US00D567774S

(12) United States Design Patent

Tani et al.

(10) **Patent No.: US D567,774 S**

(45) **Date of Patent: ** Apr. 29, 2008**

(54) **GROOVE FORMED AROUND A SEMICONDUCTOR DEVICE ON A CIRCUIT BOARD**

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(**) Term: **14 Years**

(21) Appl. No.: **29/268,261**

(22) Filed: **Nov. 1, 2006**

(30) **Foreign Application Priority Data**

May 1, 2006	(JP)	2006-011443
May 1, 2006	(JP)	2006-011445
May 1, 2006	(JP)	2006-011446

(51) **LOC (8) Cl.** **13-03**

(52) **U.S. Cl.** **D13/182**

(58) **Field of Classification Search** D13/182; 174/250, 251, 253, 254, 255, 256, 265, 260, 174/261; 361/760, 748, 720; 336/200

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D319,629	S *	9/1991	Hasegawa et al.	D13/182
5,420,558	A *	5/1995	Ito et al.	336/200
5,467,252	A *	11/1995	Nomi et al.	361/760
5,777,277	A *	7/1998	Inagawa	174/265
5,969,590	A *	10/1999	Gutierrez	336/200
6,114,937	A *	9/2000	Burghartz et al.	336/200
6,121,552	A *	9/2000	Brosnihan et al.	174/253
6,486,412	B2 *	11/2002	Kato	174/260
7,126,452	B2 *	10/2006	Teshima et al.	336/200
2006/0266545	A1 *	11/2006	Takeuchi et al.	174/251
2007/0188287	A1 *	8/2007	Lien et al.	336/200
2007/0205856	A1 *	9/2007	Matsunaga et al.	336/200

FOREIGN PATENT DOCUMENTS

JP	1263143	1/2006

OTHER PUBLICATIONS

Notification of Reasons for Refusal issued in Japanese Design Application No. 2006-011443 mailed on Nov. 10, 2006 and English translation thereof, 4 pages.

Notification of Reasons for Refusal issued in Japanese Design Application No. 2006-011445 mailed on Nov. 10, 2006 and English translation thereof, 4 pages.

Notification of Reasons for Refusal issued in Japanese Design Application No. 2006-011446 mailed on Nov. 10, 2006 and English translation thereof, 4 pages.

* cited by examiner

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(57) CLAIM

The ornamental design for a groove formed around a semiconductor device on a circuit board, as shown and described.

DESCRIPTION

FIG. **1** shows a plan view of the groove formed around a semiconductor device on a circuit board showing our new design.

FIG. **2** shows an enlarged view of a claimed portion as identified by the area boxed by the dash-dot-dash line in FIG. **1**.

FIG. **3** shows an enlarged sectional view along the line **3**—**3** in FIG. **2**.

