



US00D905647S

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

(10) **Patent No.:** **US D905,647 S**  
(45) **Date of Patent:** **\*\* Dec. 22, 2020**

(54) **COMBINATION HEAT PIPE AND HEAT SINK**

FOREIGN PATENT DOCUMENTS

JP 6429297 B1 \* 11/2018 ..... F28D 15/0275

(71) Applicant: **HEATSCAPE.COM, INC.**, Morgan Hill, CA (US)

OTHER PUBLICATIONS

(72) Inventors: **Ali Mira**, Morgan Hill, CA (US);  
**Yashar Mira**, Morgan Hill, CA (US);  
**Michael Mira**, Morgan Hill, CA (US)

“Heat Pipe Overview”. Found online Apr. 13, 2020 at youtube.com. Reference dated Jul. 9, 2015. Retrieved from https://www.youtube.com/watch?v=WoJnnHTQfuw. (Year: 2015).\*

(Continued)

(73) Assignee: **HEATSCAPE.COM, INC.**, Morgan Hill, CA (US)

*Primary Examiner* — Kendra Leslie Hamilton

*Assistant Examiner* — Amanda Christensen

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

(74) *Attorney, Agent, or Firm* — Kilpatrick Townsend & Stockton LLP

(21) Appl. No.: **29/657,394**

(57) **CLAIM**

(22) Filed: **Jul. 20, 2018**

The ornamental design for a combination heat pipe and heat sink, as shown and described.

(51) **LOC (12) Cl.** ..... **13-03**

(52) **U.S. Cl.**  
USPC ..... **D13/179**

**DESCRIPTION**

(58) **Field of Classification Search**  
USPC ..... D13/101, 118, 122, 123, 179, 182;  
D15/199; D14/435, 436, 437; D23/314,  
D23/330  
CPC . H01L 23/467; H01L 23/427; F28D 15/0275;  
G06F 1/20  
See application file for complete search history.

FIG. 1 is a top, front, right, perspective view of a combination heat pipe and heat sink, showing our new design; FIG. 2 is a bottom, front, left perspective view thereof; FIG. 3 is a front elevation view thereof; FIG. 4 is a rear elevation view thereof; FIG. 5 is a right side elevation view thereof; FIG. 6 is a left side elevation view thereof; FIG. 7 is a bottom plan view thereof; FIG. 8 is a top plan view thereof; FIG. 9 is a top, front, right perspective view of the combination heat pipe and heat sink of FIG. 1, shown in a first condition for use and exploded for clarity of disclosure; and, FIG. 10 is a top, front, right perspective view of the combination heat pipe and heat sink of FIG. 1, shown in a second condition for use and assembled for clarity of disclosure.

The broken lines depict portions of the combination heat pipe and heat sink that form no part of the claimed design.

