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

(10) **Patent No.:** **US D859,332 S**

(45) **Date of Patent:** **\*\* \*Sep. 10, 2019**

(54) **ELASTIC MEMBRANE FOR SEMICONDUCTOR WAFER POLISHING**

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(71) Applicant: **EBARA CORPORATION**, Tokyo (JP)

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(72) Inventors: **Satoru Yamaki**, Tokyo (JP); **Makoto Fukushima**, Tokyo (JP); **Keisuke Namiki**, Tokyo (JP); **Osamu Nabeya**, Tokyo (JP); **Shingo Togashi**, Tokyo (JP); **Tomoko Owada**, Tokyo (JP)

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(73) Assignee: **EBARA CORPORATION**, Tokyo (JP)

(57) **CLAIM**

The ornamental design for an elastic membrane for semiconductor wafer polishing, as shown and described.

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

**DESCRIPTION**

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

(21) Appl. No.: **29/630,484**

FIG. 1 is a top perspective view a first embodiment of an elastic membrane for semiconductor wafer polishing showing our new design;

FIG. 2 is a bottom perspective view thereof;

FIG. 3 is a top plan view thereof;

FIG. 4 is a bottom view thereof;

FIG. 5 is a front view thereof;

FIG. 6 is a side view thereof;

FIG. 7 is a cross sectional view taken along section line 7-7 in FIG. 3 thereof;

FIG. 8 is an enlarged portion view of section 8 in FIG. 7 thereof;

FIG. 9 is a top perspective view a second embodiment of an elastic membrane for semiconductor wafer polishing showing our new design;

FIG. 10 is a bottom perspective view thereof;

FIG. 11 is a top plan view thereof;

FIG. 12 is a bottom view thereof;

FIG. 13 is a front view thereof;

FIG. 14 is a side view thereof;

FIG. 15 is a cross sectional view taken along section line 15-15 in FIG. 11 thereof; and,

FIG. 16 is an enlarged portion view of section 16 in FIG. 15 thereof.

(22) Filed: **Dec. 21, 2017**

(30) **Foreign Application Priority Data**

Jun. 29, 2017 (JP) ..... 2017-013970

Jun. 29, 2017 (JP) ..... 2017-013971

(51) **LOC (12) Cl.** ..... **13-03**

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

(58) **Field of Classification Search**  
USPC ..... D13/182; 451/66, 288, 289  
CPC ..... B24B 37/30; B24B 41/061; B24B 49/16  
See application file for complete search history.

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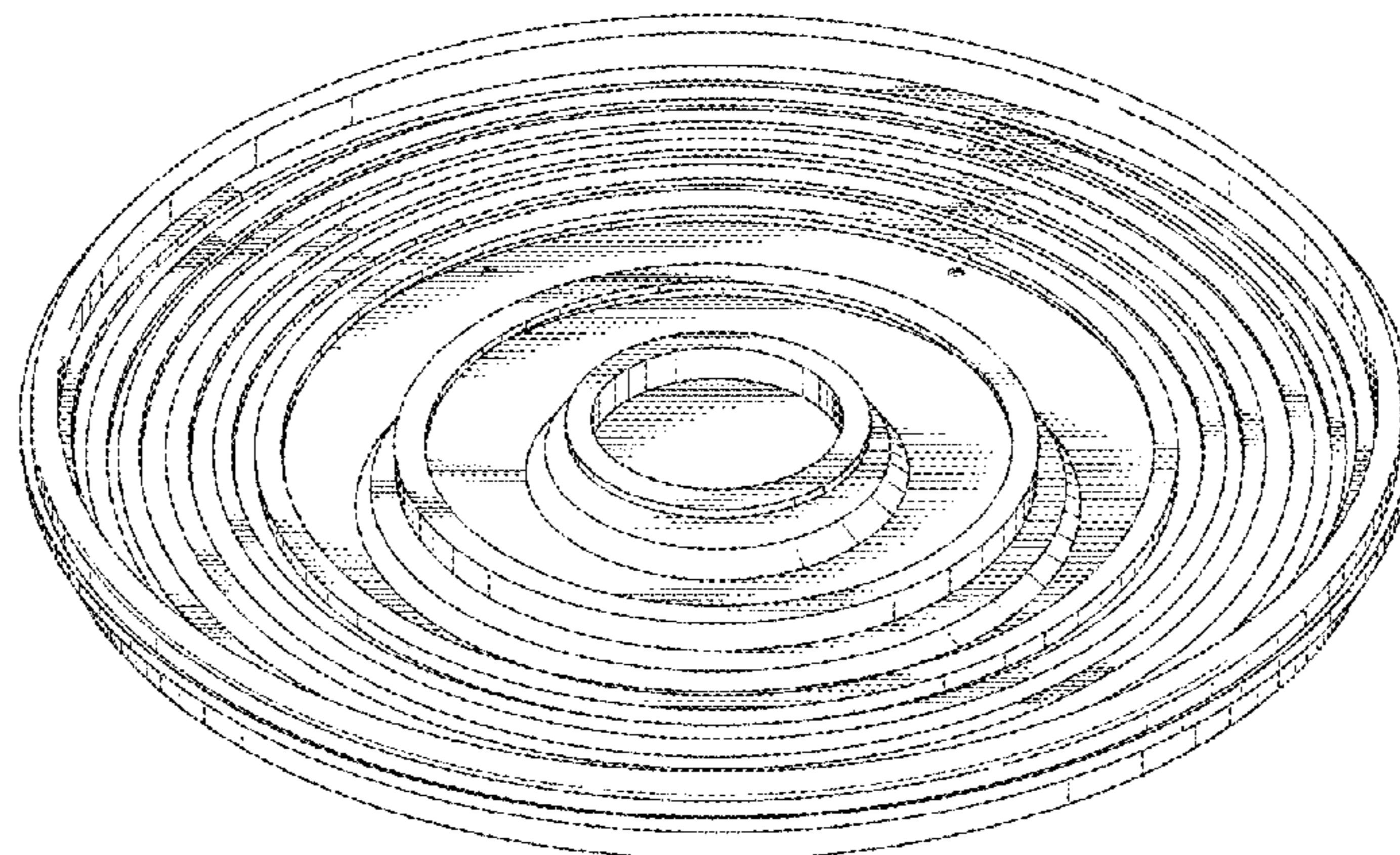
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**1 Claim, 8 Drawing Sheets**



