



US00D790039S

(12) **United States Design Patent**
Hawrylchak et al.(10) **Patent No.:** US D790,039 S
(45) **Date of Patent:** ** Jun. 20, 2017(54) **SHOWERHEAD FOR A SEMICONDUCTOR PROCESSING CHAMBER**(71) Applicant: **Applied Materials, Inc.**, Santa Clara, CA (US)(72) Inventors: **Lara Hawrylchak**, Gilroy, CA (US); **Kong Lung Samuel Chan**, Newark, CA (US); **Aaron Miller**, Sunnyvale, CA (US)(73) Assignee: **APPLIED MATERIALS, INC.**, Santa Clara, CA (US)(**) Term: **15 Years**(21) Appl. No.: **29/560,680**(22) Filed: **Apr. 8, 2016**(51) LOC (10) Cl. **23-01**

(52) U.S. Cl.

USPC **D23/213**(58) **Field of Classification Search**USPC D23/213, 223, 226, 229, 230
CPC C23C 16/45565; B05B 1/00; B05B 1/18;
B05B 9/01

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,086,677 A	7/2000	Umotoy et al.
D566,228 S *	4/2008	Neagoe D23/213
D593,640 S *	6/2009	Schoenherr D23/213
7,658,800 B2 *	2/2010	Chen C23C 16/45565 118/715
D639,385 S *	6/2011	Flowers D23/213
D641,829 S *	7/2011	Angelov D23/213
D694,359 S *	11/2013	Schoenherr D23/213
D707,328 S *	6/2014	Schoenherr D23/213
D733,257 S *	6/2015	Schoenherr D23/213
D736,348 S *	8/2015	Tan D23/213

D751,176 S * 3/2016 Schoenherr D23/213
D752,708 S * 3/2016 Chung D23/213
D757,893 S * 5/2016 Walker D23/213
9,343,307 B2 5/2016 Anikitchev
9,353,439 B2 * 5/2016 Kashyap C23C 16/45525
9,464,353 B2 * 10/2016 Park C23C 16/45551
9,484,190 B2 * 11/2016 Glukhoy H01J 37/3244
2003/0140851 A1 7/2003 Janakiraman et al.
2005/0173569 A1 8/2005 Noorbakhsh et al.
2006/0021703 A1 2/2006 Umotoy et al.

(Continued)

Primary Examiner — Robin V Webster

(74) Attorney, Agent, or Firm — Patterson + Sheridan, LLP

(57) **CLAIM**

The ornamental design for a showerhead for a semiconductor processing chamber, as shown and described.

DESCRIPTION

FIG. 1 is an isometric top view of a showerhead for a semiconductor processing chamber showing my new design.

FIG. 2 is an isometric bottom view thereof.

FIG. 3 is a top plan view thereof.

FIG. 4 is a bottom plan view thereof.

FIG. 5 is a front elevational view thereof indicated by lines 5-5 of FIG. 3, the rear elevational view being a mirror image.

FIG. 6 is a side elevational view thereof indicated by lines 6-6 of FIG. 3, the opposite side elevational view being a mirror image.