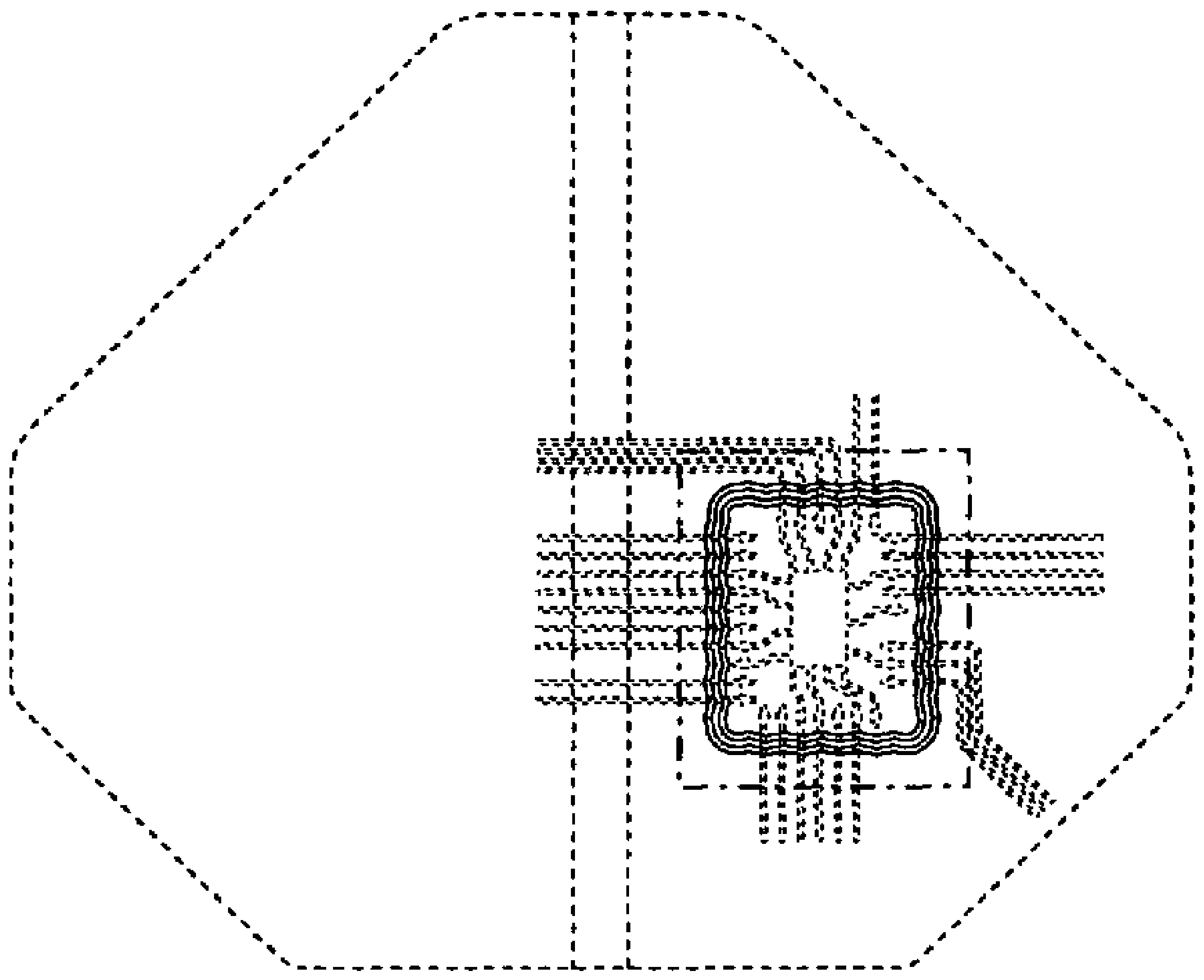
FIG. **4** shows an enlarged sectional view along the line **4**—**4** in FIG. **2**.

FIG. **5** shows a perspective view of the design in FIG. **1**; and,

FIG. **6** shows an enlarged sectional view along the line **4**—**4** in FIG. **2**, on which an environment semiconductor device is disposed.

The broken lines represent unclaimed subject matter.

