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

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(54) **FOIL HEATER**

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

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(51) **LOC (14) Cl.** **23-03**

(52) **U.S. Cl.**

USPC **D23/335**

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219/520, 481, 547, 466.1, 200, 444.1,
219/468.1

CPC . H05B 3/34; H05B 3/36; H05B 3/342; H05B
2203/017; H05B 2203/011; H05B
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B64D 15/12

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,600,486 A	6/1952	Cox	
3,263,307 A	8/1966	Lund et al.	
3,555,950 A	1/1971	Gerardus et al.	
3,745,649 A	7/1973	Doi et al.	
3,912,905 A *	10/1975	Giler	H05B 3/748 219/461.1
4,454,886 A	6/1984	Lee	
4,798,192 A *	1/1989	Maruko	F24C 1/10 126/91 A
4,889,973 A	12/1989	Farinacci et al.	
D320,649 S *	10/1991	Fleming	D23/386
D323,385 S *	1/1992	Higgins	D23/419

D326,907 S *	6/1992	McWilliams	D23/419
D342,991 S *	1/1994	McWilliams	D23/419
D378,402 S *	3/1997	Ahmady	D23/335
D402,156 S *	12/1998	Meyer	D7/407
D433,281 S *	11/2000	Carter	D7/407
6,884,965 B2	4/2005	Nelson et al.	
D916,257 S *	4/2021	Oohigashi	D23/323

(Continued)

FOREIGN PATENT DOCUMENTS

JP	19880321796 A1	6/1990
JP	19970180463 A1	1/1999
YU	2003P000051 A1	8/2006

OTHER PUBLICATIONS

Manufacture Aluminum Foil Heater for Fridge Drain Heater, "https://jypawo.en.made-in-china.com/product/DNRxoqScEPWb/China-Manufacture-Aluminum-Foil-Heater-for-Fridge-Drain-Heater.html", retrieved Jun. 21, 2022 (Year: 2022).*

(Continued)

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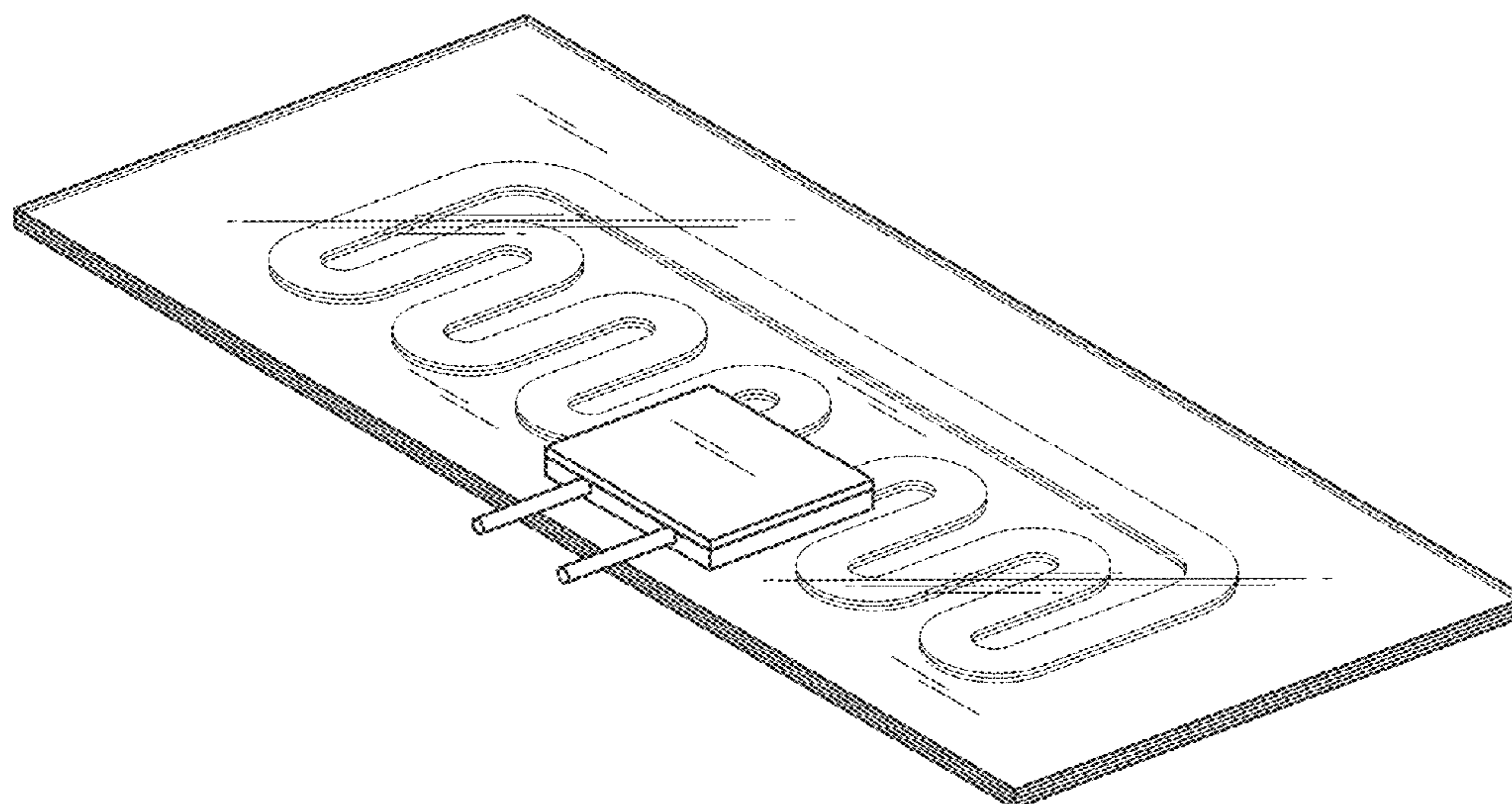
(57) **CLAIM**

