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

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(54) **SEMICONDUCTOR MODULE**

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

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(30) **Foreign Application Priority Data**

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(51) **LOC (14) Cl.** **13-03**

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

(58) **Field of Classification Search**
USPC D13/101, 110, 112, 118, 120, 123, 133,
D13/146, 147, 159, 154, 156, 174, 182,
D13/184, 199; D14/356, 433, 435, 438
CPC H01R 24/00; H01R 12/00; H01R 12/70;
H01R 13/62
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D790,491 S	*	6/2017	Hayashida	.....	D13/182
D796,459 S	*	9/2017	Iwai	.....	D13/182
D824,866 S	*	8/2018	Matsubara	.....	D13/182
D845,921 S	*	4/2019	Saito	.....	D13/182
D853,341 S	*	7/2019	Kurz	.....	D13/158
D853,343 S	*	7/2019	Nii	.....	D13/182
D856,947 S	*	8/2019	Nii	.....	D13/182
D864,884 S	*	10/2019	Yoneyama	.....	D13/182
D873,227 S	*	1/2020	Yoneyama	.....	D13/182
D900,759 S	*	11/2020	Majima	.....	D13/182
D901,405 S	*	11/2020	Saito	.....	D13/182

(Continued)

FOREIGN PATENT DOCUMENTS

CN 3290197 * 4/2003
GB 8098212000-1000 * 10/2017

(Continued)

OTHER PUBLICATIONS

DigiKey, No Announcement Date [online], retrieved on Sep. 6, 2022, retrieved from internet, <https://www.xppower.com/resources/press-releases/high-voltage-dc-dc-power-module-for-scientific-and-semiconductor-applications>.*

(Continued)

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(57) **CLAIM**

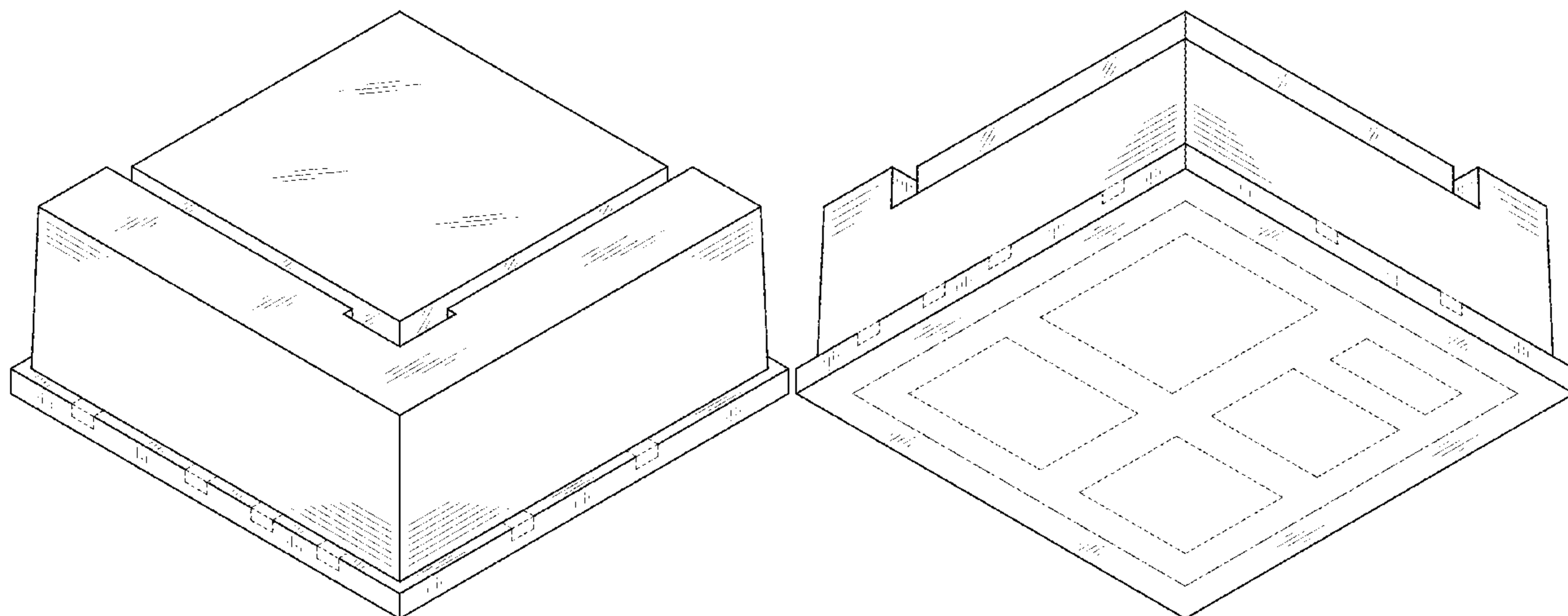
The ornamental design for a semiconductor module, as shown and described.

