



US00D932436S

(12) **United States Design Patent** (10) **Patent No.:** **US D932,436 S**
Na et al. (45) **Date of Patent:** **** Oct. 5, 2021**

(54) **BATTERY PROTECTION CIRCUIT MODULE PACKAGE**

(71) Applicant: **ITM SEMICONDUCTOR CO., LTD.,**
Cheongju-si (KR)

(72) Inventors: **Hyuk Hwi Na**, Cheongju-si (KR); **Ho Seok Hwang**, Gunpo-si (KR); **Young Seok Kim**, Cheongju-si (KR); **Sang Hoon Ahn**, Cheongju-si (KR); **Jae Ku Park**, Cheongju-si (KR); **Sung Hee Wang**, Cheongju-si (KR); **Eun Bin Lee**, Cheongju-si (KR)

(73) Assignee: **ITM SEMICONDUCTOR CO., LTD.,**
Cheongju-si (KR)

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

(21) Appl. No.: **29/719,157**

(22) Filed: **Dec. 31, 2019**

(30) **Foreign Application Priority Data**

Jul. 5, 2019 (KR) 30-2019-0032395

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

(52) **U.S. Cl.**
USPC **D13/119**

(58) **Field of Classification Search**
USPC D13/103, 118, 119, 120, 121, 182, 184
CPC H02H 7/18; H02J 7/0029; H01M 10/425;
H01M 10/4257; H01M 10/48
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D554,587 S * 11/2007 Miyamoto D13/119
D556,130 S * 11/2007 Tajima D13/119
D556,687 S * 12/2007 Miyamoto D13/119

D573,115 S * 7/2008 Miyamoto D13/182
8,420,253 B2 * 4/2013 Kim H01G 9/0003
429/163
9,450,428 B2 * 9/2016 Na H01M 50/572
9,680,973 B2 * 6/2017 Na H04M 1/026
9,787,111 B2 * 10/2017 Na H02J 7/0042
10,193,193 B2 * 1/2019 Na H01L 27/0629
10,263,238 B2 * 4/2019 Hwang H01M 10/425
10,756,550 B2 * 8/2020 Na H02H 7/18
10,950,845 B2 * 3/2021 Hwang H01M 10/48
2008/0160398 A1 * 7/2008 Kim H01M 50/147
429/121
2008/0292954 A1 * 11/2008 Park H01M 50/543
429/163
2010/0053835 A1 * 3/2010 Kwag H01M 10/425
361/103
2010/0075205 A1 * 3/2010 Kwag H01M 50/543
429/61
2011/0003195 A1 * 1/2011 Kim H01M 10/425
429/178
2011/0123838 A1 * 5/2011 Lee H01M 50/581
429/7

(Continued)

Primary Examiner — Selina Sikder

(74) *Attorney, Agent, or Firm* — Novick, Kim & Lee, PLLC; Sang Ho Lee; Hyun Woo Shin