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FIG. 1

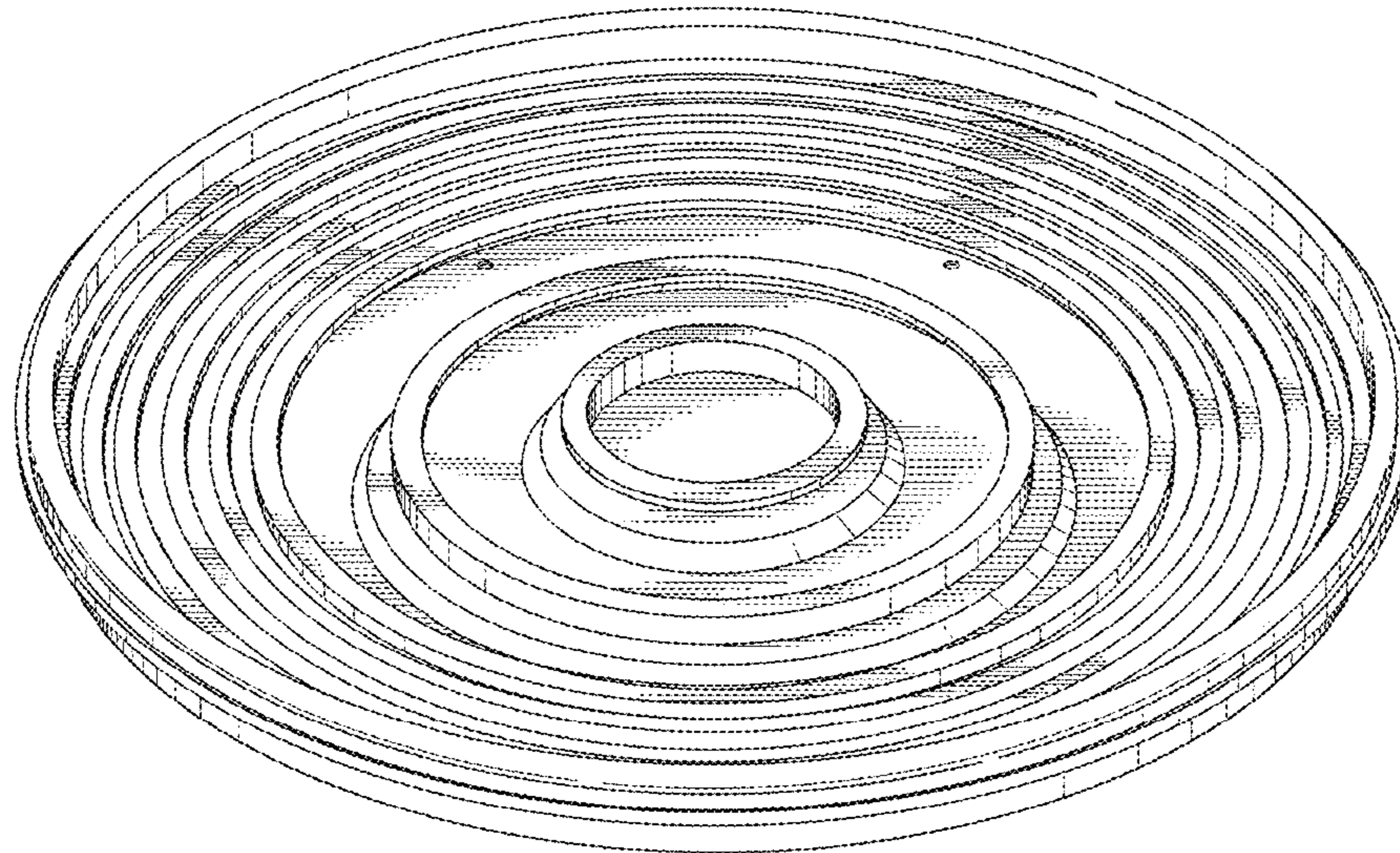


FIG. 2