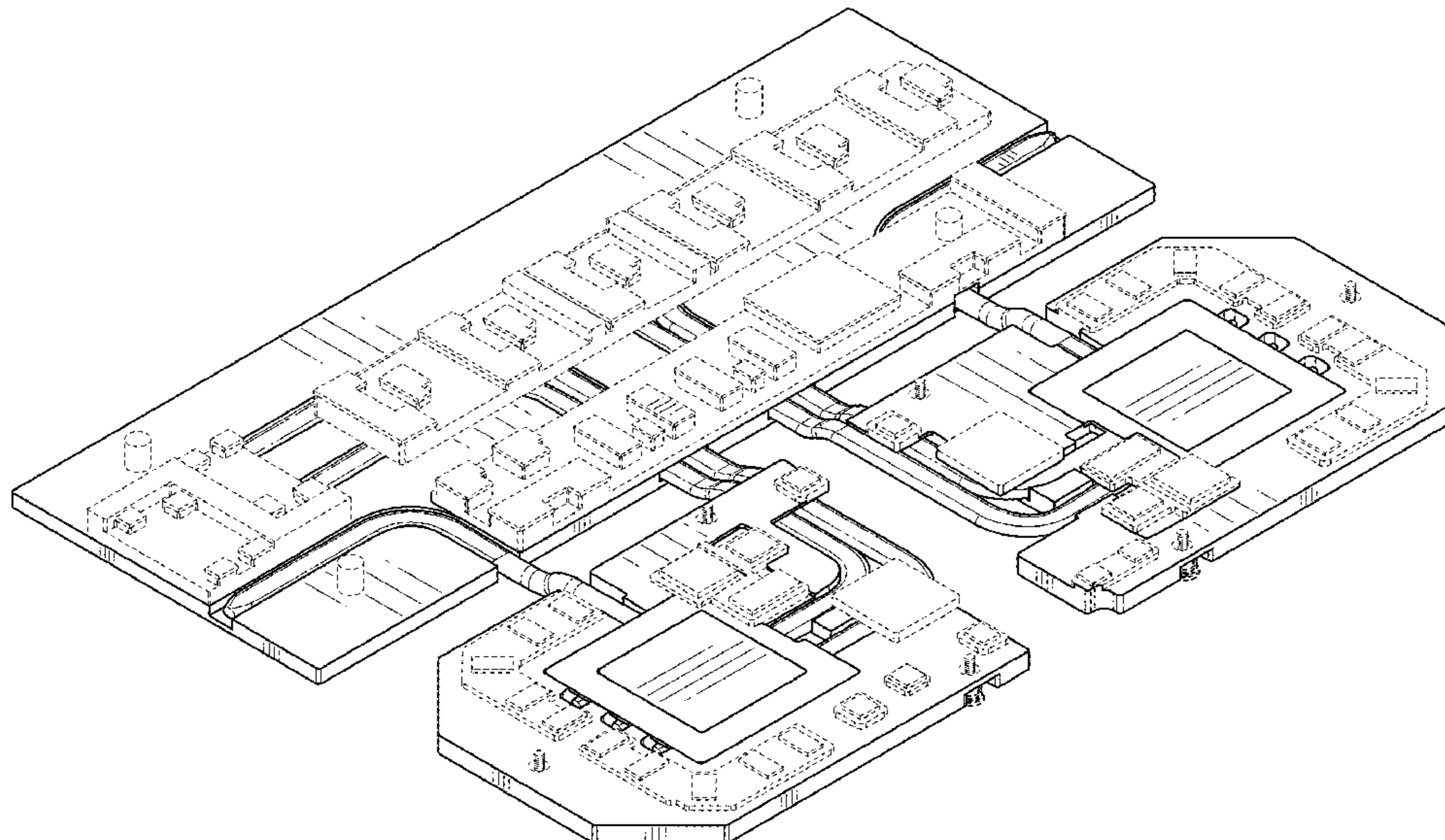
(56) **References Cited**

U.S. PATENT DOCUMENTS

D427,159 S *	6/2000	Oba	.....	D13/182
D722,573 S *	2/2015	Mira	.....	D13/179
D732,487 S *	6/2015	Lai	.....	D13/182
D807,824 S *	1/2018	Krivosnak	.....	D13/118
D819,578 S *	6/2018	Su	.....	D13/179
2006/0181856 A1 *	8/2006	Wang	.....	H05K 7/20445 361/719
2009/0194260 A1 *	8/2009	Liao	.....	H01L 23/4006 165/104.33

(Continued)

**1 Claim, 10 Drawing Sheets**



(56)

**References Cited**

U.S. PATENT DOCUMENTS

2011/0186269 A1\* 8/2011 Yang ..... F28D 15/04  
165/104.26  
2014/0022724 A1\* 1/2014 Chao ..... G06F 1/20  
361/679.47  
2014/0182817 A1\* 7/2014 Yu ..... G06F 1/20  
165/104.21  
2017/0199554 A1\* 7/2017 Chen ..... H01L 23/38  
2018/0062347 A1\* 3/2018 Hodges ..... F28F 1/22

OTHER PUBLICATIONS

“Double heatpipe heatsink”. Found online Apr. 13, 2020 at aliexpress.com. Reference dated Dec. 2, 2016. Retrieved from <https://www.aliexpress.com/i/2045174681.html>. (Year: 2016).\*

“Microcool General Liquid Cooling”. Found online Mar. 12, 2020 at slideshare.net. Reference dated Sep. 23, 2016. Retrieved from <https://www.slideshare.net/ScottHolland13/microcool-general-liquid-cooling-presentation-10215>. (Year: 2016).\*

