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

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(45) **Date of Patent:** **** Mar. 29, 2022**

(54) **VIBRATION ELEMENT FOR A HAPTIC ACTUATOR**

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

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

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(30) **Foreign Application Priority Data**

May 10, 2019 (JP) 2019-010151
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May 10, 2019 (JP) 2019-010153

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

(52) **U.S. Cl.**
USPC **D13/182; D13/199**

(58) **Field of Classification Search**
USPC D13/173, 174, 182, 199
(Continued)

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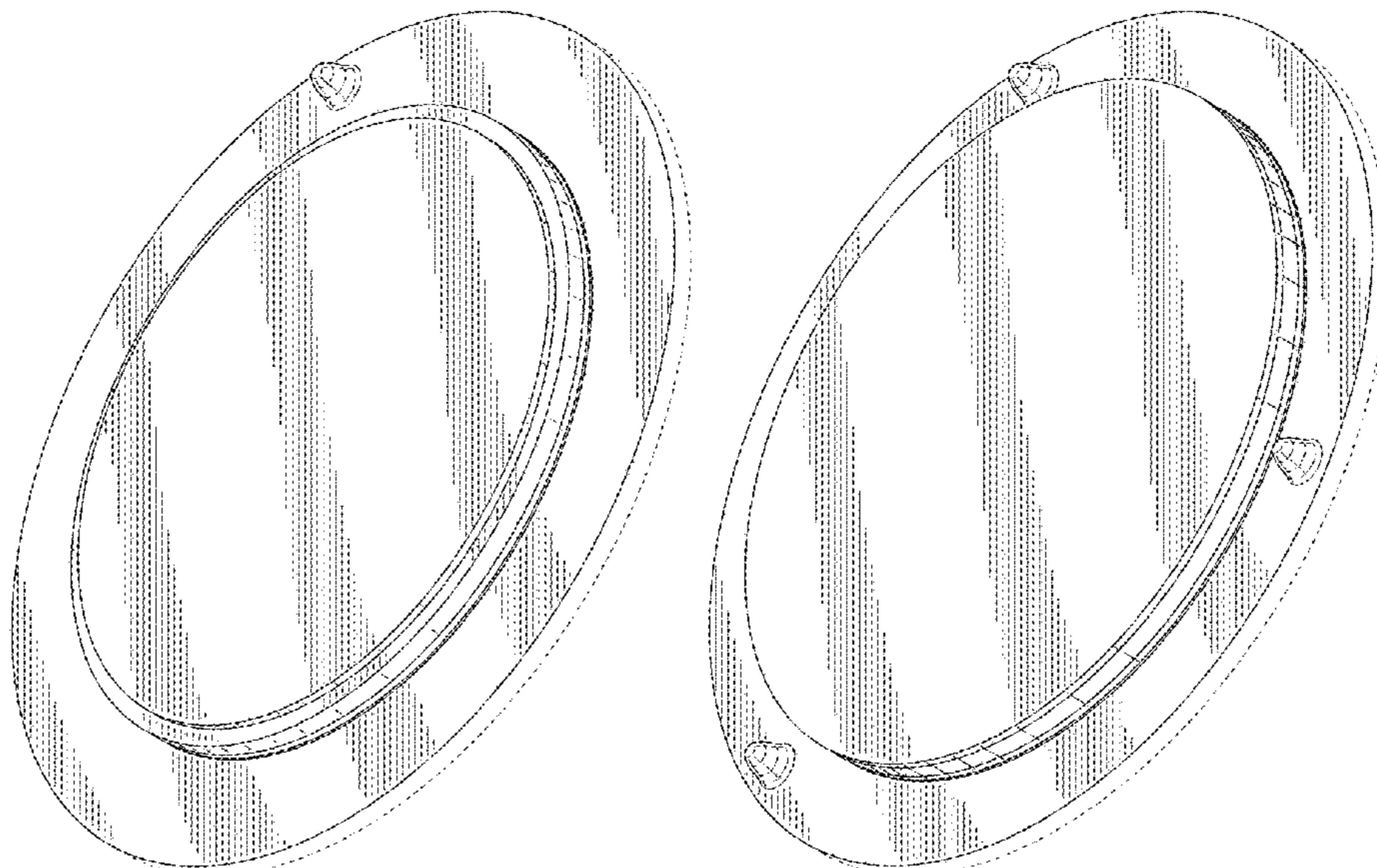
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(74) *Attorney, Agent, or Firm* — Oliff PLC

(57) **CLAIM**
The ornamental design for a vibration element for a haptic actuator, as shown and described.

DESCRIPTION

FIG. 1 is a front view of a vibration element for a haptic actuator of the present invention;
FIG. 2 is a rear view thereof;
FIG. 3 is a top plan view thereof;
FIG. 4 is a bottom plan view thereof;
FIG. 5 is a right side view thereof;
FIG. 6 is a left side view thereof;
FIG. 7 is a perspective view thereof;
FIG. 8 is a sectional view taken along lines 8-8 in FIG. 1;
FIG. 9 is a perspective view thereof showing the vibration element for a haptic actuator in use.
FIG. 10 is a front view of a second embodiment of a vibration element for a haptic actuator of the present invention;
FIG. 11 is a rear view thereof;
FIG. 12 is a top plan view thereof;
FIG. 13 is a bottom view thereof;
FIG. 14 is a right side view thereof;
FIG. 15 is a left side view thereof;
FIG. 16 is a perspective view thereof;
FIG. 17 is a sectional view taken along lines 17-17 in FIG. 10;
FIG. 18 is a perspective view thereof showing the vibration element for a haptic actuator in use.
FIG. 19 is a front view of a third embodiment of a vibration element for a haptic actuator of the present invention;
FIG. 20 is a rear view thereof;
FIG. 21 is a top plan view thereof;
FIG. 22 is a bottom view thereof;
FIG. 23 is a right side view thereof;
FIG. 24 is a left side view thereof;
FIG. 25 is a perspective view thereof;
FIG. 26 is a sectional view taken along lines 26-26 in FIG. 19; and,
FIG. 27 is a perspective view thereof showing the vibration element for a haptic actuator in use.
The features shown in broken lines depict environmental subject matter only and form no part of the claimed design.

1 Claim, 27 Drawing Sheets



(58) **Field of Classification Search**
 CPC H01L 41/02; H01L 41/04; H01L 41/0474;
 H01L 41/053; H01L 41/09
 See application file for complete search history.