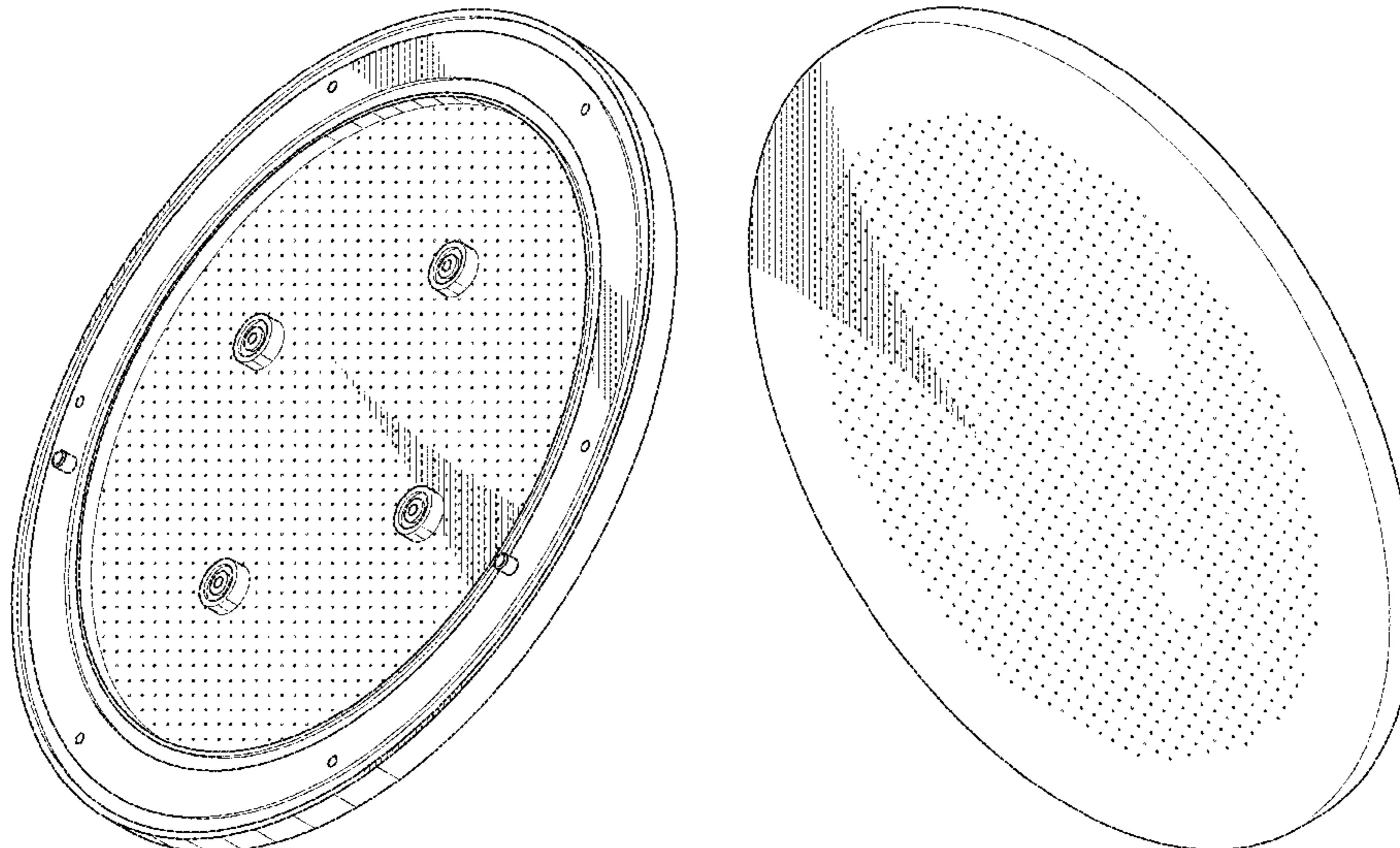
FIG. 7 is a cross-sectional view thereof taken along lines 7-7 of FIG. 3.

FIG. 8 is a cross-sectional view thereof taken along lines 8-8 of FIG. 3.

FIG. 9 is an enlarged view of a portion of FIG. 7.

FIG. 10 is an enlarged view of another portion of FIG. 7; and,

FIG. 11 is an enlarged view of a portion of FIG. 8.

1 Claim, 8 Drawing Sheets

(56)

References Cited

U.S. PATENT DOCUMENTS

2006/0234514 A1 10/2006 Gianoulakis et al.
2009/0179085 A1 7/2009 Carducci et al.

