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(12) **United States Design Patent**
Saulou et al.

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(54) **FRAC PLUG SLIP**
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5,819,846 A * 10/1998 Bolt, Jr. E21B 33/134 166/123
7,475,736 B2 * 1/2009 Lehr E21B 33/1204 166/120
7,735,549 B1 * 6/2010 Nish E21B 33/1293 166/134
8,066,065 B2 * 11/2011 Buckner E21B 33/1204 166/118
D673,182 S * 12/2012 Frazier D15/21
D694,281 S * 11/2013 Frazier D15/21
8,596,347 B2 * 12/2013 Valencia E21B 33/1204 166/134
8,678,081 B1 * 3/2014 Nish E21B 33/1294 166/135
D703,698 S * 4/2014 Frazier D15/21
D705,821 S * 5/2014 Frazier D15/21
8,770,276 B1 * 7/2014 Nish E21B 33/1291 166/118

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(52) **U.S. Cl.**
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(58) **Field of Classification Search**
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CPC E21B 33/1293; E21B 33/1204; E21B 33/1216; E21B 33/1285; E21B 33/12; E21B 33/1295; E21B 33/129; E21B 33/01; E21B 33/06; E21B 33/124; E21B 33/128; E21B 33/1291; E21B 33/1292; E21B 21/01; E21B 43/26; E21B 23/01
See application file for complete search history.

(56) **References Cited**
U.S. PATENT DOCUMENTS
2,204,659 A * 6/1940 Burt E21B 33/129 166/217
3,530,934 A * 9/1970 Kisling E21B 33/129 166/134
3,687,196 A * 8/1972 Mullins E21B 23/01 166/217
4,440,223 A * 4/1984 Akkerman E21B 33/1295 166/134

(Continued)

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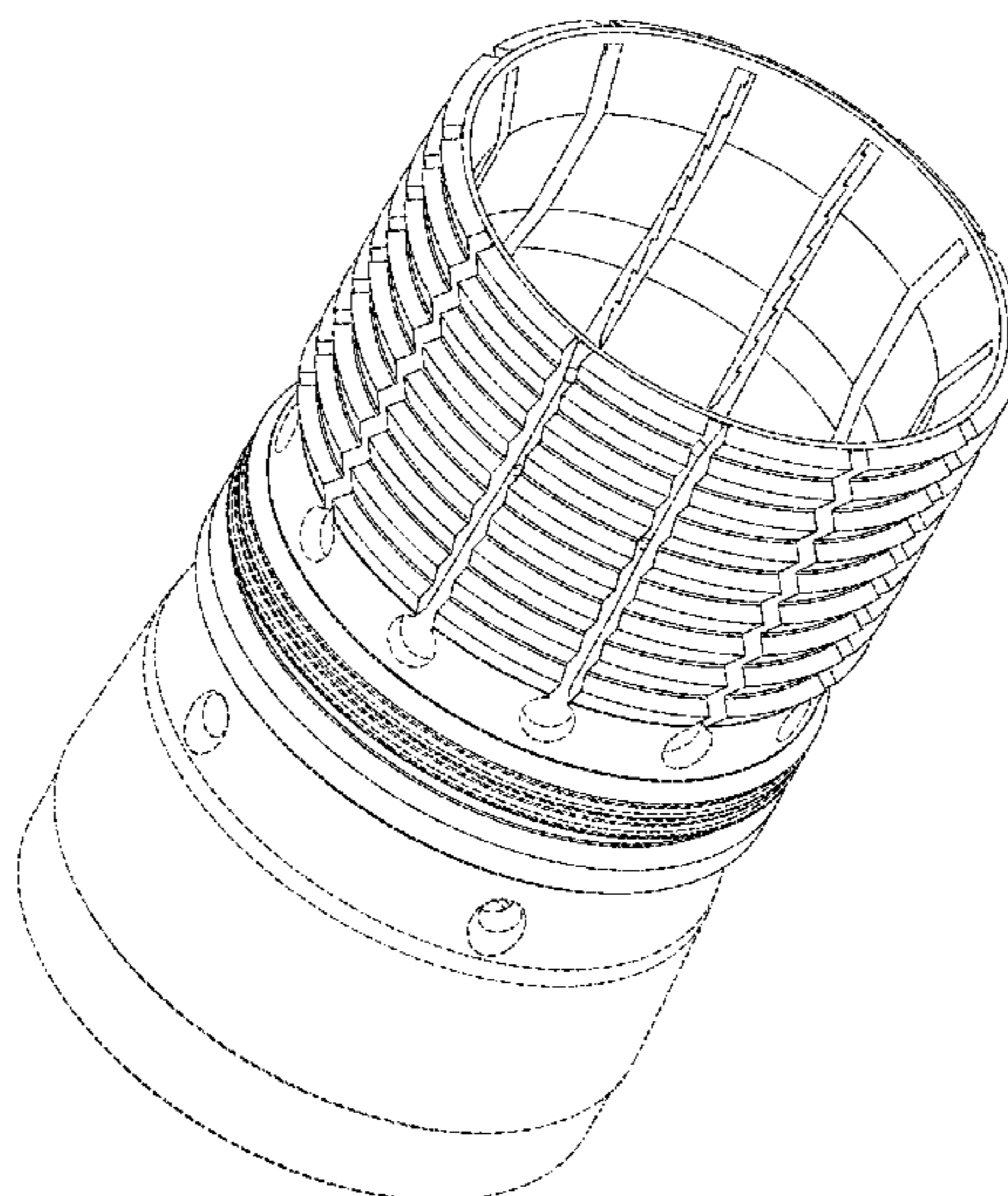
(57) **CLAIM**

