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(12) **United States Design Patent**
Kawase

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(45) **Date of Patent: ** May 2, 2017**

(54) **SEMICONDUCTOR DEVICE**

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(73) Assignee: **Mitsubishi Electric Corporation**, Tokyo (JP)

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

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(22) Filed: **Feb. 22, 2016**

Related U.S. Application Data

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(30) **Foreign Application Priority Data**

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(51) **LOC (10) Cl.** **13-03**
(52) **U.S. Cl.**
USPC **D13/182**
(58) **Field of Classification Search**
USPC D13/110, 182; 257/678, 684, 690, 691; 361/679.01, 713, 728, 736, 760, 761, 772, 361/775, 783, 820; 174/250, 253; 438/15, 25, 26, 51, 55, 63, 64, 106
CPC . H01L 21/00; H01L 2224/42; H01L 2224/43; H01L 2021/00; H01L 2021/02; H01L 2021/04; H01L 21/4814; H01L 21/4846; H01L 21/4871; H01L 21/67144; H01L 23/12; H01L 23/13; H01L 23/14; H01L 23/147; H01L 2924/171; H01L 2924/1711; H01L 2924/1715; H01L 2924/17151; H01L 2924/181; H01L
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,602,846 A *	8/1971	Hauser	....	H03H 7/34 174/528
3,762,039 A *	10/1973	Douglass	....	B29C 70/72 174/522

(Continued)

FOREIGN PATENT DOCUMENTS

JP	1411990 S	4/2011
JP	1412318 S	4/2011

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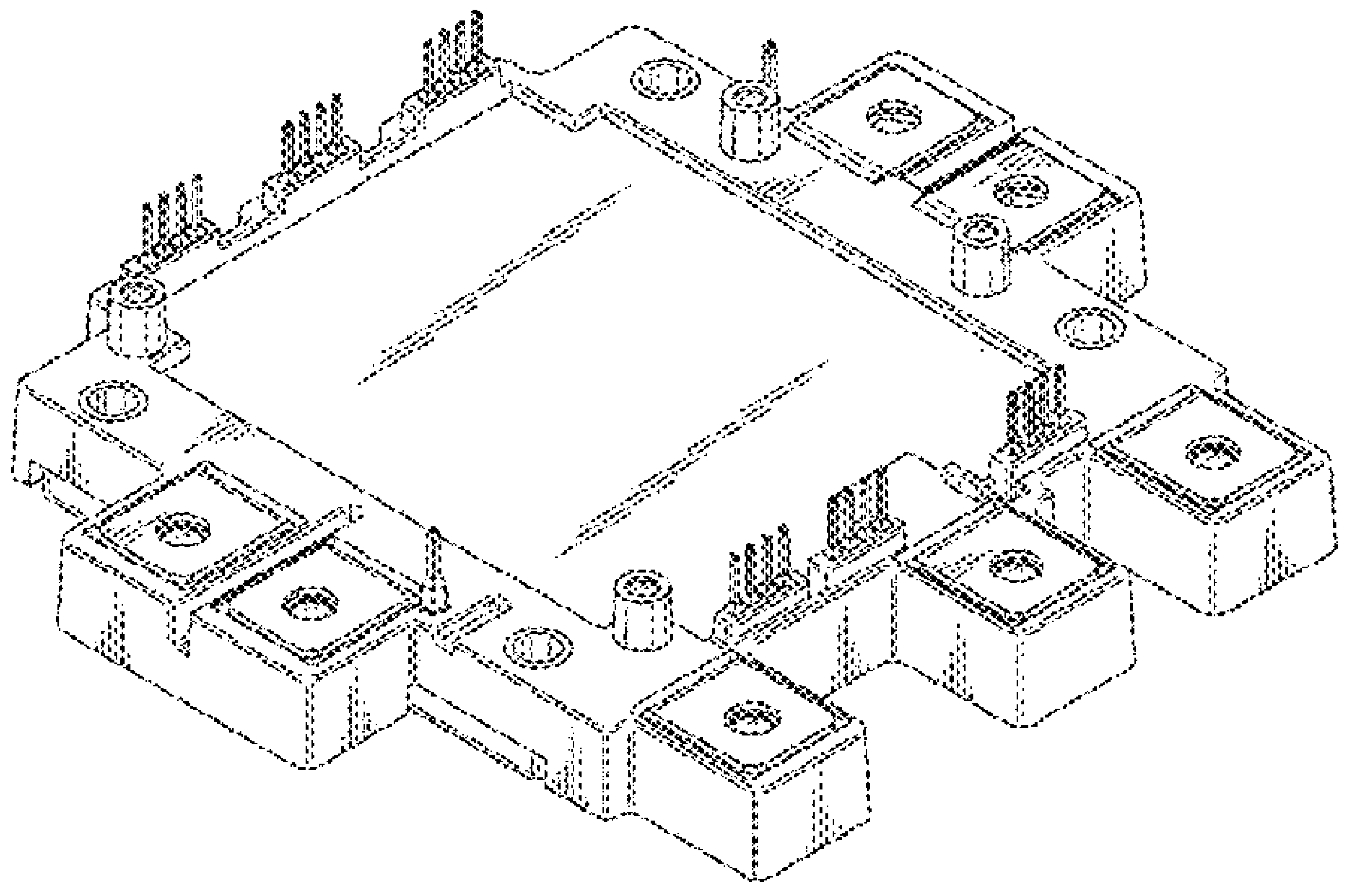
(57) **CLAIM**

