



US00D941372S

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

(10) **Patent No.:** **US D941,372 S**
(45) **Date of Patent:** **** Jan. 18, 2022**

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

(71) Applicant: **APPLIED MATERIALS, INC.**, Santa Clara, CA (US)

(72) Inventors: **Ilya Lavitsky**, San Francisco, CA (US); **Keith A Miller**, Mountain View, CA (US); **Goichi Yoshidome**, Albany, CA (US)

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

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

(21) Appl. No.: **29/728,821**

(22) Filed: **Mar. 20, 2020**

(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 D 1252261 10/2005
JP D 1267922 4/2006

(Continued)

OTHER PUBLICATIONS

International Search Report for PCT/US2021/022445, dated Jun. 30, 2021.

Primary Examiner — Calvin E Vansant

Assistant Examiner — Mark T. Philipps

(74) *Attorney, Agent, or Firm* — Moser Taboada

(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 the first embodiment of the novel design.

FIG. 2 is a top plan view thereof.

FIG. 3 is a bottom plan view thereof.

FIG. 4 is a left side elevation view thereof.

FIG. 5 is a right side elevation view thereof.

FIG. 6 is a back elevation view thereof.

FIG. 7 is a front elevation view thereof.

FIG. 8 is a cross-sectional view taken along line 8-8' of FIG. 2.

FIG. 9 is a top isometric view of a process shield for a substrate processing chamber, according to the second embodiment of the novel design.

FIG. 10 is a top plan view thereof.

FIG. 11 is a bottom plan view thereof.

FIG. 12 is a left side elevation view thereof.

FIG. 13 is a right side elevation view thereof.

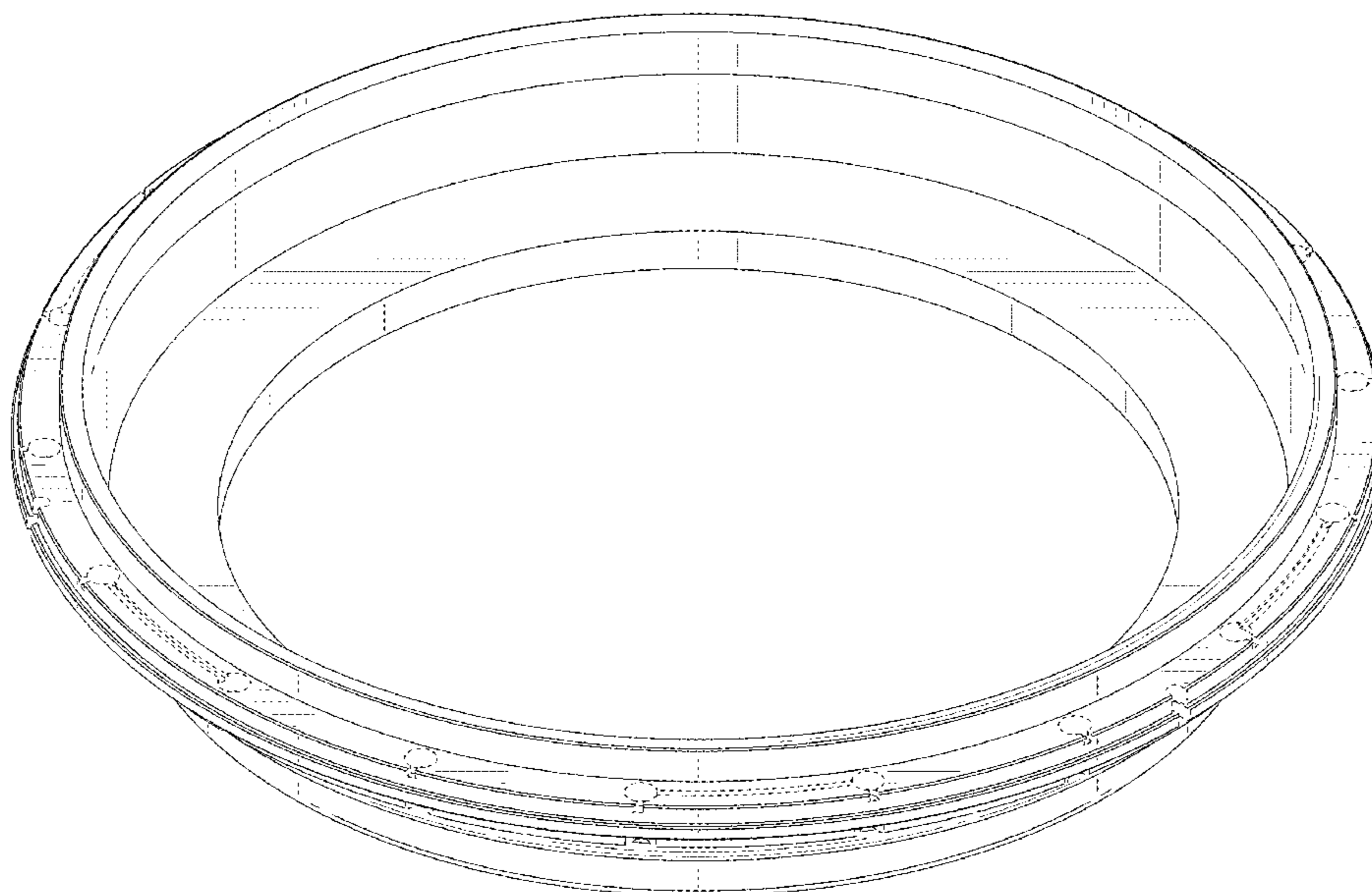
FIG. 14 is a back elevation view thereof.

