



US0D1033355S

(12)

United States Design Patent

Hara

(10)

Patent No.:

US D1,033,355 S

(45)

Date of Patent:

** Jul. 2, 2024

(54) SEMICONDUCTOR MODULE

(71) Applicant: ROHM CO., LTD., Kyoto (JP)
(72) Inventor: Hideo Hara, Kyoto (JP)
(73) Assignee: ROHM CO., LTD., Kyoto (JP)
(**) Term: 15 Years

(21) Appl. No.: 29/823,892
(22) Filed: Jan. 20, 2022

(30) Foreign Application Priority Data

Jul. 29, 2021 (JP) 2021-016448 D
Jul. 29, 2021 (JP) 2021-016451 D
(51) LOC (14) Cl. 13-03
(52) U.S. Cl.
USPC D13/182
(58) Field of Classification Search
USPC D13/117, 118, 123, 133, 146, 147, 158,
D13/182, 184, 199
CPC ... H01L 23/31; H01L 23/36; H01L 23/49555;
H01L 23/49575; H01L 2224/32245;
H01L 2224/48247; H02M 7/00; H05K
7/20; H05K 1/18
See application file for complete search history.

(56) References Cited

U.S. PATENT DOCUMENTS

5,337,216 A * 8/1994 McIver H01L 21/56
361/728
D359,028 S * 6/1995 Siegel D13/182
D459,705 S * 7/2002 Yokota D13/182
D466,485 S * 12/2002 Maehara D13/182
D505,400 S * 5/2005 Kawafuji D13/182
D770,994 S * 11/2016 Hasegawa D13/182
D859,334 S * 9/2019 Yokoyama D13/182

(Continued)

OTHER PUBLICATIONS

International Registration No. DM/209,494, Date of the international registration: Jul. 22, 2020 (49 pages).
(Continued)

Primary Examiner — Derrick E Holland
(74) Attorney, Agent, or Firm — HSML P.C.

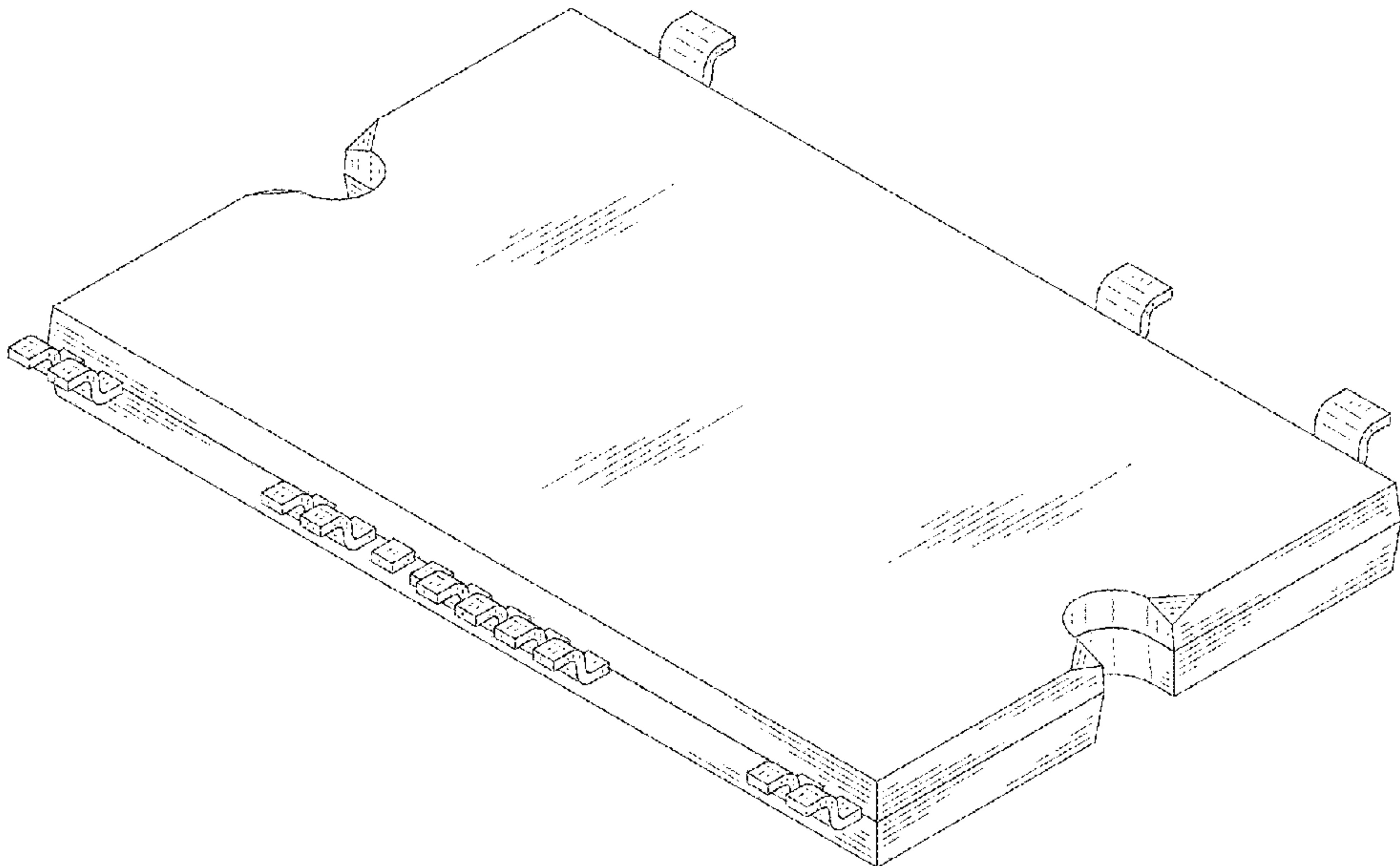
(57) CLAIM

The ornamental design for a semiconductor module, as shown and described.