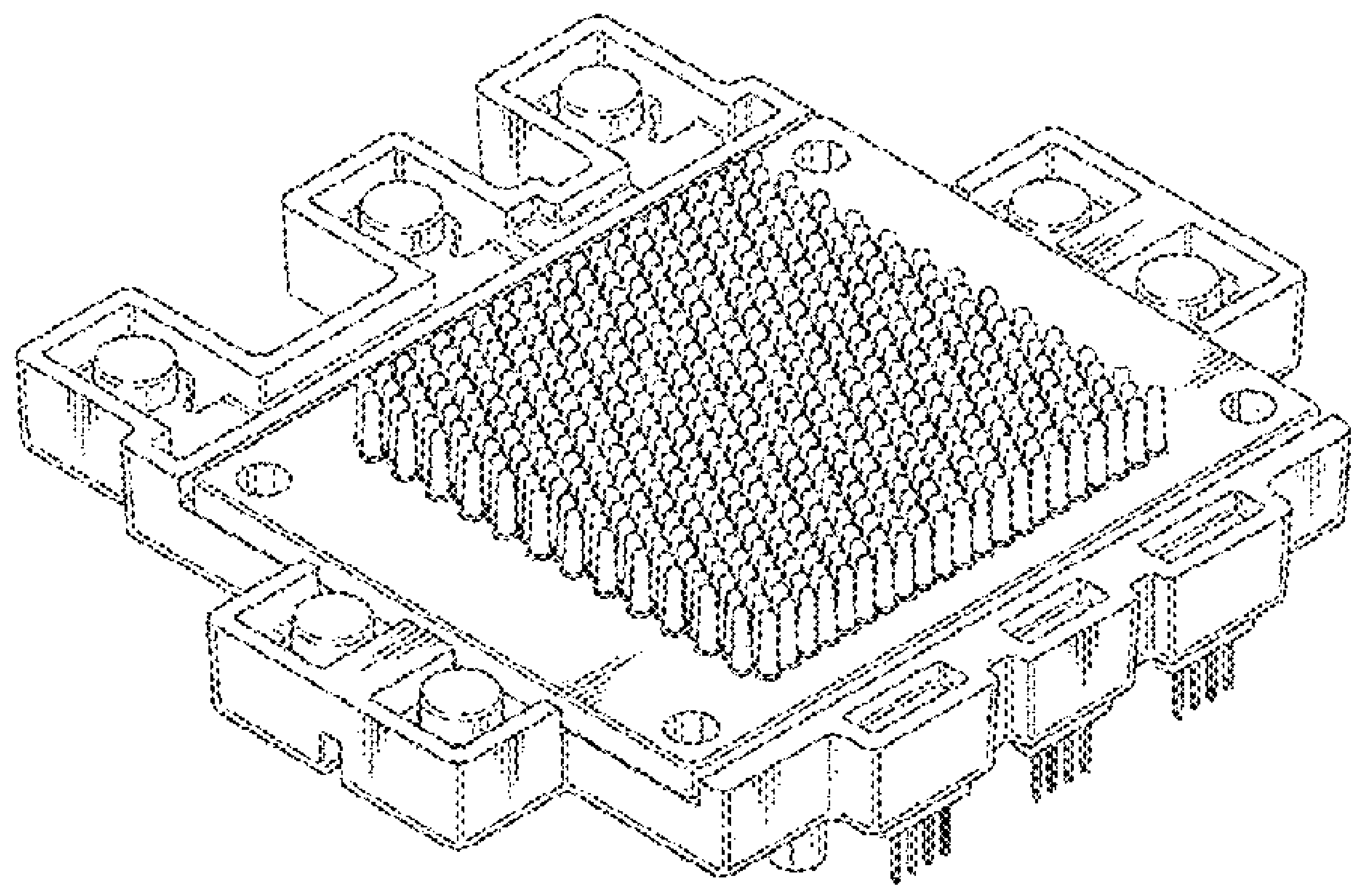
The ornamental design for a semiconductor device, as shown and described.

DESCRIPTION

FIG. **1** is a top, right and rear side perspective view of a semiconductor device, showing my new design;
FIG. **2** is a front, left and bottom side perspective view thereof;
FIG. **3** is a front elevational view thereof;
FIG. **4** is a rear elevational view thereof;
FIG. **5** is a left side elevational view thereof;
FIG. **6** is a right side elevational view thereof;
FIG. **7** is a top plan view thereof;
FIG. **8** is a bottom plan view thereof;
FIG. **9** is another perspective view thereof, shown in a used condition mounted to a board in broken lines; and,
FIG. **10** is another rear elevational view thereof, shown in a used condition mounted to a board in broken lines.
The broken lines shown in the drawings represent portions of the semiconductor device, that form no part of the claimed design.

