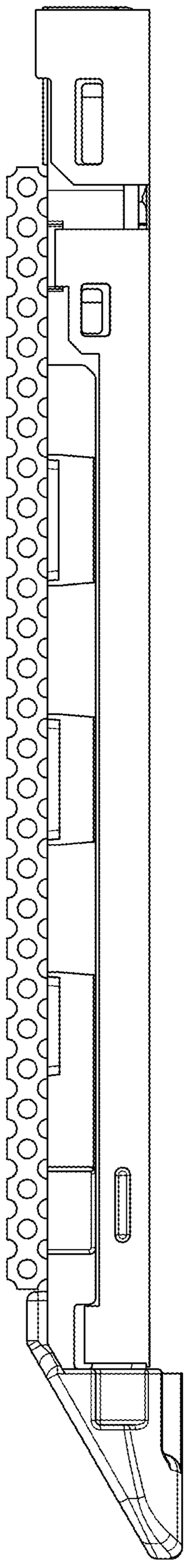

FIG. 7

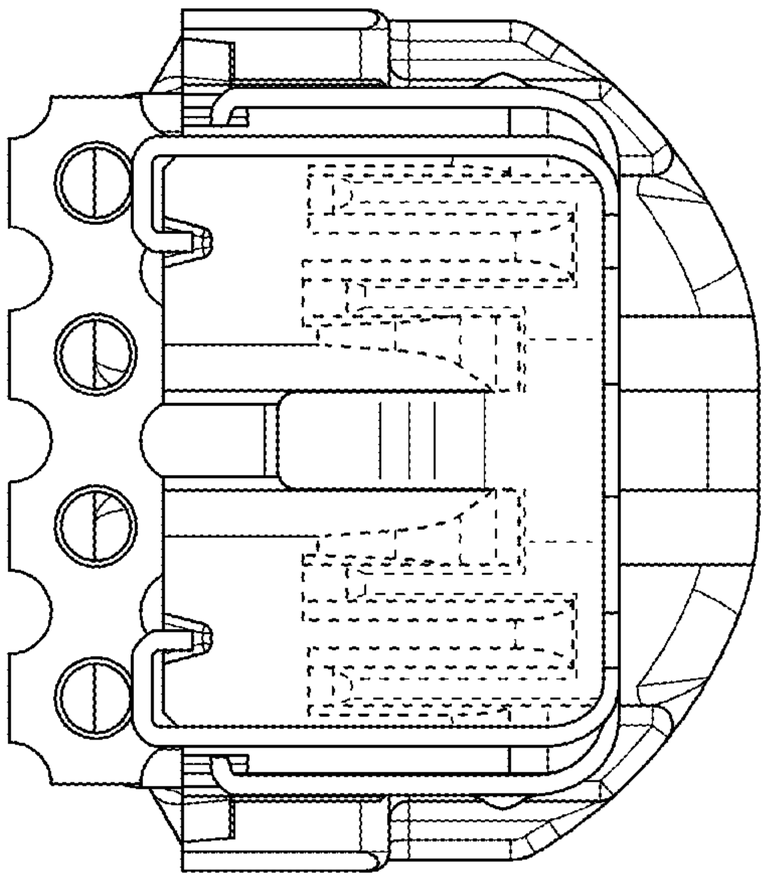

FIG. 9

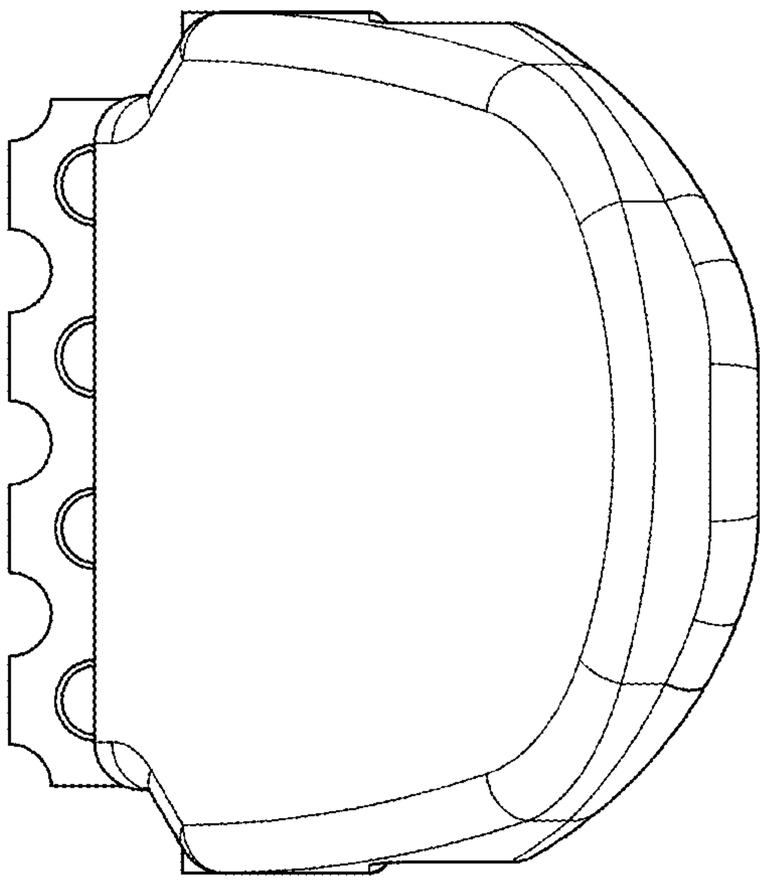