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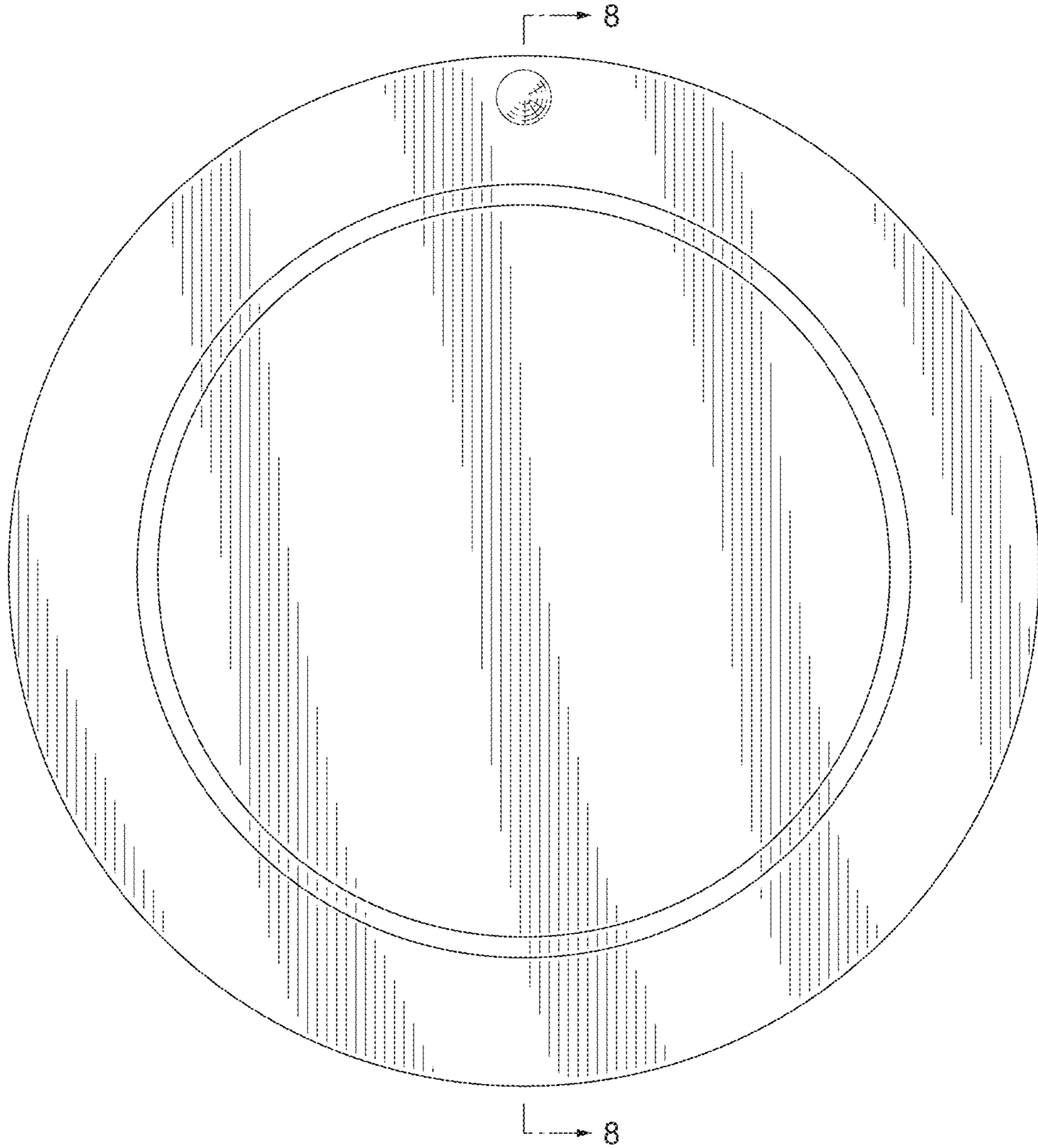


