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

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(54) **LEAD FRAME**

(75) Inventors: **Akira Oga**, Kadoma (JP); **Shuichi Ogata**, Kadoma (JP)

(73) Assignee: **Panasonic Corporation**, Osaka (JP)

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(30) **Foreign Application Priority Data**

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(51) **LOC (9) Cl.** ..... **13-03**

(52) **U.S. Cl.** ..... **D13/180**

(58) **Field of Classification Search** ..... D13/182;  
174/527, 528, 529; 257/666, 676, 691, E23.037,  
257/E23.038, E23.039; 324/754

See application file for complete search history.

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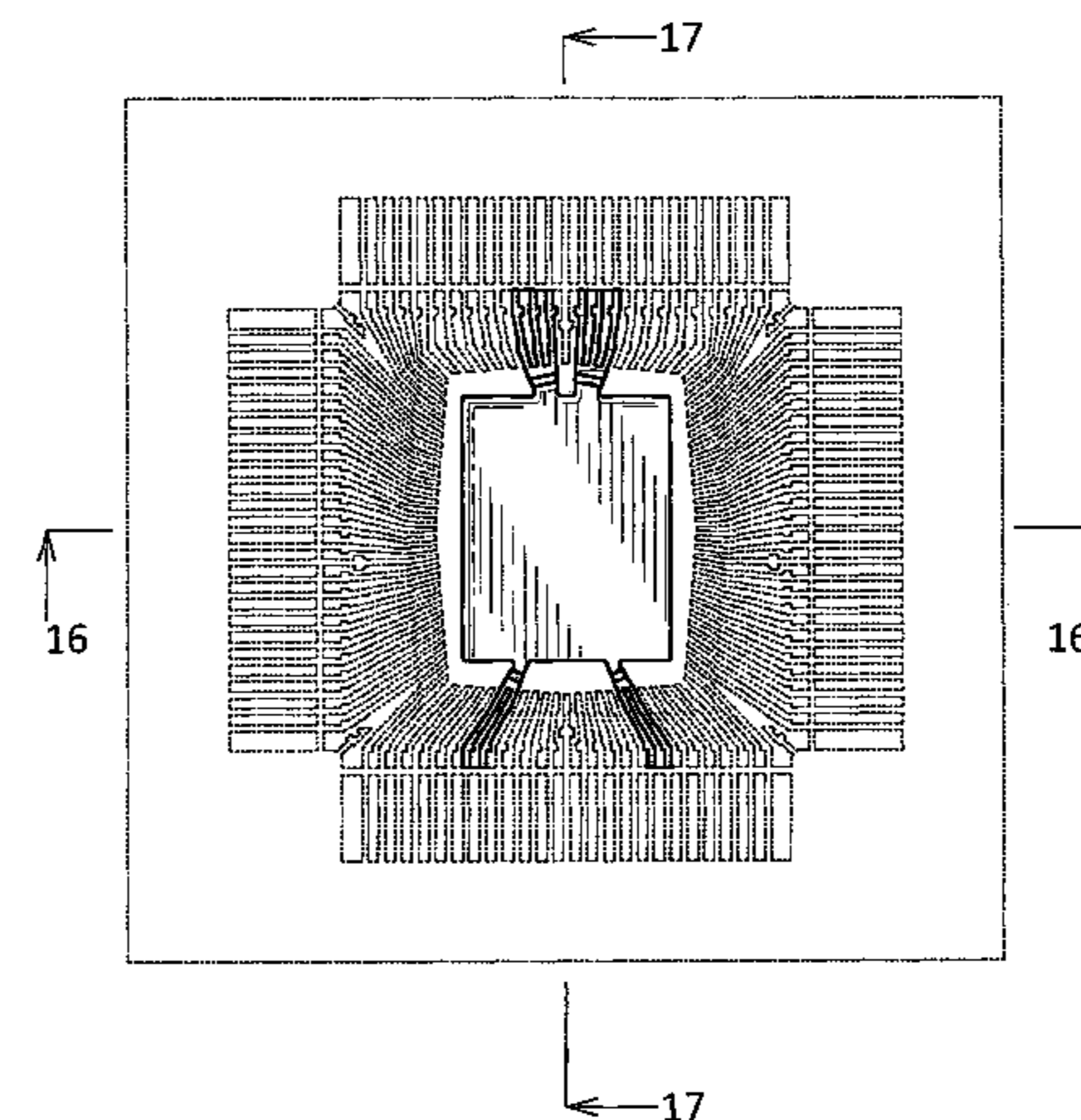
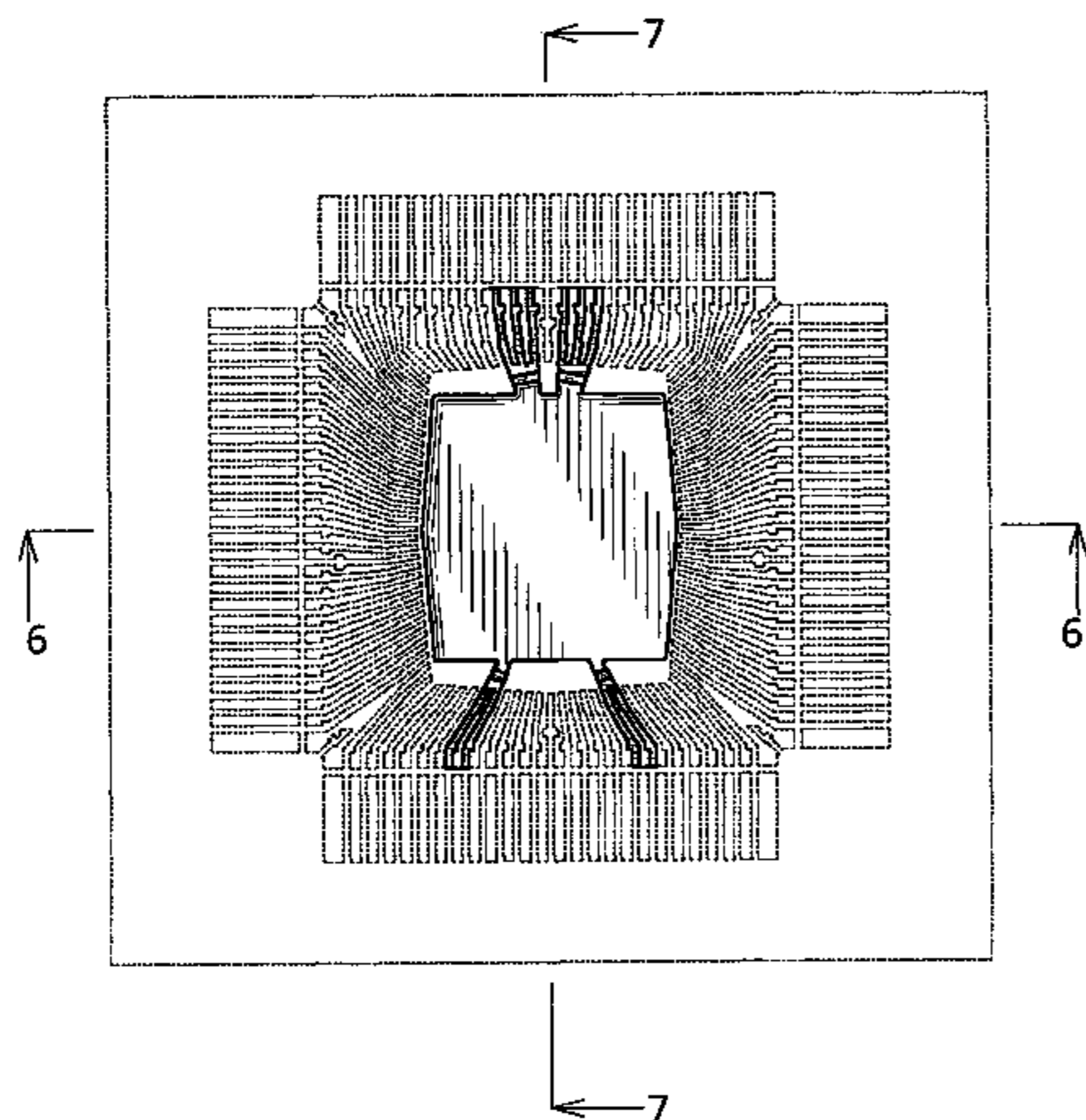
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*Primary Examiner*—Selina Sikder

