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

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(54) **POWER SEMICONDUCTOR DEVICE**

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(30) **Foreign Application Priority Data**

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

(58) **Field of Classification Search**
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CPC H01L 21/00; H01L 21/02433; 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 2924/1811; H01L 2924/1815; H01L

2924/19042; H01L 2924/1905; H01L 2224/08054; H01L 23/58; H05B 41/14; H02B 6/4201; G02B 6/4256; G02B 6/4257; G02B 6/4261; G02B 6/4262; G02B 6/42; G02B 6/4281; H05K 1/14; H05K 1/141; H05K 1/142; H05K 1/144; H05K 1/18; H05K 1/181; H05K 1/182; H05K 1/026; H05K 1/0228; H05K 1/0245; H05K 1/0236; H05K 1/0263

See application file for complete search history.

(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
3,825,876 A * 7/1974 Damon H05K 7/1046
174/535
3,846,734 A * 11/1974 Pauza H05K 7/1076
174/541

(Continued)

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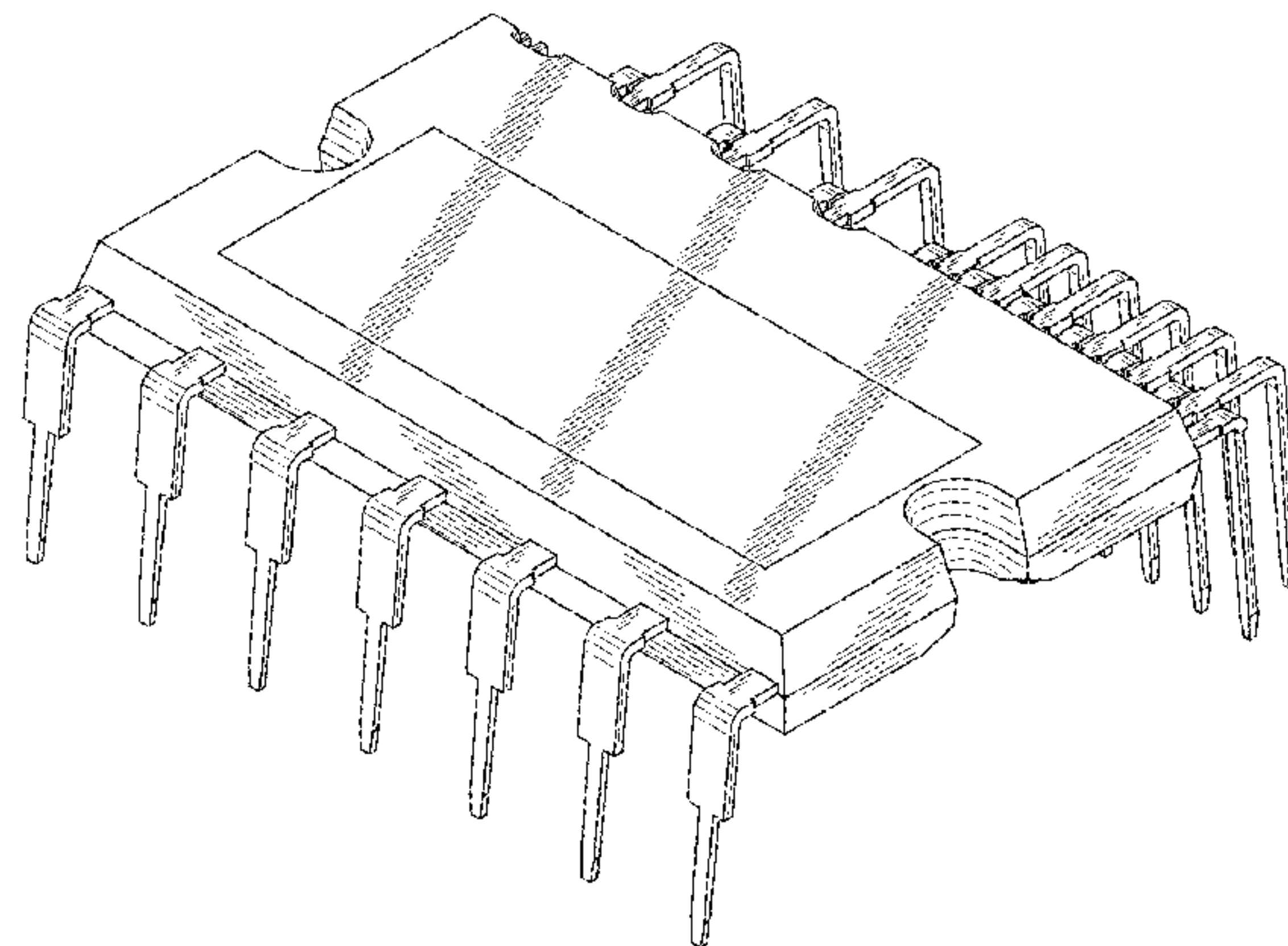
(57) **CLAIM**