The ornamental design for a frac plug slip, as shown.

DESCRIPTION

FIG. 1 is a perspective view of the frac plug slip showing our new design;
FIG. 2 is a side view thereof;
FIG. 3 is a top view thereof;
FIG. 4 is a bottom view thereof; and,
FIG. 5 is a perspective view of the frac plug slip from an opposite end.
The broken lines in the drawings within the slip portion shown in solid lines represent unclaimed boundaries of the design. The broken lines showing the remainder of the frac plug are for environmental purposes only and form no part of the claimed design.

1 Claim, 5 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

8,869,904 B2 *	10/2014	Jani	E21B 33/134	2013/0048272 A1 *	2/2013	VanLue	E21B 33/128
			166/117.5				166/118
8,997,853 B2 *	4/2015	VanLue	E21B 33/128	2013/0048313 A1 *	2/2013	VanLue	E21B 33/128
			166/118				166/387
9,074,439 B2 *	7/2015	VanLue	E21B 33/128	2013/0048314 A1 *	2/2013	VanLue	E21B 33/128
9,097,095 B2 *	8/2015	VanLue	E21B 33/128				166/387
9,103,177 B2 *	8/2015	VanLue	E21B 33/128	2015/0167424 A1 *	6/2015	Richards	E21B 33/134
D762,737 S *	8/2016	Fitzhugh	D15/21				166/386
D763,324 S *	8/2016	Fitzhugh	D15/21	2015/0198008 A1 *	7/2015	Smith	E21B 33/134
9,725,982 B2 *	8/2017	VanLue	E21B 33/129				166/386
2008/0264627 A1 *	10/2008	Roberts	E21B 23/01	2015/0354313 A1 *	12/2015	McClinton	E21B 23/06
			166/118				166/135
2011/0259610 A1 *	10/2011	Shkurti	E21B 33/1204	2016/0145957 A1 *	5/2016	Davies	E21B 23/01
			166/386				166/382
2012/0097384 A1 *	4/2012	Valencia	E21B 33/1204	2016/0160602 A1 *	6/2016	Ruffo	E21B 33/1216
			166/134				166/386
2012/0125631 A1 *	5/2012	Entchev	E21B 33/12	2016/0290096 A1 *	10/2016	Tse	E21B 33/129
			166/376				166/386
2012/0292052 A1 *	11/2012	Xu	E21B 33/134	2017/0101835 A1 *	4/2017	Webster	E21B 23/01
			166/386				166/386
2013/0014958 A1 *	1/2013	Jani	E21B 33/134	2017/0101836 A1 *	4/2017	Webster	E21B 33/1293
			166/386				166/138
2013/0048271 A1 *	2/2013	VanLue	E21B 33/128	2017/0234103 A1 *	8/2017	Frazier	E21B 33/1291
			166/118				166/373
				2017/0234108 A1 *	8/2017	Xu	E21B 34/12
							166/373
				2017/0260823 A1 *	9/2017	Roseman	E21B 33/128
				2017/0260824 A1 *	9/2017	Kellner	E21B 33/1293
				2017/0268310 A1 *	9/2017	Shkurti	E21B 33/129

