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

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(54) **SEMICONDUCTOR MODULE**

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

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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, 184; 174/250, 253; 257/666, 668, 678, 690, 694, 696; 361/713, 728, 736, 775
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,762,039 A *	10/1973	Douglass et al.	....	29/827
3,825,876 A *	7/1974	Damon et al.	....	439/70
4,218,724 A *	8/1980	Kaufman	....	361/736
D357,462 S *	4/1995	Terasawa et al.	....	D13/182
D357,671 S *	4/1995	Terasawa et al.	....	D13/182
D357,672 S *	4/1995	Terasawa et al.	....	D13/182
D360,619 S *	7/1995	Terasawa et al.	....	D13/182
D364,383 S *	11/1995	Yamada et al.	....	D13/182
D364,384 S *	11/1995	Shimizu et al.	....	D13/182
D364,385 S *	11/1995	Shimizu et al.	....	D13/182
D389,808 S *	1/1998	Yamada et al.	....	D13/182
D401,912 S *	12/1998	Majumdar et al.	....	D13/182
D441,726 S *	5/2001	Sofue et al.	....	D13/182
6,521,983 B1 *	2/2003	Yoshimatsu et al.	....	257/678
D476,962 S *	7/2003	Yoshihira et al.	....	D13/182
D505,399 S *	5/2005	Yoshida et al.	....	D13/182

(Continued)

OTHER PUBLICATIONS

"General Catalog of Fuji Semiconductors," Cover page, index, p. 75 and notices (5 pages total), Fuji Electric Co., Ltd., JP (Dec. 2012).

(Continued)

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(57) **CLAIM**

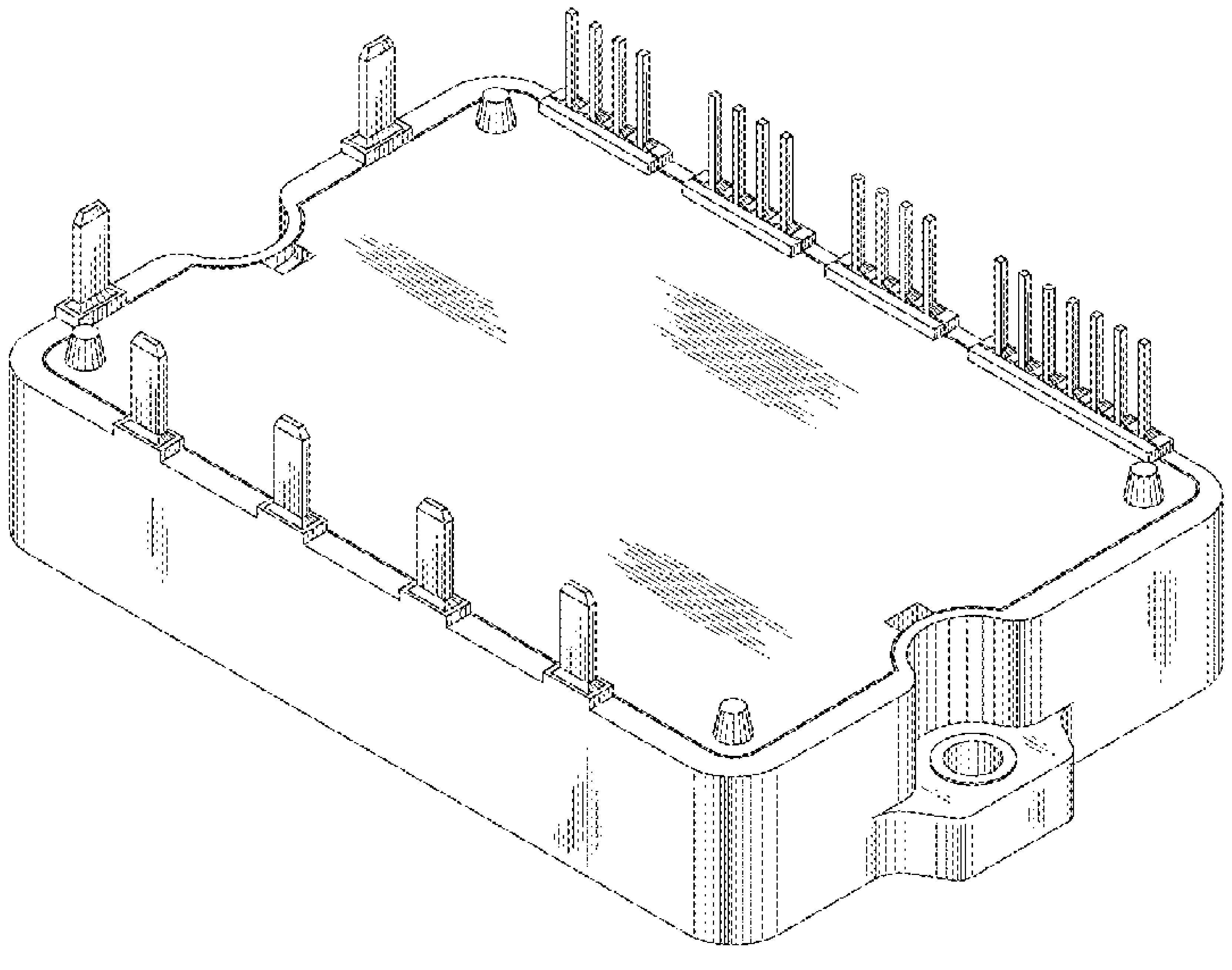
The ornamental design for a semiconductor module, as shown and described.