DESCRIPTION

FIG. 1 is a front, top and right side perspective view of a semiconductor module showing our new 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 right side view thereof; and, FIG. 8 is a left side view thereof.

The broken lines illustrate portions of the semiconductor module that form no part of the claimed design. The dash-dotted lines denote the boundary of the claim and form no part of the claimed design. The member illustrated with fine, diagonal, parallel lines is translucent.

1 Claim, 8 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D903,611 S * 12/2020 Sannai D13/182
D904,325 S * 12/2020 Omichi D13/182
D904,991 S * 12/2020 Aoki D13/182
D923,591 S * 6/2021 Aoki D13/182
D932,452 S * 10/2021 McBride D13/182
D945,384 S * 3/2022 Yamauchi D13/182
2022/0190556 A1 * 6/2022 Kigoshi H01S 5/02345
2022/0231003 A1 * 7/2022 Mimori H05B 45/40

FOREIGN PATENT DOCUMENTS

GB 8202701000-1000 * 4/2019
JP D1128311 * 12/2001
JP D1175871 * 6/2003
JP D1563809 S 11/2016
JP D1563811 S 11/2016
JP D1563907 S 11/2016
JP D1563908 S 11/2016
JP D1563910 S 11/2016
JP D1692093 * 8/2021
JP D1711446 * 3/2022

OTHER PUBLICATIONS

AP power, Announced on Sep. 30, 2020 [online], retrieved on Sep. 6, 2022, retrieved from internet, https://web.archive.org/web/20200930054949/https://www.xppower.com/resources/press-releases/high-voltage-dc-dc-power-module-for-scientific-and-semiconductor-applications.*