DESCRIPTION

FIG. 1 is a front, top and right side perspective view of a first embodiment of a semiconductor module showing my design;
FIG. 2 is a rear, bottom and left side perspective view thereof;
FIG. 3 is a front view thereof;
FIG. 4 is a rear view thereof;
FIG. 5 is a top plan view thereof;
FIG. 6 is a bottom plan view thereof;
FIG. 7 is a tight side view thereof, the left side view being an identical image of FIG. 7;
FIG. 8 is a front, top and right side perspective view of a second embodiment of a semiconductor module showing my design;
FIG. 9 is a rear, bottom and left side perspective view thereof;
FIG. 10 is a front view thereof;
FIG. 11 is a rear view thereof;
FIG. 12 is a top plan view thereof;
FIG. 13 is a bottom plan view thereof; and,
FIG. 14 is a right side view thereof, the left side view being an identical image of FIG. 14.
The broken lines illustrate portions of the semiconductor module that form no part of the claimed design. The member illustrated with fine, diagonal, parallel lines is transparent.

1 Claim, 12 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

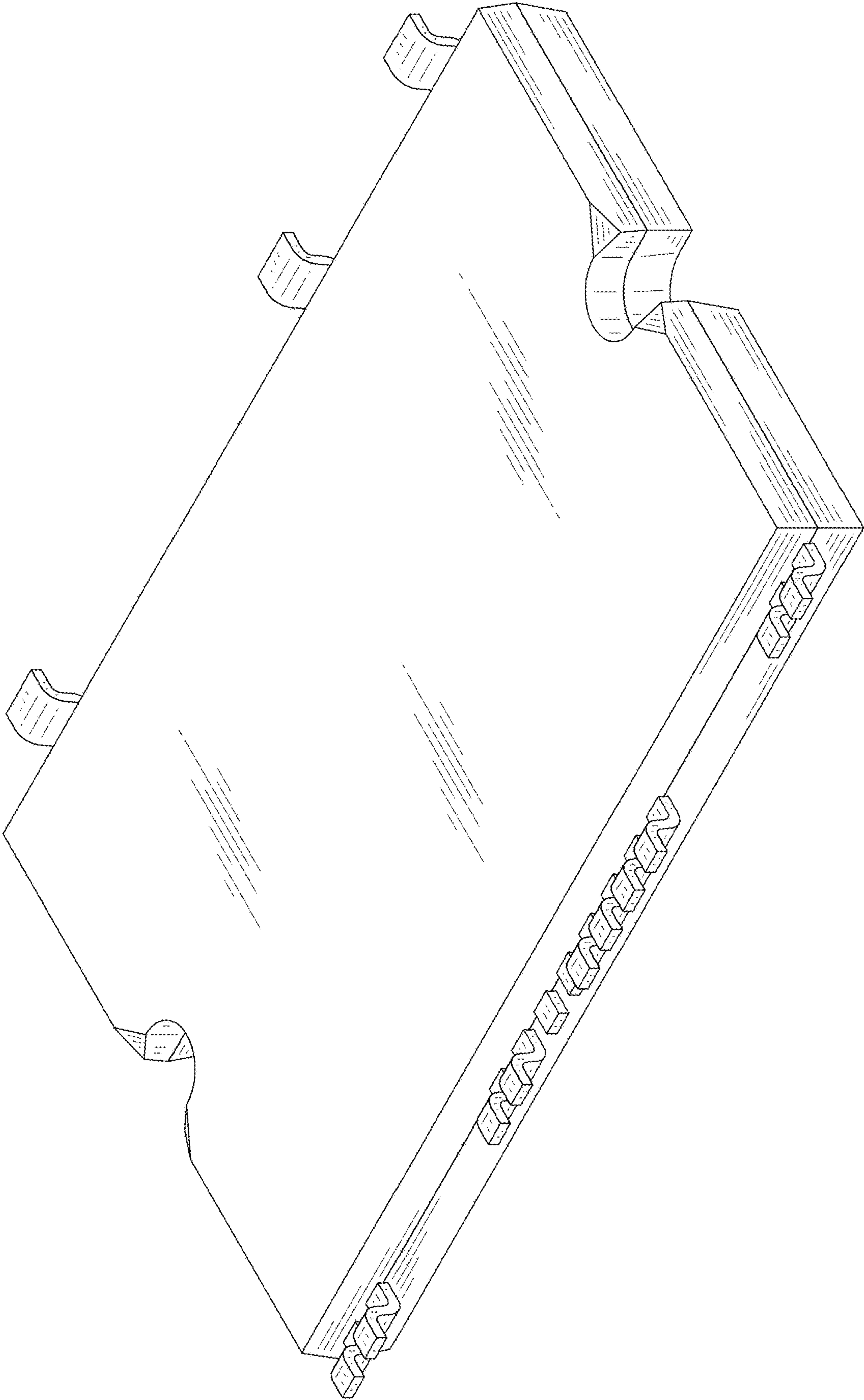
D902,877 S * 11/2020 Hirata D13/182
2021/0217741 A1* 7/2021 Ishimatsu H01L 24/73

OTHER PUBLICATIONS

Office Action issued for Chinese Patent Application No. 202230025877.
1, dated Jul. 19, 2023, 3 pages including English machine transla-
tion.