FIG. 15 is a front elevation view thereof; and,

FIG. 16 is a cross-sectional view taken along line 16-16' of FIG. 10.

The dashed lines in FIGS. 1-16 represent unclaimed environment forming no part of the claimed design.

1 Claim, 12 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
 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
 10,347,475 B2 7/2019 Scheible et al.
 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
 2008/0178801 A1 7/2008 Pavloff 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
 2016/0189938 A1 6/2016 Savandaiah et al.
 2017/0002461 A1 1/2017 Johanson et al.
 2017/0009367 A1 * 1/2017 Harris C25D 17/06
 2017/0076924 A1 3/2017 Johanson et al.
 2018/0087147 A1 3/2018 Rasheed et al.
 2018/0142340 A1 5/2018 Johanson et al.
 2019/0096638 A1 3/2019 Lavitsky et al.
 2020/0090915 A1 * 3/2020 Kerschbaumer C23C 14/3407

FOREIGN PATENT DOCUMENTS

JP D 1435220 3/2012
 JP D 1646366 11/2019
 KR D 30-0725455 1/2014
 KR D 30-0725456 1/2014
 KR D 30-1024426 12/2018
 KR D 30-1064100 9/2019
 TW D197825 6/2019
 TW D197827 6/2019

* cited by examiner

