



US00D840364S

(12) **United States Design Patent** (10) **Patent No.:** **US D840,364 S**  
**Ichino et al.** (45) **Date of Patent:** **\*\* \*Feb. 12, 2019**

(54) **ELECTRODE COVER FOR A PLASMA PROCESSING APPARATUS**

(71) Applicant: **Hitachi High-Technologies Corporation**, Minato-ku, Tokyo (JP)

(72) Inventors: **Takamasa Ichino**, Tokyo (JP); **Kohei Sato**, Tokyo (JP); **Kazunori Nakamoto**, Tokyo (JP)

(73) Assignee: **Hitachi High-Technologies Corporation**, Tokyo (JP)

(\* ) Notice: This patent is subject to a terminal disclaimer.

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

(21) Appl. No.: **29/610,996**

(22) Filed: **Jul. 18, 2017**

(30) **Foreign Application Priority Data**

Jan. 31, 2017 (JP) ..... 2017-001753

(51) **LOC (11) Cl.** ..... **13-03**

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

(58) **Field of Classification Search**  
USPC ..... D13/158-177, 182, 184; 204/286.1, 204/297.1; 205/118, 123; 200/1 R, 5 R,  
(Continued)

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

D404,372 S \* 1/1999 Ishii ..... D13/182  
D494,551 S 8/2004 Doba  
(Continued)

**FOREIGN PATENT DOCUMENTS**

JP D1210213 S 6/2004  
JP D1361441 S 6/2009  
JP D1551512 S 6/2014

**OTHER PUBLICATIONS**

Ichino et al., Design U.S. Appl. No. 29/610,995, filed Jul. 18, 2017.

(Continued)

*Primary Examiner* — Elizabeth J Oswecki

(74) *Attorney, Agent, or Firm* — Crowell & Moring LLP

(57) **CLAIM**

The ornamental design for an electrode cover for a plasma processing apparatus, as shown and described.

**DESCRIPTION**

This application contains subject matter related to the following co-pending U.S. design patent applications:

Application Ser. No. 29/610,995, filed herewith and entitled “Electrode Cover for a Plasma Processing Apparatus”;

Application Ser. No. 29/610,998, filed herewith and entitled “Ring for a Plasma Processing Apparatus”;

Application Ser. No. 29/610,999, filed herewith and entitled “Cover Ring for a Plasma Processing Apparatus”; and

Application Ser. No. 29/611,001, filed herewith and entitled “Discharge Chamber for a Plasma Processing Apparatus”.

FIG. 1 is a front, top and right side perspective view of an electrode cover for a plasma processing apparatus, showing our new design;

FIG. 2 is a front, bottom and right side perspective view thereof;

FIG. 3 is a front elevational view thereof;

FIG. 4 is a rear elevational view thereof;

FIG. 5 is a right side elevational view thereof;

FIG. 6 is a left side elevational view thereof;

FIG. 7 is a top plan view thereof;