DESCRIPTION

FIG. **1** is a front view of a semiconductor module according to our new design;
FIG. **2** is a rear view of the semiconductor module of FIG. **1**;
FIG. **3** is a left side view of the semiconductor module of FIG. **1**;
FIG. **4** is a right side view of the semiconductor module of FIG. **1**;
FIG. **5** is a top view of the semiconductor module of FIG. **1**;
FIG. **6** is a bottom view of the semiconductor module of FIG. **1**; and,
FIG. **7** is a top, front, right side perspective view of the semiconductor module of FIG. **1**.

The ornamental design of the present disclosure is a semiconductor module on which power semiconductor elements and the like may be mounted.

1 Claim, 7 Drawing Sheets



(56) References Cited

U.S. PATENT DOCUMENTS

D505,400	S	*	5/2005	Kawafuji et al.	D13/182
D539,761	S	*	4/2007	Takahashi et al.	D13/182
D548,202	S	*	8/2007	Takahashi et al.	D13/182
D548,203	S	*	8/2007	Takahashi et al.	D13/182
D587,662	S	*	3/2009	Soutome et al.	D13/182
D589,012	S	*	3/2009	Soyano et al.	D13/182
D606,951	S	*	12/2009	Soyano et al.	D13/182
D653,633	S	*	2/2012	Soyano	D13/182
D653,634	S	*	2/2012	Soyano	D13/182
D674,760	S	*	1/2013	Mochizuki et al.	D13/182
D686,174	S	*	7/2013	Soyano	D13/182
2001/0038143	A1	*	11/2001	Sonobe et al.	257/690
2003/0042584	A1	*	3/2003	Yamaguchi	257/666
2010/0149774	A1	*	6/2010	Matsumoto et al.	361/783
2011/0044012	A1	*	2/2011	Matsumoto	361/728

OTHER PUBLICATIONS

U.S. Appl. No. 29/458,663, filed Jun. 21, 2013.
U.S. Appl. No. 29/458,665, filed Jun. 21, 2013.
U.S. Appl. No. 29/458,667, filed Jun. 21, 2013.
U.S. Appl. No. 29/458,669, filed Jun. 21, 2013.
U.S. Appl. No. 29/460,862, filed Jul. 16, 2013.
U.S. Appl. No. 29/460,861, filed Jul. 16, 2013.
U.S. Appl. No. 29/460,860, filed Jul. 16, 2013.
U.S. Appl. No. 29/460,859, filed Jul. 16, 2013.
U.S. Appl. No. 29/460,858, filed Jul. 16, 2013.

