



US00D850424S

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

(10) **Patent No.:** **US D850,424 S**
(45) **Date of Patent:** **** Jun. 4, 2019**

(54) **FLEXIBLE PCB DUAL ANTENNA MODULE FOR USE IN SMARTPHONE**

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

(21) Appl. No.: **29/587,670**

(22) Filed: **Dec. 14, 2016**

(51) **LOC (11) Cl.** **14-03**

(52) **U.S. Cl.**
USPC **D14/230**

(58) **Field of Classification Search**
USPC D12/138, 230–238.1, 240, 299, 358;
D14/42, 43
CPC H01L 33/48; H01L 23/02; H01Q 7/00;
H01Q 13/10
See application file for complete search history.

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Primary Examiner — Mark A Goodwin
Assistant Examiner — Benjamin M Weeks

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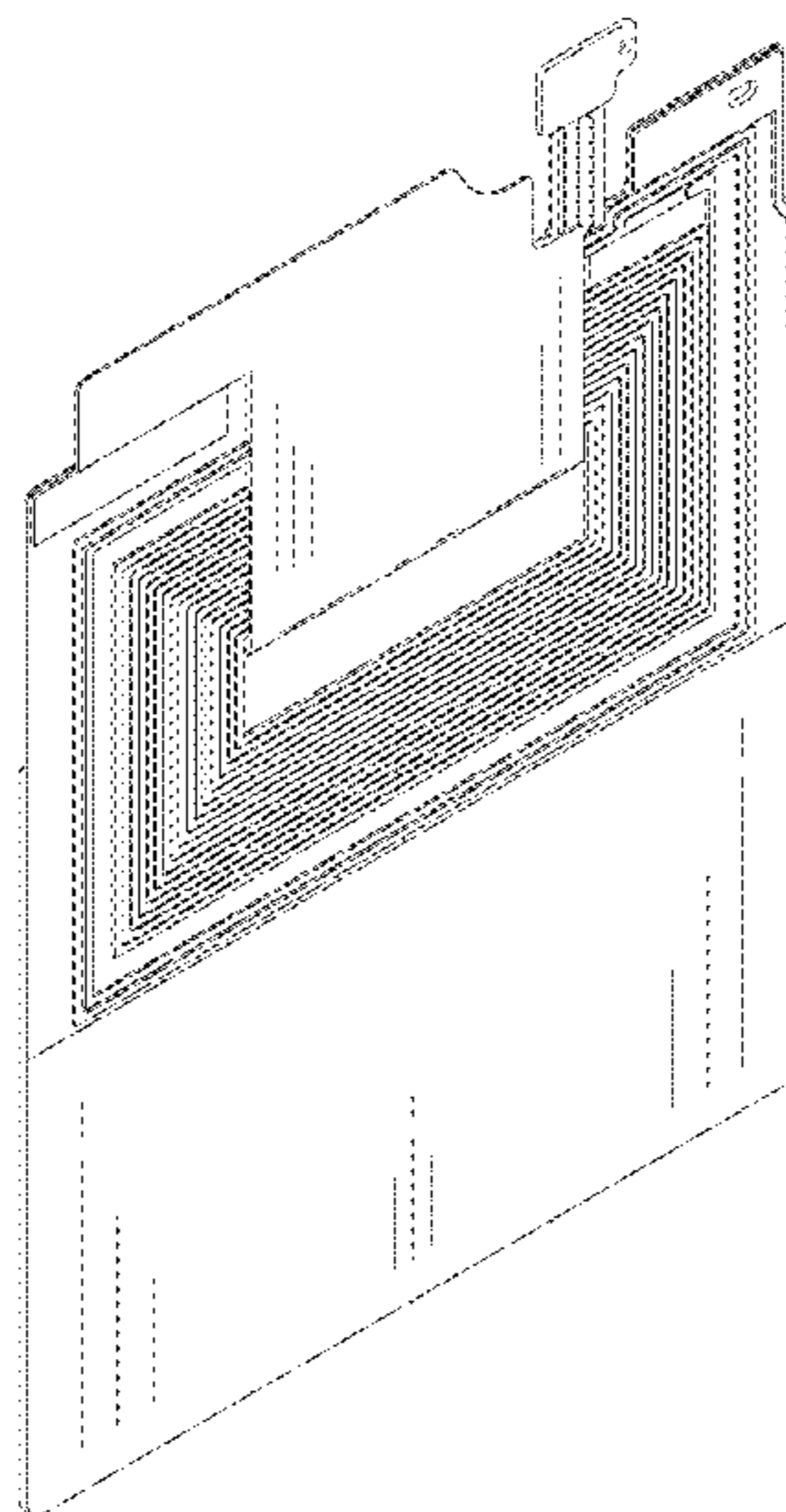
(57) **CLAIM**