(74) *Attorney, Agent, or Firm*—Brinks Hofer Gilson & Lione

(57) **CLAIM**

The ornamental design for a lead frame, as shown and described.



**DESCRIPTION**

FIG. 1 is a front view of a first embodiment of a lead frame of the present invention;

FIG. 2 is a rear view thereof;

FIG. 3 is a first side view thereof with the opposite side being a mirror image thereof;

FIG. 4 is a top view thereof;

FIG. 5 is a bottom view thereof;

FIG. 6 is a cross-section view taken along the line 6—6 of FIG. 1;

FIG. 7 is a cross-section view taken along the line 7—7 of FIG. 1;

FIG. 8 is an enlarged second side view thereof taken along the lines 8 of FIG. 43;

FIG. 9 is an enlarged top view thereof taken along the lines 9—9 of FIG. 4;

FIG. 10 is an enlarged bottom view thereof taken along the lines 10—10 of FIG. 5;

FIG. 11 is a front view of a second embodiment of a lead frame of the present invention;

FIG. 12 is a rear view thereof;

FIG. 13 is a first side view thereof with the opposite side being a mirror image thereof;

FIG. 14 is a top view thereof;

FIG. 15 is a bottom view thereof;

FIG. 16 is a cross-section view taken along the line 16—16 of FIG. 11;

FIG. 17 is a cross-section view taken along the line 19—19 of FIG. 11;

FIG. 18 is an enlarged second side view thereof taken along the lines 18—18 of FIG. 13;

FIG. 19 is an enlarged top view thereof taken along the lines 19—19 of FIG. 14;

FIG. 20 is an enlarged bottom view thereof taken along the lines 20—20 of FIG. 15;

FIG. 21 is a front view of a third embodiment of a lead frame of the present invention;

FIG. 22 is a rear view thereof;

FIG. 23 is a first side view thereof with the opposite side being a mirror image thereof;

FIG. 24 is a top view thereof;

FIG. 25 is a bottom view thereof;

FIG. 26 is a cross-section view taken along the line 26—26 of FIG. 21;

FIG. 27 is a cross-section view taken along the line 27—27 of FIG. 21;

FIG. 28 is an enlarged second side view thereof taken along the lines 28—28 of FIG. 23;

FIG. 29 is an enlarged top view thereof taken along the lines 29—29 of FIG. 24;

FIG. 30 is an enlarged bottom view thereof taken along the lines 30—30 of FIG. 25;

FIG. 31 is a front view of a fourth embodiment of a lead frame of the present invention;

FIG. 32 is a rear view thereof;

FIG. 33 is a first side view thereof with the opposite side being a mirror image thereof;

FIG. 34 is a top view thereof;

FIG. 35 is a bottom view thereof;

FIG. 36 is a cross-section view taken along the line 36—36 of FIG. 31;

FIG. 37 is a cross-section view taken along the line 37—37 of FIG. 31;

FIG. 38 is an enlarged second side view thereof taken along the lines 42—42 of FIG. 33;

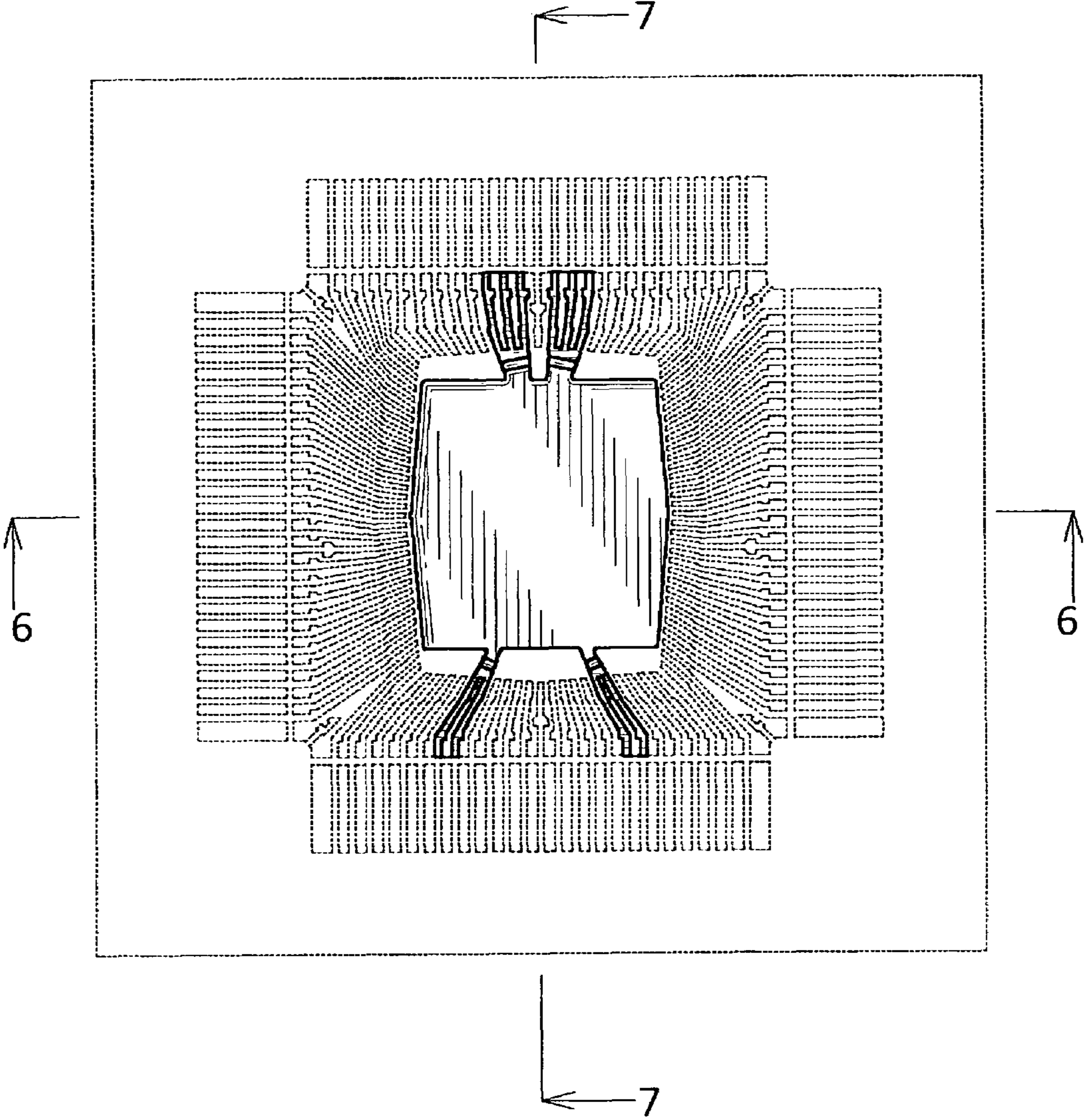
FIG. 39 is an enlarged top view thereof taken along the lines 39—39 of FIG. 34; and,

FIG. 40 is an enlarged bottom view thereof taken along the lines 44—44 of of FIG. 35.

