



US00D943539S

(12) **United States Design Patent** (10) **Patent No.:** **US D943,539 S**
Perry (45) **Date of Patent:** **** Feb. 15, 2022**

(54) **CONFINEMENT PLATE FOR A SUBSTRATE PROCESSING CHAMBER**

6,156,151 A 12/2000 Komino et al.
6,224,472 B1 * 5/2001 Lai B24B 37/32
451/398

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

6,464,843 B1 10/2002 Wicker et al.
6,506,254 B1 1/2003 Bosch et al.
6,506,685 B2 1/2003 Li et al.
D494,551 S * 8/2004 Doha D13/182
7,267,741 B2 9/2007 Ren

(72) Inventor: **Joseph Perry**, San Jose, CA (US)

(Continued)

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

FOREIGN PATENT DOCUMENTS

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

CN 106898534 A 6/2017
JP 2011040461 A 2/2011

(21) Appl. No.: **29/728,616**

(Continued)

(22) Filed: **Mar. 19, 2020**

OTHER PUBLICATIONS

(51) **LOC (13) Cl.** **13-03**

International Search Report for PCT/US2021/021986, dated Jun. 28, 2021.

(52) **U.S. Cl.**

USPC **D13/182**; D15/144.1

(Continued)

(58) **Field of Classification Search**

USPC D13/182, 184, 199; D15/144, 144.1, D15/144.2; 118/715; 156/345.43, 156/345.28; 216/58, 63, 67
CPC H01J 37/32623; H01J 37/32633; H01J 37/32642; H01J 37/32715; H01J 37/32733; H01J 37/32743; H01J 37/32807; H01J 37/32082; H01J 37/32091; C23F 1/00; C23F 1/10; C23F 1/12; C23F 1/14; H01L 21/00; H01L 21/67; H01L 21/67005; H01L 21/67011; H01L 21/67017; H01L 21/67063; H01L 21/67069; H01L 21/67075; H01L 21/67098; H01L 21/67115; C23C 16/00; C23C 16/458; C23C 16/44; C23C 16/04; C23C 16/4582; C23C 16/4583; C23C 16/4585

See application file for complete search history.

Primary Examiner — Elizabeth J Oswecki

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

(57)

CLAIM

The ornamental design for a confinement plate for a substrate processing chamber, as shown and described.