FIG. 8

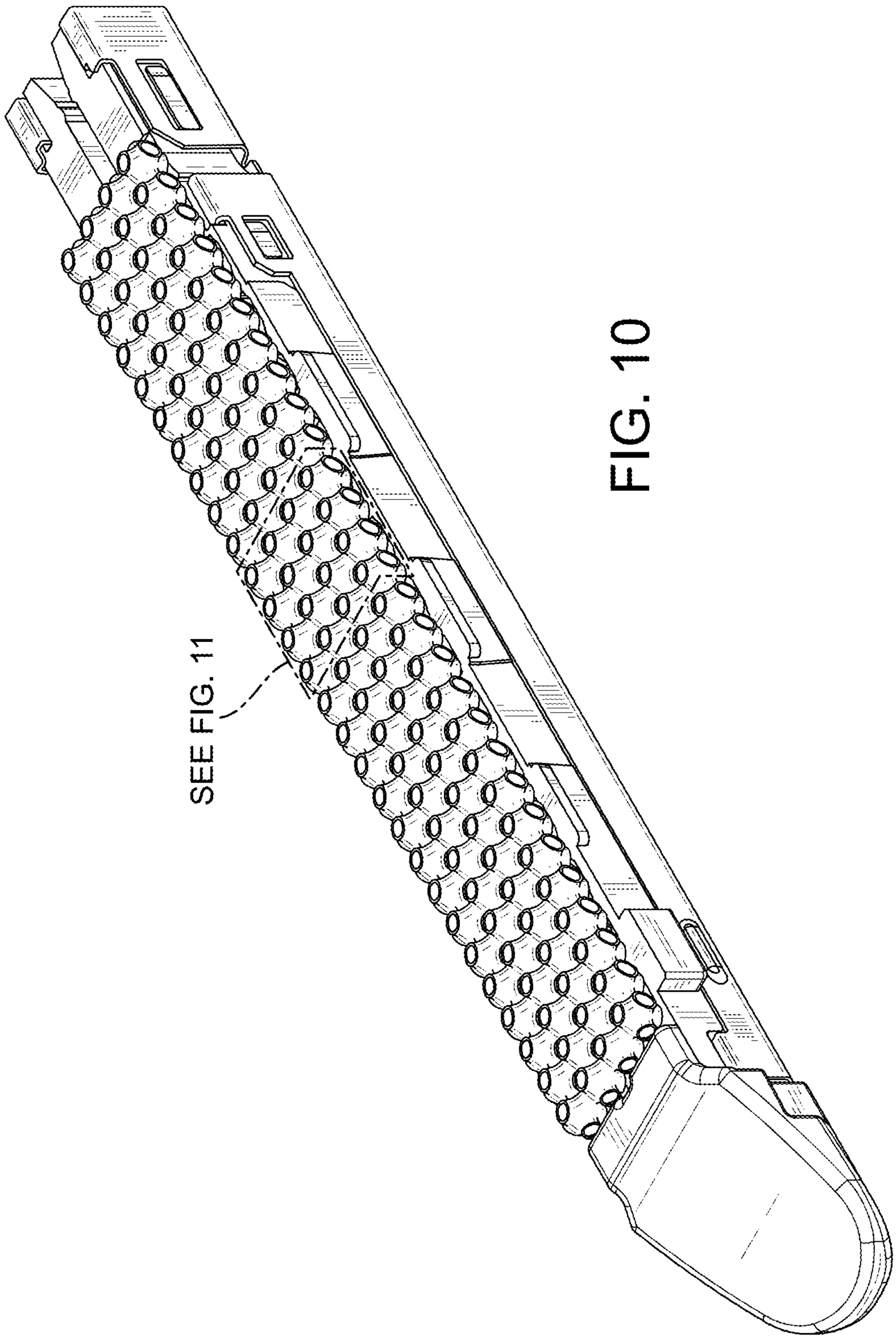

FIG. 10

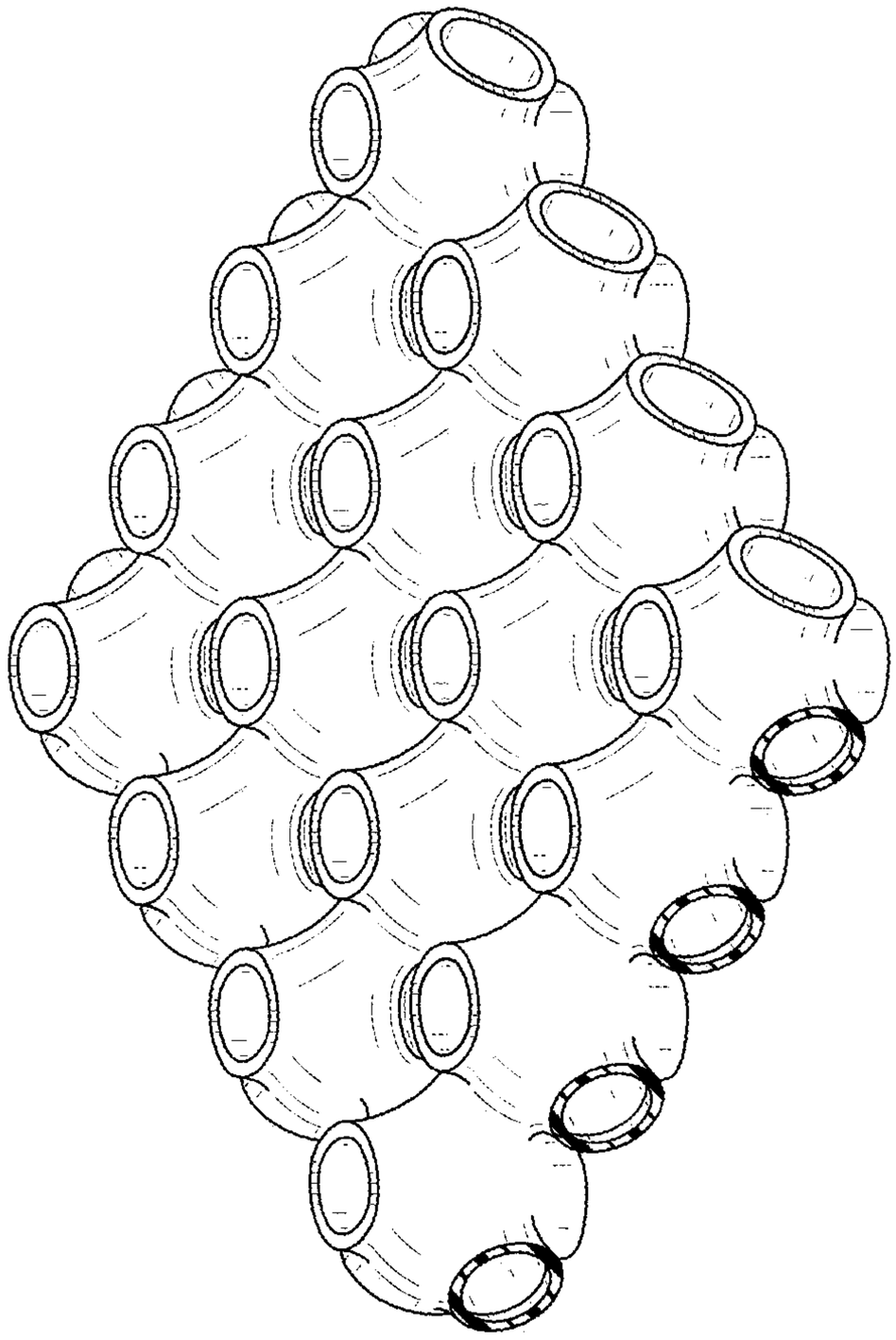

FIG. 11

