

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

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(54) **RADIAL BEARING**

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

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B60G 2200/17; B60G 2200/46; B60G
2202/12; B60G 2202/135; B60G
2202/152; B60G 2202/24; B60G
2202/242; B60G 2202/31; B60G
2202/312; B60G 2202/314; B60G
2202/412; B60G 2202/413; B60G
2204/1244; B60G 2204/128; B60G
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2204/1431; B60G 2204/416; B60G
2204/4302; B60G 2204/44; B60G
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2206/0116; B60G 2206/014; B60G
2206/016; B60G 2206/10; B60G 2206/12;
B60G 2206/16; B60G 2206/424; B60G
2206/606; B60G 2206/7101; B60G
2206/7102; B60G 2206/80; B60G
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2206/8102; B60G 2206/811; B60G
2206/82; B60G 2206/8201; B60G
2206/8207; B60G 2206/83; B60G
2206/91; B60G 2300/02; B60G 2300/07;
B60G 2300/122; B60G 2300/124; B60G
2300/13; B60G 2300/402; B60G 2300/45;
B60G 2400/252; B60G 2400/51; B60G
2400/51222; B60G 2400/60; B60G
2401/172; B60G 2500/201; B60G
2800/01; B60G 2800/012; B60G
2800/162; B60G 2800/20; B60G 3/202;
B60G 5/00; B60G 7/00; B60G 7/005

See application file for complete search history.

Related U.S. Application Data

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(51) **LOC (14) Cl.** **15-03**

(52) **U.S. Cl.**
USPC **D15/143**

(58) **Field of Classification Search**
USPC D15/5, 138, 143; D12/400, 159, 161,
D12/206; D8/358, 359, 356; D14/484;
D3/24
CPC B60G 3/20; B60G 2206/122; B60G 7/02;
B60G 2200/156; B60G 2200/18; B60G
2204/143; B60G 7/001; B60G 7/008;
B60G 11/14; B60G 2200/1424; B60G
2200/144; B60G 2200/154; B60G
2204/148; B60G 2204/41; B60G 2500/30;
B60G 3/02; B60G 3/06; B60G 11/27;
B60G 11/48; B60G 13/003; B60G
13/005; B60G 13/16; B60G 15/02; B60G
15/06; B60G 15/062; B60G 15/065;
B60G 15/12; B60G 17/005; B60G
17/0155; B60G 17/016; B60G 17/017;
B60G 17/0272; B60G 17/052; B60G
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B60G 21/007; B60G 21/0551; B60G

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Primary Examiner — Khawaja Anwar

(74) *Attorney, Agent, or Firm* — BKRIIP LLC

(57) CLAIM

The ornamental design for a radial bearing, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a radial bearing including a bearing element having a plurality of grooves in a bearing surface thereof, according to a first embodiment;

FIG. 2 is a perspective cutaway view of the radial bearing shown in FIG. 1;

FIG. 3 is a side elevational view of the bearing element shown in FIGS. 1 and 2, with the opposing side elevational view being identical;

FIG. 4 is a side elevational view of the bearing element shown in FIGS. 1 and 2 and rotated 90° relative to the side elevational view shown in FIG. 3, with the opposing side elevational view being identical;

FIG. 5 is a perspective view of a radial bearing including a plurality of bearing elements that each have a plurality of grooves in a bearing surface thereof, according to a second embodiment;

FIG. 6 is a perspective cutaway view of the radial bearing shown in FIG. 5;

FIG. 7 is a side elevational view of one of the bearing elements shown in FIGS. 5 and 6, with the opposing side elevational view being identical;

FIG. 8 is a side elevational view of one of the bearing elements shown in FIGS. 5 and 6 and rotated 90° relative to the side elevational view shown in FIG. 7, with the opposing side elevational view being identical;

FIG. 9 is a perspective view of a radial bearing including a plurality of bearing elements that each have a plurality of grooves in a bearing surface thereof, according to a third embodiment;

FIG. 10 is a perspective cutaway view of the radial bearing shown in FIG. 9;

FIG. 11 is a side elevational view of one of the bearing elements shown in FIGS. 9 and 10, with the opposing side elevational view being identical;

FIG. 12 is a side elevational view of one of the bearing elements shown in FIGS. 9 and 10 and rotated 90° relative to the side elevational view shown in FIG. 11, with the opposing side elevational view being identical;

FIG. 13 is a perspective view of a radial bearing including a plurality of bearing elements that each have a plurality of grooves in a bearing surface thereof, according to a fourth embodiment;

FIG. 14 is a perspective cutaway view of the radial bearing shown in FIG. 13;

FIG. 15 is a side elevational view of one of the bearing elements shown in FIGS. 13 and 14, with the opposing side elevational view being identical;

FIG. 16 is a side elevational view of one of the bearing elements shown in FIGS. 13 and 14 and rotated 90° relative to the side elevational view shown in FIG. 15, with the opposing side elevational view being identical;

FIG. 17 is a perspective view of a radial bearing including a plurality of first bearing elements that each have a plurality of grooves in a bearing surface thereof and a second bearing element that does not include any grooves in a bearing surface thereof, according to a fifth embodiment;

FIG. 18 is a perspective cutaway view of the radial bearing shown in FIG. 17;

FIG. 19 is a side elevational view of one of the first bearing elements shown in FIGS. 17 and 18, with the opposing side elevational view being identical;

FIG. 20 is a side elevational view of one of the first bearing elements shown in FIGS. 17 and 18 and rotated 90° relative to the side elevational view shown in FIG. 19, with the opposing side elevational view being identical;

FIG. 21 is a side elevational view of the second bearing element shown in FIGS. 17 and 18, with the opposing side elevational view being identical;

FIG. 22 is a side elevational view of the second bearing element shown in FIGS. 17 and 18, and rotated 90° relative to the side elevational view shown in FIG. 21, with the opposing side elevational view being identical;

FIG. 23 is a perspective view of a radial bearing including a plurality of first bearing elements that each have a plurality of grooves in a bearing surface thereof and a plurality of second bearing elements that do not include any grooves in a bearing surface thereof, according to a sixth embodiment;

FIG. 24 is a perspective cutaway view of the radial bearing shown in FIG. 23;

FIG. 25 is a side elevational view of one of the first bearing elements shown in FIGS. 23 and 24, with the opposing side elevational view being identical;

FIG. 26 is a side elevational view of one of the first bearing elements shown in FIGS. 23 and 34 and rotated 90° relative to the side elevational view shown in FIG. 25, with the opposing side elevational view being identical;

FIG. 27 is a side elevational view of one of the second bearing elements shown in FIGS. 23 and 24, with the opposing side elevational view being identical;

FIG. 28 is a side elevational view of one of the second bearing elements shown in FIGS. 23 and 34, and rotated 90° relative to the side elevational view shown in FIG. 27, with the opposing side elevational view being identical;

FIG. 29 is a perspective view of a radial bearing including a plurality of bearing elements that each have a plurality of grooves in a bearing surface thereof, according to an seventh embodiment;

FIG. 30 is a perspective cutaway view of the radial bearing shown in FIG. 29;

FIG. 31 is a side elevational view of one of the bearing elements shown in FIGS. 29 and 30, with the opposing side elevational view being identical;

FIG. 32 is a side elevational view of one of the bearing elements shown in FIGS. 29 and 30 and rotated 90° relative to the side elevational view shown in FIG. 31, with the opposing side elevational view being identical;

FIG. 33 is a perspective view of a radial bearing including a plurality of bearing elements that each have a plurality of grooves in a bearing surface thereof, according to an eighth embodiment;

FIG. 34 is a perspective cutaway view of the radial bearing shown in FIG. 33;

FIG. 35 is a side elevational view of one of the bearing elements shown in FIGS. 33 and 34, with the opposing side elevational view being identical; and,

FIG. 36 is a side elevational view of one of the bearing elements shown in FIGS. 33 and 34 and rotated 90° relative to the side elevational view shown in FIG. 35, with the opposing side elevational view being identical.

The broken lines shown in the drawings are for illustrative purposes only and form no part of the claimed design.