DESCRIPTION

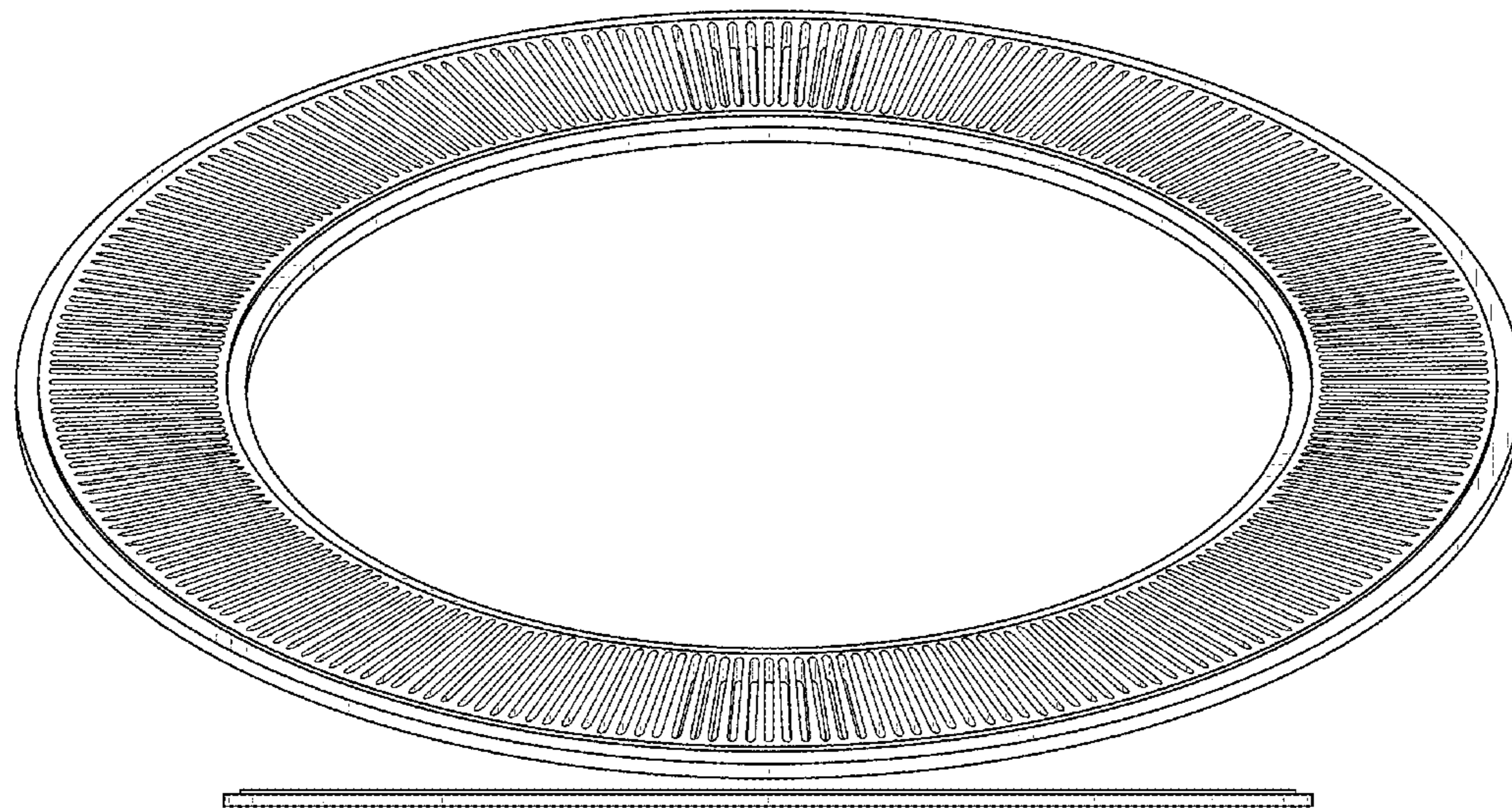
FIG. 1 is a top, isometric view of a confinement plate for a substrate processing chamber, showing my new design; FIG. 2 is a top plan view thereof; FIG. 3 is a bottom plan view thereof; FIG. 4 is a front elevation view thereof; FIG. 5 is a rear elevation view thereof; FIG. 6 is a right side elevation view thereof; FIG. 7 is a left side elevation view thereof; and, FIG. 8 is an enlarged cross-sectional view taken along line 16-16 of FIG. 10.

1 Claim, 5 Drawing Sheets

(56) **References Cited**

U.S. PATENT DOCUMENTS

D225,434 S * 12/1972 Cleeland D7/585
6,129,808 A 10/2000 Wicker et al.



(56)

References Cited

U.S. PATENT DOCUMENTS

7,552,521 B2 6/2009 Fink
 7,585,384 B2 9/2009 Bera et al.
 7,754,997 B2 7/2010 Bera et al.
 7,802,539 B2 9/2010 Bosch
 7,837,826 B2 11/2010 Marakhtanov et al.
 7,972,467 B2 7/2011 Bera et al.
 8,298,046 B2* 10/2012 Frank, Jr. B24B 37/32
 451/286
 8,485,128 B2 7/2013 Kellogg et al.
 8,517,803 B2* 8/2013 Sather B24B 37/32
 451/286
 D694,790 S * 12/2013 Matsumoto D15/144
 D694,791 S * 12/2013 Matsumoto D15/144
 D697,038 S * 1/2014 Matsumoto D13/182
 8,622,021 B2 1/2014 Taylor et al.
 D699,200 S * 2/2014 Nagakubo D13/182
 D709,536 S * 7/2014 Yoshimura D15/138
 D709,537 S * 7/2014 Kuwabara D15/138
 D709,538 S * 7/2014 Mizukami D15/138
 D709,539 S * 7/2014 Kuwabara D15/138
 D713,363 S * 9/2014 Funk D13/182
 8,826,855 B2* 9/2014 Kellogg H01J 37/32091
 118/723 E
 8,893,702 B2 11/2014 Stumpf et al.
 8,900,398 B2 12/2014 Dhindsa et al.
 D729,730 S * 5/2015 Gillespie-Brown D13/110
 9,123,661 B2 9/2015 Kellogg
 9,184,029 B2 11/2015 Dhindsa et al.
 9,330,927 B2 5/2016 Dhindsa et al.
 D766,849 S * 9/2016 Fukushima D13/182
 D770,992 S * 11/2016 Tauchi D13/182
 9,508,530 B2 11/2016 Dhindsa et al.
 D793,976 S * 8/2017 Fukushima D13/182
 D797,691 S * 9/2017 Joubert D13/182
 9,779,916 B2 10/2017 Dhindsa et al.
 D810,705 S * 2/2018 Krishnan D13/182
 D836,573 S * 12/2018 Ichino D13/182
 D840,364 S * 2/2019 Ichino D13/182
 D871,609 S * 12/2019 Isozaki D24/224
 D873,782 S * 1/2020 Garcia D13/182