FIG. 1

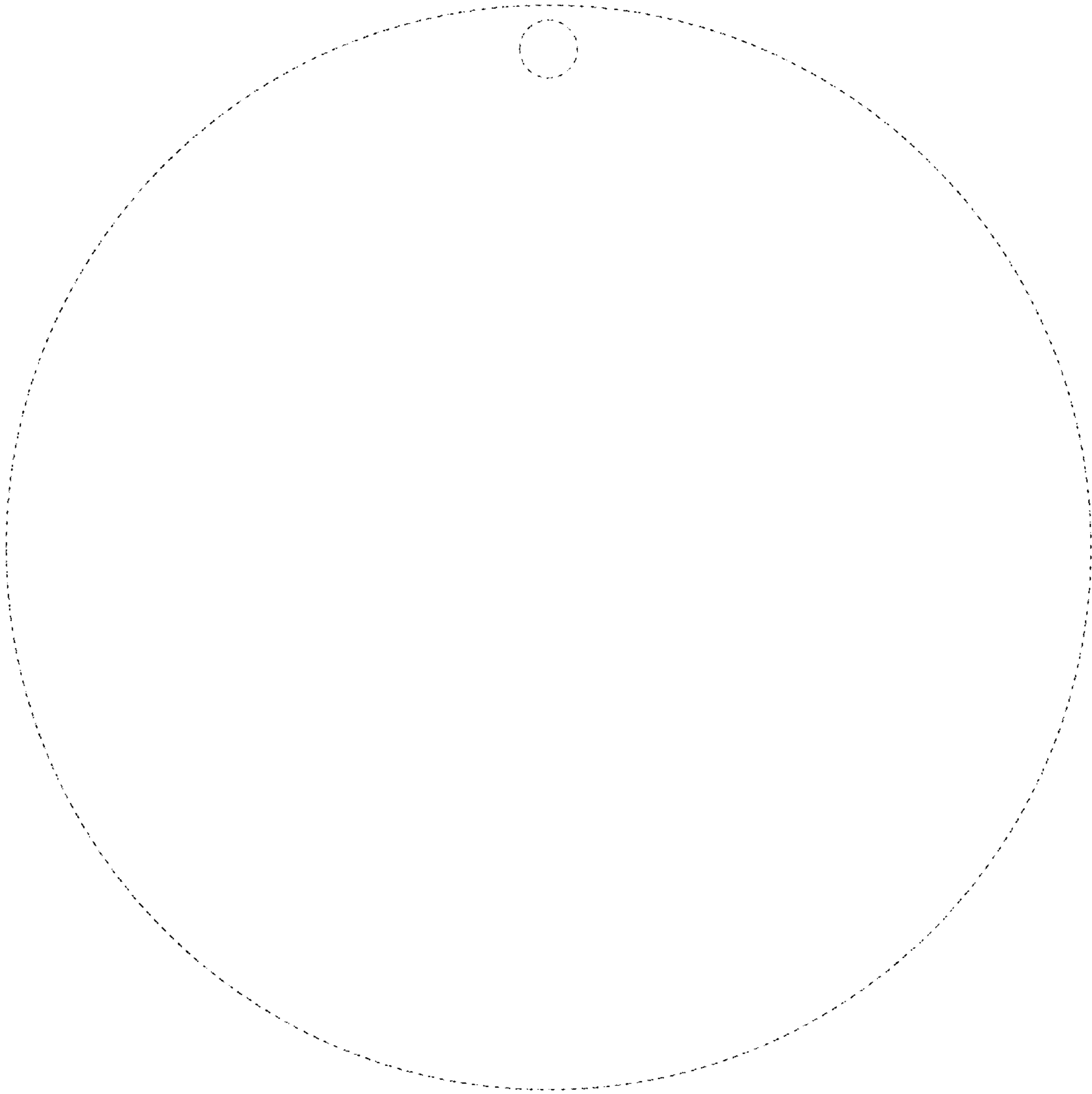


FIG. 2

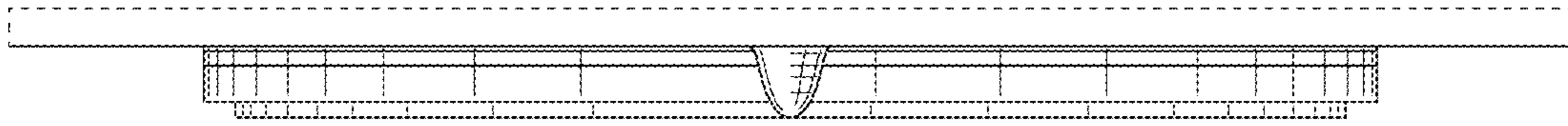


FIG. 3

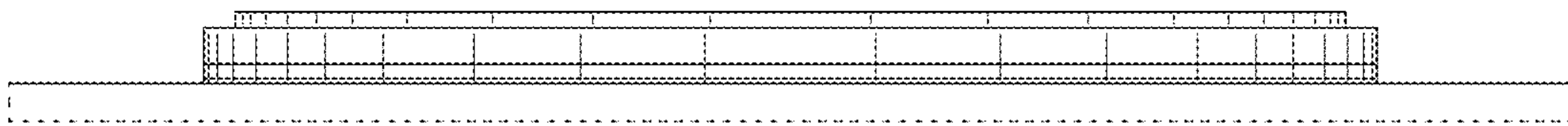


FIG. 4

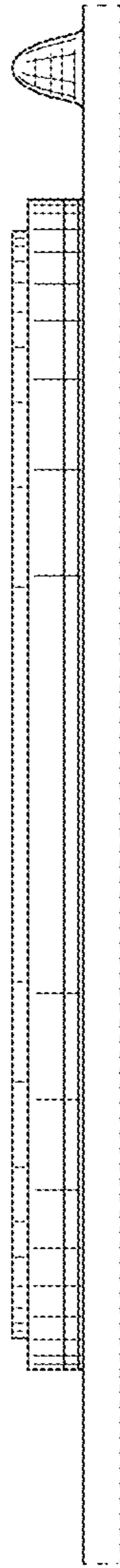


FIG. 5