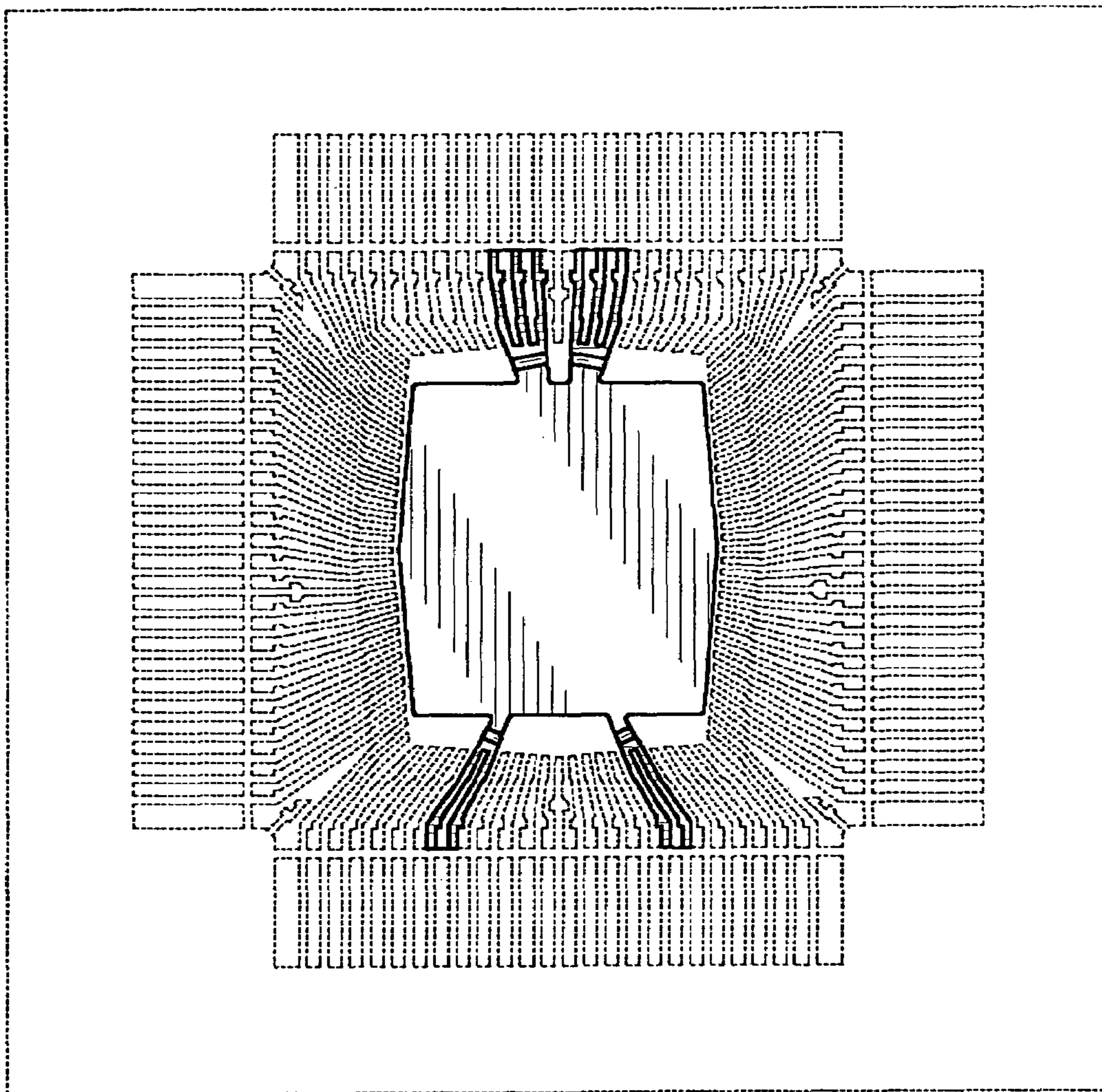
The ornamental design which is claimed is shown in solid lines in the drawings. Any broken lines in the drawings are for illustrative purposes only and form no part of the claimed design.