* cited by examiner

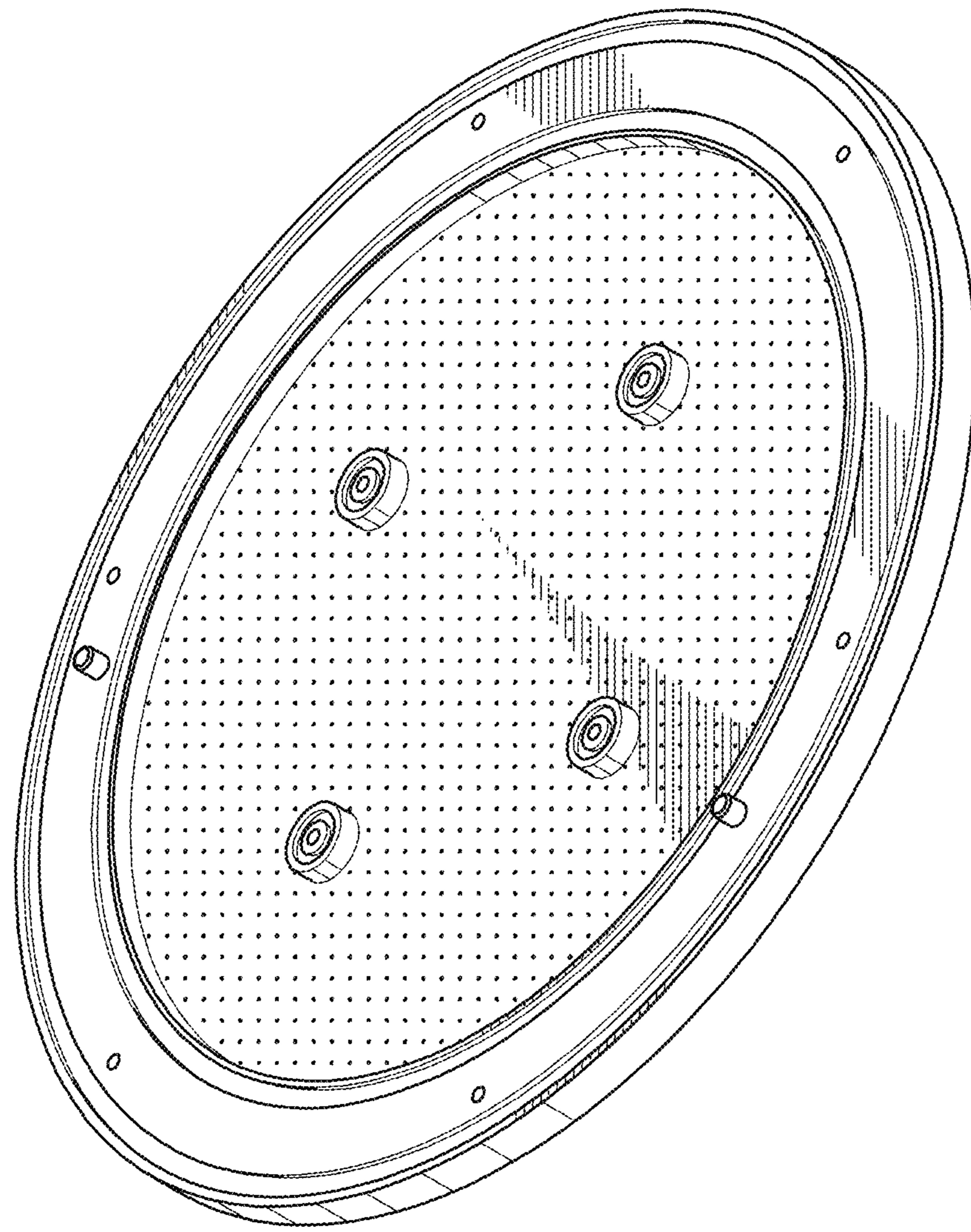


Fig. 1

