

US00D512970S

(12) **United States Design Patent** (10) **Patent No.:** **US D512,970 S**
Hart (45) **Date of Patent:** **** Dec. 20, 2005**

(54) **UNIVERSAL LEAD STRAIGHTENER FOR INTEGRATED CIRCUIT DEVICES**

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(73) Assignee: **Topline Corporation**, Garden Grove, CA (US)

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

(21) Appl. No.: **29/192,710**

(22) Filed: **Oct. 29, 2003**

(51) **LOC (6) Cl.** **13-03**

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

(58) **Field of Search** D13/182; 174/52.1,
174/250, 260, 265; 140/105, 147; 29/407.1,
840

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,542,457 A 8/1996 Gordon et al.
5,640,308 A * 6/1997 Osann et al. 361/777
6,014,993 A * 1/2000 Goins, III 140/105
6,026,566 A * 2/2000 Urban et al. 29/840
6,740,822 B2 * 5/2004 Watanabe 174/260
2003/0066681 A1 * 4/2003 Uchida et al. 174/260

OTHER PUBLICATIONS

COOPER Tools, *Weller WLSK1000 QFP Lead Repair Kit*,
CT97-0400/GP-92902/5M/Printed Jun. 1998/USA Cooper

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* cited by examiner

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(57) **CLAIM**

The ornamental design for a universal lead straightener for integrated circuit devices, as shown and described.

DESCRIPTION

FIG. 1 is a front view of a universal lead straightener for integrated circuit devices showing the ornamental design. FIG. 2 is a back view thereof.

FIG. 3 is a left side view thereof, which is a mirror image of the right side.

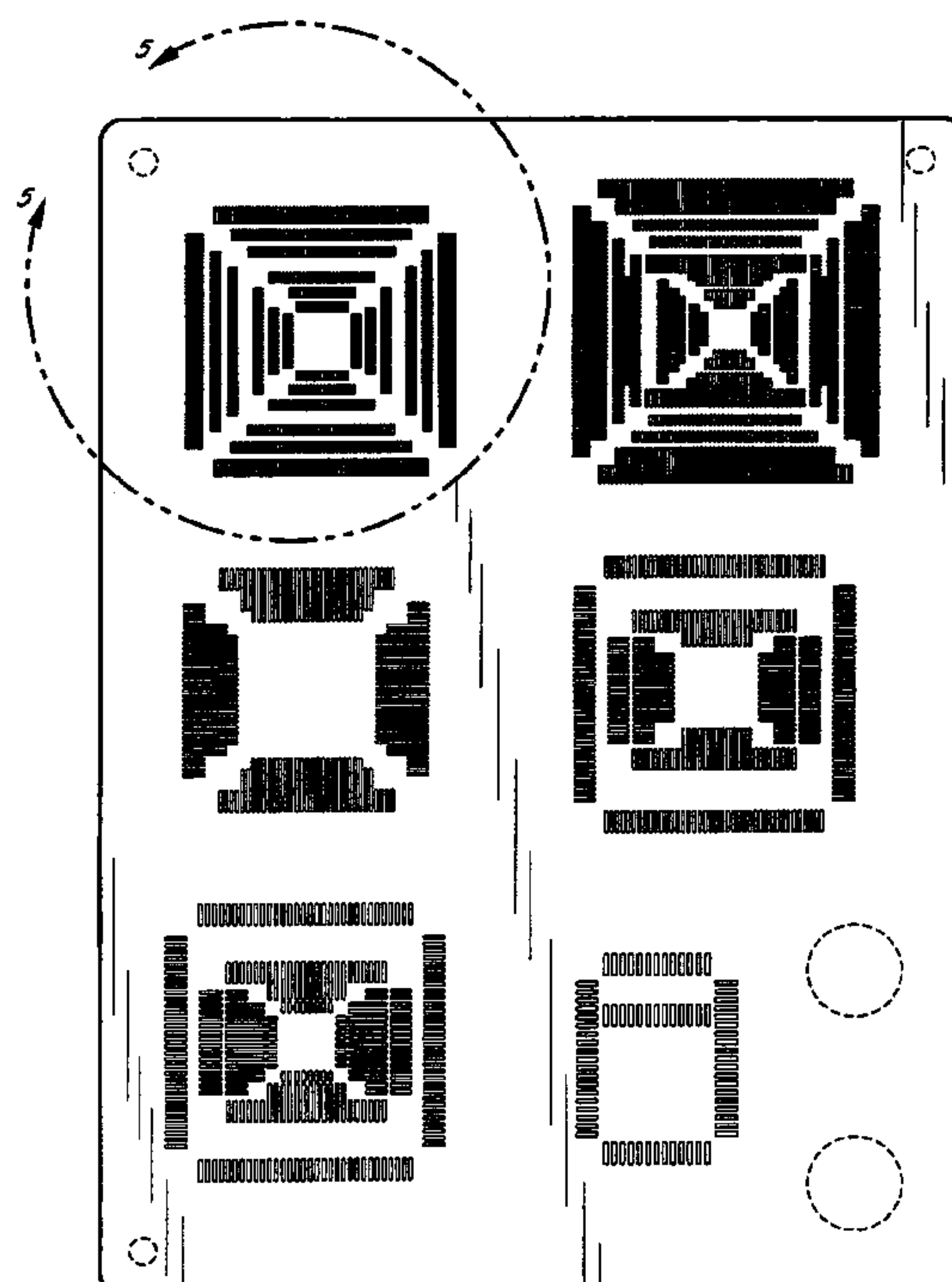
FIG. 4 is a bottom edge view thereof which is a mirror image of a top edge.