1 Claim, 26 Drawing Sheets

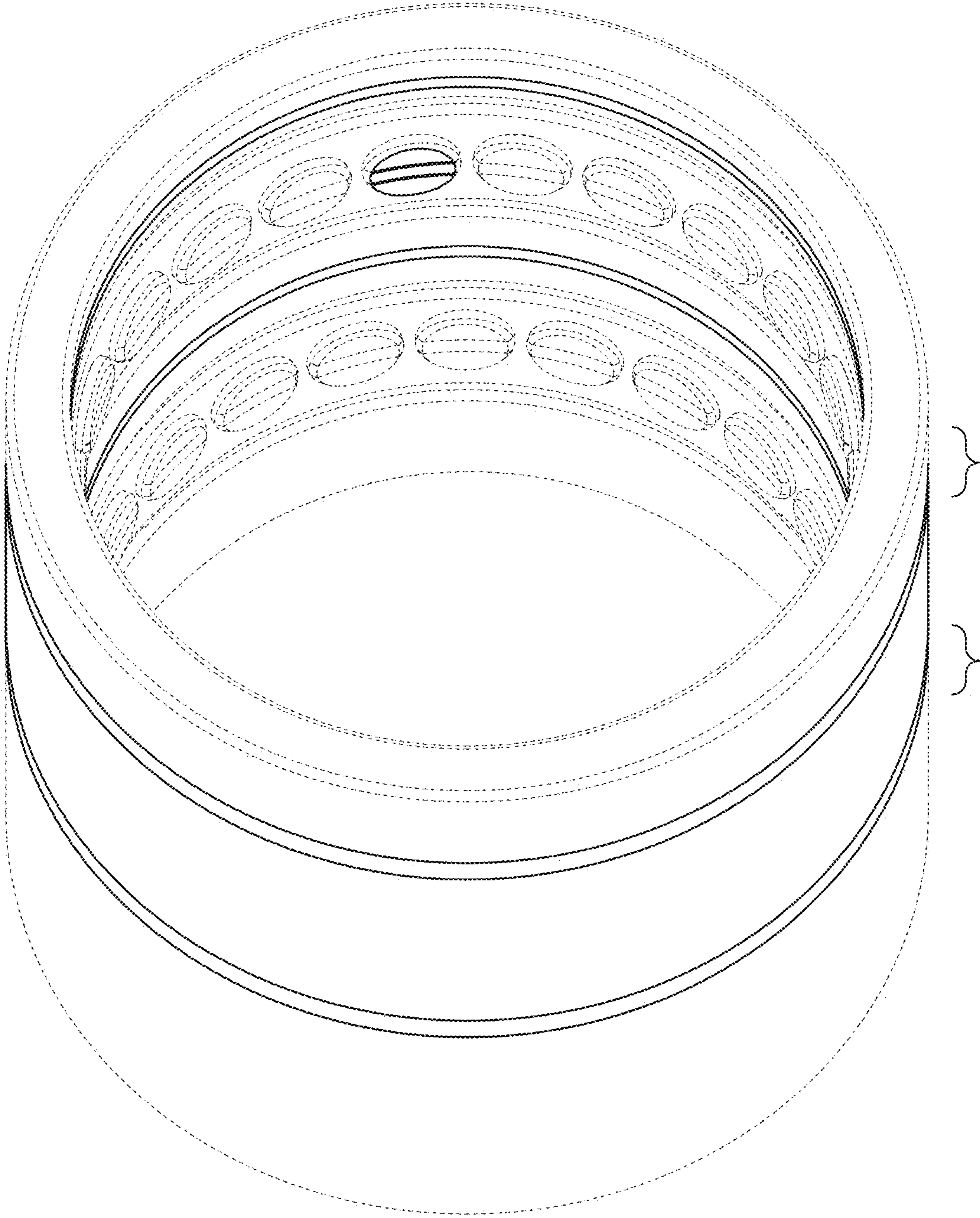


FIG. 1

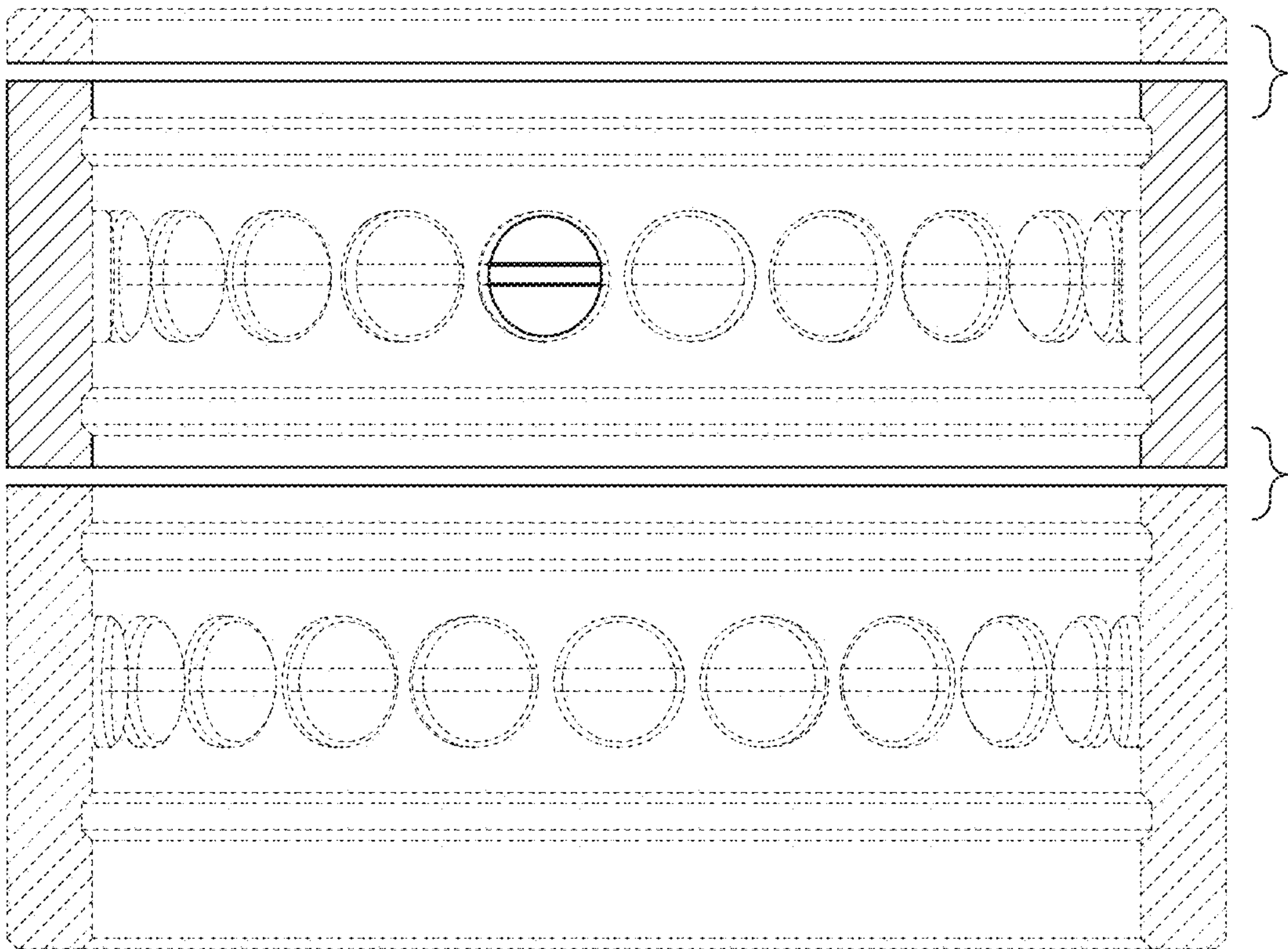


FIG. 2

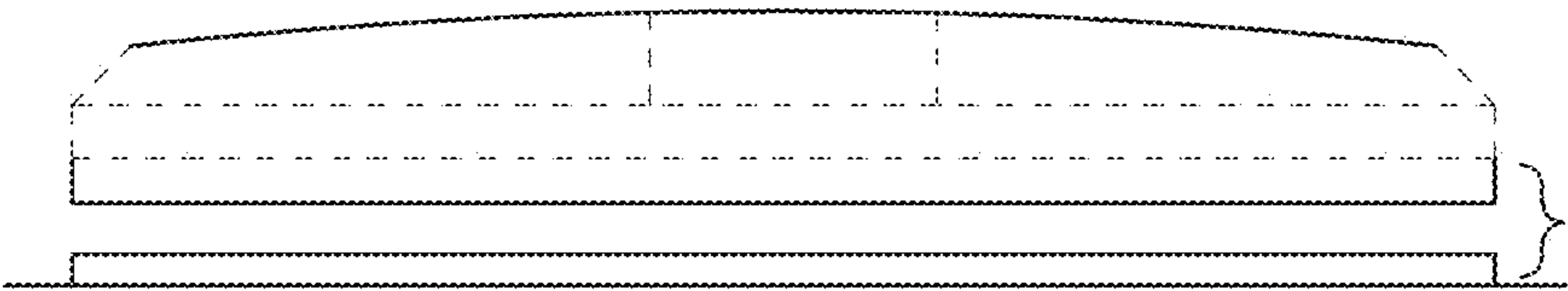


FIG. 3

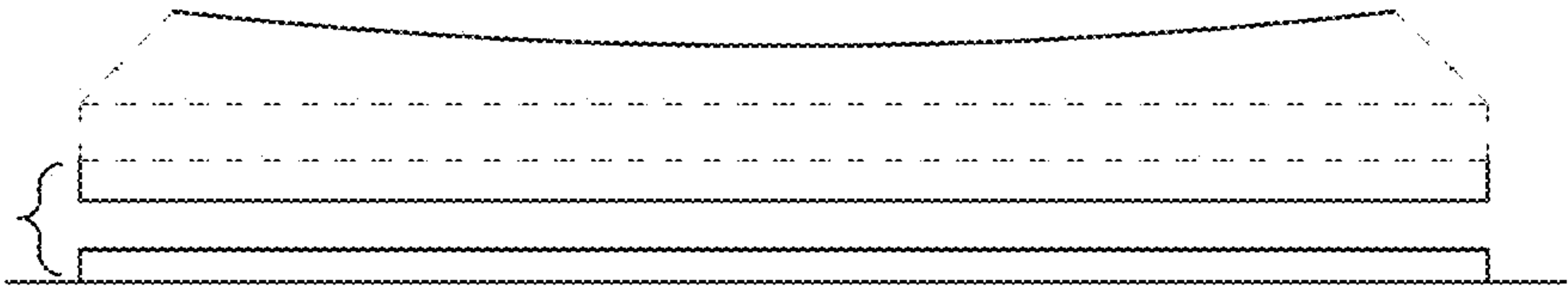


FIG. 4

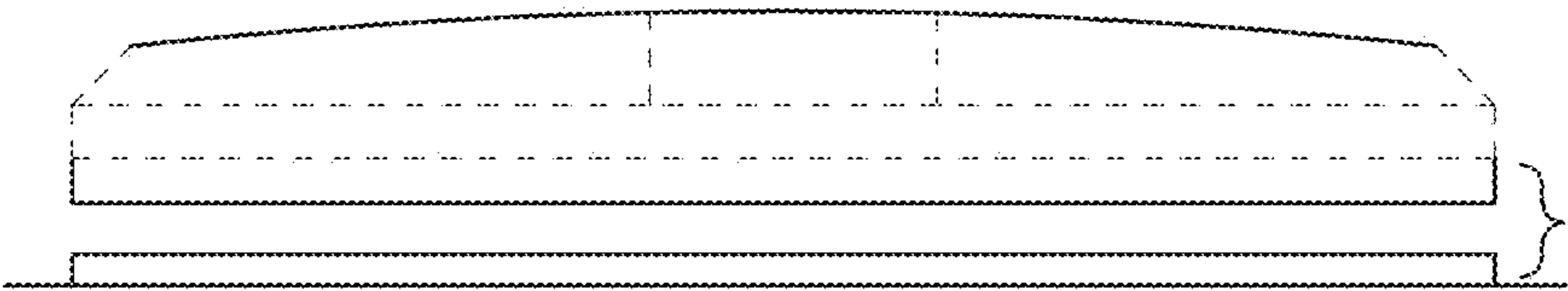