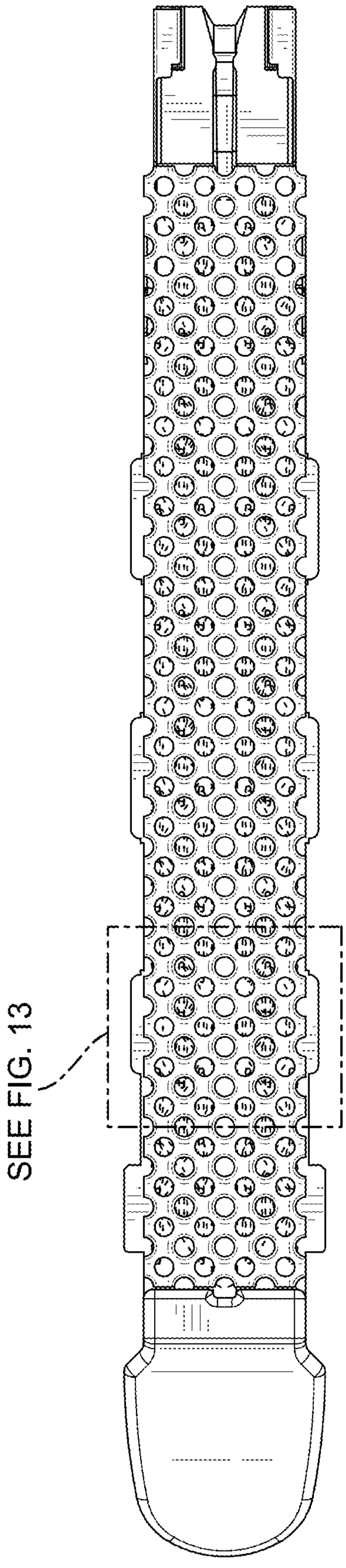

FIG. 12

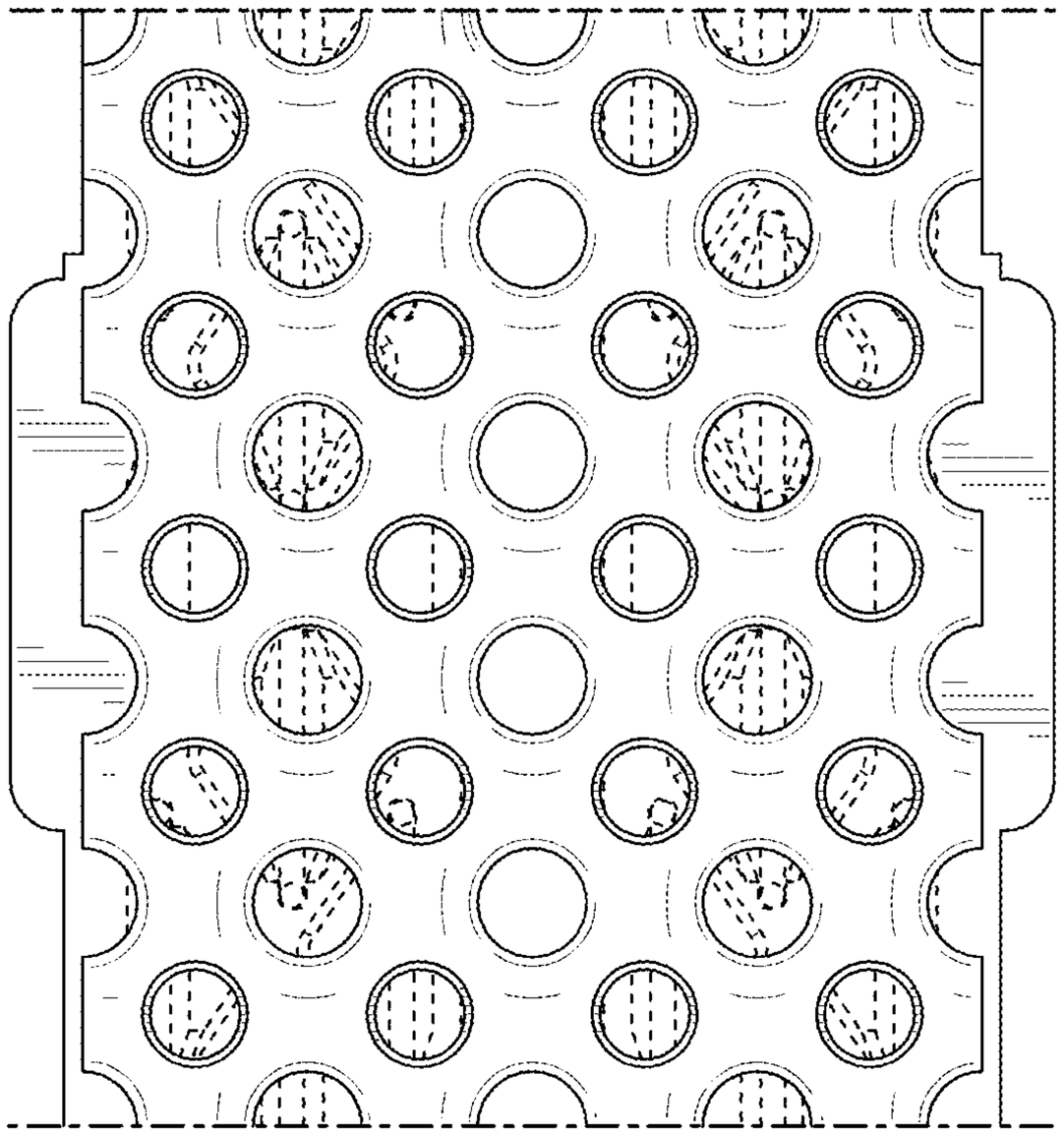

FIG. 13

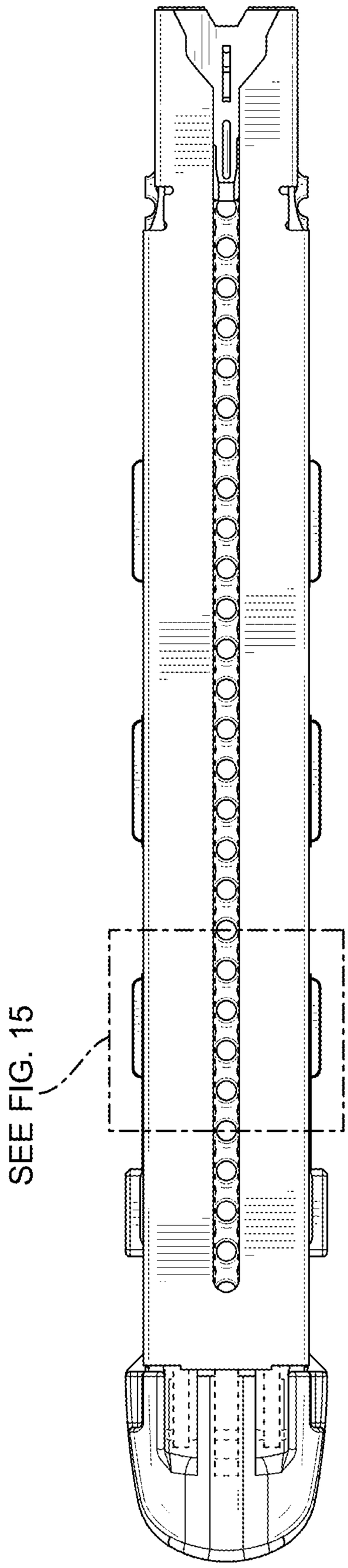