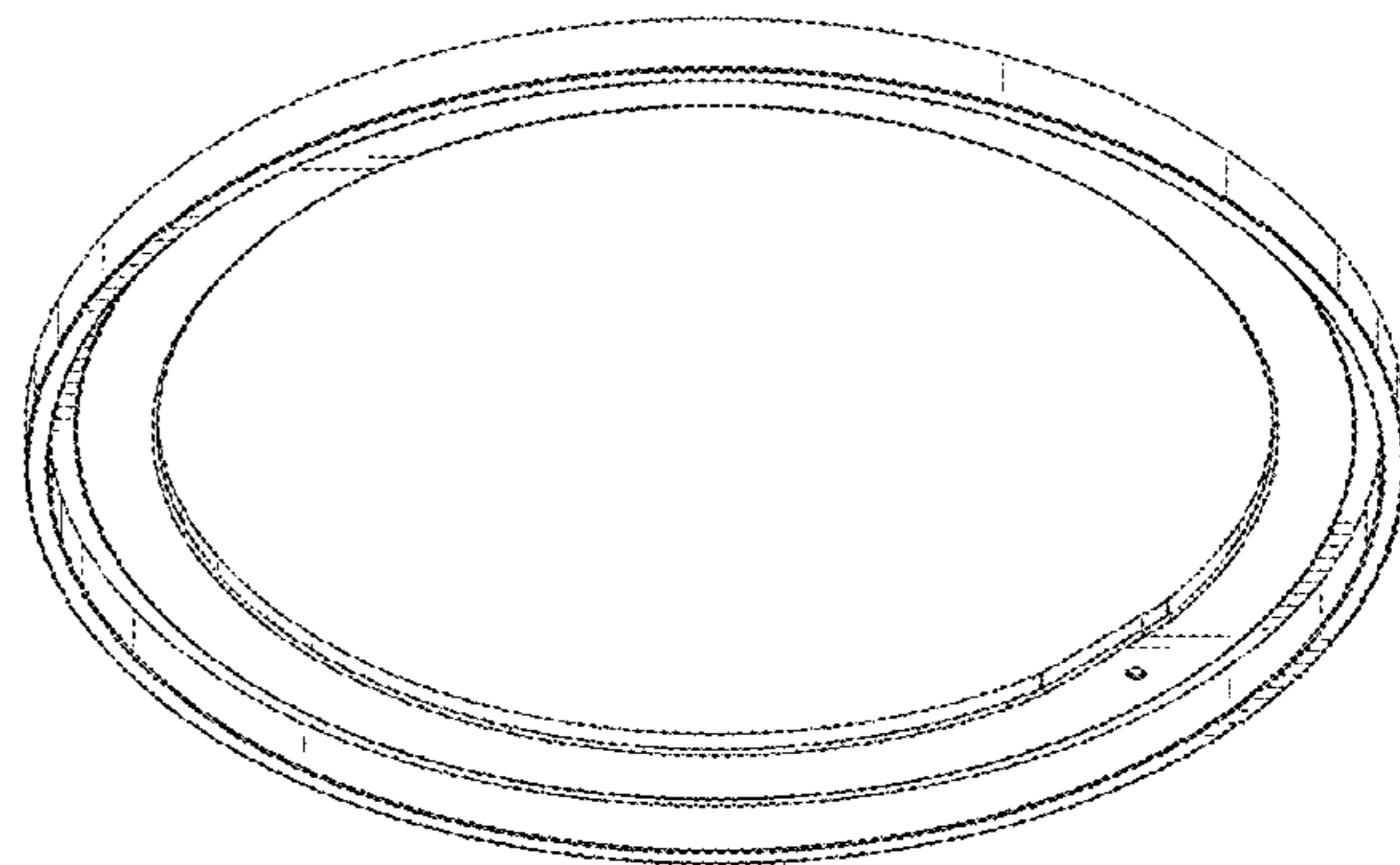