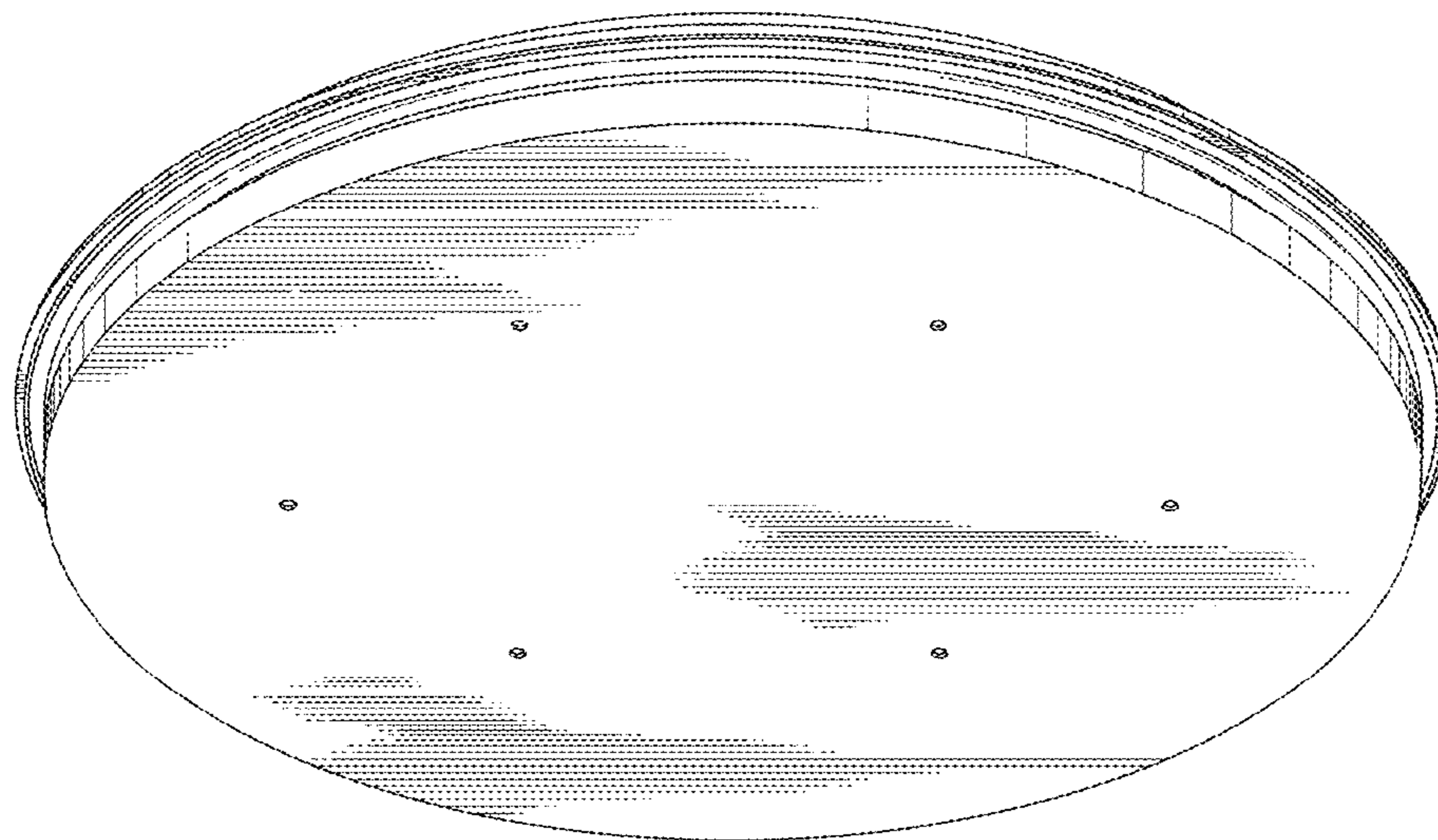


FIG. 3

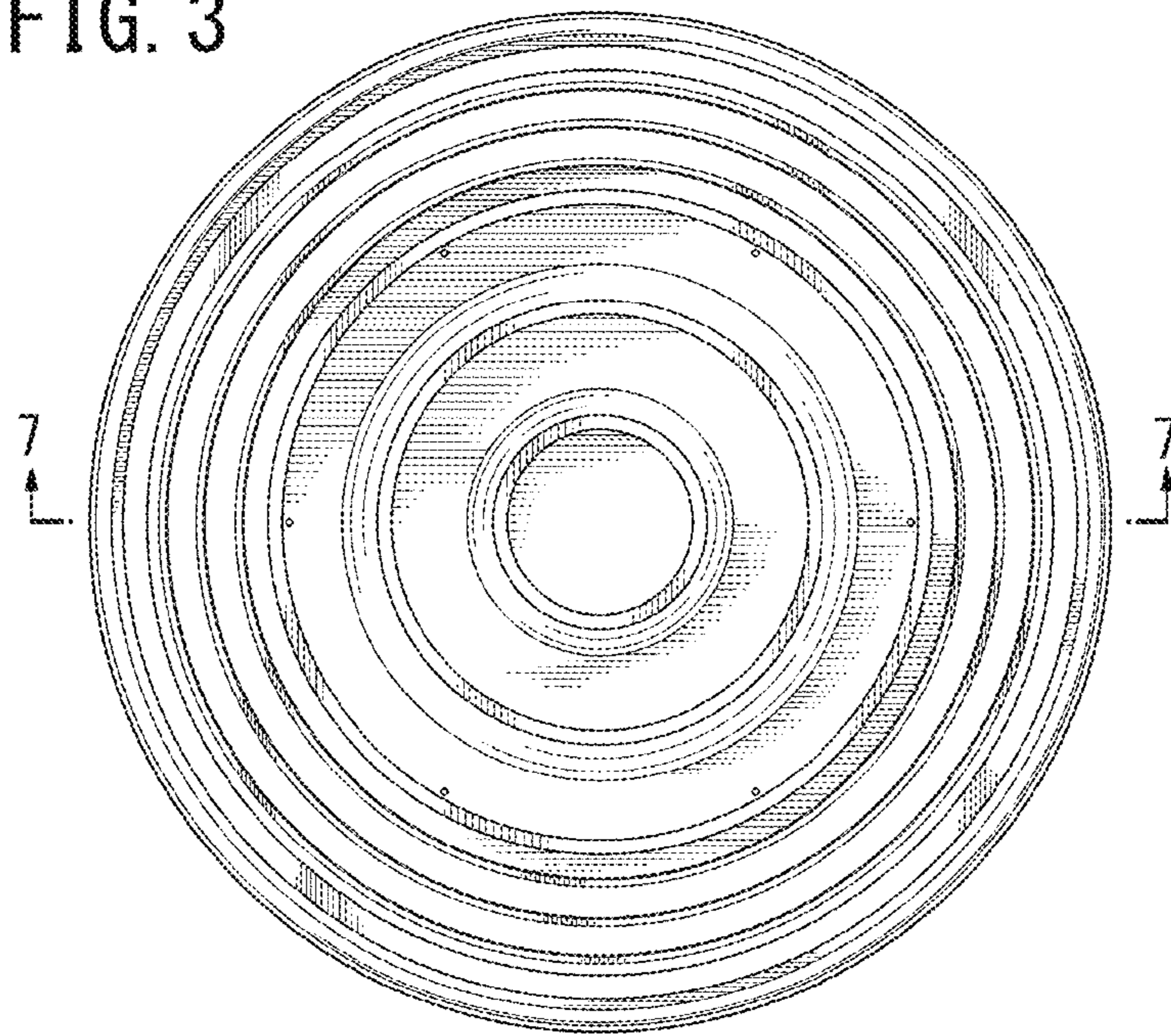


FIG. 4

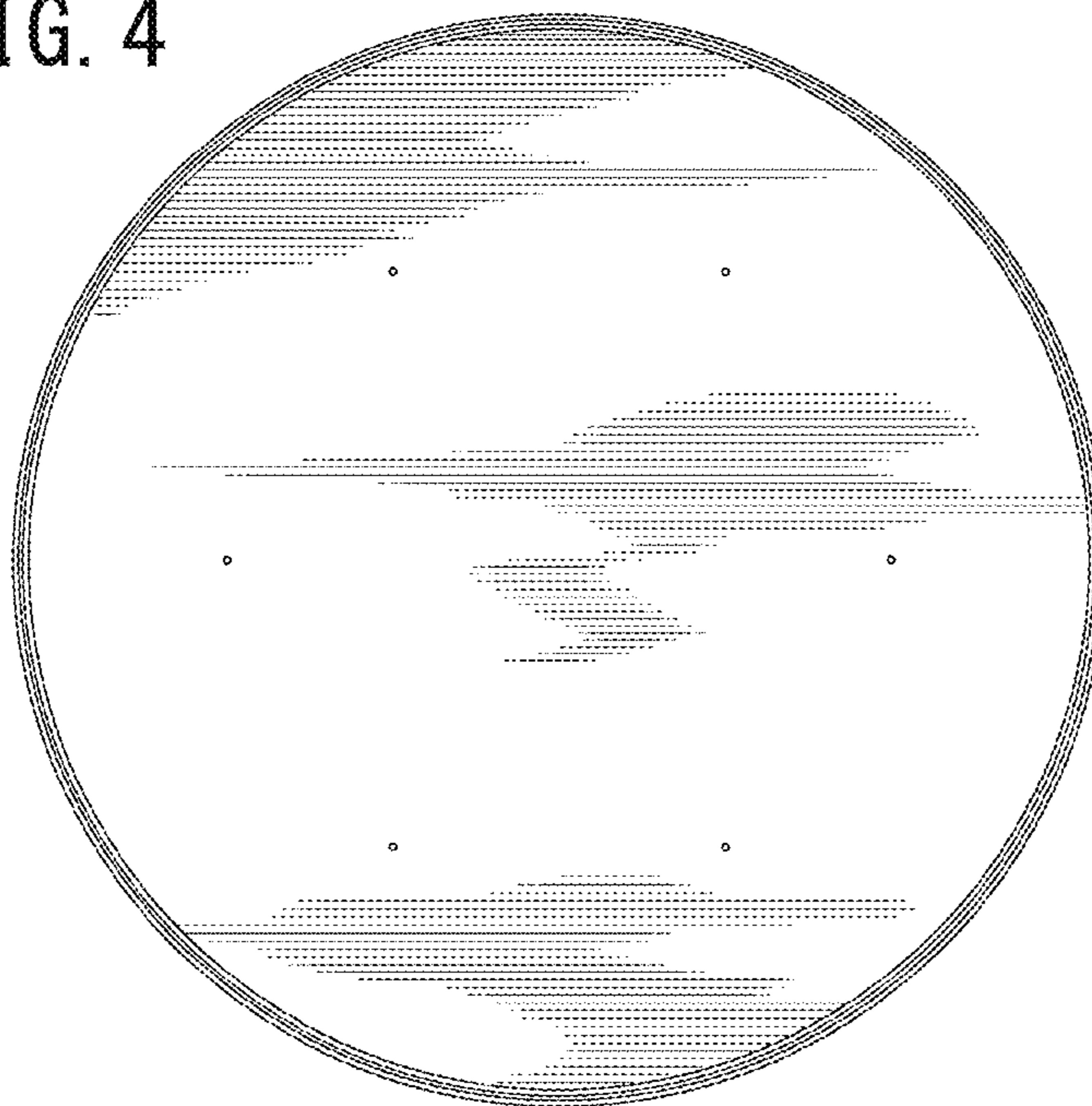