“Dell Heatpipe Heatsink”. Found online Mar. 12, 2020 at newegg.com. Reference dated Mar. 30, 2019. Retrieved from [https://www.newegg.com/p/2RM-000M-00776?Description=heatpipe%20heatsink&cm\\_re=heatpipe\\_heatsink\\_-\\_9SIAH9B9331370\\_-\\_Product](https://www.newegg.com/p/2RM-000M-00776?Description=heatpipe%20heatsink&cm_re=heatpipe_heatsink_-_9SIAH9B9331370_-_Product). (Year: 2019).\*

\* cited by examiner

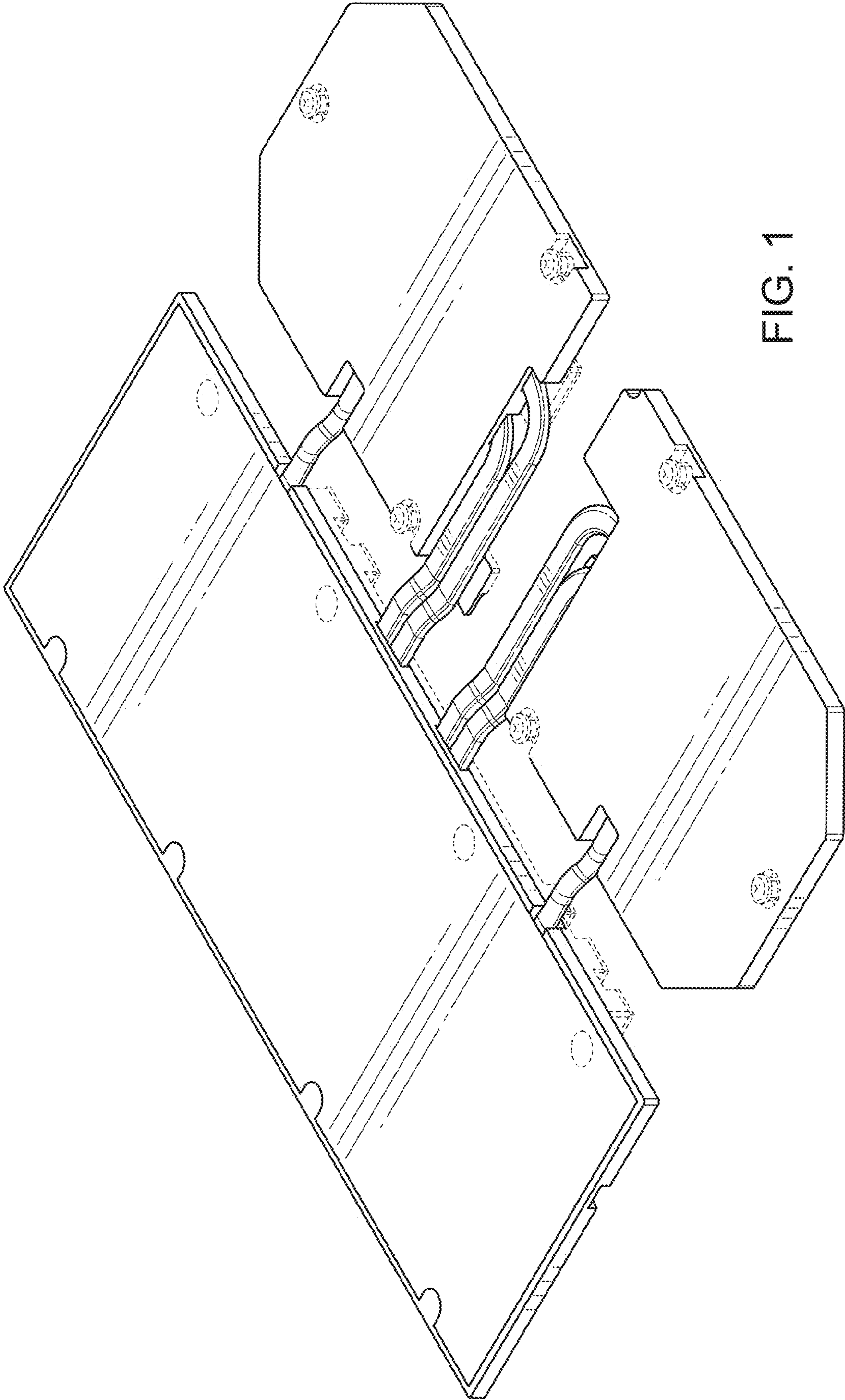


FIG. 1