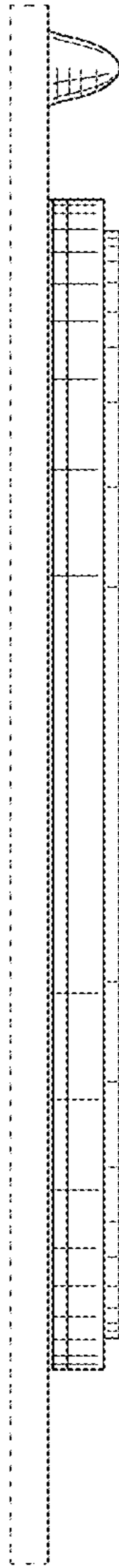


FIG. 6

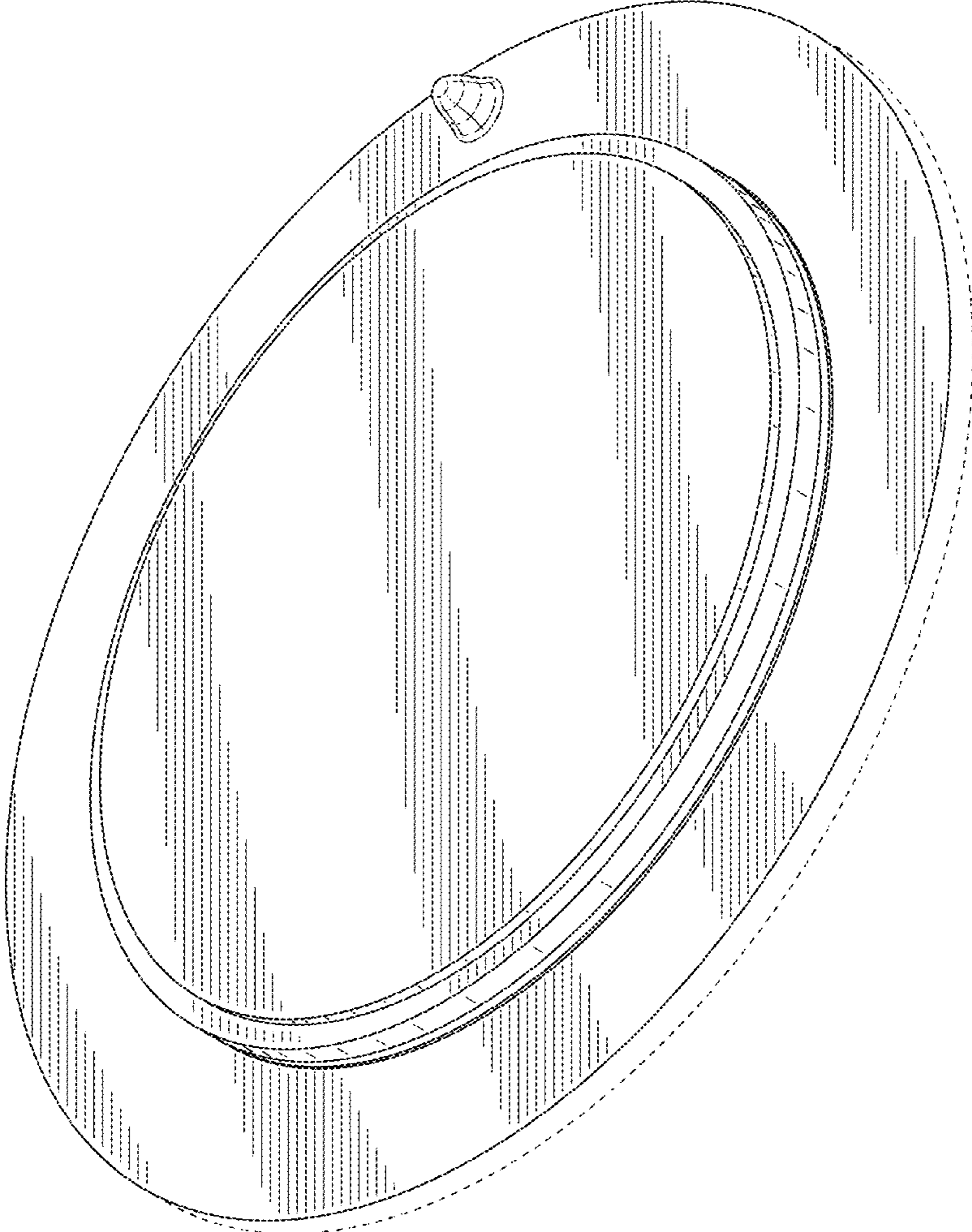


FIG. 7

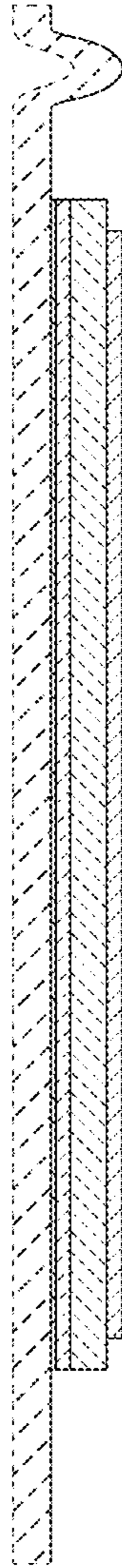


FIG. 8

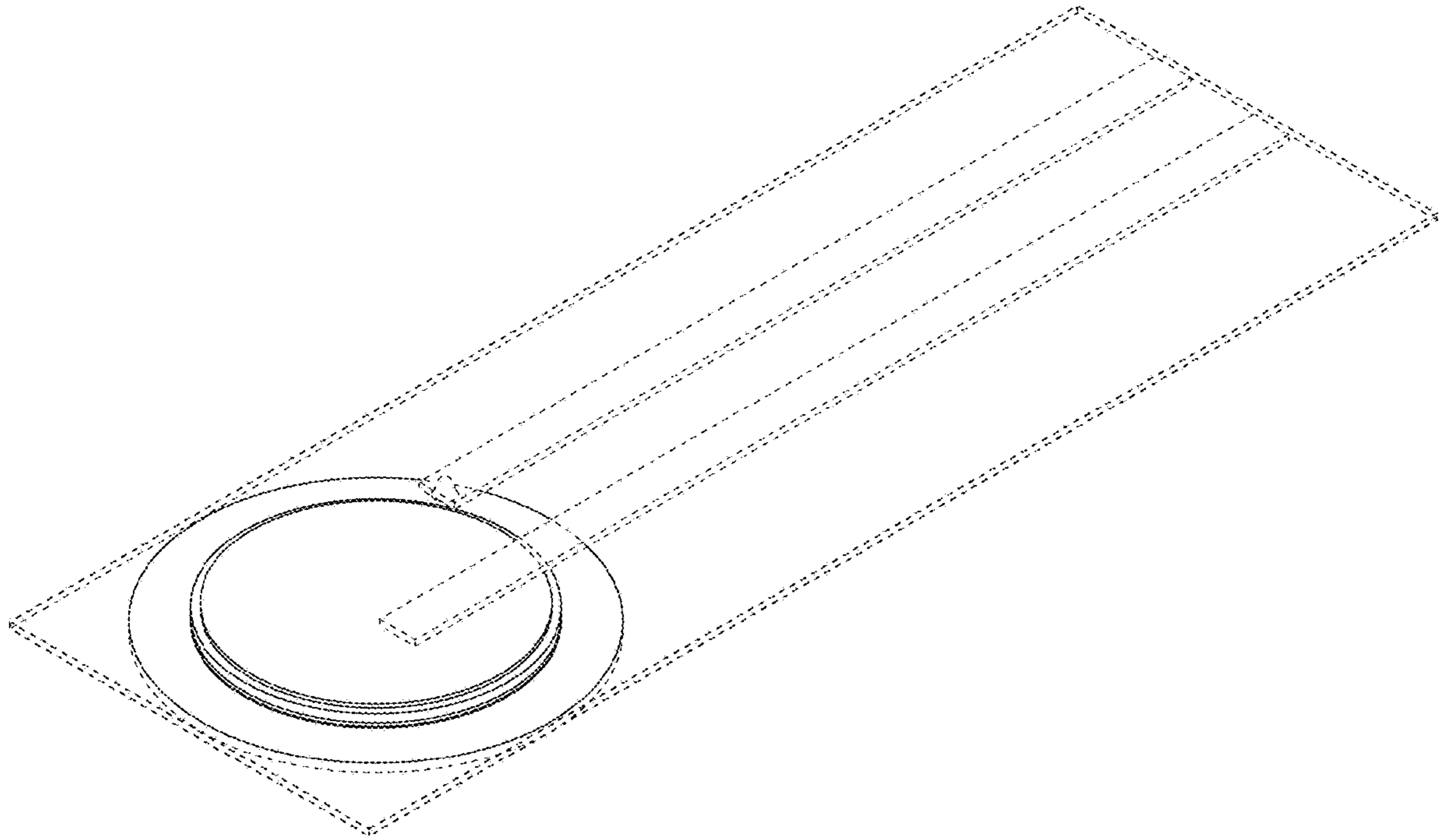


FIG. 9

