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

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(54) **PROCESS SHIELD FOR A SUBSTRATE PROCESSING CHAMBER**

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(73) Assignee: **APPLIED MATERIALS, INC.**, Santa Clara, CA (US)

(**) Term: **15 Years**

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(51) **LOC (13) Cl.** **15-09**

(52) **U.S. Cl.**
USPC **D15/138**; D13/182

(58) **Field of Classification Search**
USPC D23/249, 259, 262, 269; D15/138, 139, D15/143, 144, 144.1, 144.2, 150, 199;
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,320,728 A *	6/1994	Tepman	....	H01J 37/3408 204/192.12
D351,450 S *	10/1994	Maryska	....	D22/113

(Continued)

FOREIGN PATENT DOCUMENTS

JP	D1481081 S	10/2013
JP	D1509910 S	10/2014

(Continued)

OTHER PUBLICATIONS

Search Report for Taiwan Design Application No. 108304729, dated Aug. 5, 2020.

(Continued)

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(57) **CLAIM**

The ornamental design for a process shield for a substrate processing chamber, as shown and described.

DESCRIPTION

FIG. **1** is a top isometric view of a process shield for a substrate processing chamber, according to one embodiment of the novel design.
FIG. **2** is a bottom isometric view thereof.
FIG. **3** is a bottom plan view thereof.
FIG. **4** is a top plan view thereof.
FIG. **5** is a front elevation view thereof.
FIG. **6** is a back elevation view thereof.
FIG. **7** is a left side elevation view thereof.
FIG. **8** is a right side elevation view thereof.
FIG. **9** is cross-sectional view taken along line **9**-**9** of FIG. **3**.
FIG. **10** is a top isometric view of a process shield for a substrate processing chamber, according to another embodiment of the novel design.
FIG. **11** is a bottom isometric view thereof.
FIG. **12** is a bottom plan view thereof.
FIG. **13** is a top plan view thereof.
FIG. **14** is a front elevation view thereof.
FIG. **15** is a back elevation view thereof.
FIG. **16** is a left side elevation view thereof.
FIG. **17** is a right side elevation view thereof.
FIG. **18** is cross-sectional view taken along line **18**-**18** of FIG. **12**; and,
FIG. **19** is cross-sectional view taken along line **19**-**19** of FIG. **14**.

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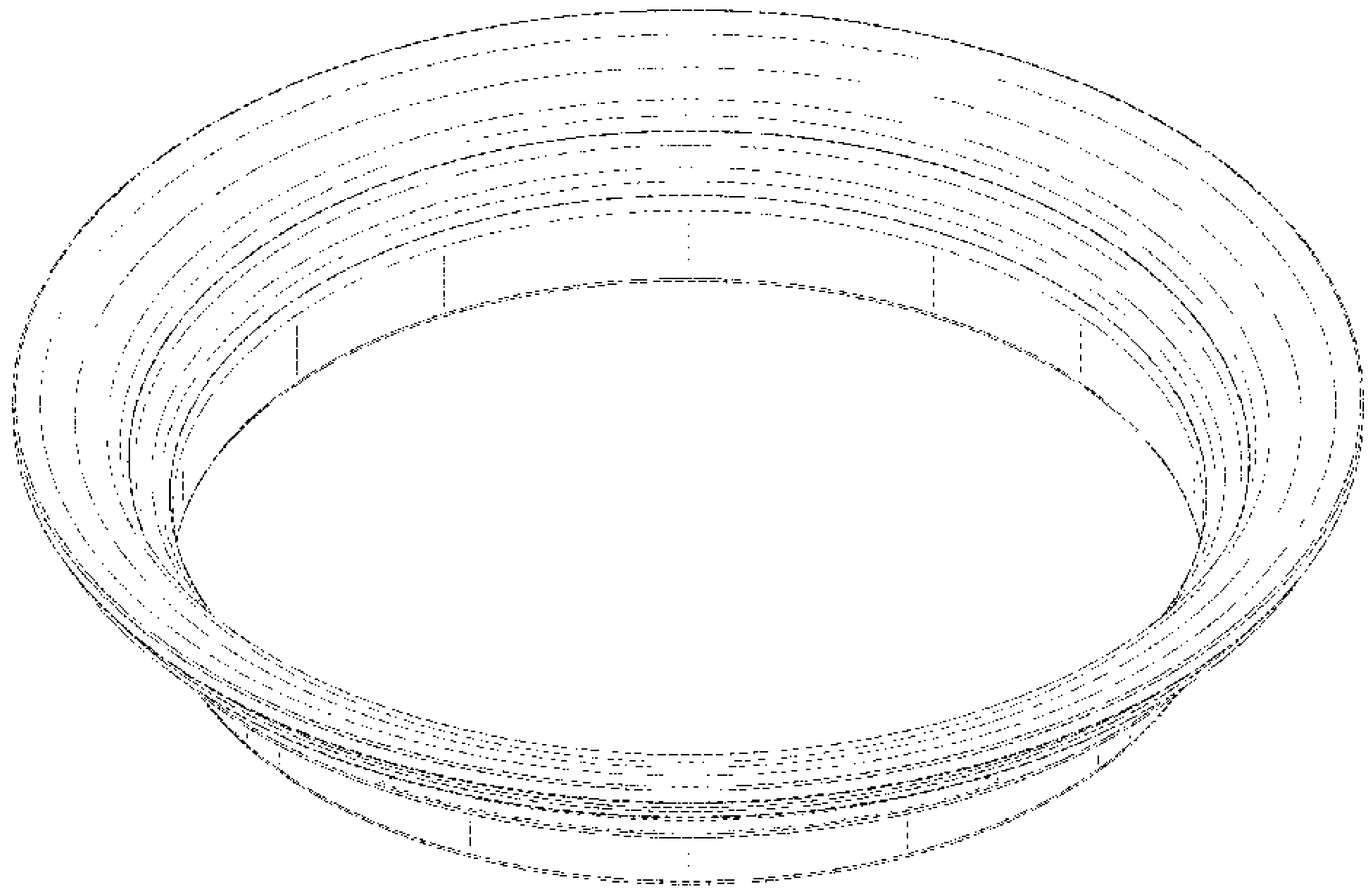
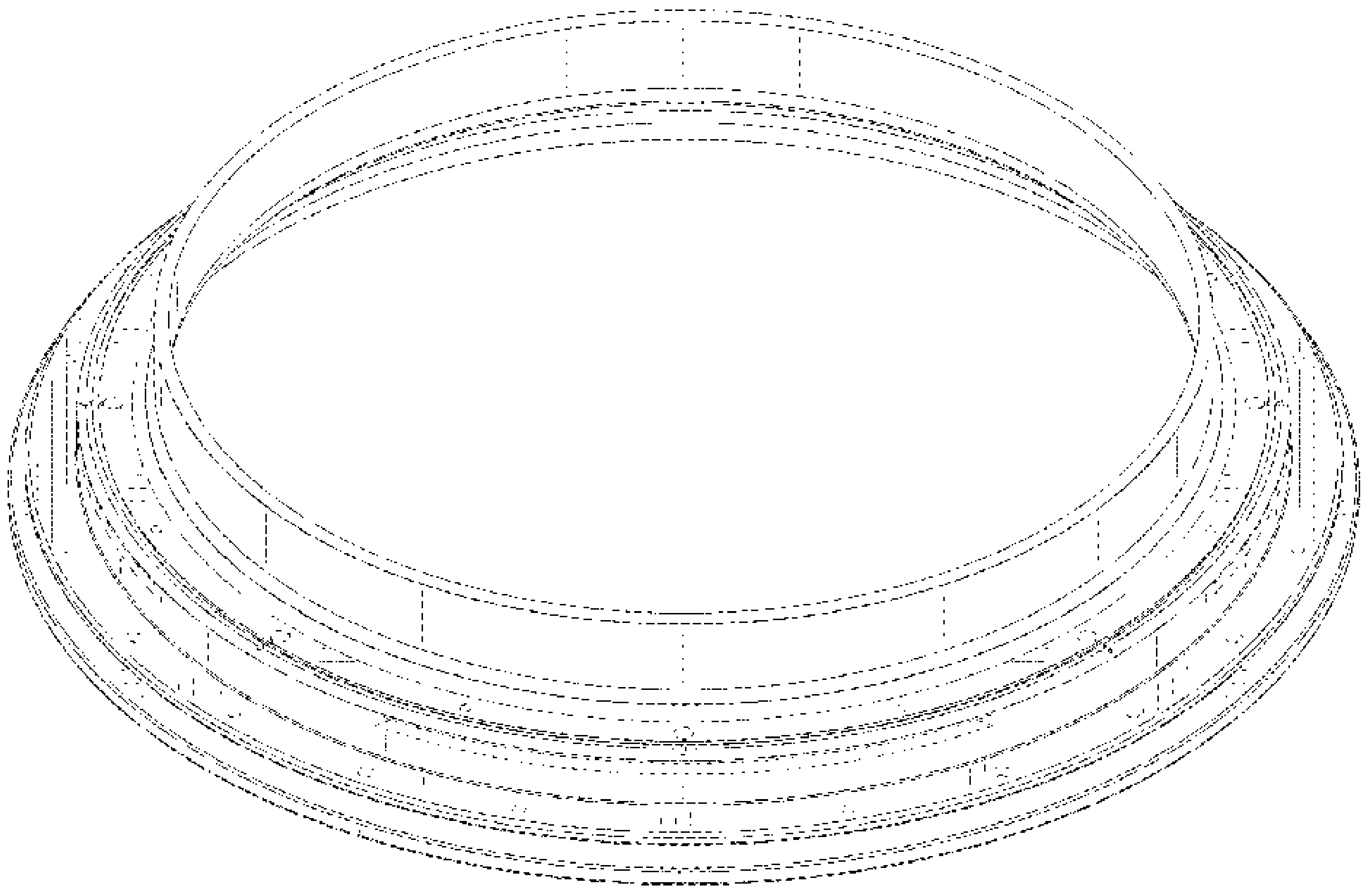