D876,504 S * 2/2020 Lee D15/138
 10,672,629 B2* 6/2020 Kim H01L 21/3065
 D891,382 S * 7/2020 Koppa D13/182
 D891,636 S * 7/2020 Isozaki D24/224
 10,720,314 B2* 7/2020 Dhindsa H01J 37/32807
 D895,777 S * 9/2020 Chase D23/269
 2003/0092278 A1 5/2003 Fink
 2004/0075036 A1* 4/2004 Saulnier G01R 27/2635
 248/346.01
 2006/0162657 A1* 7/2006 Cirigliano H01L 21/67069
 118/715
 2006/0283551 A1* 12/2006 Son H01J 37/32623
 156/345.28
 2008/0023029 A1 1/2008 Ren
 2008/0110567 A1 5/2008 Miller et al.
 2009/0188625 A1 7/2009 Carducci et al.
 2010/0304571 A1 12/2010 Larson et al.
 2011/0100553 A1 5/2011 Dhindsa et al.
 2011/0226739 A1 9/2011 Allen et al.
 2012/0273130 A1 11/2012 Drewery et al.
 2014/0113453 A1 4/2014 Shih et al.
 2014/0116338 A1 5/2014 He et al.
 2015/0329955 A1 11/2015 Sun et al.
 2015/0364322 A1 12/2015 Kellogg
 2016/0002788 A1* 1/2016 Nal C23C 16/45521
 118/724
 2016/0158910 A1* 6/2016 Lee B24B 37/32
 451/398
 2018/0061618 A1 3/2018 Nichols et al.

FOREIGN PATENT DOCUMENTS

KR 201803064 U 10/2018
 KR 2040281 B1 11/2019
 TW 0195951 2/2019
 WO WO 2004/059716 A1 7/2004

OTHER PUBLICATIONS

Search Report for Taiwan Design Application No. 110303814, dated Oct. 29, 2021.