* cited by examiner

FIG.1



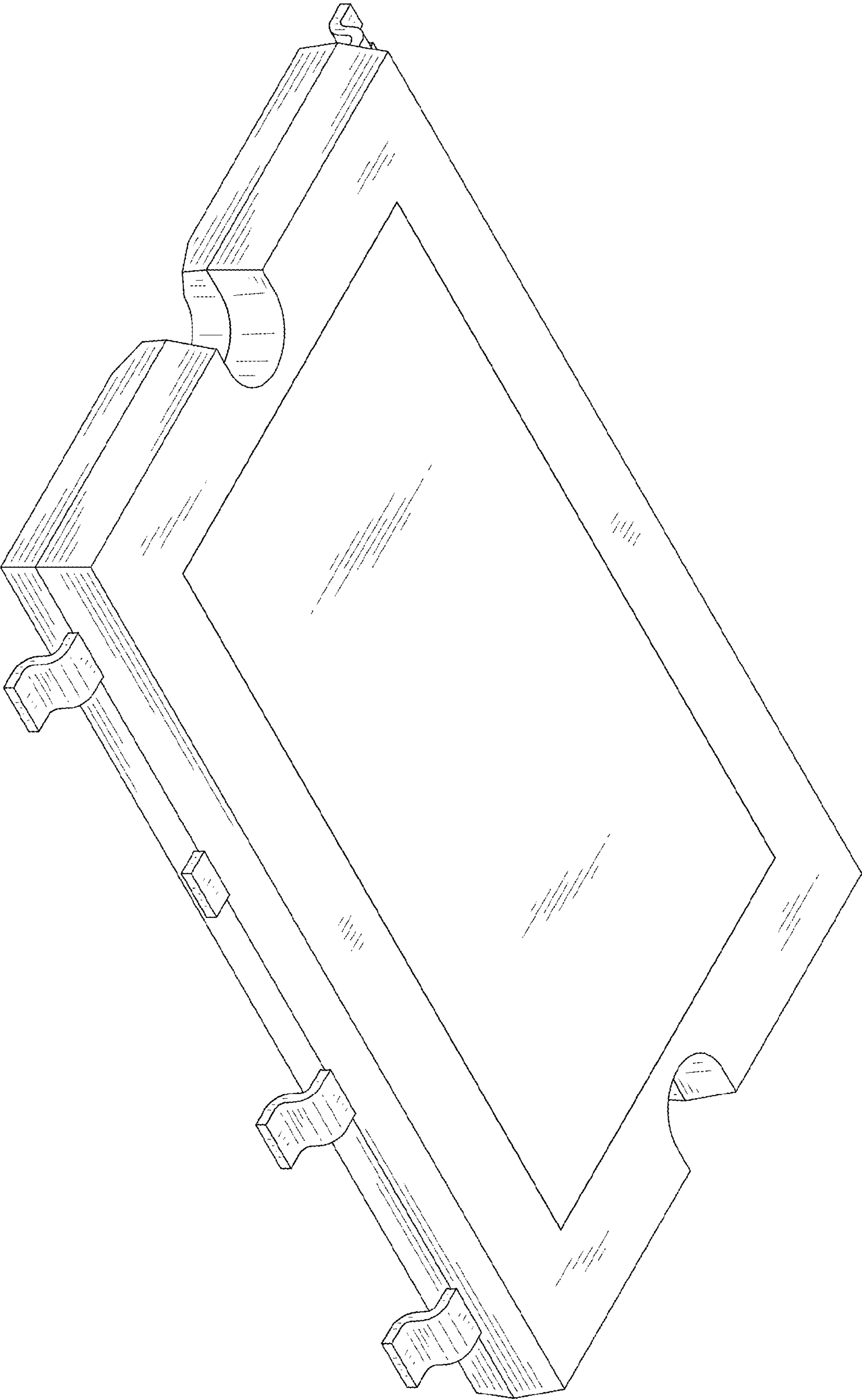


FIG.2

FIG.3

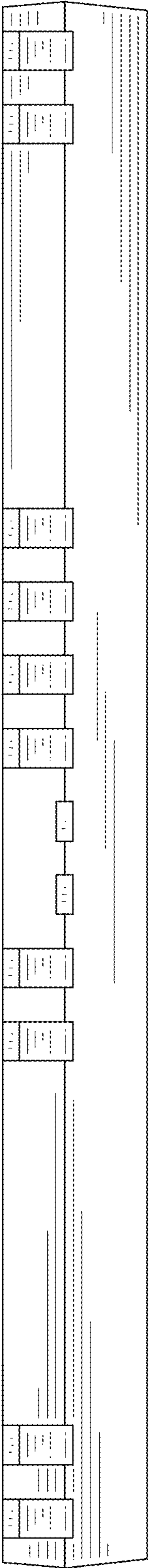