1 Claim, 8 Drawing Sheets





(58) **Field of Classification Search**

CPC 2924/1811; H01L 2924/1815; H01L
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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,825,876	A	*	7/1974	Damon	H05K 7/1046 174/535
3,846,734	A	*	11/1974	Pauza	H05K 7/1076 174/541
4,987,474	A	*	1/1991	Yasuhara	H01L 23/4951 174/536
5,347,160	A	*	9/1994	Sutrina	H01L 24/72 257/678
5,408,128	A		4/1995	Furnival	
5,410,450	A		4/1995	Iida et al.	
D364,383	S		11/1995	Yamada et al.	
D364,384	S		11/1995	Shimizu et al.	
D364,385	S		11/1995	Shimizu et al.	
6,078,501	A		6/2000	Catrambone et al.	
D441,726	S		5/2001	Sofue et al.	
D441,727	S		5/2001	Sekimoto	
6,521,983	B1		2/2003	Yoshimatsu et al.	
D476,959	S		7/2003	Yamada et al.	
D525,215	S		7/2006	Hisaishi et al.	
D539,761	S		4/2007	Takahashi et al.	
D548,202	S		8/2007	Takahashi	
D548,203	S		8/2007	Takahashi	
D587,662	S		3/2009	Soutome et al.	
D589,012	S		3/2009	Soyano et al.	
D606,951	S		12/2009	Soyano et al.	
D653,633	S		2/2012	Soyano	
D653,634	S		2/2012	Soyano	
D674,760	S		1/2013	Mochizuki et al.	
D686,174	S		7/2013	Soyano	
D689,446	S		9/2013	Soyano	
8,526,199	B2		9/2013	Matsumoto et al.	
D699,693	S		2/2014	Otsuka et al.	
D703,625	S		4/2014	Lim et al.	
D704,670	S		5/2014	Chen et al.	
D704,671	S		5/2014	Chen et al.	
D705,184	S		5/2014	Takahashi et al.	
D706,232	S		6/2014	Nakamura	
D710,317	S		8/2014	Chen et al.	
D710,318	S		8/2014	Chen et al.	
D710,319	S		8/2014	Chen et al.	
D712,853	S	*	9/2014	Nakamura	D13/182
D719,113	S	*	12/2014	Sohn	D13/182
D719,537	S	*	12/2014	Kawase	D13/182
D754,084	S	*	4/2016	Kawase	D13/182
D759,604	S	*	6/2016	Yoneyama	D13/182
D762,185	S	*	7/2016	Muehlensiep	D13/182
D762,597	S	*	8/2016	Bertalan	D13/182
D766,851	S	*	9/2016	Yoneyama	D13/182
D767,516	S	*	9/2016	Yoneyama	D13/182
D769,834	S	*	10/2016	Kawase	D13/182
D770,994	S	*	11/2016	Hasegawa	D13/182
D772,182	S	*	11/2016	Hasegawa	D13/182
D772,184	S	*	11/2016	Soyano	D13/182
2001/0038143	A1	*	11/2001	Sonobe	H01L 24/49 257/690
2003/0042584	A1	*	3/2003	Yamaguchi	H01L 21/50 257/666
2010/0149774	A1	*	6/2010	Matsumoto	H01L 23/055 361/783
2011/0044012	A1	*	2/2011	Matsumoto	H01R 4/04 361/728