* cited by examiner

Fig.1

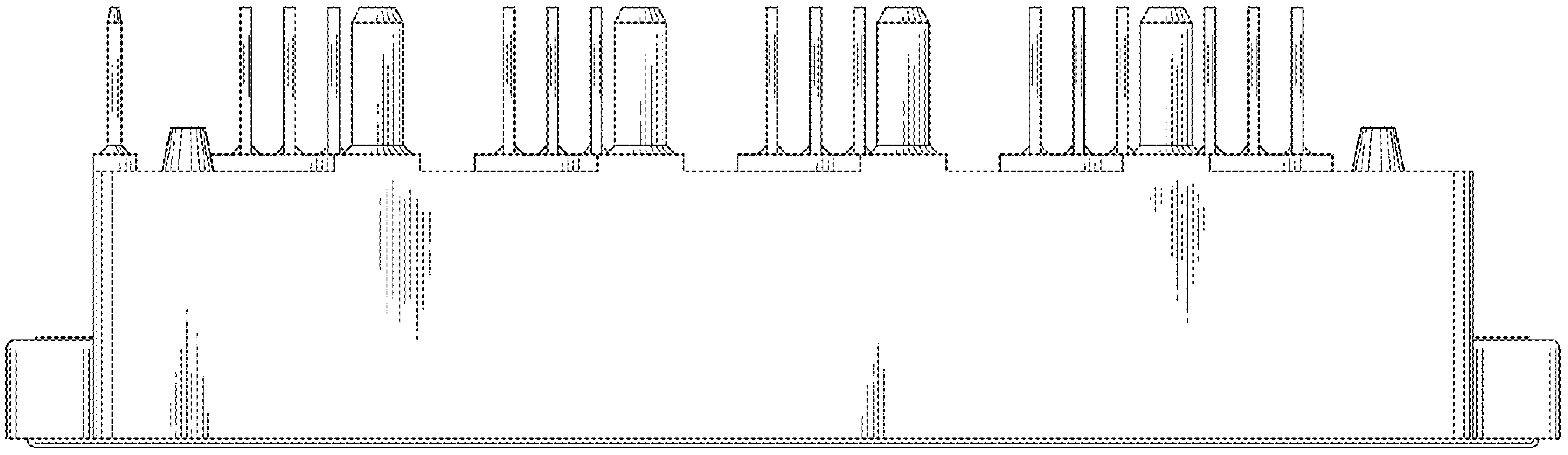