**1 Claim, 24 Drawing Sheets**

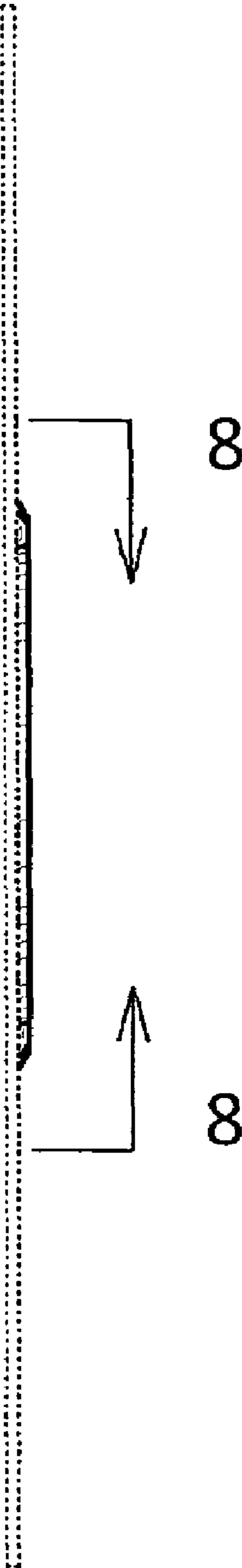
FIG. 1



**FIG. 2**



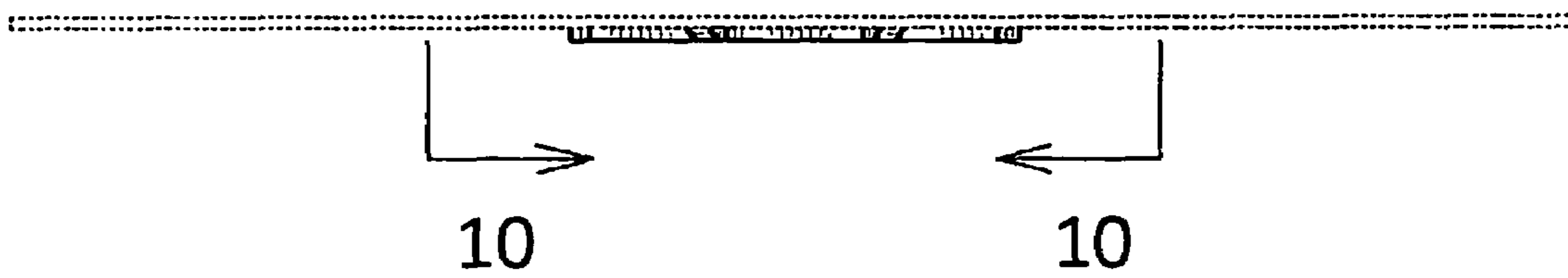
**FIG.3**



**FIG.4**



**FIG.5**



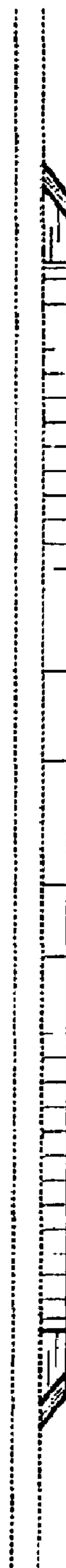
**FIG.6**



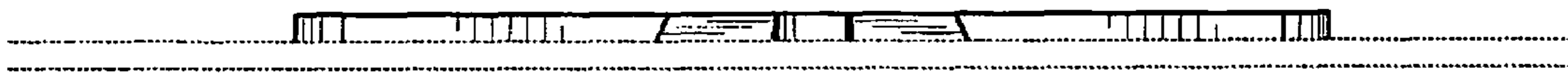
**FIG.7**



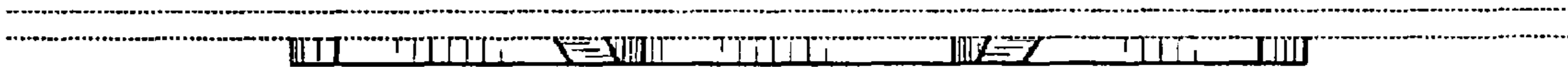