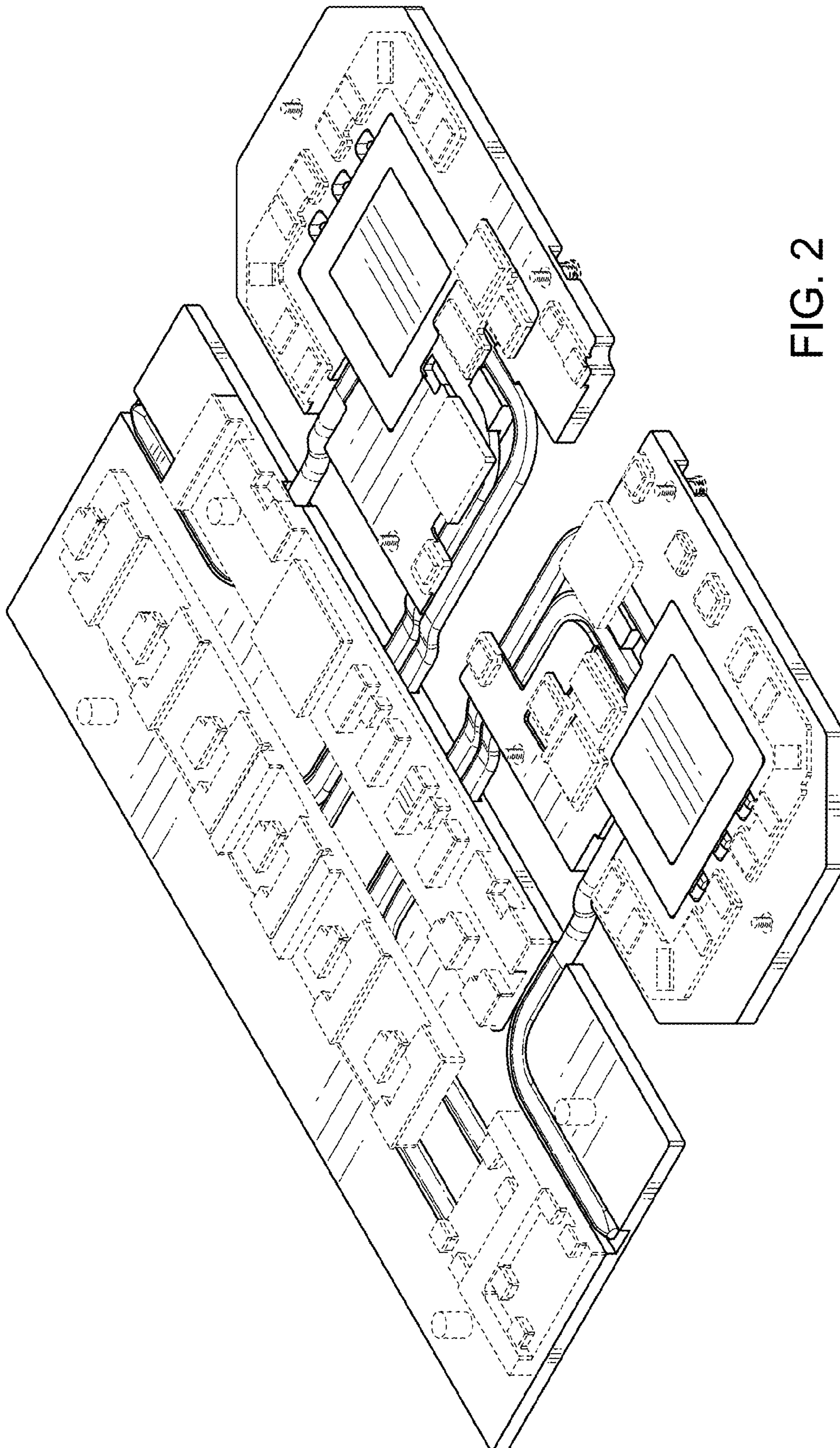


FIG. 2

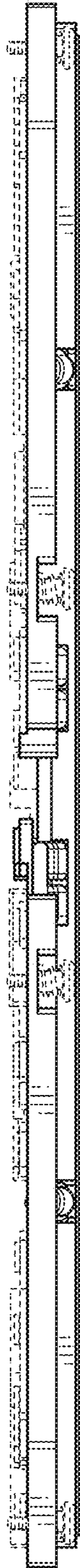


FIG. 3

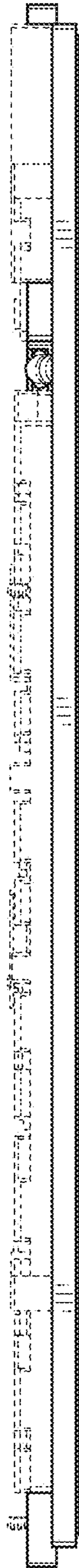


FIG. 4