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

DESCRIPTION

FIG. 1 is a front, right side, bottom perspective view of a power semiconductor device showing our new design; FIG. 2 is a rear, left side, top perspective view thereof; FIG. 3 is a front view thereof; FIG. 4 is a rear view thereof; FIG. 5 is a left side view thereof; FIG. 6 is a right side view thereof; FIG. 7 is a top plan view thereof; and, FIG. 8 is a bottom plan view thereof. The broken lines shown represent unclaimed subject matter of a power semiconductor device and form no part of the claimed design.

1 Claim, 8 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D288,922 S *	3/1987	Olla	.....	D13/182	D548,202 S *	8/2007	Takahashi	.....	D13/182
4,663,833 A *	5/1987	Tanaka	.....	G11C 16/18 257/667	D548,203 S *	8/2007	Takahashi	.....	D13/182
D358,806 S *	5/1995	Siegel	.....	D13/182	D587,662 S *	3/2009	Soutome	.....	D13/182
D359,028 S *	6/1995	Siegel	.....	D13/182	D589,012 S *	3/2009	Soyano	.....	D13/182
D394,244 S *	5/1998	Majumdar	.....	D13/182	D606,951 S *	12/2009	Soyano	.....	D13/182
D401,912 S *	12/1998	Majumdar	.....	D13/182	D653,633 S *	2/2012	Soyano	.....	D13/182
D418,485 S *	1/2000	Kawafuji	.....	D13/182	D653,634 S *	2/2012	Soyano	.....	D13/182
D421,969 S *	3/2000	Kawafuji	.....	D13/182	D674,760 S *	1/2013	Mochizuki	.....	D13/182
D448,739 S *	10/2001	Iwasaki	.....	D13/182	D686,174 S *	7/2013	Soyano	.....	D13/182
D459,705 S *	7/2002	Yokota	.....	D13/182	D689,446 S *	9/2013	Soyano	.....	D13/180
D470,825 S *	2/2003	Iwasaki	.....	D13/182	D705,184 S *	5/2014	Takahashi	.....	D13/182
D472,530 S *	4/2003	Iwasaki	.....	D13/182	D717,253 S *	11/2014	Jo	.....	D13/182
D505,399 S *	5/2005	Yoshida	.....	D13/182	D717,254 S *	11/2014	Jo	.....	D13/182
D505,400 S *	5/2005	Kawafuji	.....	D13/182	D717,255 S *	11/2014	Lim	.....	D13/182
D539,761 S *	4/2007	Takahashi	.....	D13/182	D717,256 S *	11/2014	Sohn	.....	D13/182
					D719,113 S *	12/2014	Sohn	.....	D13/182
					D719,537 S *	12/2014	Kawase	.....	D13/182
					D719,926 S *	12/2014	Sohn	.....	D13/182