FIG.4

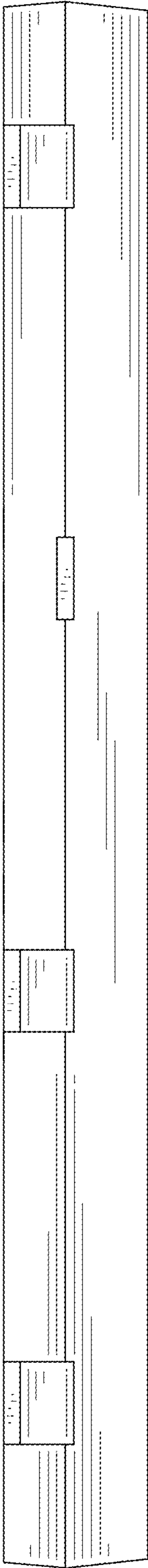
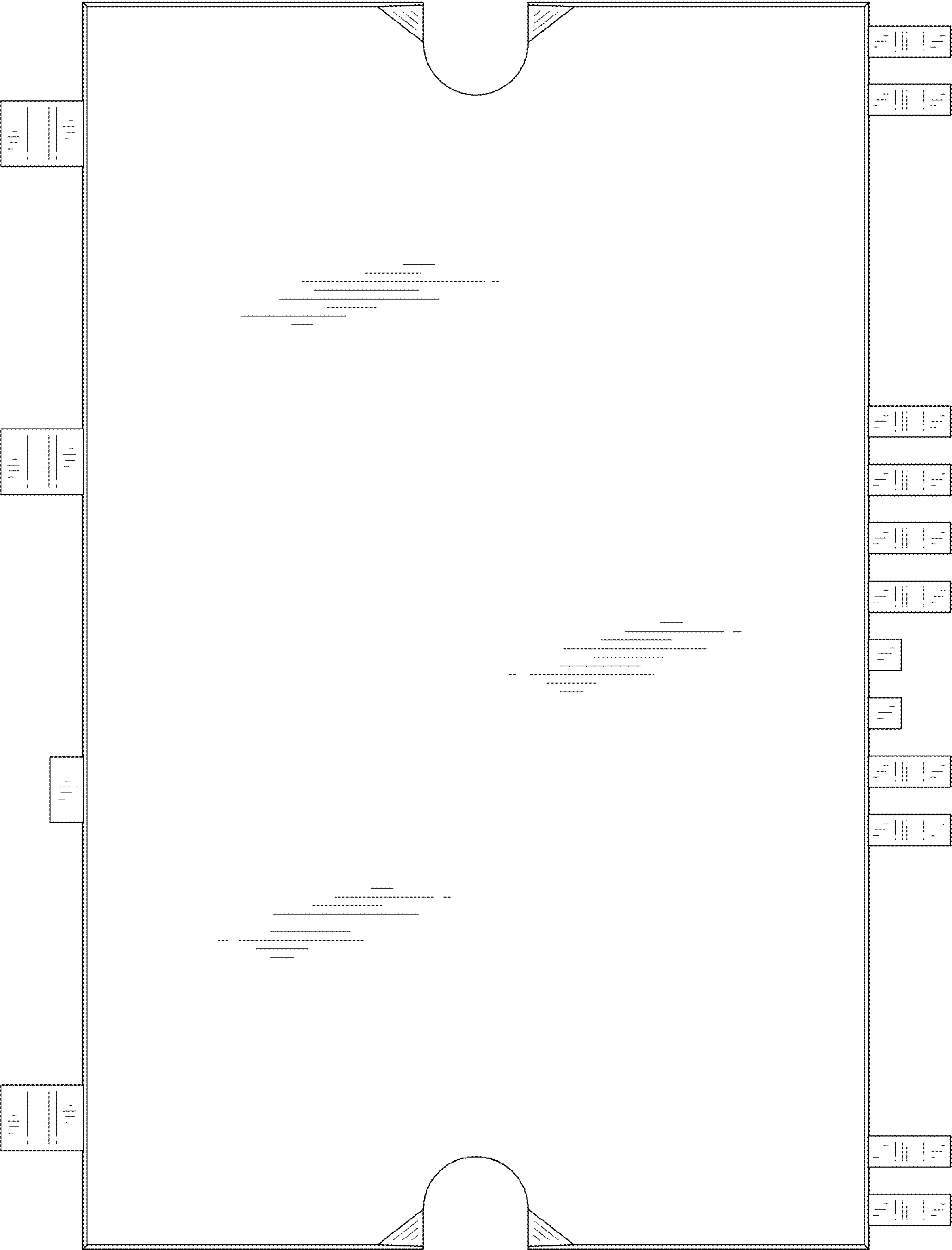