FIG. 14

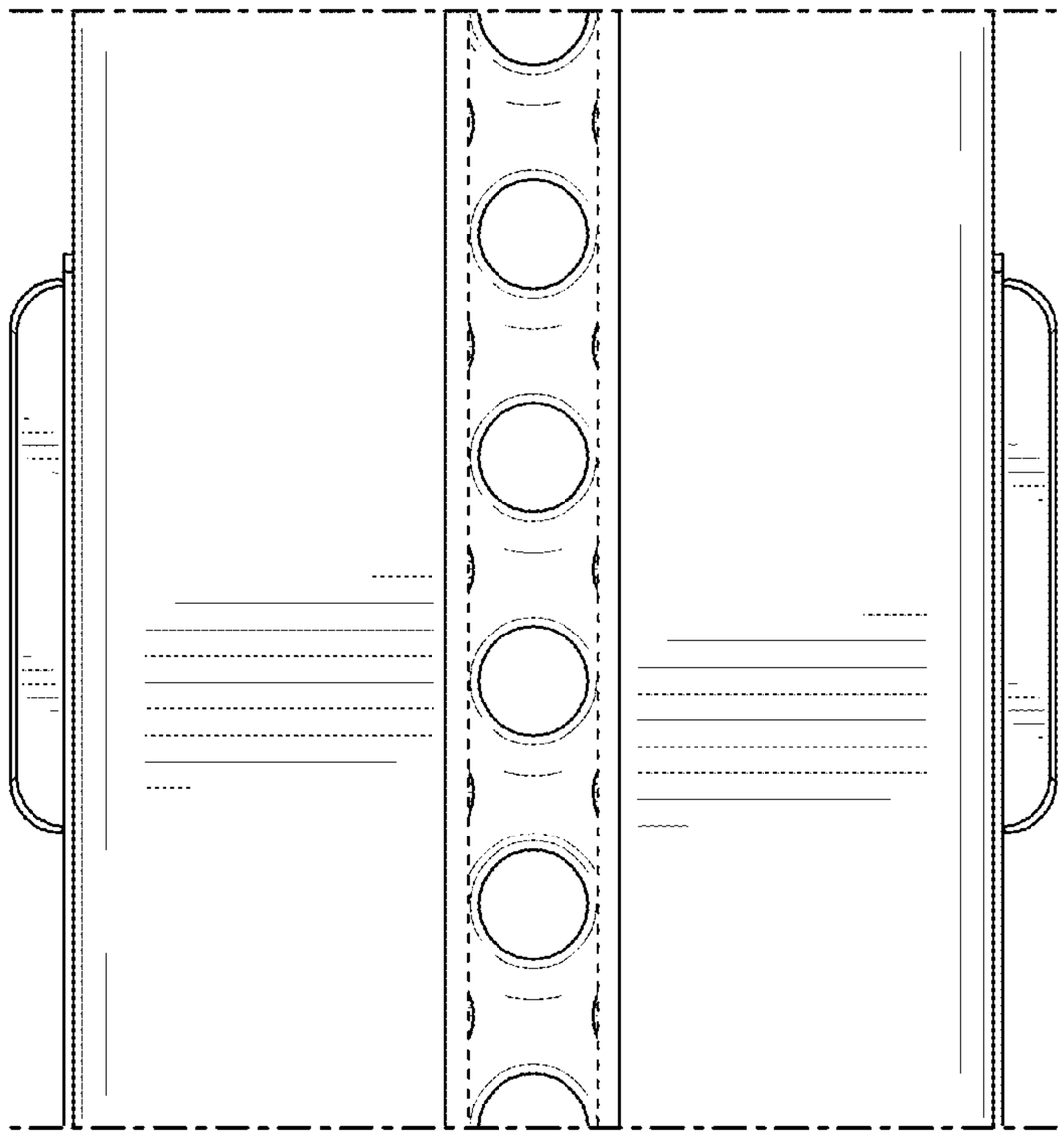

FIG. 15

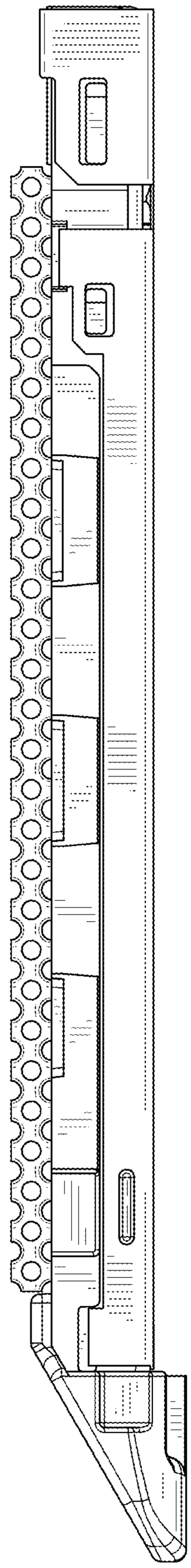

FIG. 16

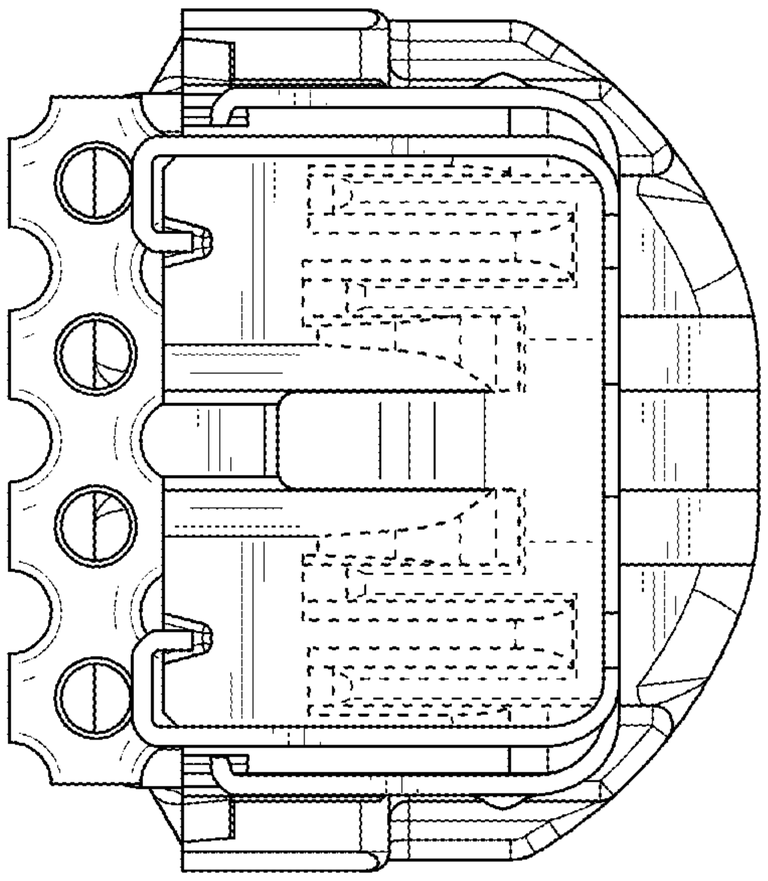