* cited by examiner

FIG. 1

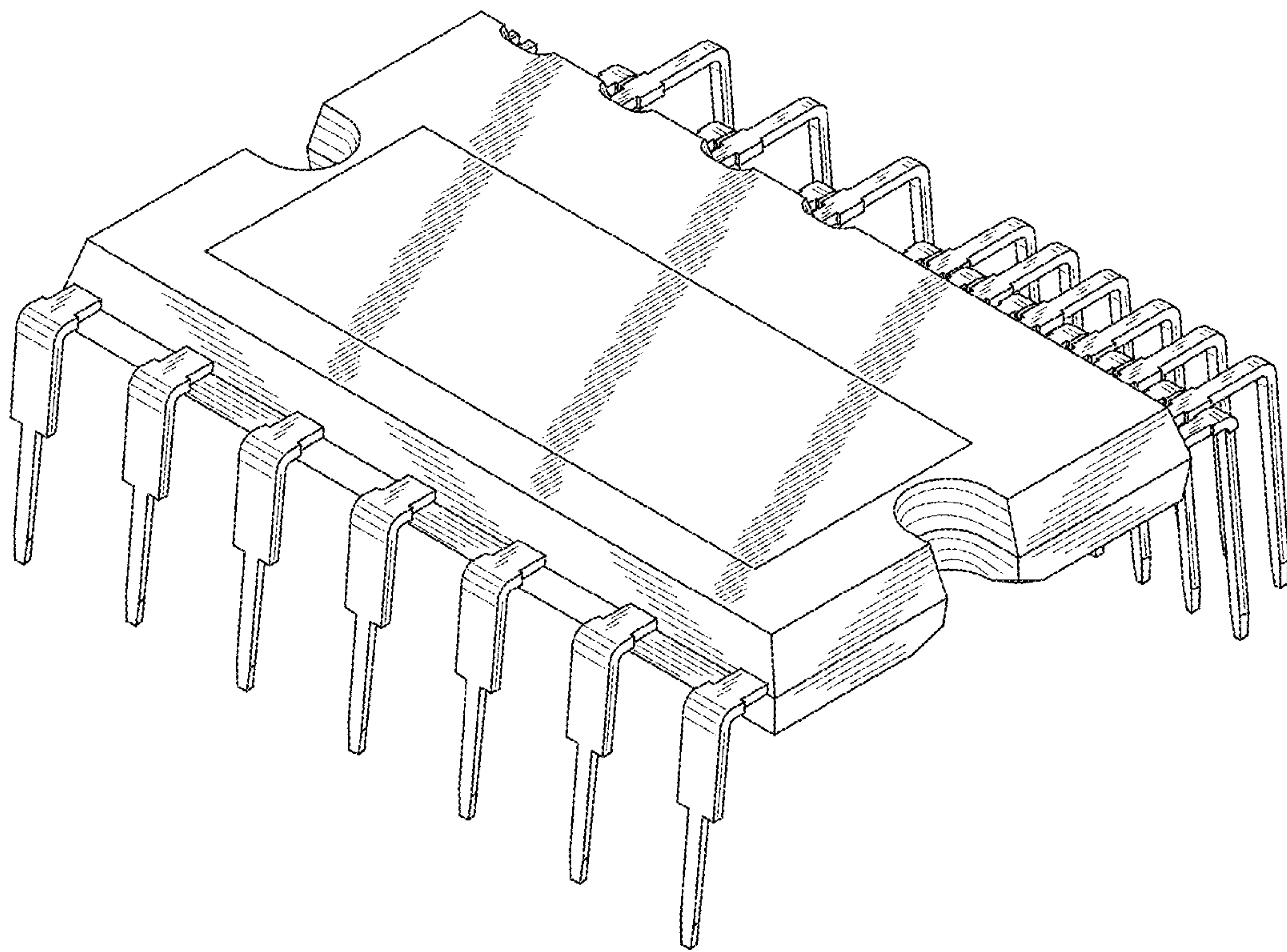