The ornamental design of a flexible PCB dual antenna module for use in smartphone, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of flexible PCB dual antenna module for use in smartphone according to an embodiment of the present invention;
 FIG. 2 is a front view of the flexible PCB dual antenna module for use in smartphone of FIG. 1;
 FIG. 3 is a rear view of the flexible PCB dual antenna module for use in smartphone of FIG. 1;
 FIG. 4 is a left side view of the flexible PCB dual antenna module for use in smartphone of FIG. 1;
 FIG. 5 is a right side view of the flexible PCB dual antenna module for use in smartphone of FIG. 1;
 FIG. 6 is a top plan view of the flexible PCB dual antenna module for use in smartphone of FIG. 1;
 FIG. 7 is a bottom plan view of the flexible PCB dual antenna module for use in smartphone of FIG. 1;
 FIG. 8 is a sectional view of the flexible PCB dual antenna module for use in smartphone of FIG. 1, which is taken along a line A-A shown in FIG. 2;
 FIG. 9 is an enlarged view of a portion C shown in FIG. 8;
 FIG. 10 is a sectional view of the flexible PCB dual antenna module for use in smartphone of FIG. 1, which is taken along a line B-B shown in FIG. 2;
 FIG. 11 is an enlarged view of a portion D shown in FIG. 10; and,
 FIG. 12 is an enlarged view of a portion E shown in FIG. 10.
 In FIG. 2, letters A and B, lines for taking sections A-A and B-B and arrows for showing the viewing directions are for only illustrating section lines and viewing directions and are not intended to limit the claimed design.
 In FIGS. 8-12, letters C, D, E and F and phantom lines forming oval shapes are for only indicating portions C, D, E and F and are not intended to limit the claimed design.

