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

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

(71) Applicant: **AQ CORPORATION**, Suwon-si, Gyeonggi-do (KR)

(72) Inventors: **Young Sung Kang**, Yongin-si (KR); **Kyoung Jun Choi**, Uijeongbu-si (KR)

(73) Assignee: **AQ CORPORATION**, Suwon-si, Gyeonggi-do (KR)

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

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(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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(Continued)

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

(74) *Attorney, Agent, or Firm* — Knobbe Martens Olson & Bear LLP

(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

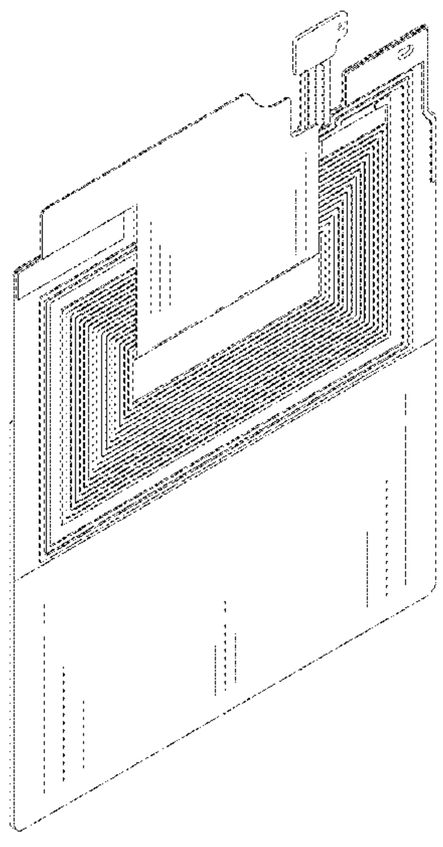

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FIG. 1