1 Claim, 3 Drawing Sheets



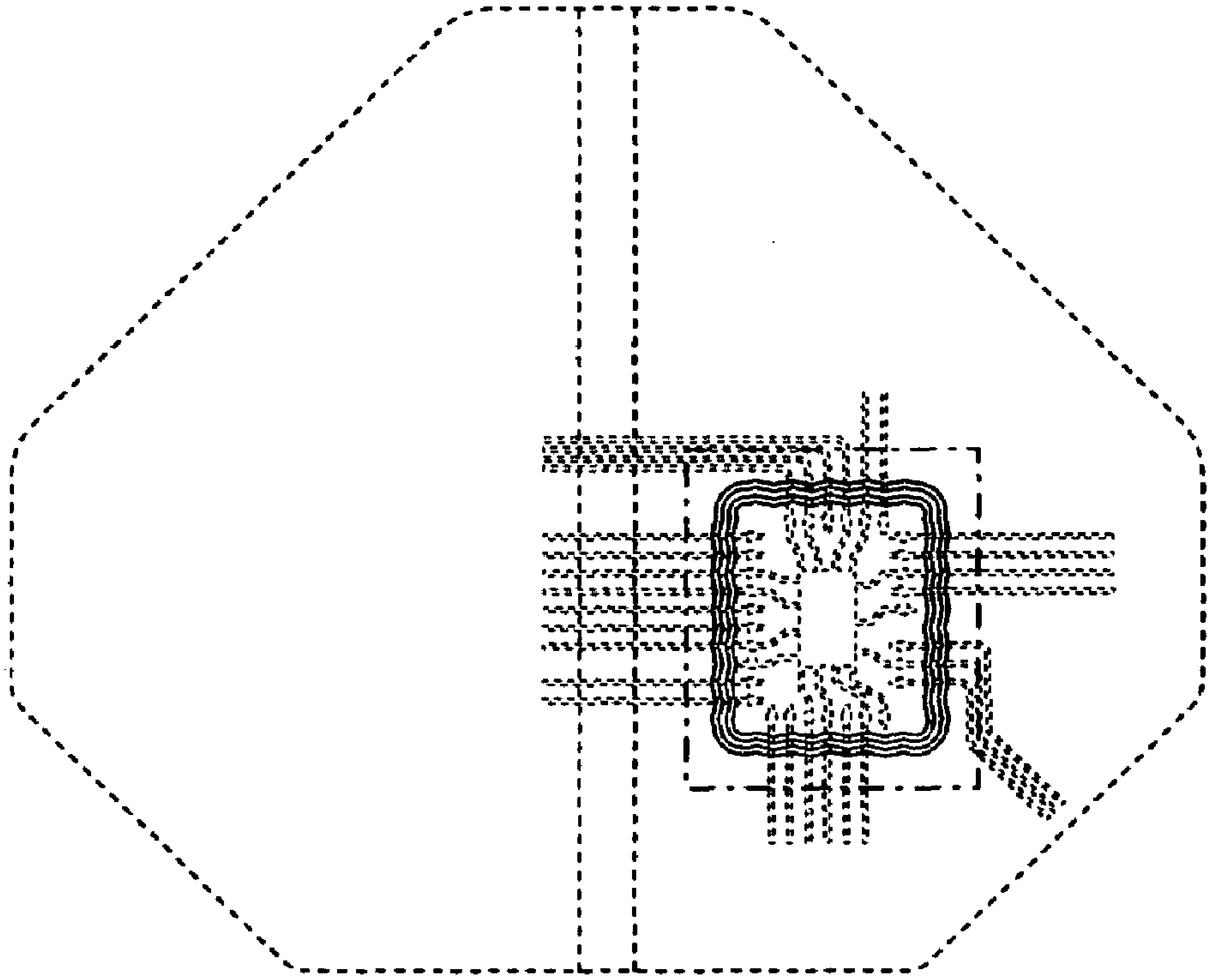


FIG. 1

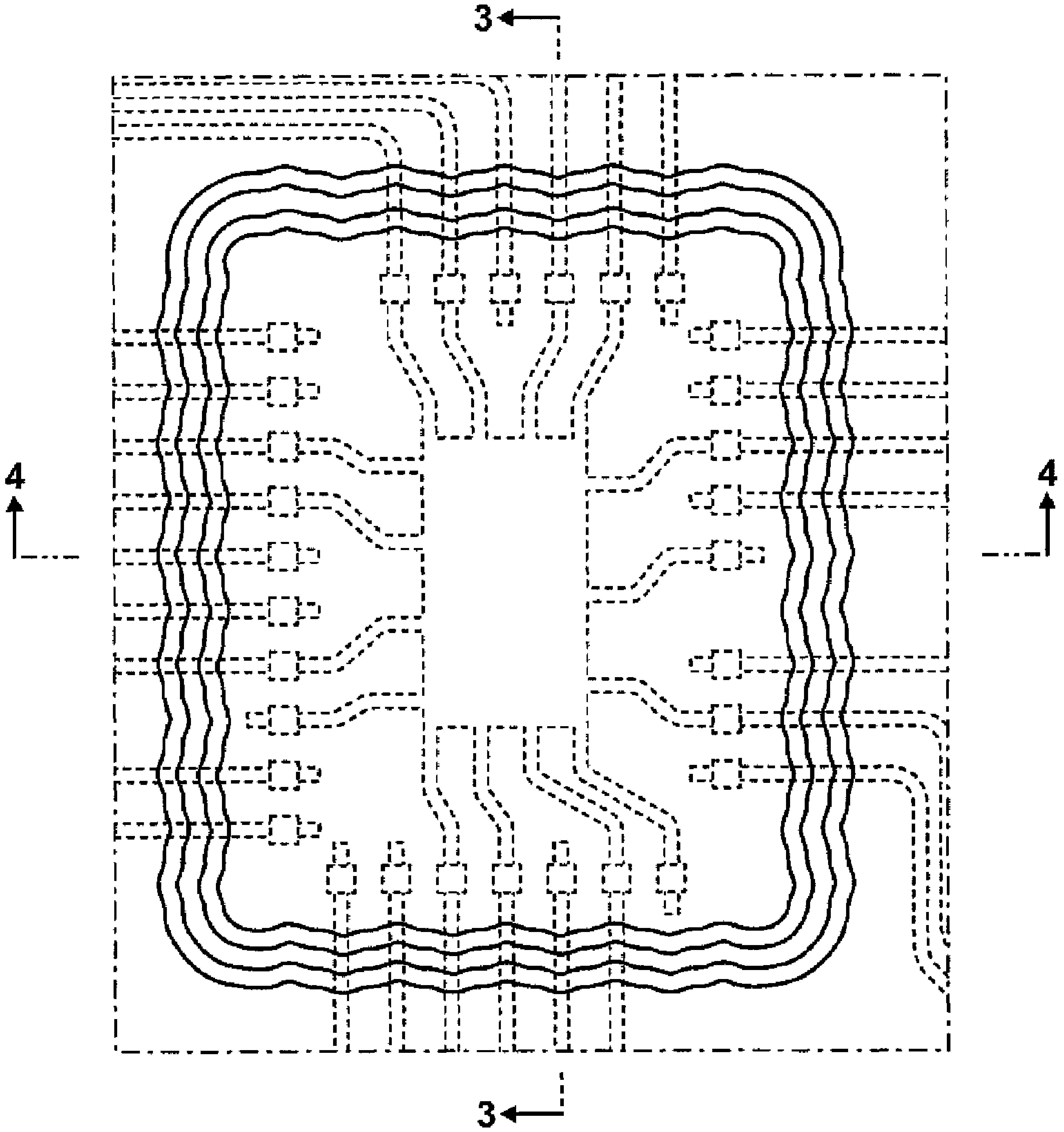