FIG. 5

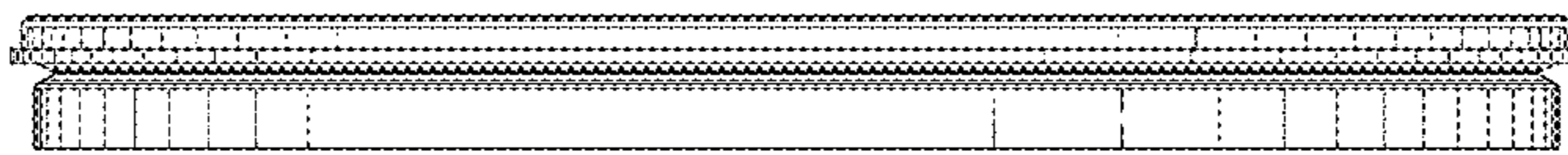


FIG. 6

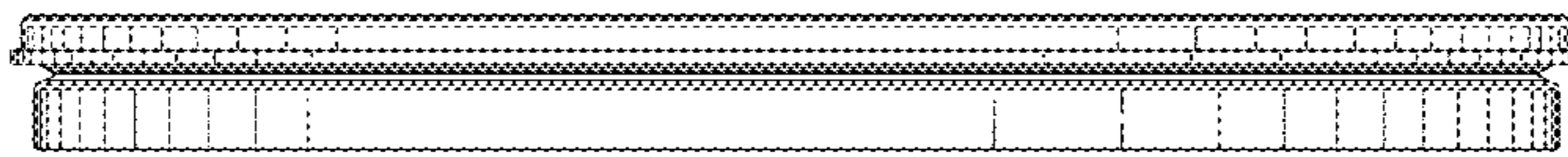