* cited by examiner

FIG. 1

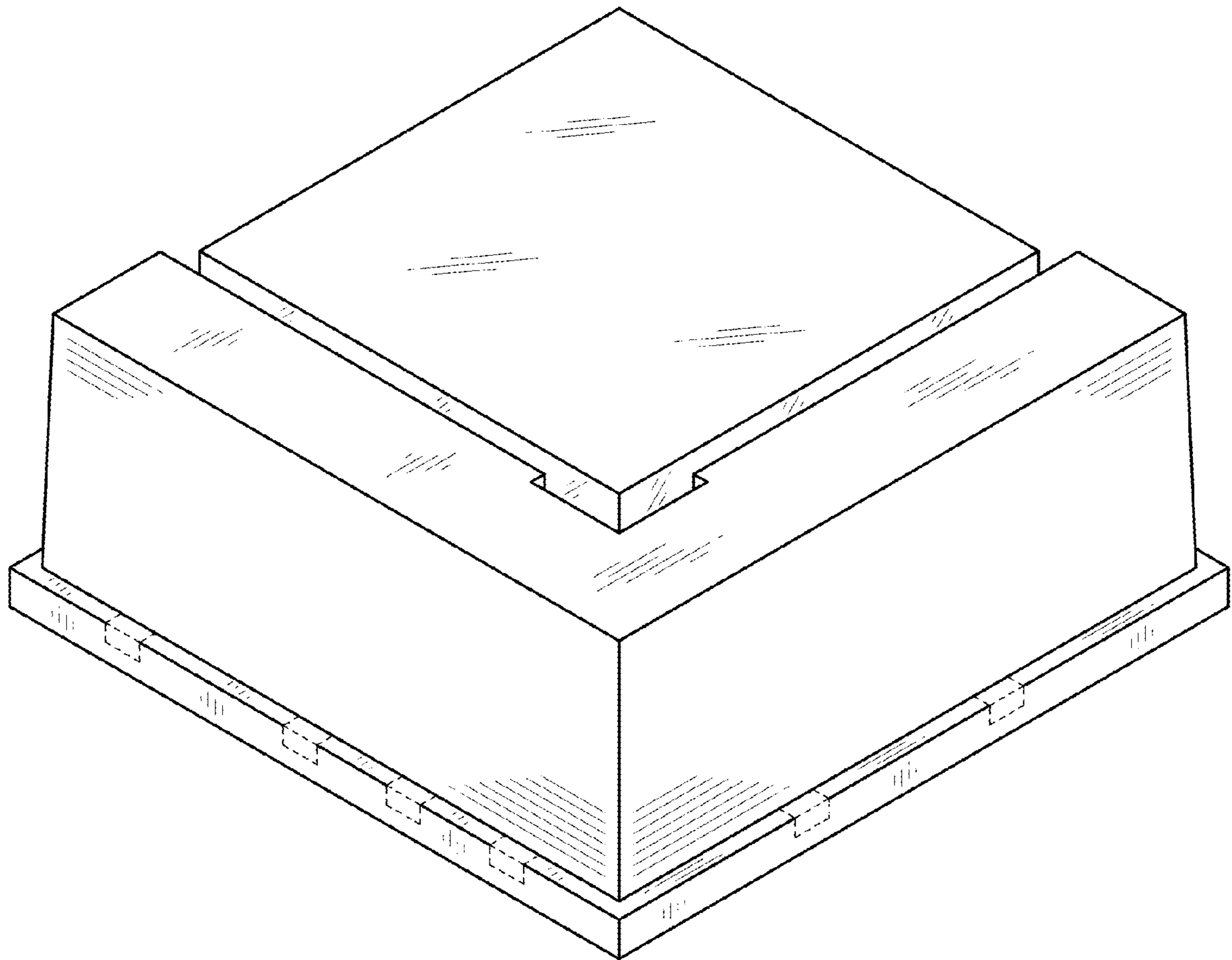