1 Claim, 12 Drawing Sheets



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FIG. 1

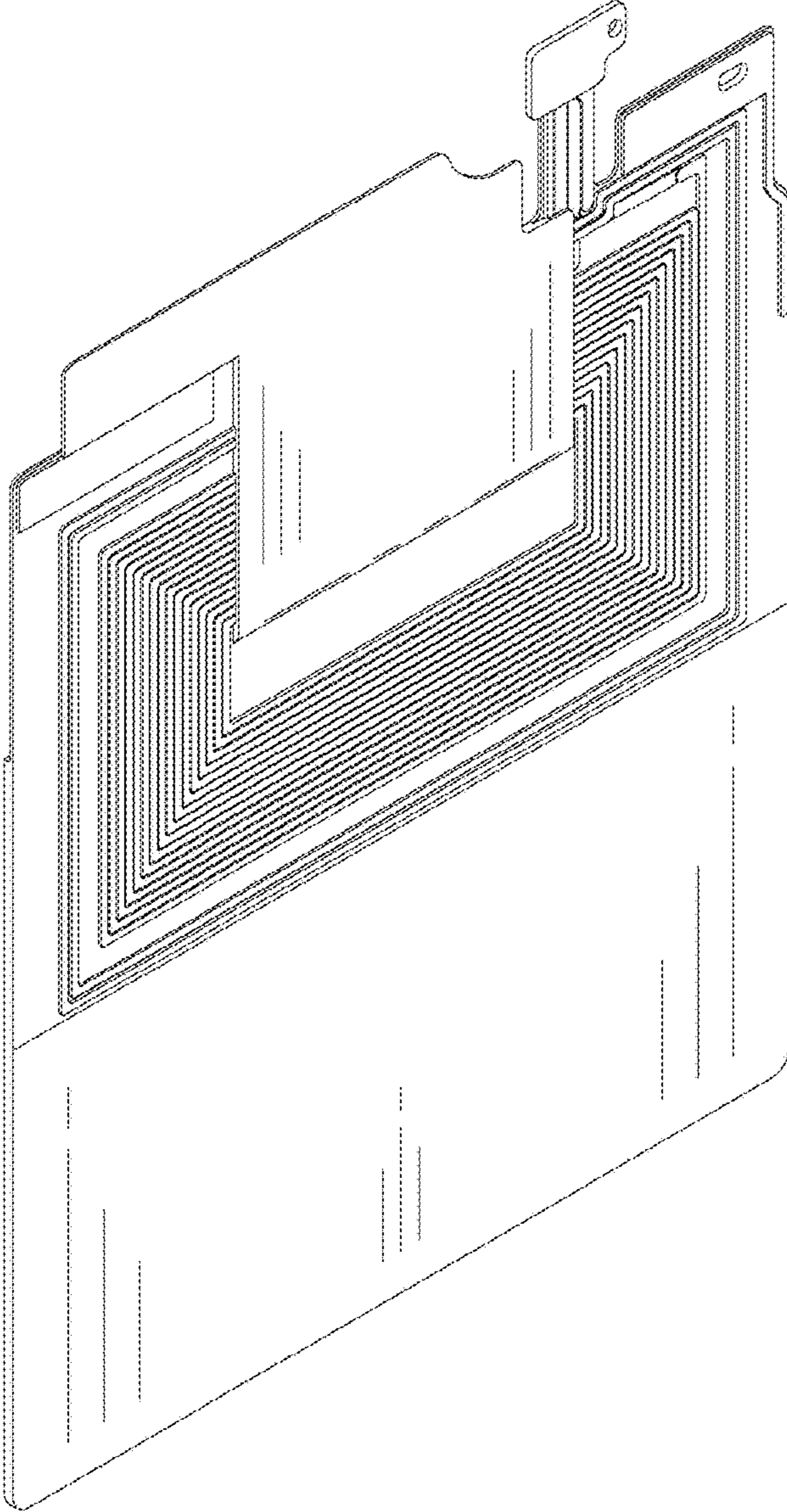