Fig.2

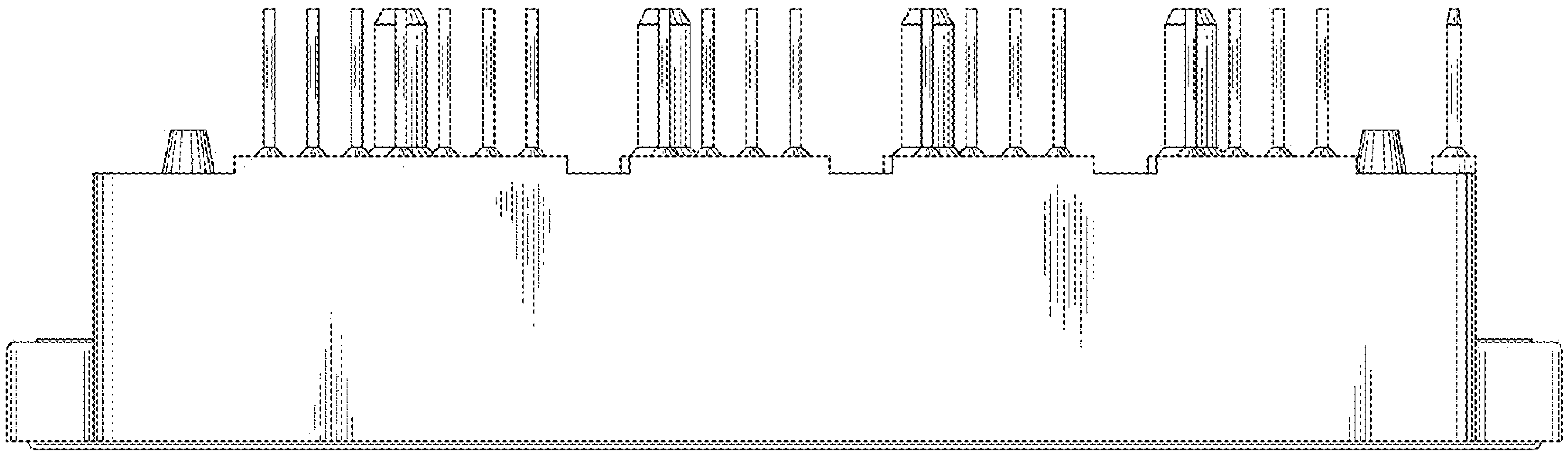


Fig.3