* cited by examiner

Fig. 1

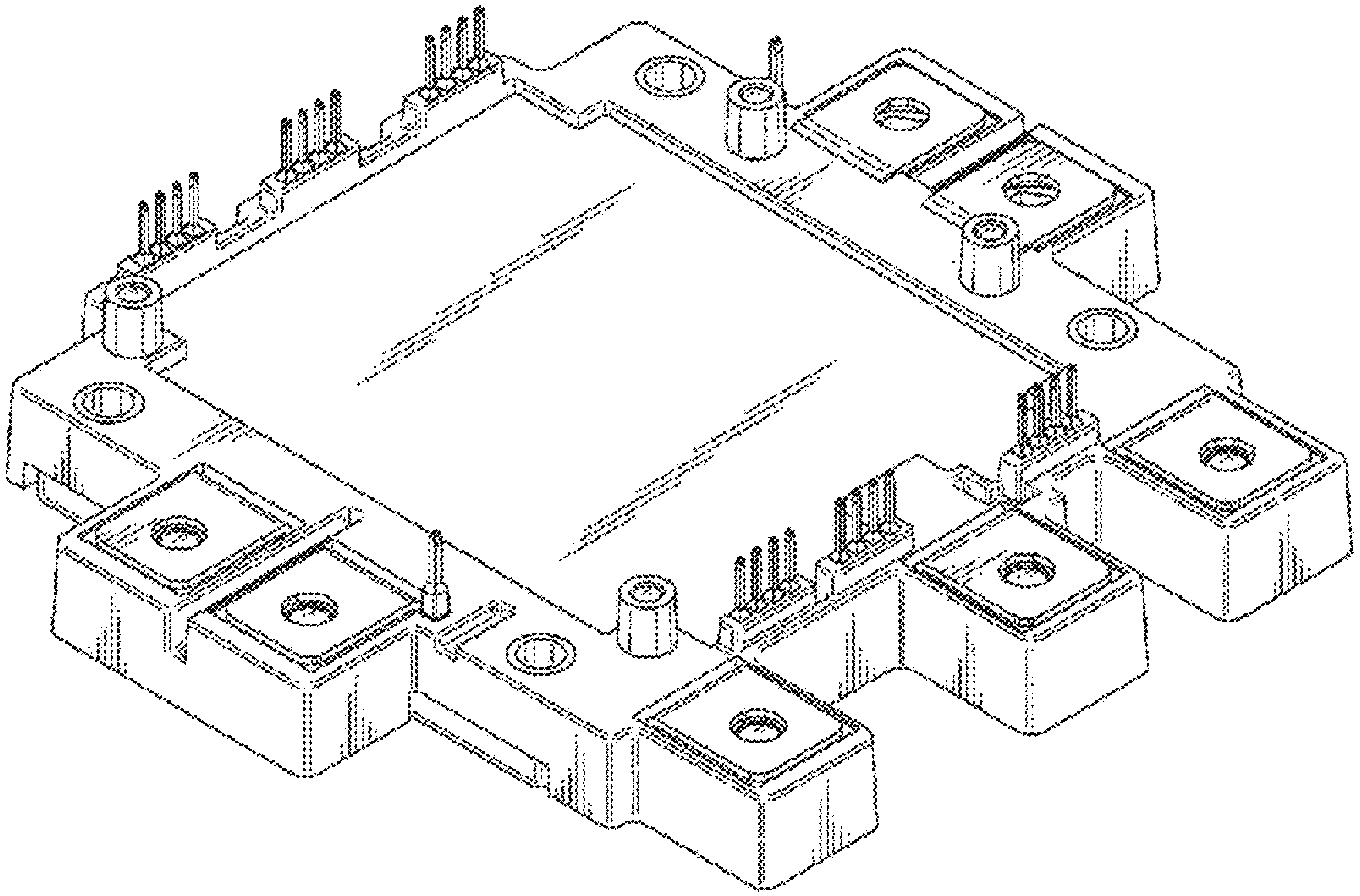
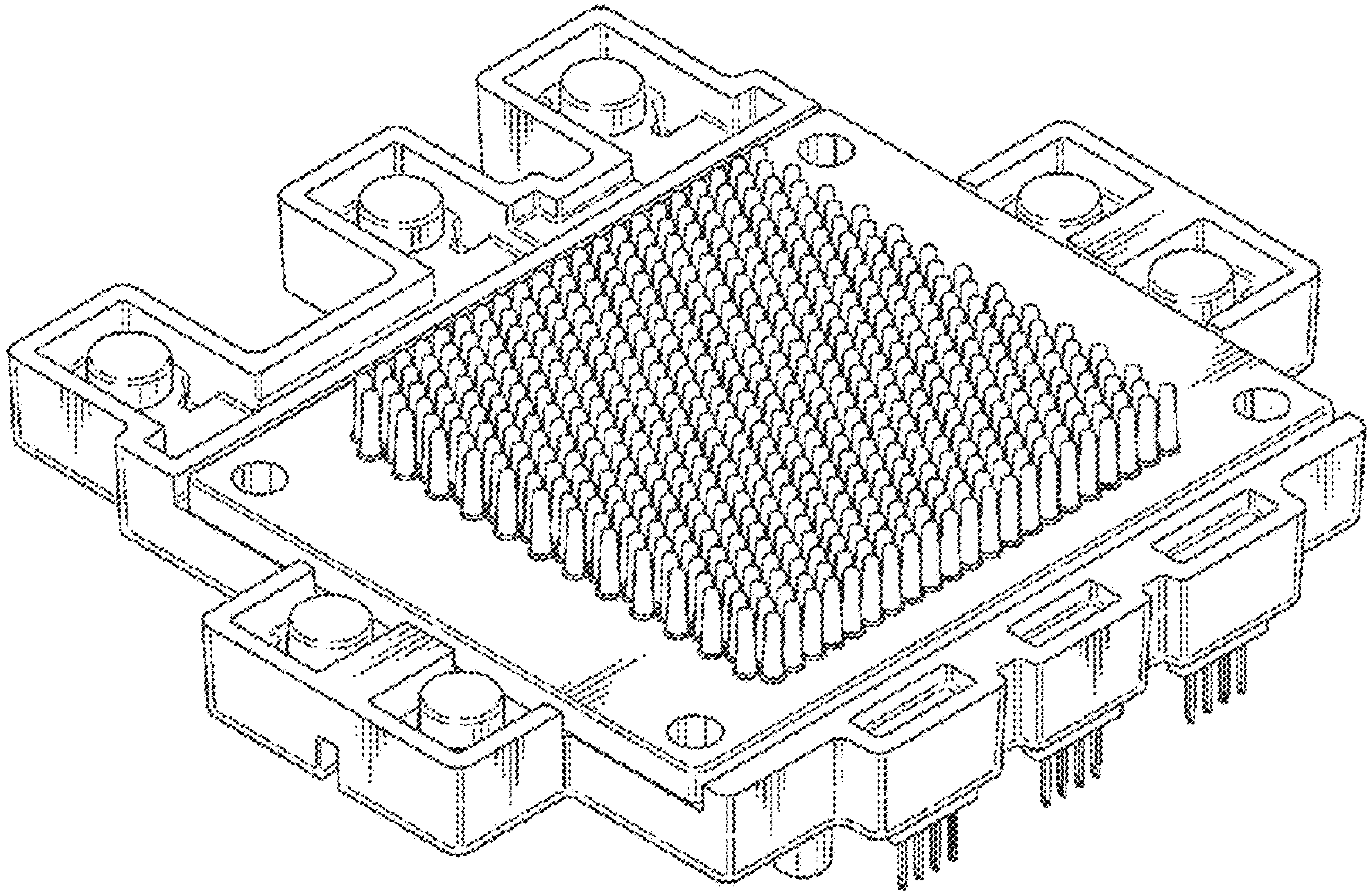