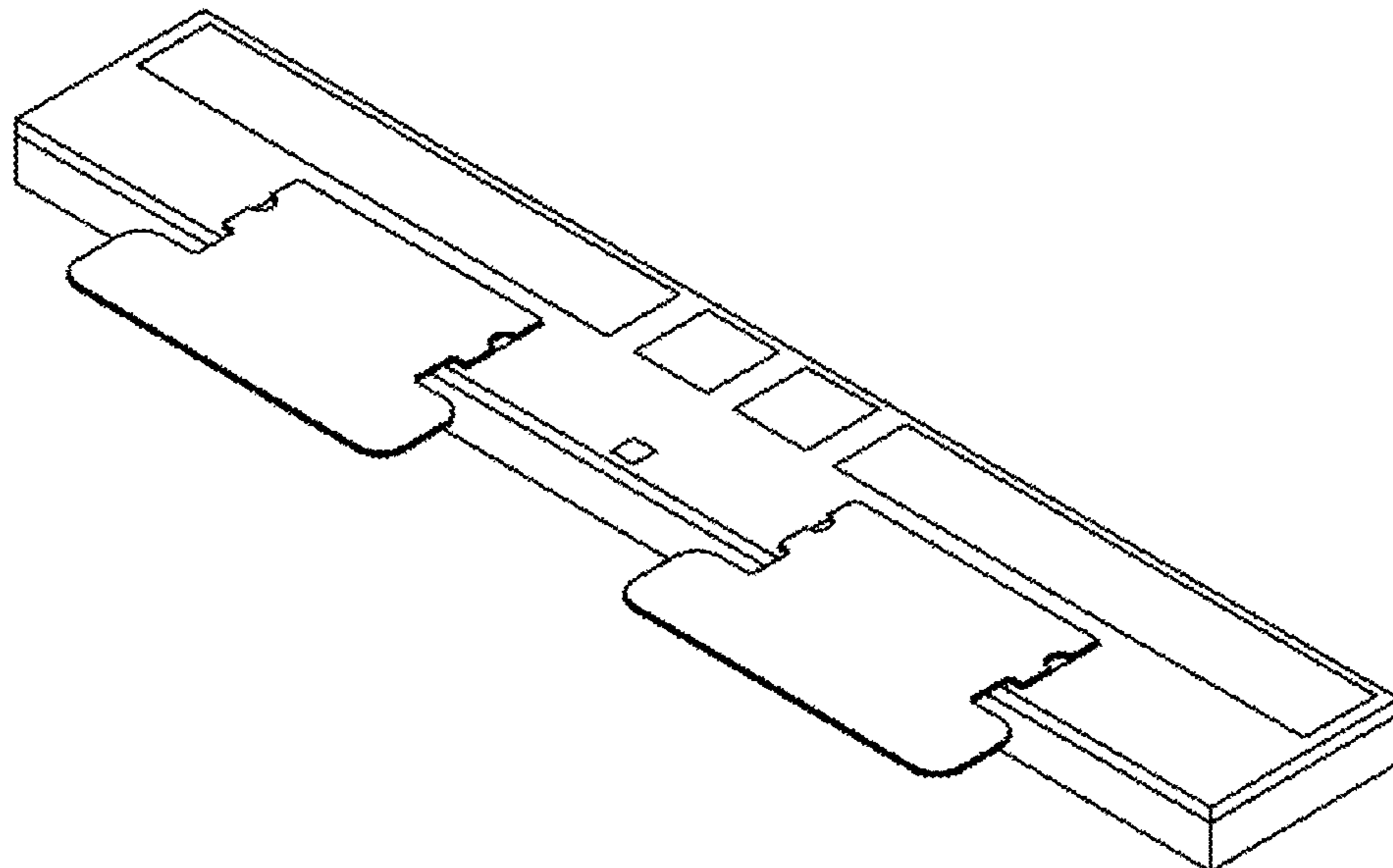
(57) **CLAIM**

We claim the ornamental design for a battery protection circuit module package, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a battery protection circuit module package showing our new design; FIG. 2 is a front elevational view thereof; FIG. 3 is a rear elevational view thereof; FIG. 4 is a left side elevational view thereof; FIG. 5 is a right side elevational view thereof; FIG. 6 is a top plan view thereof; and, FIG. 7 is a bottom plan view thereof.

1 Claim, 3 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2012/0127682	A1 *	5/2012	Jang	H01M 50/581 361/777
2012/0276420	A1 *	11/2012	Baek	H01M 10/425 429/7
2014/0212698	A1 *	7/2014	Moon	H01M 10/425 429/7
2014/0302372	A1 *	10/2014	Kim	H01M 50/209 429/121
2014/0349163	A1 *	11/2014	Kim	H01M 10/425 429/121
2015/0004441	A1 *	1/2015	Jeong	H01M 50/147 429/7
2015/0228954	A1 *	8/2015	Wang	H01M 10/486 429/158
2016/0056444	A1 *	2/2016	Hwang	H01M 10/48 429/7
2018/0123178	A1 *	5/2018	Yang	H01M 50/557
2019/0173134	A1 *	6/2019	Lee	H01M 10/425
2020/0077522	A1 *	3/2020	Wang	H05K 3/28
2020/0144677	A1 *	5/2020	Choi	H01M 50/572