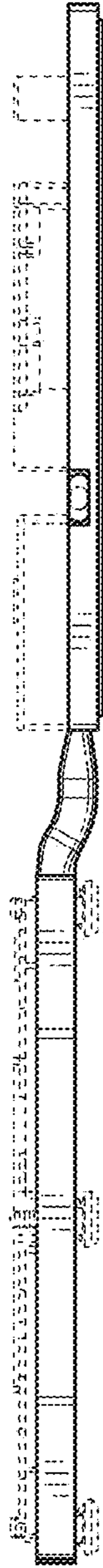


FIG. 5

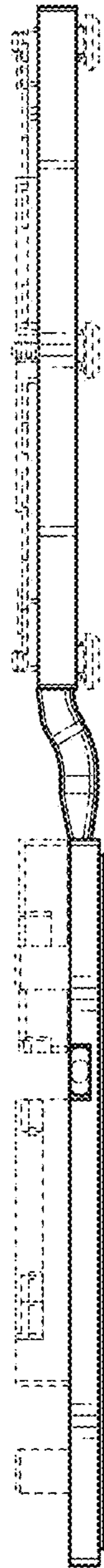


FIG. 6



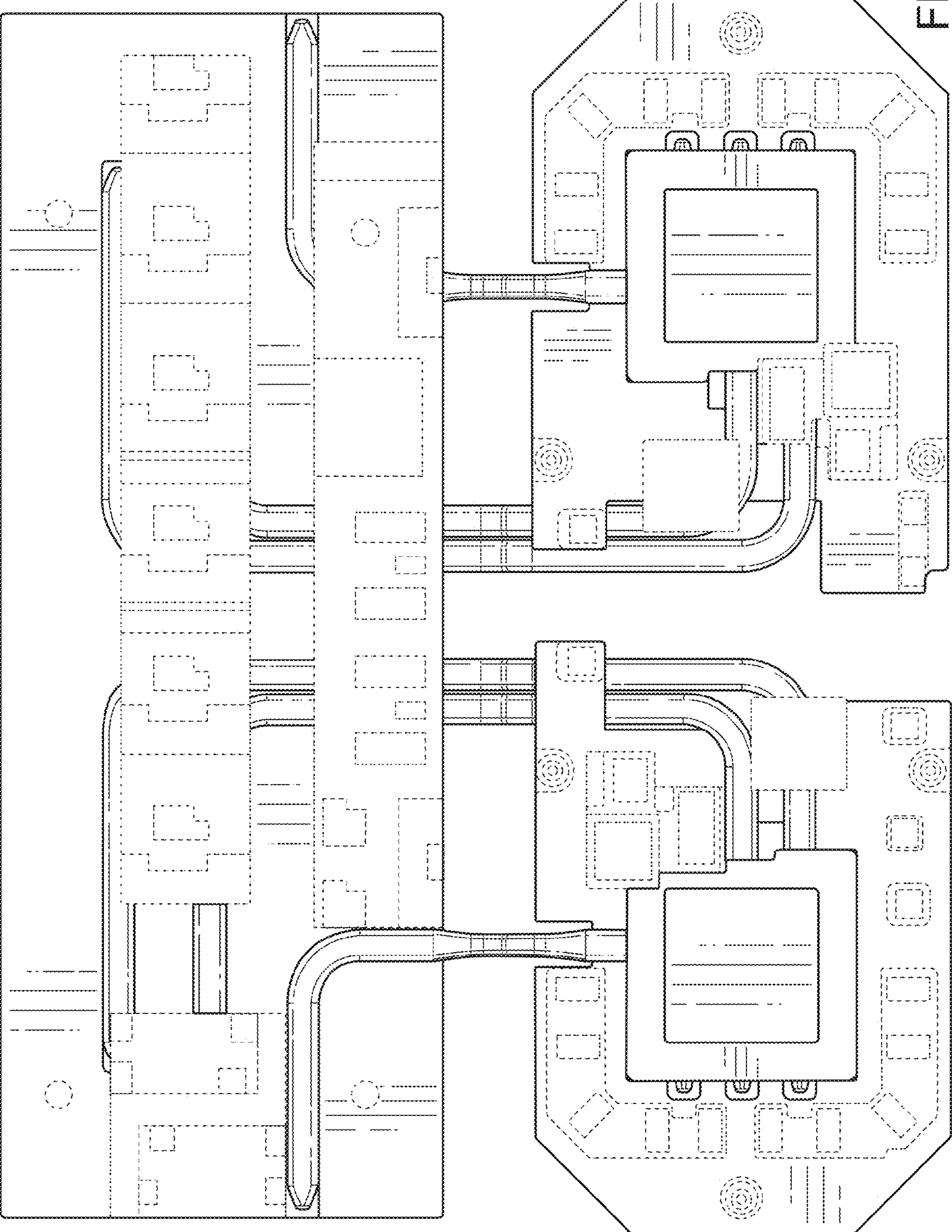


FIG. 7