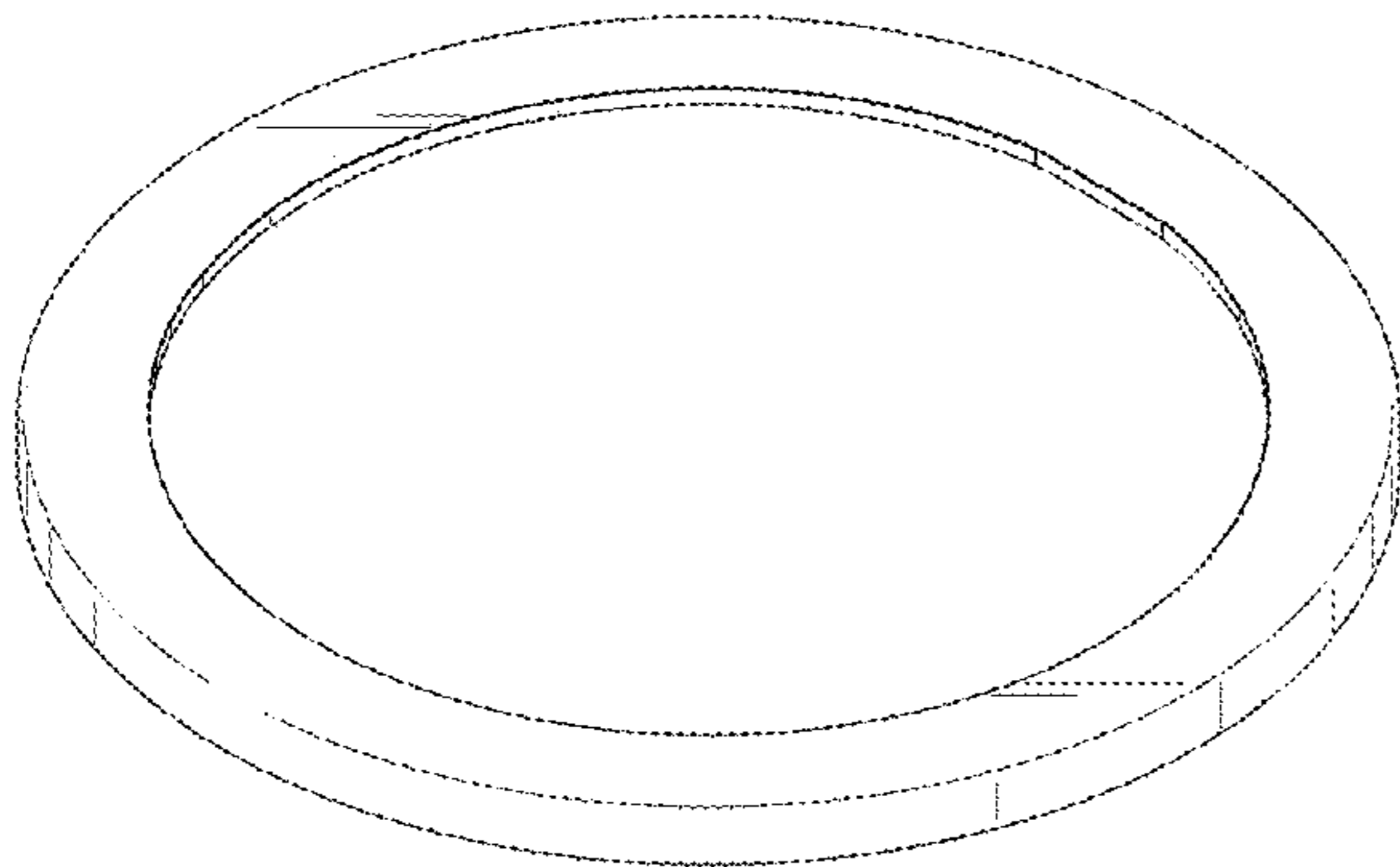
FIG. 8 is a bottom plan view thereof;