* cited by examiner

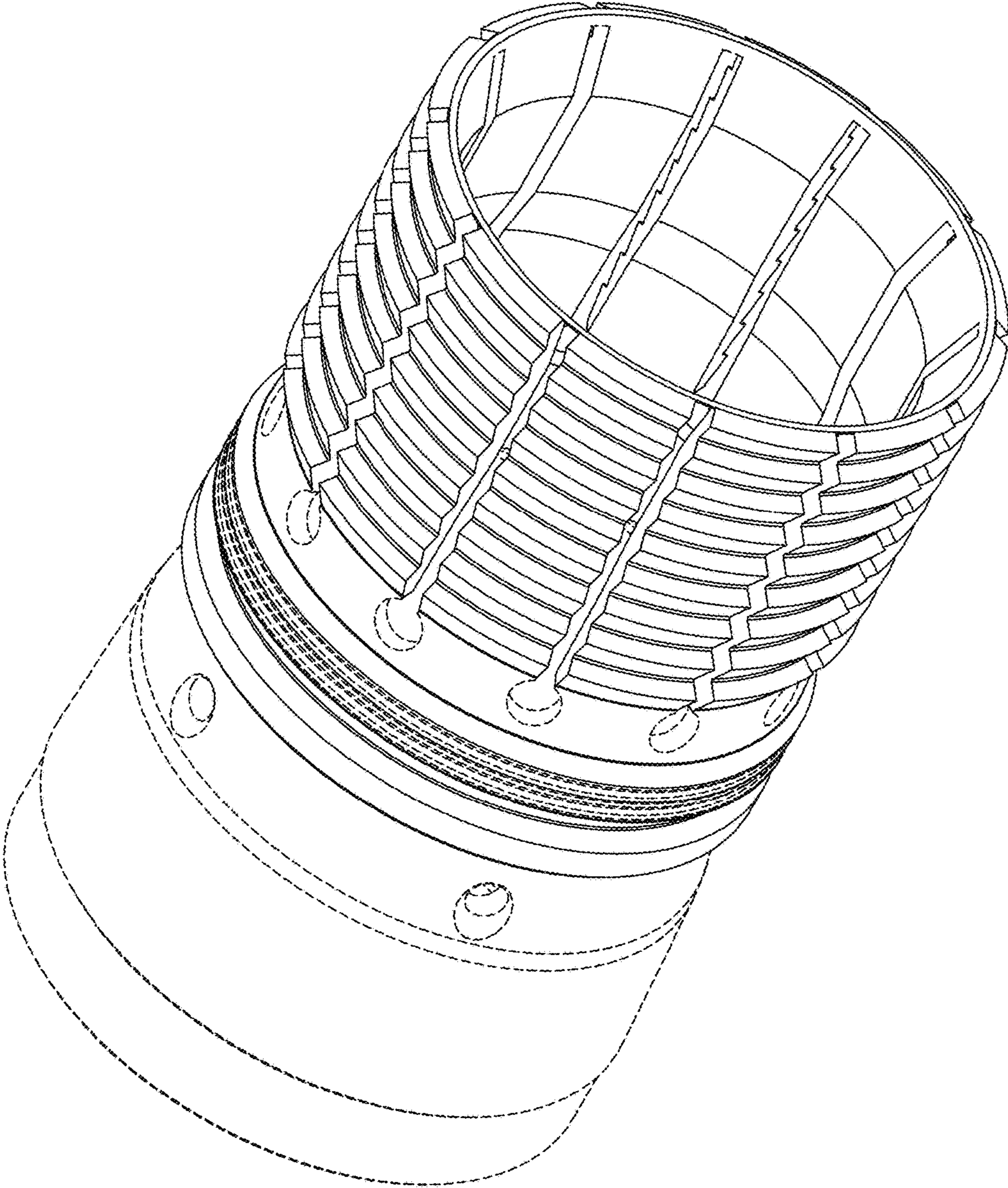