**FIG.8**



**FIG.9**

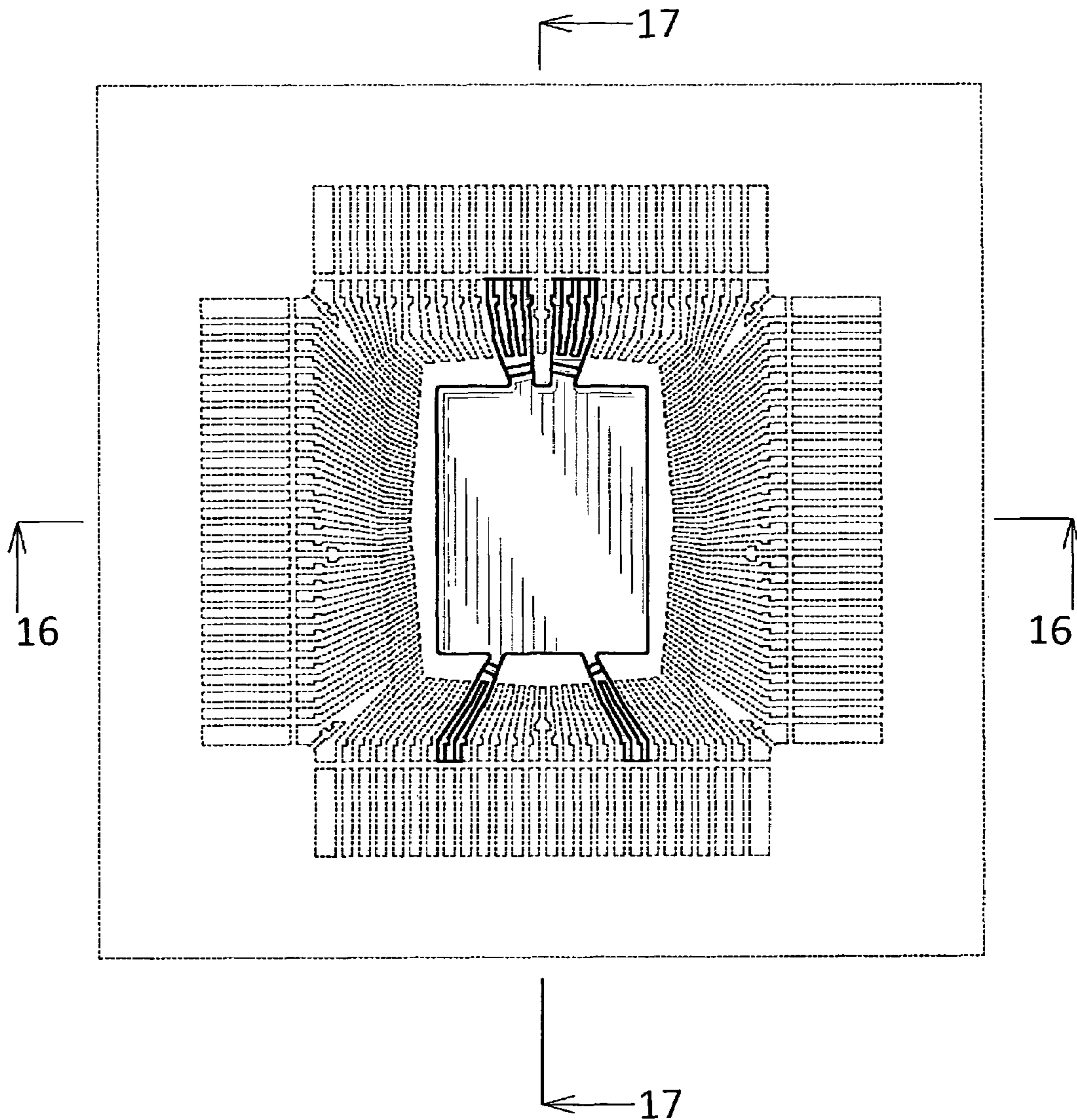


**FIG.10**

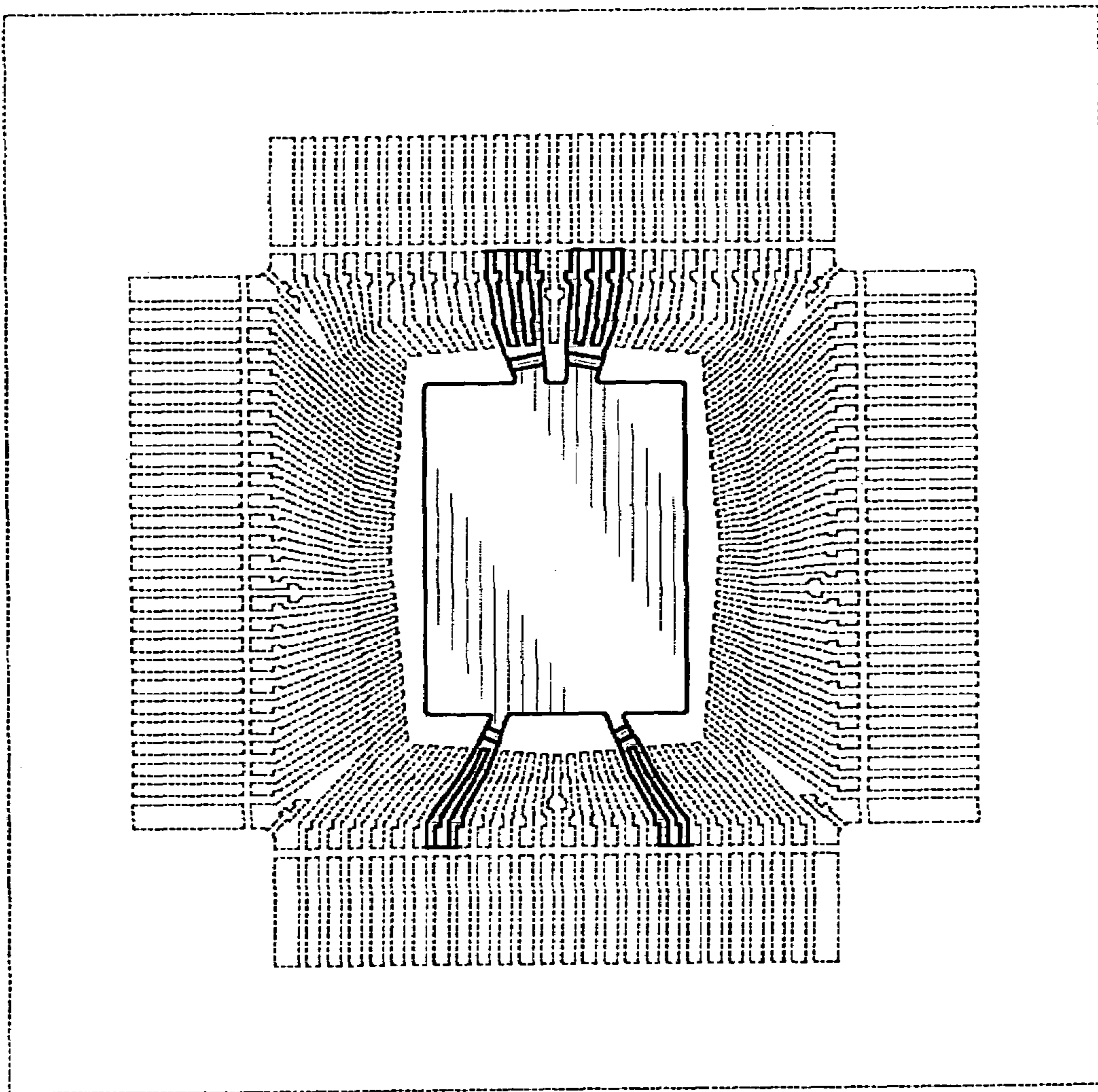




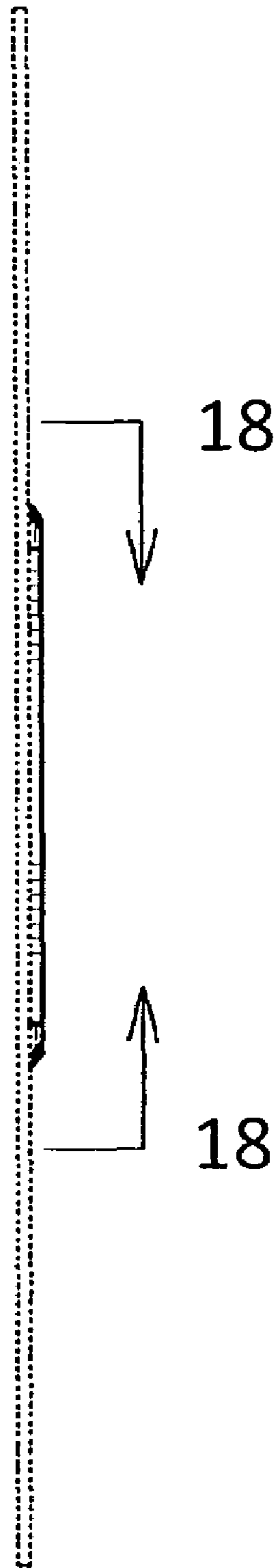
**FIG.11**



**FIG.12**



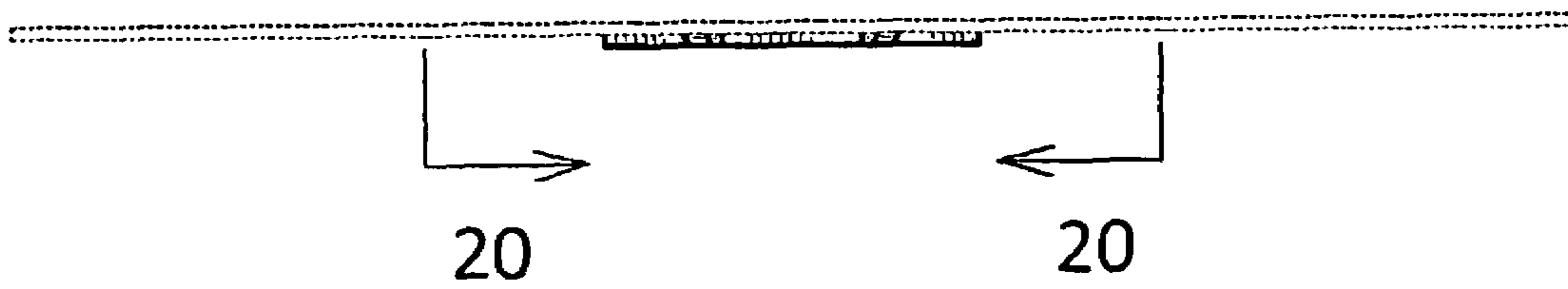
**FIG. 13**



**FIG.14**



**FIG.15**



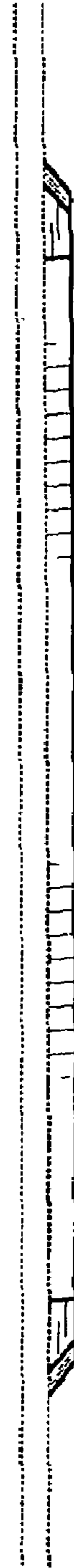