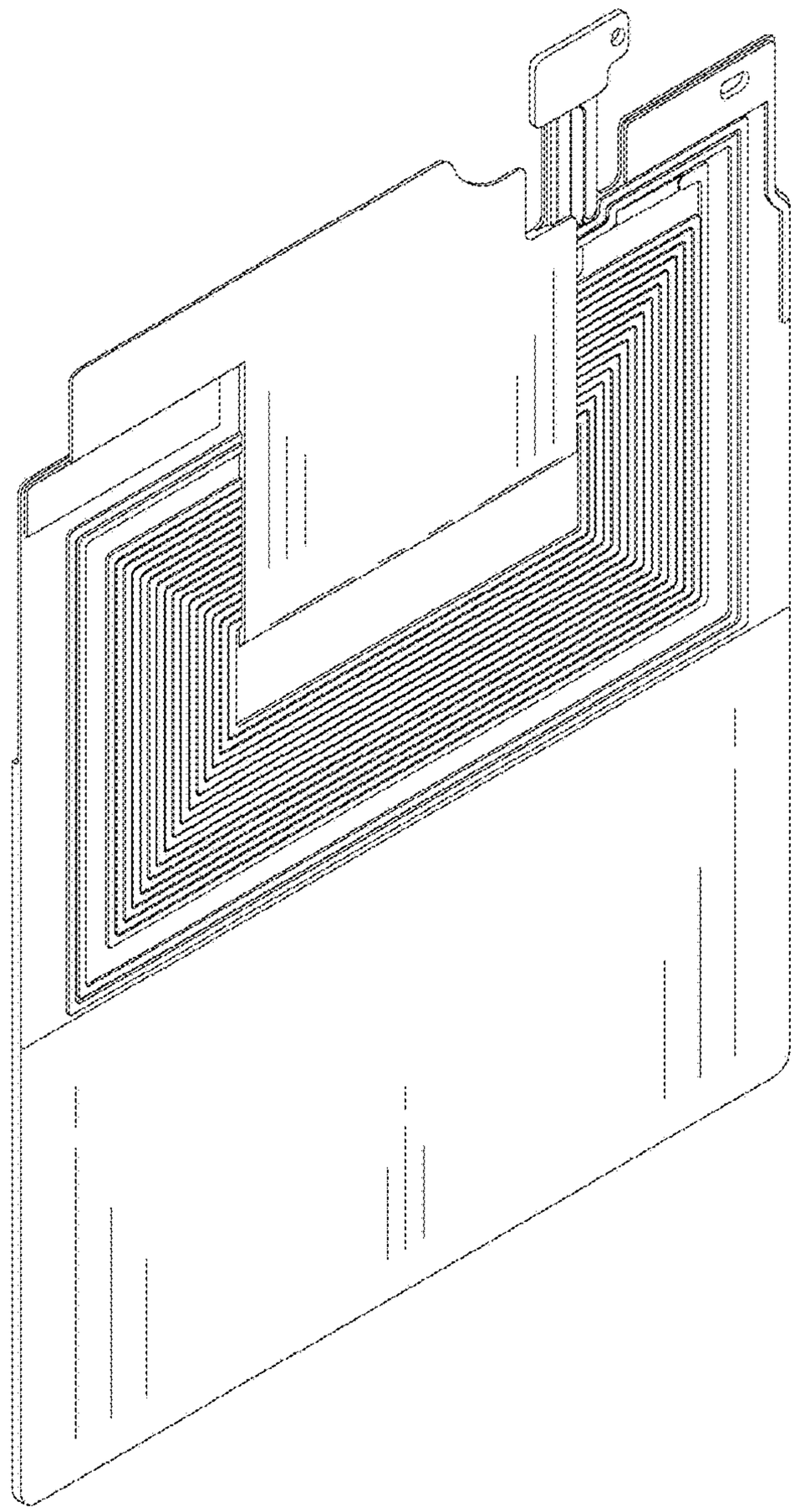

FIG. 2

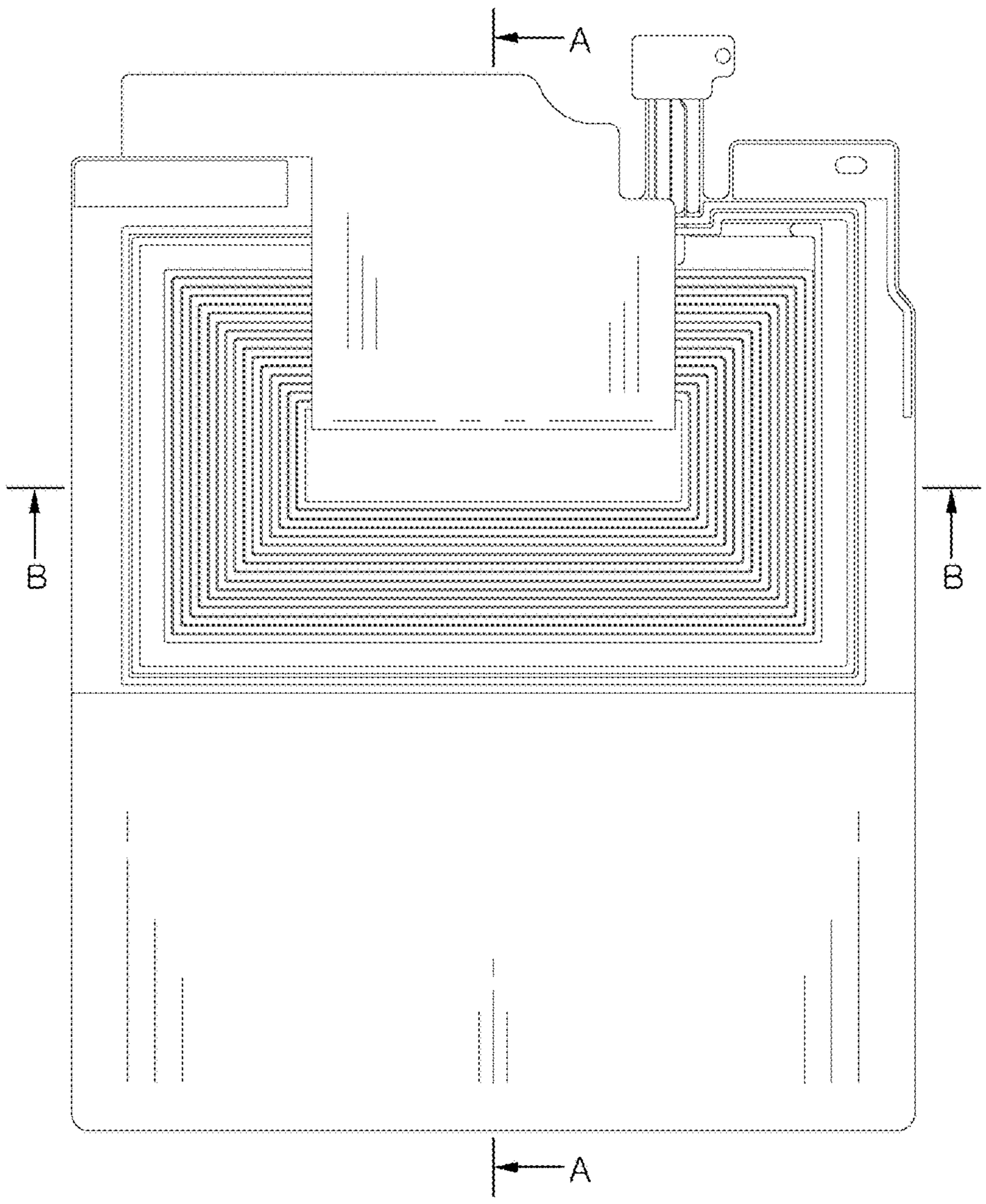

FIG. 3

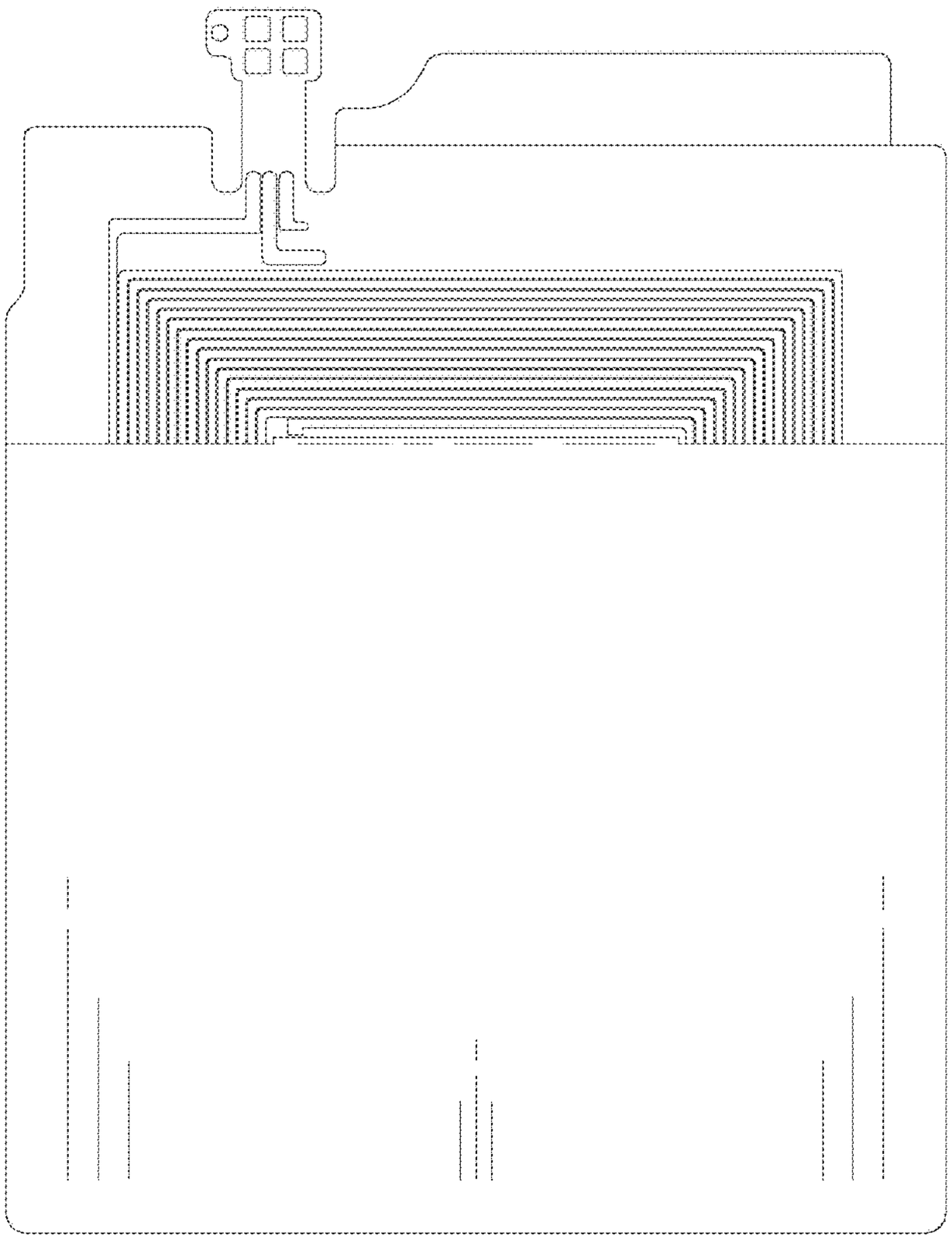

FIG. 4

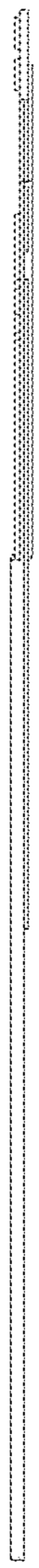

FIG. 5

FIG. 6

FIG. 7