FIG. 2

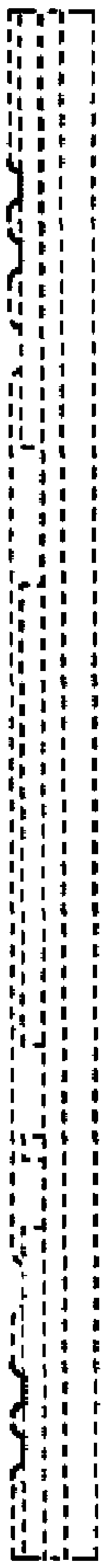


FIG. 3

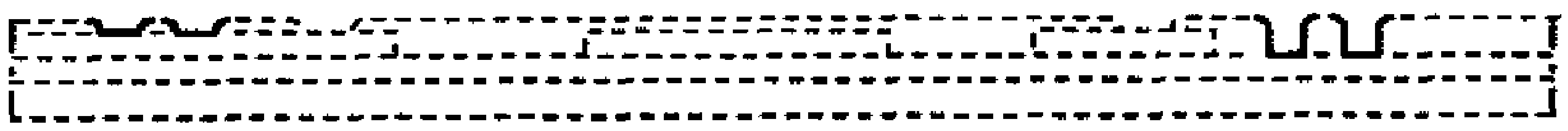