The dashed lines in FIGS. **1-19** represent unclaimed environment forming no part of the claimed design.

1 Claim, 19 Drawing Sheets

(58) **Field of Classification Search**
USPC D13/118, 122, 133, 162, 182, 184, 199; D22/113, 119
CPC H01J 37/3414; H01J 37/3423; H01L 21/02631; H01L 2221/68363; H01L 2224/75186–75189; H01L 21/67742; H01L 21/0226; H01L 21/02263; H01L 21/02266; H01L 21/02269; H01L 21/02271; F16J 7/00; E04D 13/14; C23C 14/3407; C23C 14/35
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D376,744	S	*	12/1996	Eisenblatter	D8/70
D381,030	S	*	7/1997	Tepman	D15/144
D395,483	S	*	6/1998	Maryska	D22/100
D401,252	S	*	11/1998	Tudhope	D15/138
D403,002	S	*	12/1998	Tudhope	D15/138
D403,334	S	*	12/1998	Tudhope	D15/138
D403,337	S	*	12/1998	Or	D15/199
D491,963	S	*	6/2004	Doba	D15/144
D559,066	S	*	1/2008	Tano	D8/70
D584,591	S	*	1/2009	Tano	D8/70
D592,029	S	*	5/2009	Tano	D8/70
D592,030	S	*	5/2009	Tano	D8/70
D600,989	S	*	9/2009	Tano	D8/70
D616,389	S	*	5/2010	Takahashi	D13/182
8,043,487	B2		10/2011	Li et al.	
D665,491	S	*	8/2012	Goel	D23/386
8,371,904	B2	*	2/2013	Jindal	B24B 37/30 451/41
D678,745	S	*	3/2013	Nguyen	D8/70
D703,162	S	*	4/2014	Tamaso	D13/182
D738,451	S	*	9/2015	Olson	D21/790
D741,823	S	*	10/2015	Tateno	D13/182
D741,921	S	*	10/2015	Jarvius	D15/136
9,475,996	B2	*	10/2016	Mandle	C10G 2/32
D795,208	S	*	8/2017	Sasaki	D13/182
D796,458	S	*	9/2017	Jang	D13/182
D810,705	S	*	2/2018	Krishnan	D13/182
D819,580	S	*	6/2018	Krishnan	D13/182
D877,101	S	*	3/2020	Johanson	D13/182
D888,903	S	*	6/2020	Gunther	D23/269
D891,382	S	*	7/2020	Koppa	D13/182
D913,979	S	*	3/2021	Babu	D13/182
D913,980	S	*	3/2021	Lee	D13/182
2003/0029564	A1		2/2003	Brown et al.	
2012/0263569	A1	*	10/2012	Priddy	C30B 23/02 414/800
2015/0357169	A1	*	12/2015	Yuan	B23K 35/24 204/298.13
2017/0009367	A1	*	1/2017	Harris	C25D 17/06
2020/0090915	A1	*	3/2020	Kerschbaumer	C23C 14/3407

FOREIGN PATENT DOCUMENTS

JP	D1549498	S	5/2016
JP	D1570910	S	3/2017
JP	D1575876	S	5/2017
JP	D1584875	S	8/2017
JP	D1584906	S	8/2017
TW	D161030		6/2014
TW	D166552		3/2015
TW	D167109		4/2015
TW	D166431		11/2017
TW	D187432		12/2017

OTHER PUBLICATIONS

Search Report for Taiwan Design Application No. 108304735001, dated Dec. 2, 2020.