* cited by examiner

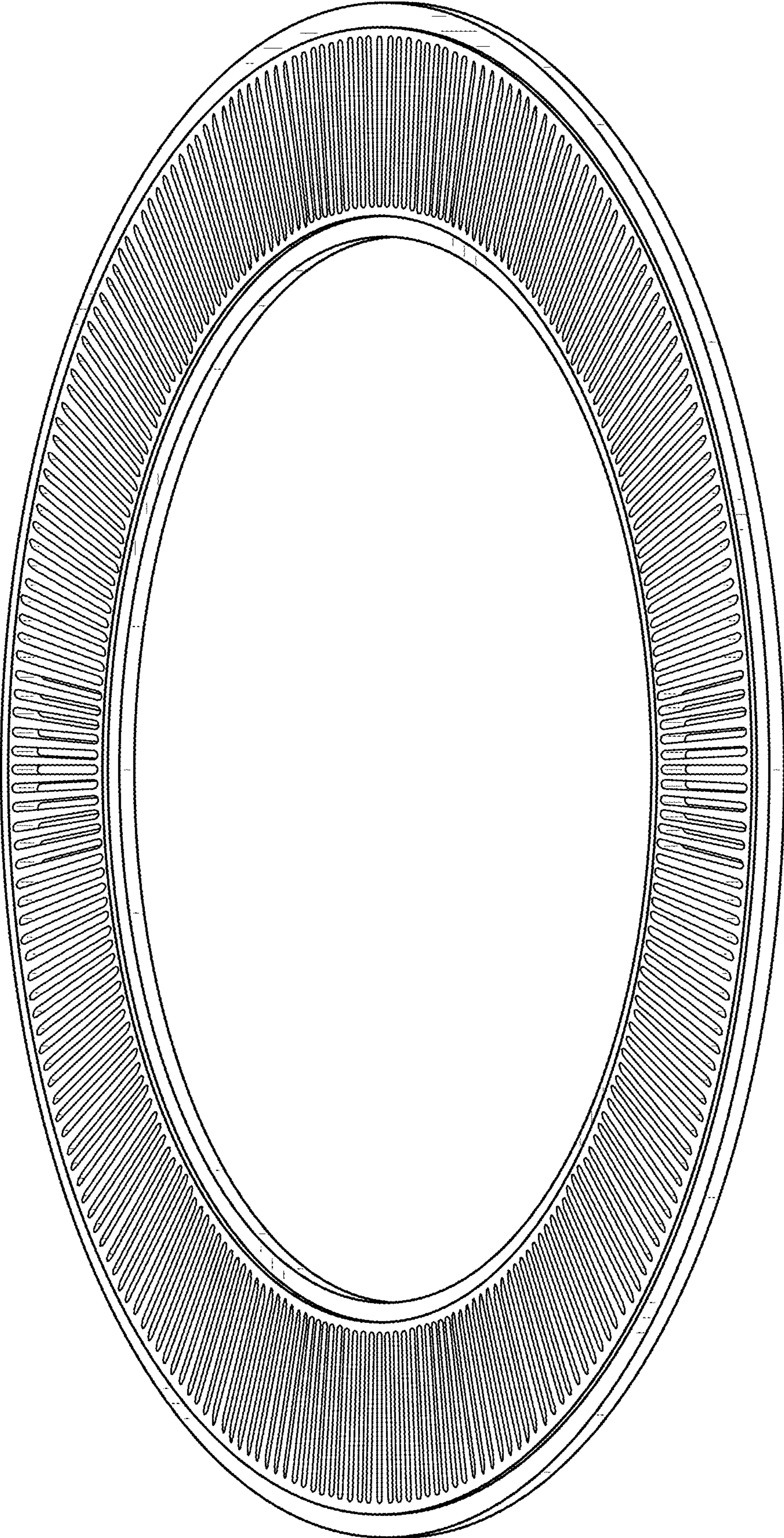


FIG. 1

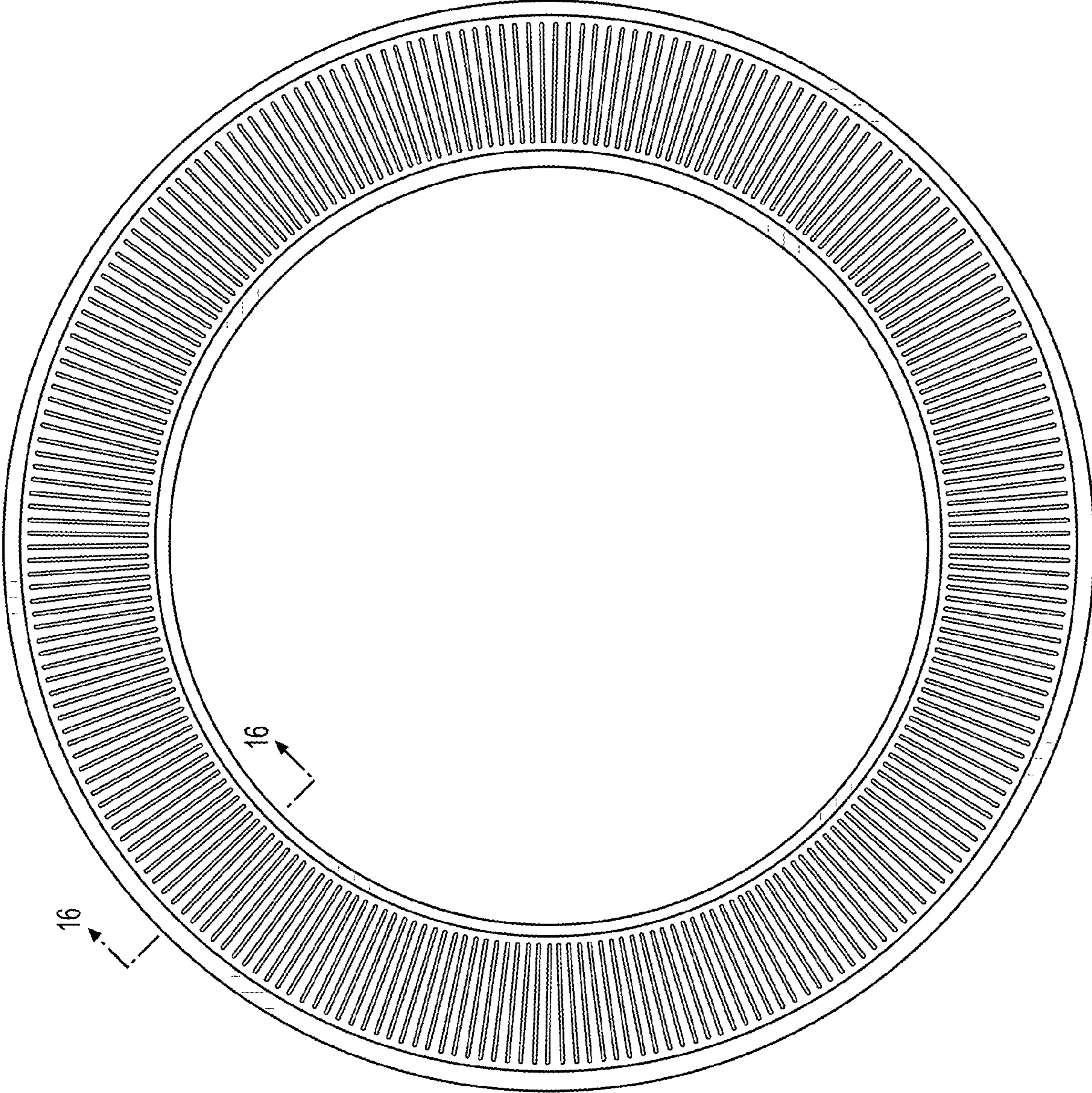


FIG. 2