FIG. 7

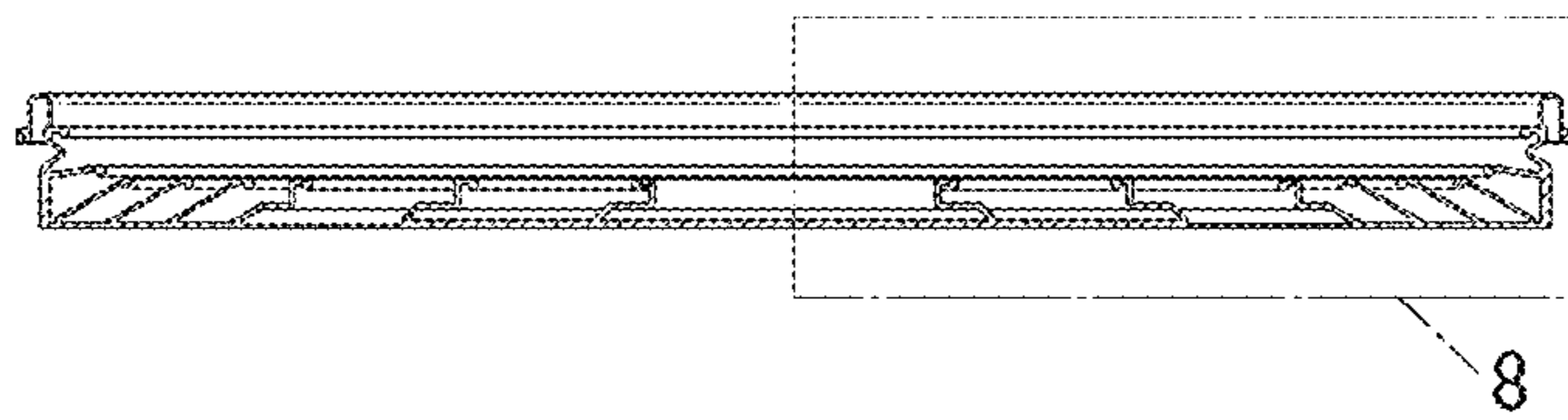


FIG. 8

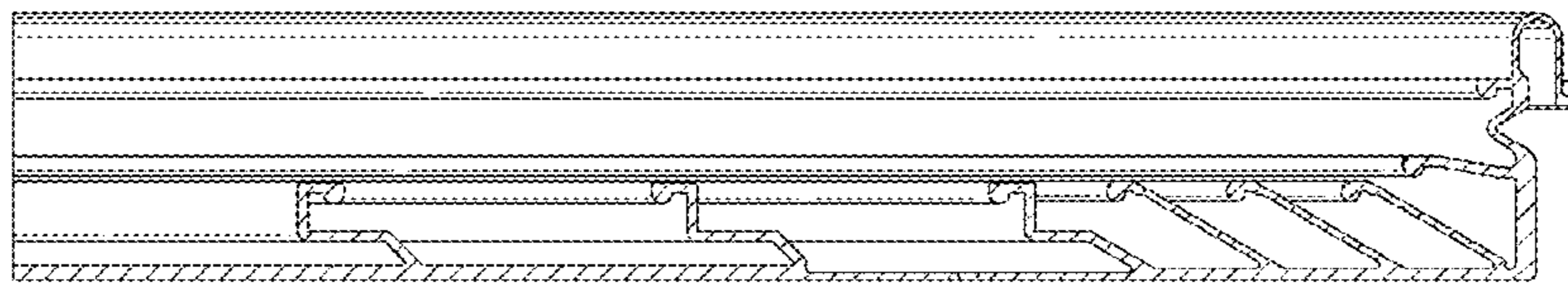


FIG. 9