FIG. 18

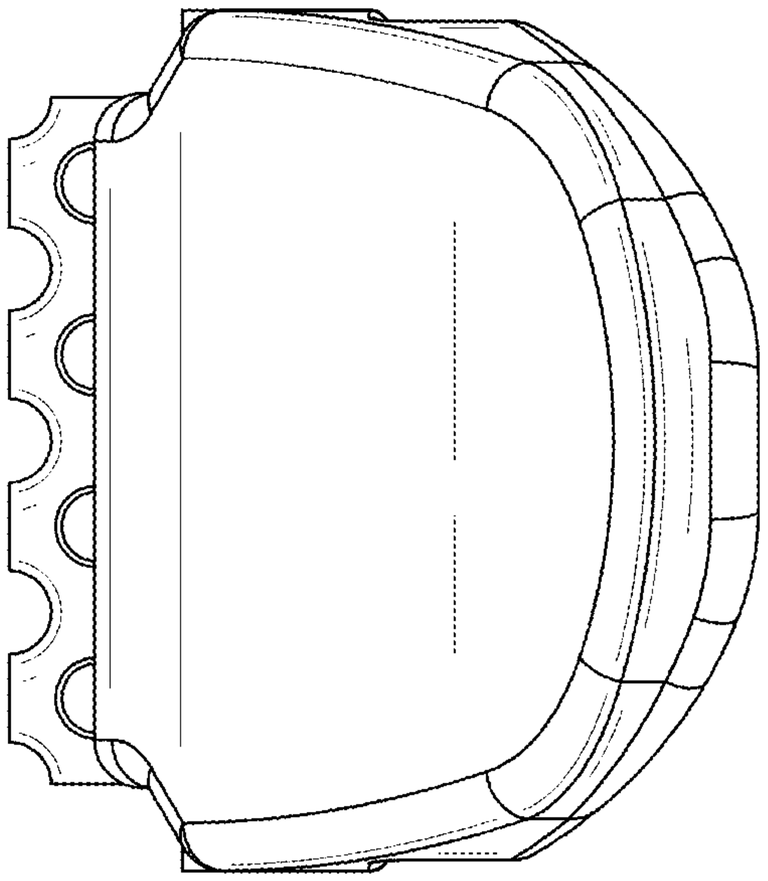

FIG. 17

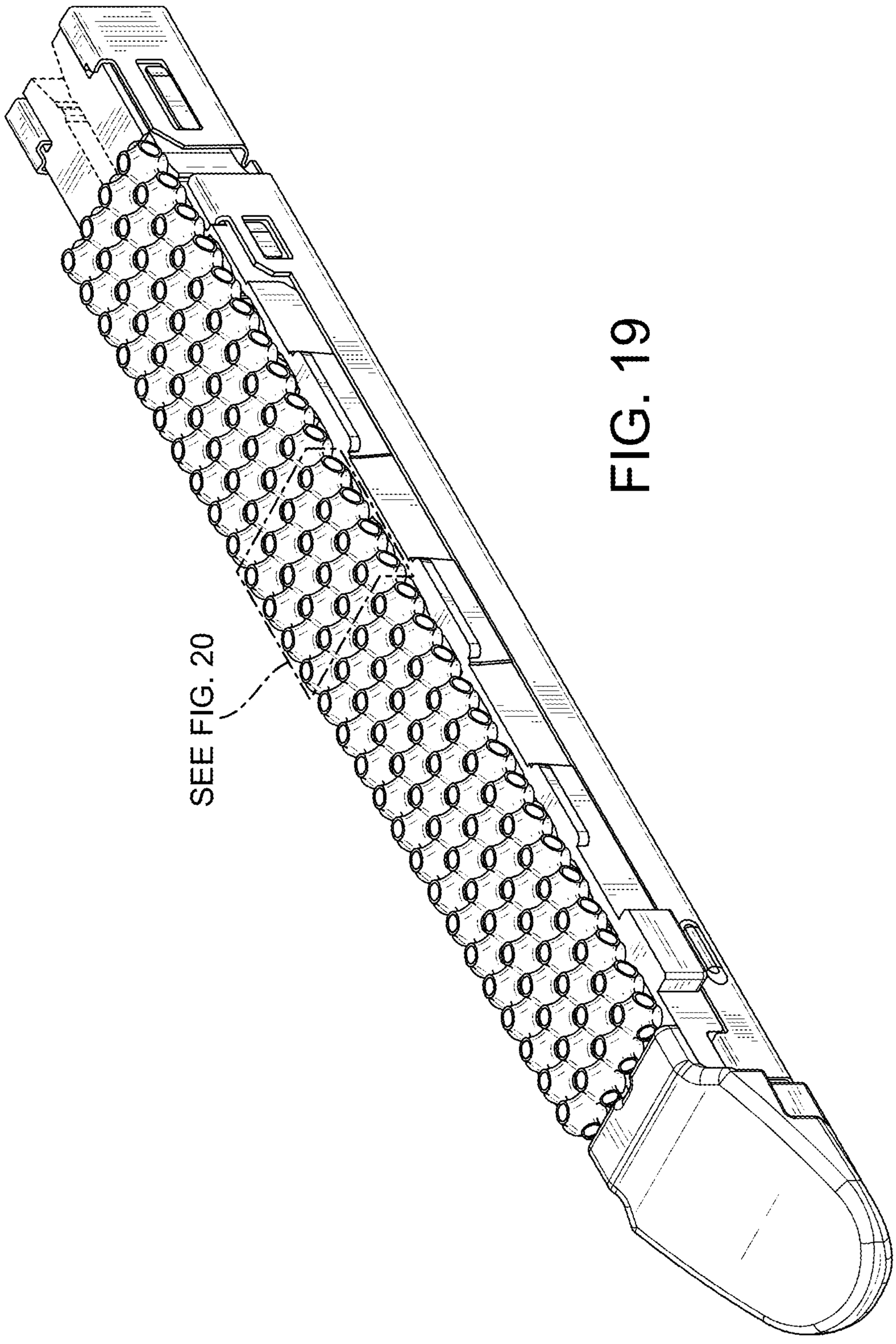

FIG. 19