The ornamental design for a foil heater, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a foil heater.
FIG. 2 is a top plan view thereof.
FIG. 3 is a bottom plan view thereof.
FIG. 4 is a front view thereof.
FIG. 5 is a back view thereof.
FIG. 6 is a left elevation view thereof.
FIG. 7 is a right elevation view thereof; and,
FIG. 8 is an exploded perspective view of the foil heater shown in FIG. 1.

1 Claim, 6 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

D921,431	S *	6/2021	Krishnan	D7/409
11,408,132	B2 *	8/2022	Logan	F24D 19/1096
11,412,886	B2 *	8/2022	Stoud	A47J 36/2433
11,467,126	B2 *	10/2022	Bell	G01N 30/96
11,483,900	B2 *	10/2022	Yu	H05B 3/04
11,529,633	B2 *	12/2022	Andreyev	H05B 3/26
2004/0075528	A1 *	4/2004	Carbin	H05K 1/167 338/307
2006/0201933	A1 *	9/2006	Carpino, II	H05B 3/34 219/545
2006/0289110	A1	12/2006	Schmitt et al.	
2006/0289472	A1	12/2006	Beisser et al.	
2016/0007474	A1	1/2016	Dardona et al.	
2018/0093455	A1	4/2018	Zou	
2019/0373680	A1	12/2019	Barfuss et al.	
2022/0266478	A1 *	8/2022	Wallinger	H05B 3/28
2022/0304116	A1 *	9/2022	Reevell	A24F 40/51
2022/0316823	A1 *	10/2022	Do	F24H 9/40
2022/0355578	A1 *	11/2022	Fraschetti	B32B 5/18
2022/0394821	A1 *	12/2022	Tong	H05B 3/145

OTHER PUBLICATIONS

Imperial 37493 Heating Elements for, Ir-E, 208V, “<https://www.amazon.com/Imperial-37493-Heating-Elements-208V/dp/B00MYMA3DQ>”, Date First Available : Aug. 28, 2015, retrieved Jun. 21, 2022 (Year: 2015).*

Warmup—Installation Manual: Foil Floor Heating System, available on warmyourfloor.ca, published Nov. 2011 [online] [site visited Jul. 20, 2022], Internet URL: <https://www.warmyourfloor.ca/pub/media/pdf/Warmup-FOIL-Heat-Mats-Install-manual-WYF-Current.pdf> (Year: 2011).*