FIG. 2

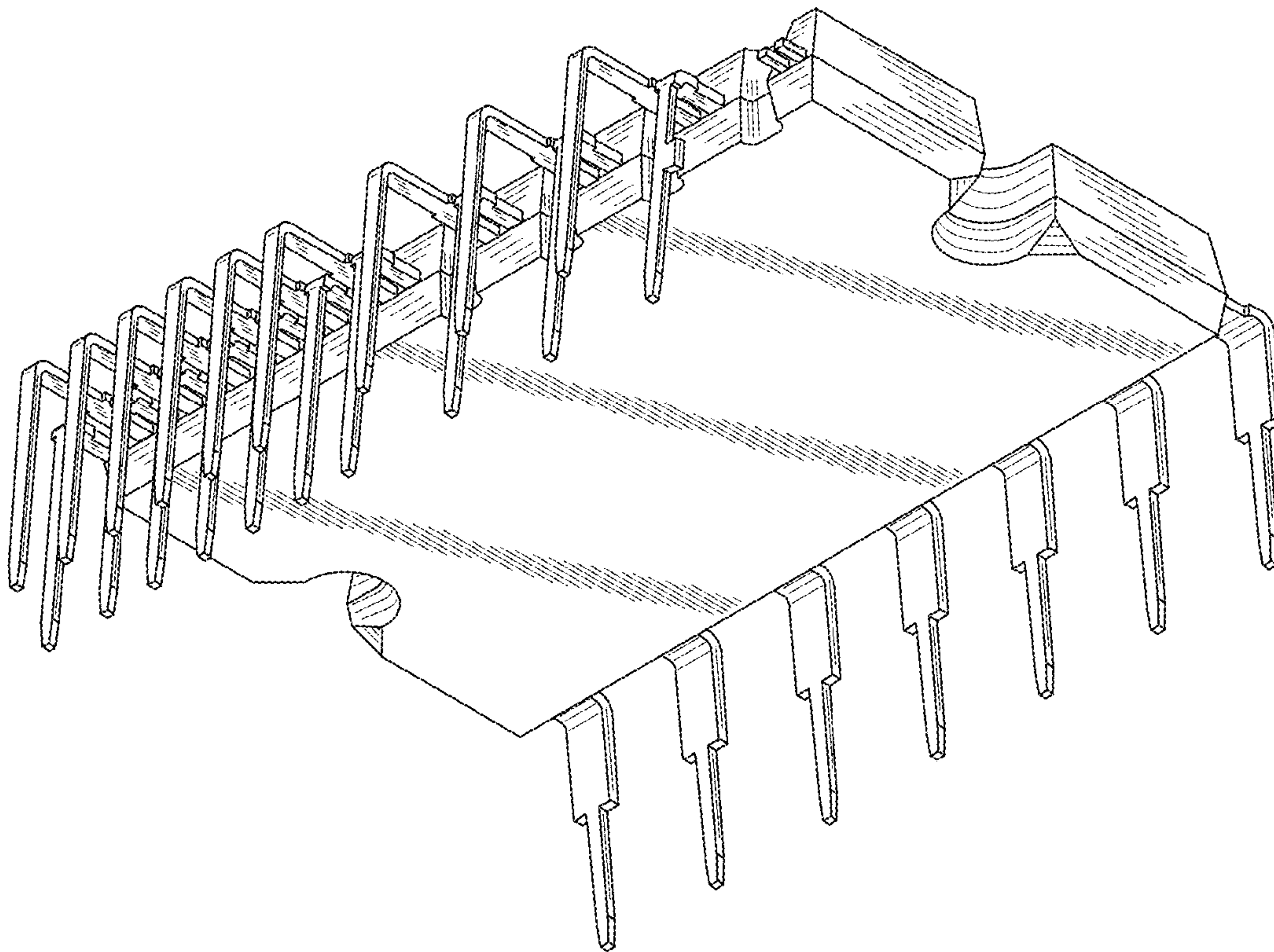


FIG. 3