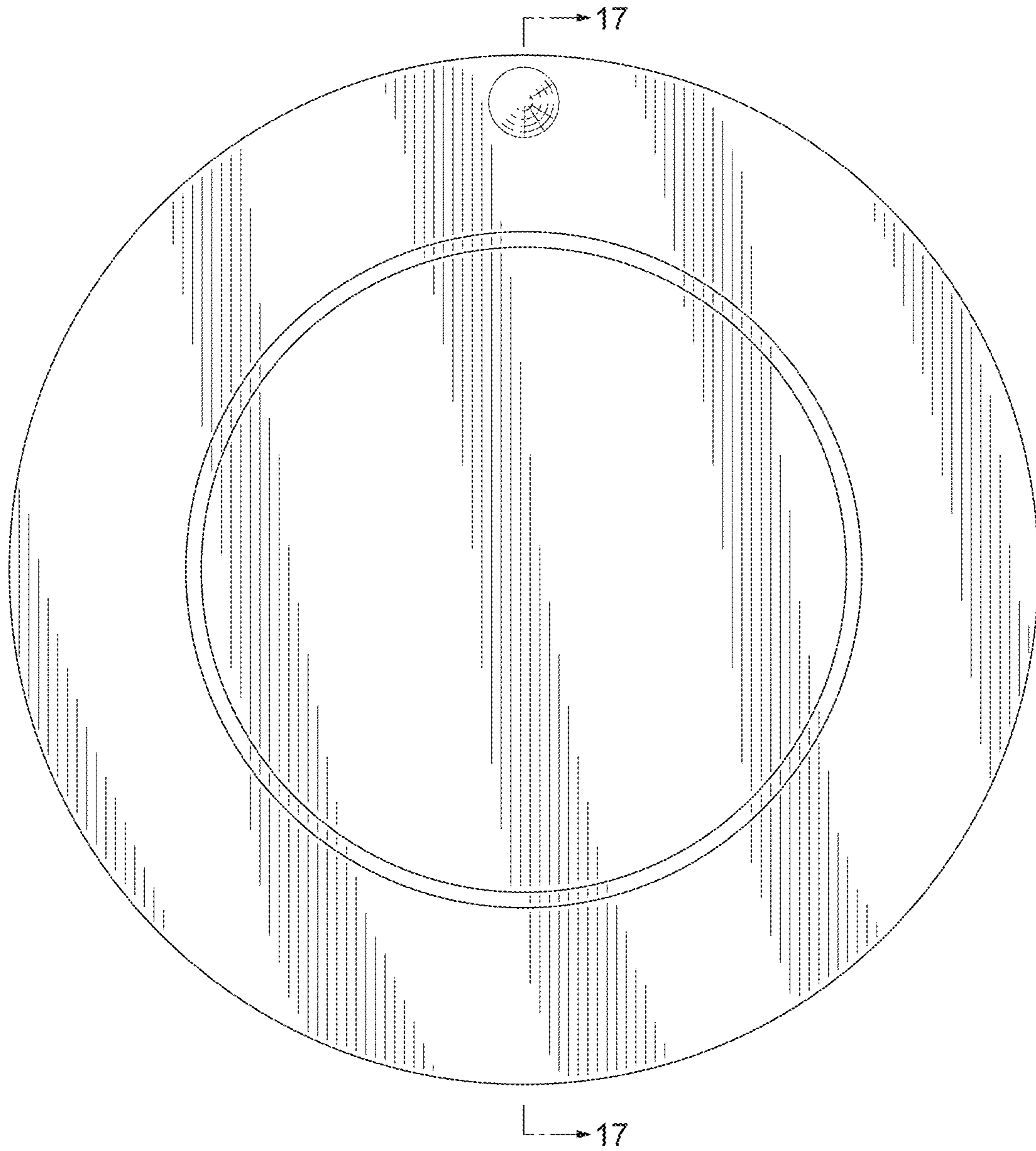


FIG. 10

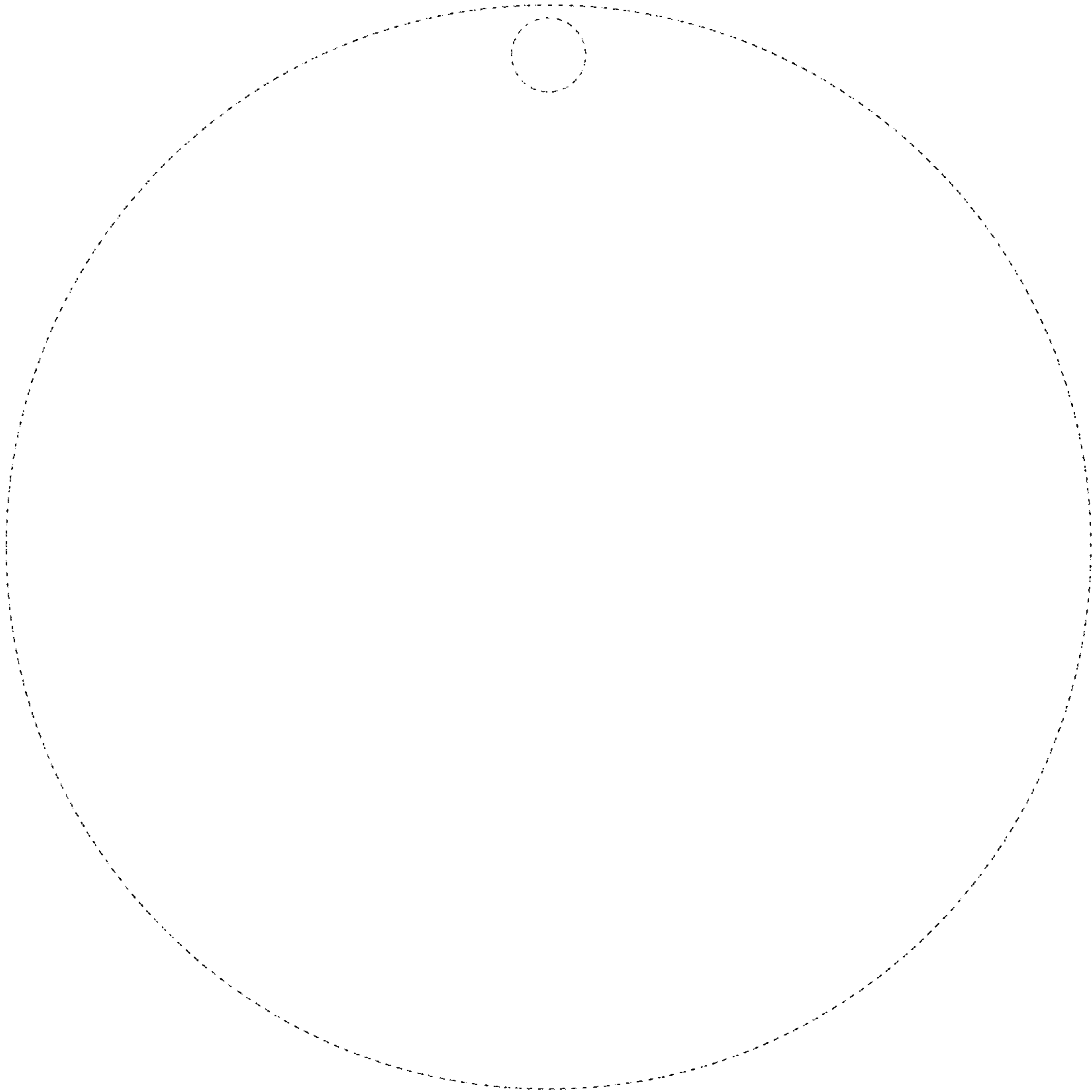


FIG. 11



FIG. 12

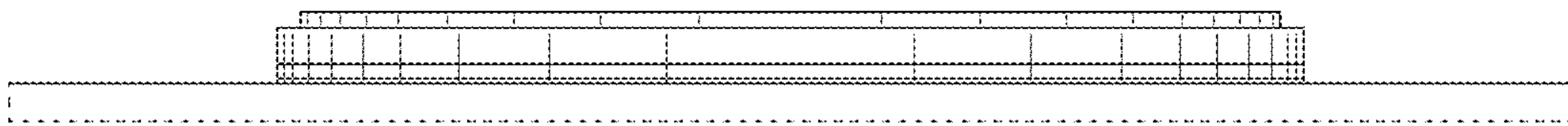


FIG. 13

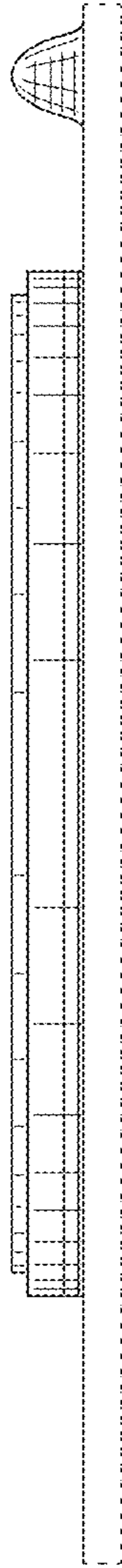


FIG. 14