FIG. 4

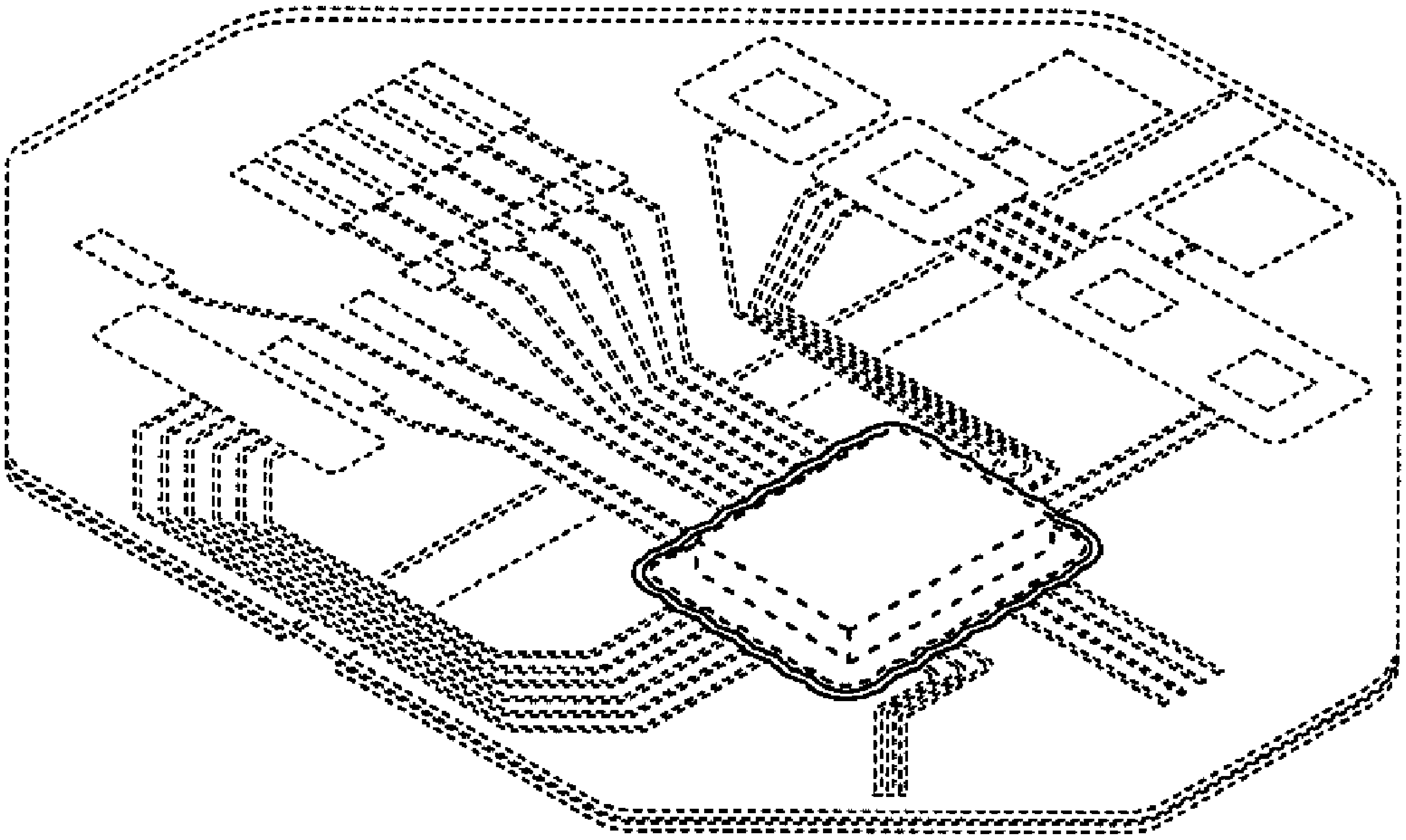


FIG. 5

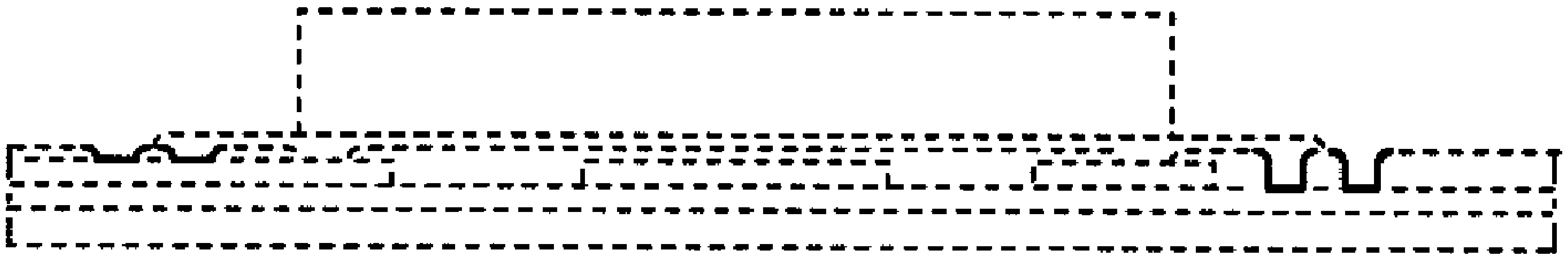


FIG. 6