* cited by examiner

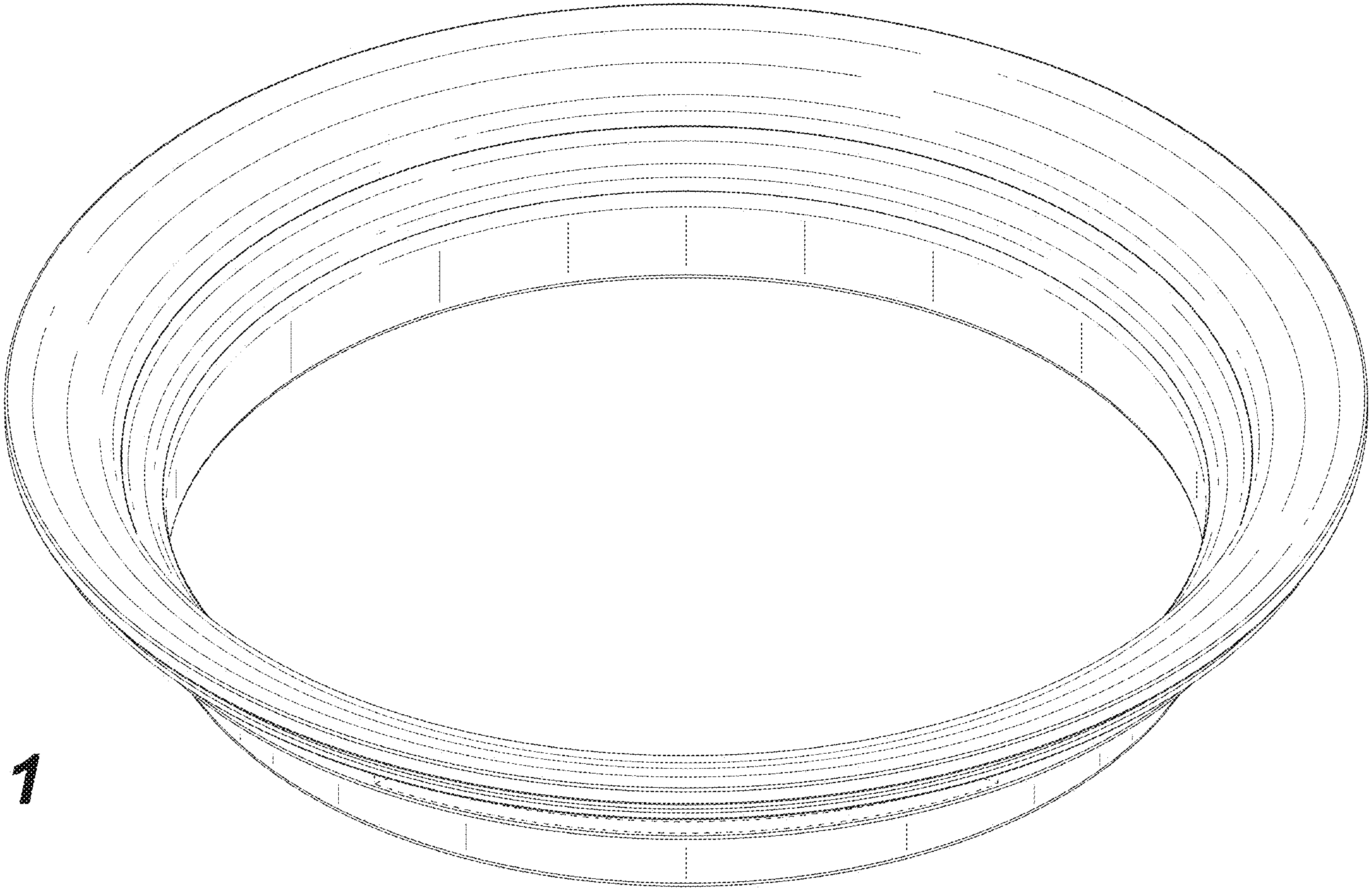


FIG. 1

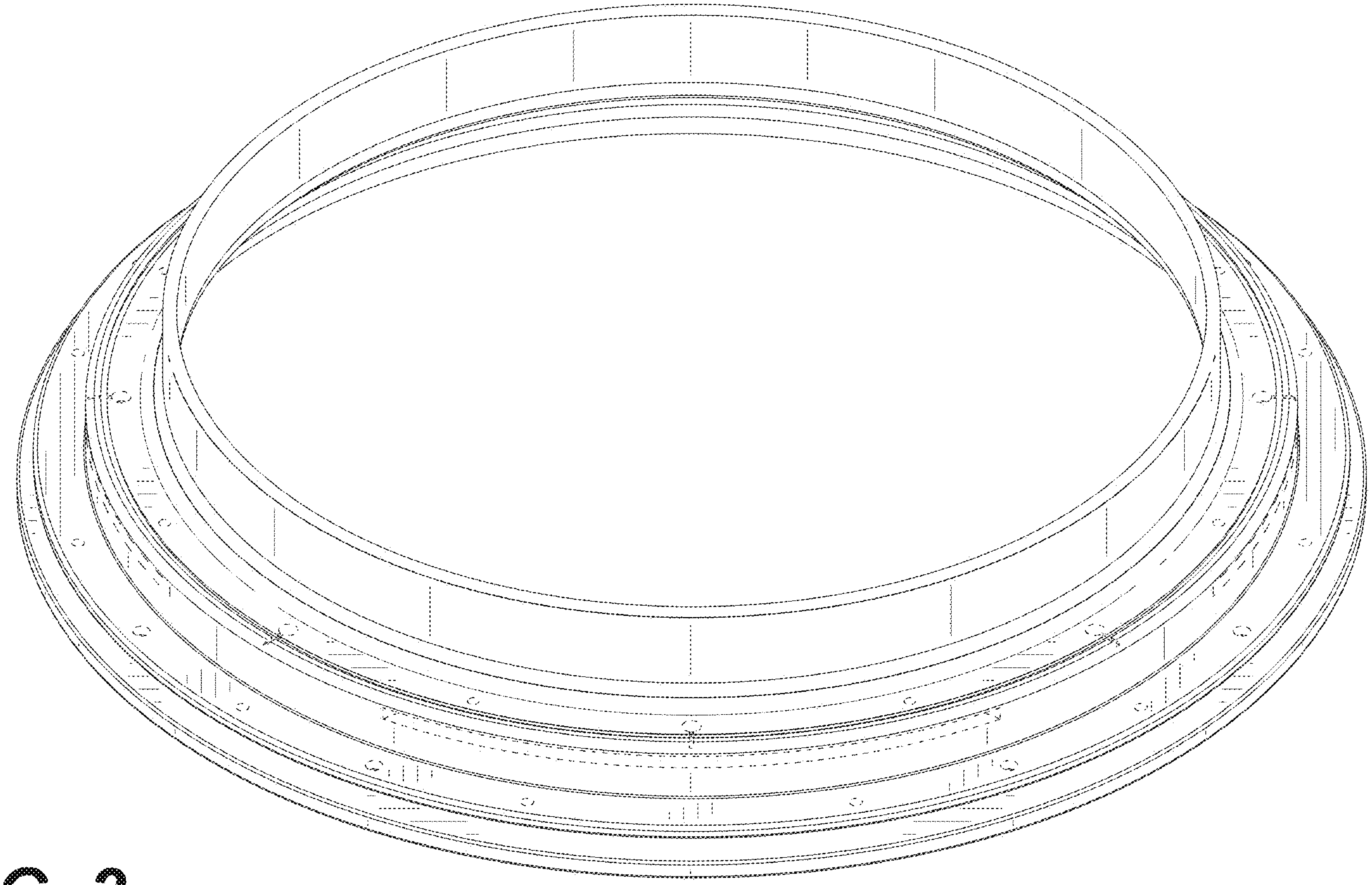
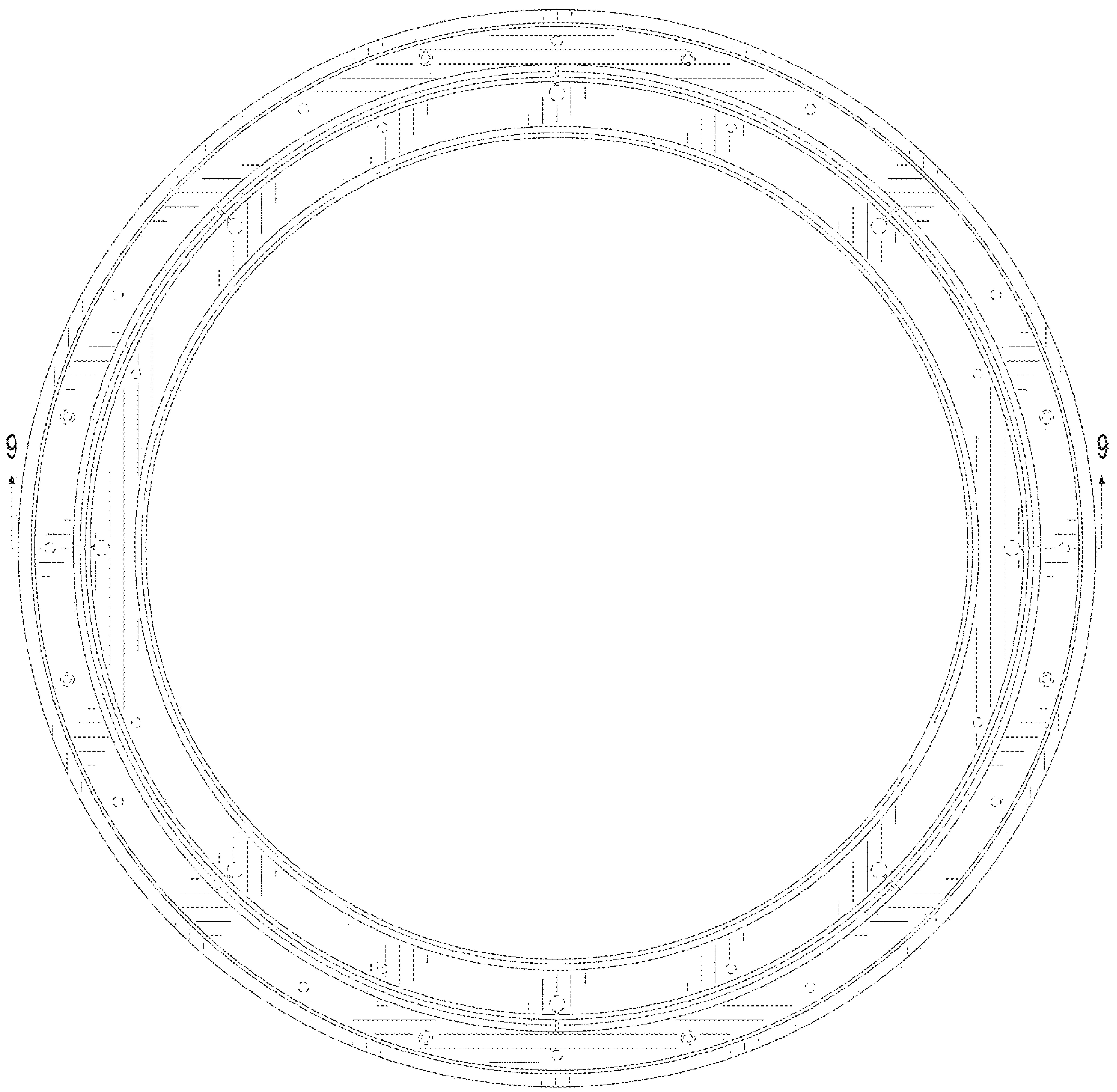