FIG.2

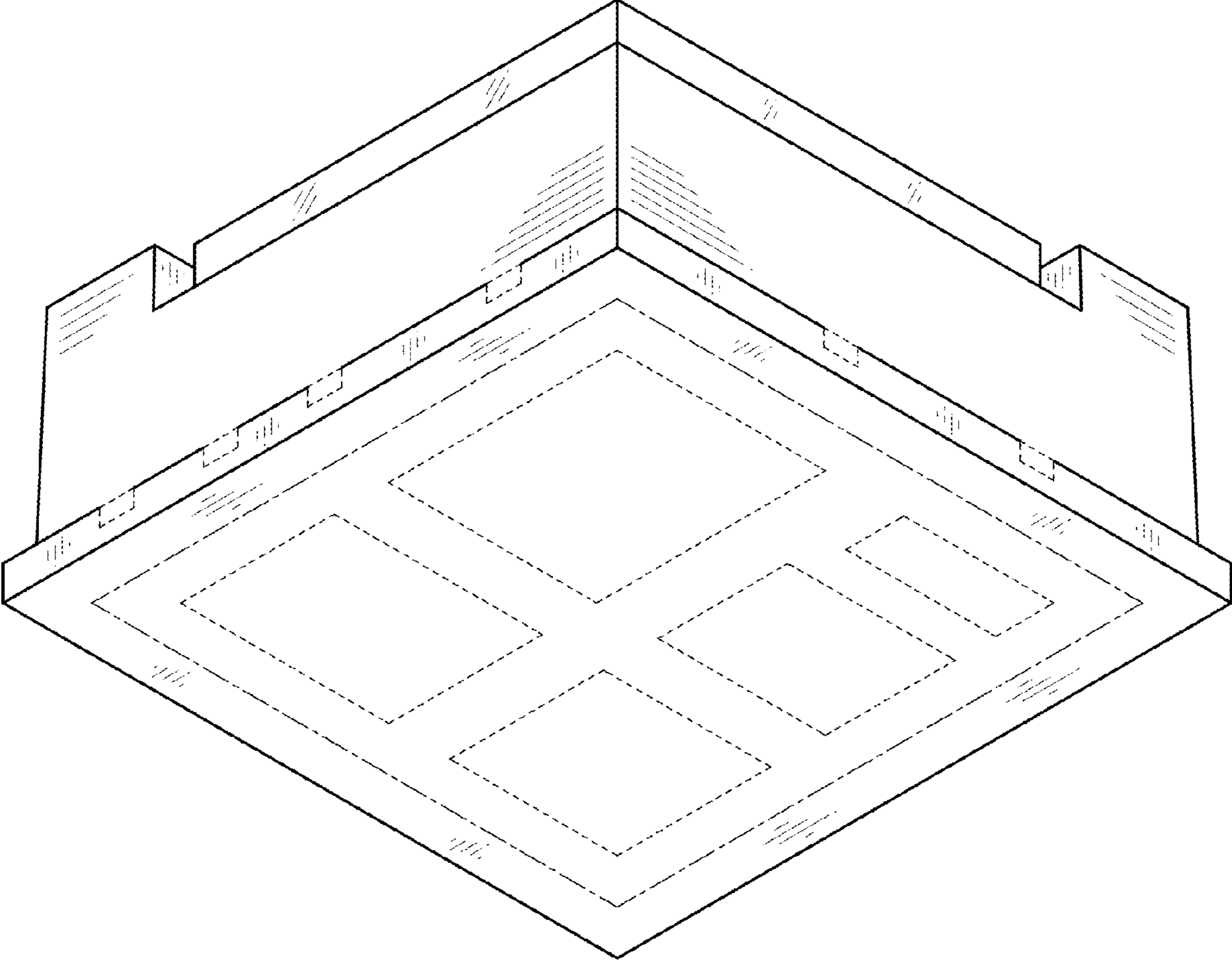


FIG.3