* cited by examiner

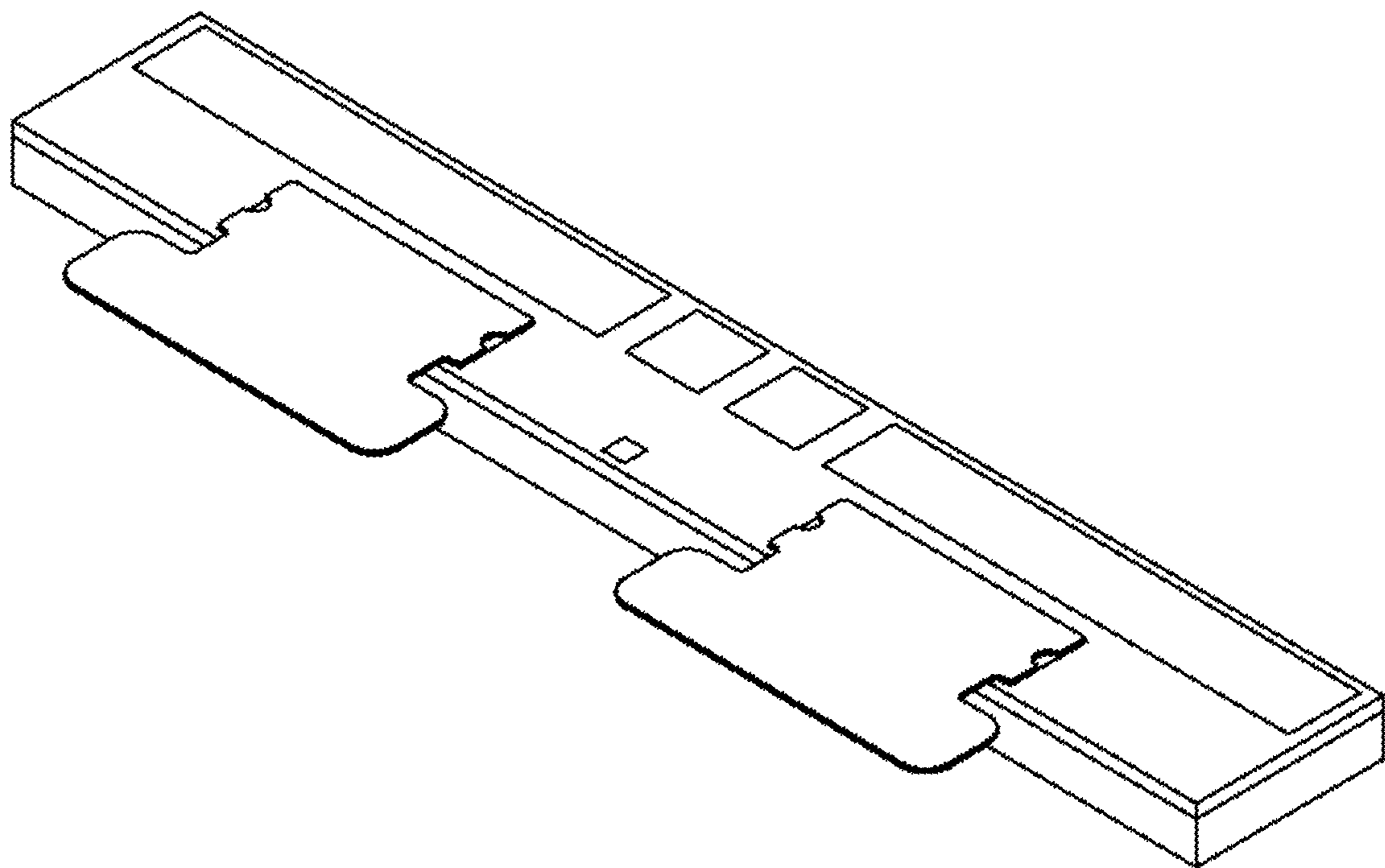


FIG. 1



FIG. 2



FIG. 3



FIG. 4