FIG. 2

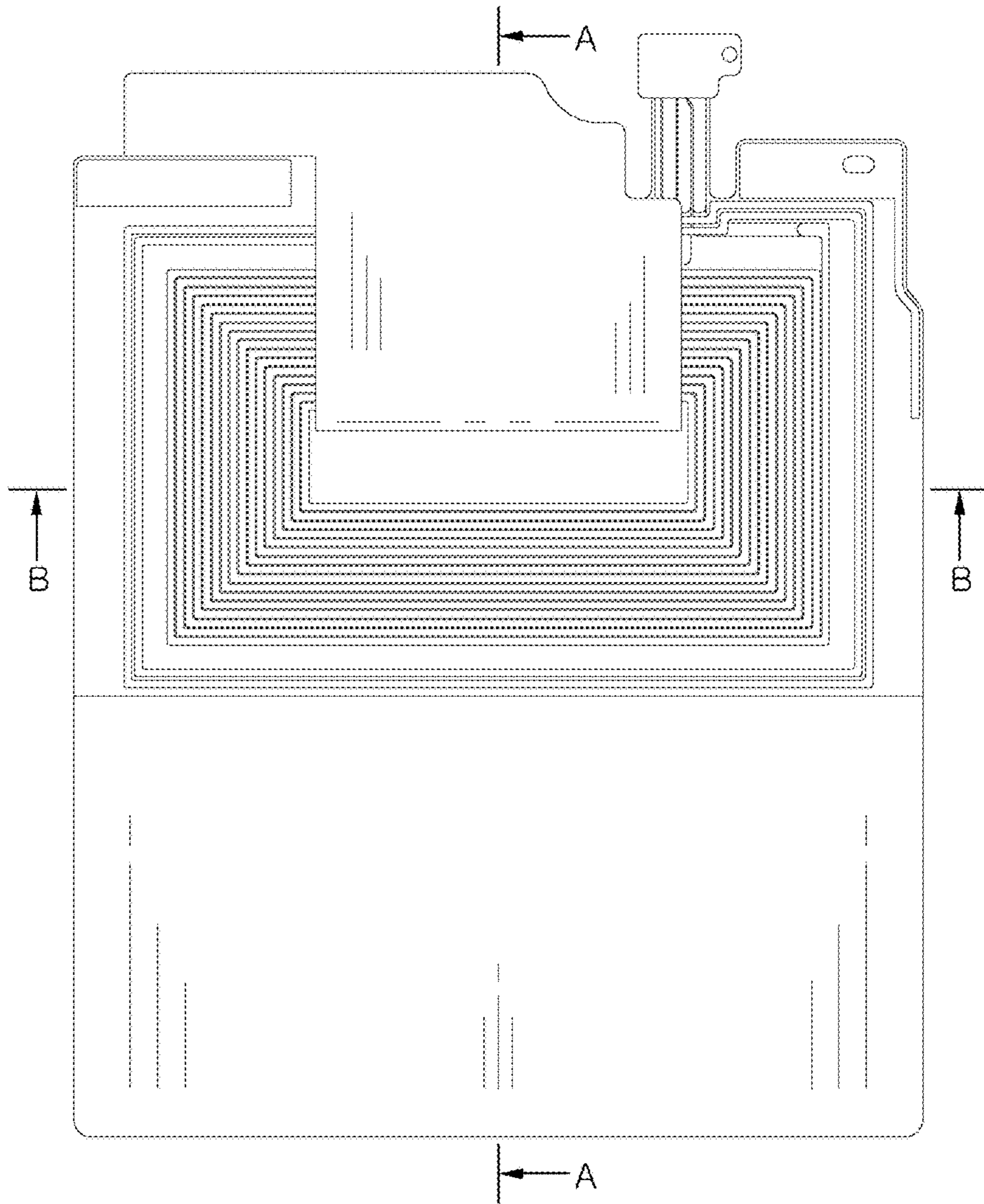


FIG. 3

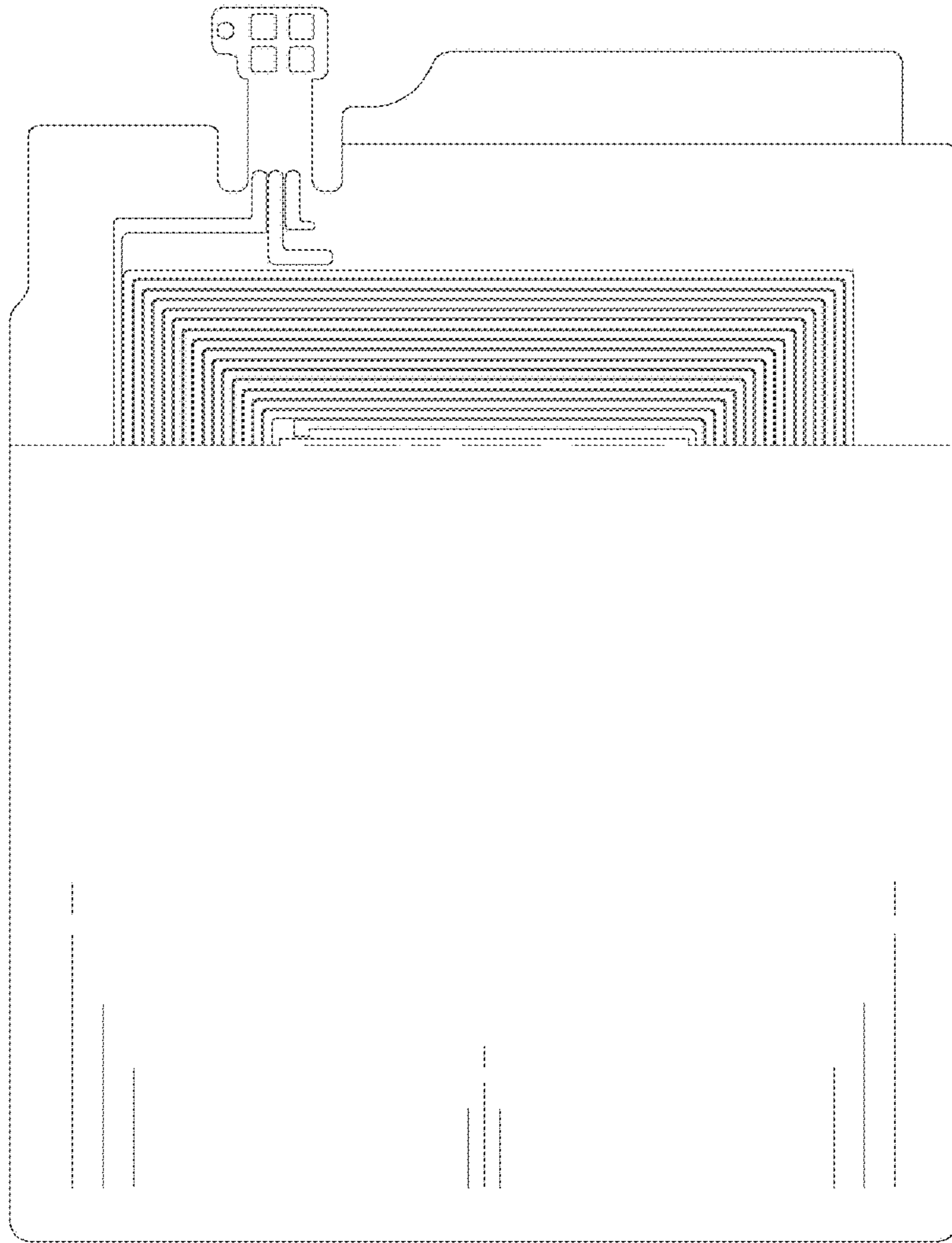


FIG. 4