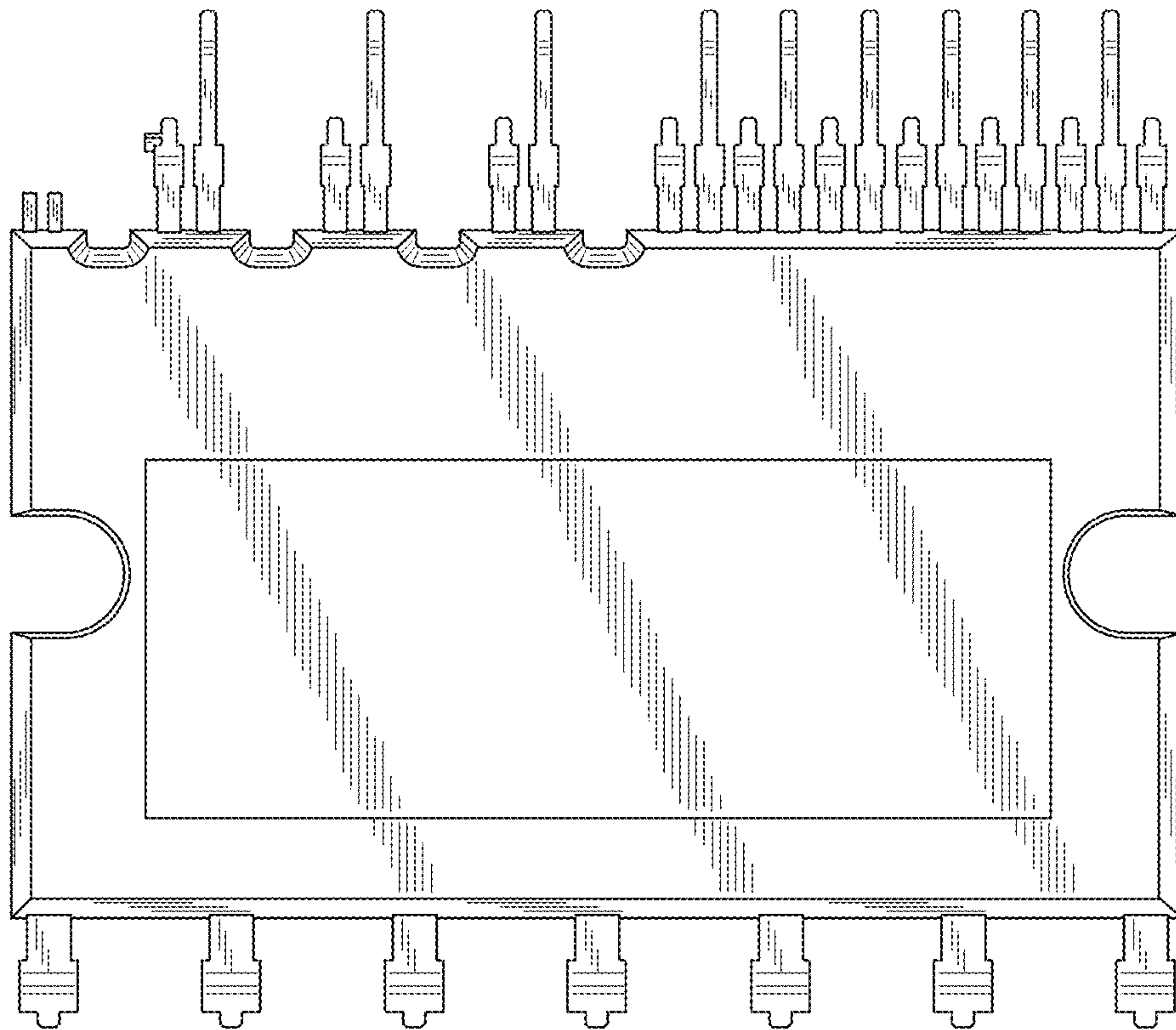


FIG. 4