Fig. 2



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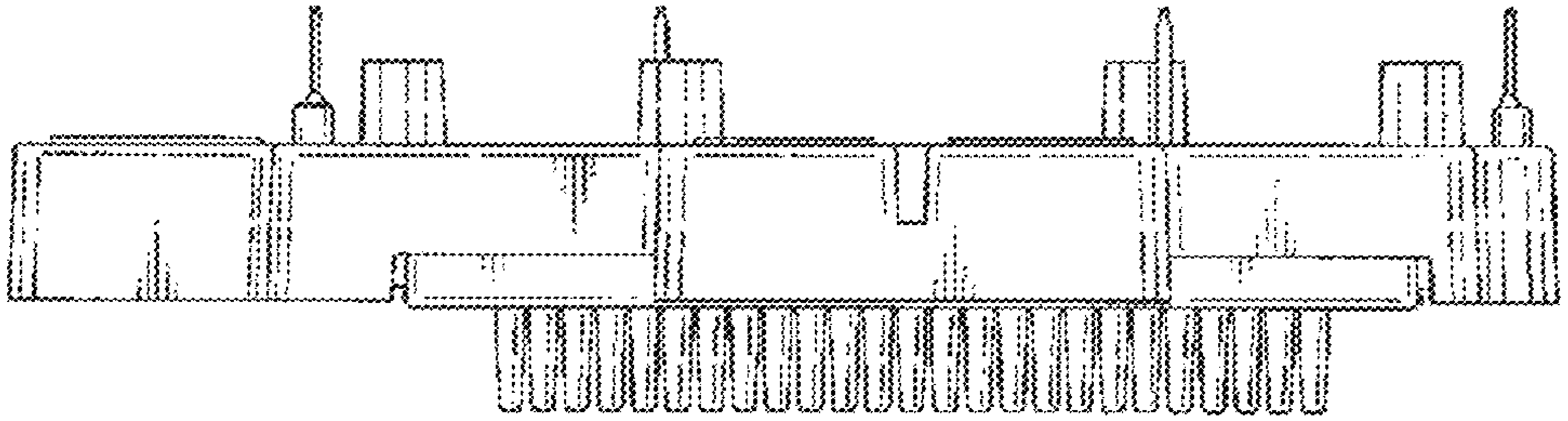

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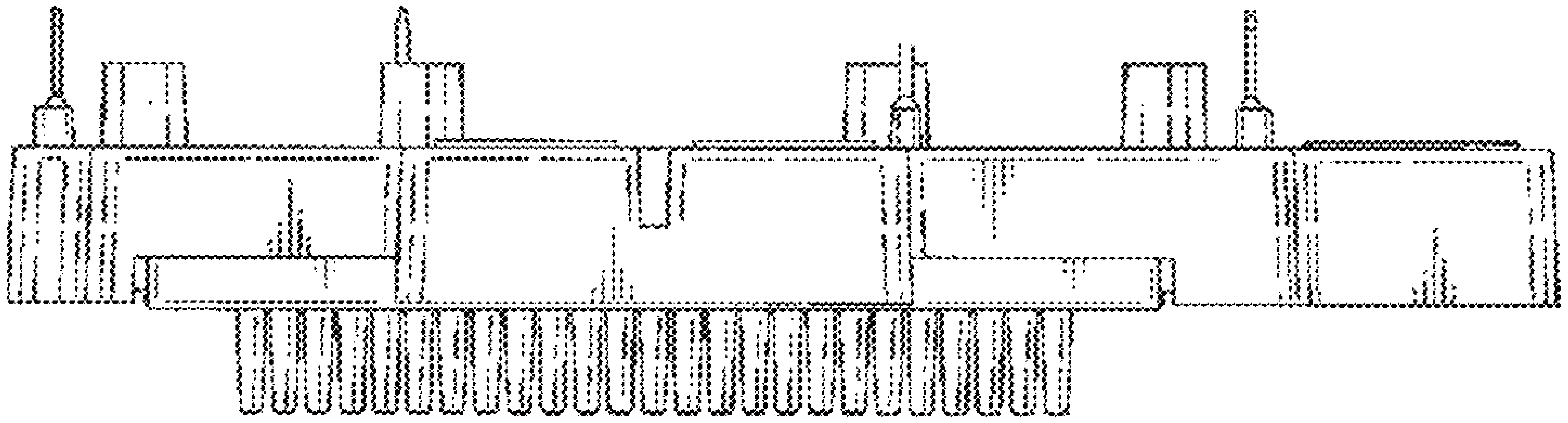