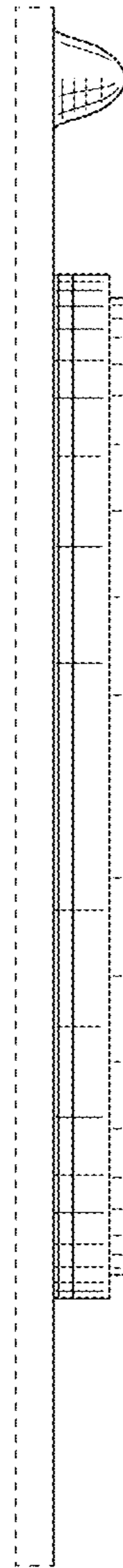


FIG. 15

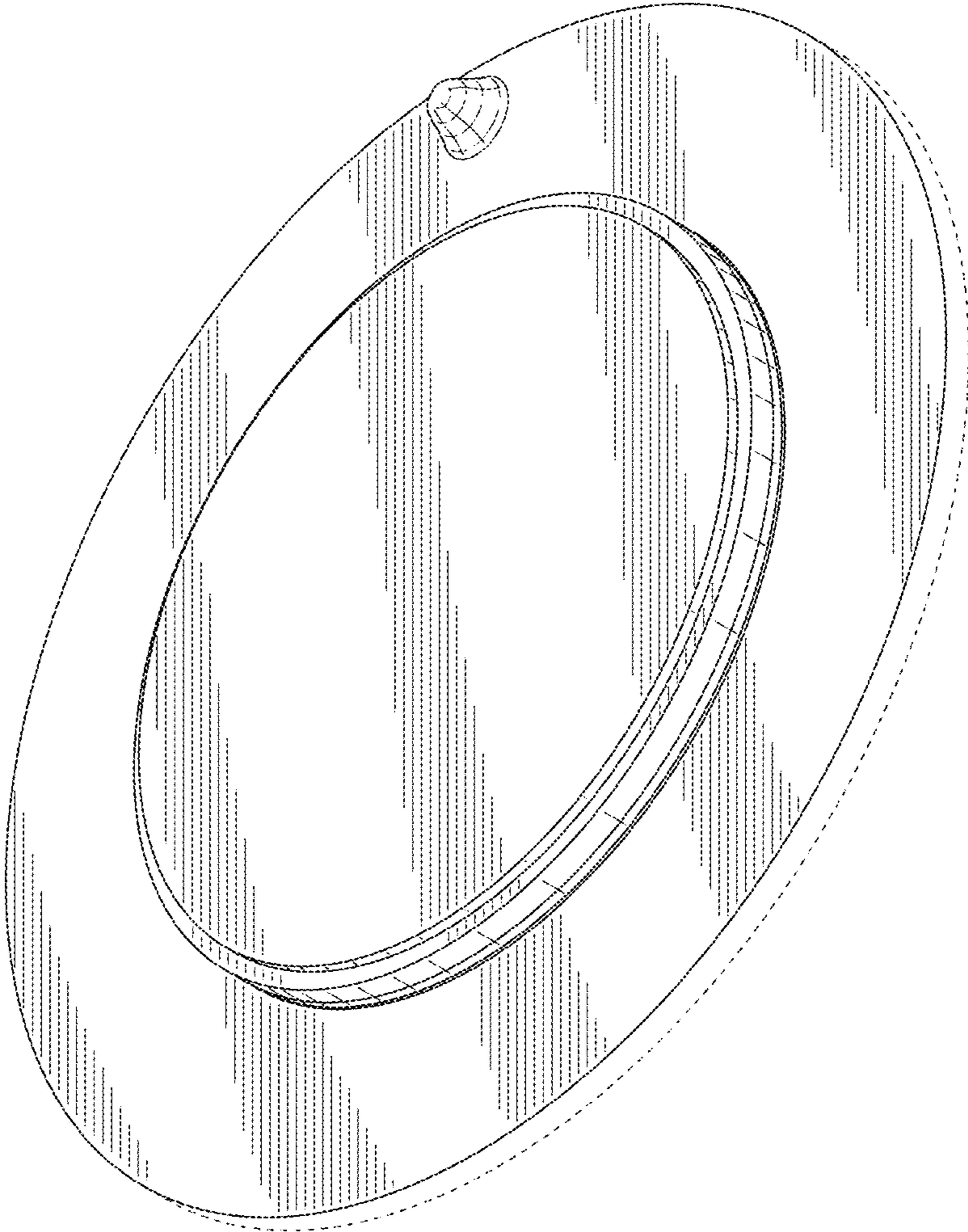


FIG. 16

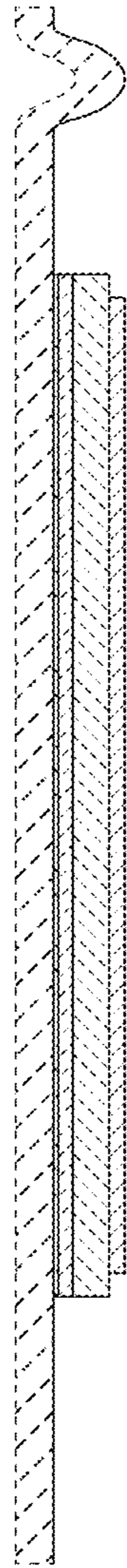


FIG. 17

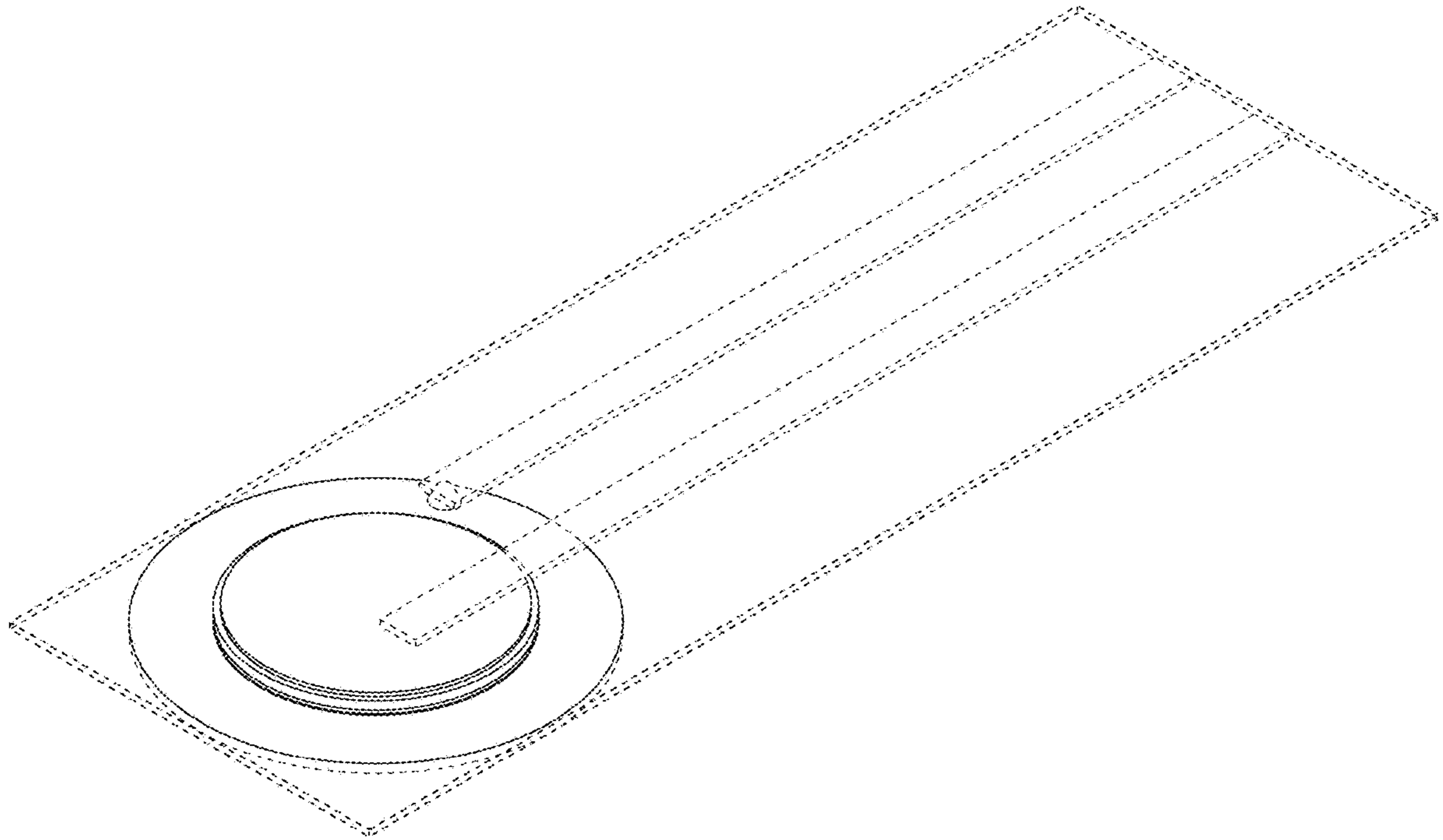


FIG. 18

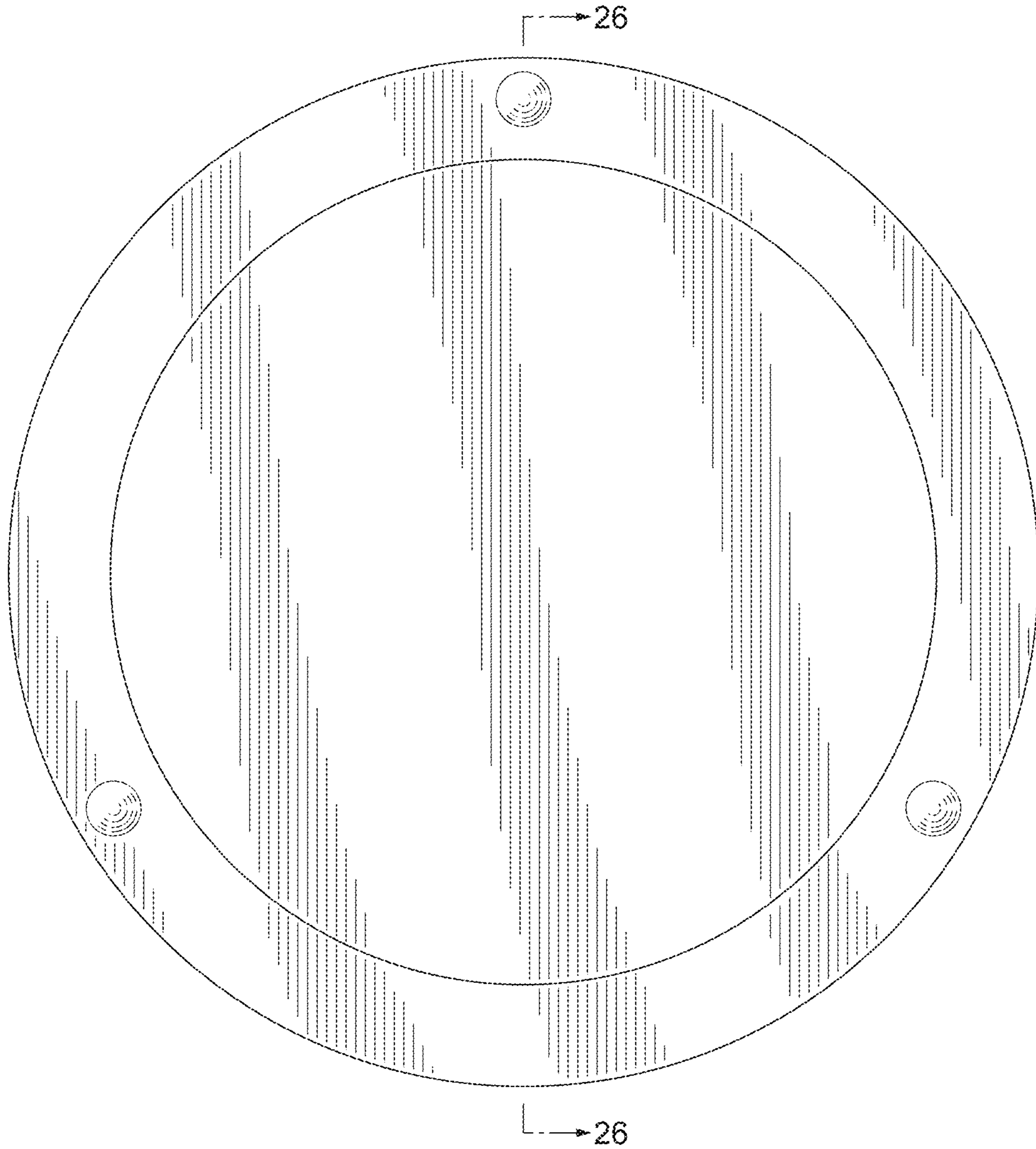