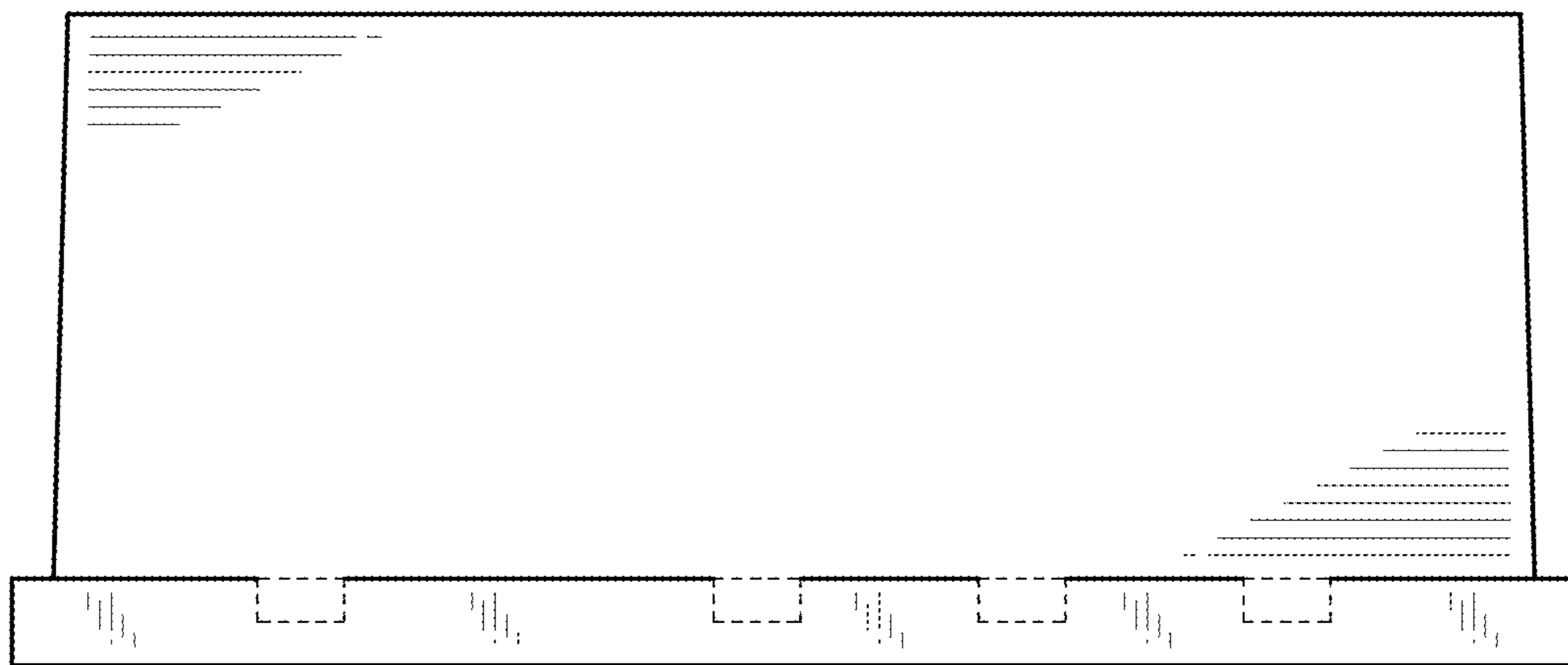


FIG.4