FIG. 5 is an enlarged view of a portion of FIG. 1, taken along the line 5—5 in FIG. 1; and,

FIG. 6 is a perspective, partially sectionalized view taken along the line 6—6 in FIG. 5 to illustrate the shallow recesses of the arrays and to illustrate in phantom lines the manner in which the leads of an integrated circuit device fit within the shallow recesses.

The broken line showing of the environment is for illustrative purposes only and forms no part of the claimed design.

1 Claim, 5 Drawing Sheets



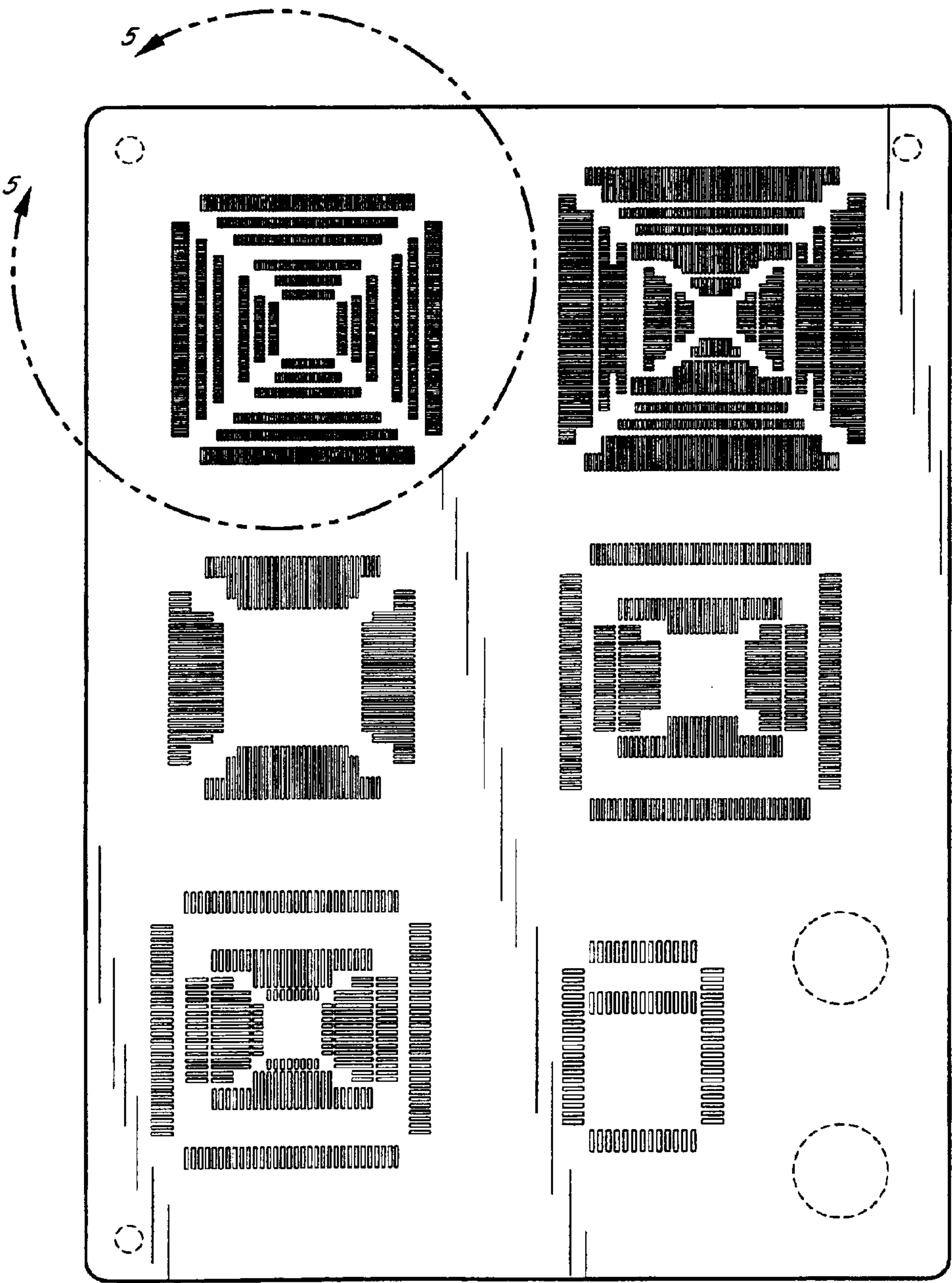


FIG. 1

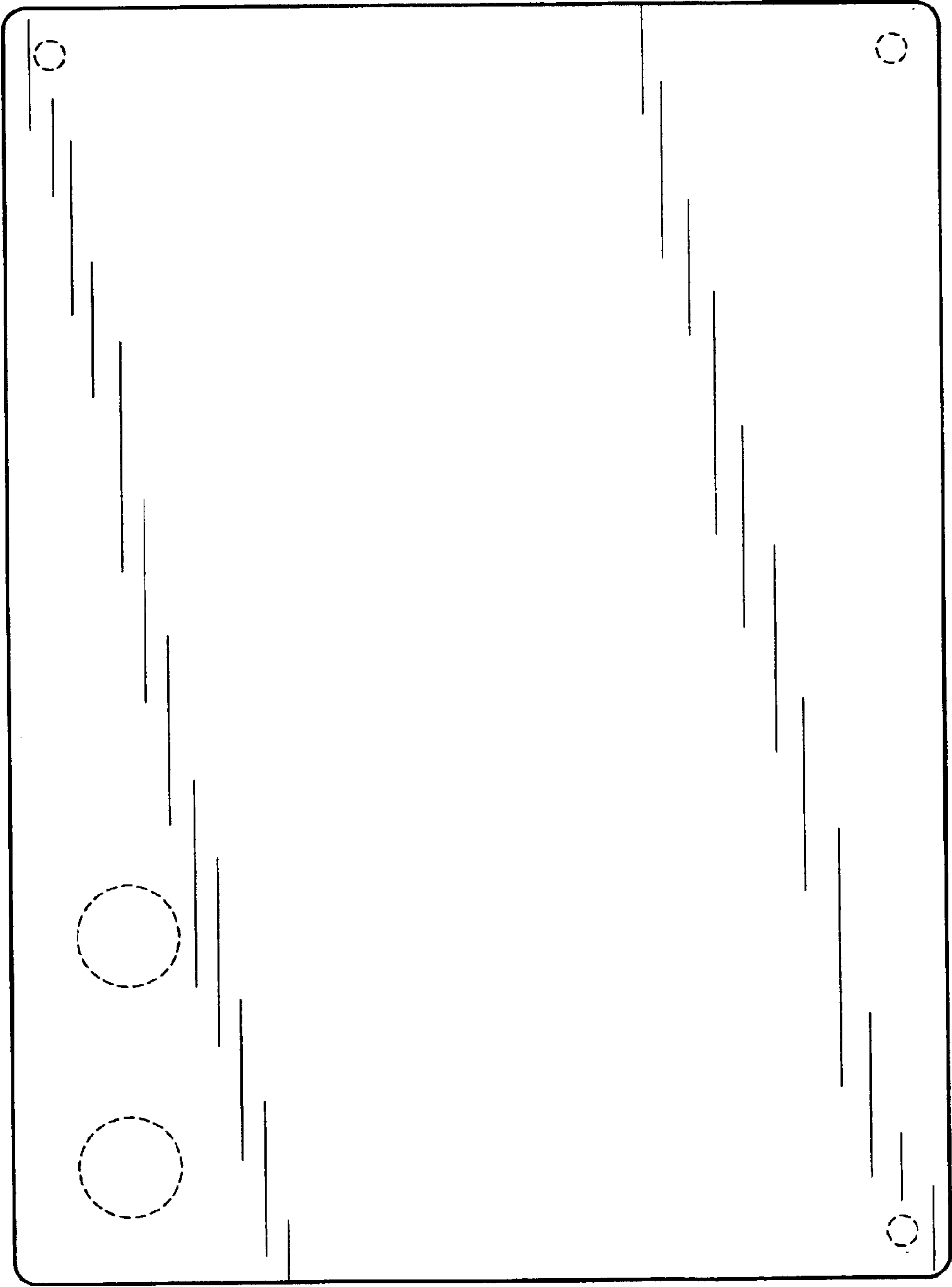
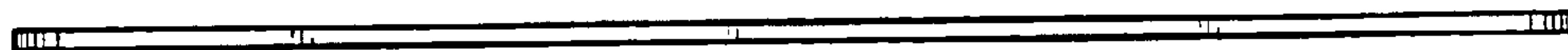