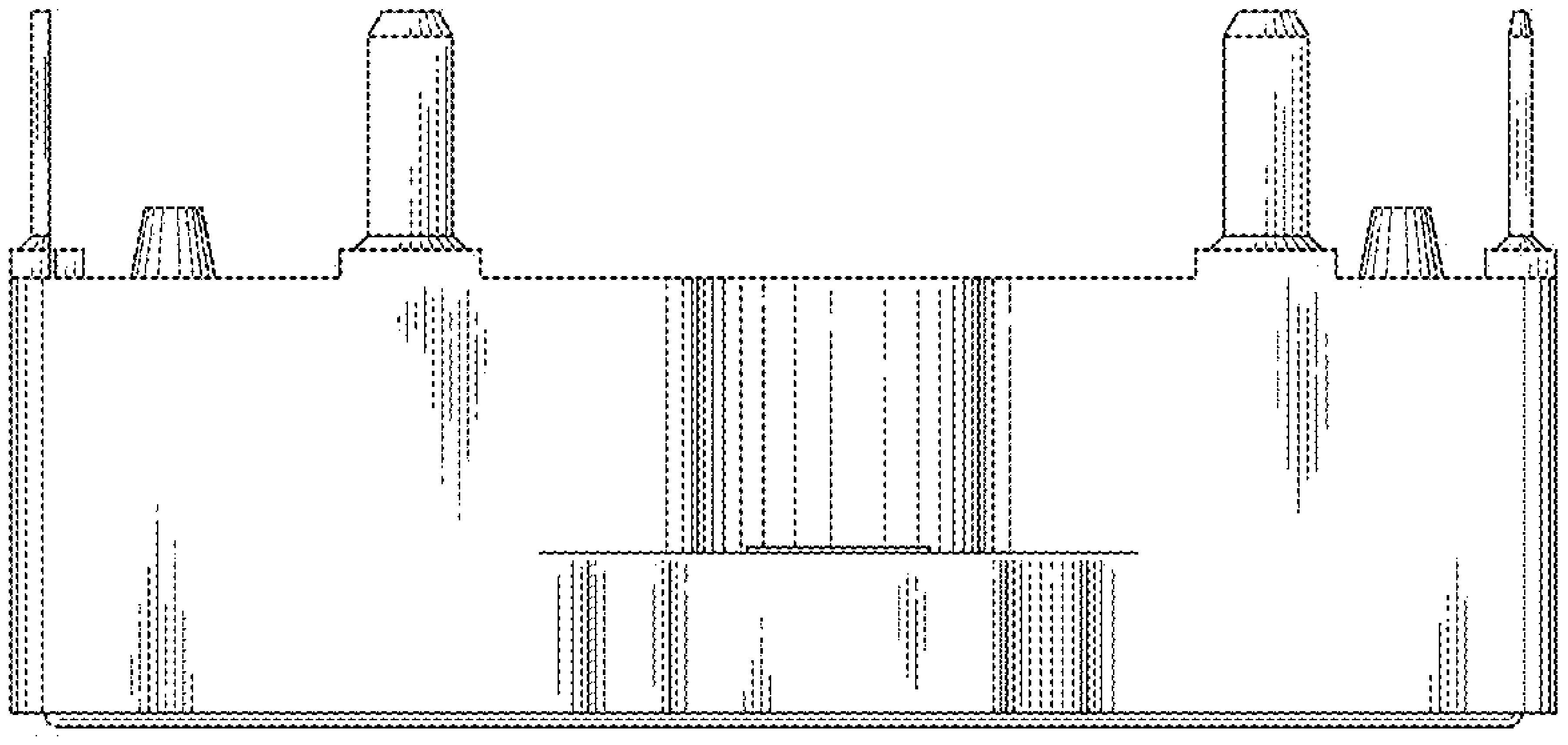


Fig.4