FIG. 1

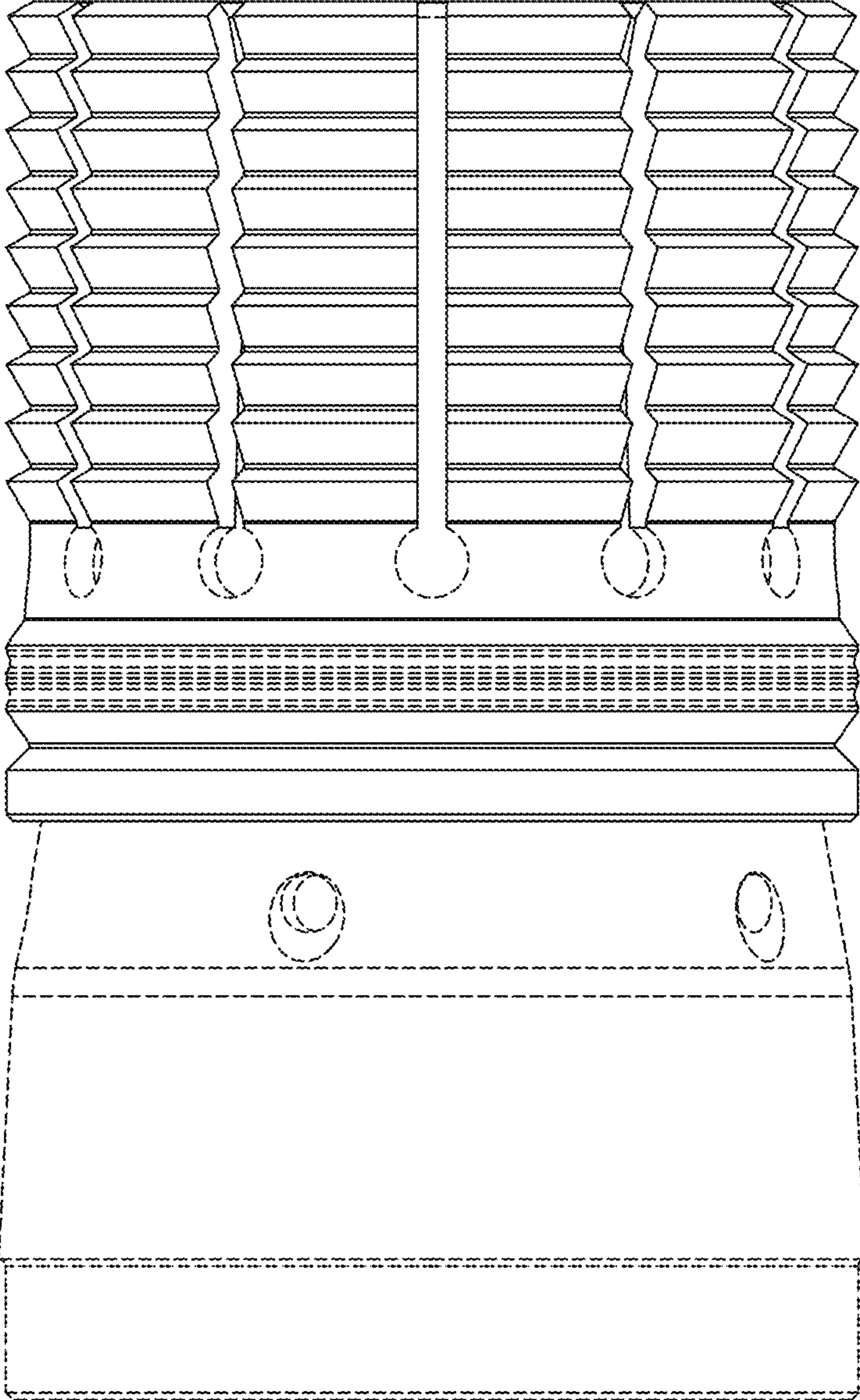