FIG. 9 is a cross-sectional view taken along line 9-9 of FIG. 3; and,

FIG. 10 is an enlarged view of the portion shown in BOX 10 in FIG. 9.

The box labeled FIG. 10 in FIG. 9 is shown in broken lines and forms no part of the claimed design.

**1 Claim, 5 Drawing Sheets**



(58) **Field of Classification Search**

USPC ... 200/52 R, 315, 310, 6 A, 302.1, 308, 314,  
200/317, 11 R, 16 B  
CPC ..... C25D 17/10; C25D 17/12; C25D 17/14;  
C25D 17/06; C25D 17/08; C25D 7/12;  
C25D 7/10; H01L 21/283; H01H 9/02;  
H01H 9/0214; H01H 9/04; H01H 9/161;  
H01H 13/04; H01H 13/06; H01H 13/023;  
H01H 21/08; H01H 19/025

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D557,226 S 12/2007 Uchino et al.  
D557,425 S 12/2007 Nakamura et al.  
D559,993 S \* 1/2008 Nagakubo ..... D24/232  
D559,994 S 1/2008 Nagakubo et al.  
D699,199 S \* 2/2014 Kuwabara ..... D13/182  
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  
D717,746 S \* 11/2014 Lau ..... D13/182  
D729,730 S \* 5/2015 Gillespie-Brown ..... D13/110

D770,992 S 11/2016 Tauchi et al.  
D783,922 S \* 4/2017 Kirkland ..... D34/29  
D789,888 S \* 6/2017 Jang ..... D13/121  
D797,691 S \* 9/2017 Joubert ..... D13/182  
D803,917 S \* 11/2017 Harada ..... D15/144.1  
D804,556 S \* 12/2017 Harada ..... D15/144.1  
D810,705 S \* 2/2018 Krishnan ..... D13/182  
D813,181 S \* 3/2018 Okajima ..... D13/182  
2004/0077167 A1 \* 4/2004 Willis ..... B24B 37/32  
438/689  
2009/0050272 A1 \* 2/2009 Rosenberg ..... C23C 14/50  
156/345.51  
2012/0263569 A1 \* 10/2012 Priddy ..... C30B 23/02  
414/800  
2015/0024330 A1 \* 1/2015 Tian ..... C23C 16/46  
432/9  
2016/0002788 A1 \* 1/2016 Nal ..... C23C 16/45504  
118/724

OTHER PUBLICATIONS

Ichino et al., Design U.S. Appl. No. 29/610,998, filed Jul. 18, 2017.  
Ichino et al., Design U.S. Appl. No. 29/610,999, filed Jul. 18, 2017.  
Nunomura et al., Design U.S. Appl. No. 29/611,001, filed Jul. 18,  
2017.