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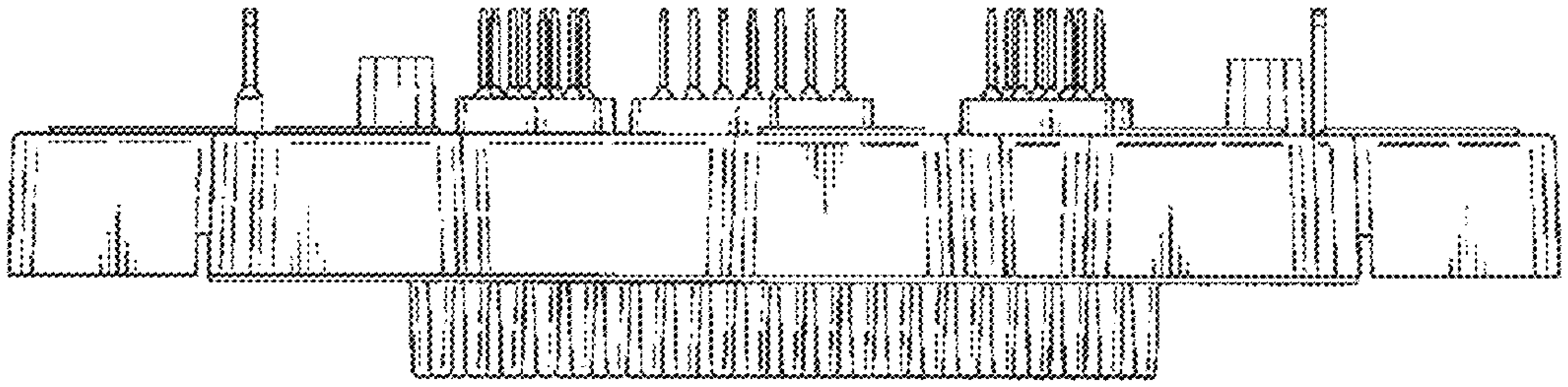

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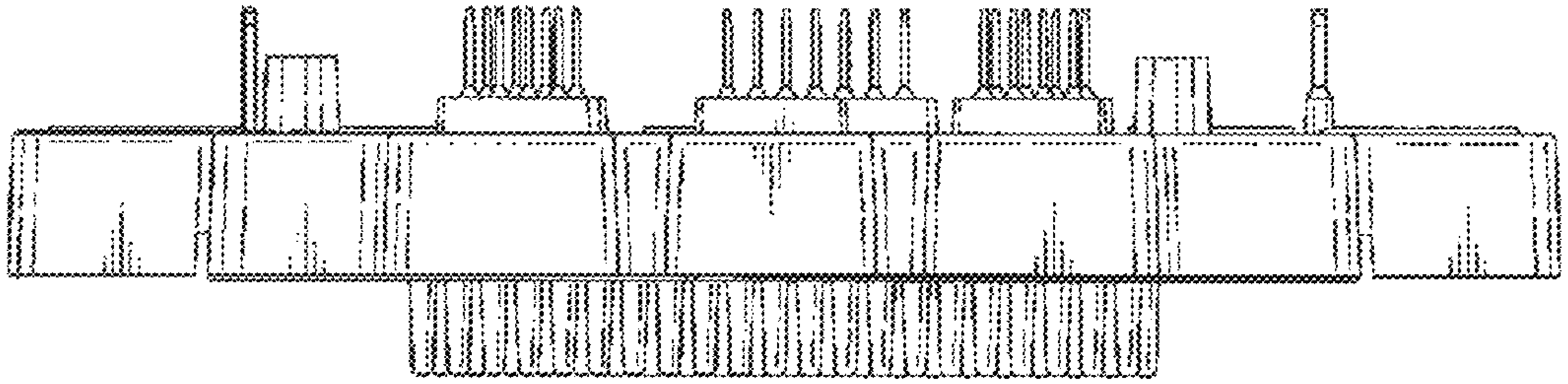