**FIG.16**



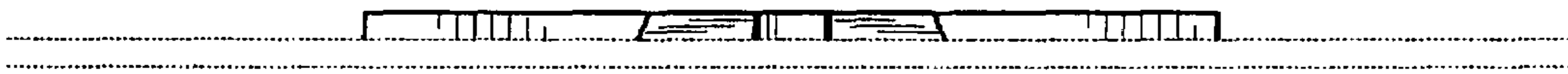
**FIG.17**



**FIG.18**



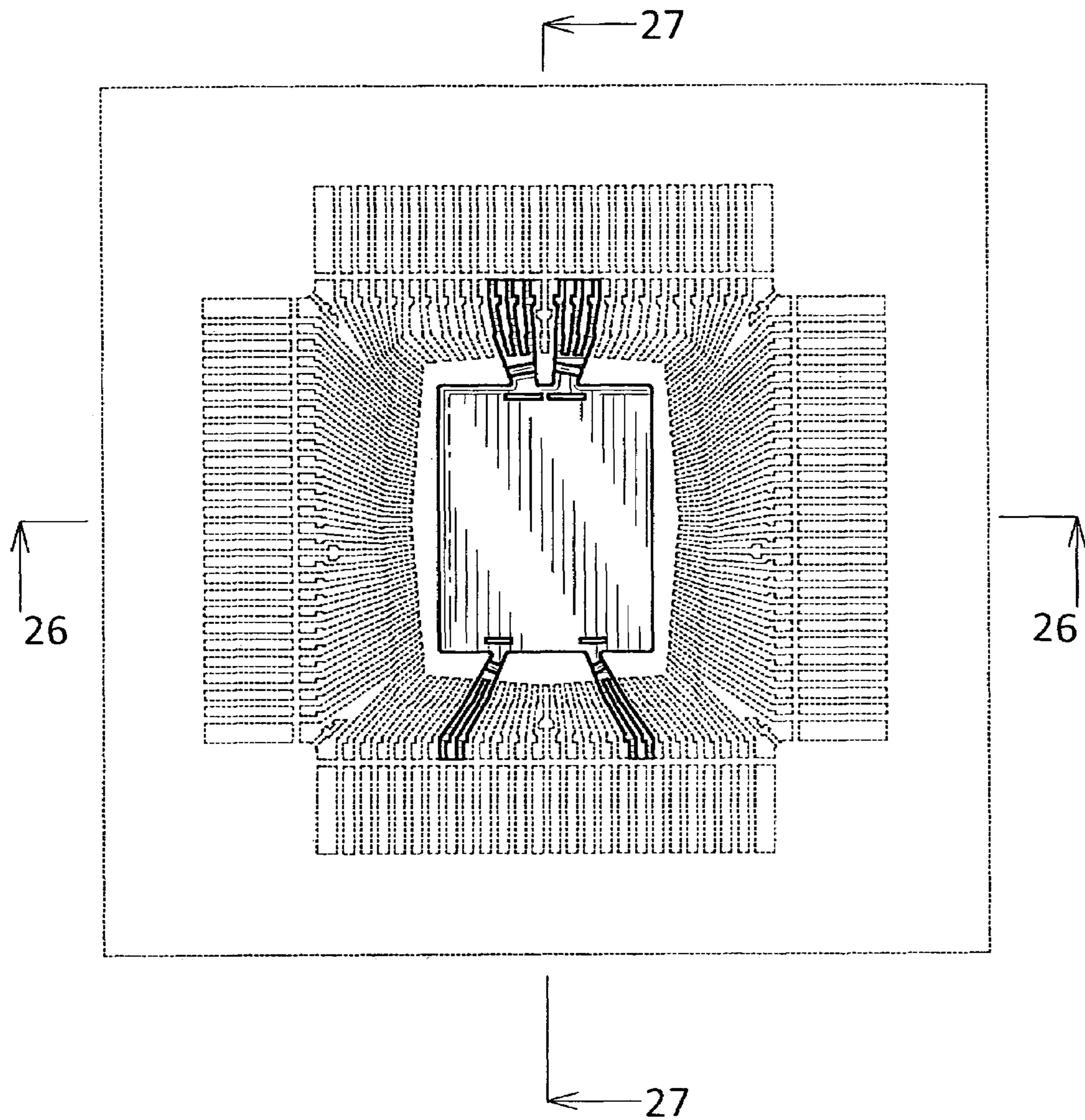
**FIG.19**



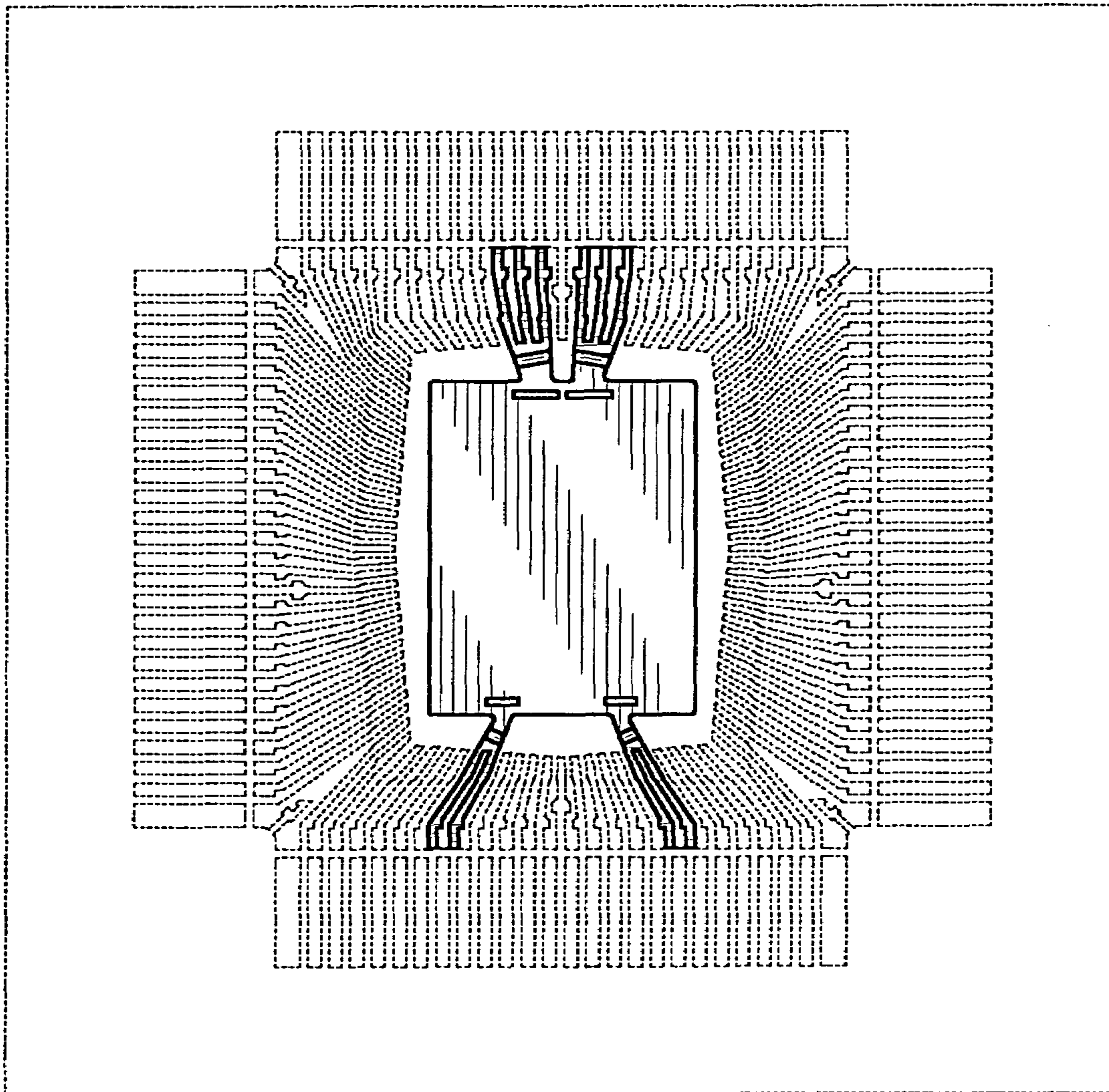
**FIG.20**



**FIG.21**

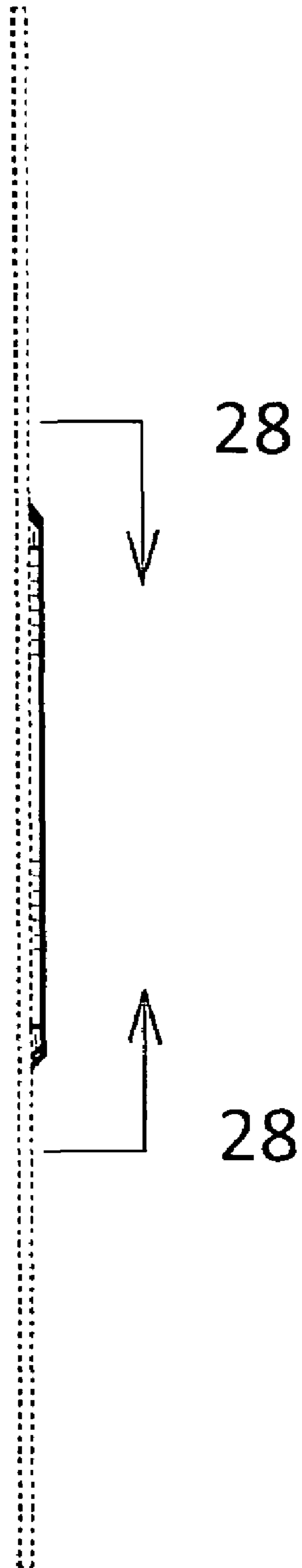