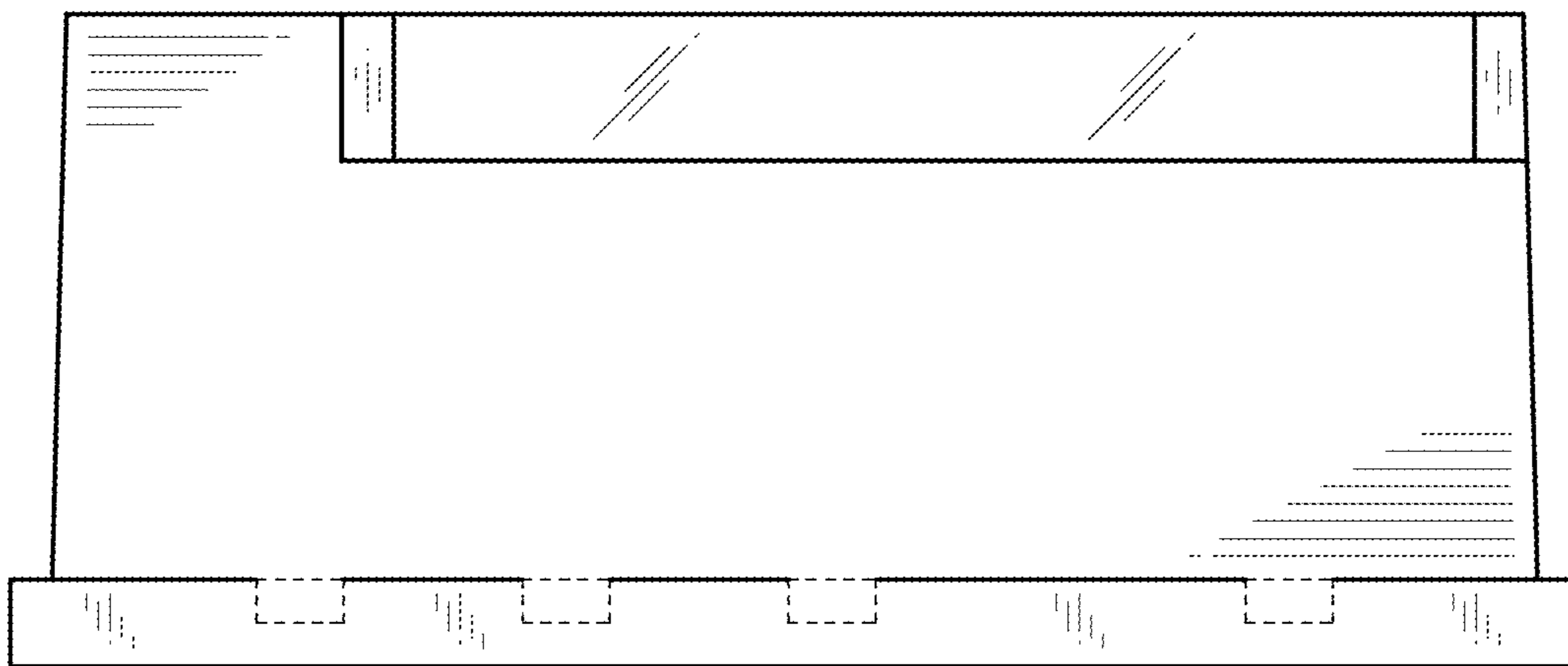


FIG.5

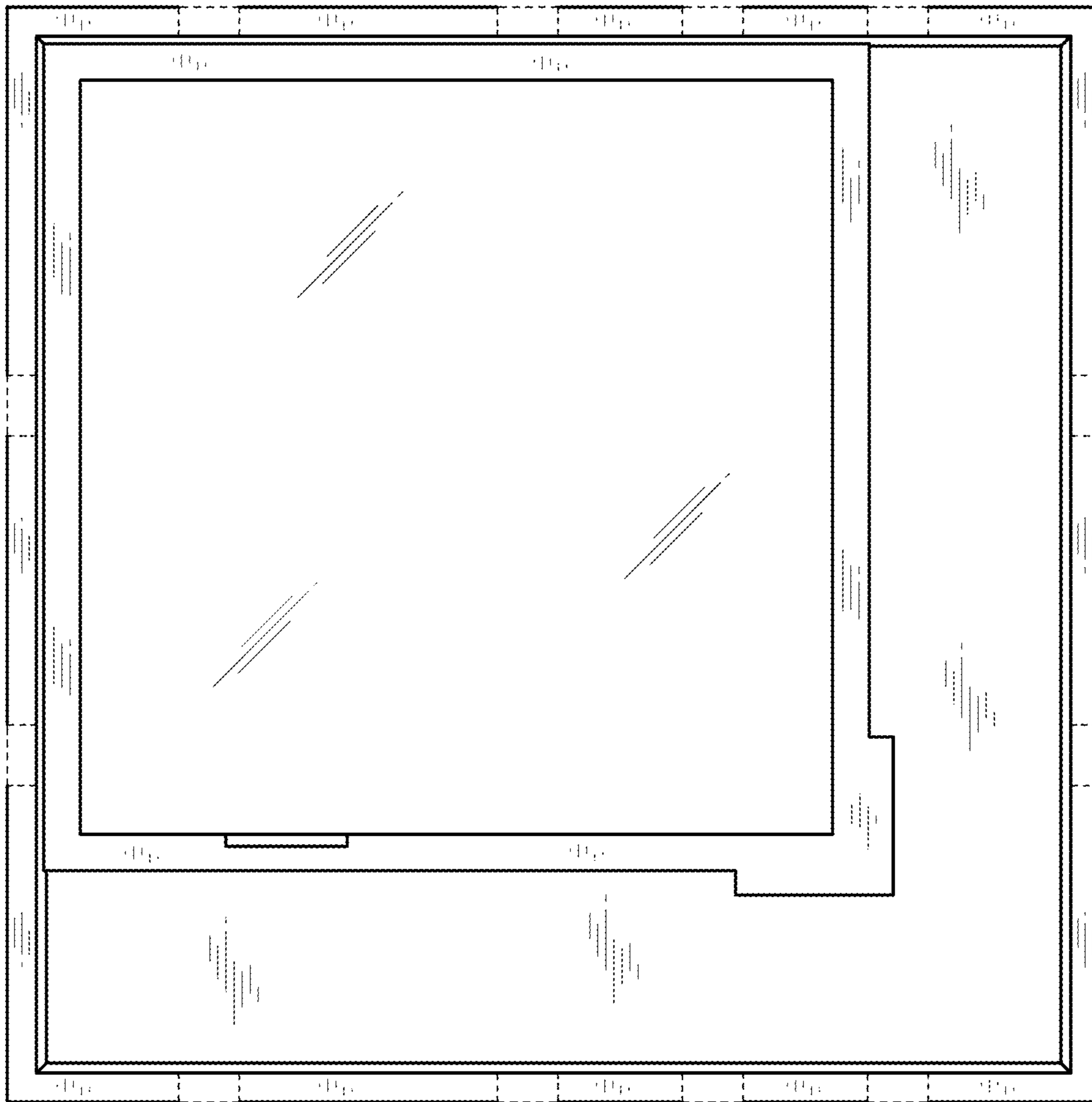