FIG.5



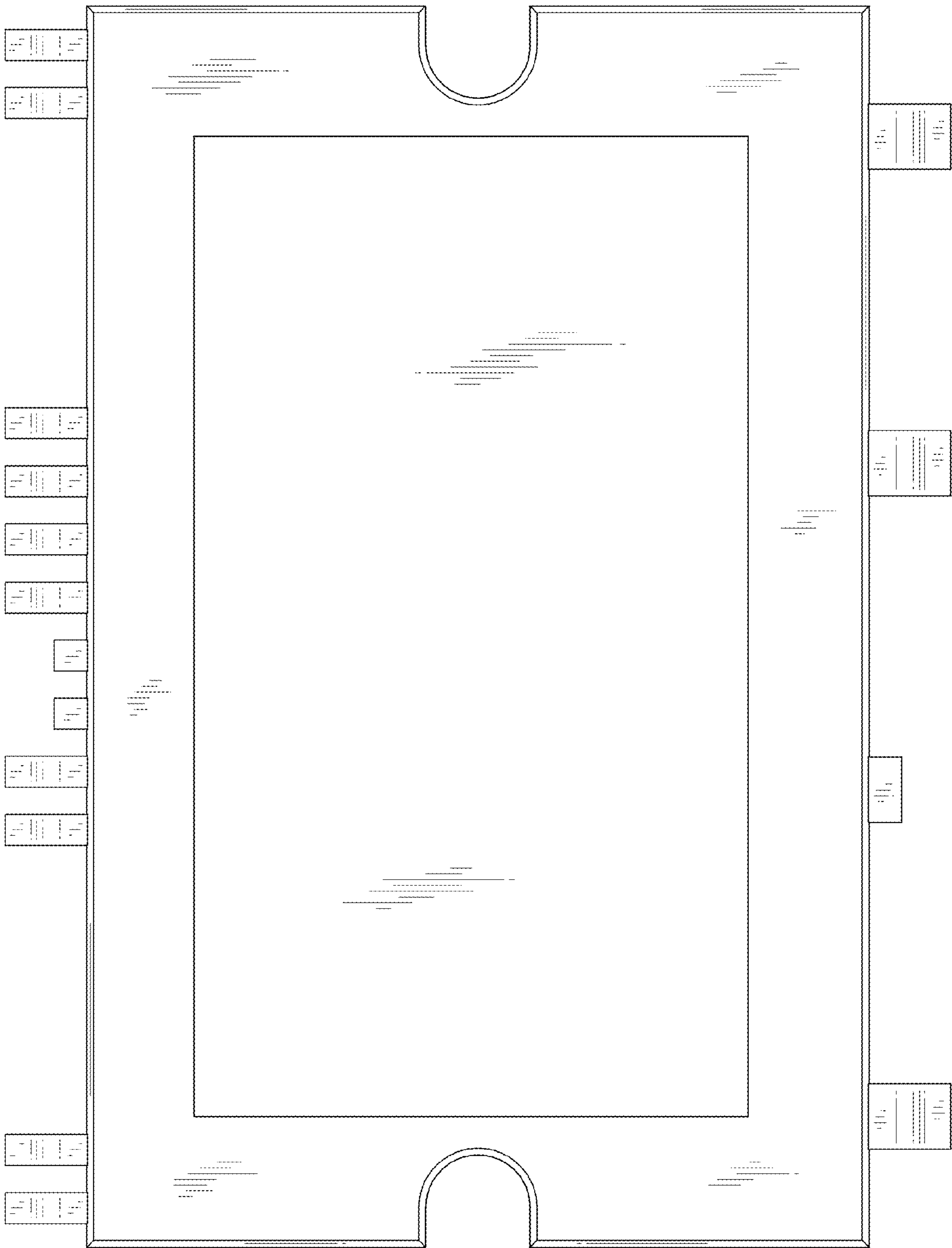


FIG. 6

FIG.7

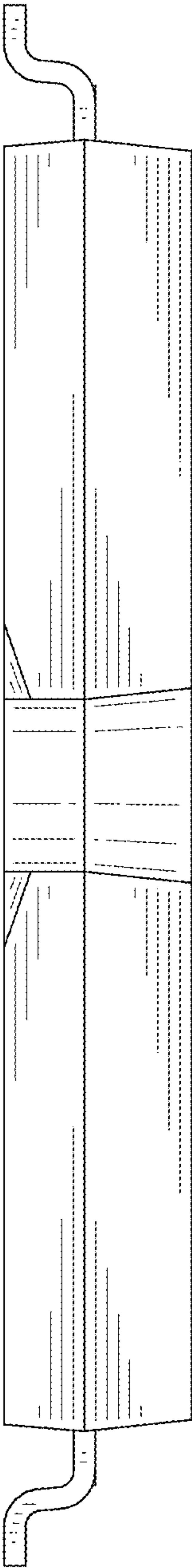
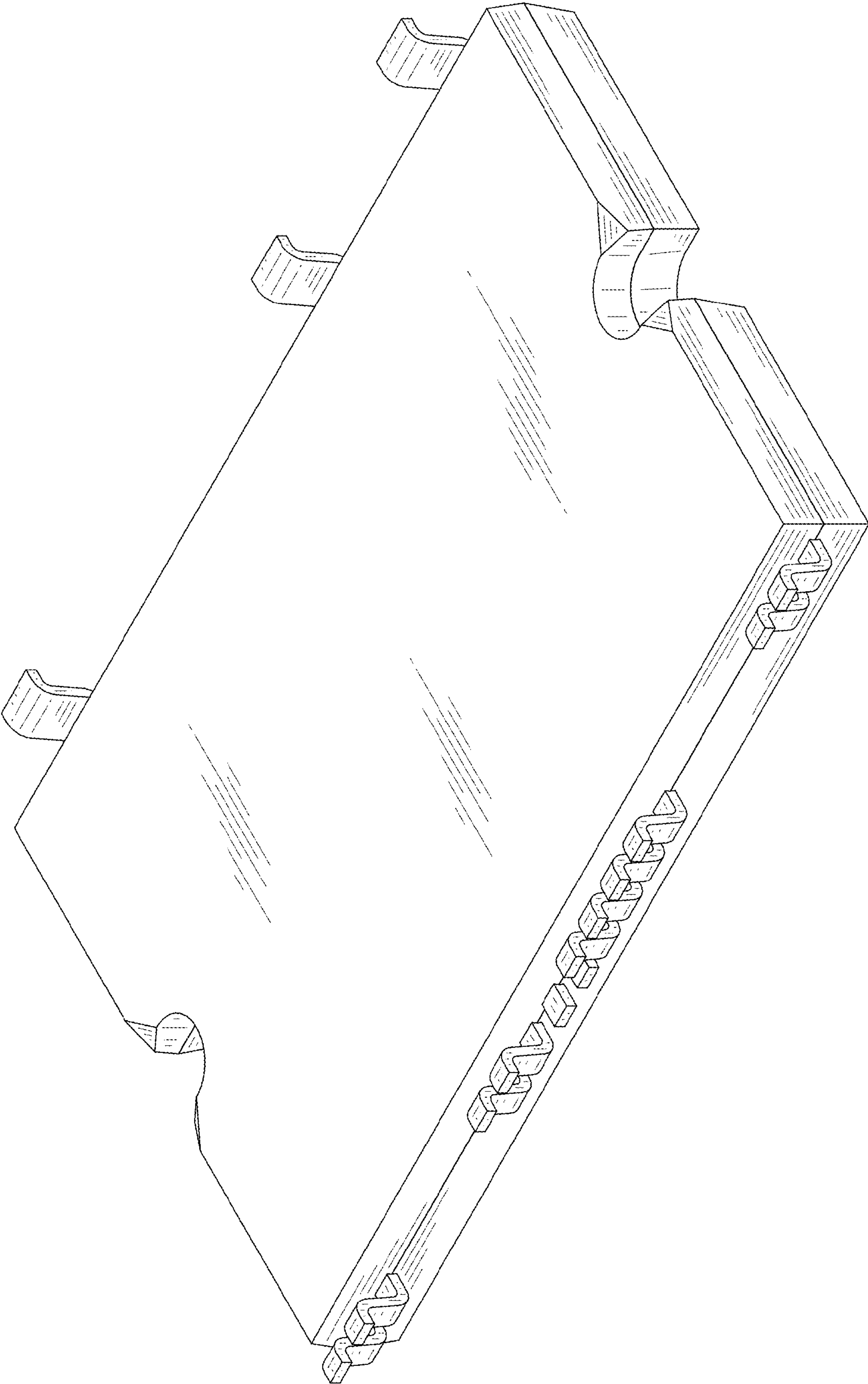