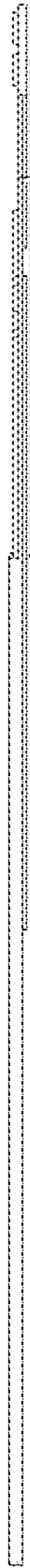


FIG. 5



FIG. 6

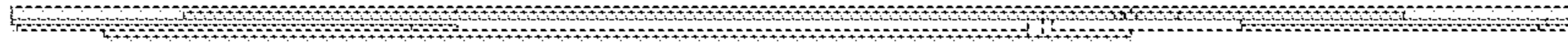


FIG. 7

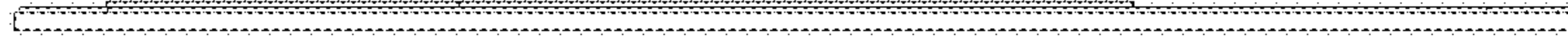


FIG. 8

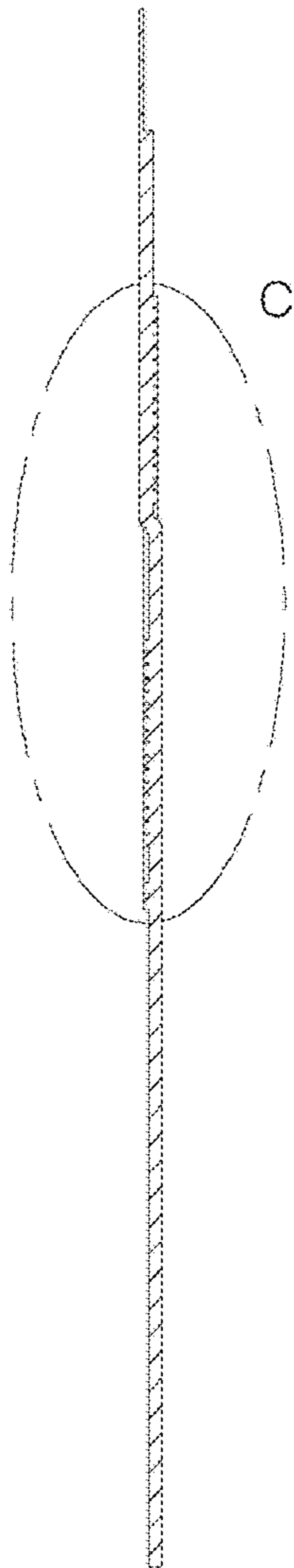


FIG. 9

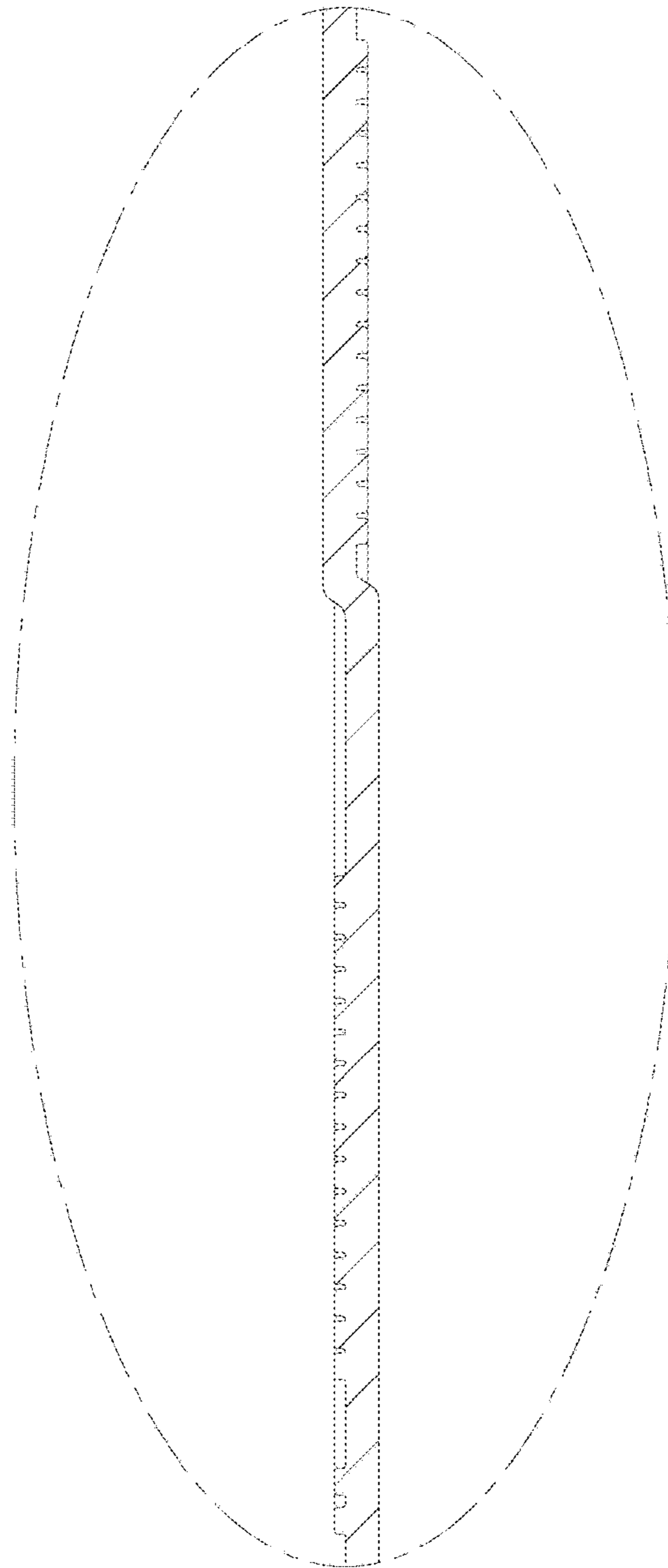