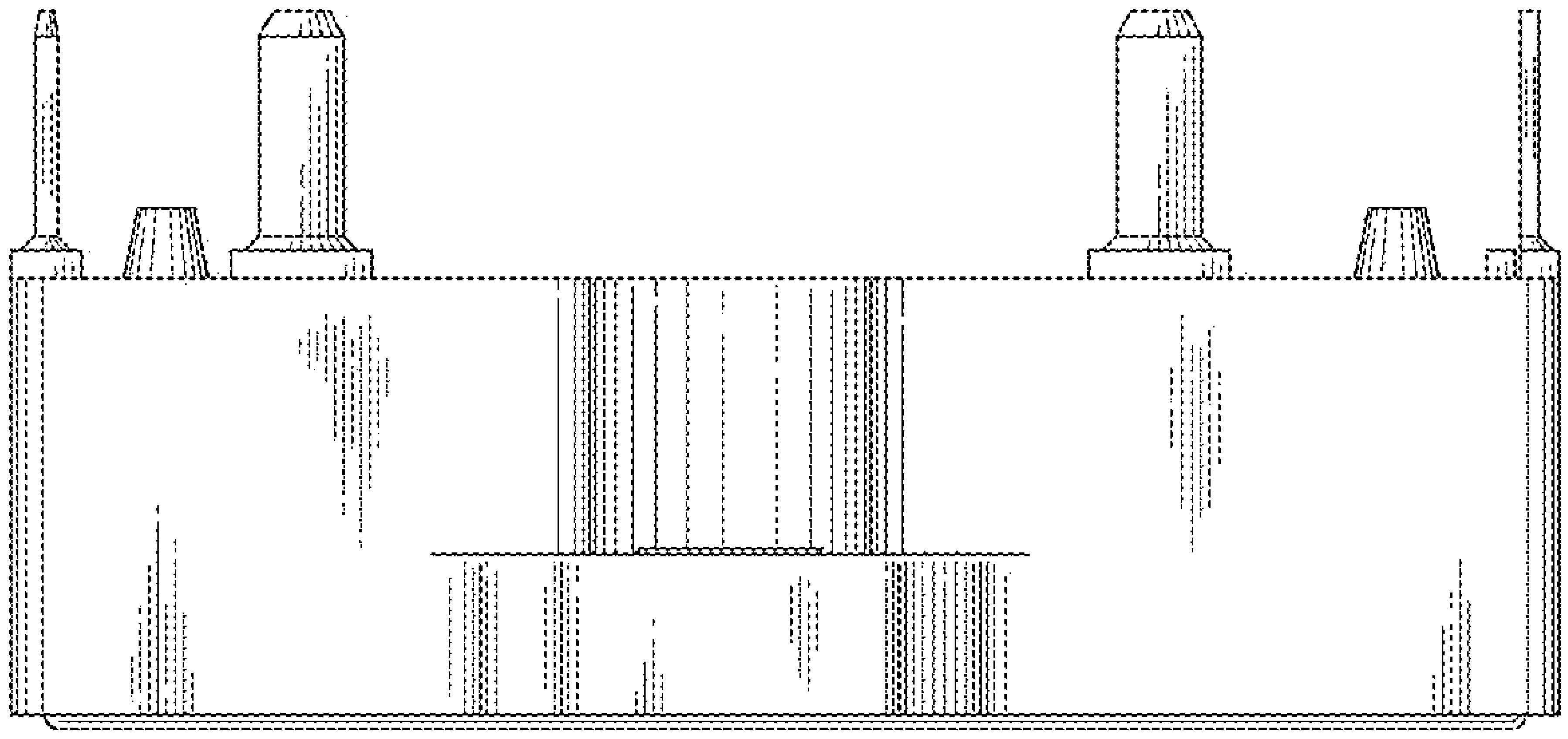


Fig.5

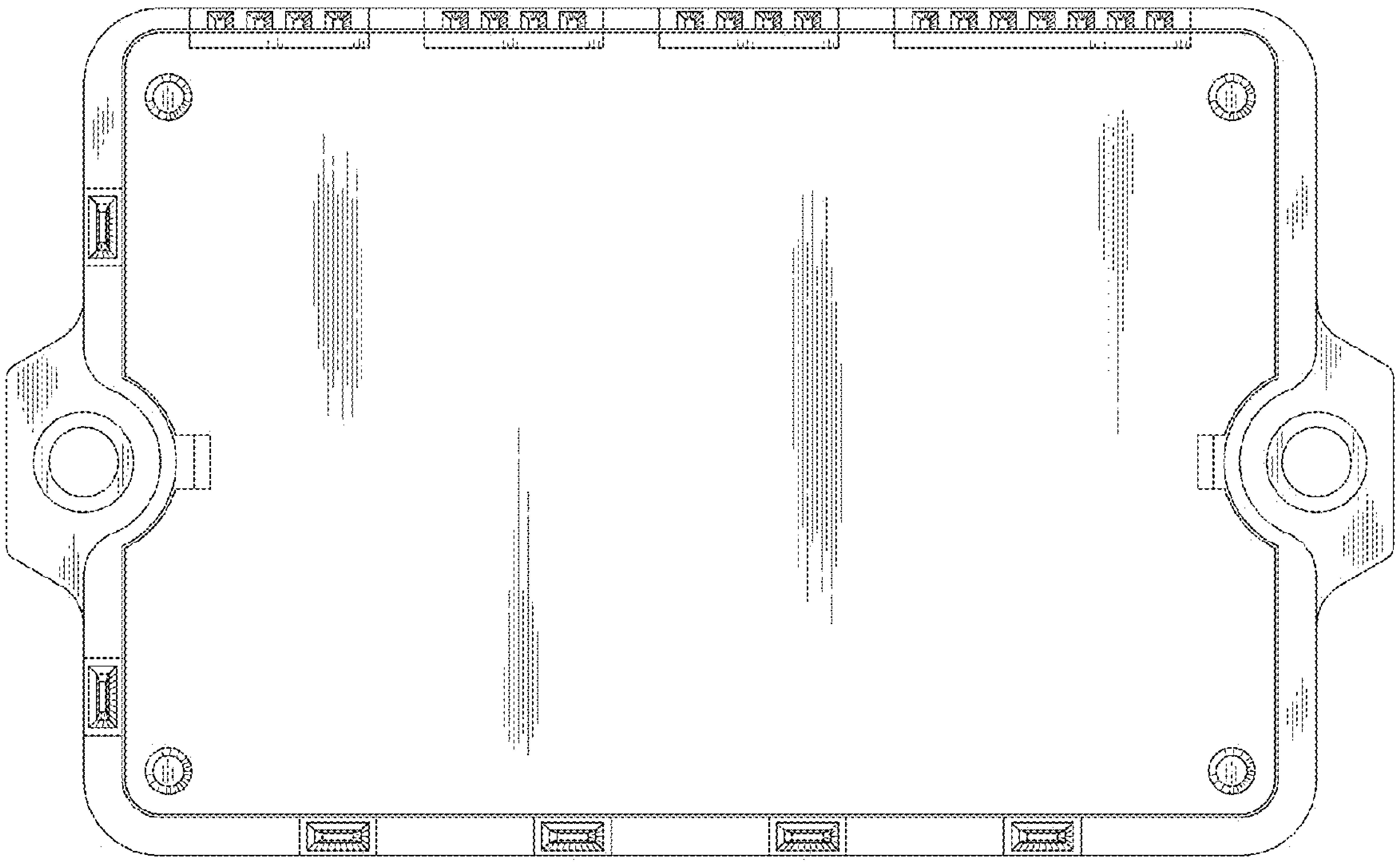