FIG.8



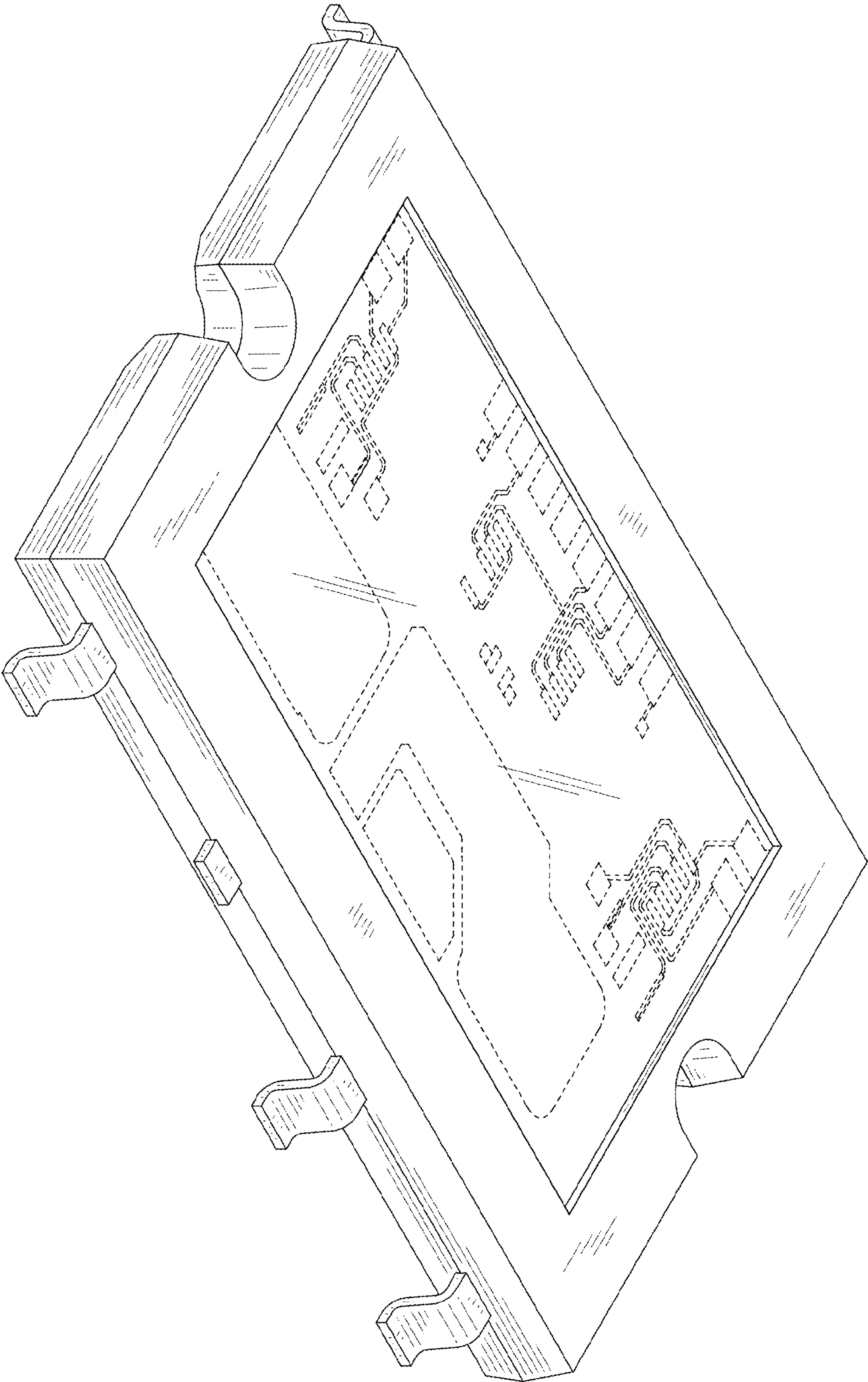


FIG. 9

FIG.10

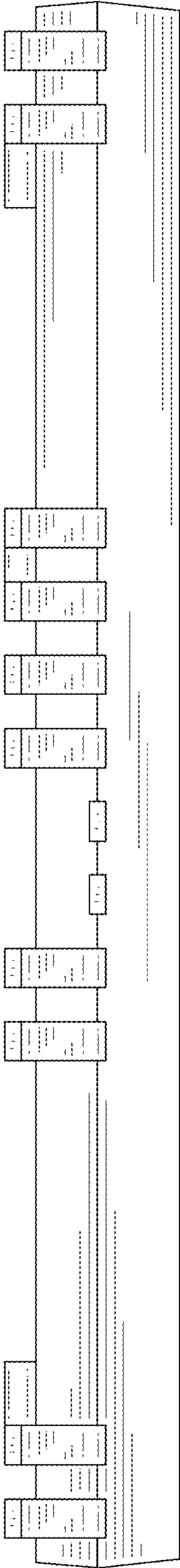