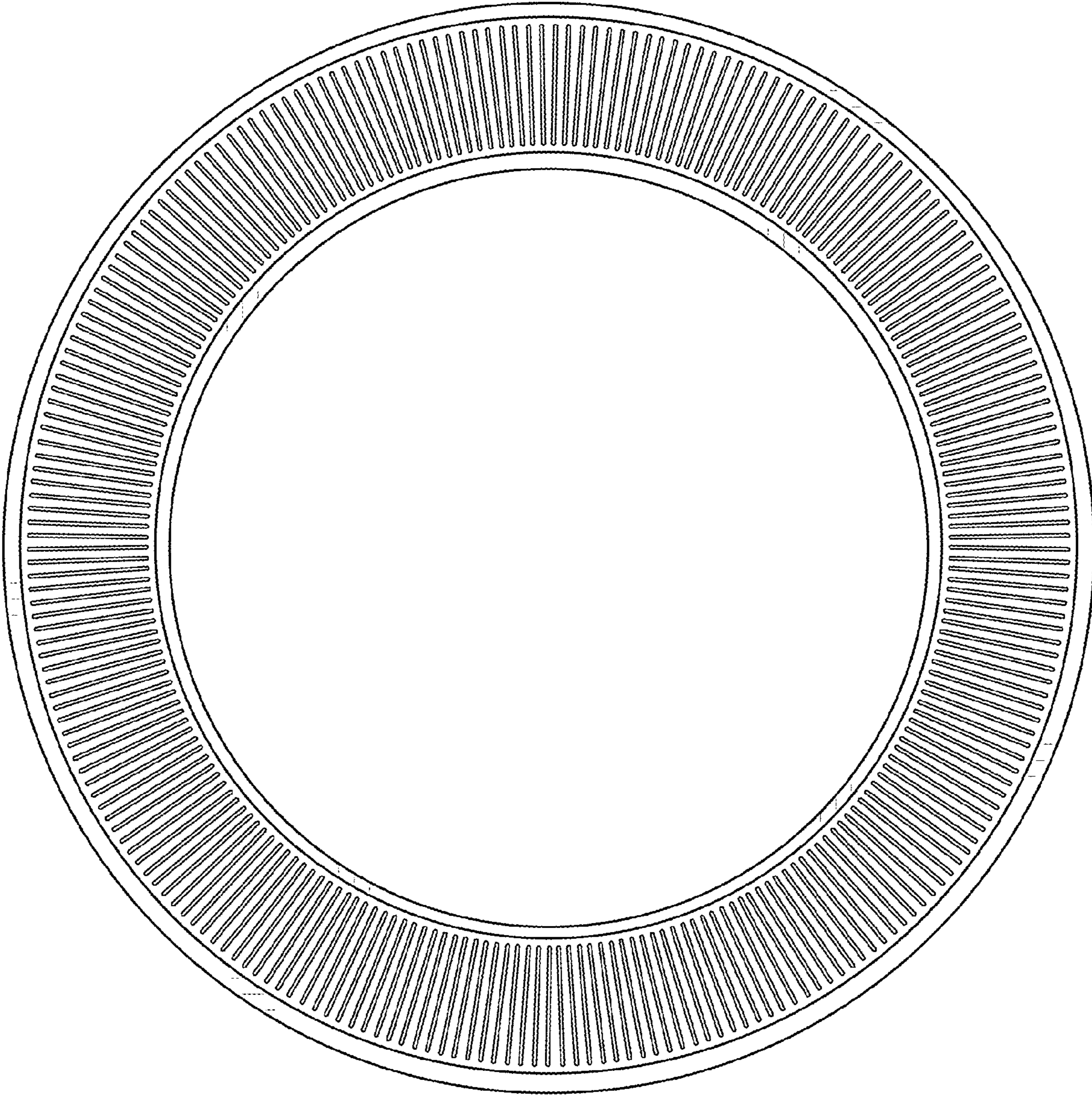


FIG. 3

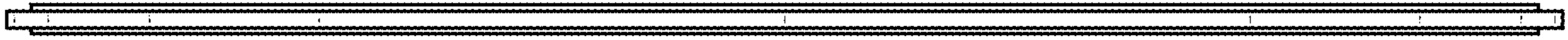


FIG. 4

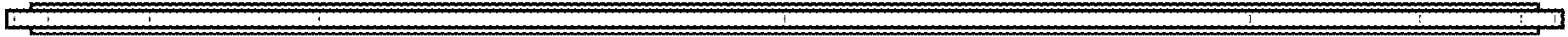


FIG. 5