FIG. 7

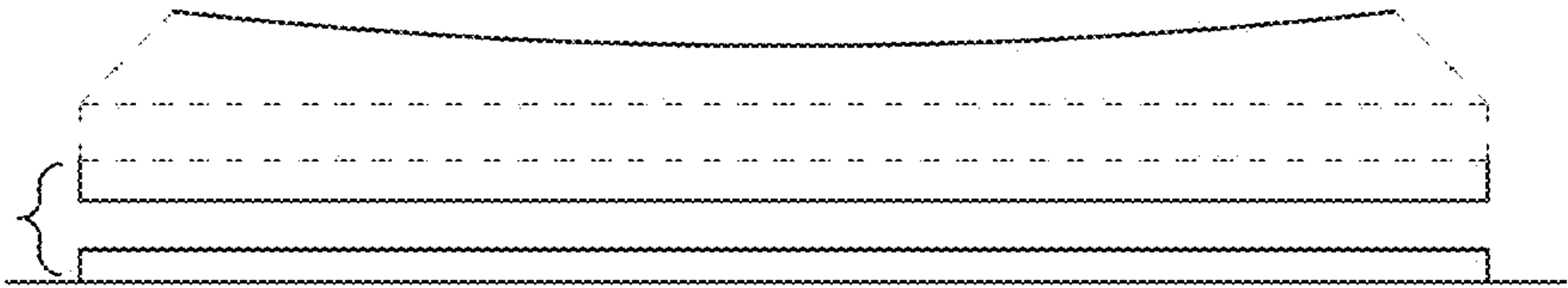


FIG. 8

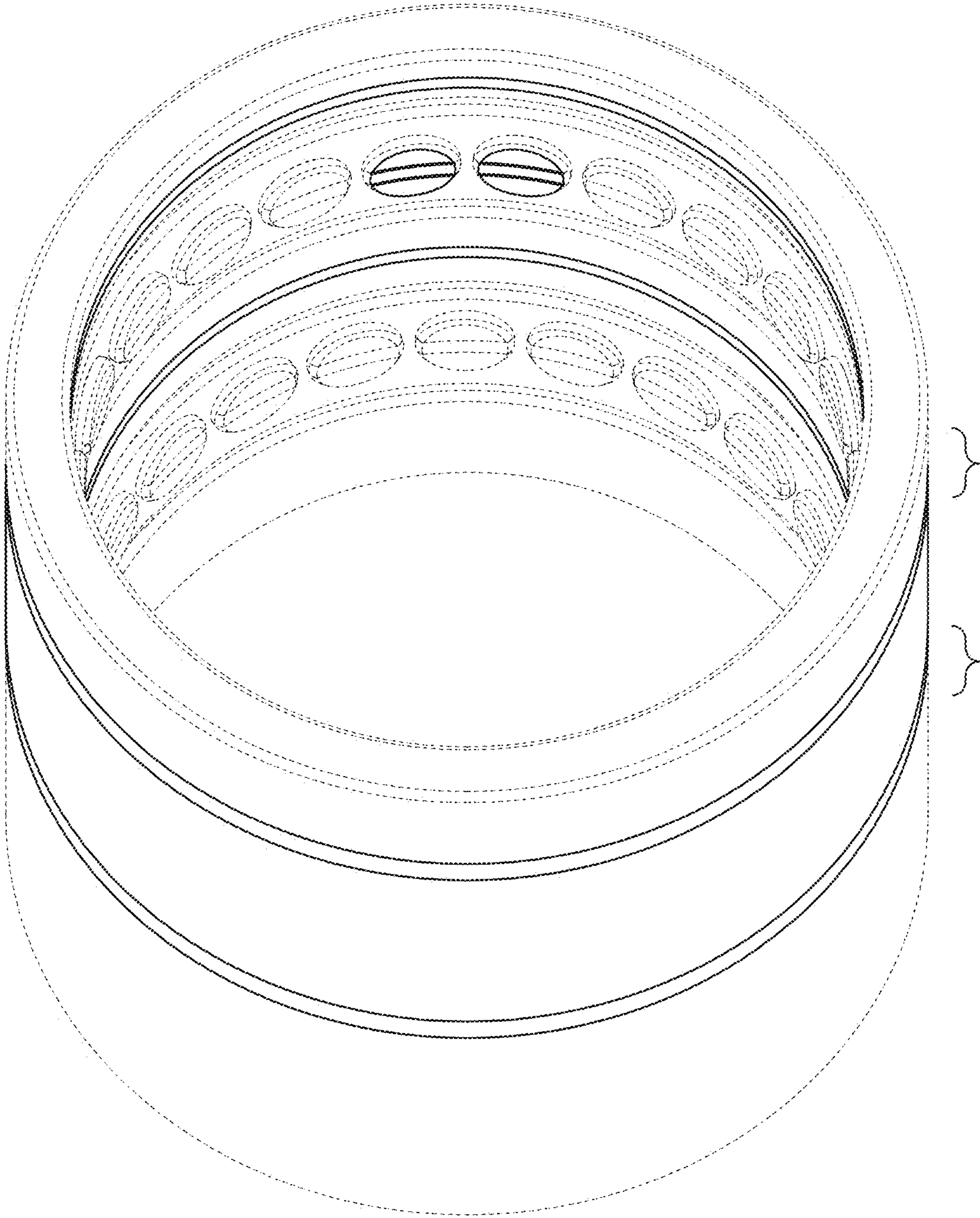


FIG. 9

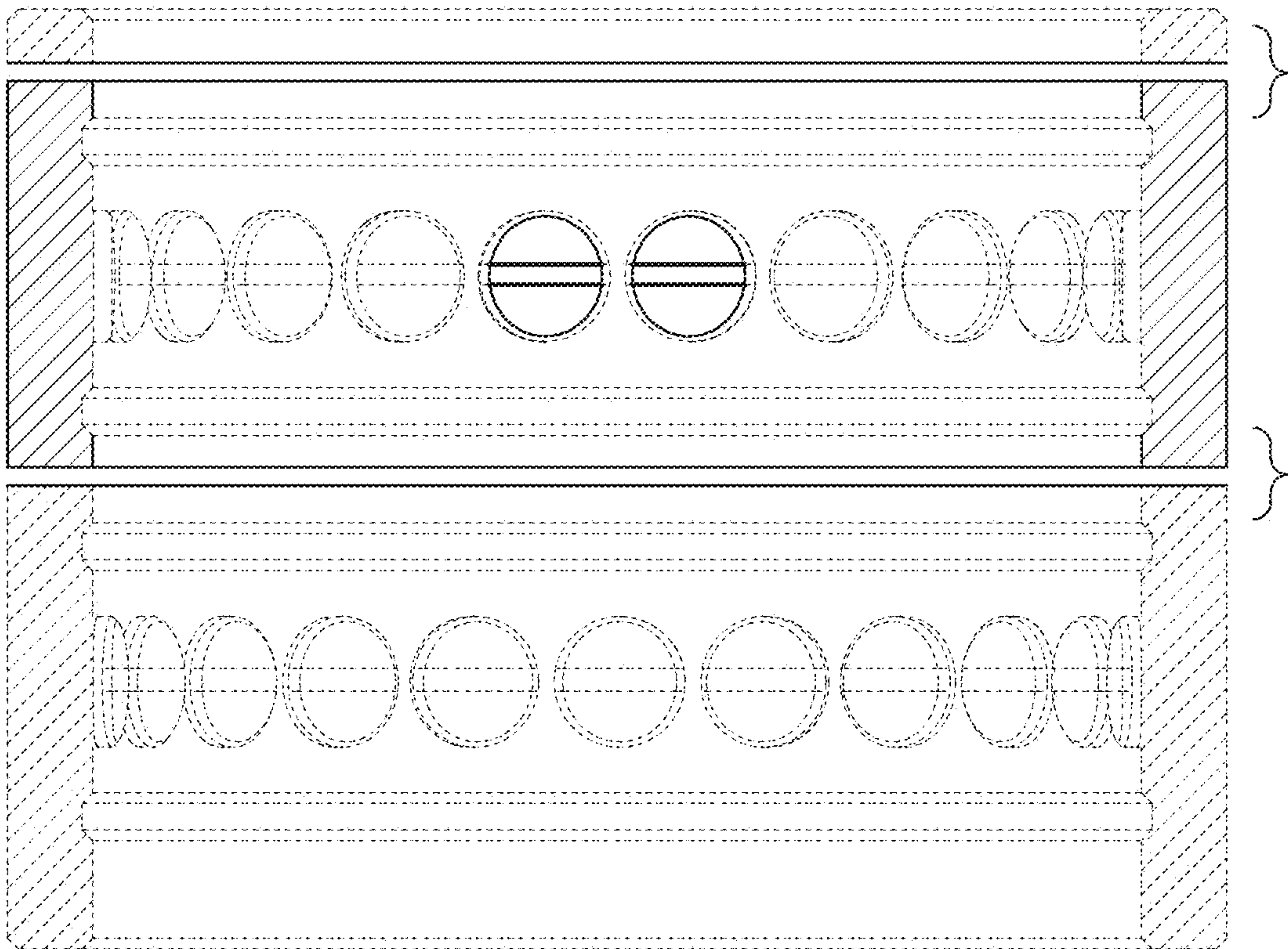


FIG. 10

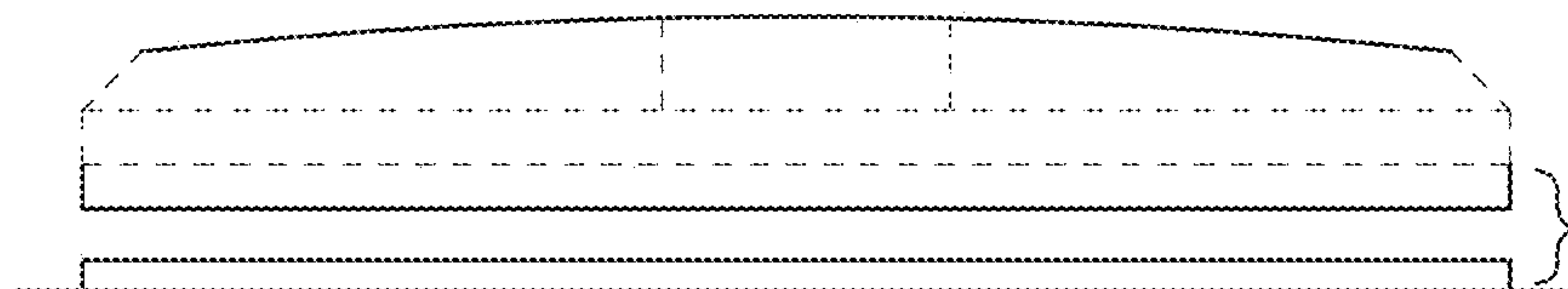


FIG. 11

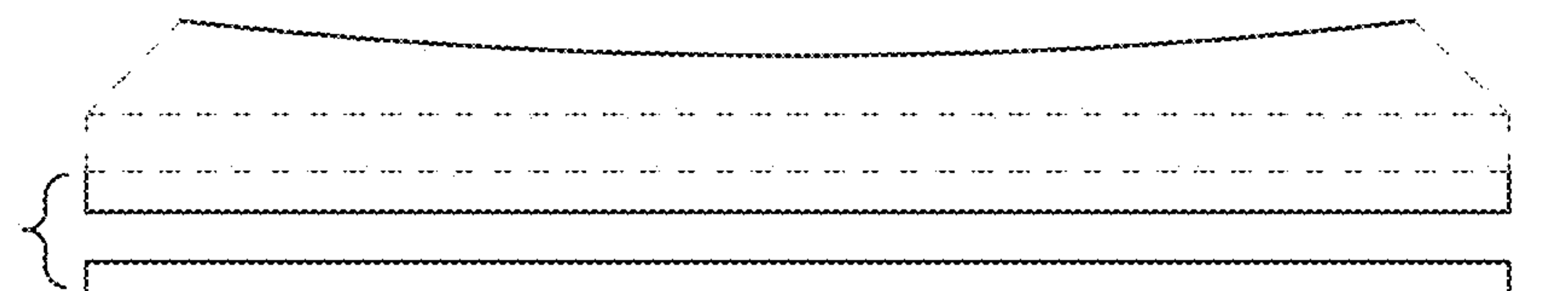