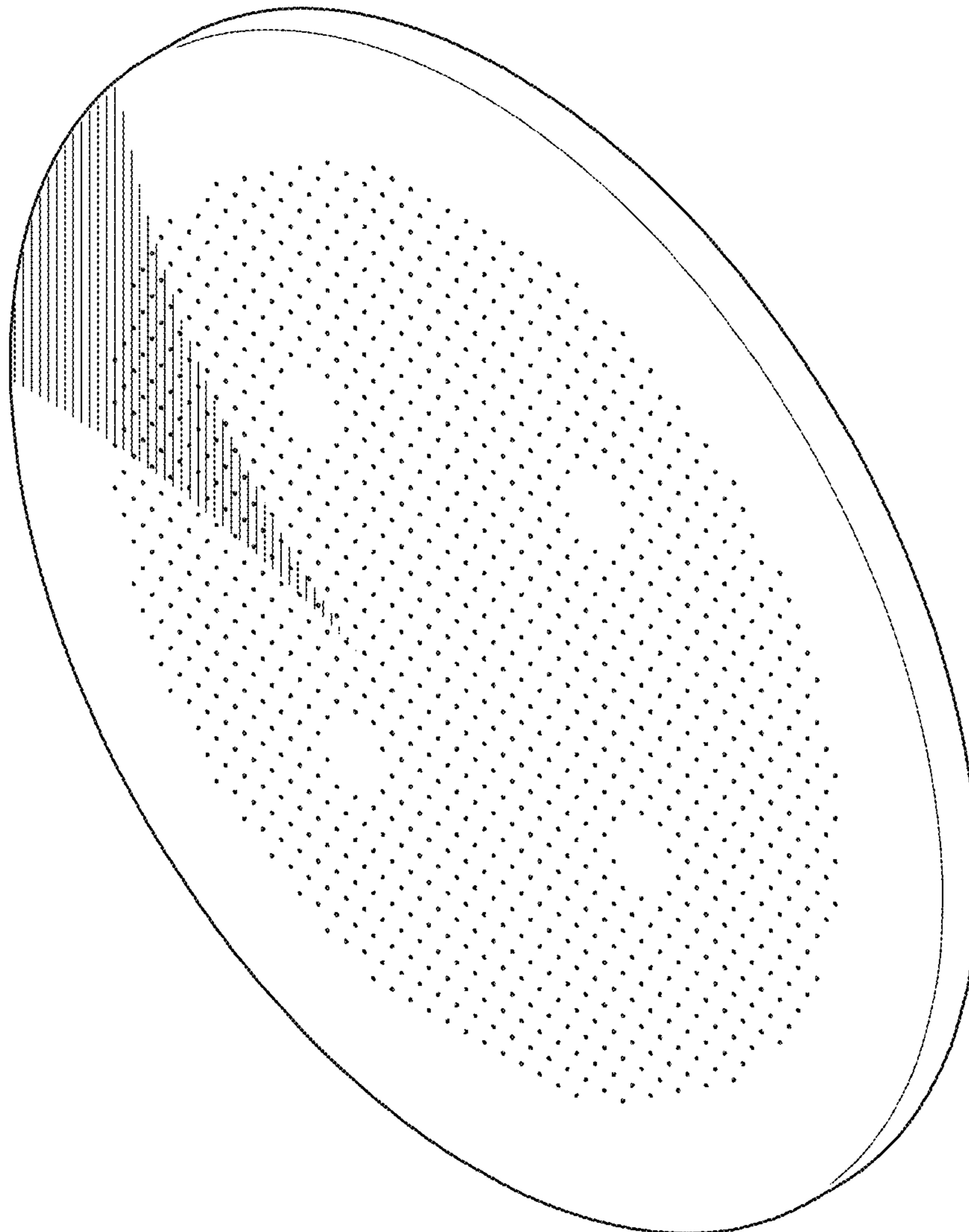


Fig. 2

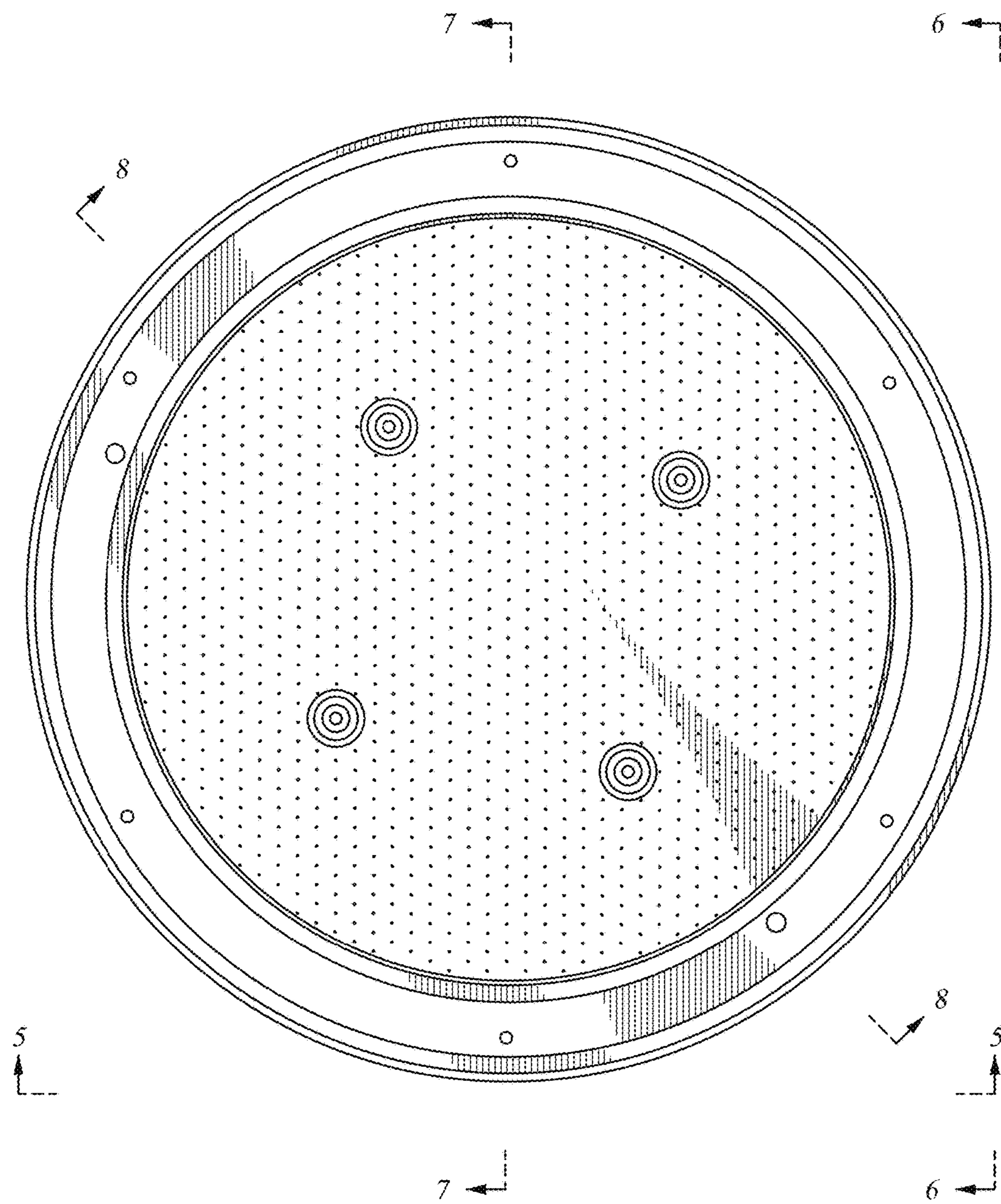