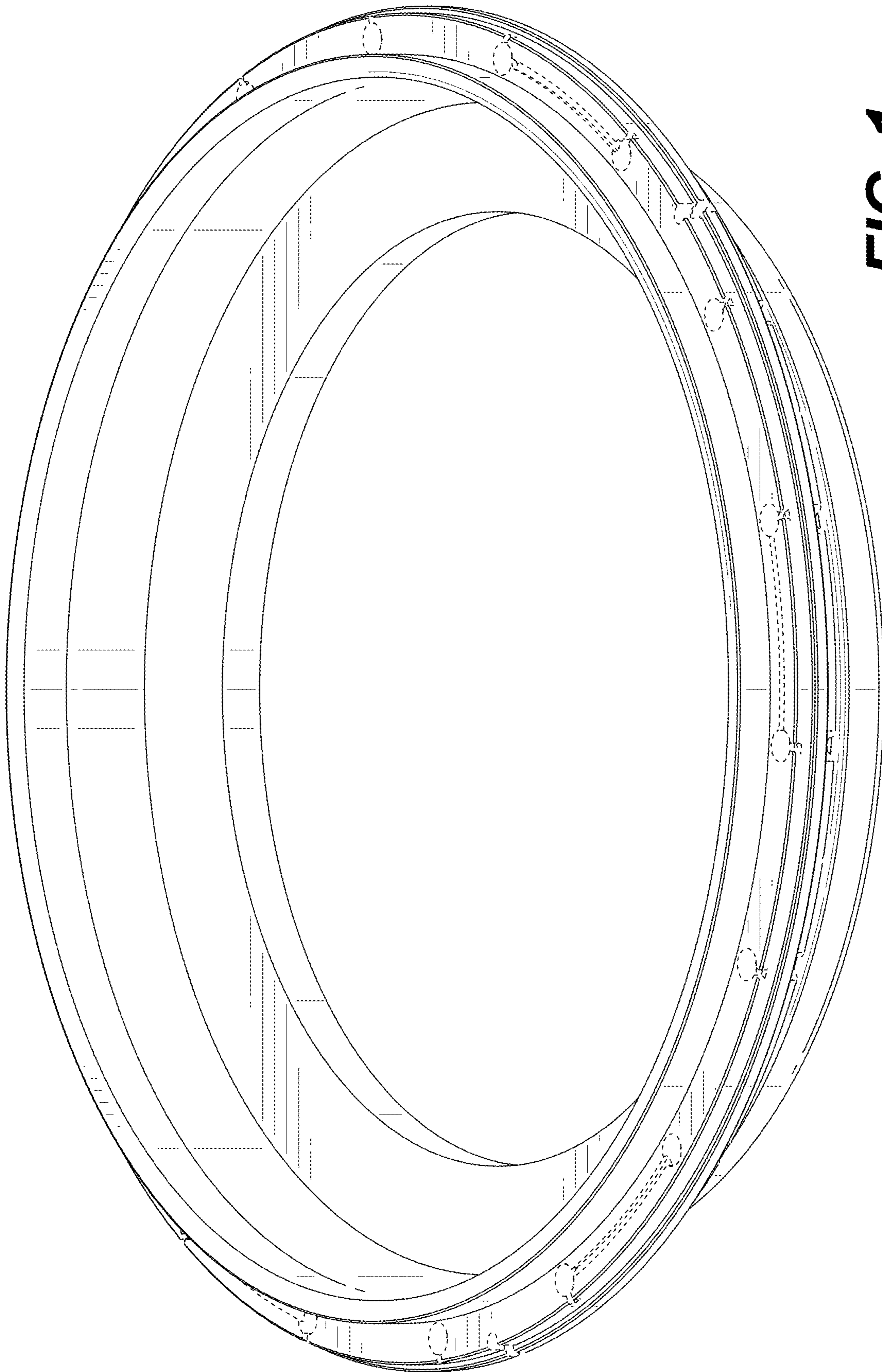


FIG. 1

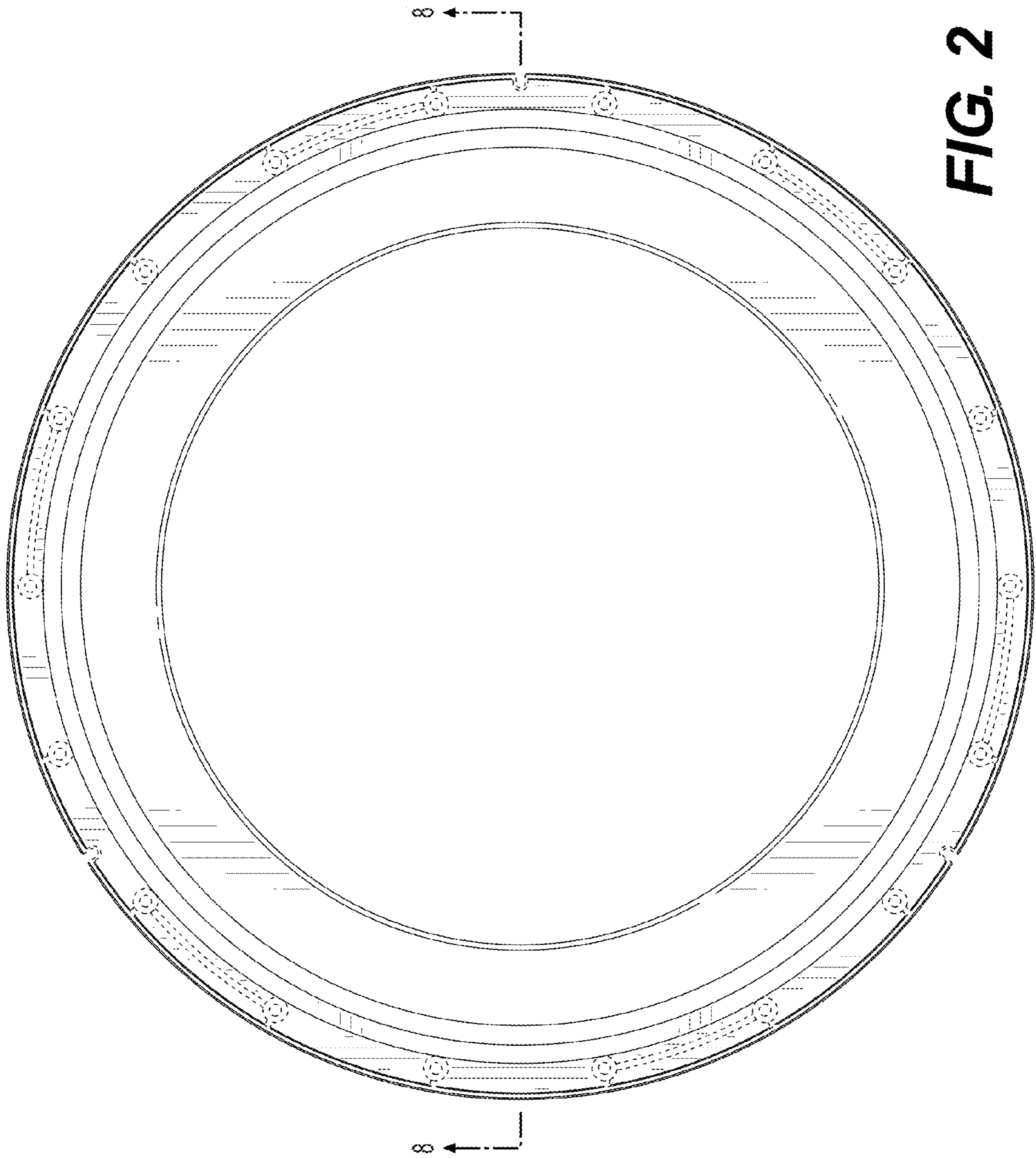


FIG. 2

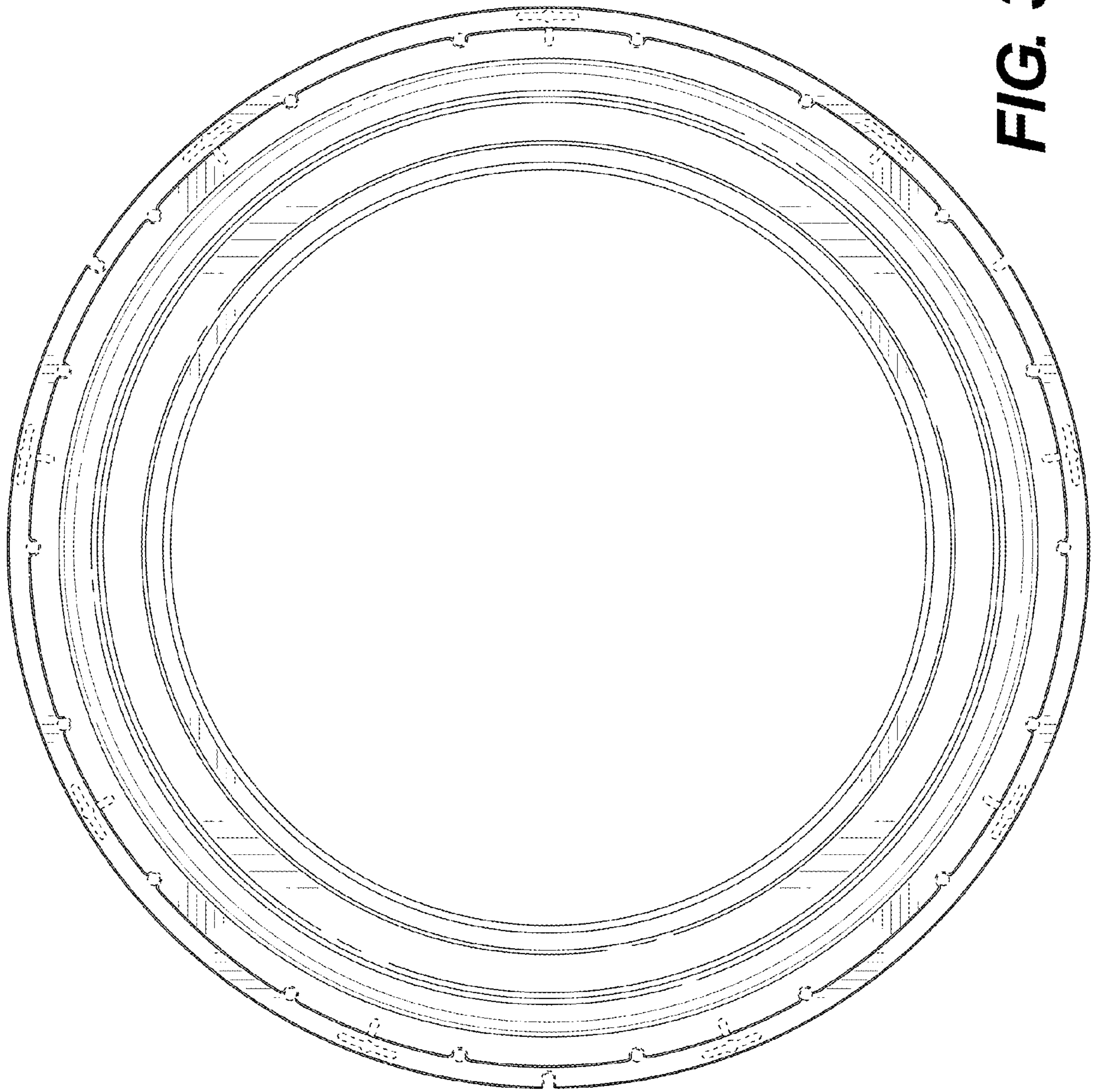


FIG. 3

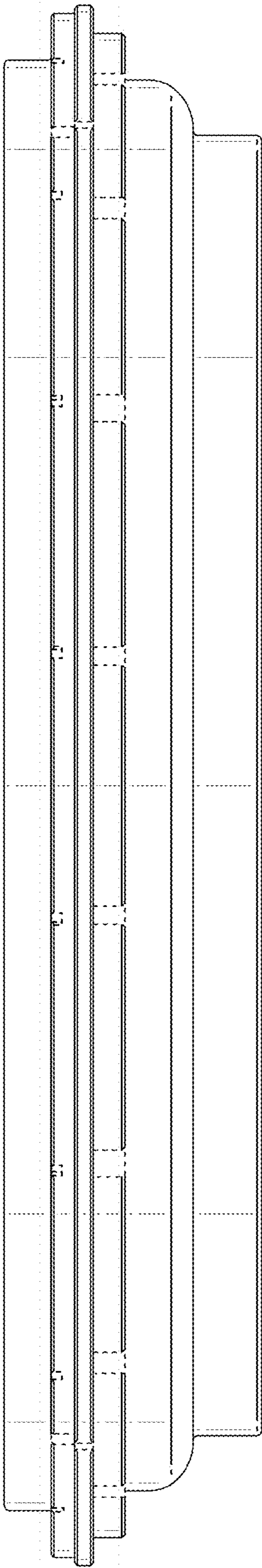


FIG. 4

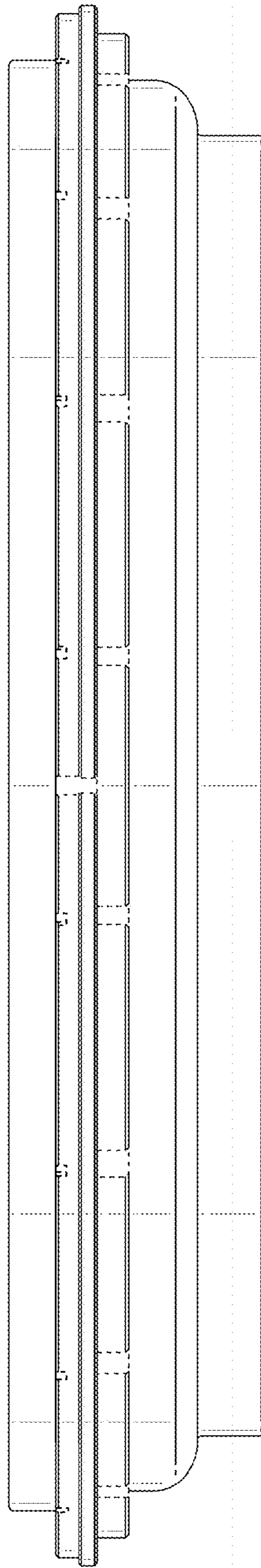


FIG. 5