FIG. 12

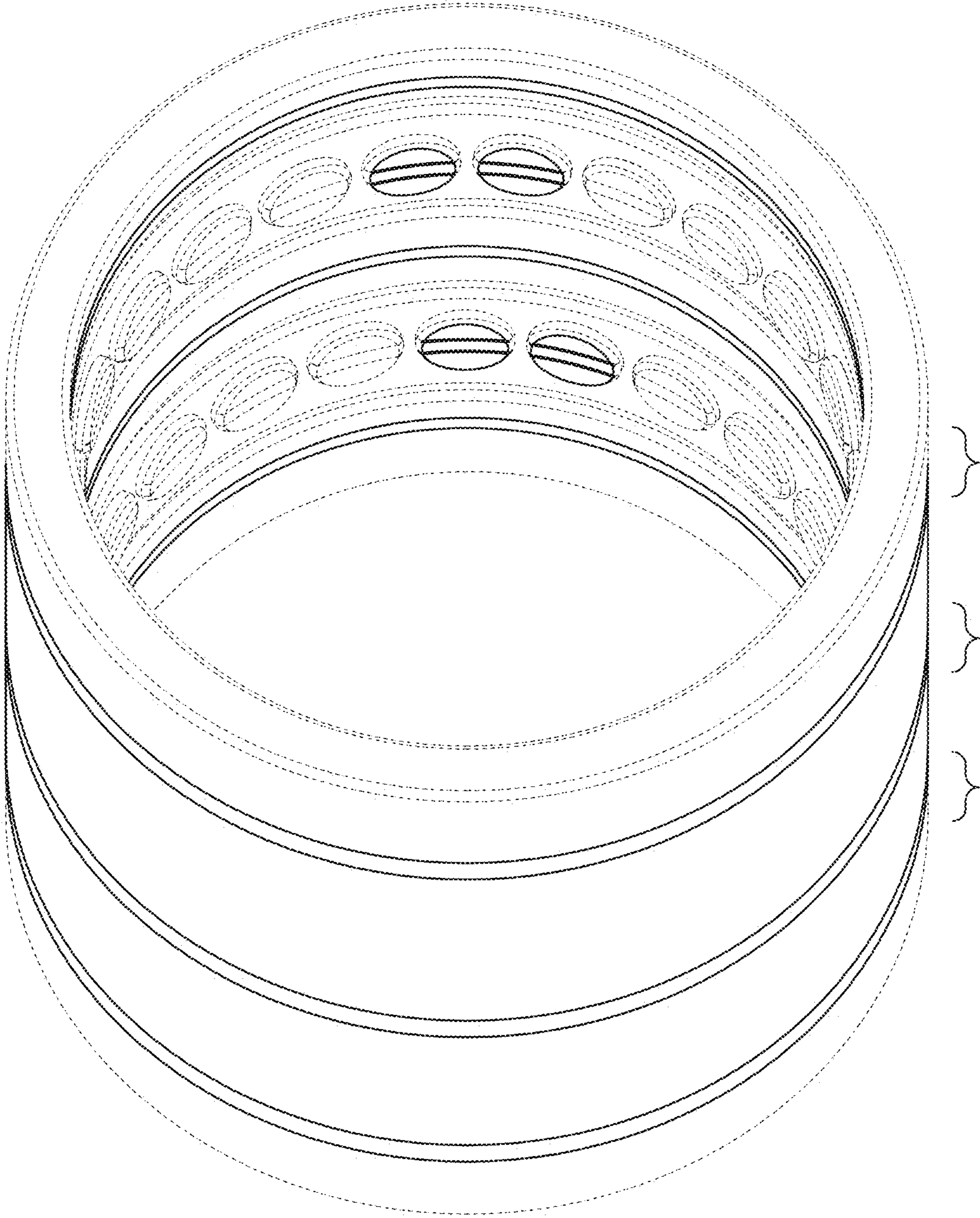


FIG. 13

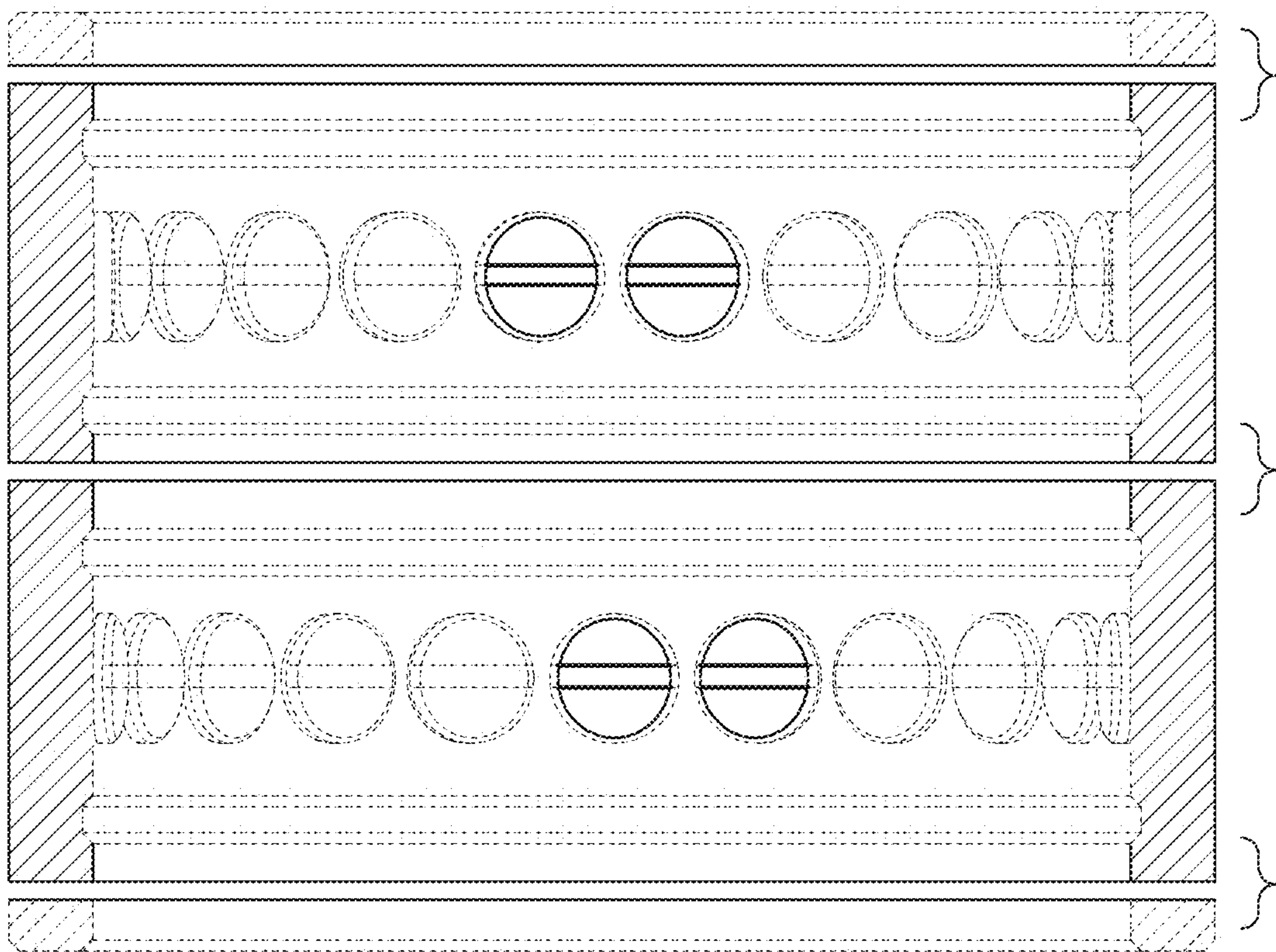


FIG. 14

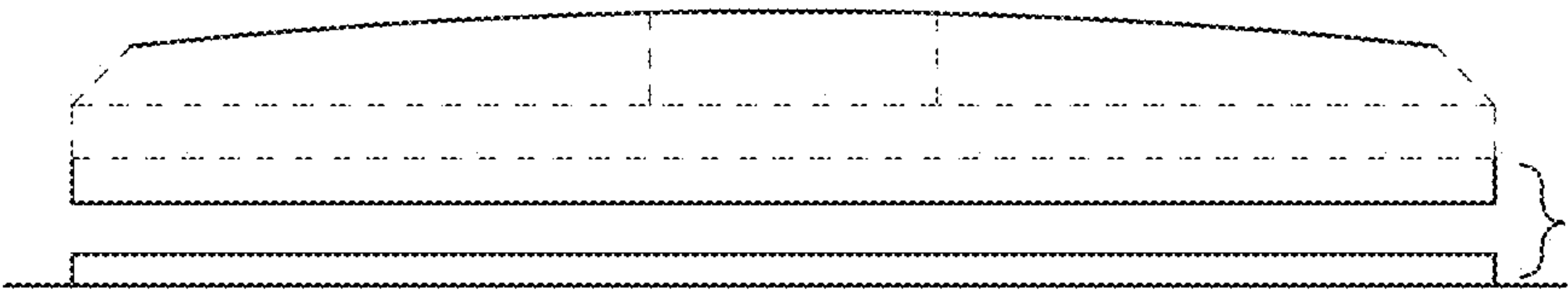


FIG. 15

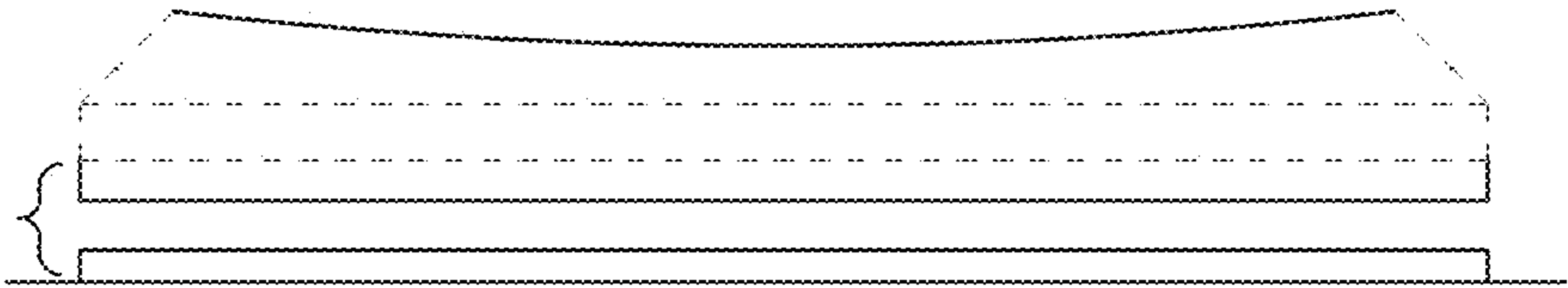


FIG. 16

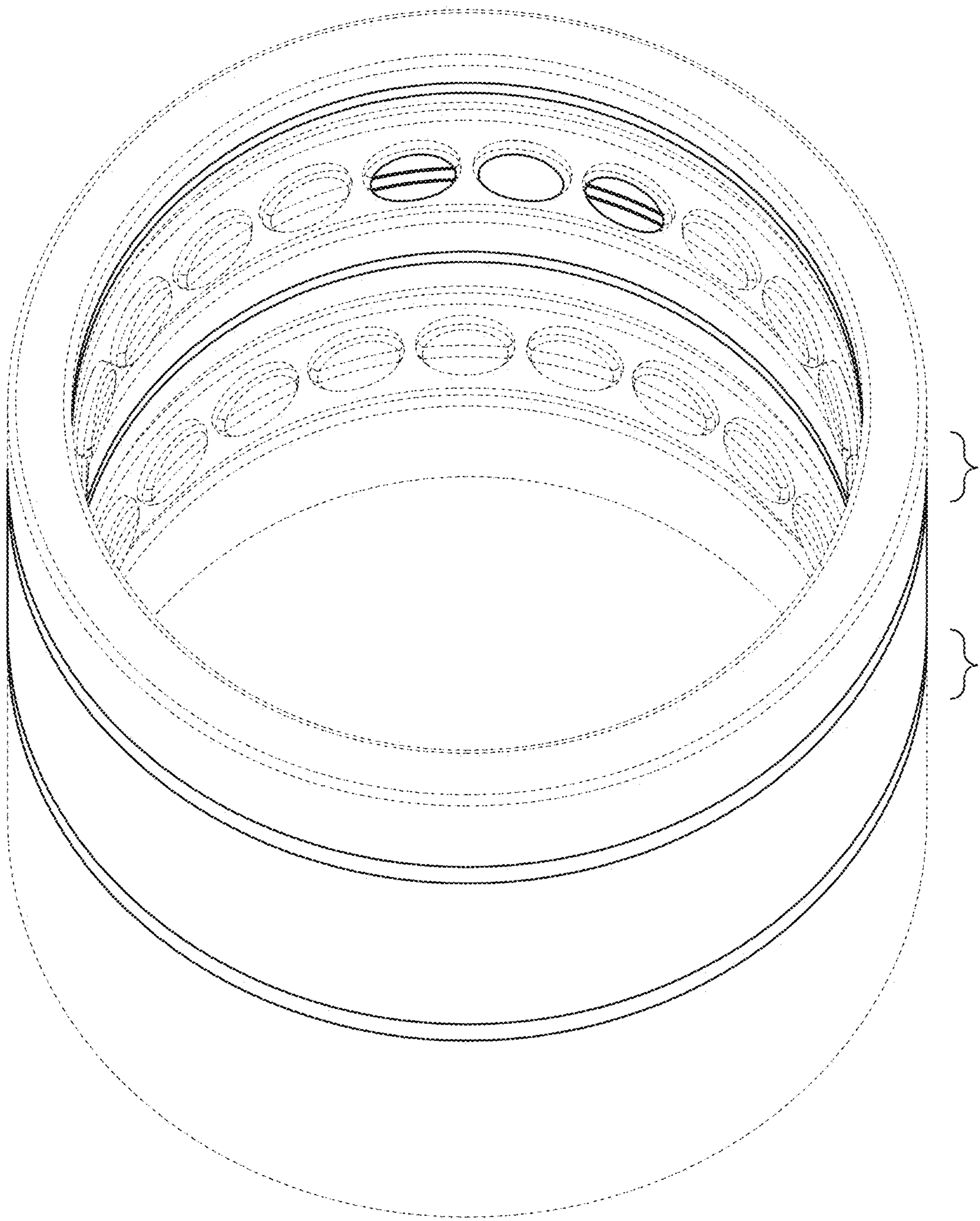