FIG. 2

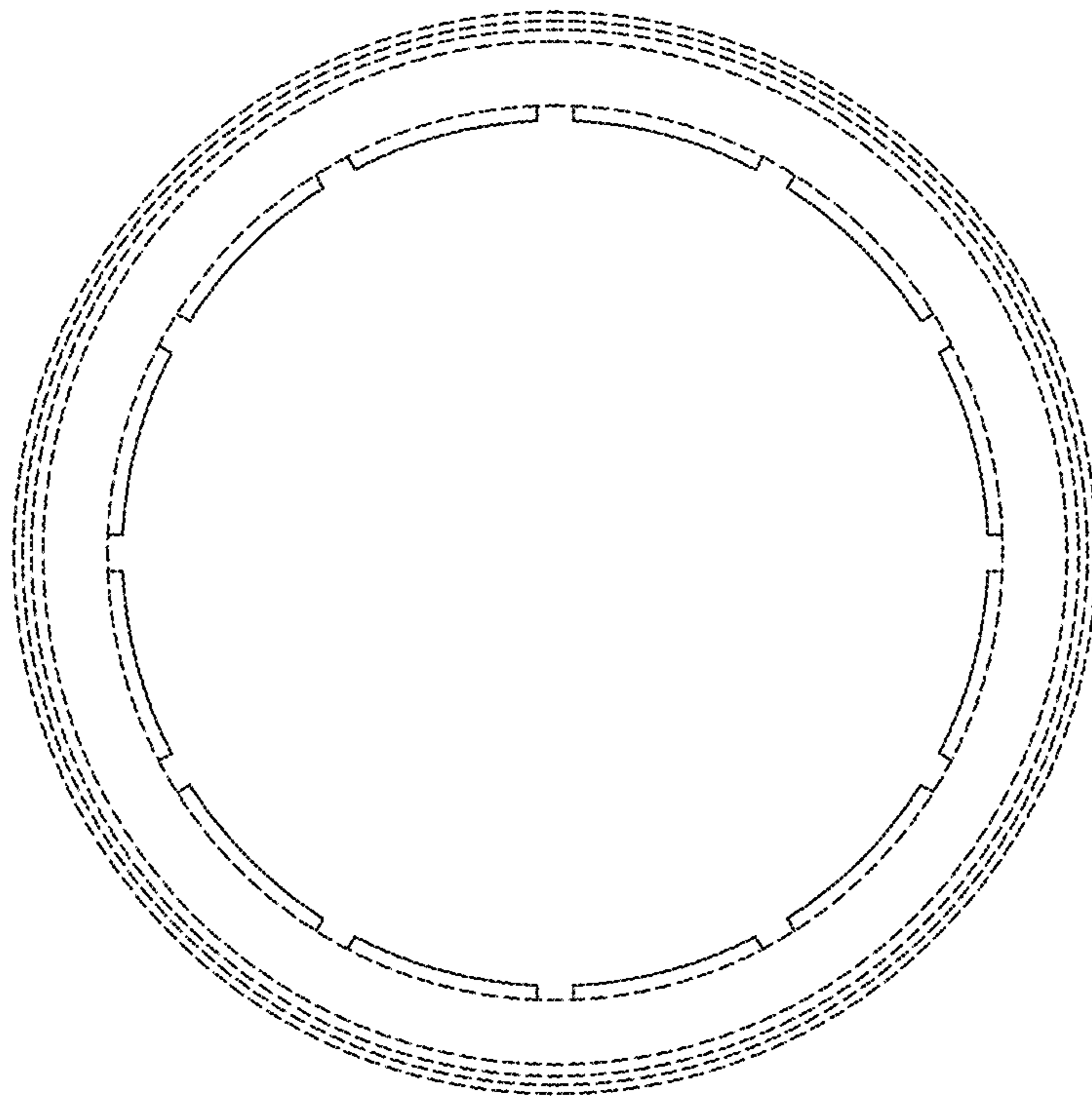