FIG. 2



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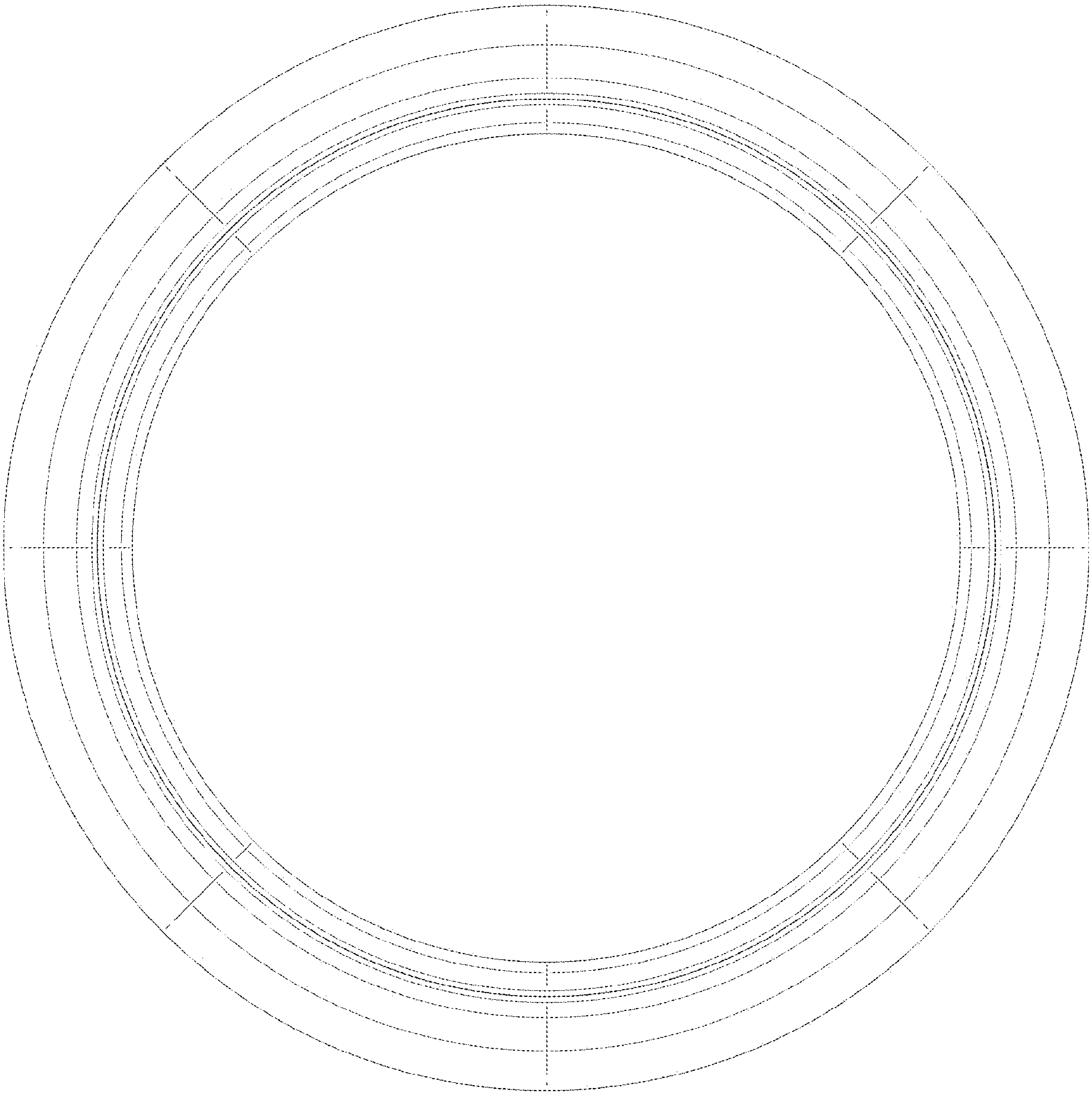

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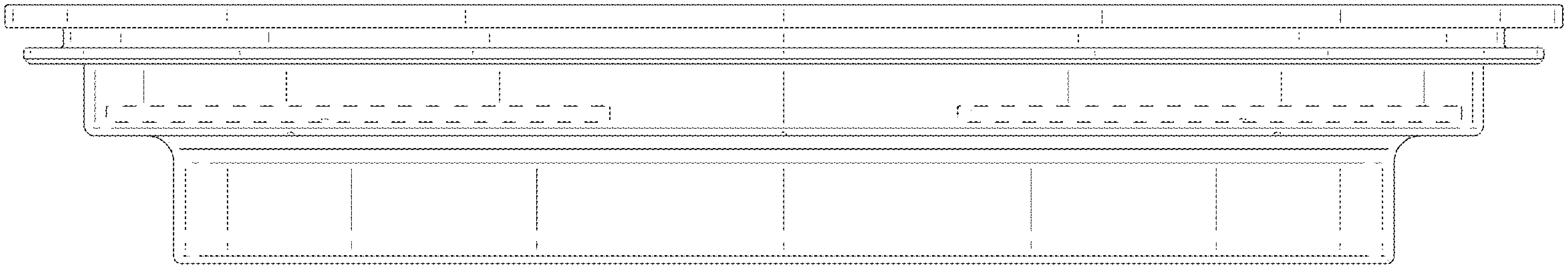

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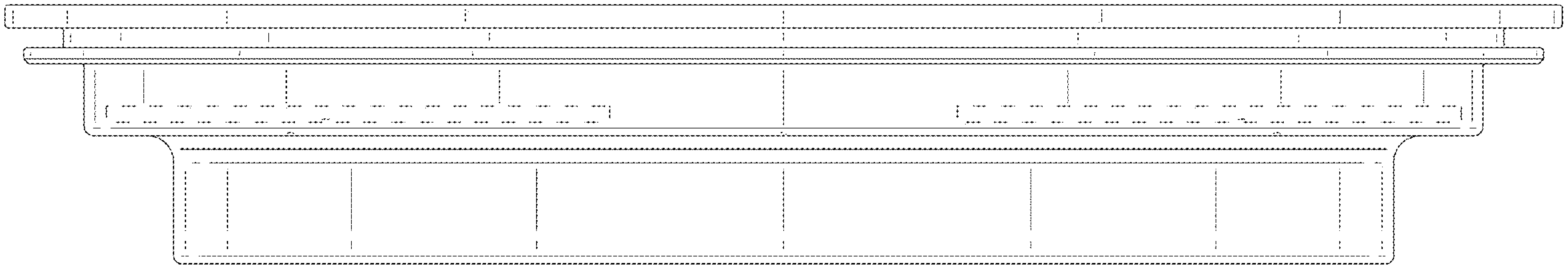