Fig. 3

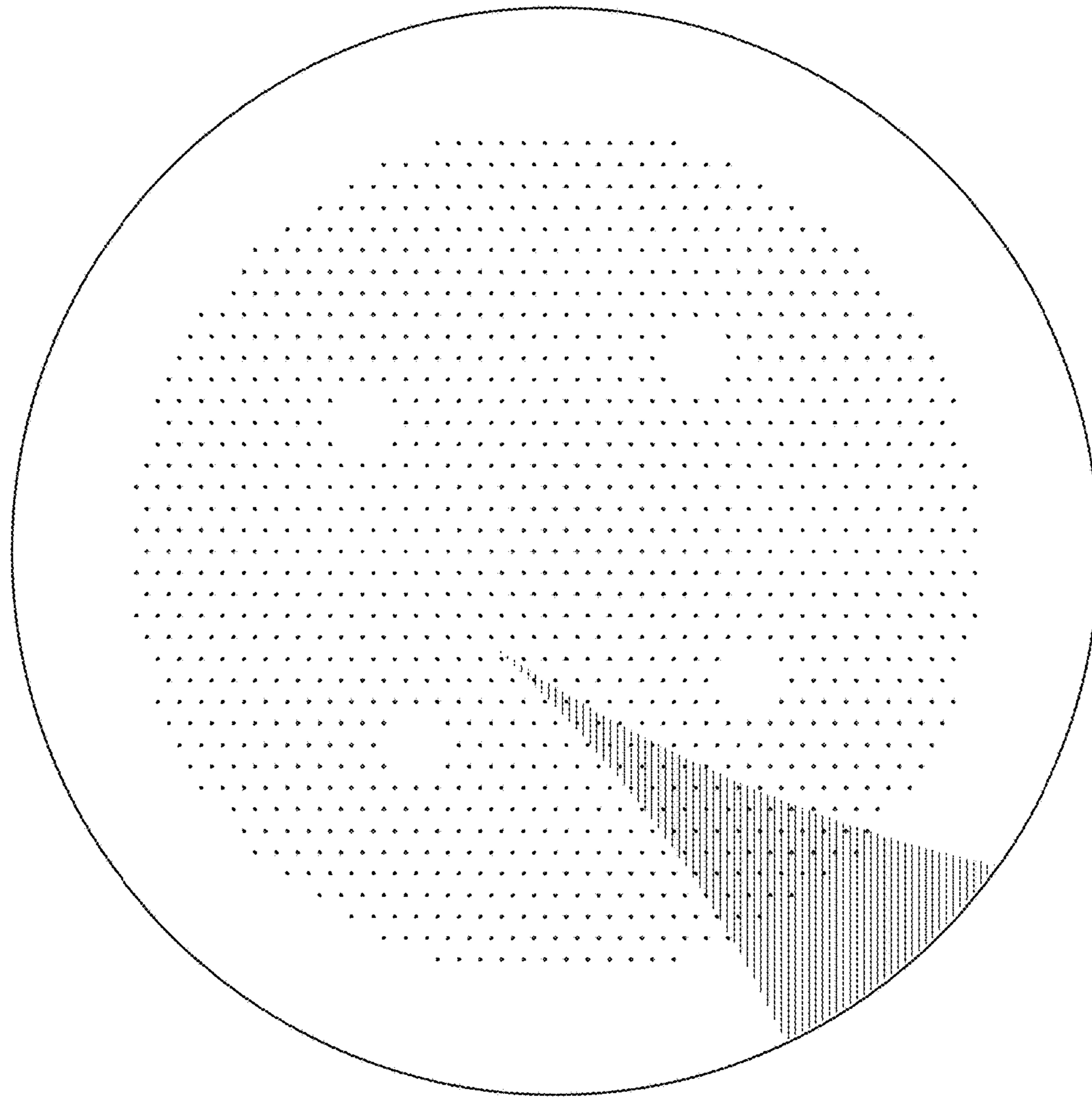


Fig. 4



Fig. 5



Fig. 6