Warmup—Installation Manual: Foil Heating System for Laminate and Carpet, available on warmyourfloor.ca, published 2013 [online] [site visited Jul. 20, 2022], Internet URL: <https://www.warmyourfloor.ca/pub/media/pdf/Warmup-FOIL-Heat-Mats-Install-manual-WYF-Current.pdf> (Year: 2013).*

Star Manufacturing International. Inc. Model: 18MCP/MCPT, available on manualzz.com, published Jan. 20, 2012 [online] [site visited Jul. 20, 2022], Internet URL: <https://manualzz.com/doc/53579111/star-manufacturing-18mcpt-operation-manual> (Year: 2012).*

* cited by examiner

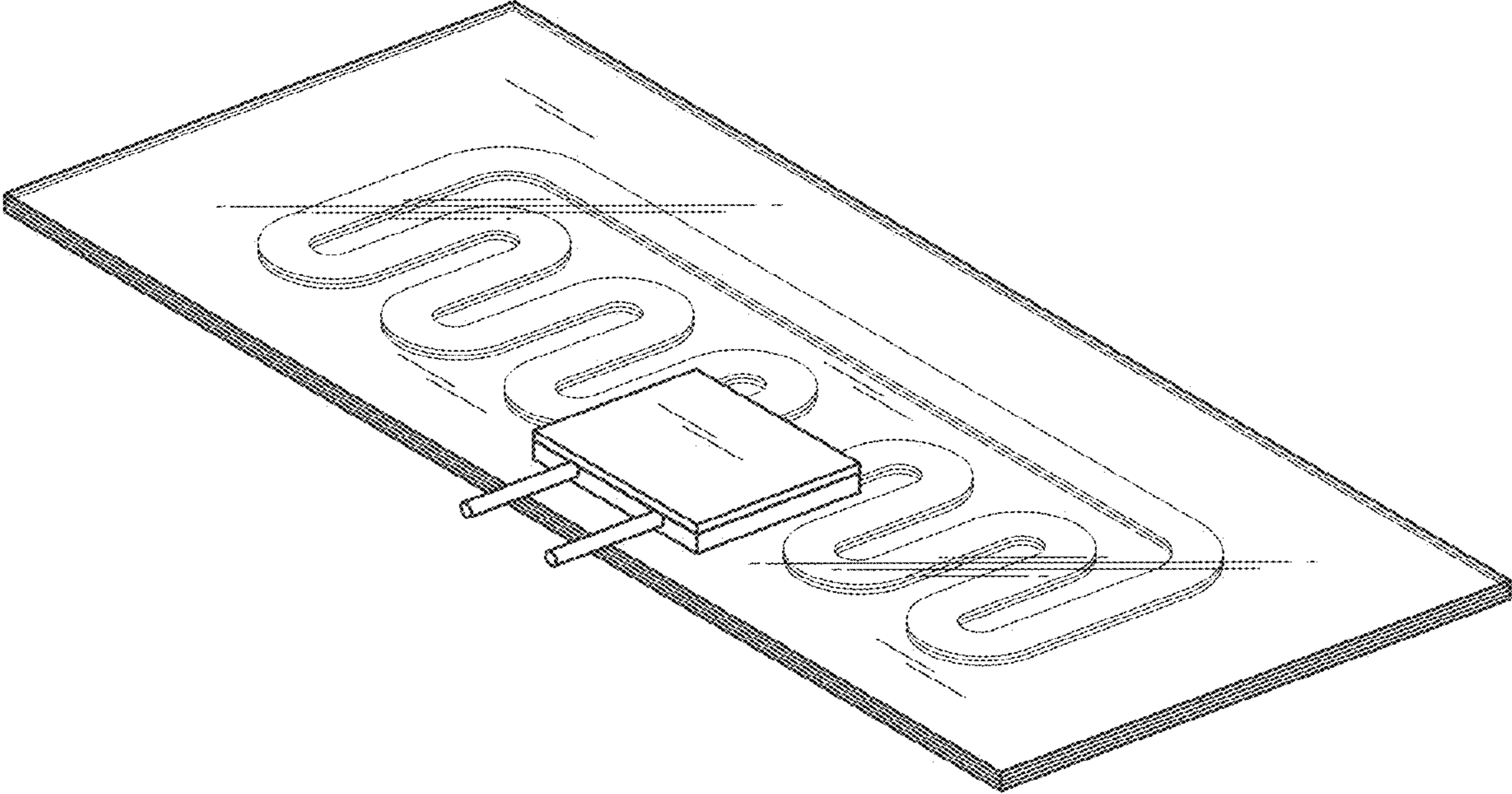