FIG. 8

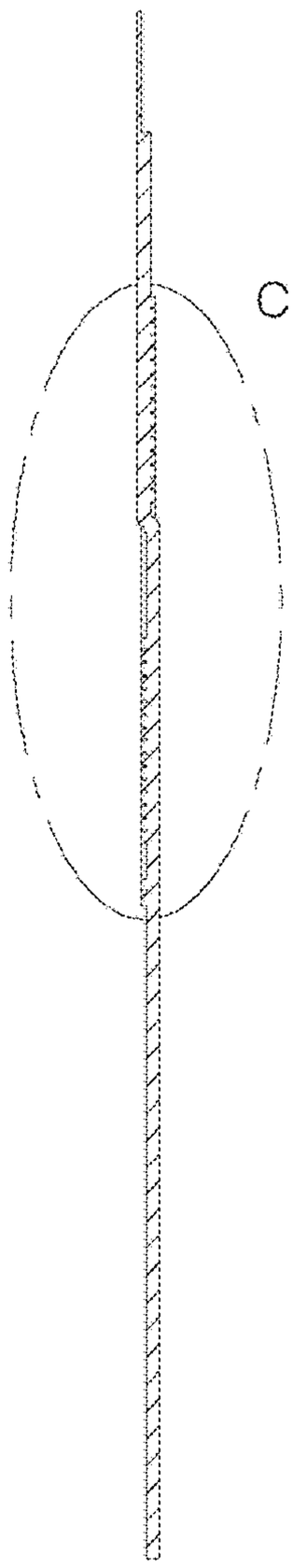

FIG. 9

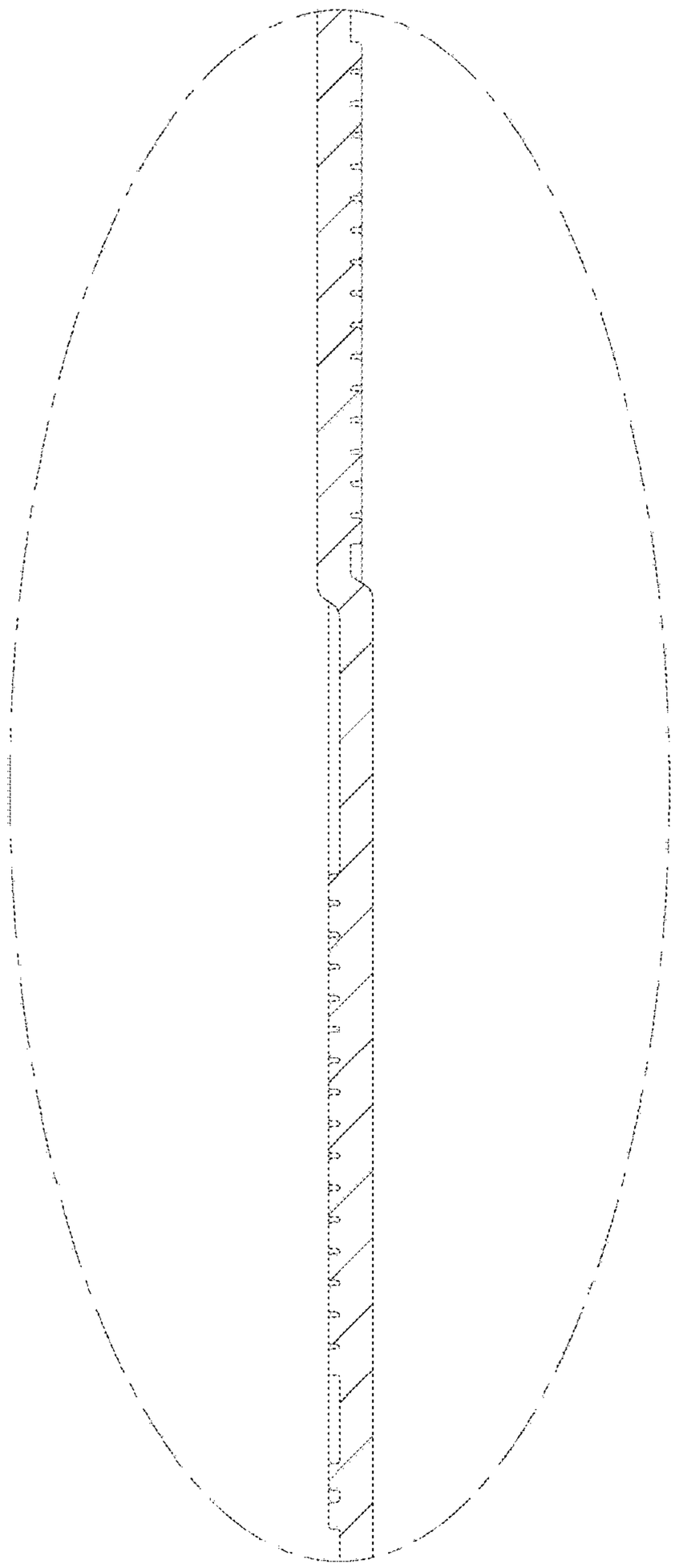

FIG. 10

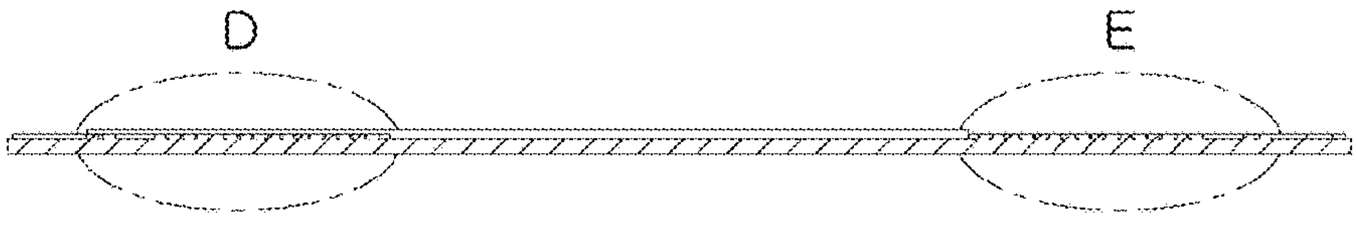

FIG. 11

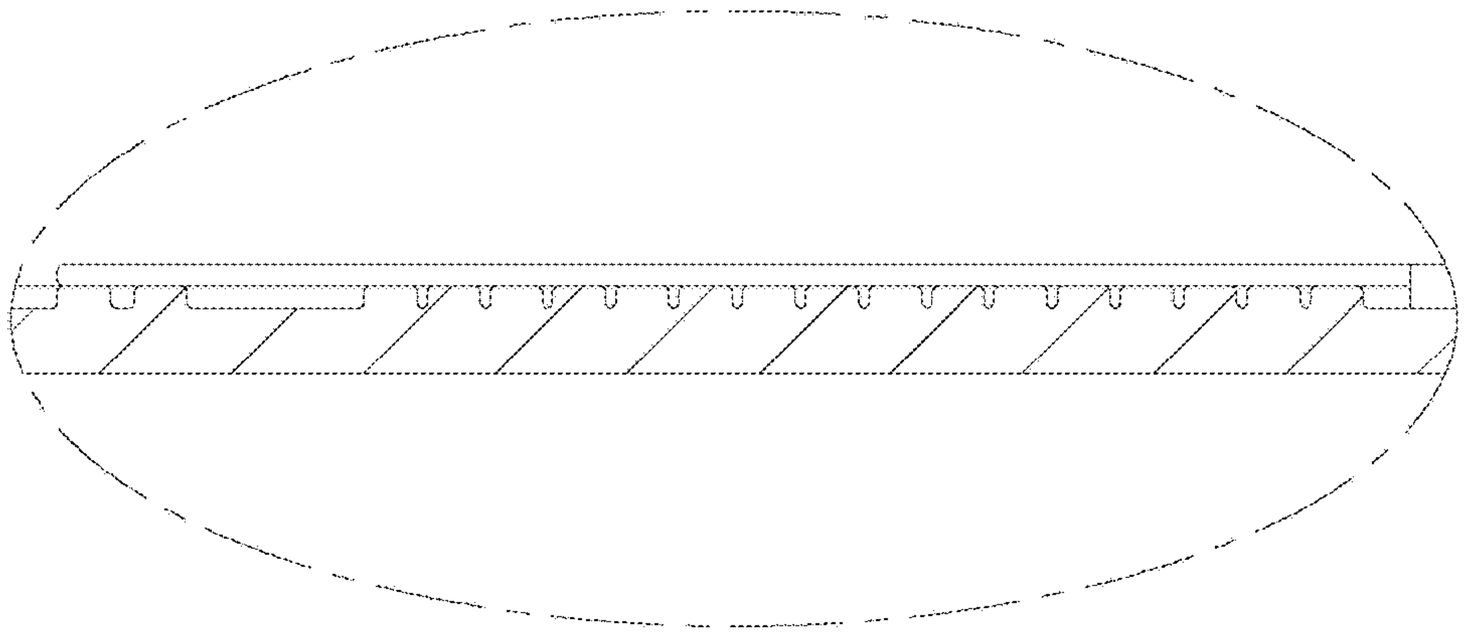

FIG. 12