FIG. 19

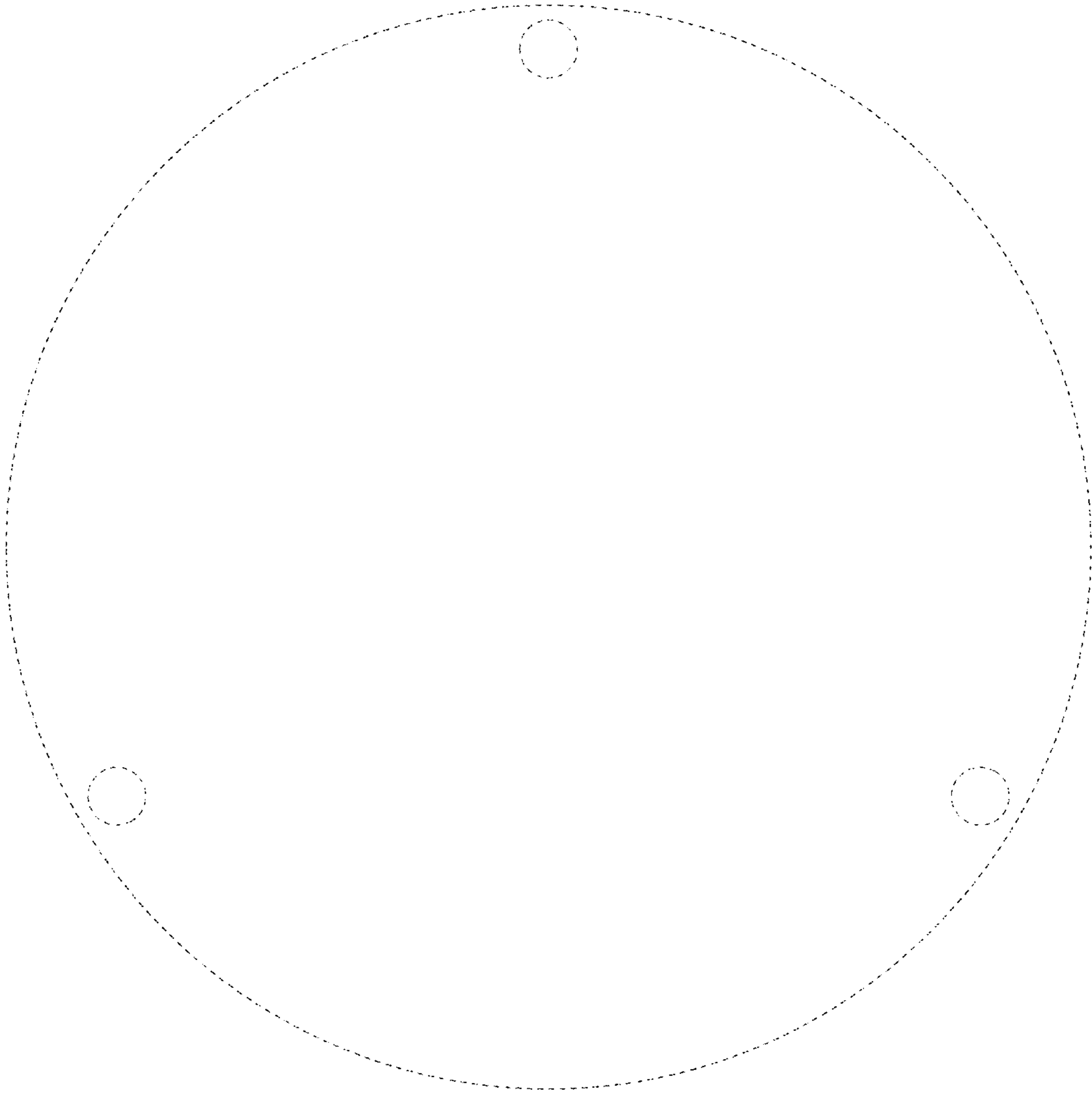


FIG. 20

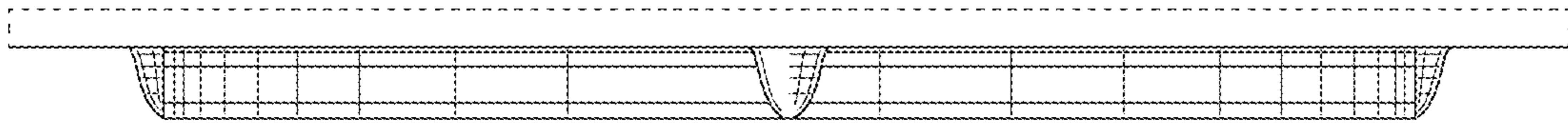


FIG. 21

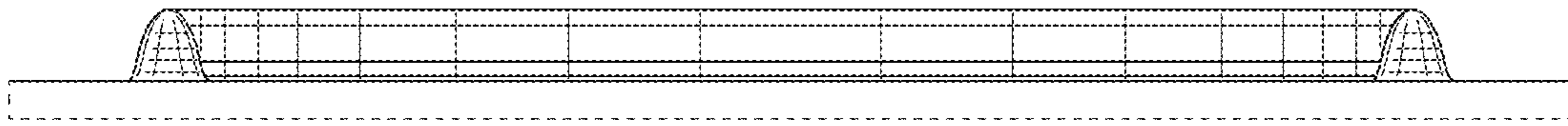


FIG. 22

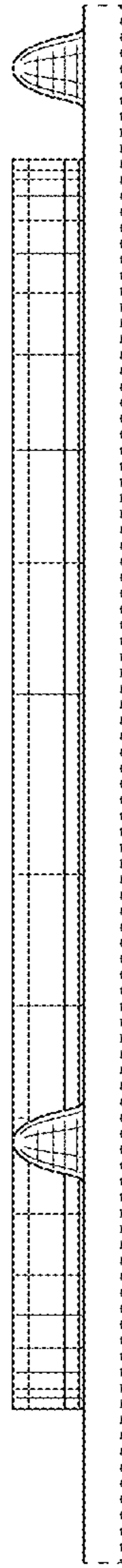