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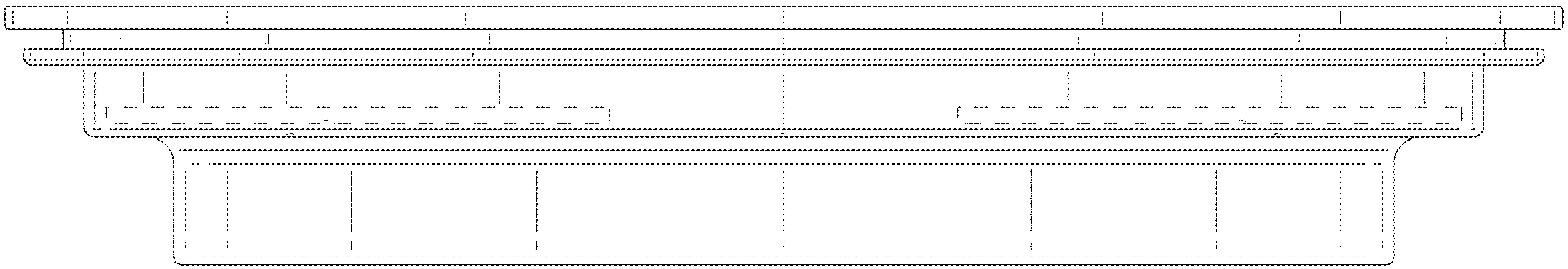

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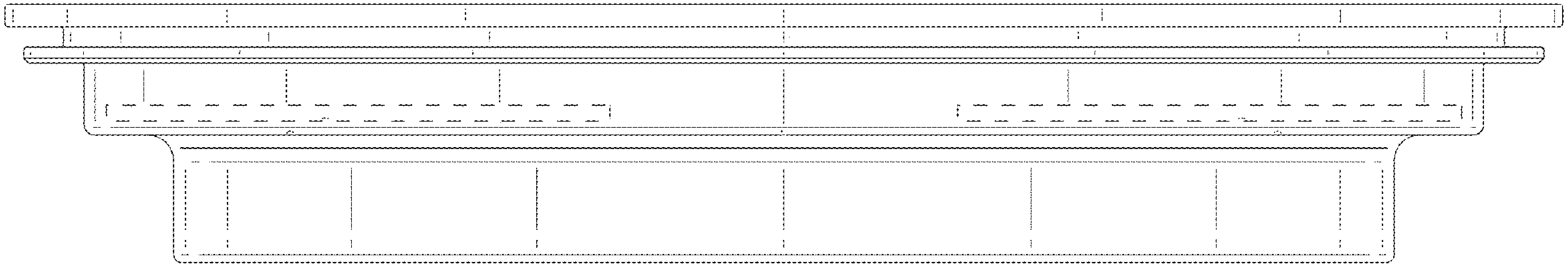

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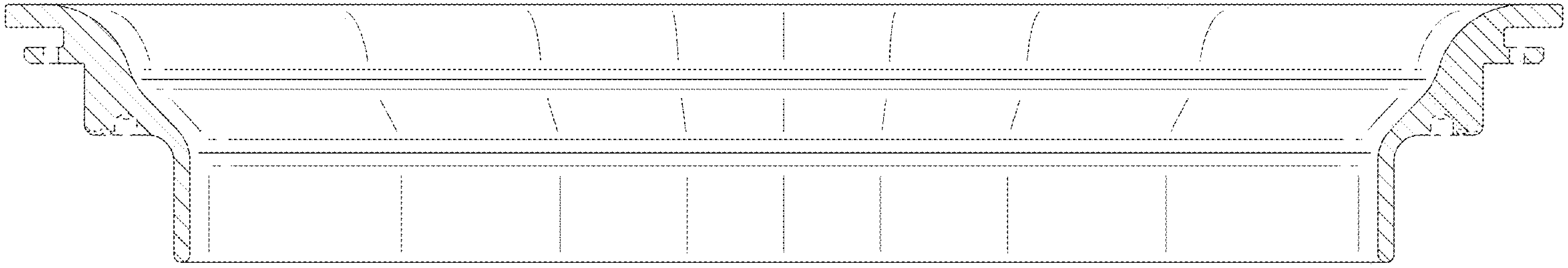

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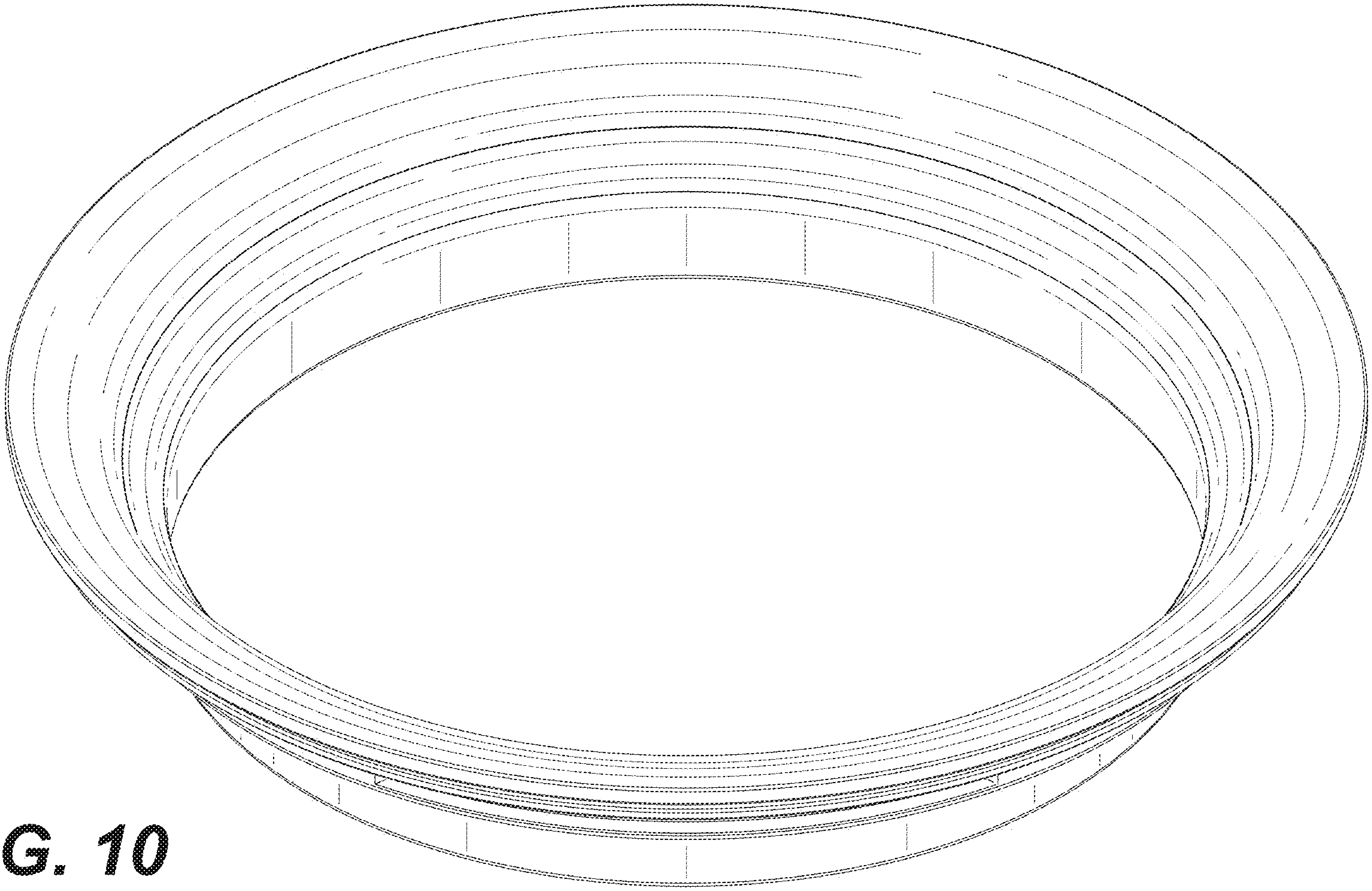