FIG.6

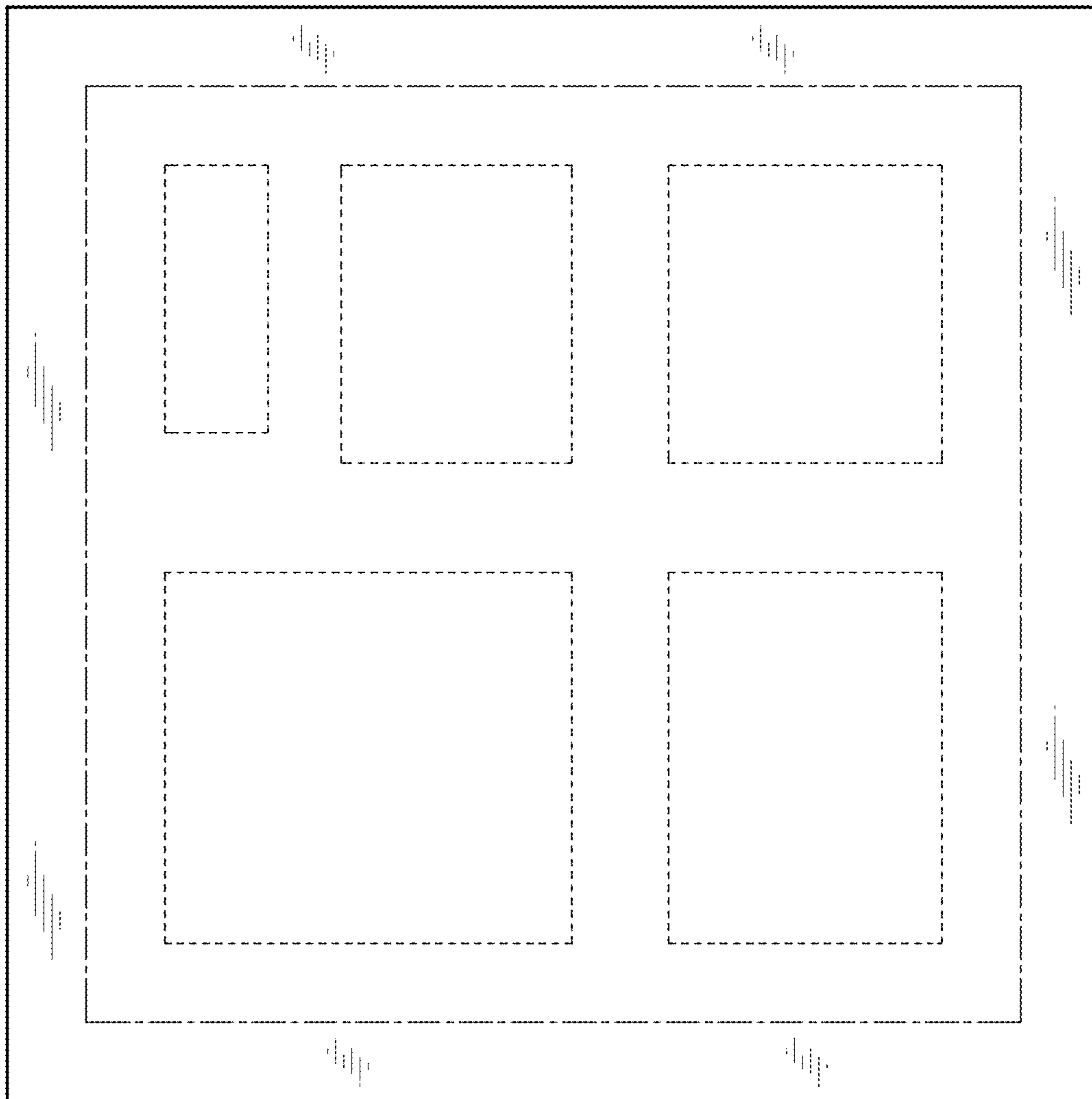