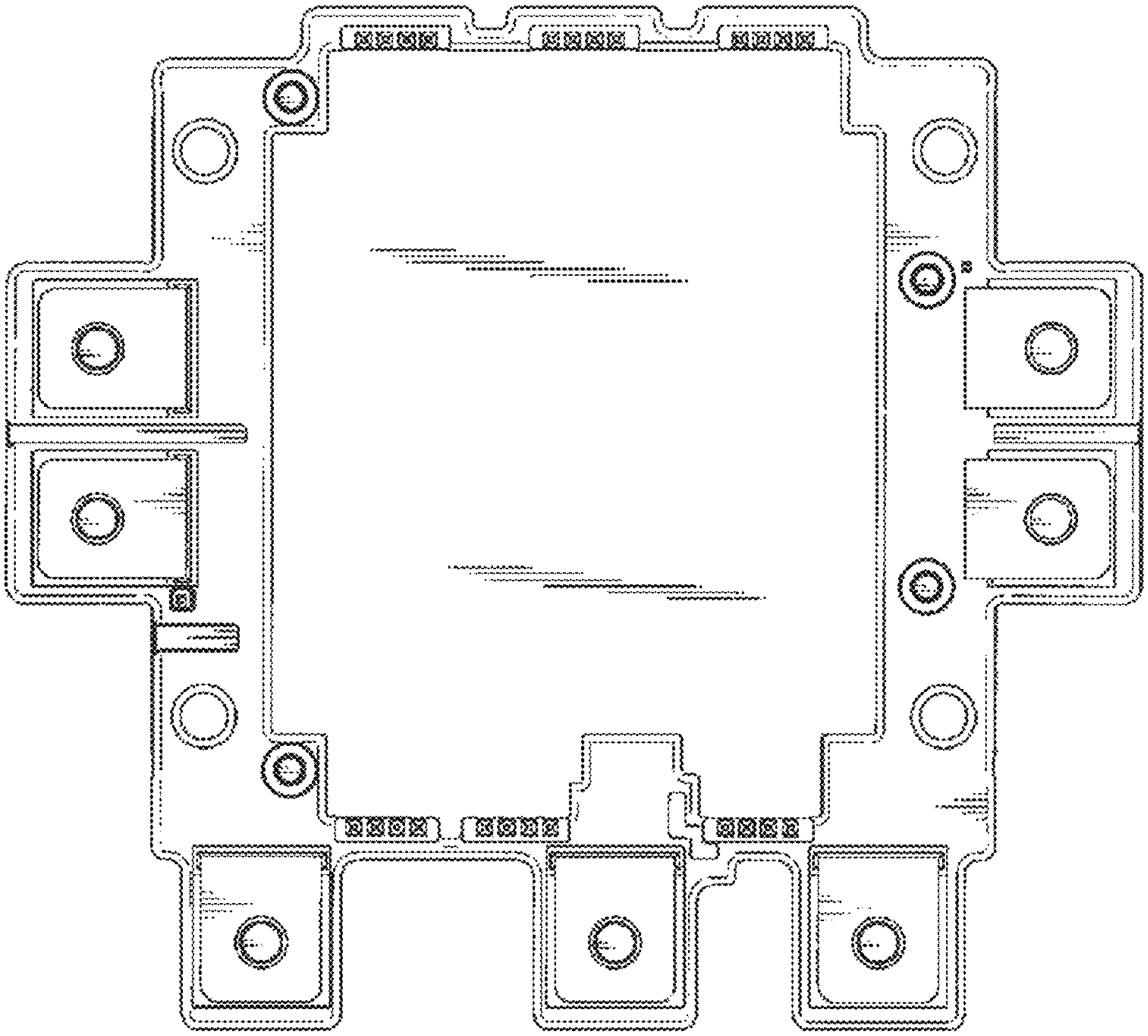

Fig. 7

Fig. 8