FIG. 2



FIG. 3

FIG. 4



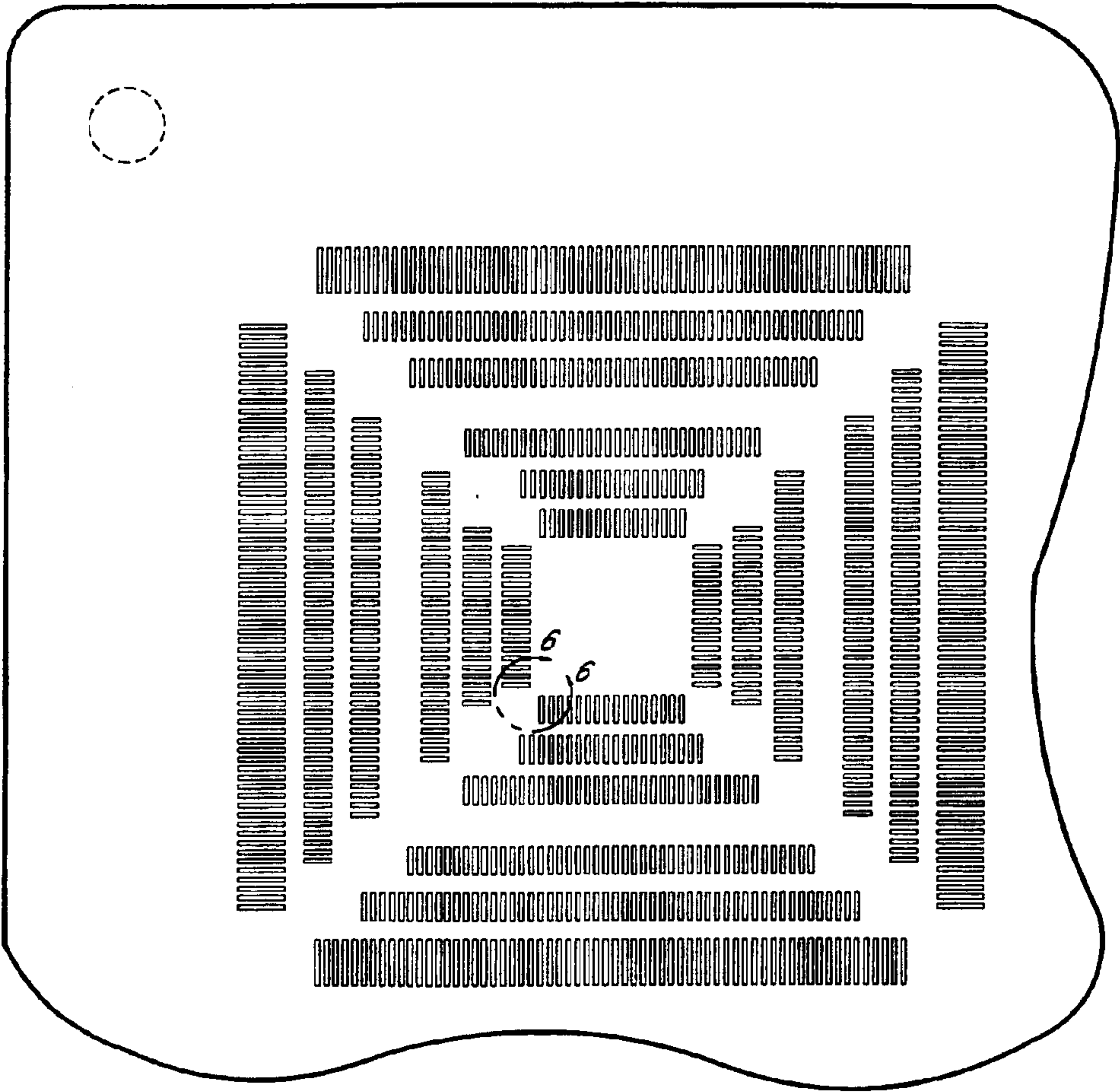