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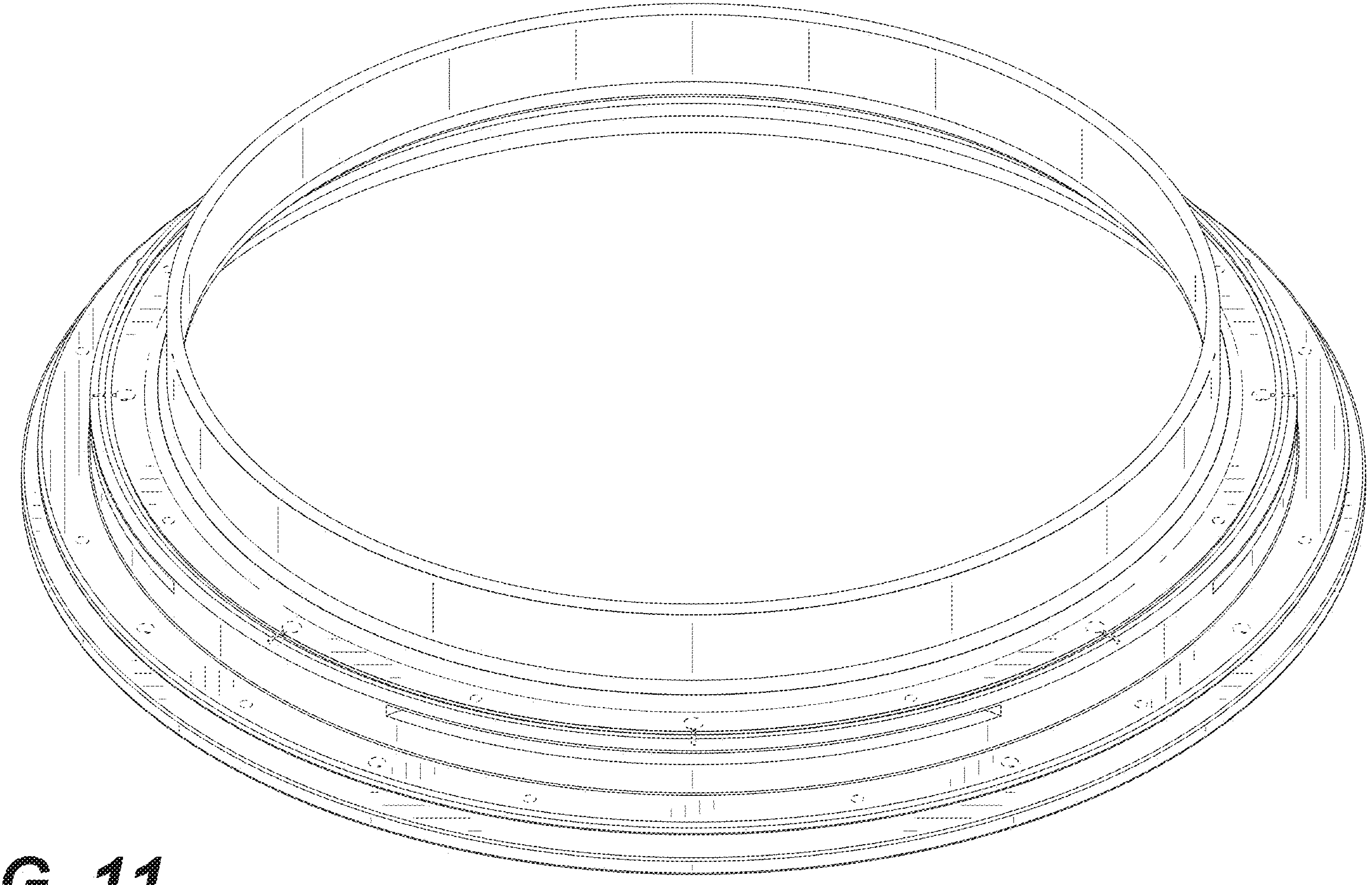

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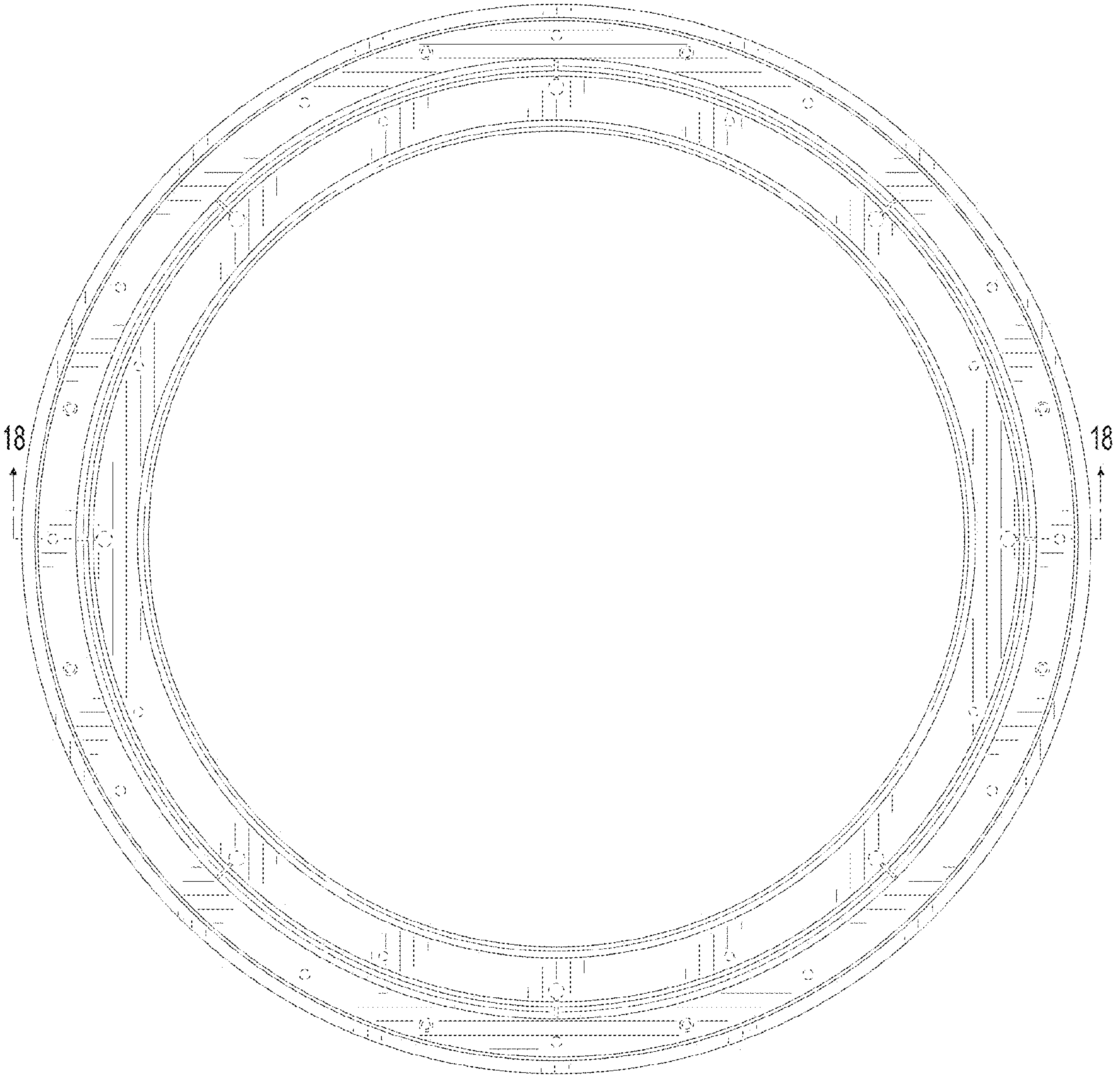