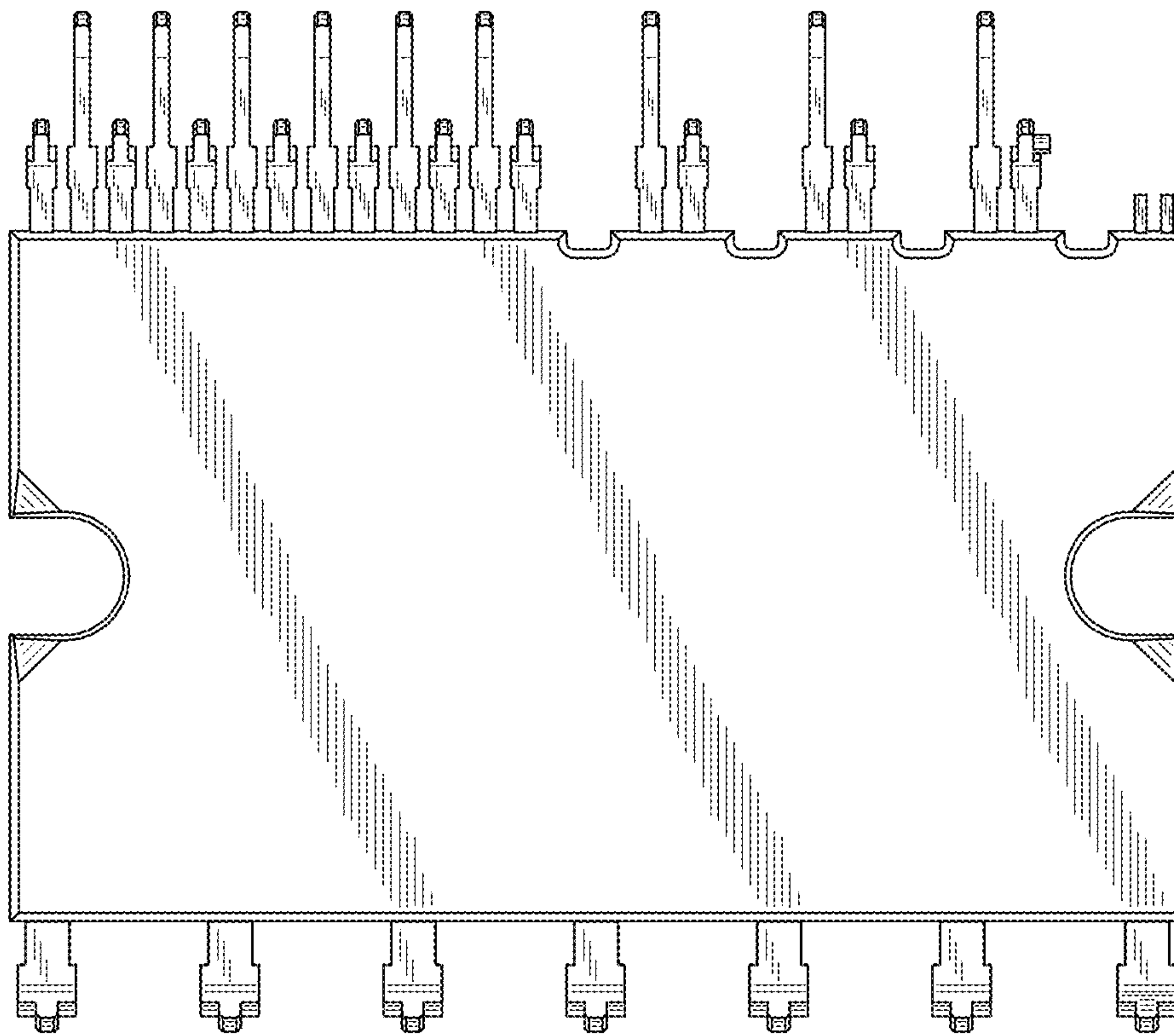


FIG. 5

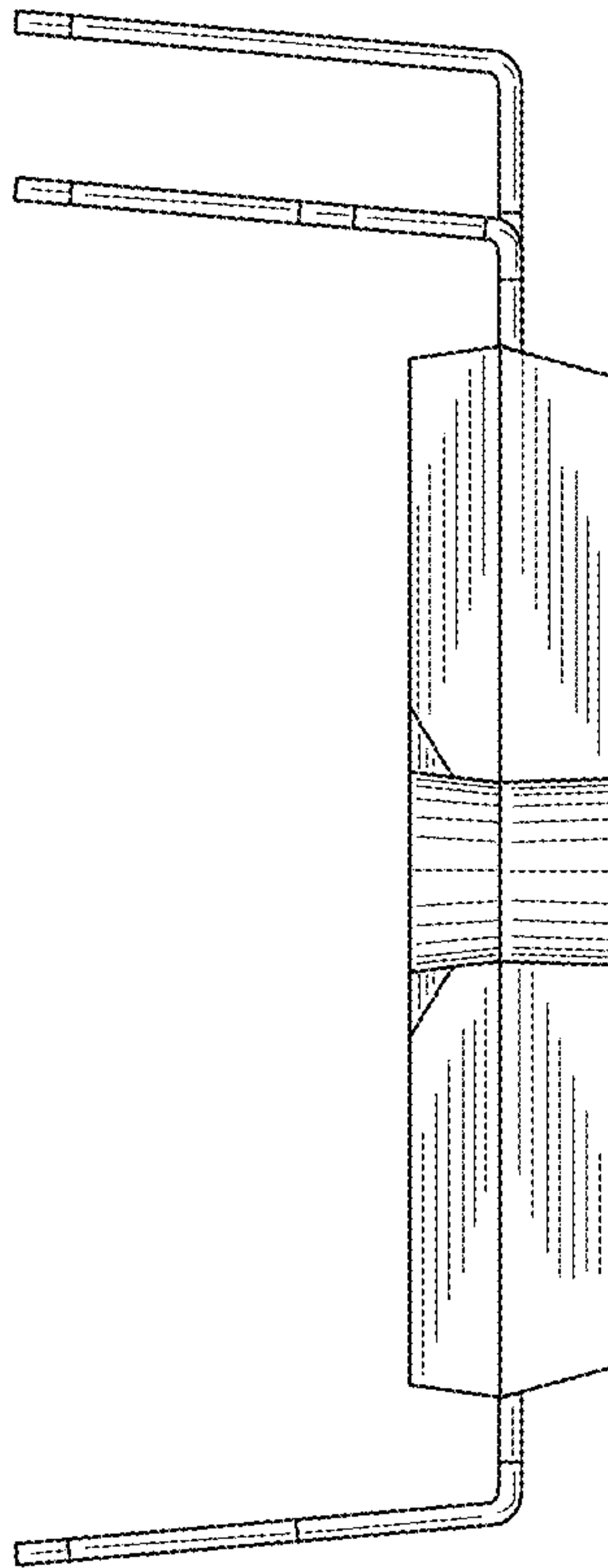