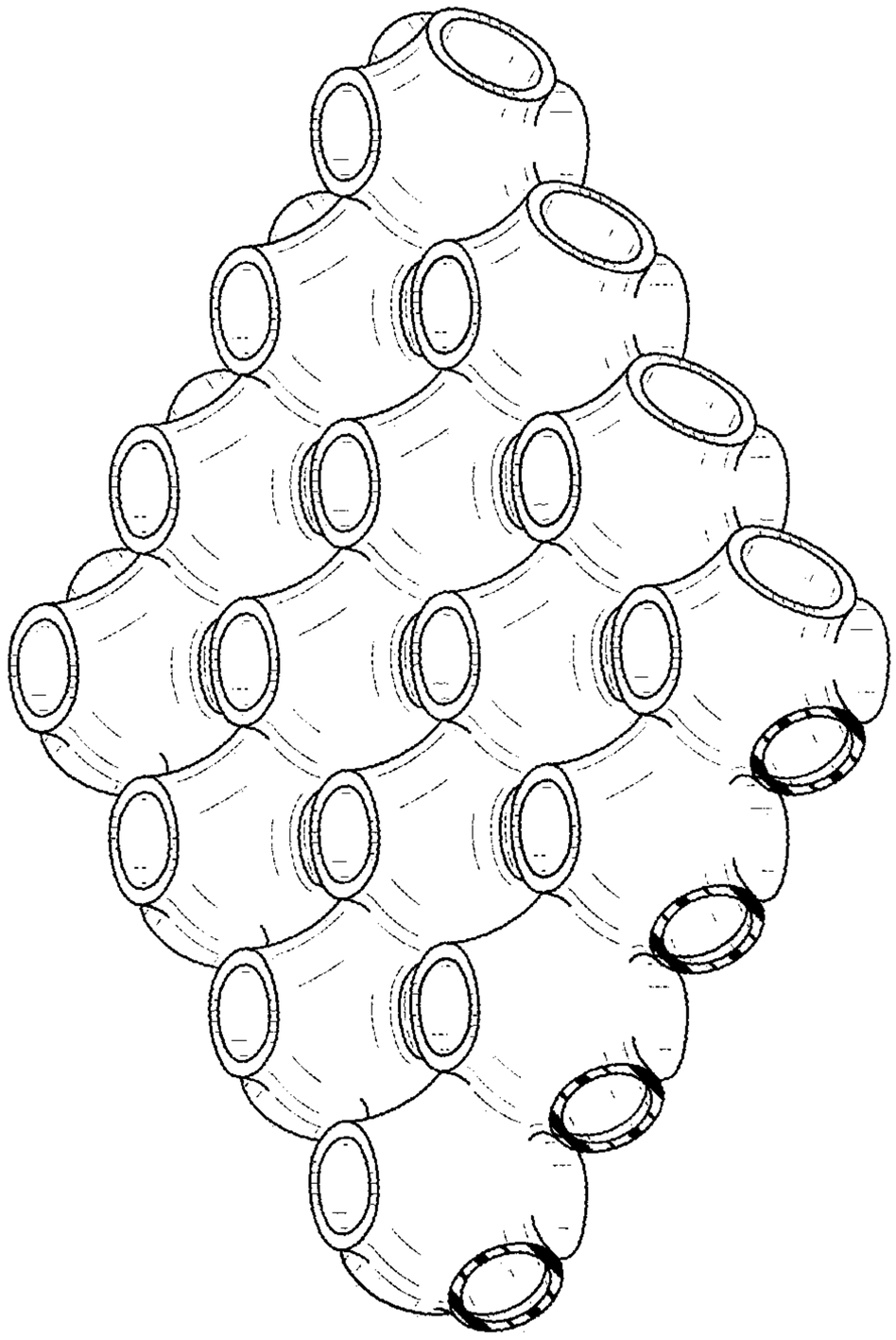

FIG. 20

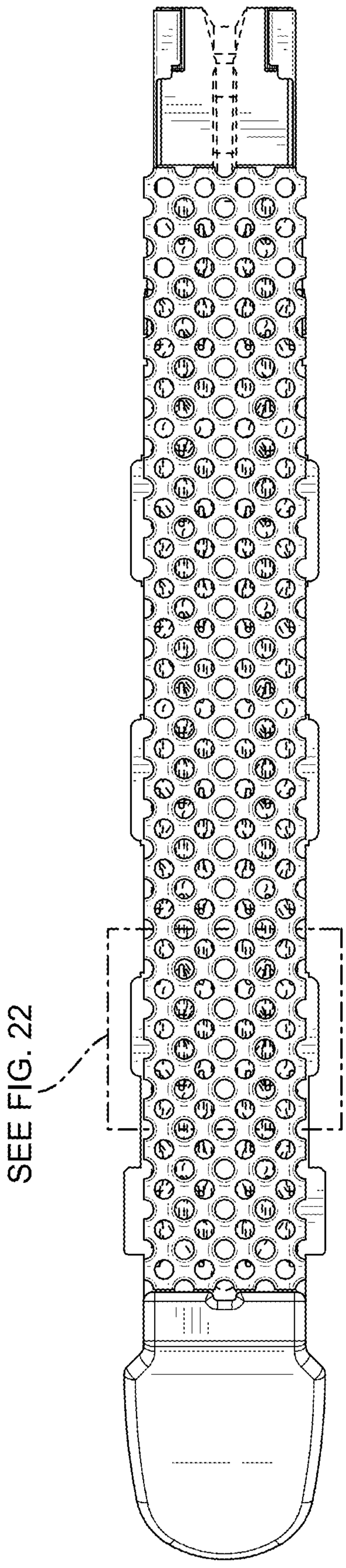

FIG. 21

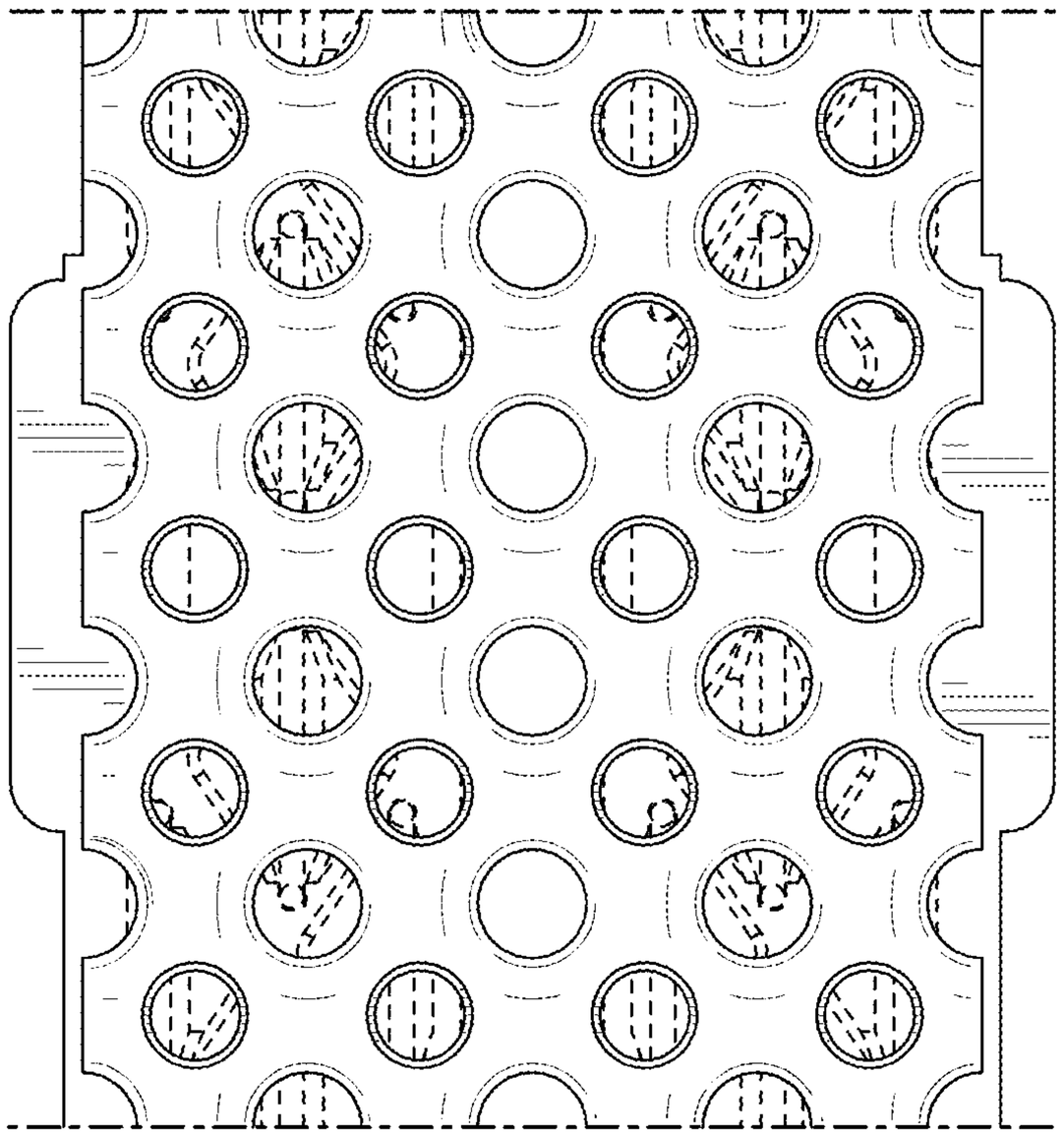