FIG. 3

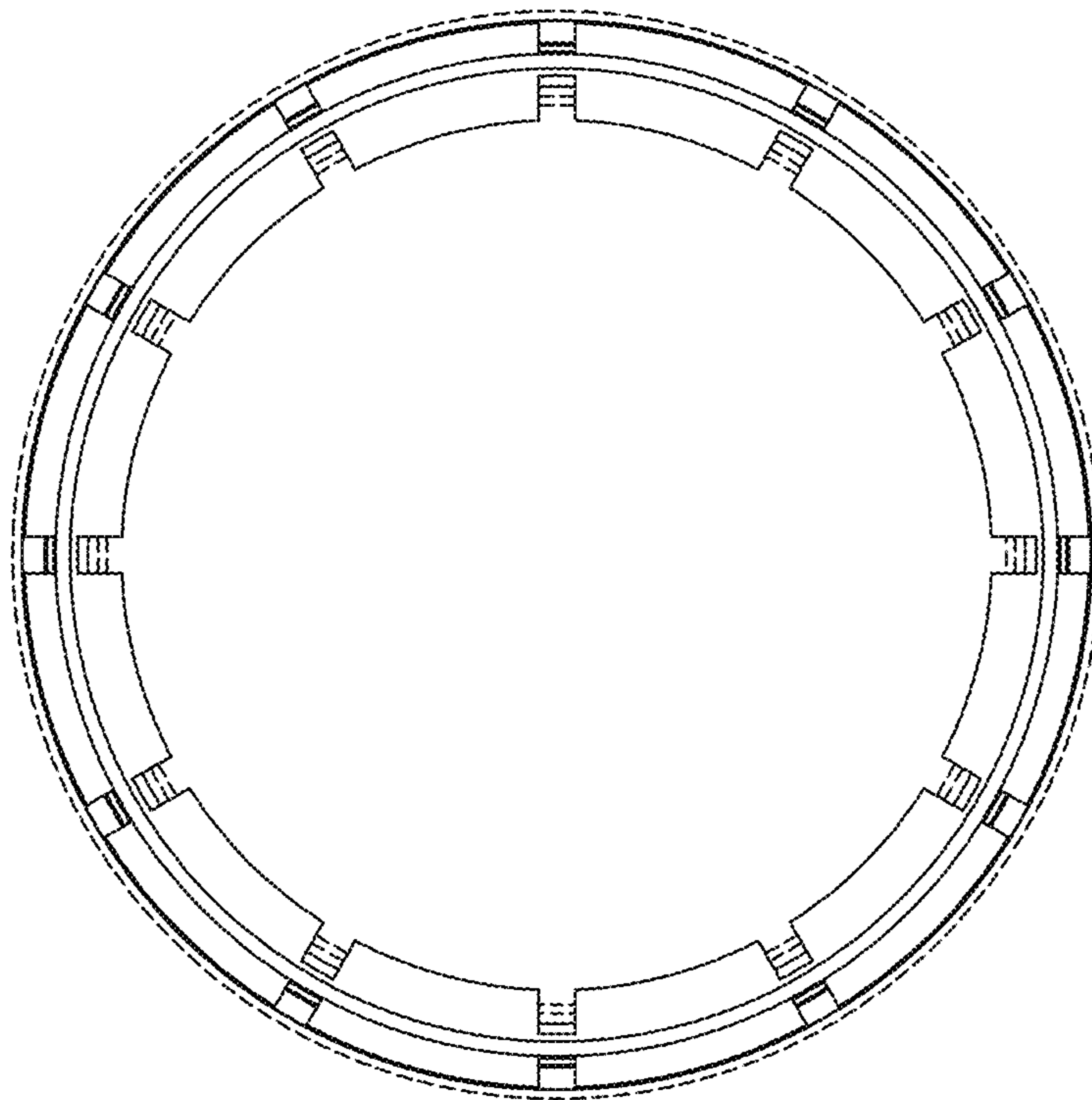