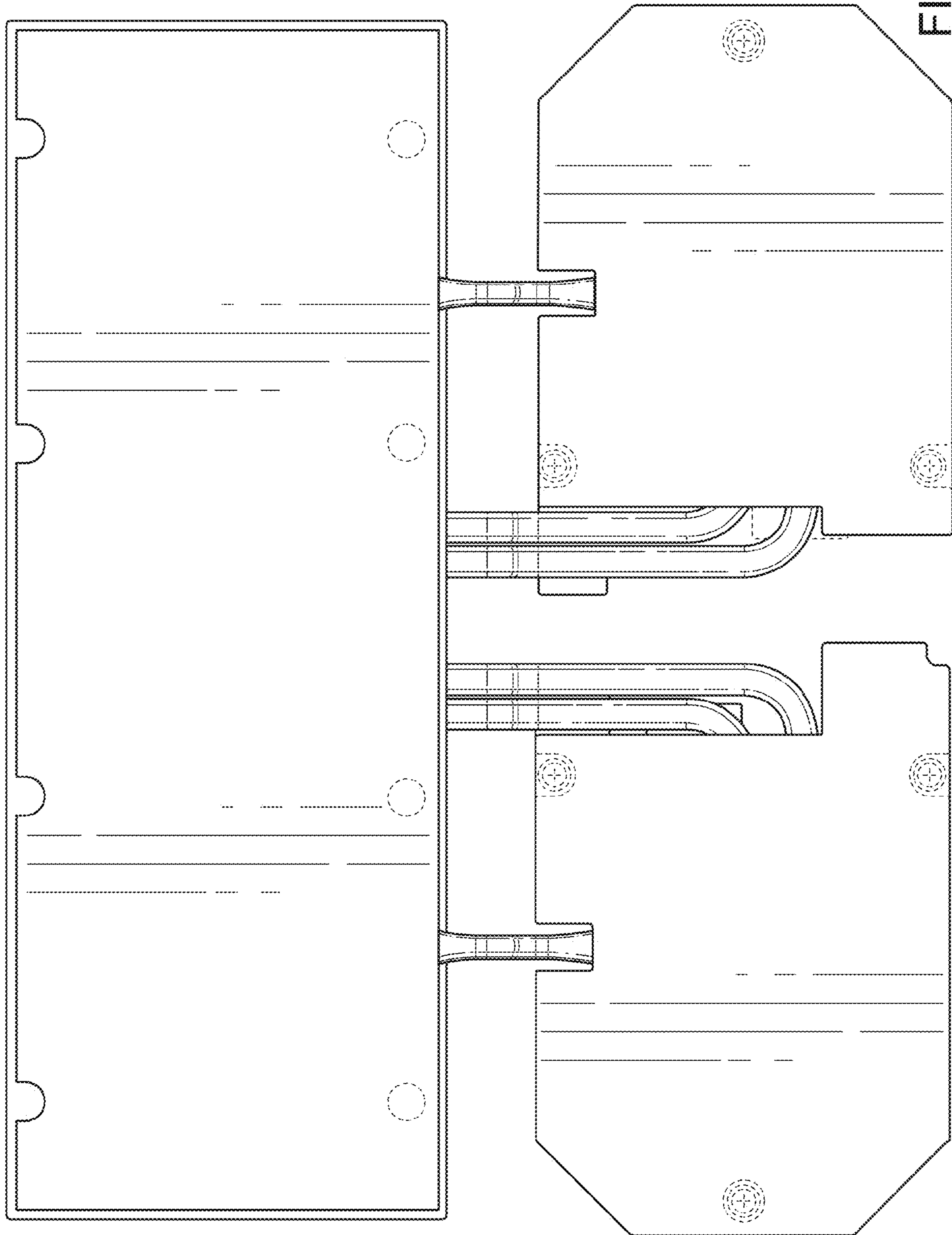


FIG. 8

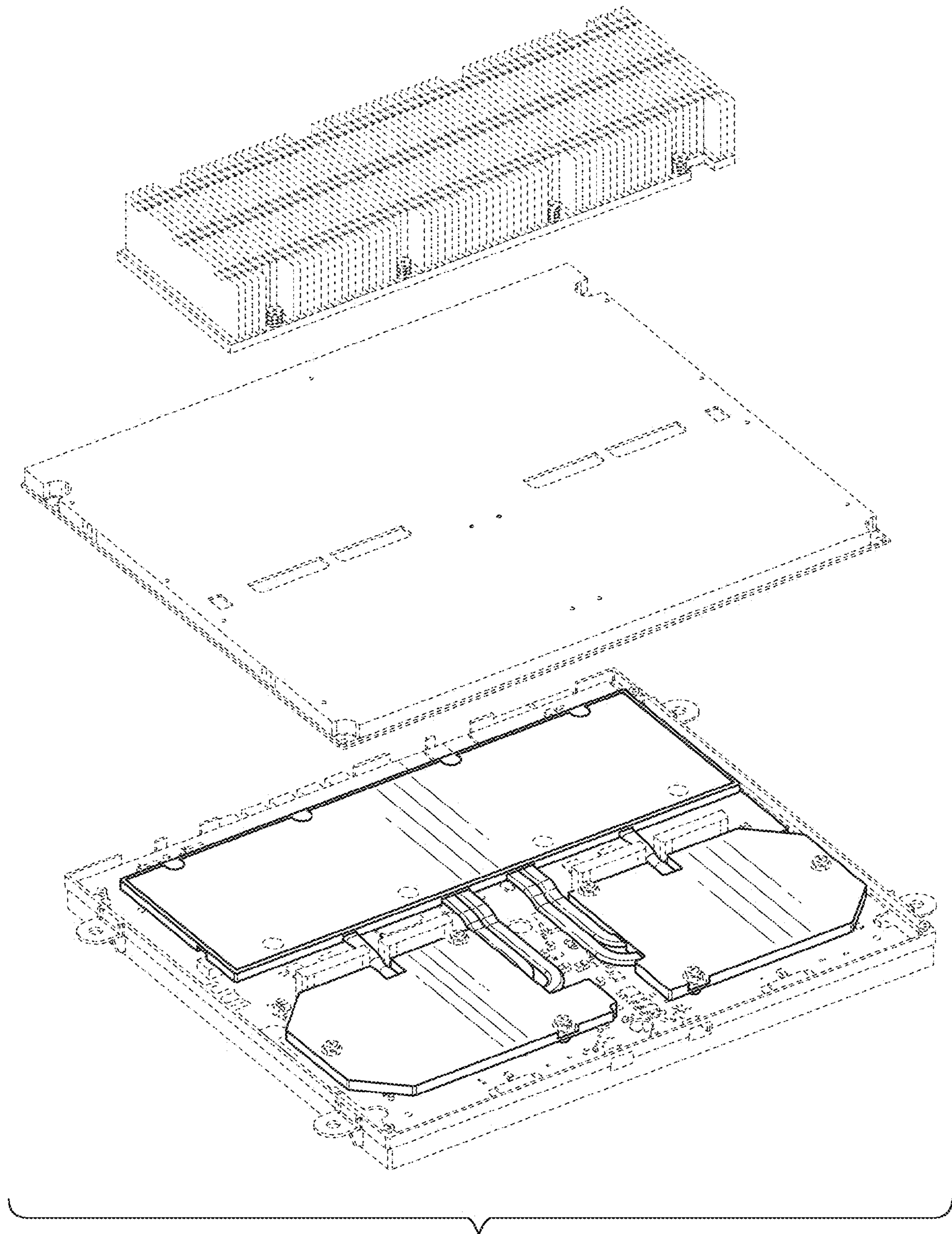


FIG. 9

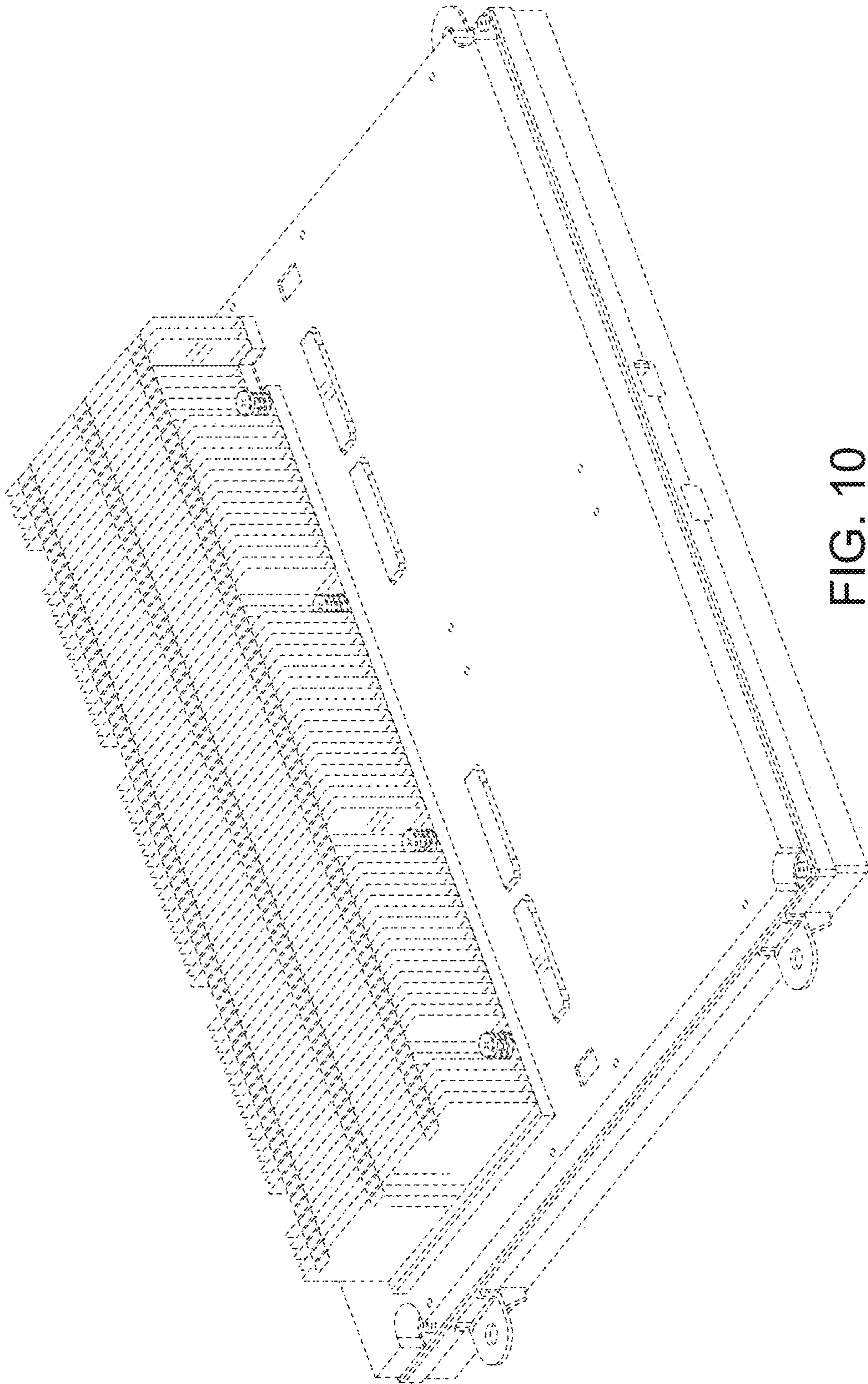


FIG. 10