FIG. 5

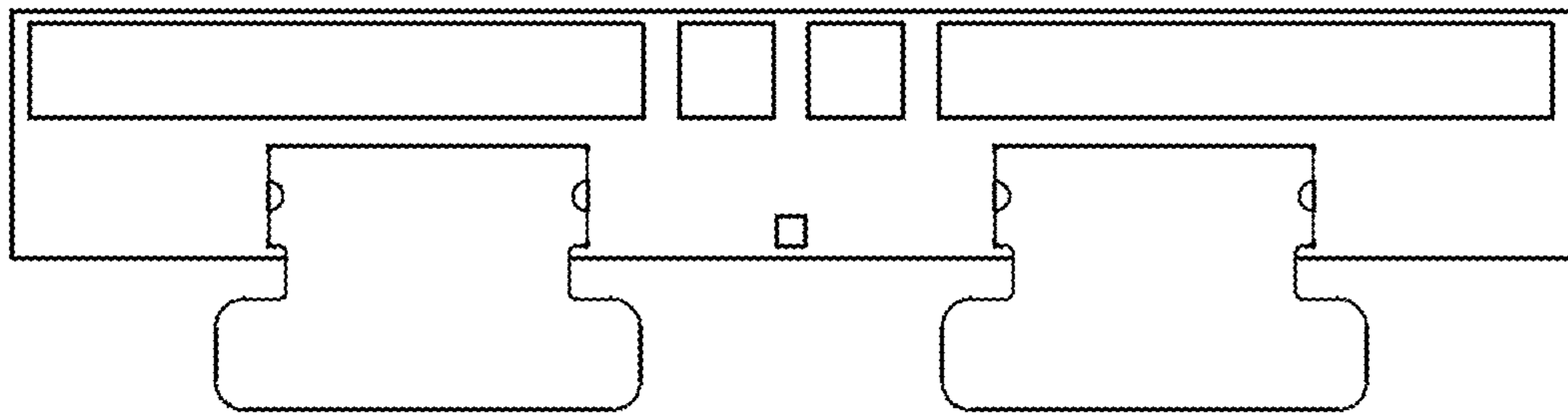


FIG. 6

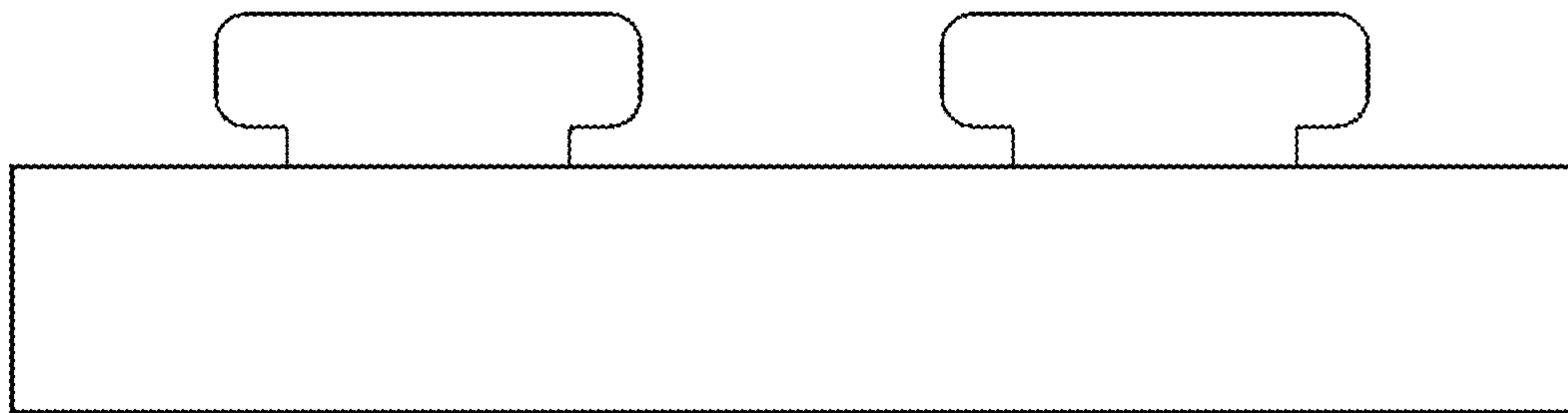


FIG. 7