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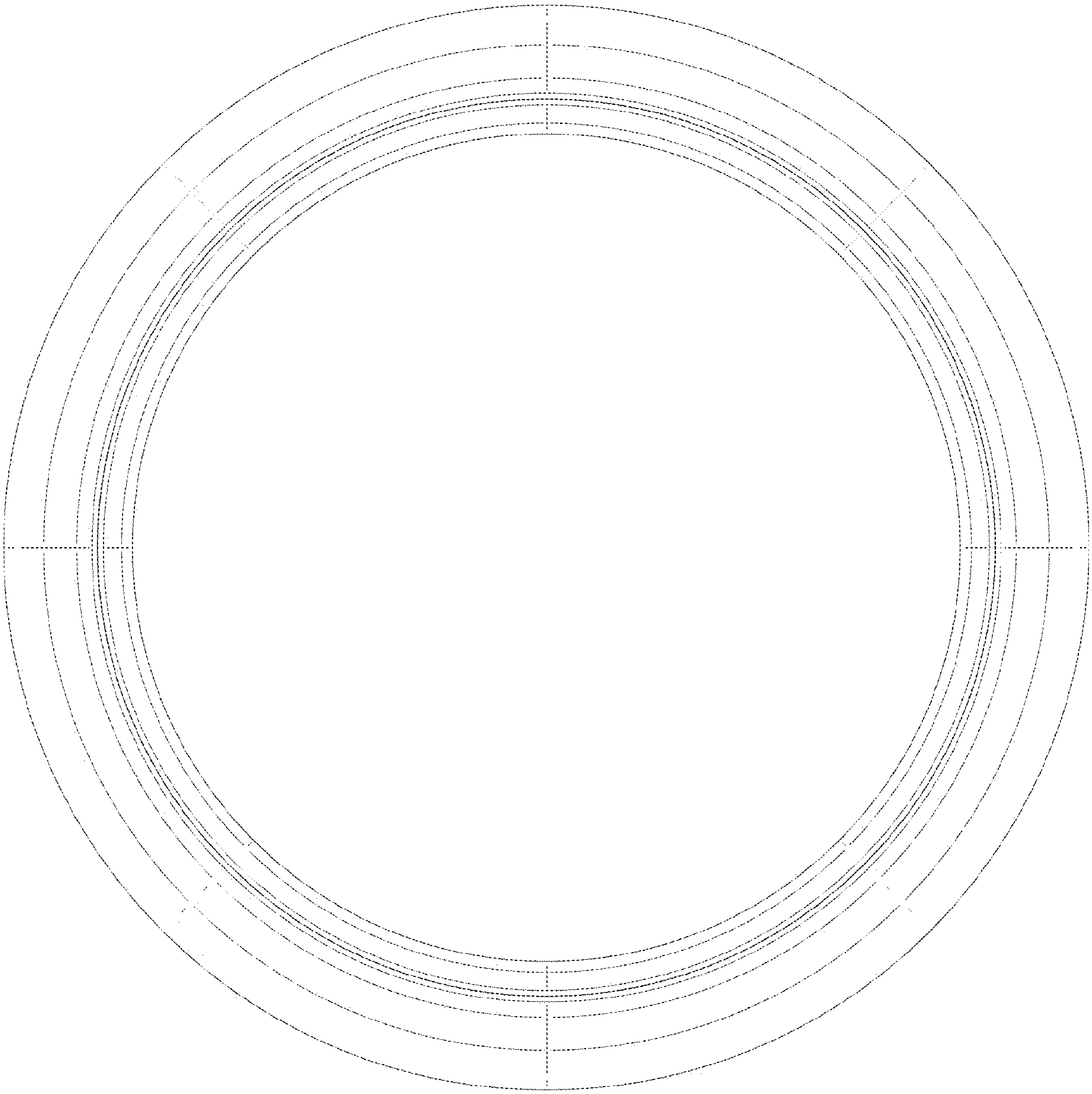

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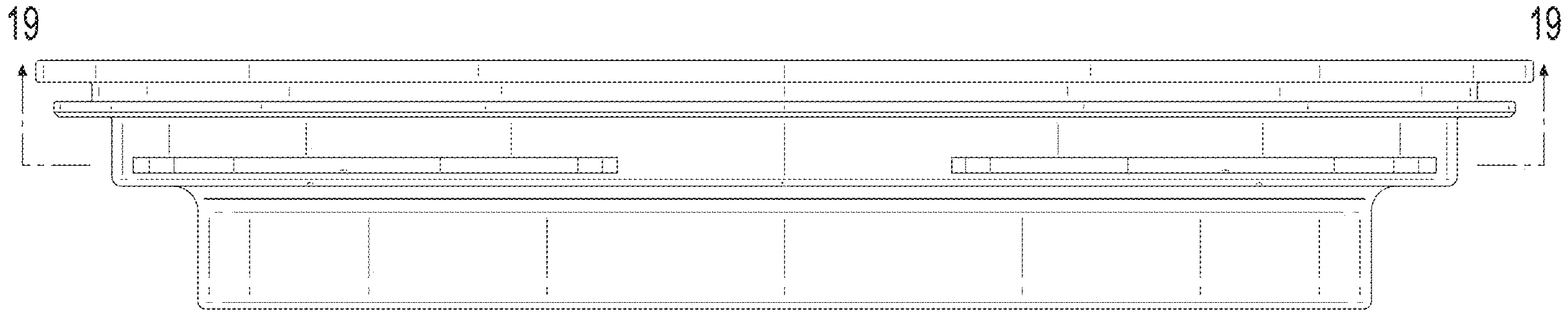

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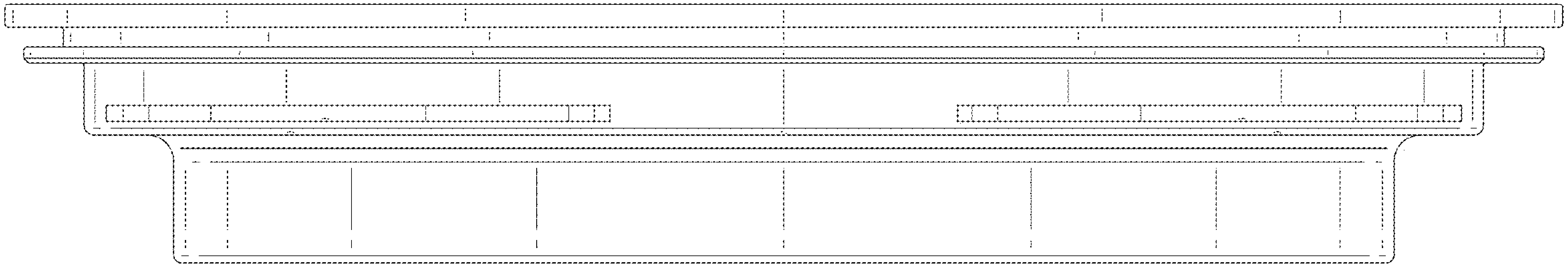