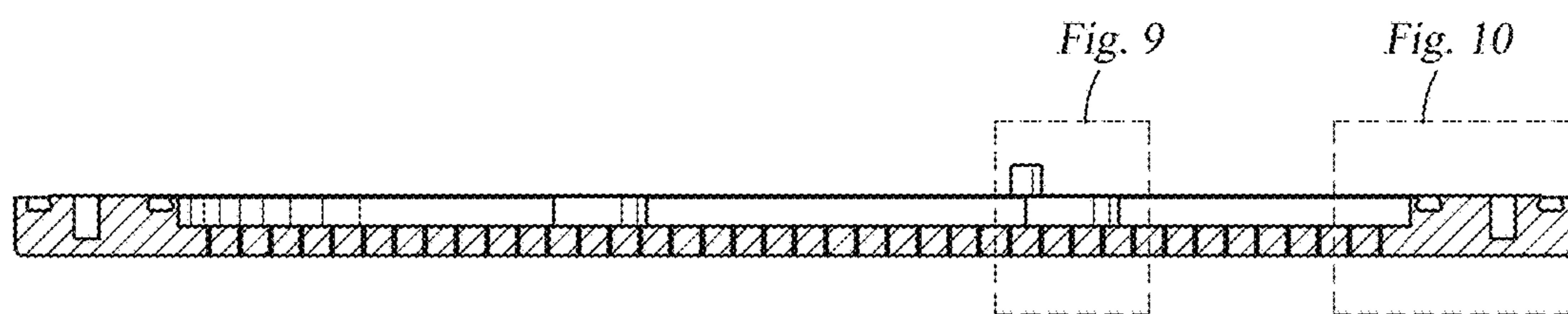


Fig. 7

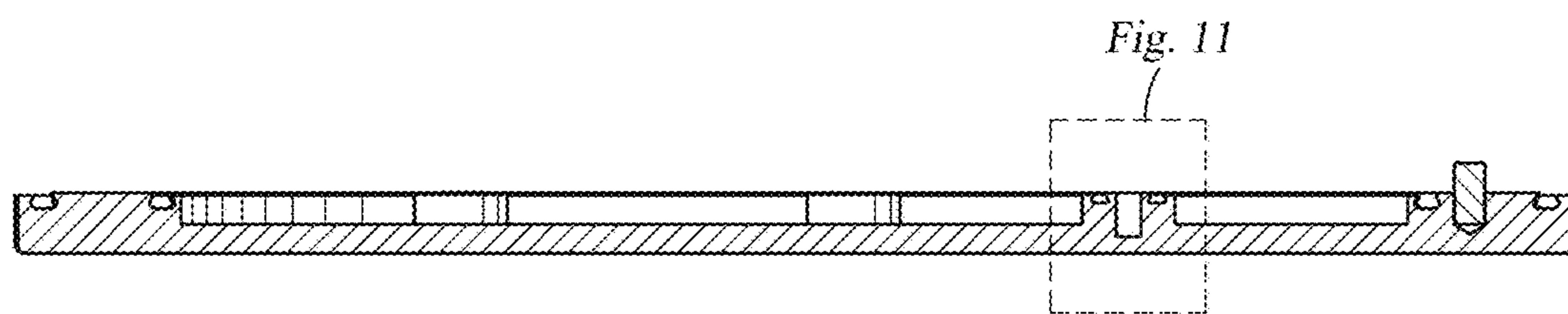