\* cited by examiner

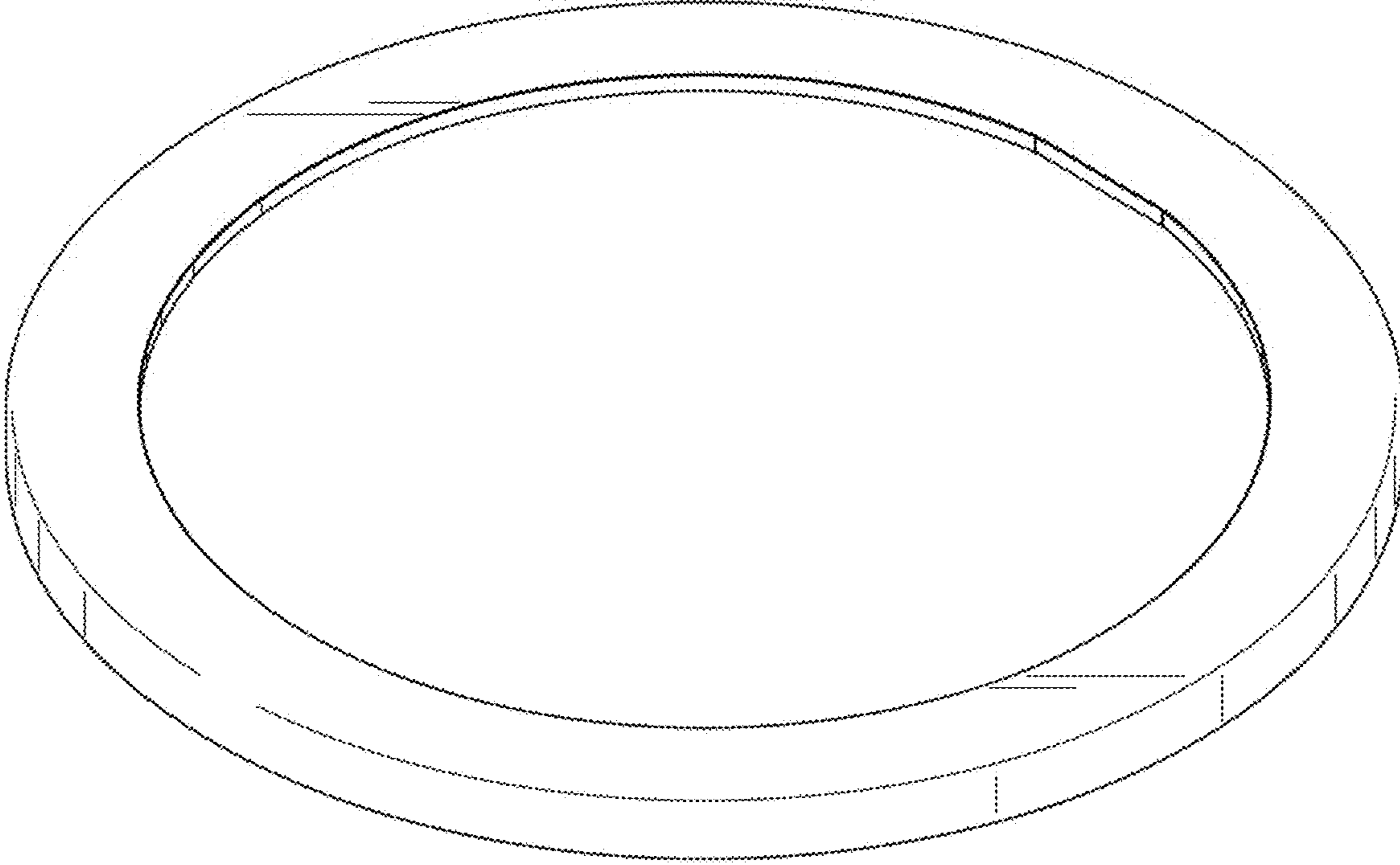


FIG. 1

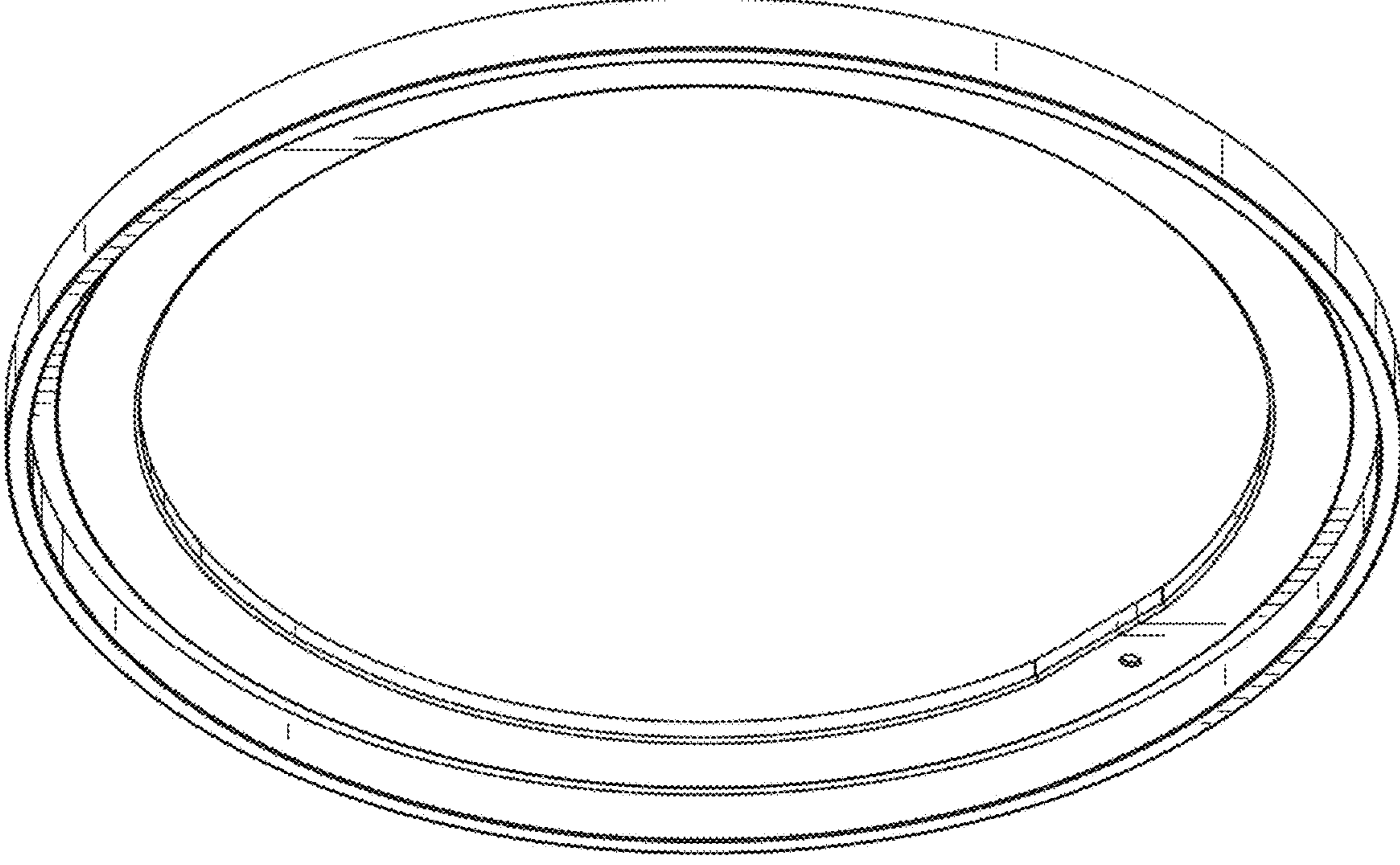