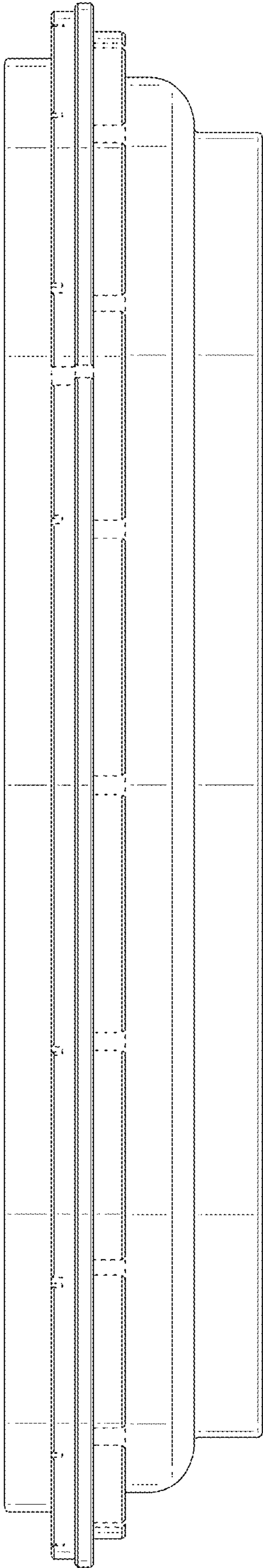


FIG. 6

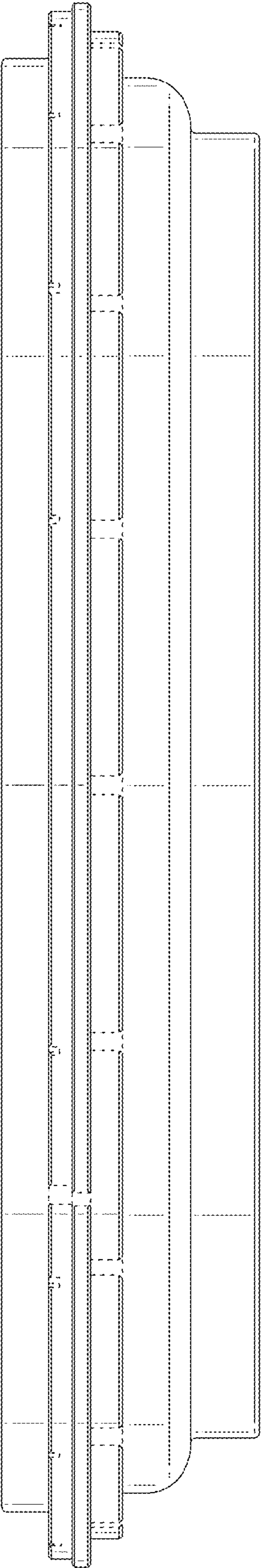


FIG. 7

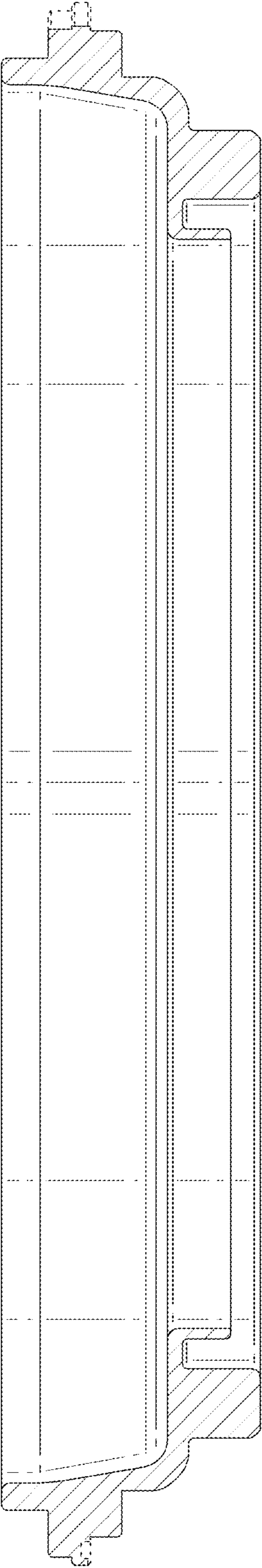


FIG. 8

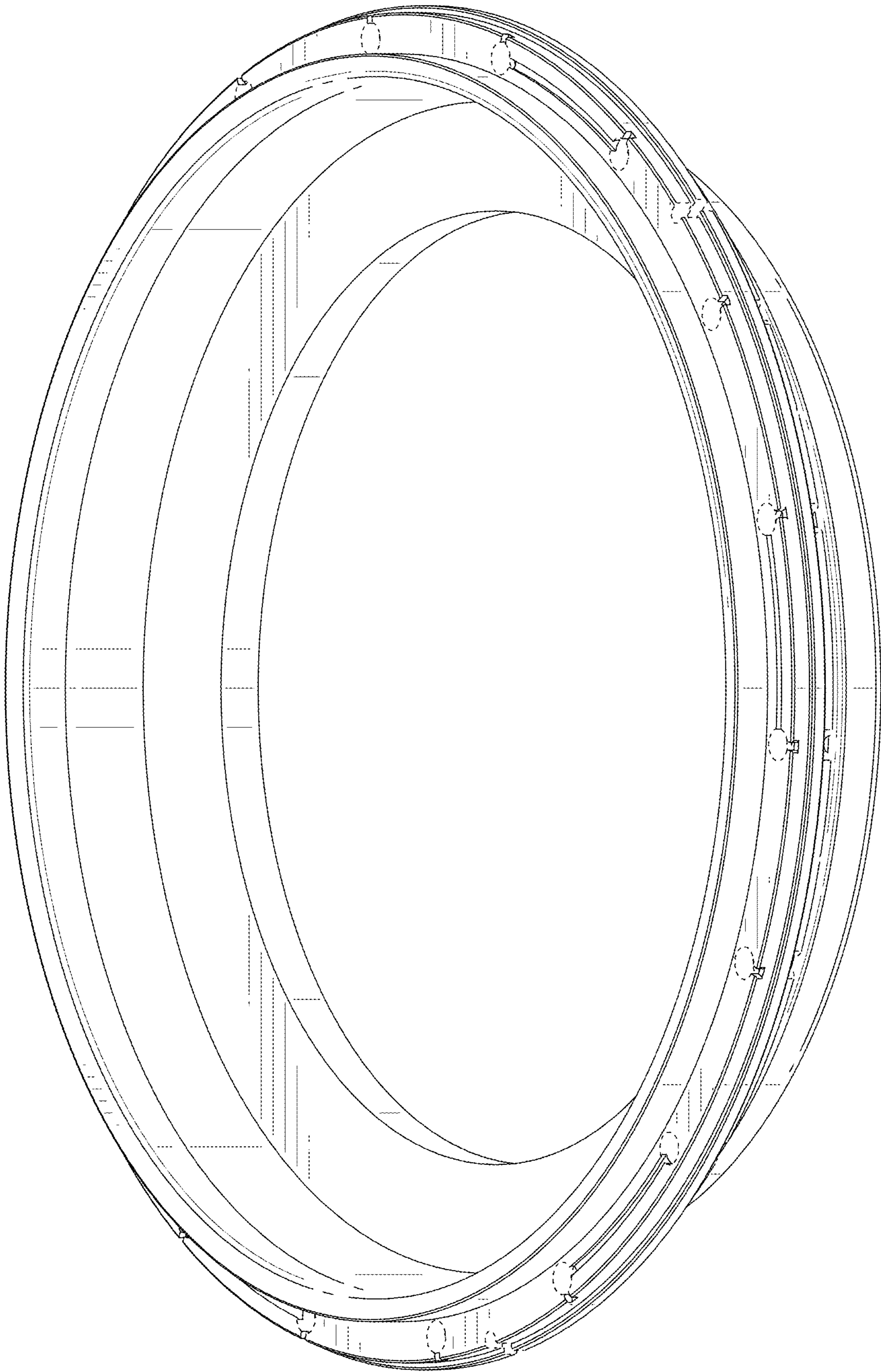


FIG. 9

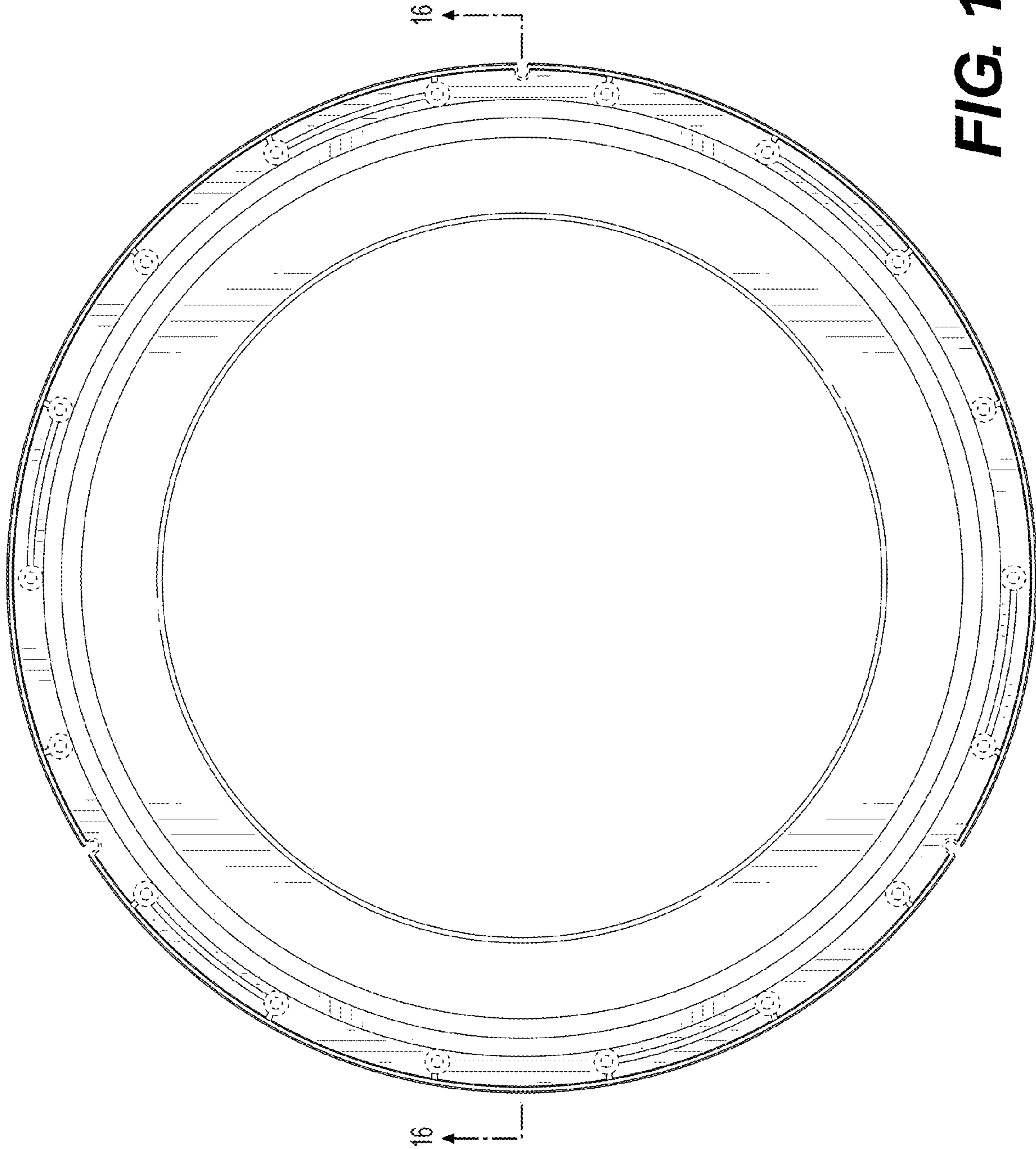


FIG. 10

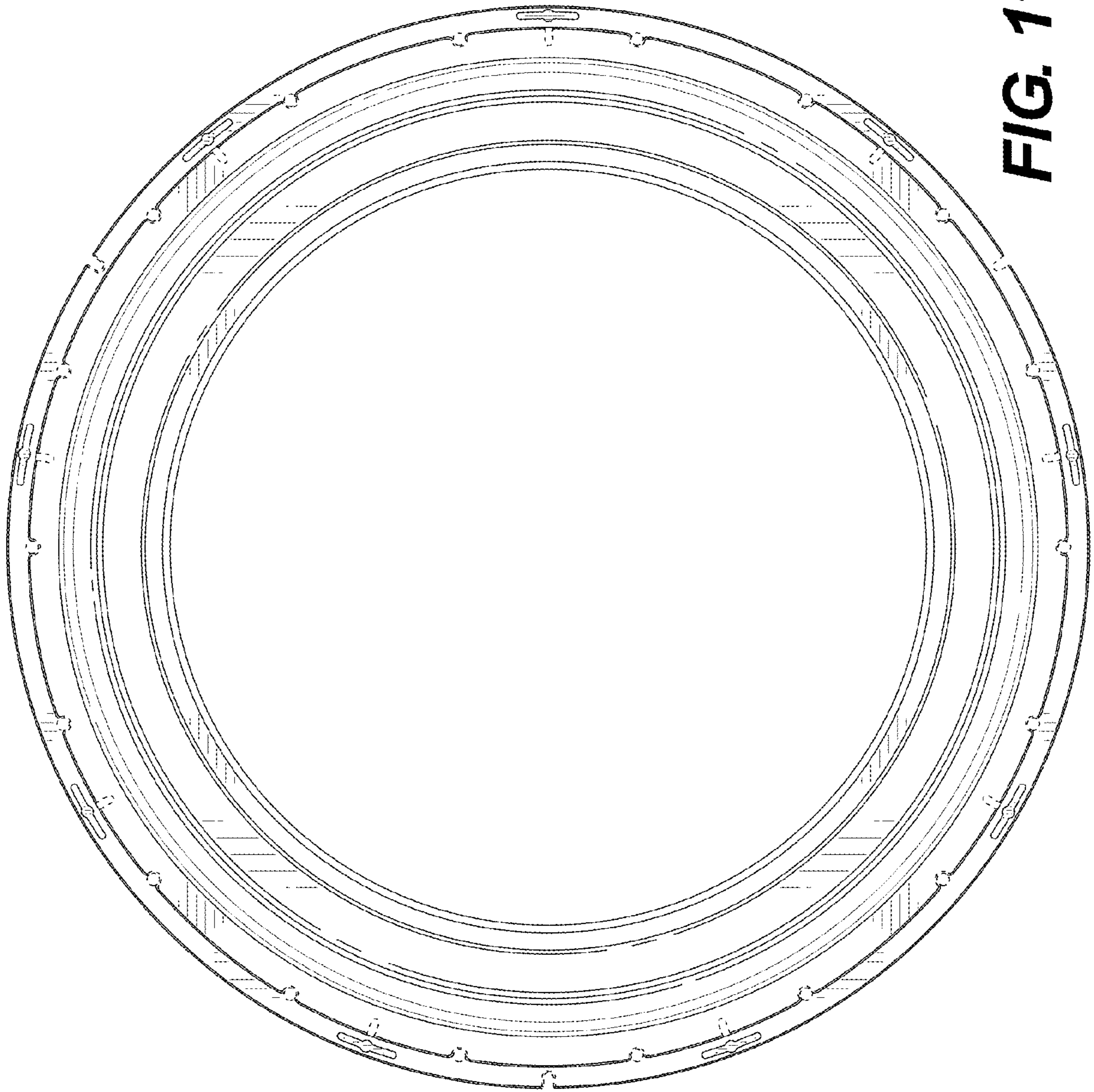