FIG. 22

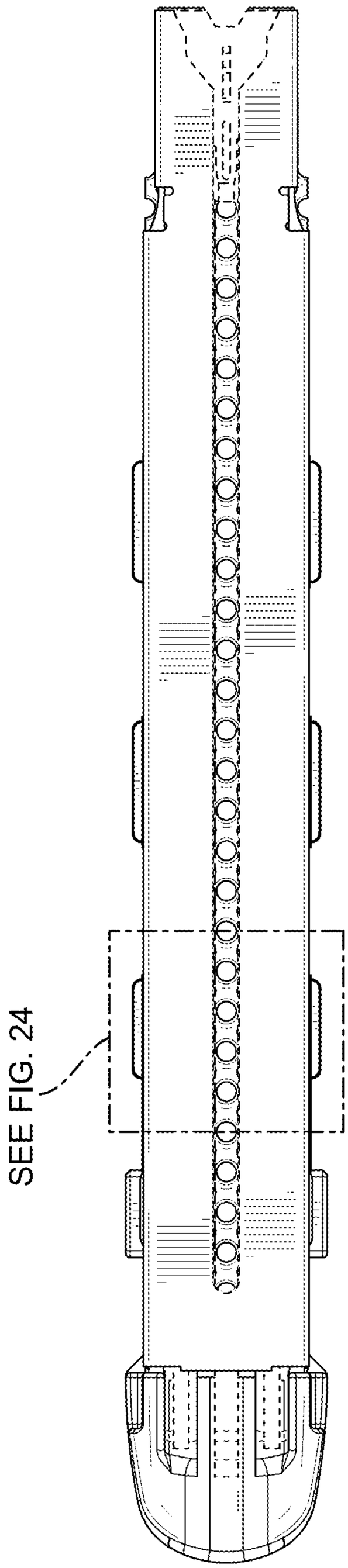

FIG. 23

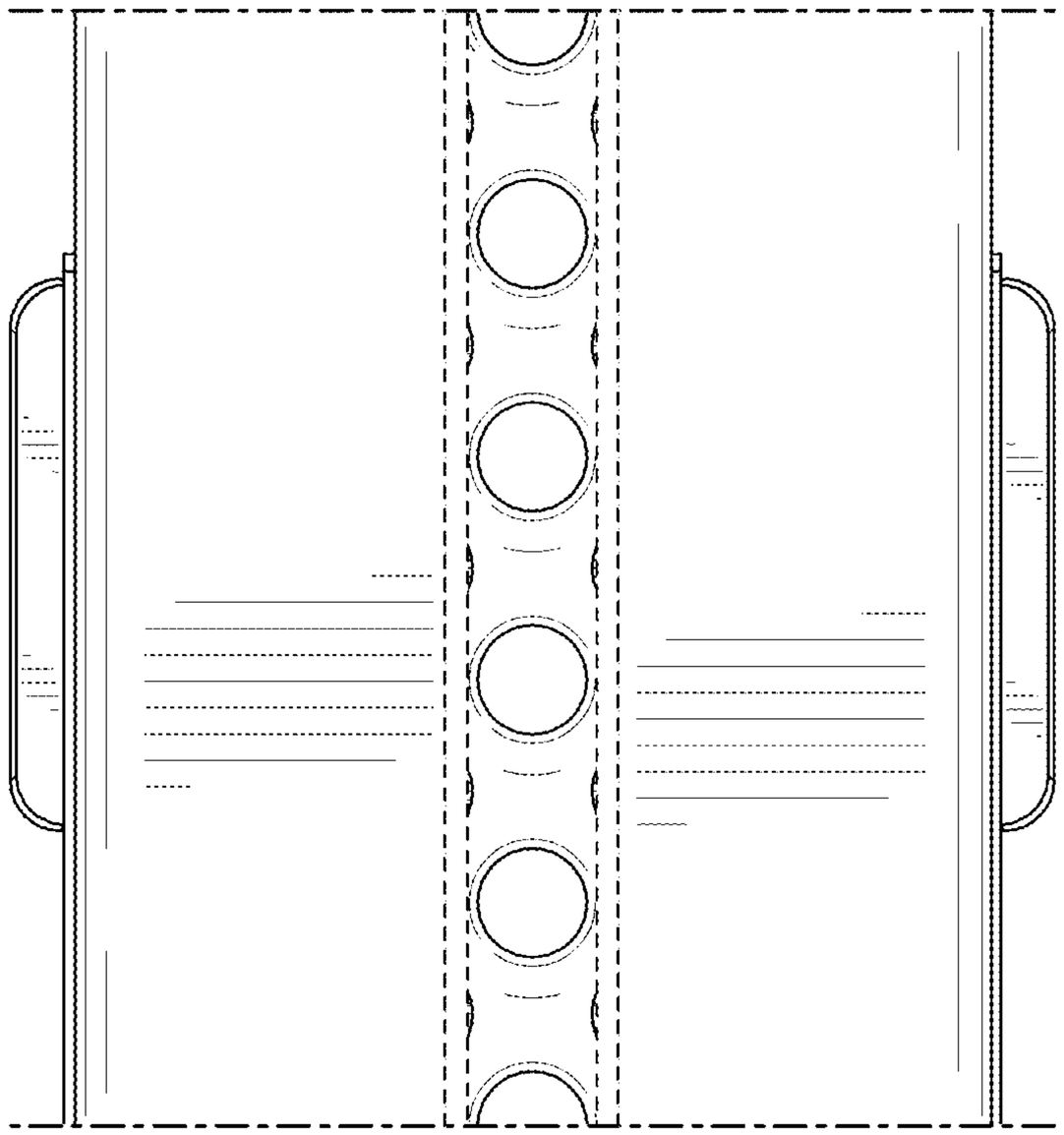

FIG. 24