FIG. 2



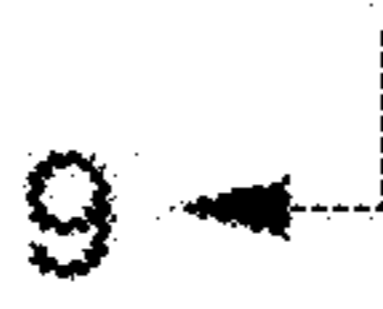
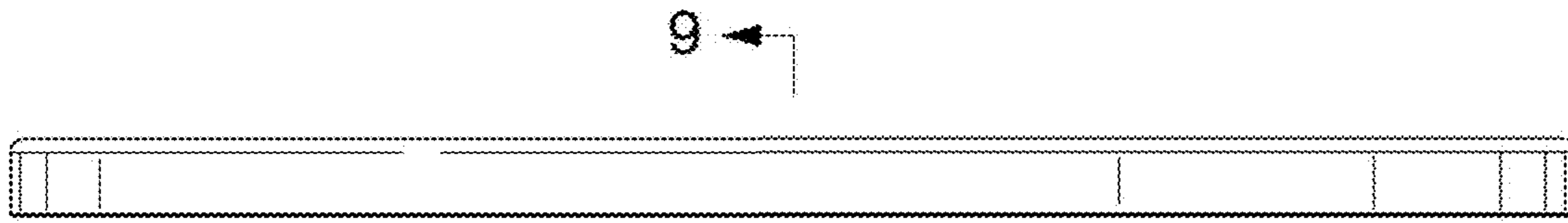