FIG. 4

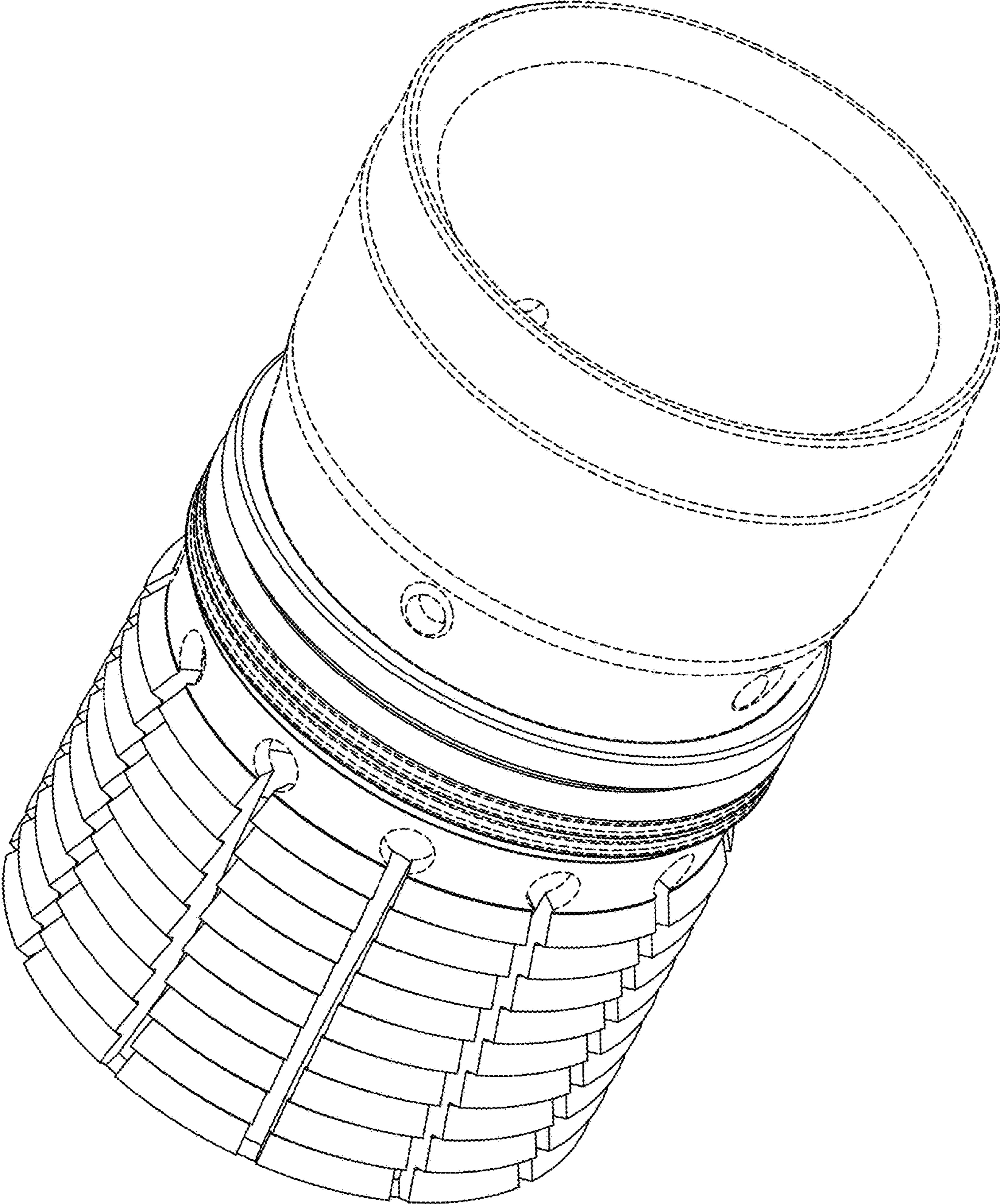


FIG. 5