FIG. 17

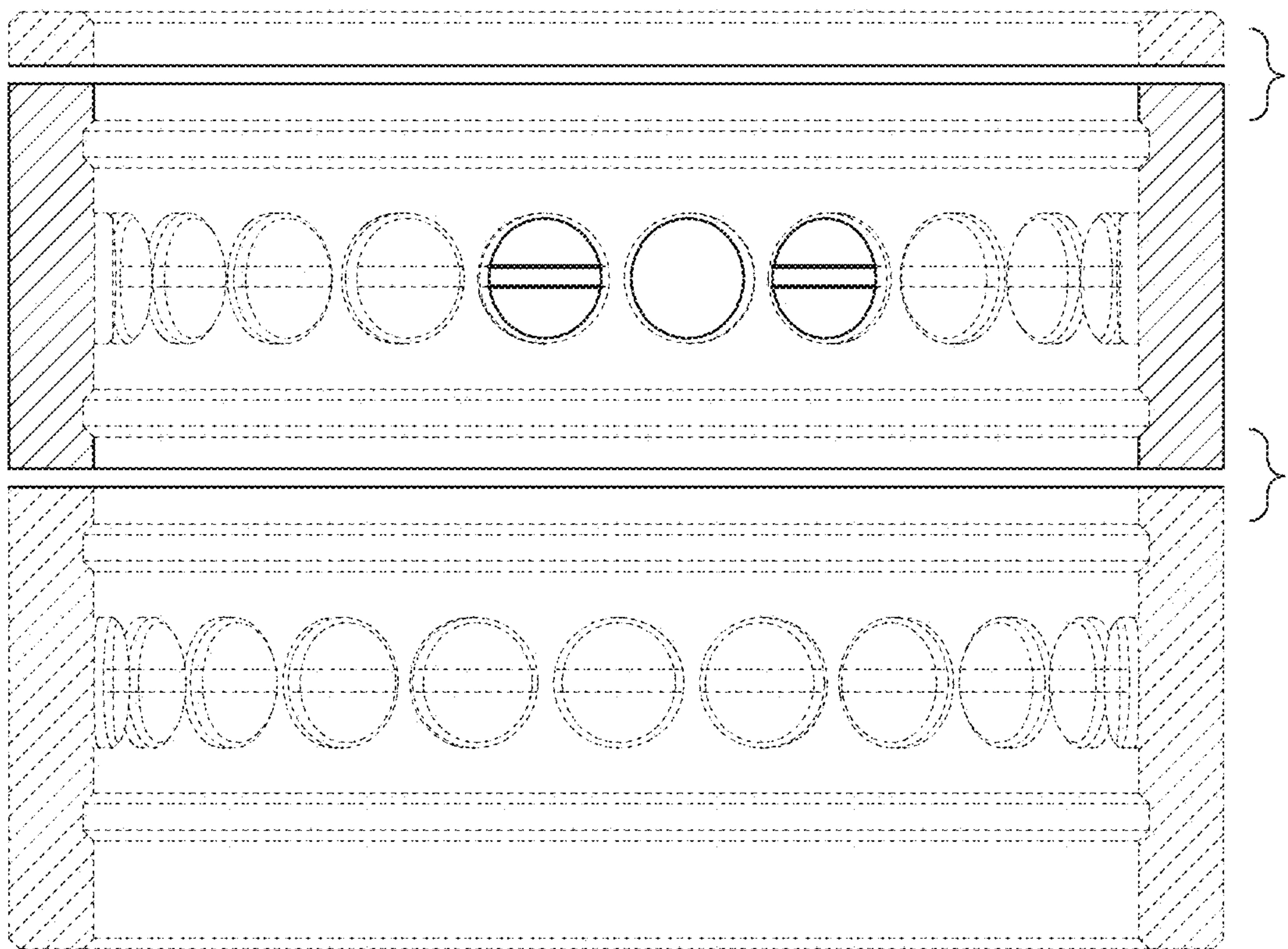


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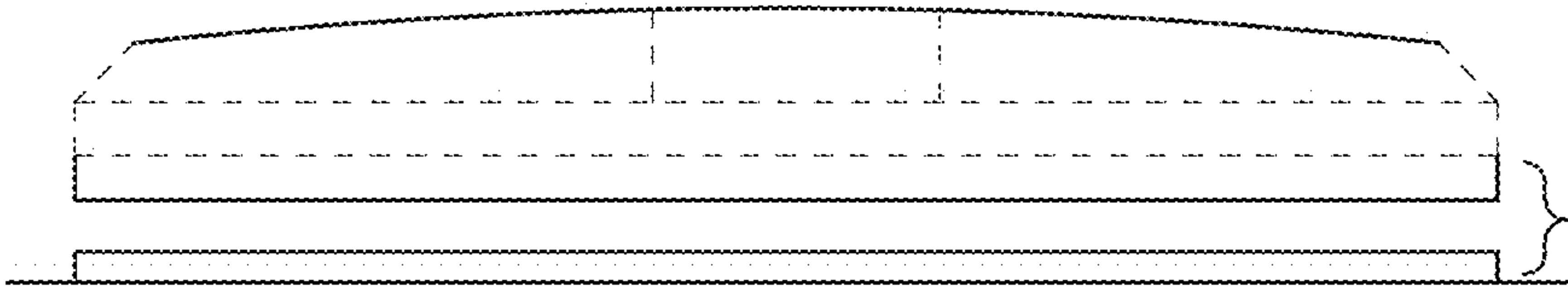


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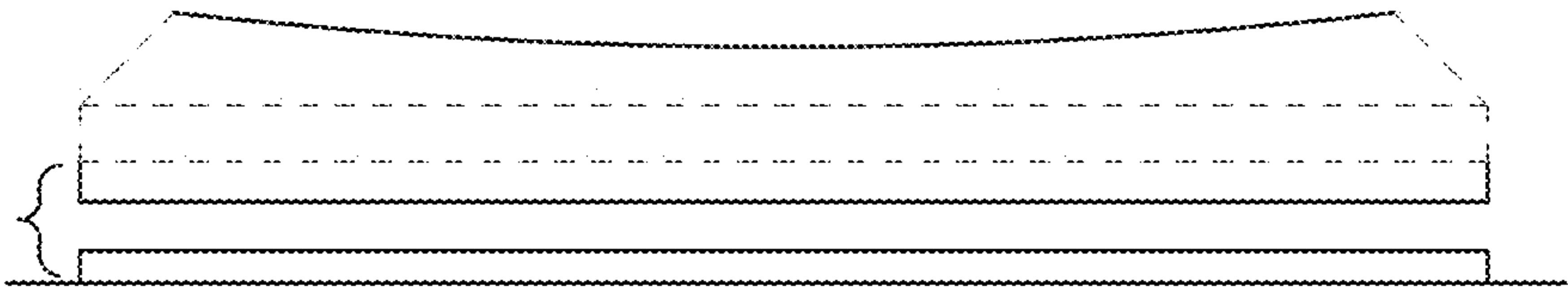