FIG. 3



FIG. 4



FIG. 5



FIG. 6

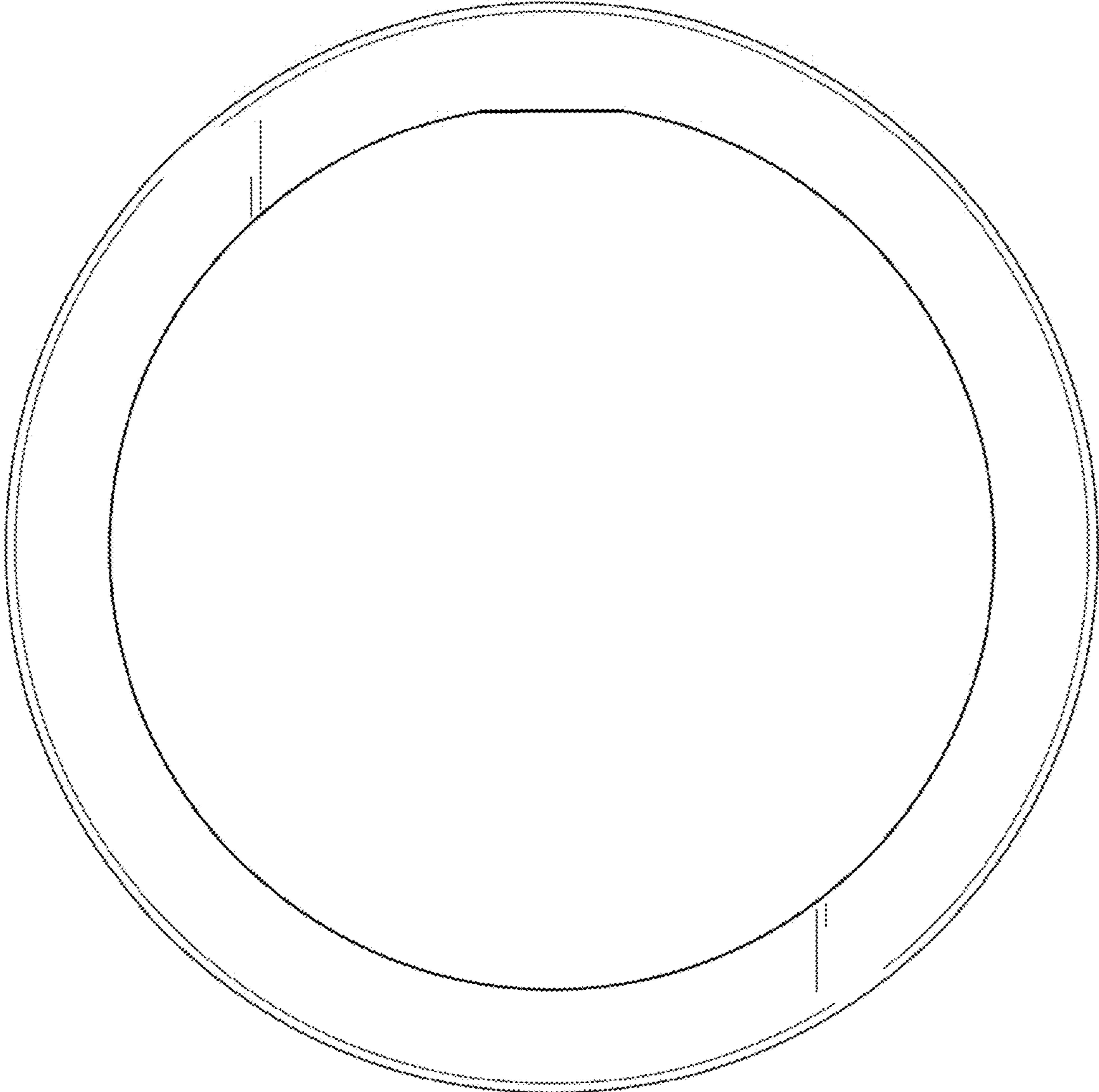


FIG. 7

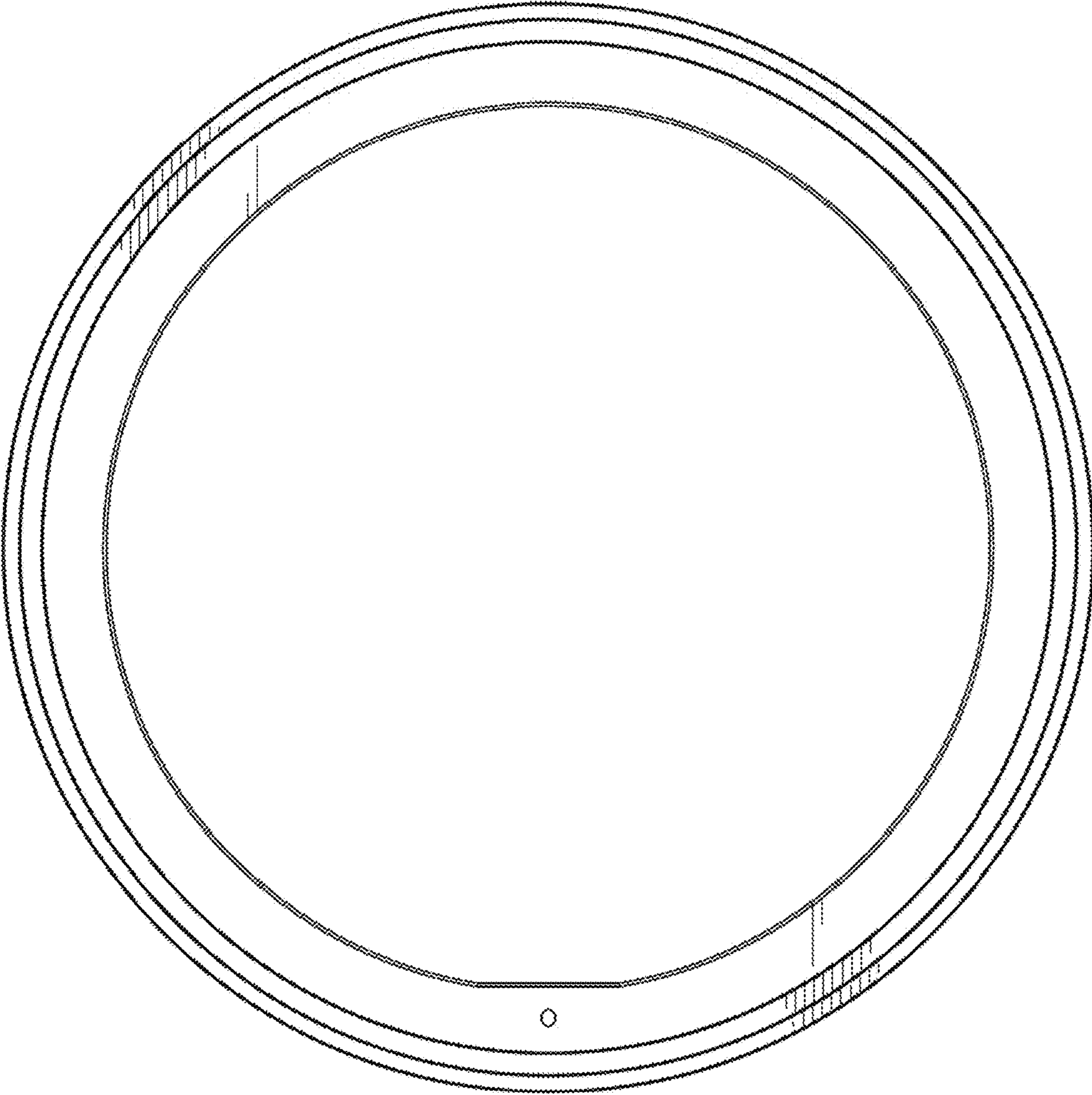