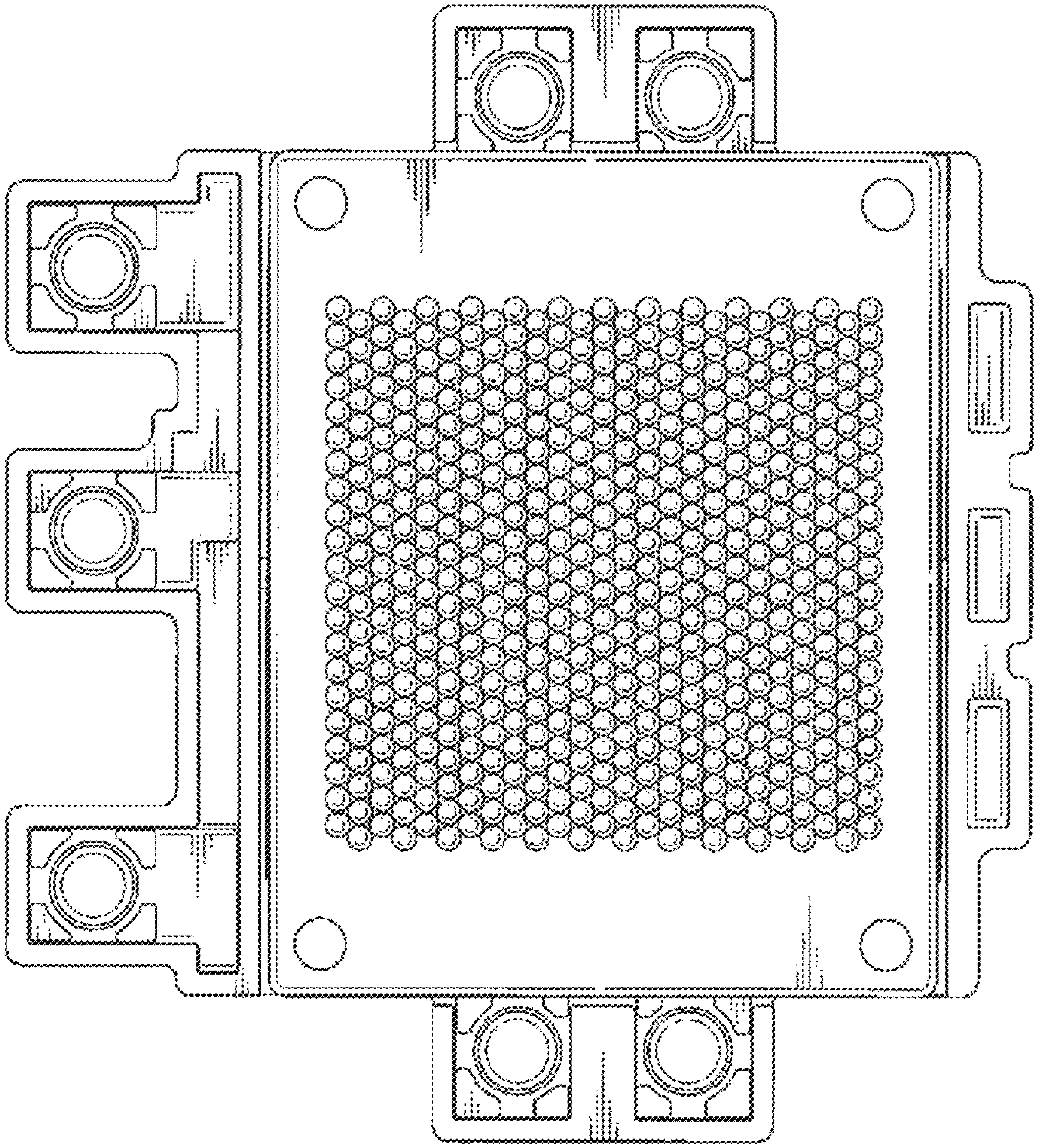

Fig. 9

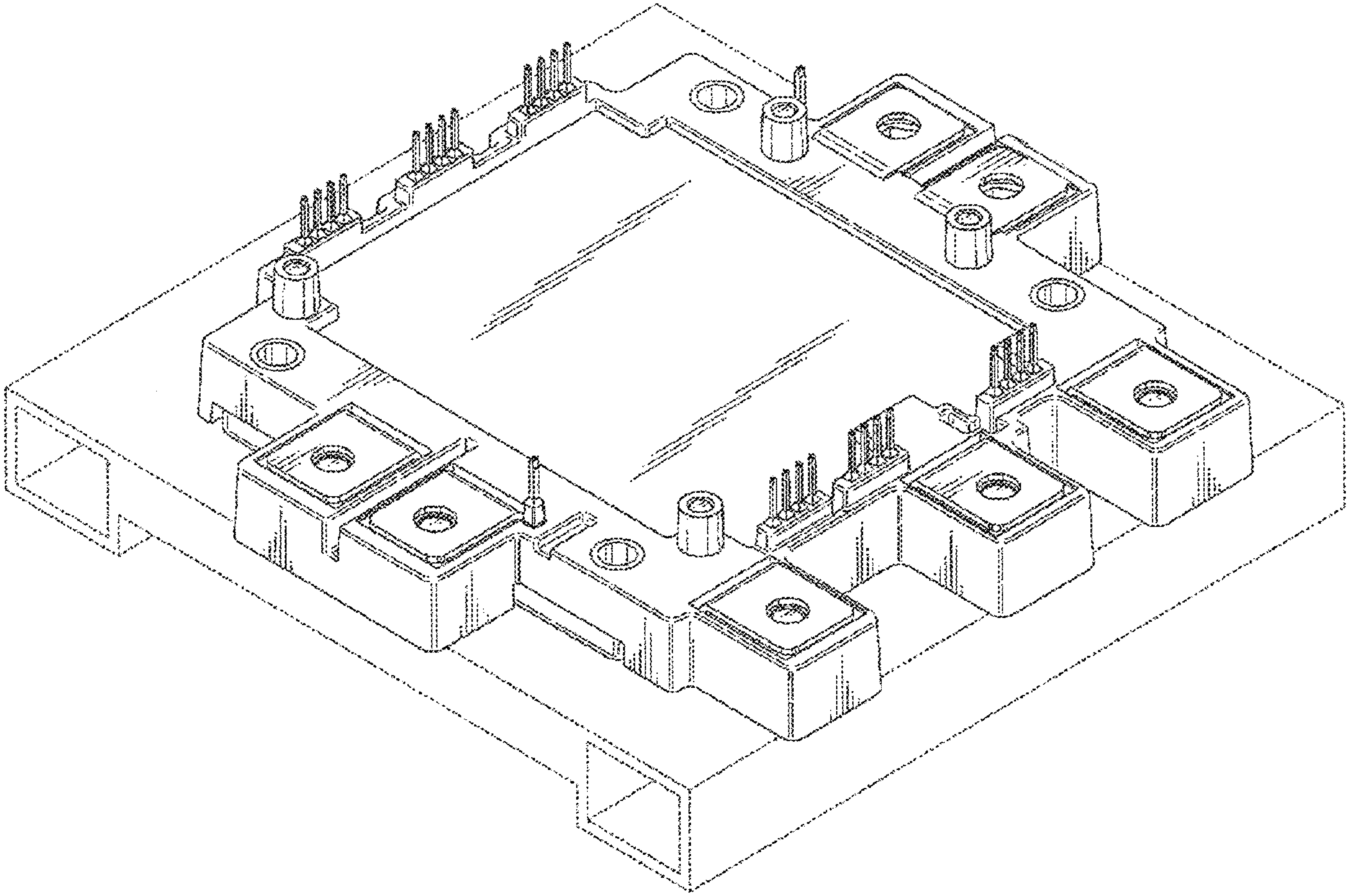

Fig. 10