FIG.7

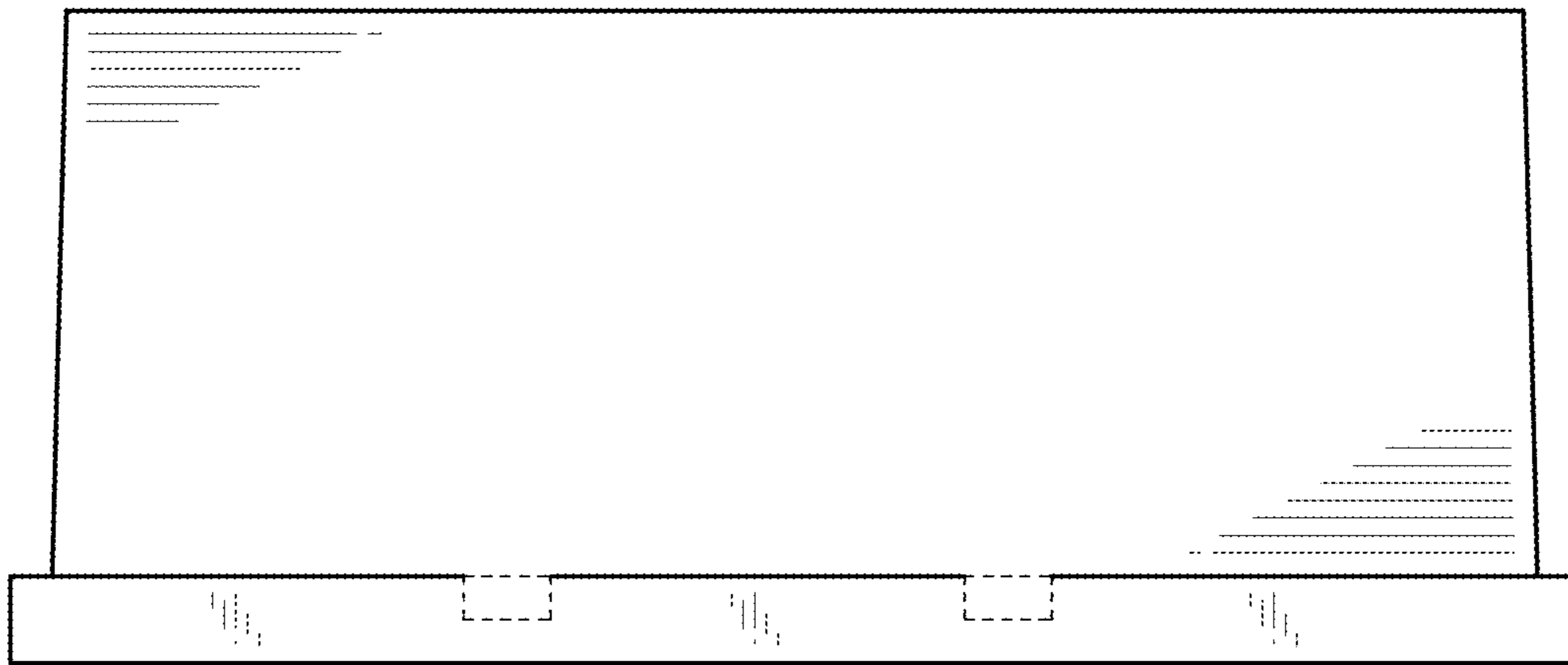


FIG.8