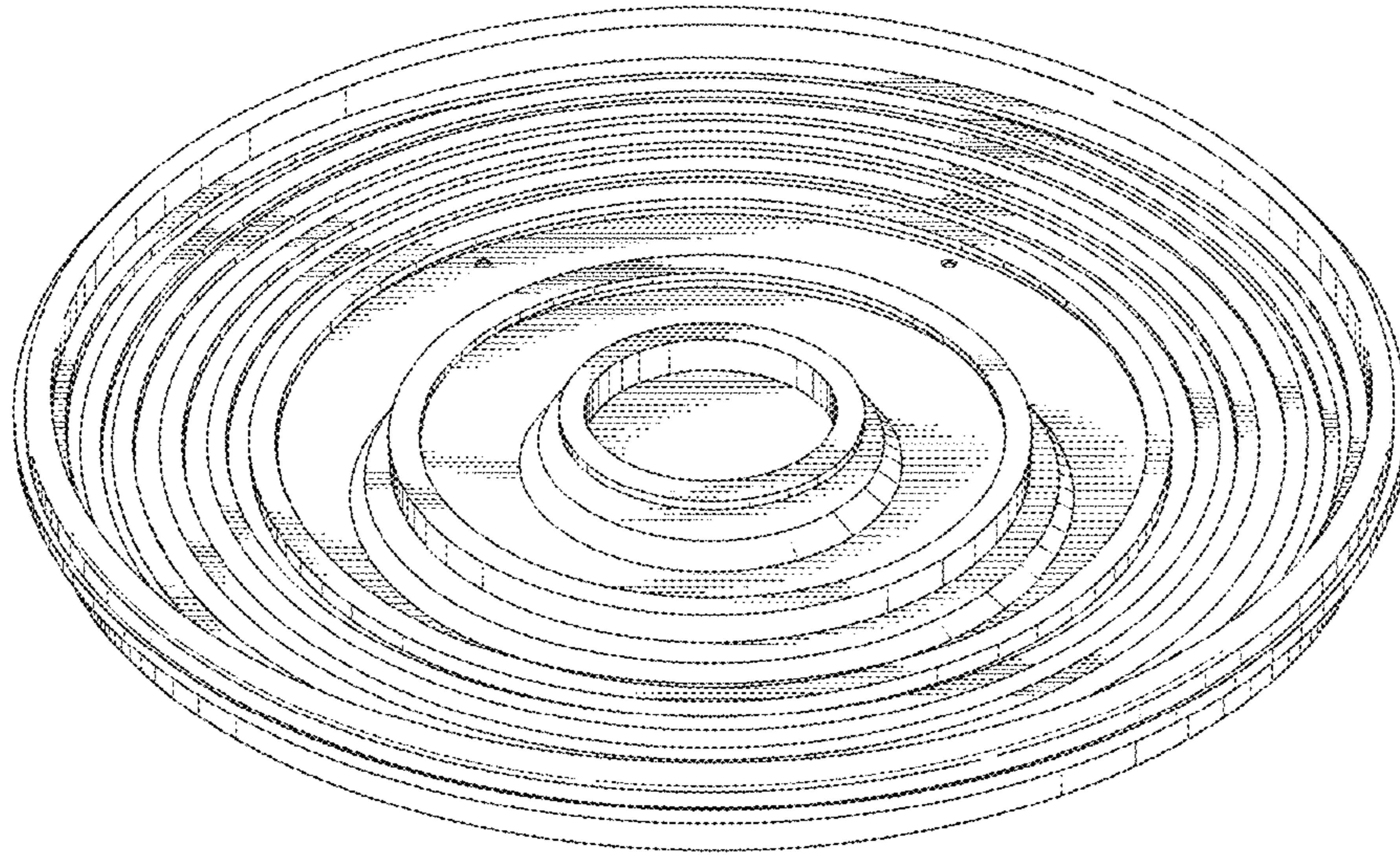


FIG. 10

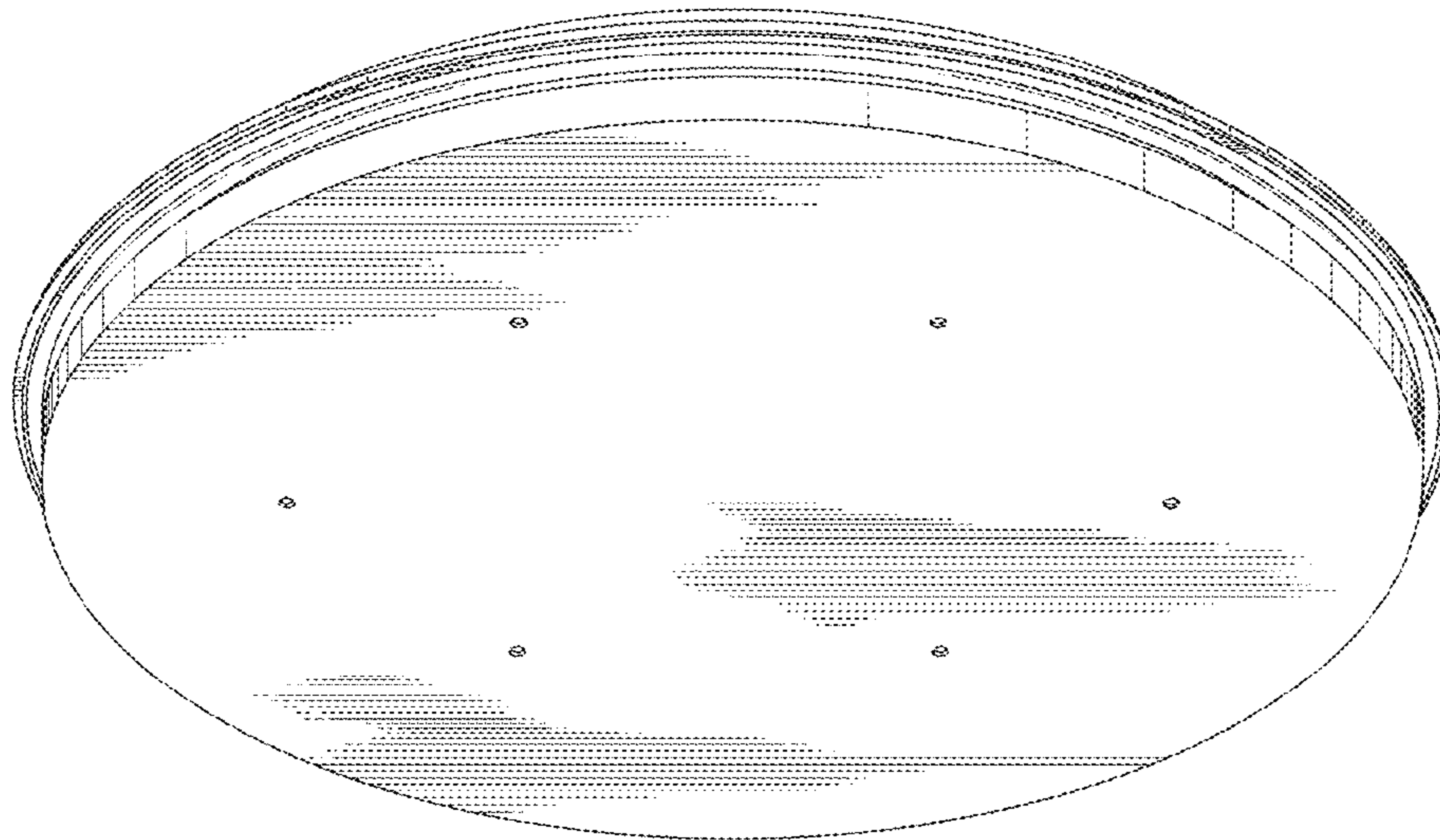


FIG. 11

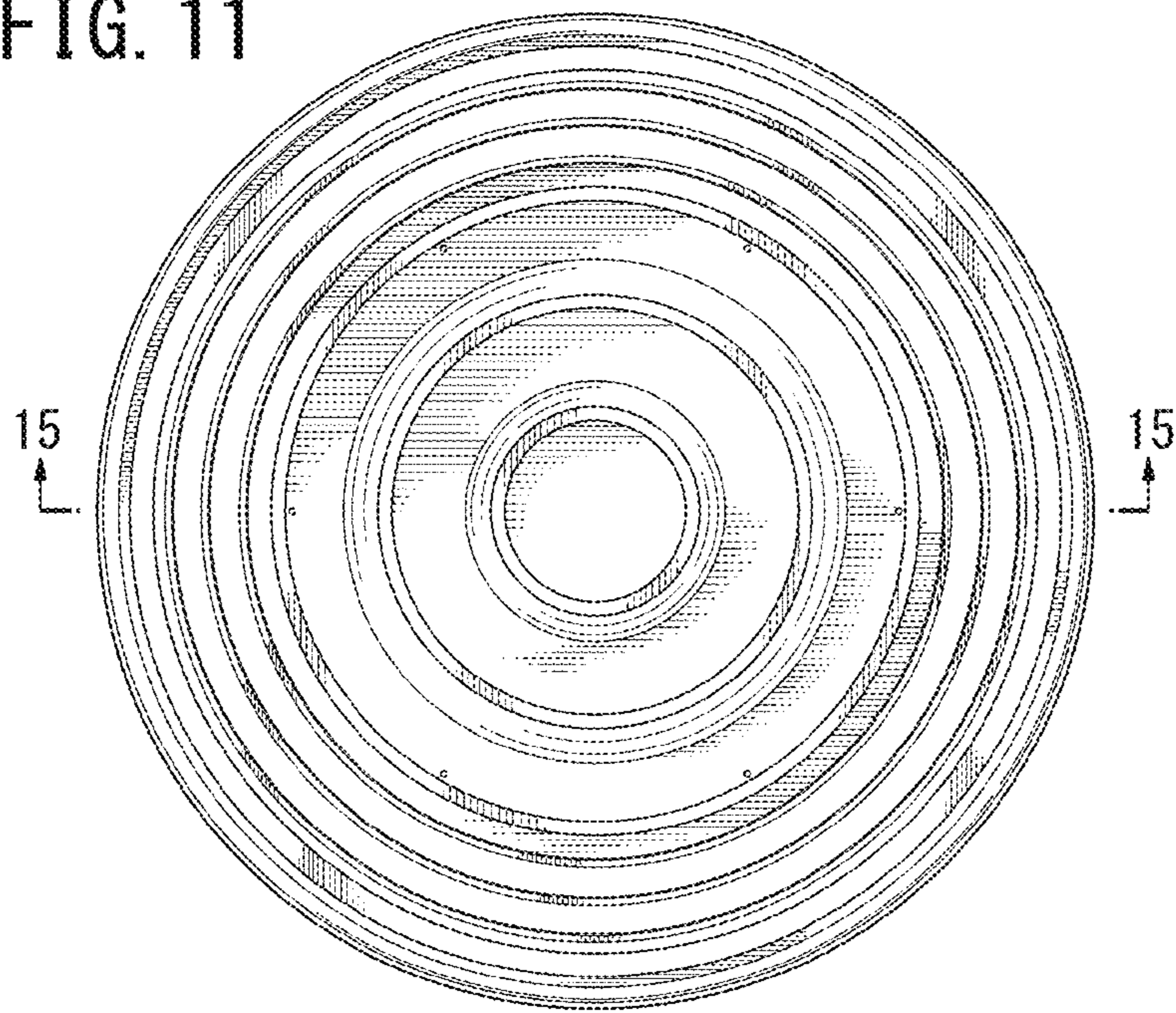