FIG. 20

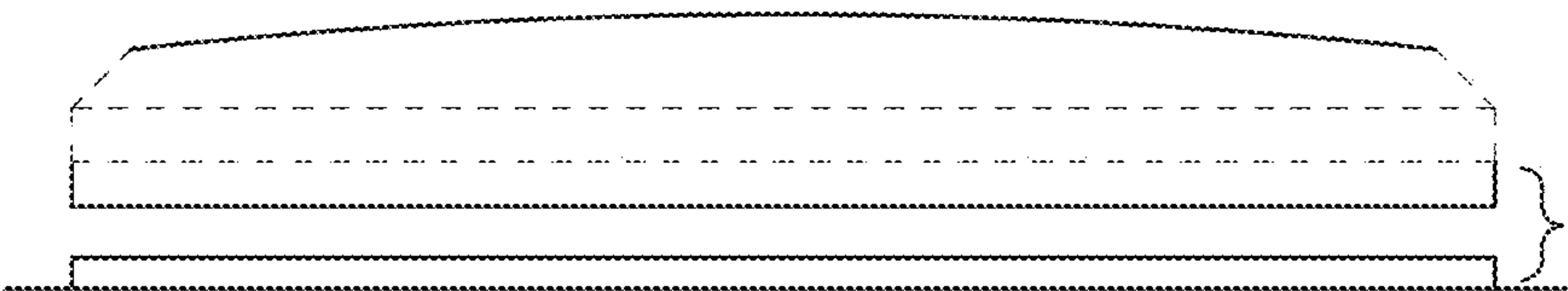


FIG. 21

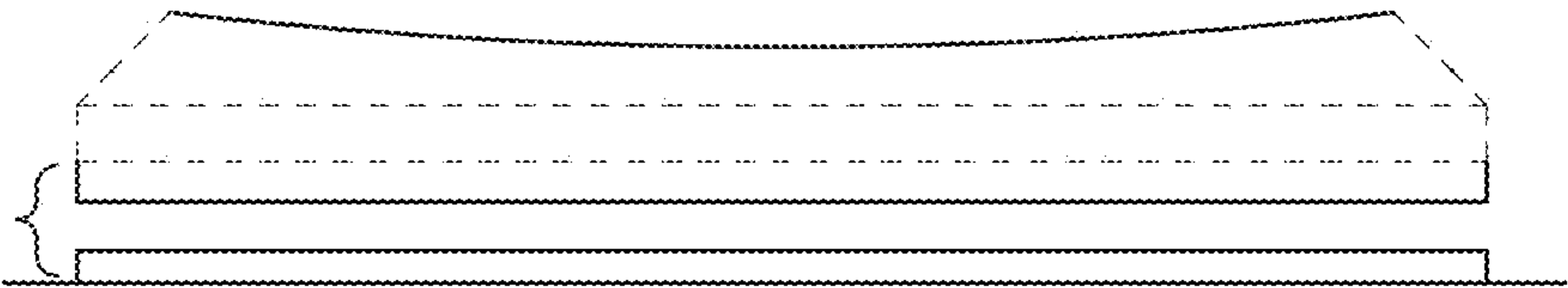


FIG. 22

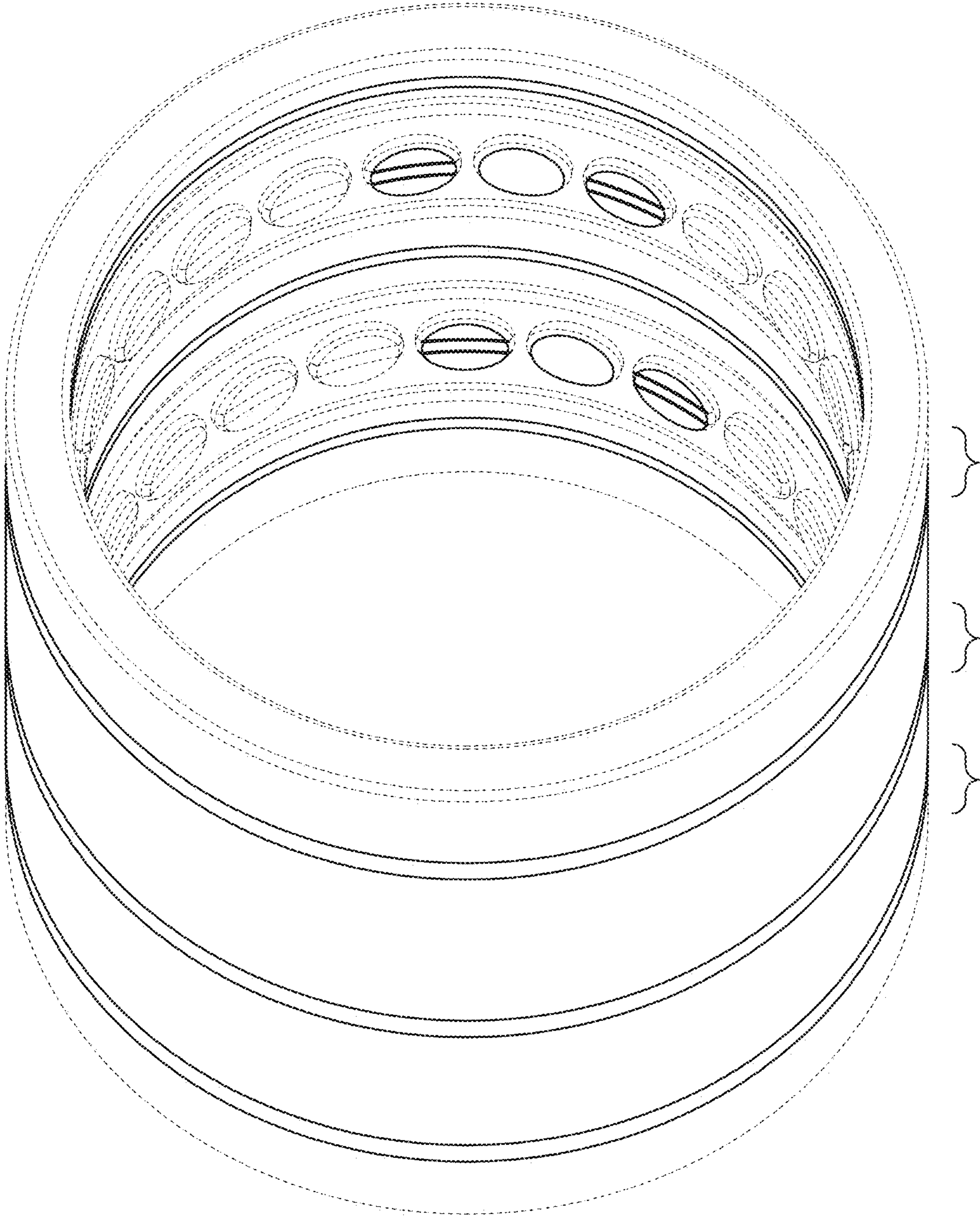


FIG. 23

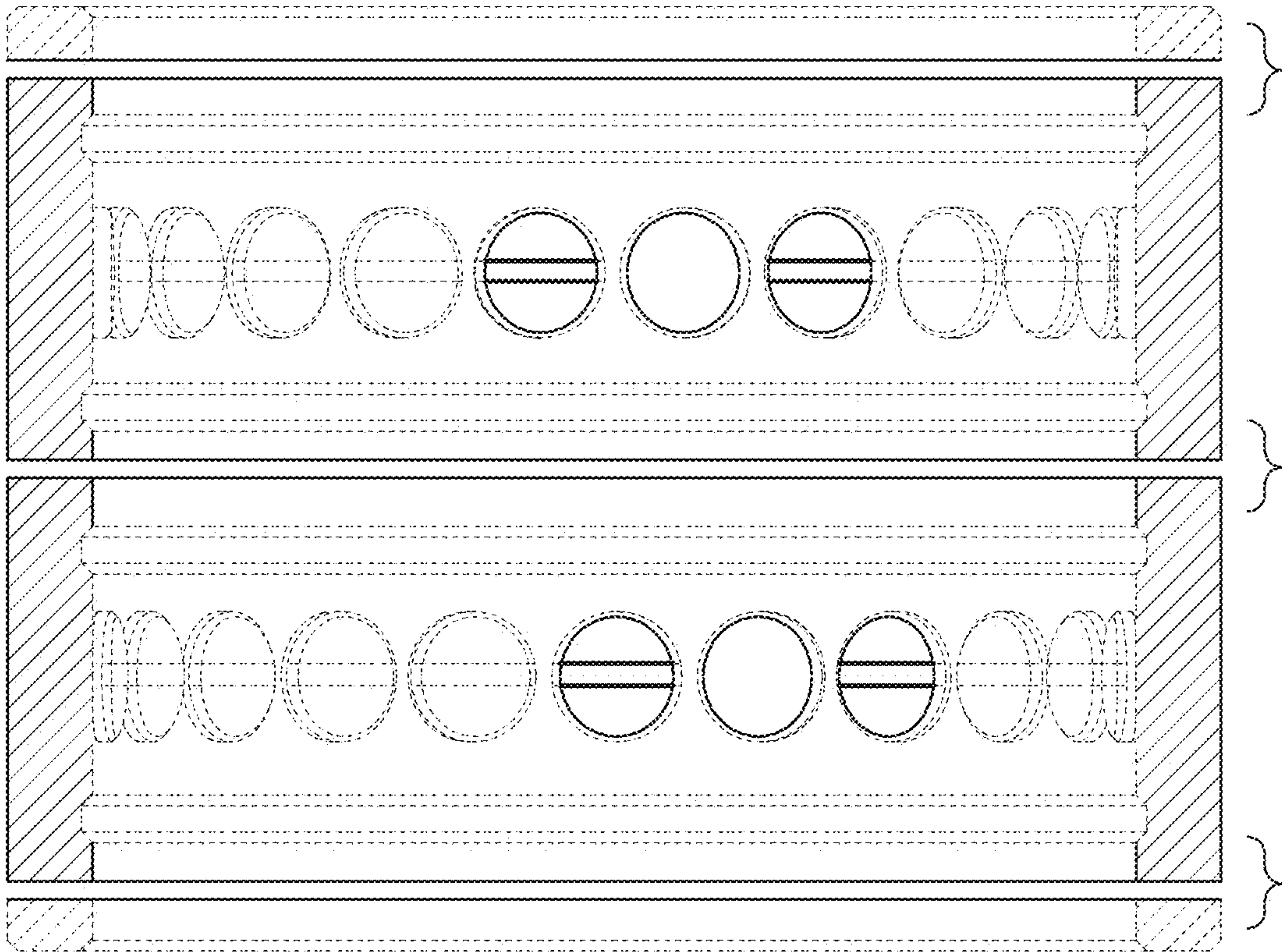


FIG. 24

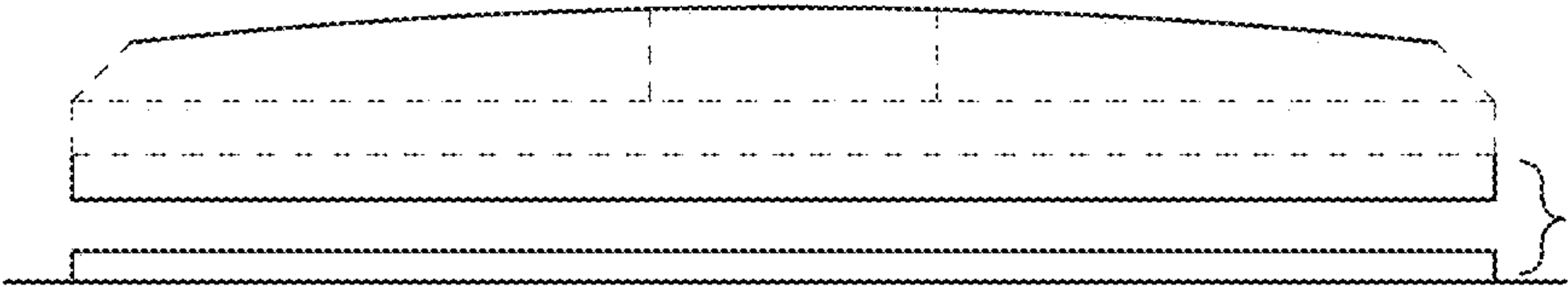


FIG. 25

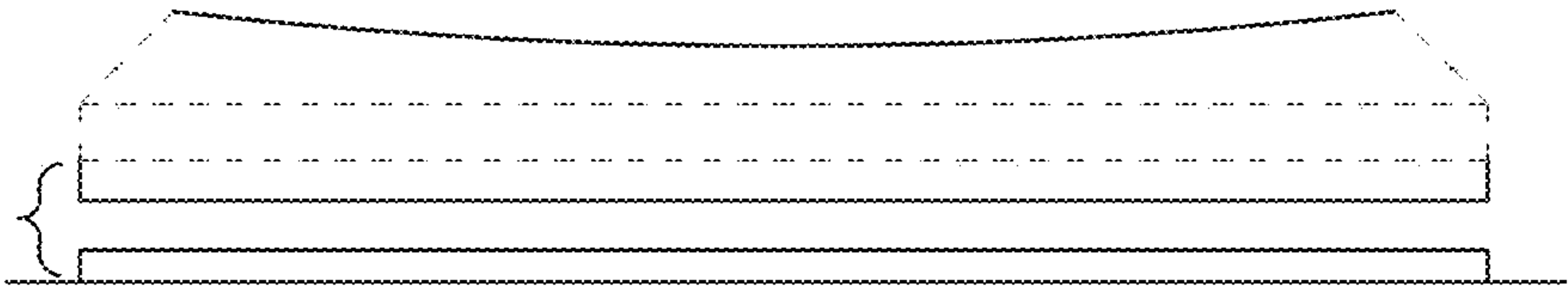


FIG. 26