FIG. 11

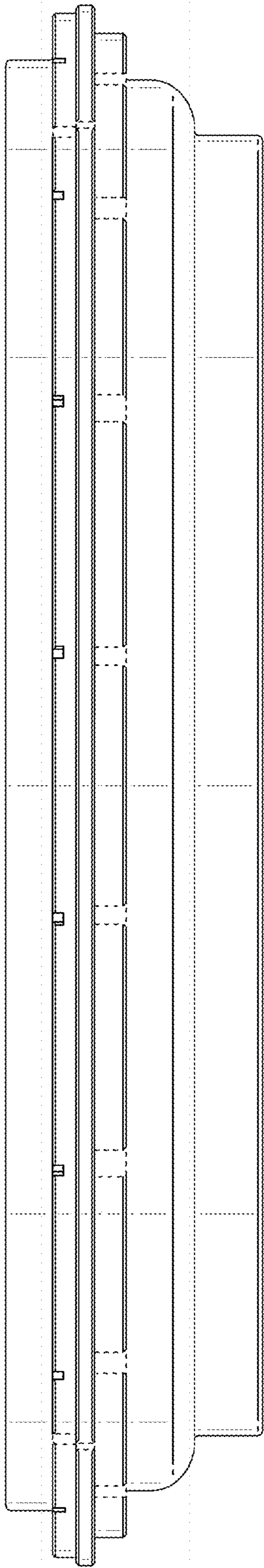


FIG. 12

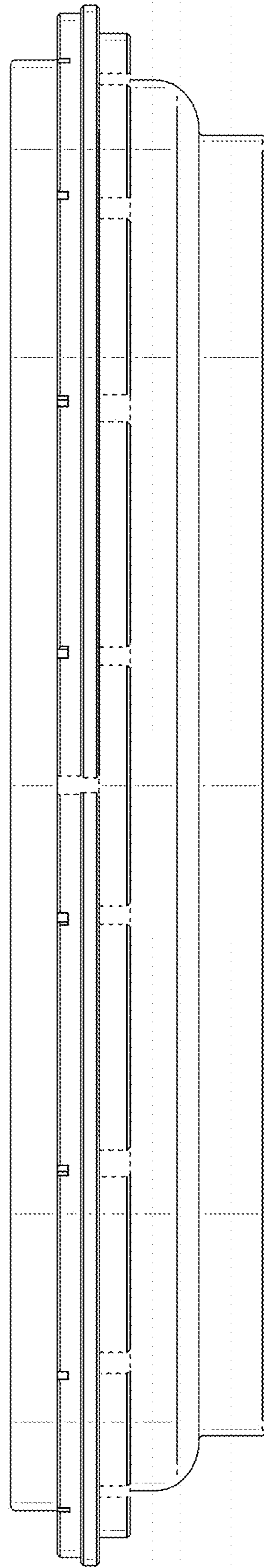


FIG. 13

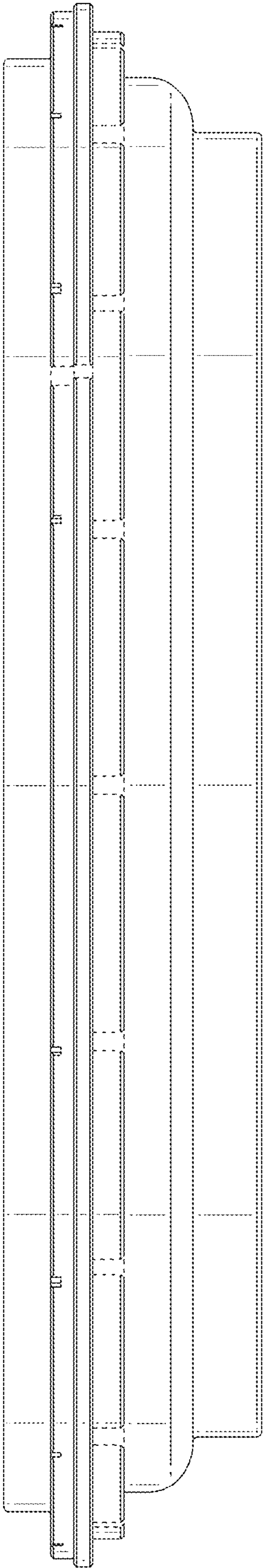


FIG. 14

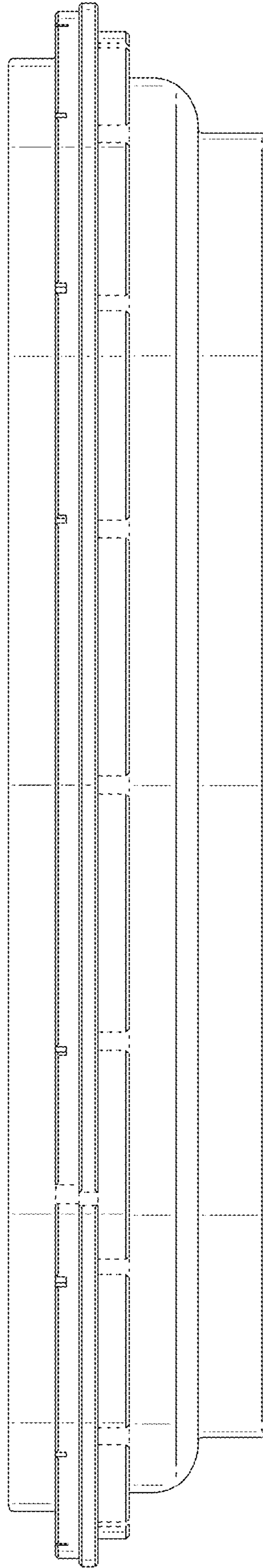


FIG. 15

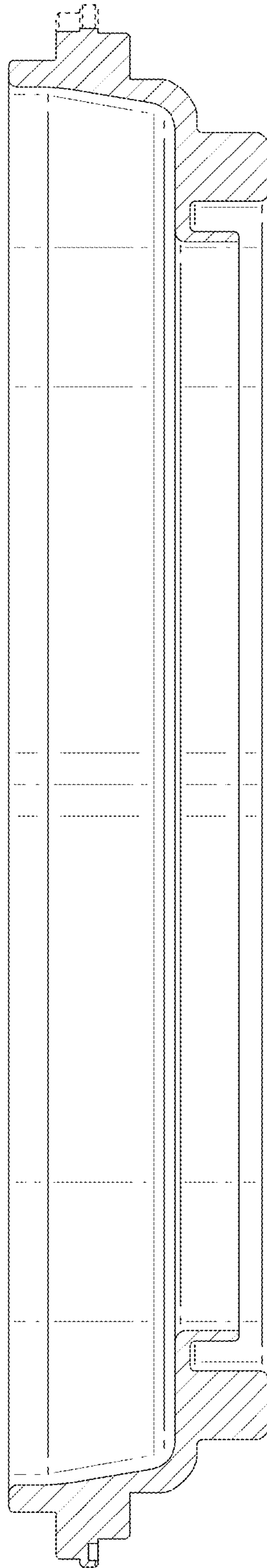


FIG. 16