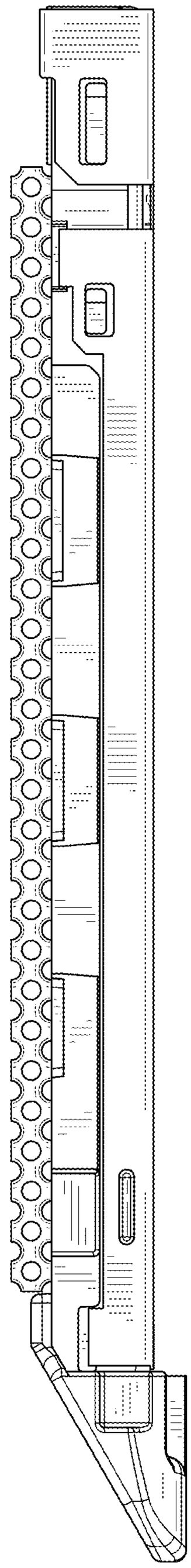

FIG. 25

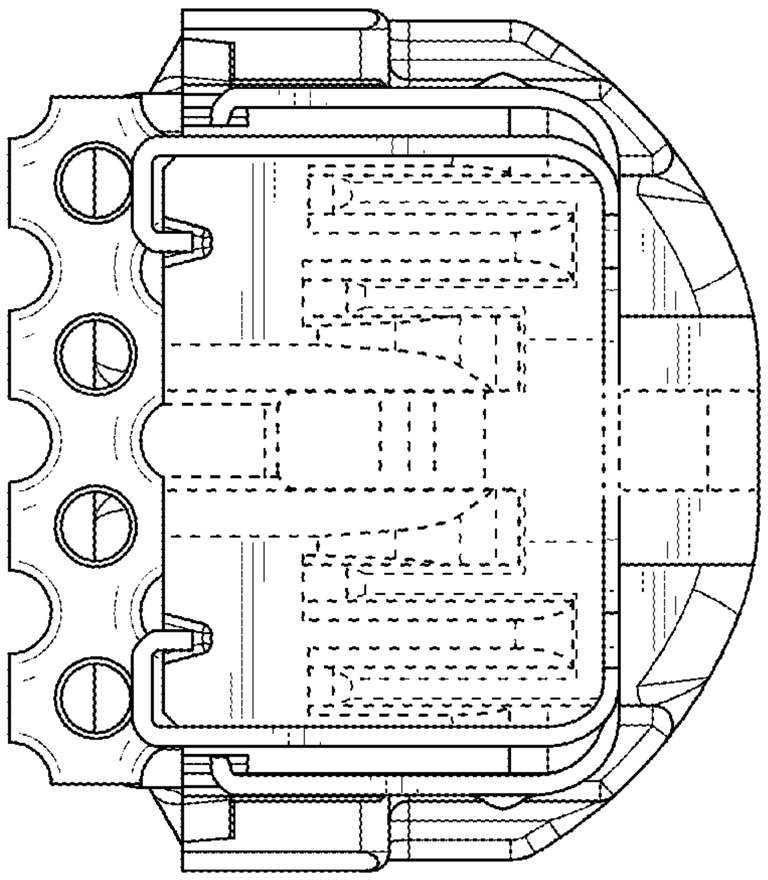

FIG. 27

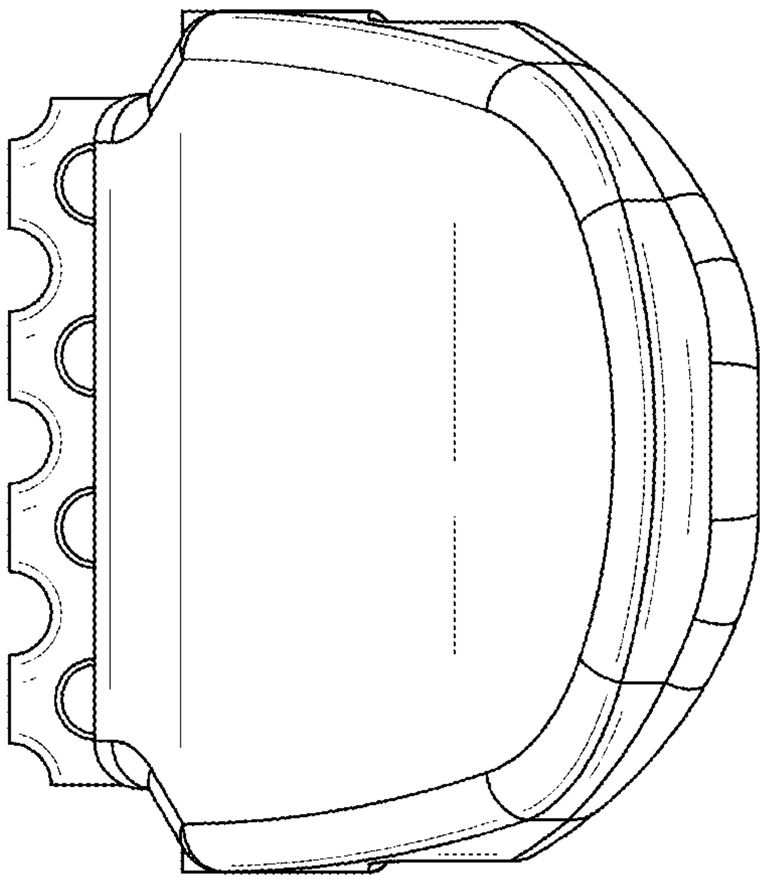

FIG. 26