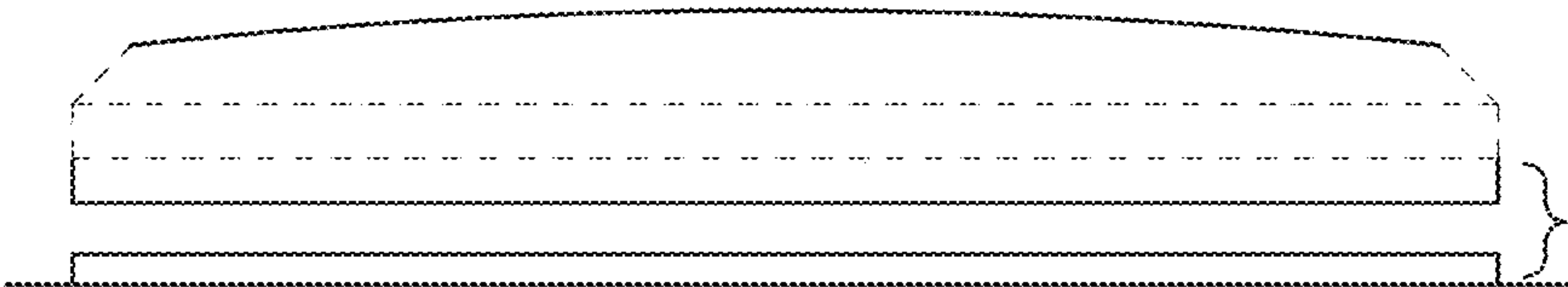


FIG. 27

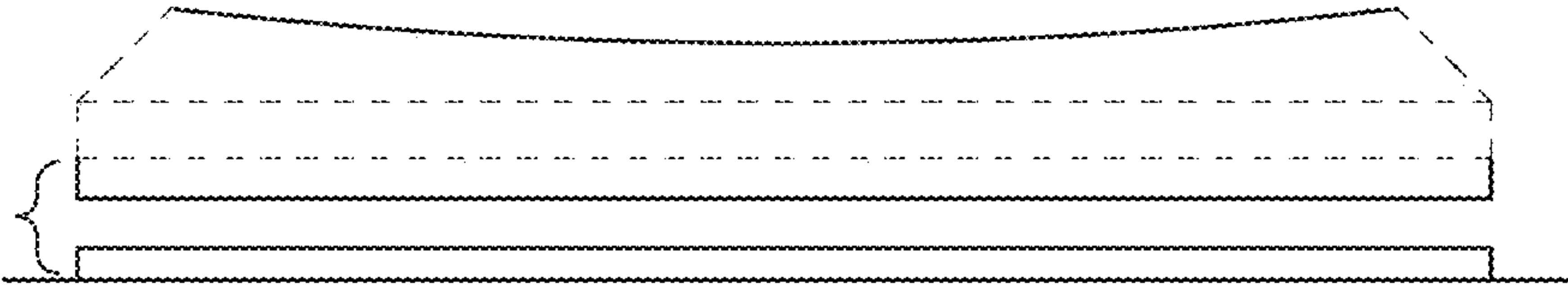


FIG. 28

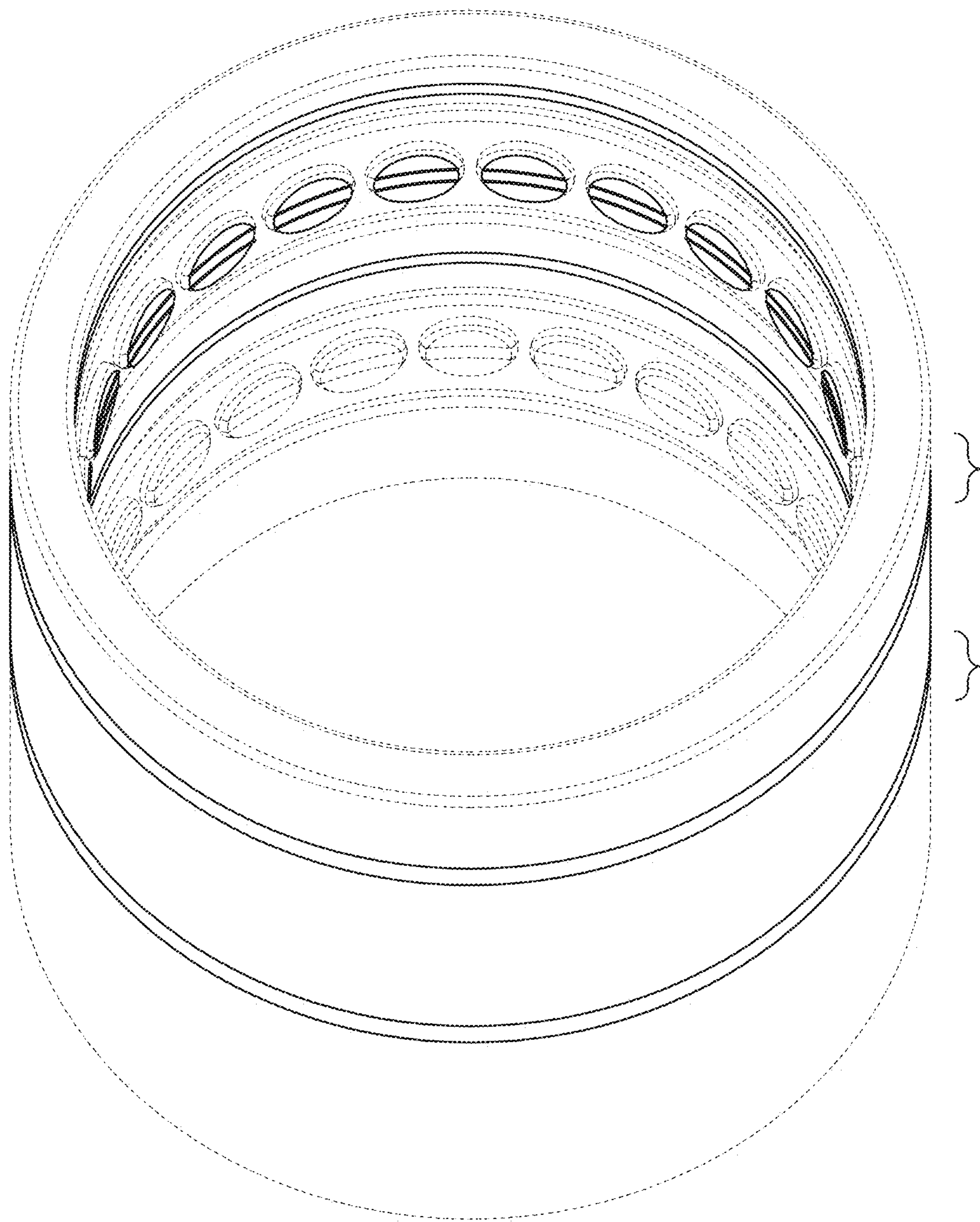


FIG. 29

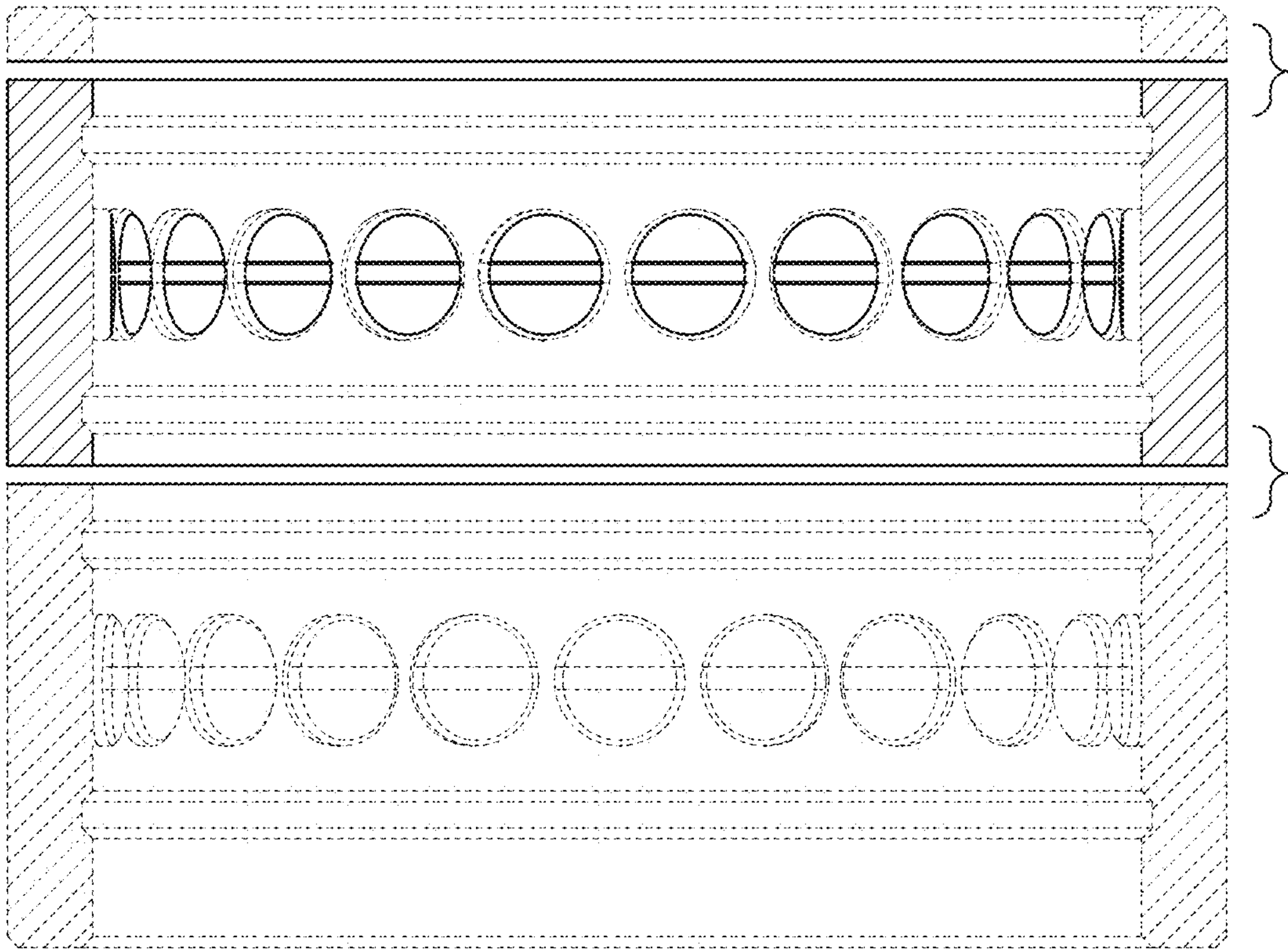


FIG. 30

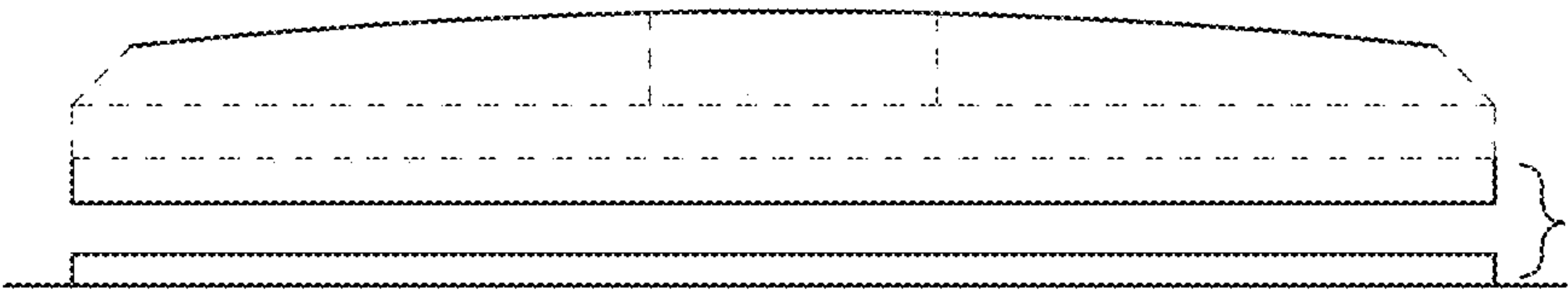


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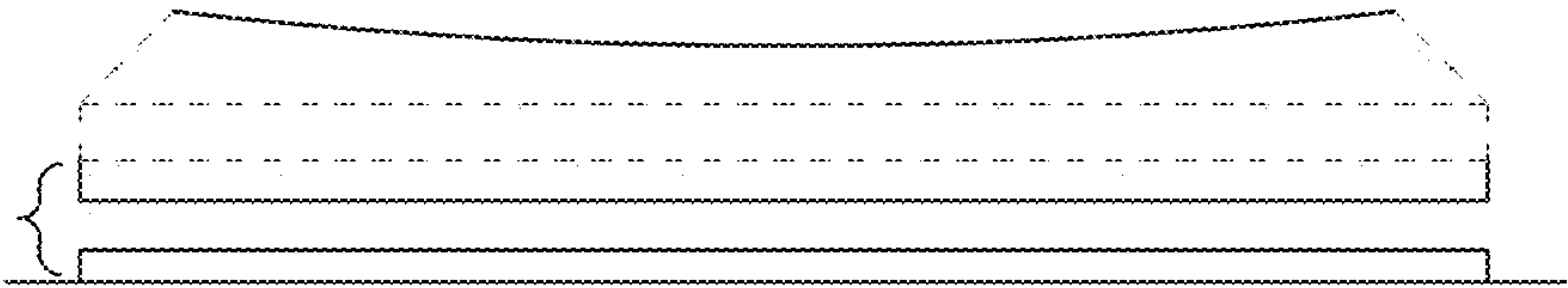