FIG. 12

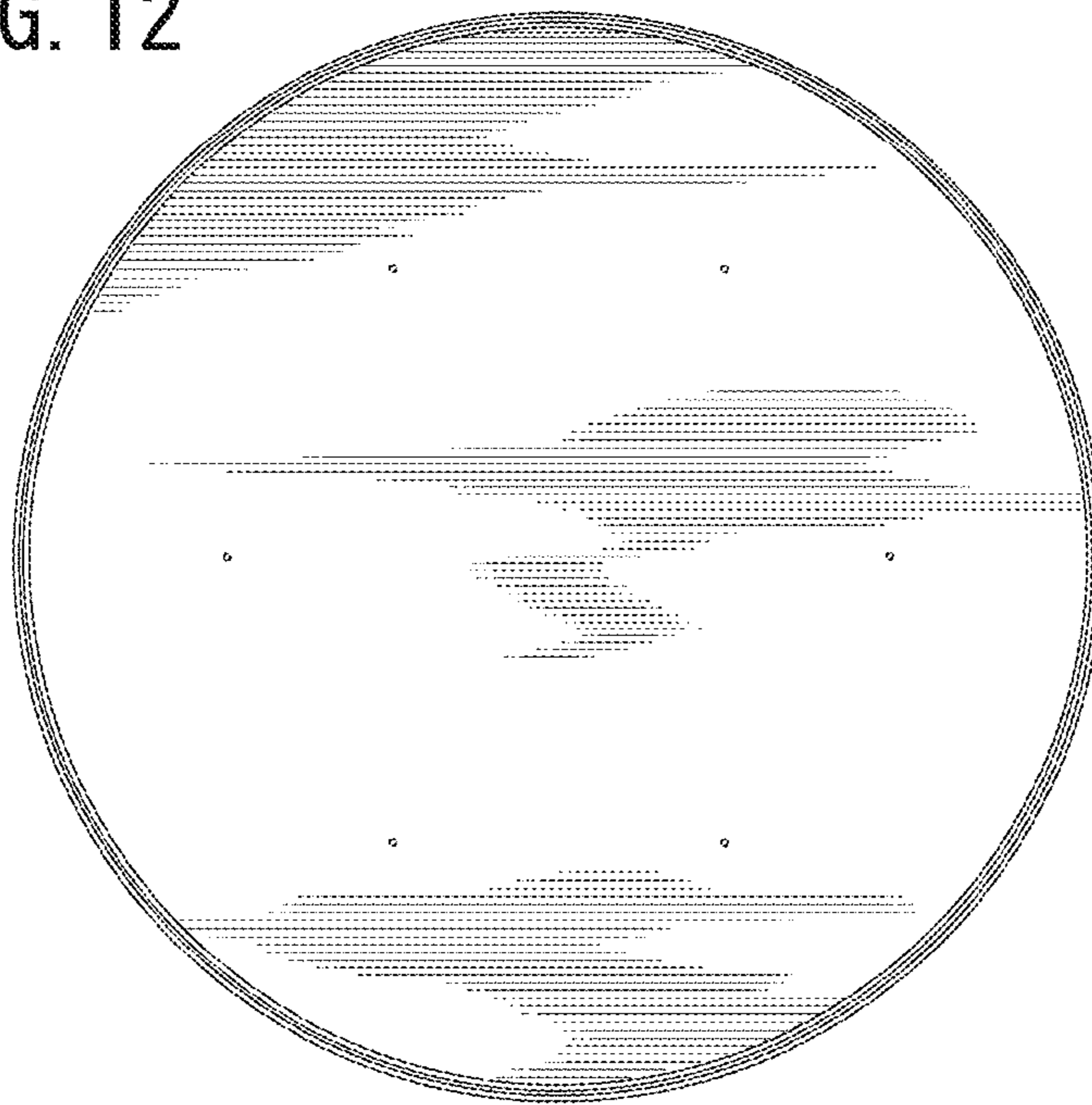




FIG. 13

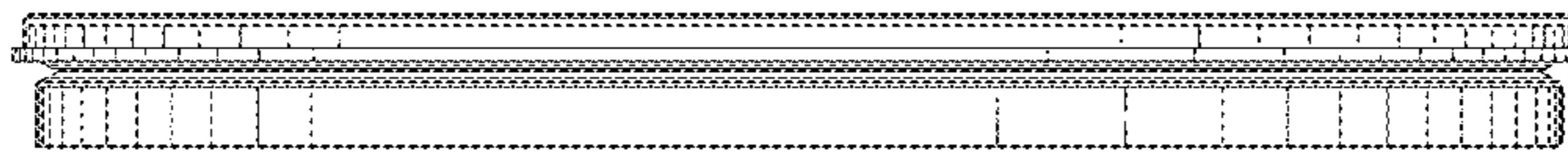