Fig.6

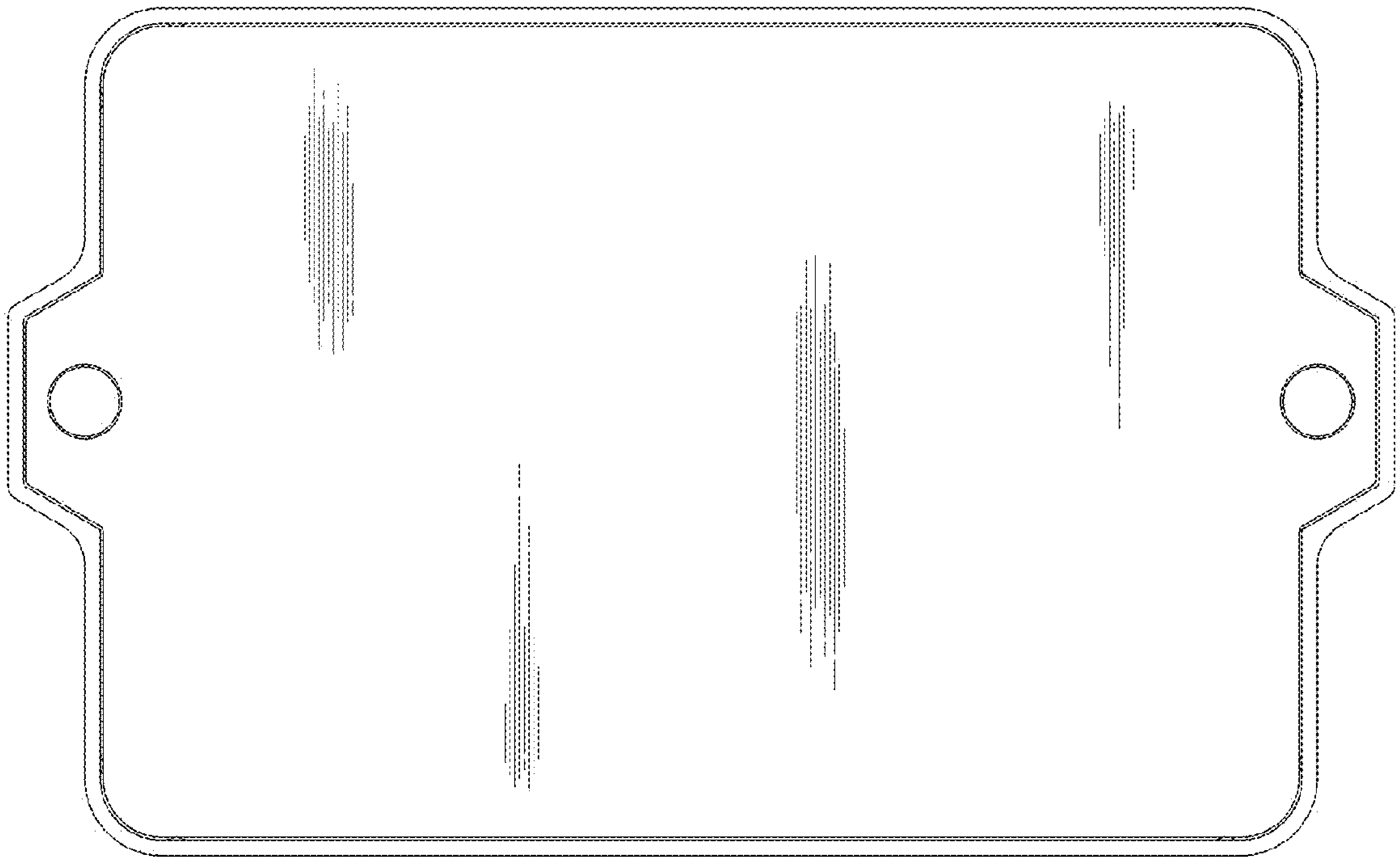


Fig.7