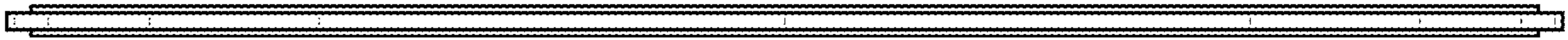


FIG. 6

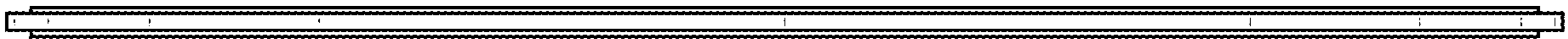


FIG. 7

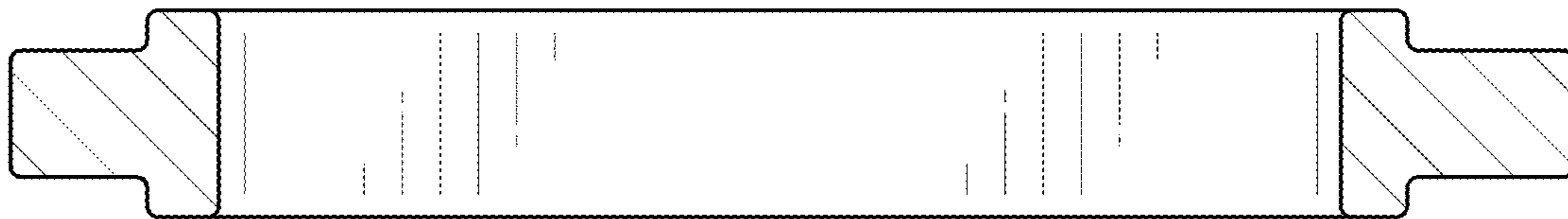


FIG. 8