FIG. 8

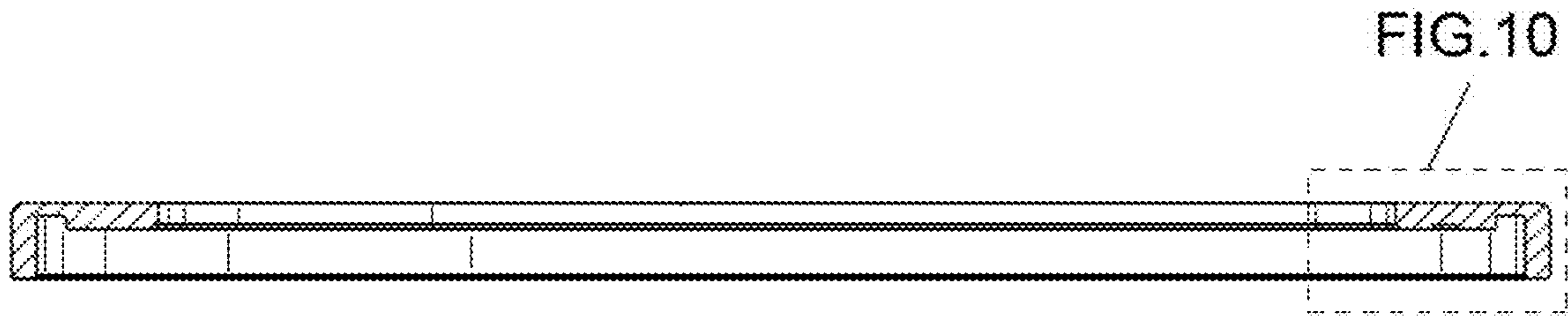


FIG. 9

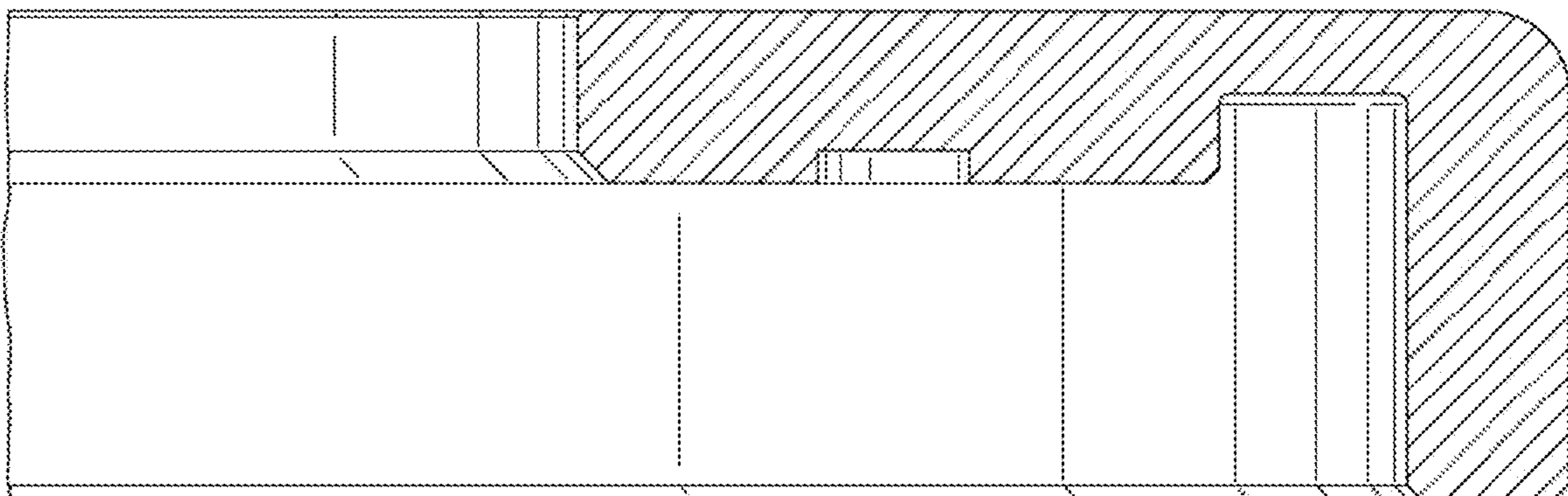


FIG. 10