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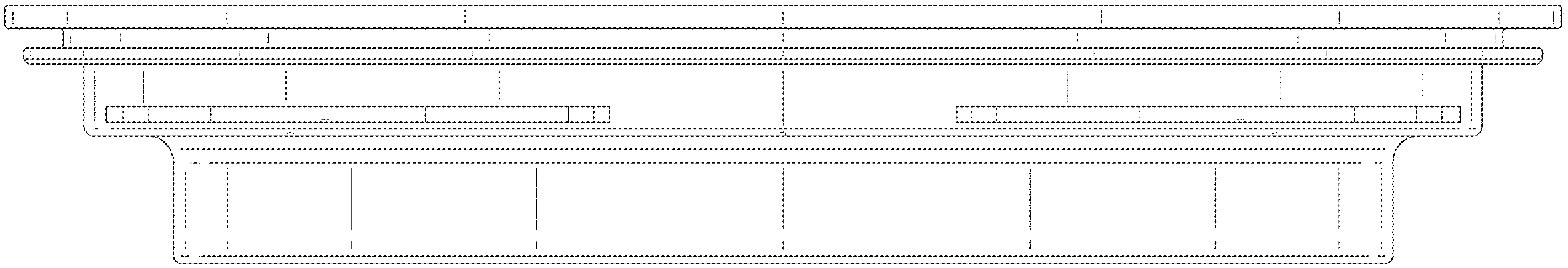

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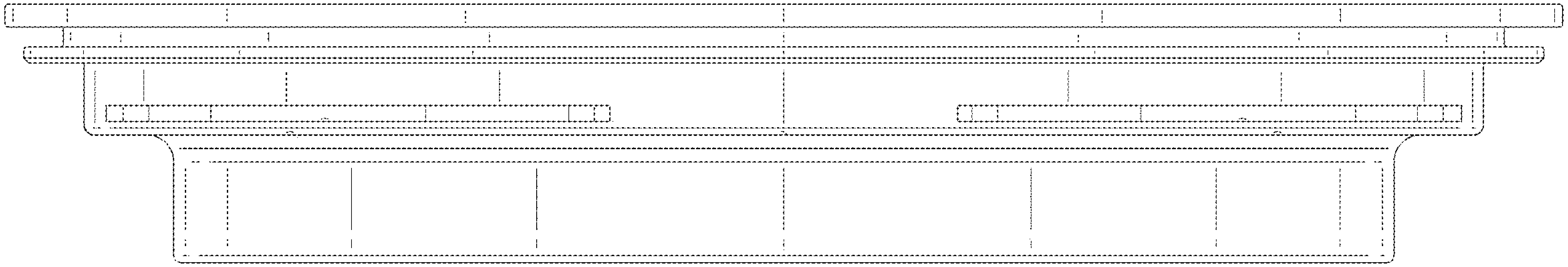

FIG. 17

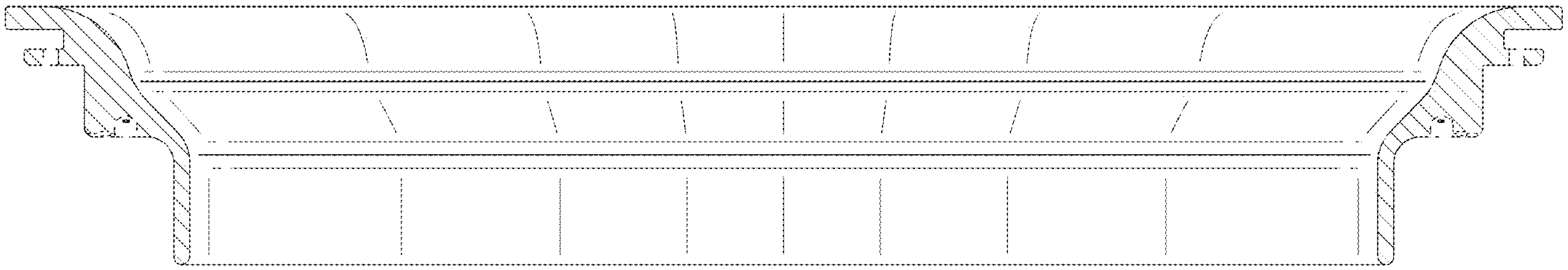

FIG. 18

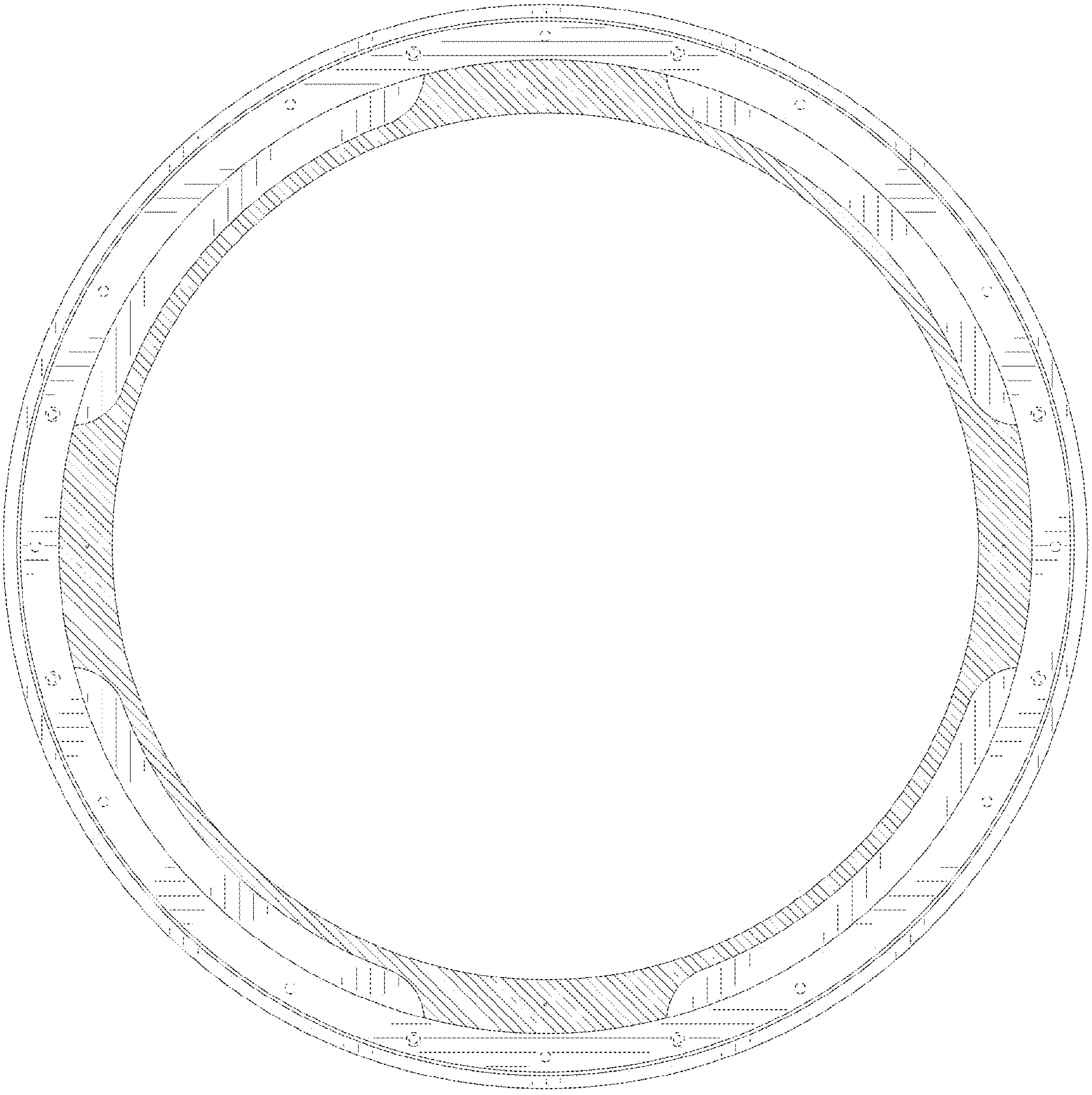

FIG. 19