FIG.11

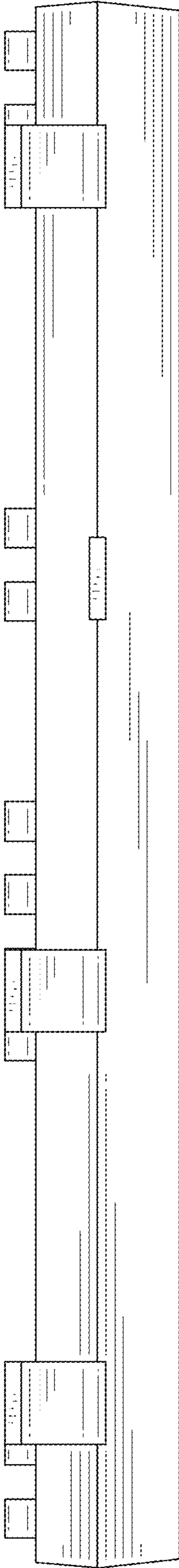


FIG.12

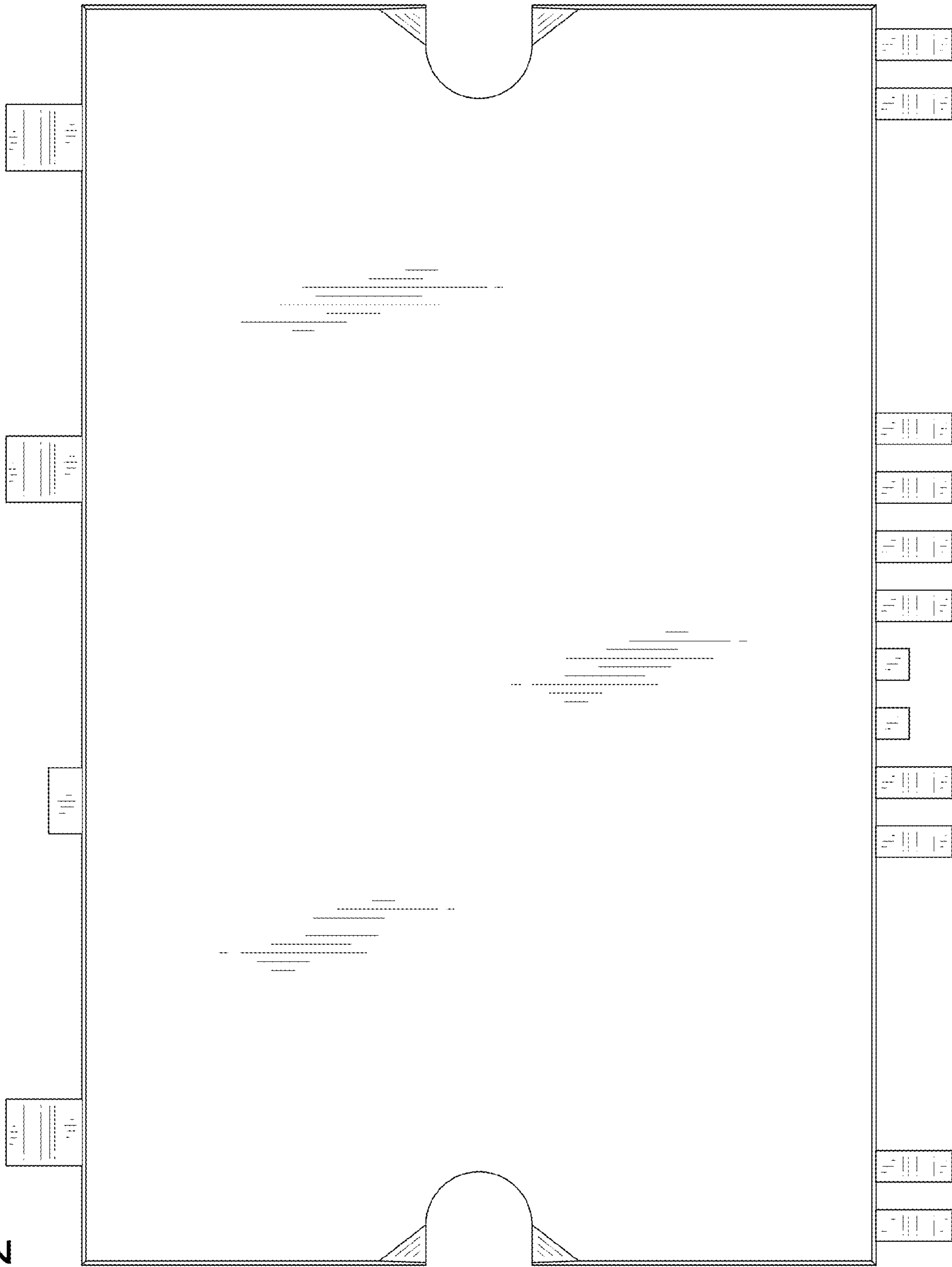