FIG. 5

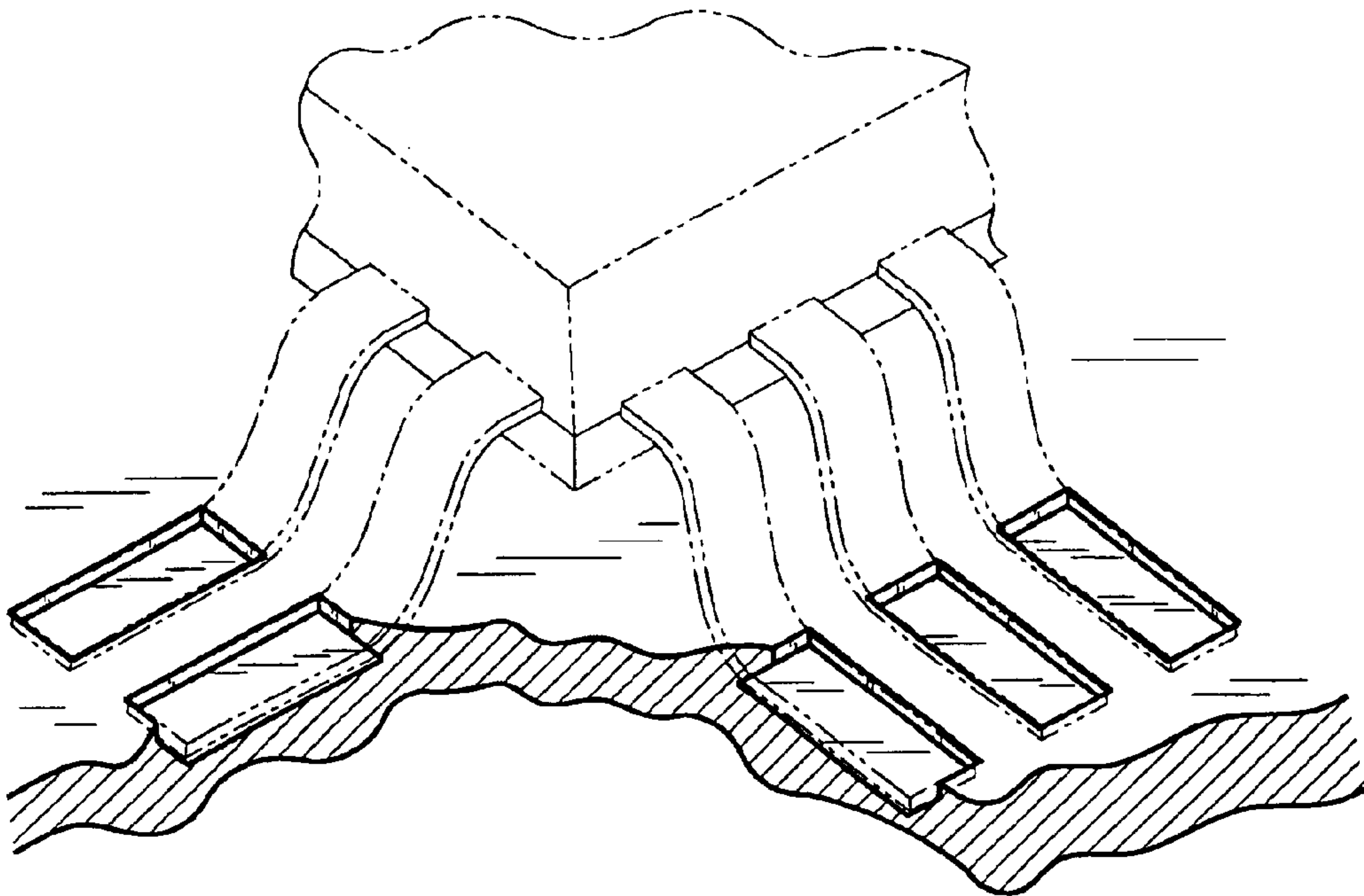


FIG. 6