FIG. 10

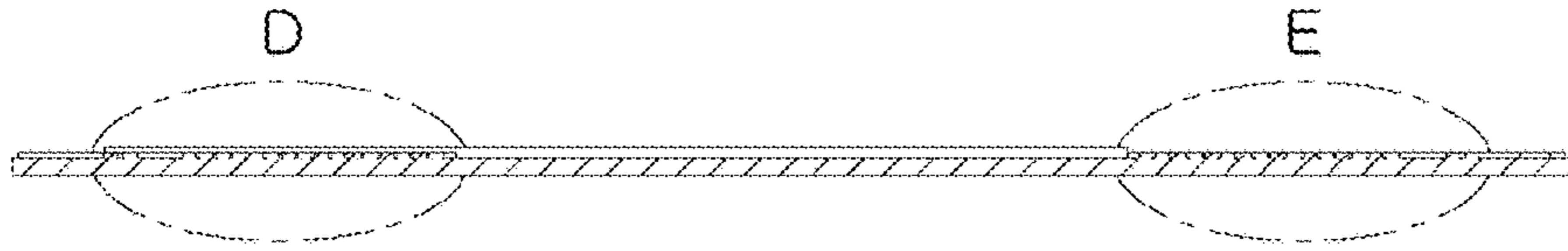


FIG. 11

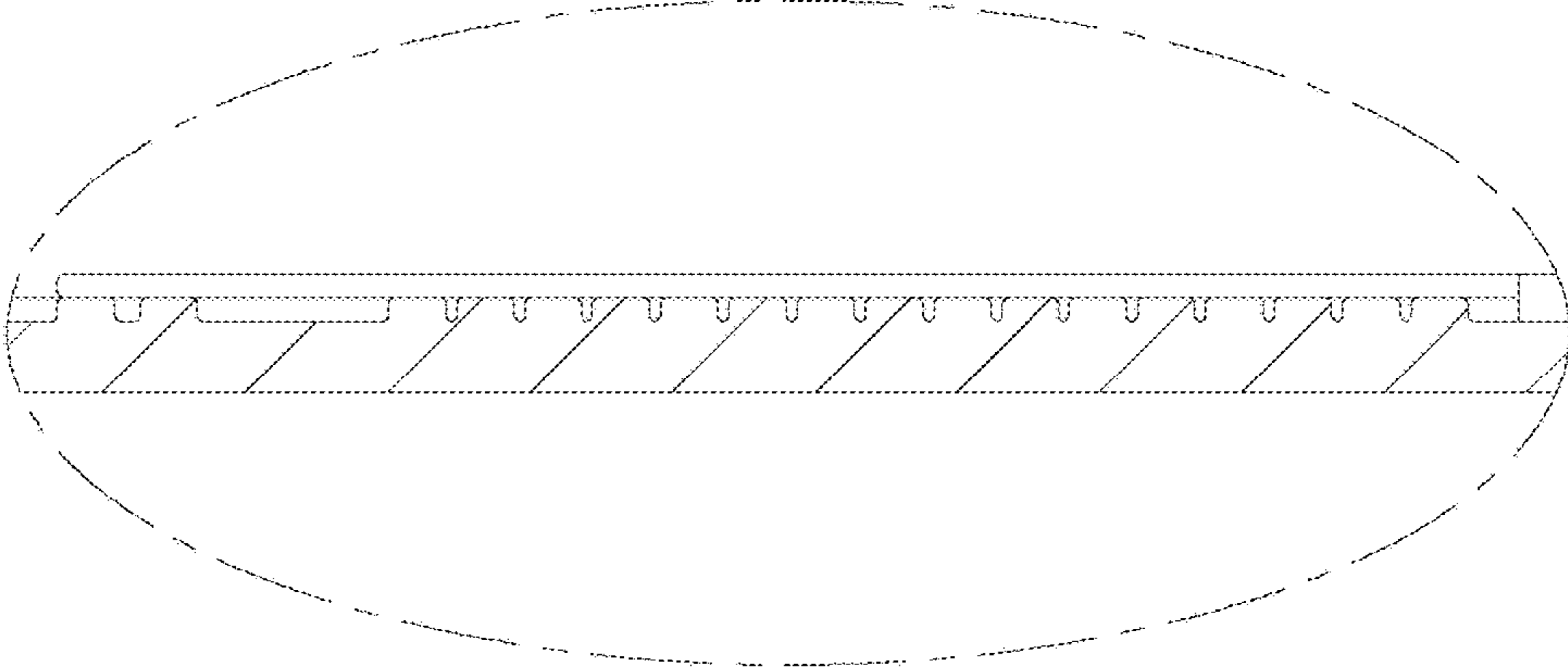


FIG. 12