Fig. 8

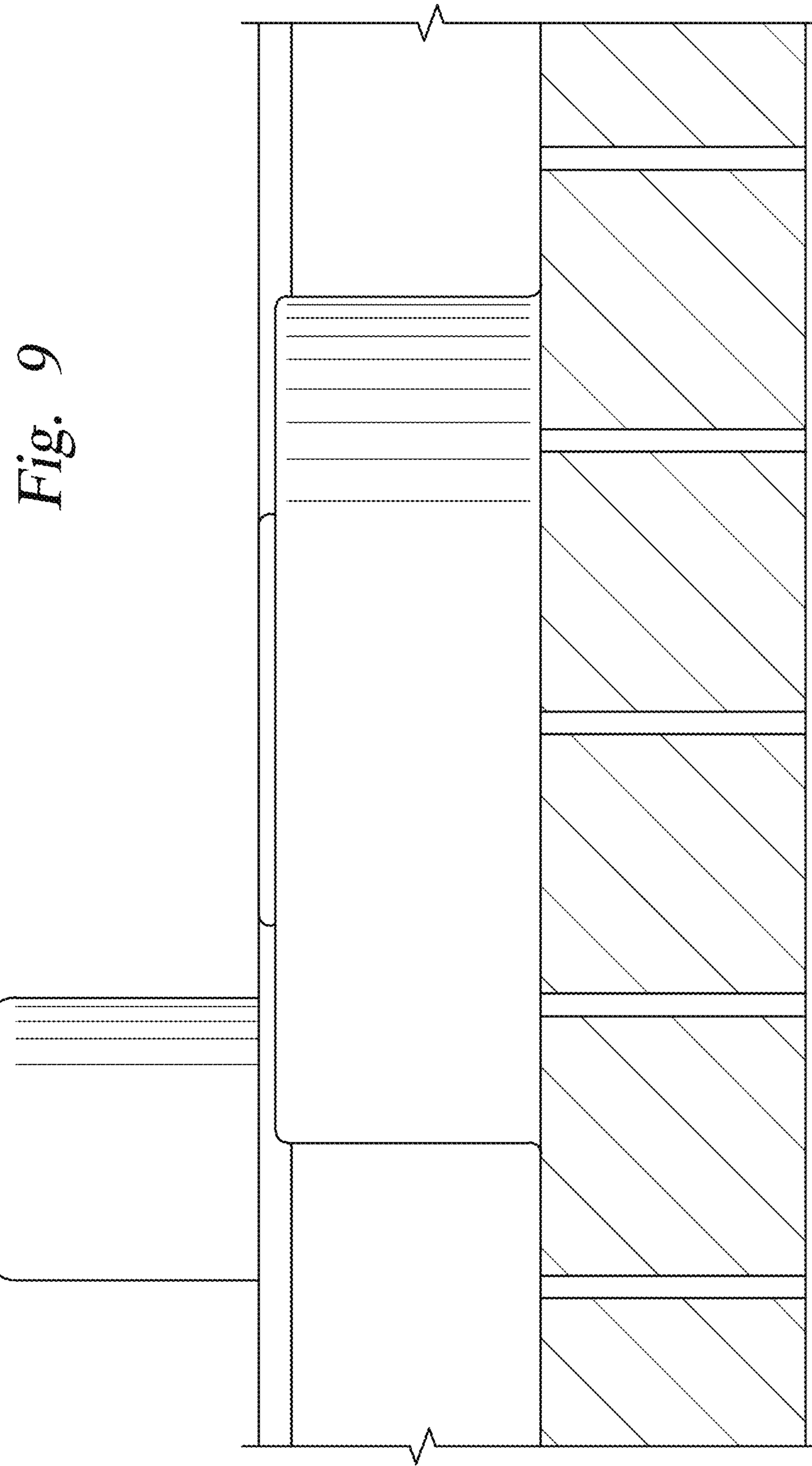


Fig. 9