FIG. 14

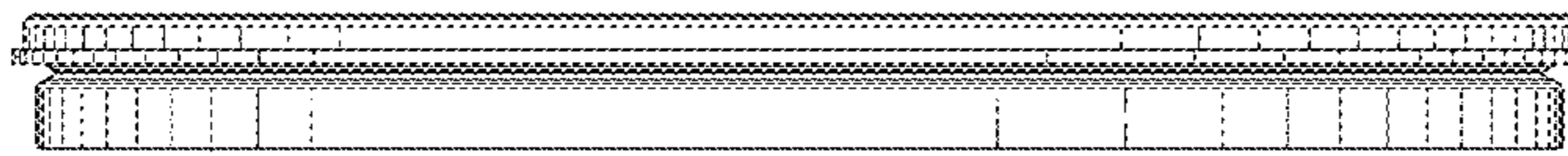


FIG. 15

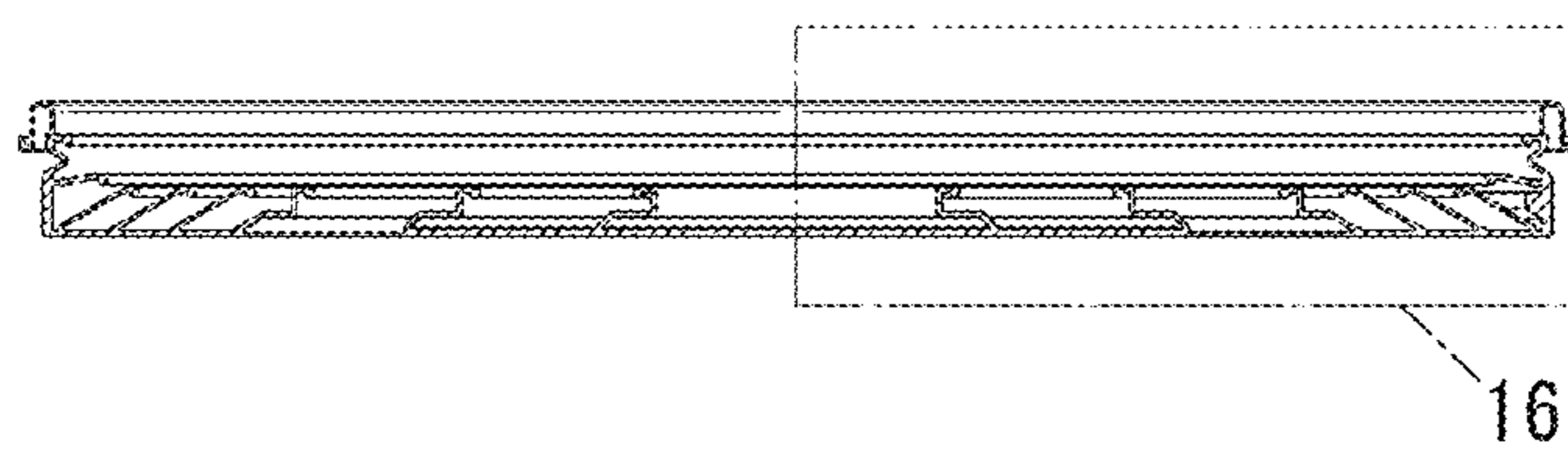


FIG. 16