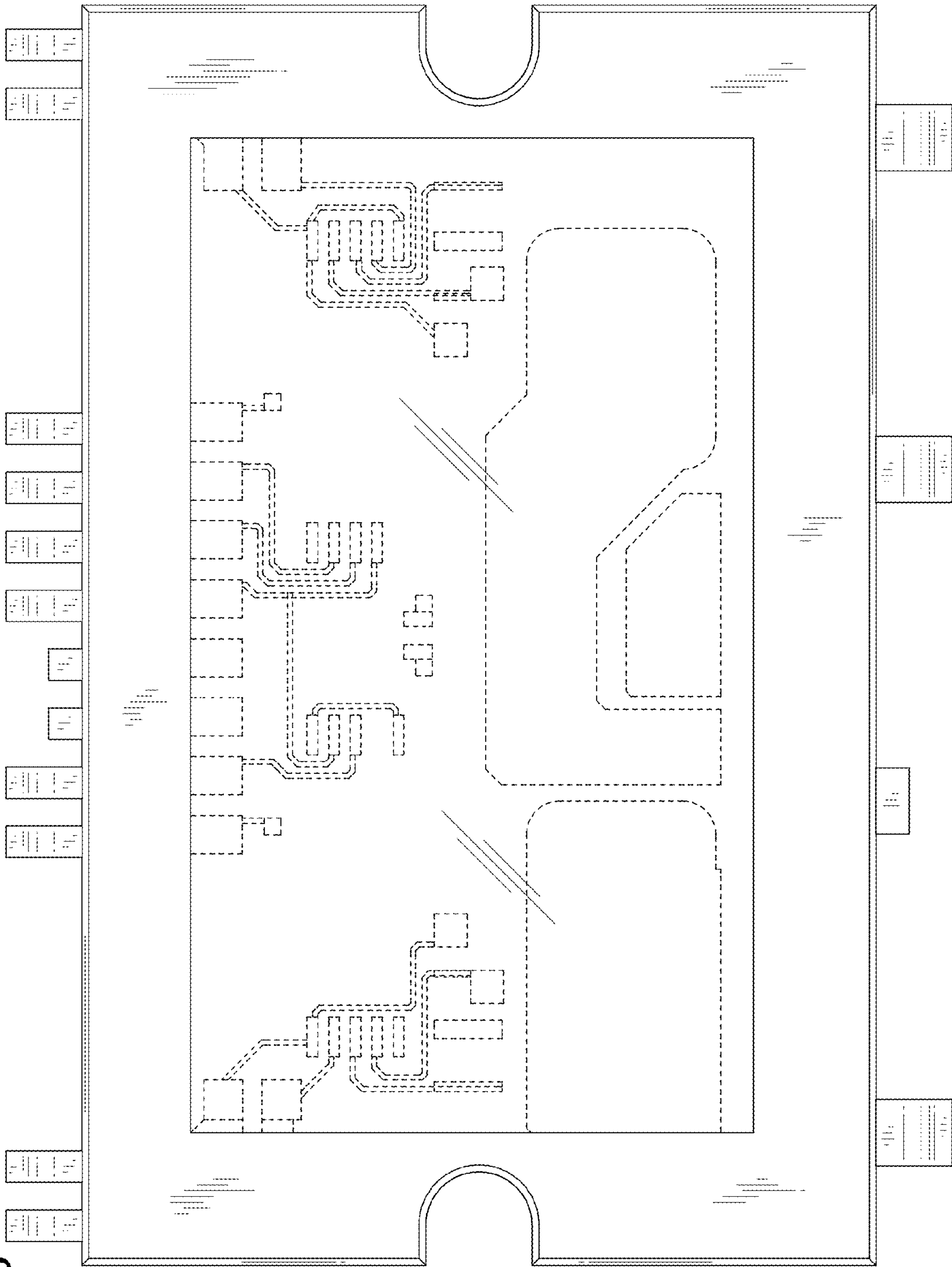


FIG.13



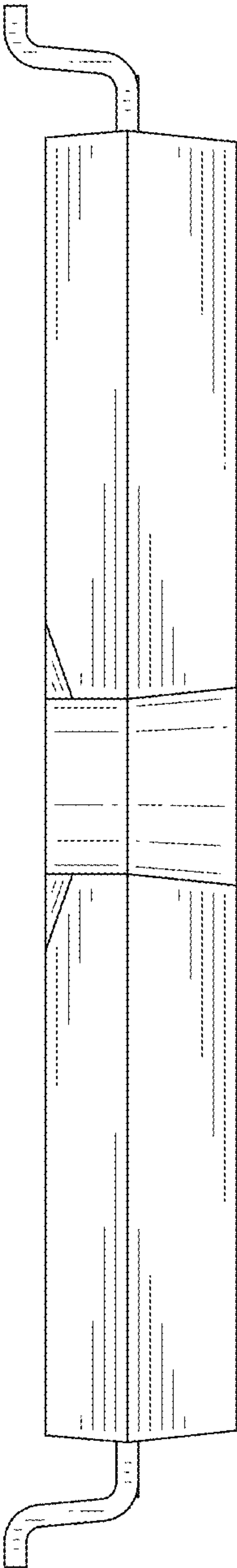


FIG.14