FIG. 6

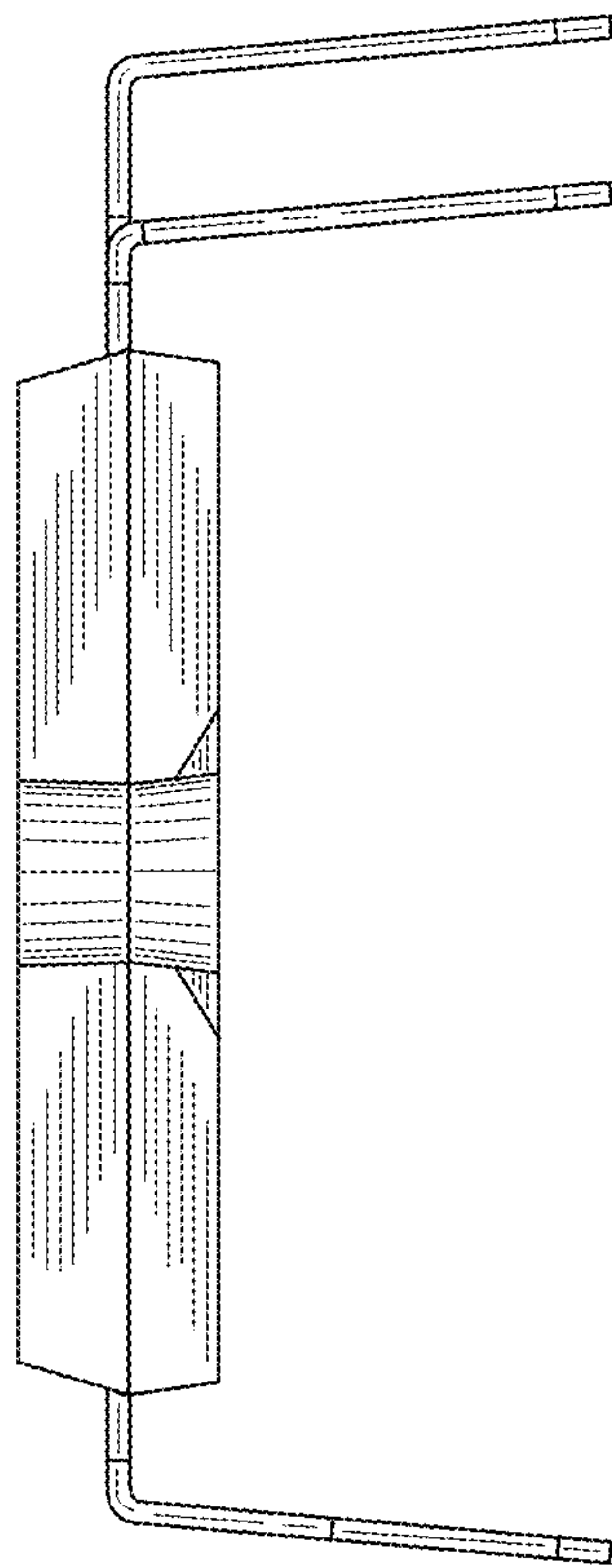