FIG. 23

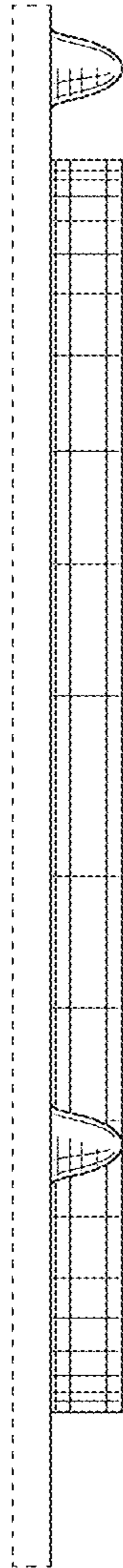


FIG. 24

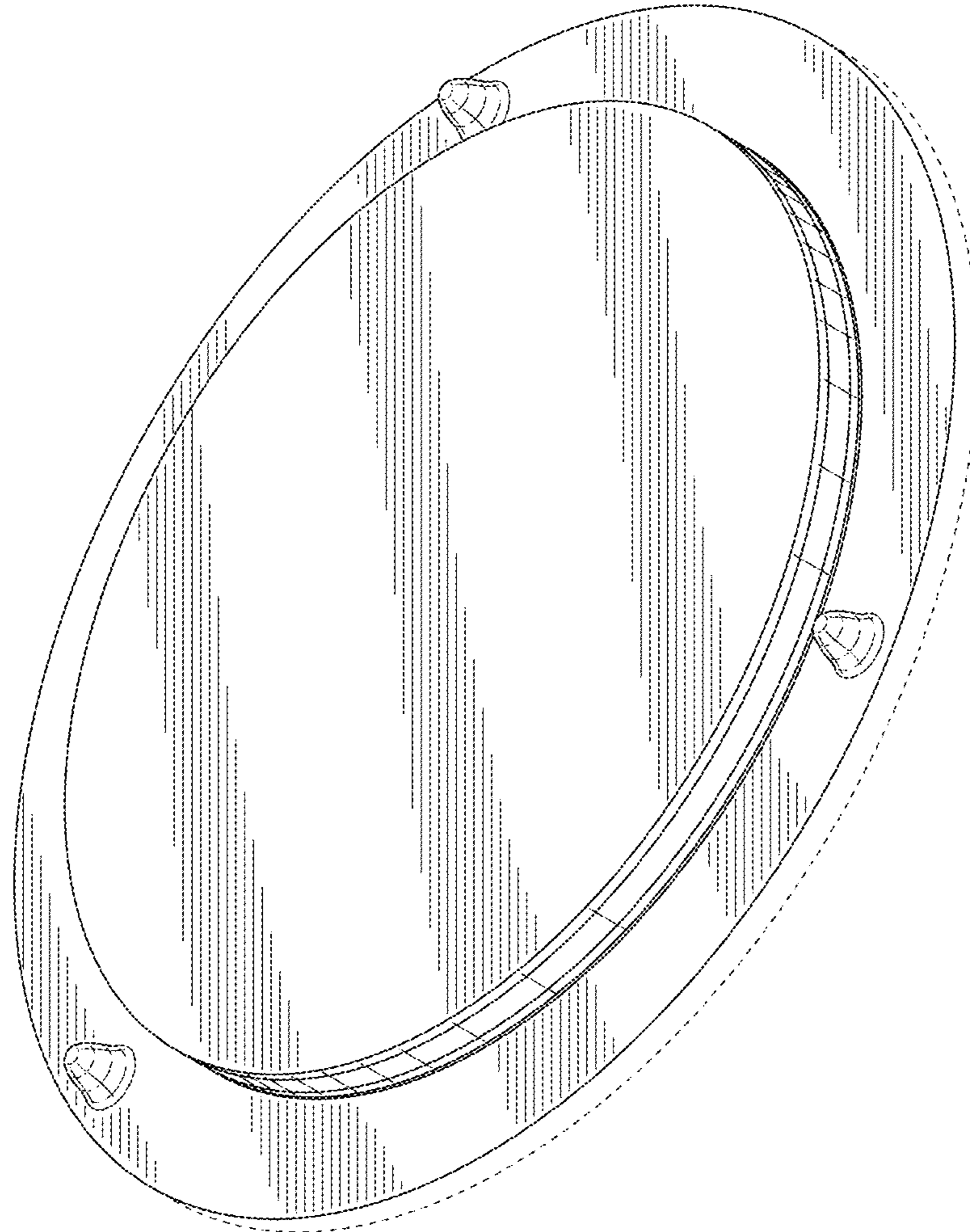


FIG. 25

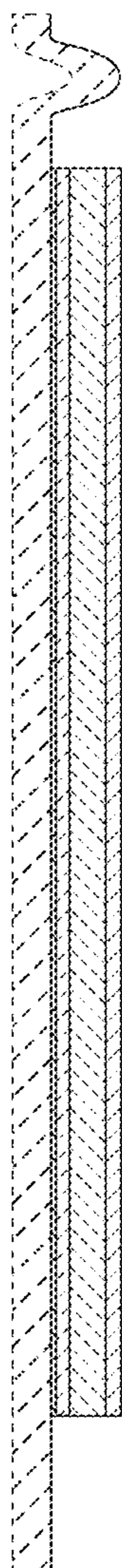


FIG. 26

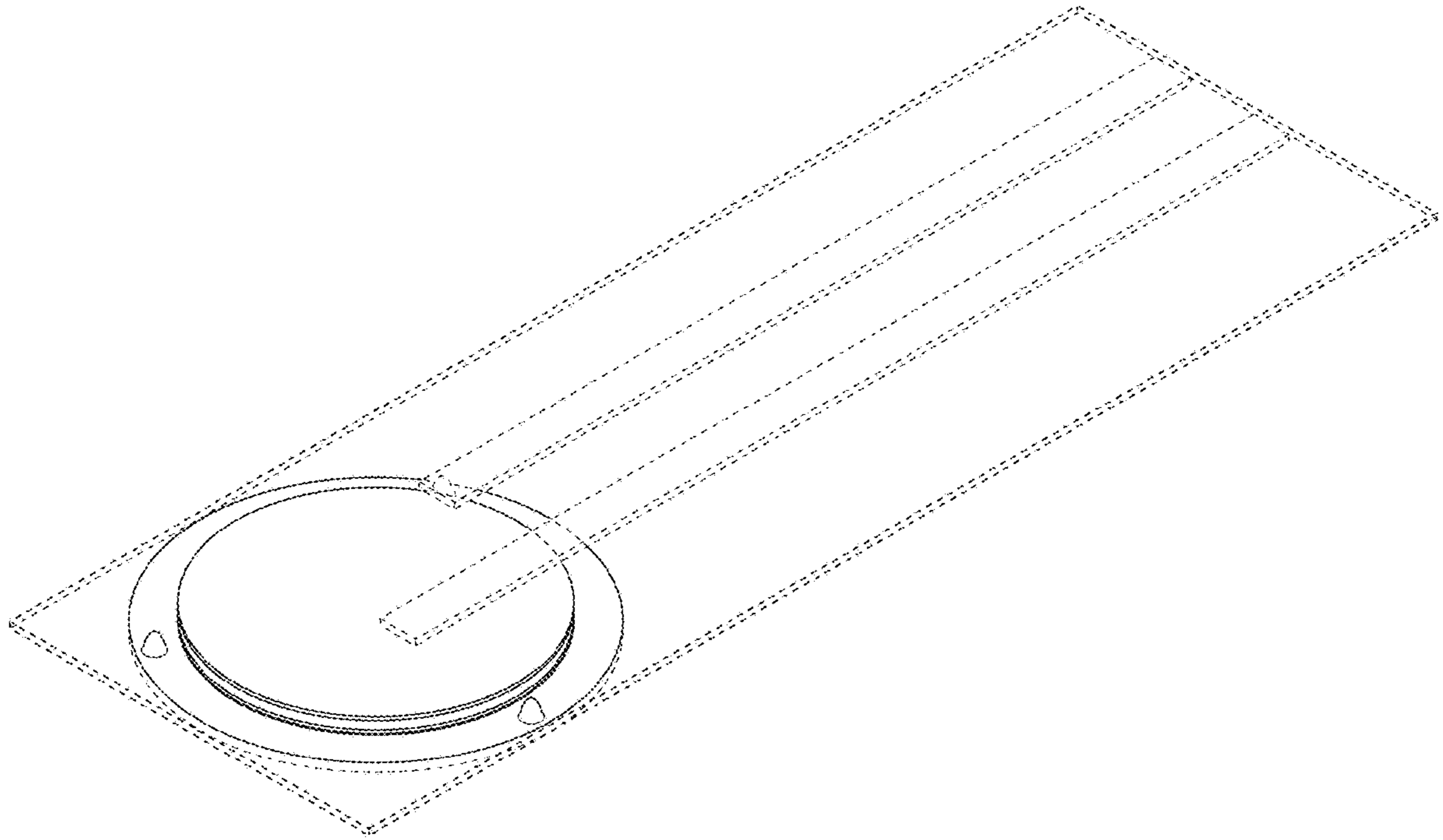


FIG. 27