**FIG.22**





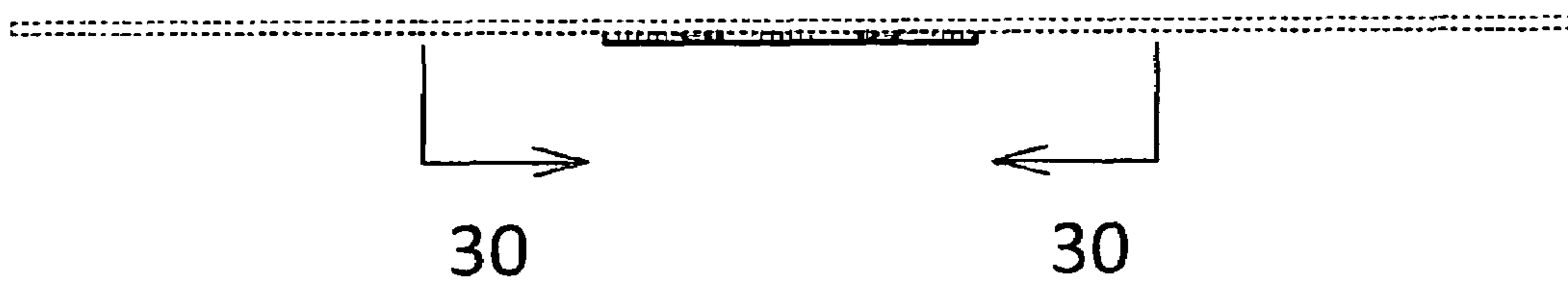
**FIG. 23**



**FIG.24**



**FIG.25**

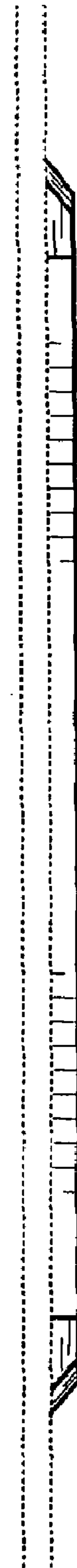


**FIG.26**

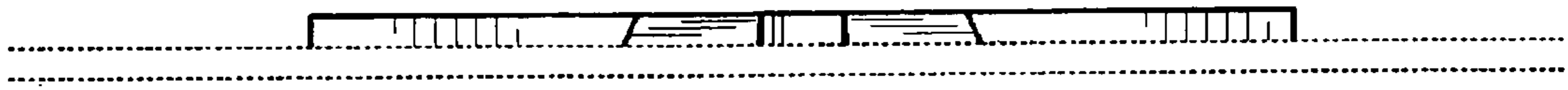


**FIG.28**

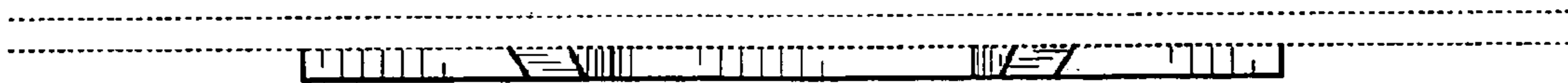
**FIG.27**



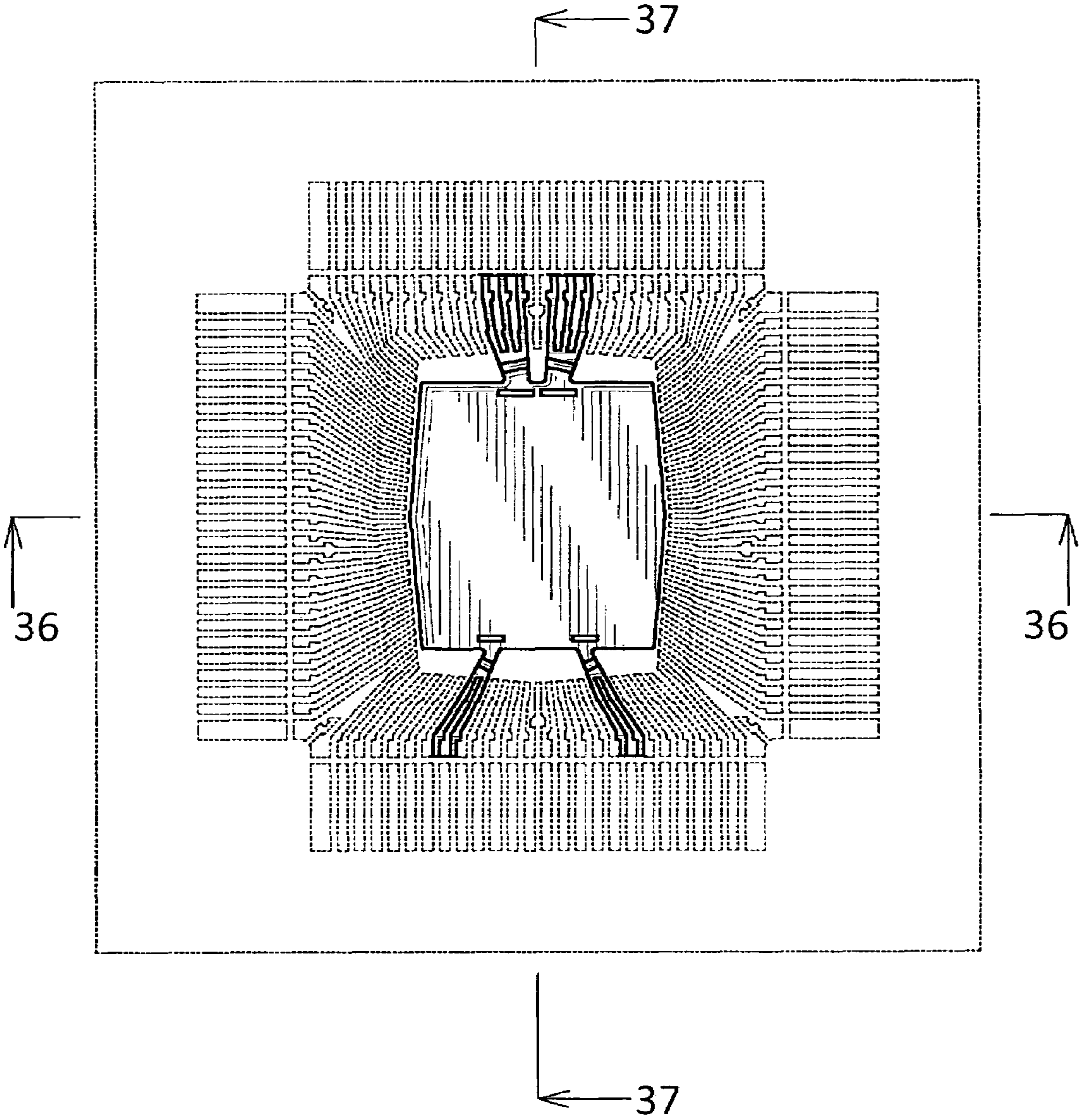