FIG. 7

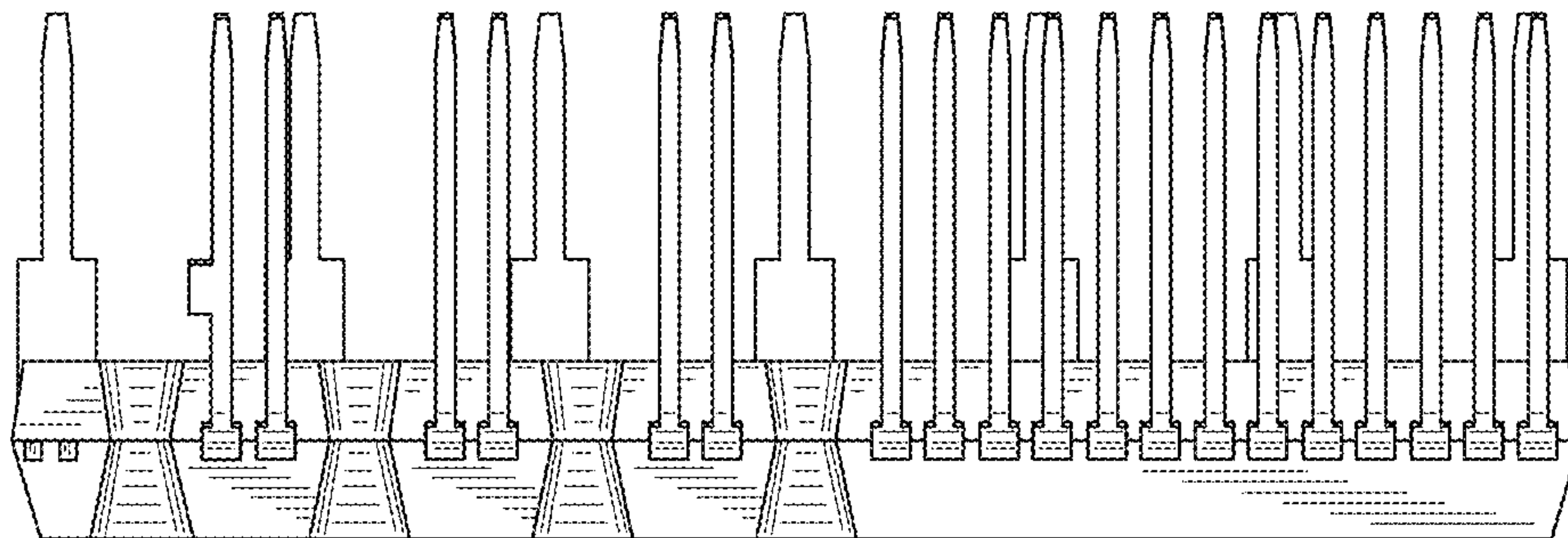


FIG. 8