FIG. 32

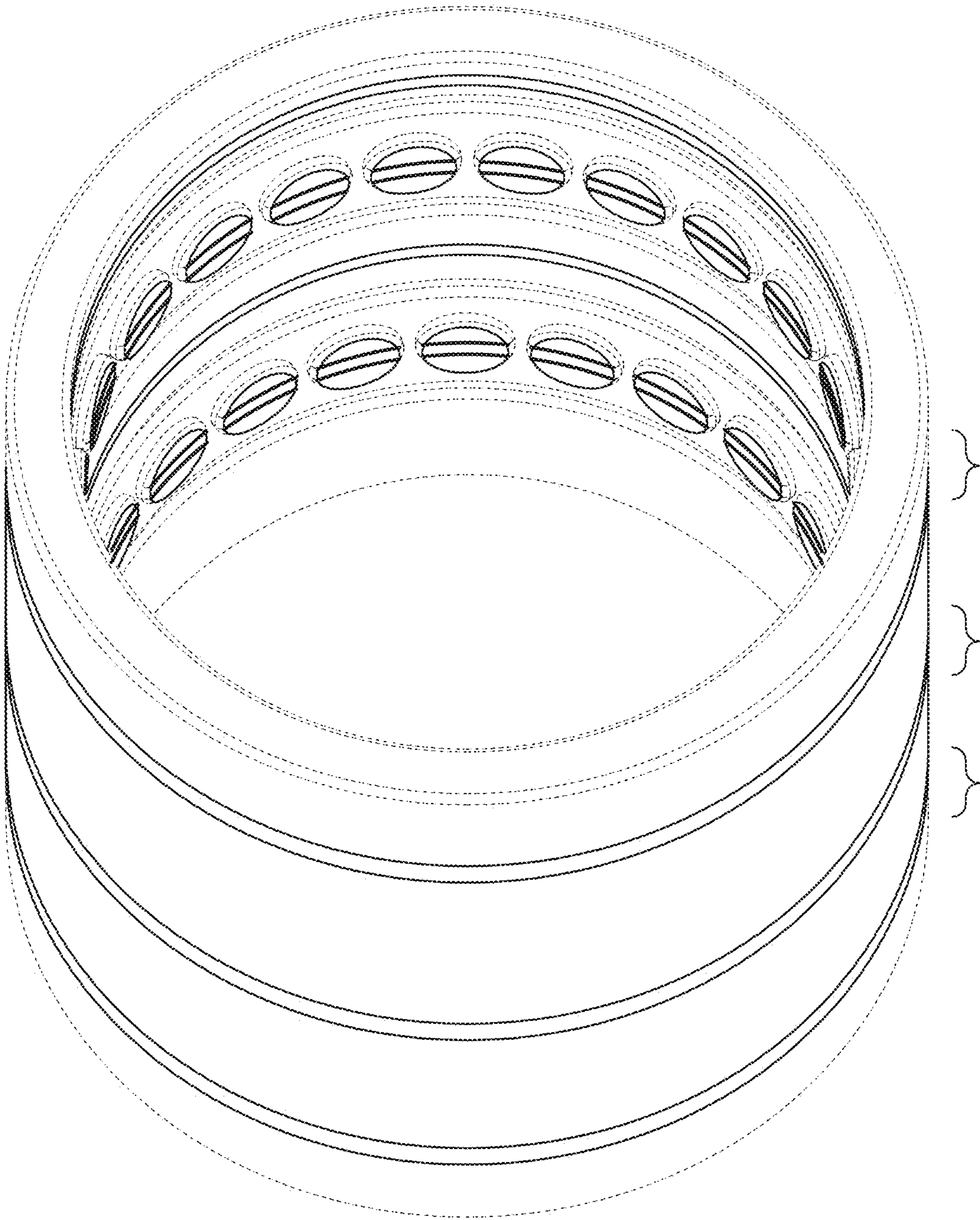


FIG. 33

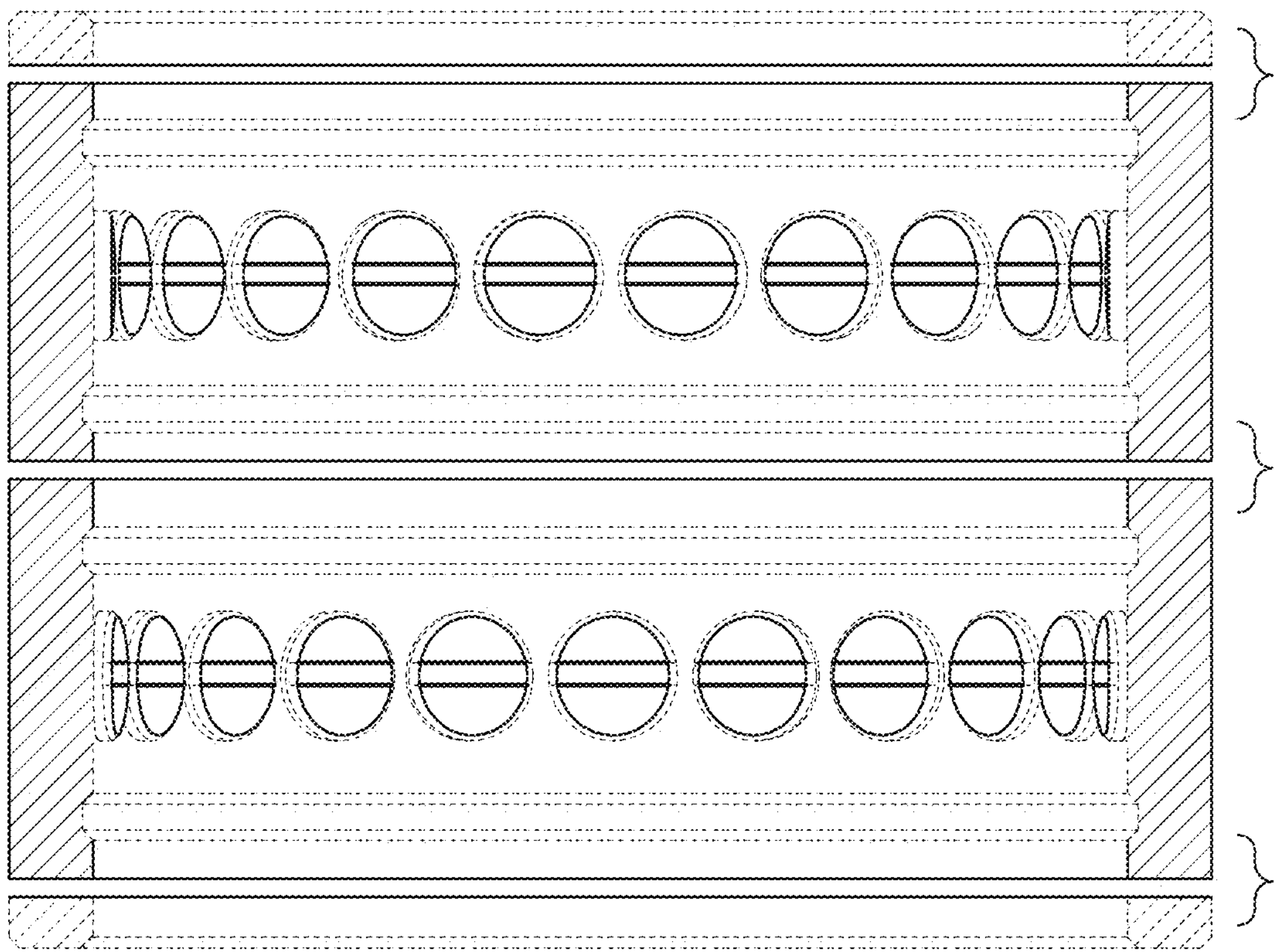


FIG. 34

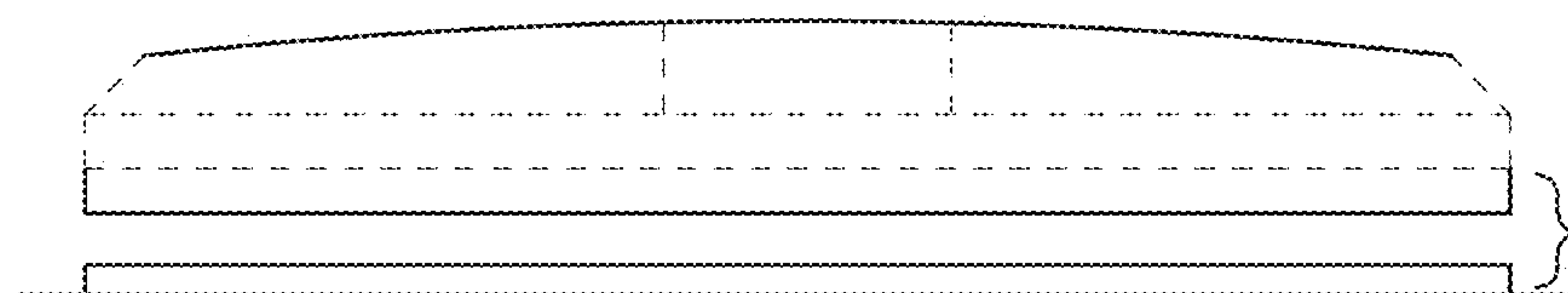


FIG. 35

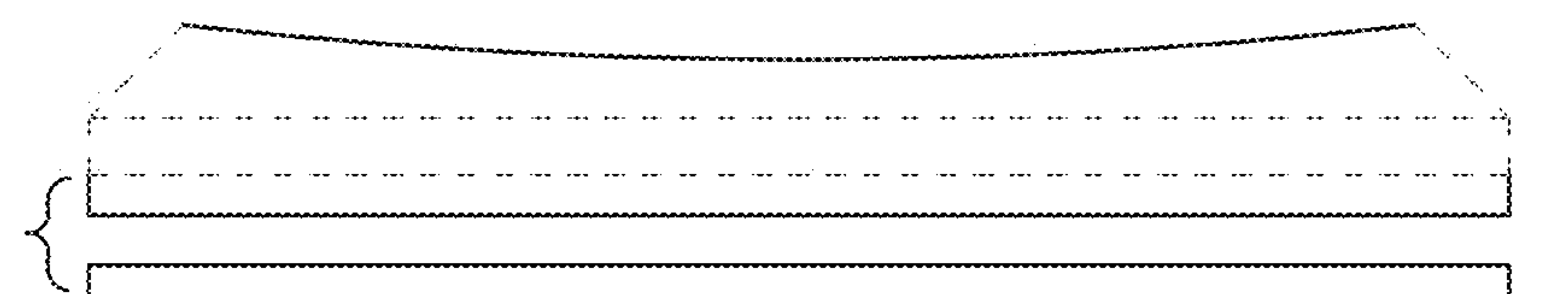


FIG. 36