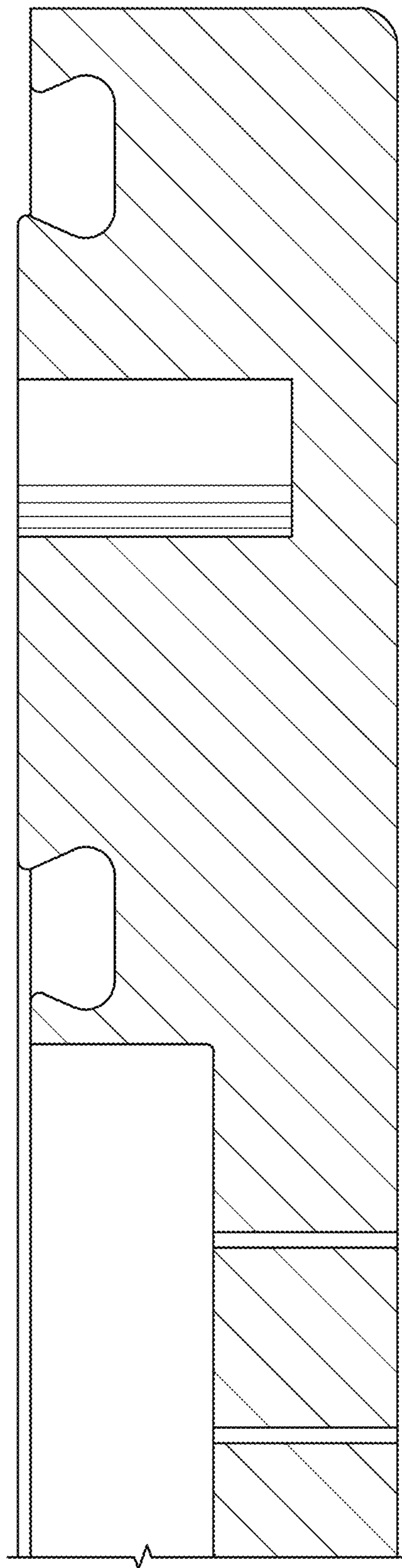


Fig. 10

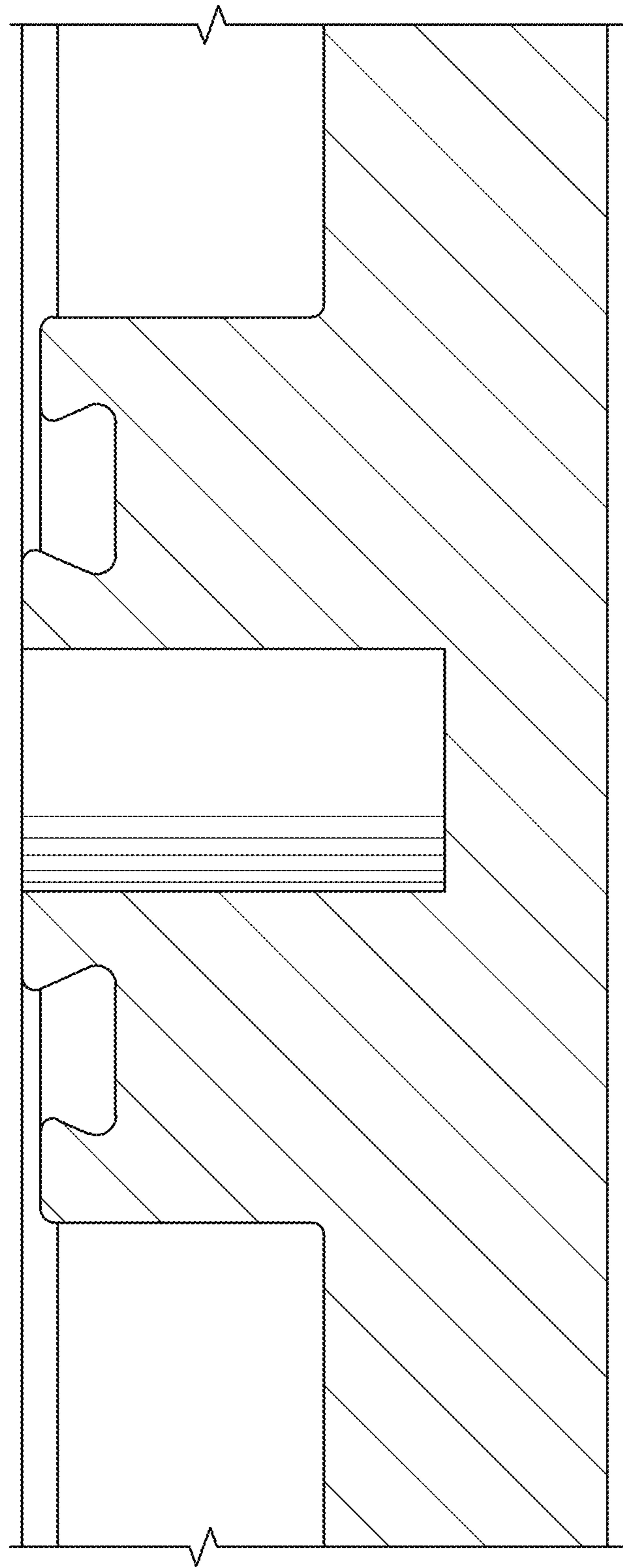


Fig. 11