FIG. 1

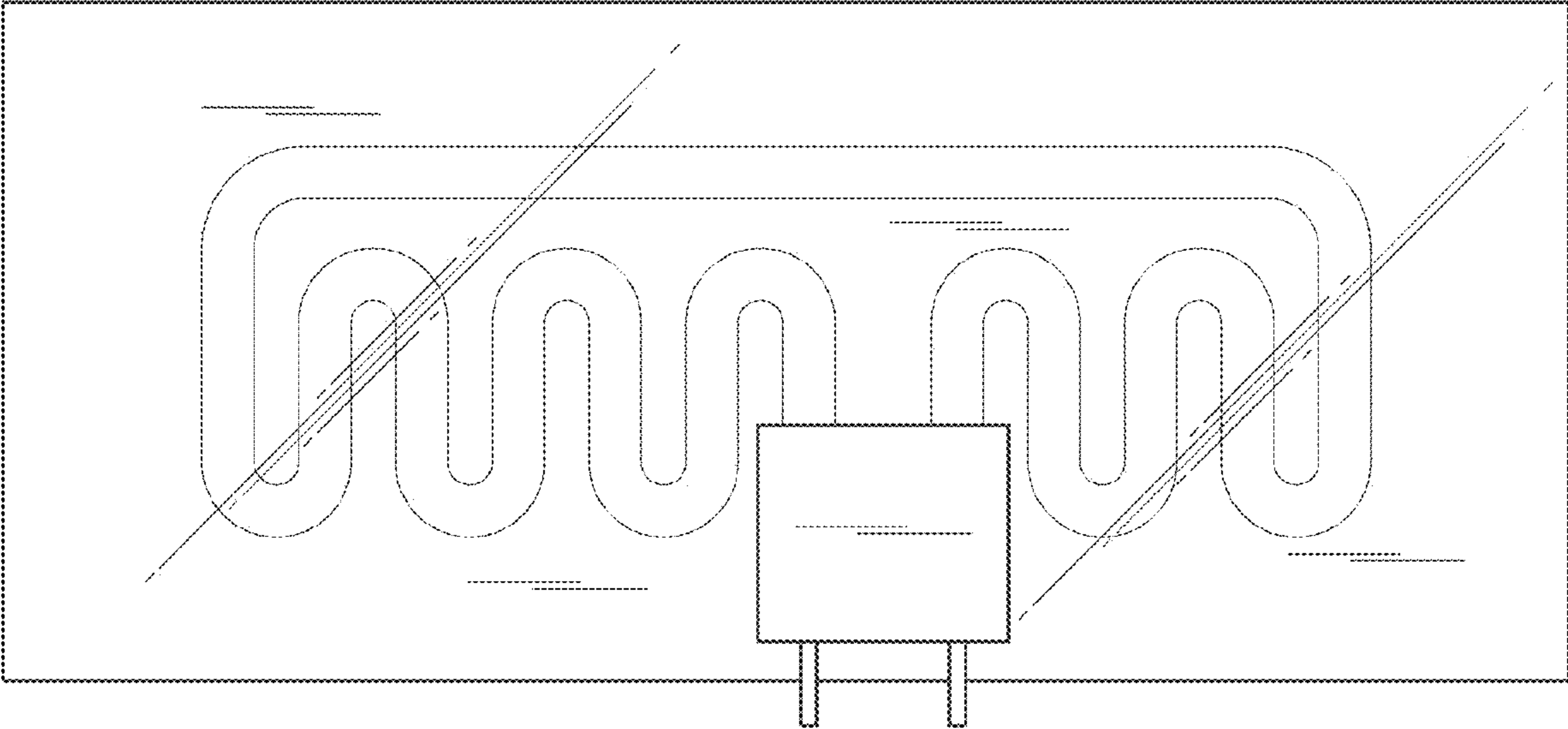


FIG. 2

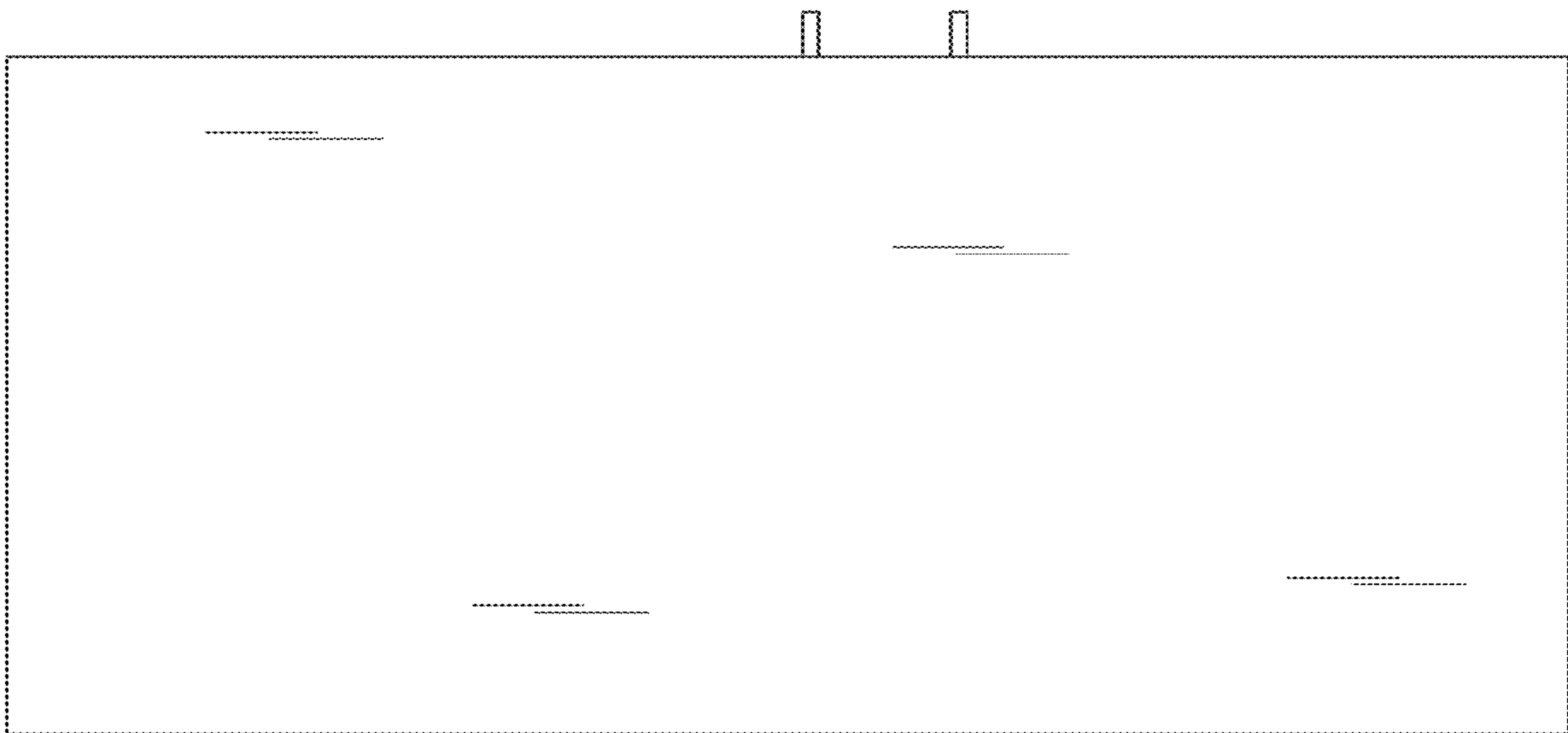


FIG. 3



FIG. 4



FIG. 5



FIG. 6



FIG. 7

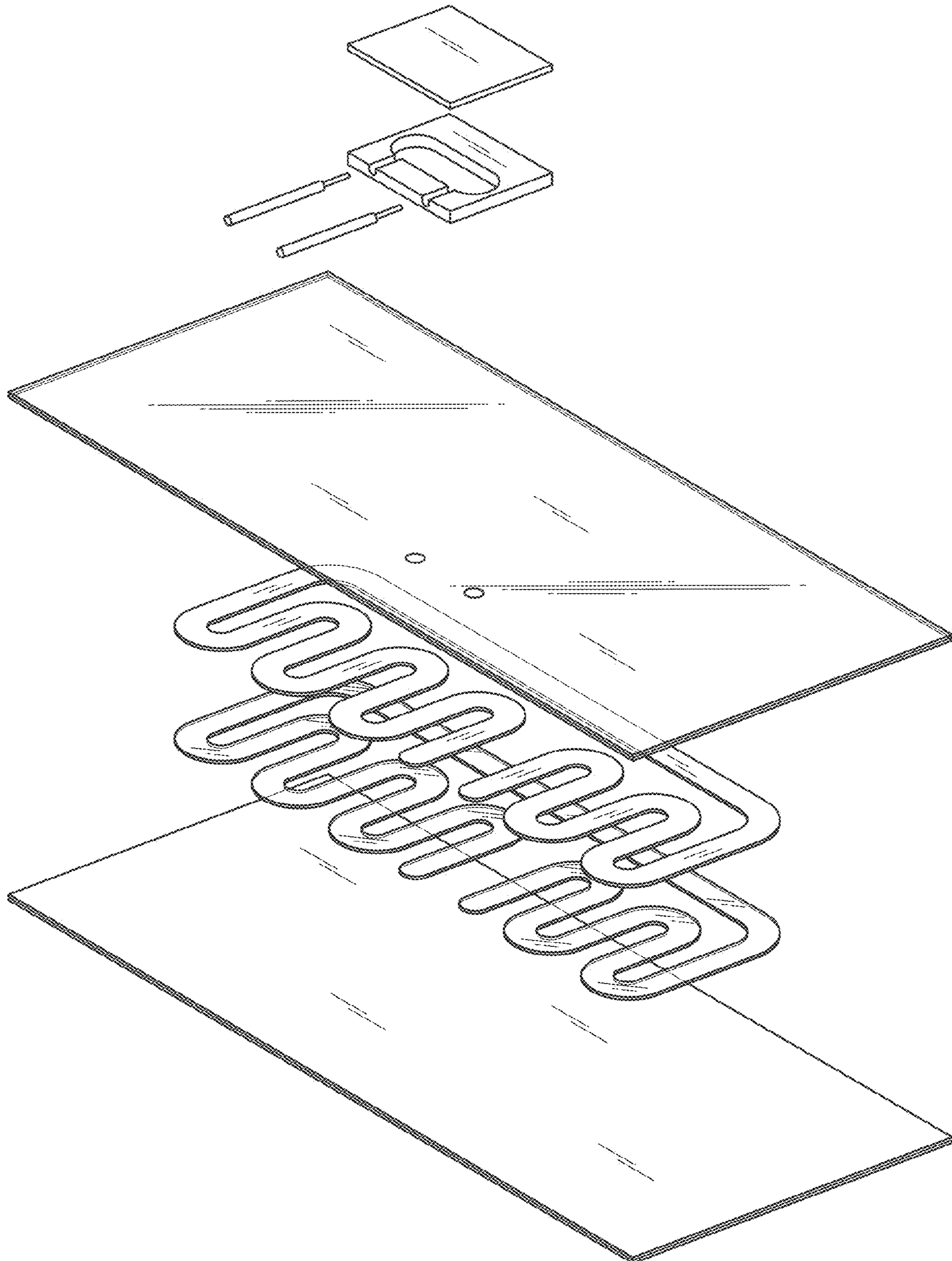


FIG. 8