**FIG.29**



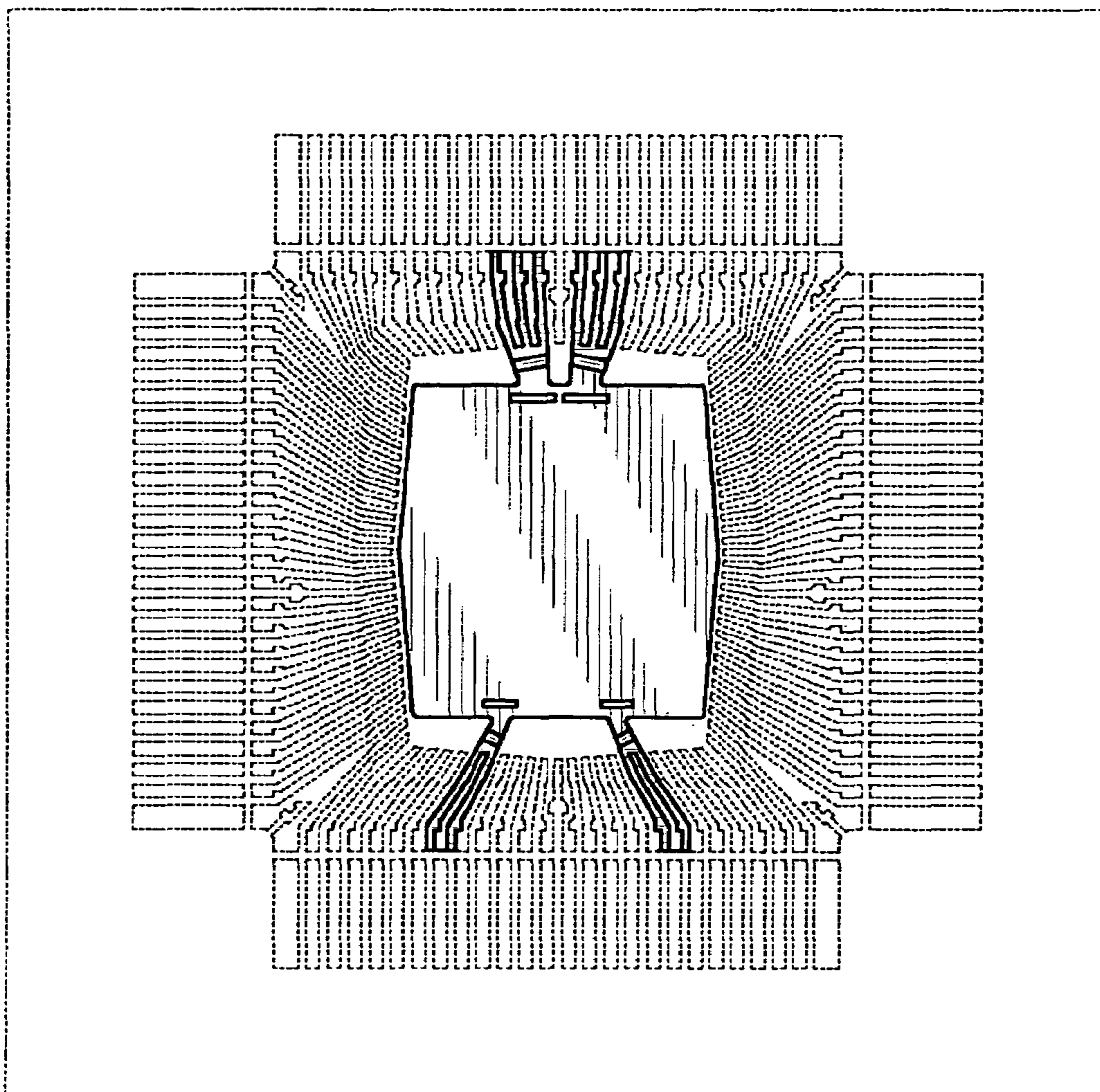
**FIG.30**



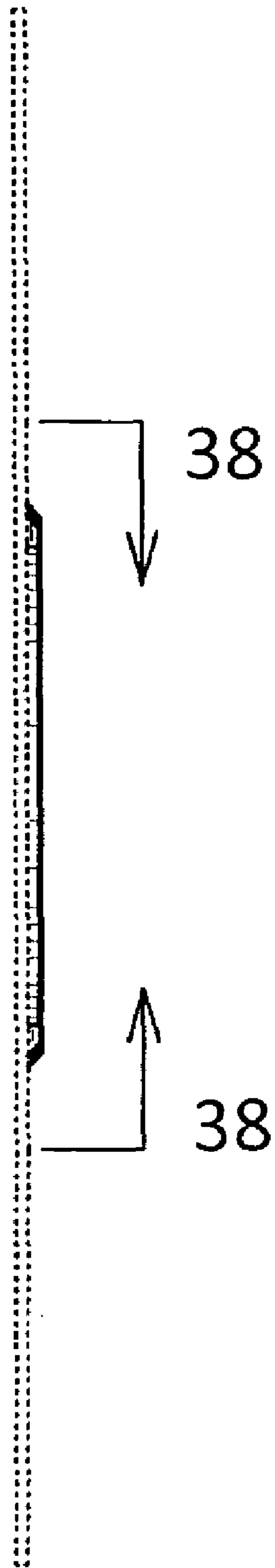
**FIG.31**



**FIG.32**



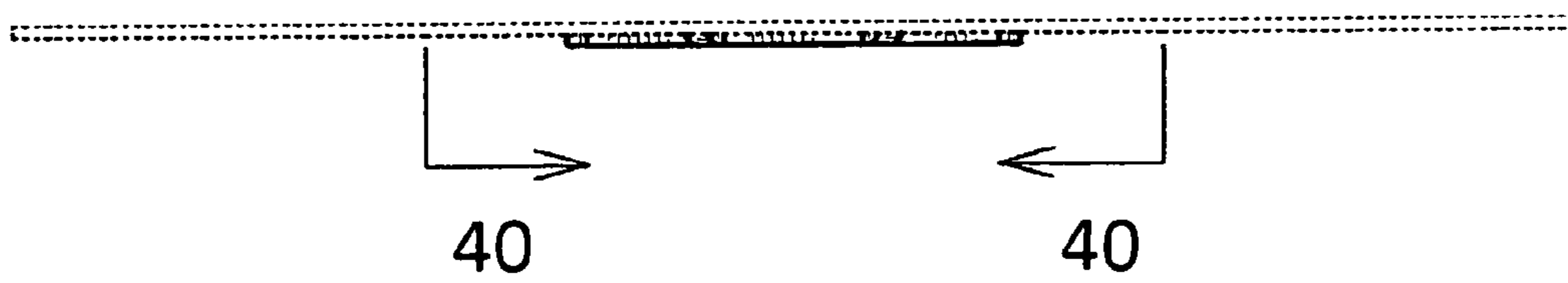
**FIG. 33**



**FIG.34**



**FIG.35**



**FIG.36**





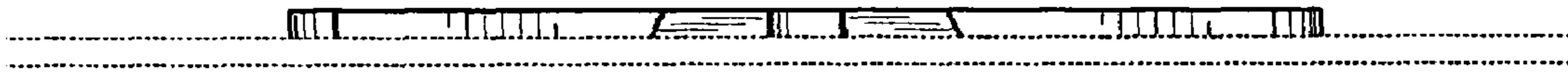
**FIG.37**



**FIG.38**



**FIG.39**



**FIG.40**

