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

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(54) **LIGHT-EMITTING DIODE ARRAY**

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

(21) Appl. No.: **29/630,260**

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(51) **LOC (11) Cl.** ..... **13-03**

(52) **U.S. Cl.**  
USPC ..... **D13/180**

(58) **Field of Classification Search**  
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H01L 27/156; H01L 33/00; H01L 33/04;  
H01L 33/08; H01L 33/10; H01L 33/20;  
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H01L 33/483; H01L 33/486; F21K 9/135;  
F21K 9/30; F21K 9/50; Y10S 362/80  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

D644,188 S \* 8/2011 Shen ..... D13/180  
8,188,493 B2 \* 5/2012 Li ..... H01L 33/38  
257/91  
D681,566 S \* 5/2013 Chen ..... D13/180

D681,570 S \* 5/2013 Wang ..... D13/180  
8,466,487 B2 \* 6/2013 Emura ..... H01L 33/38  
257/99  
D687,396 S \* 8/2013 Chen ..... D13/180  
D744,966 S \* 12/2015 Yeh ..... D13/180  
9,373,751 B2 \* 6/2016 Sato ..... H01L 33/36  
9,472,724 B2 \* 10/2016 Emura ..... H01L 33/38  
D770,399 S \* 11/2016 Yeh ..... D13/180

(Continued)

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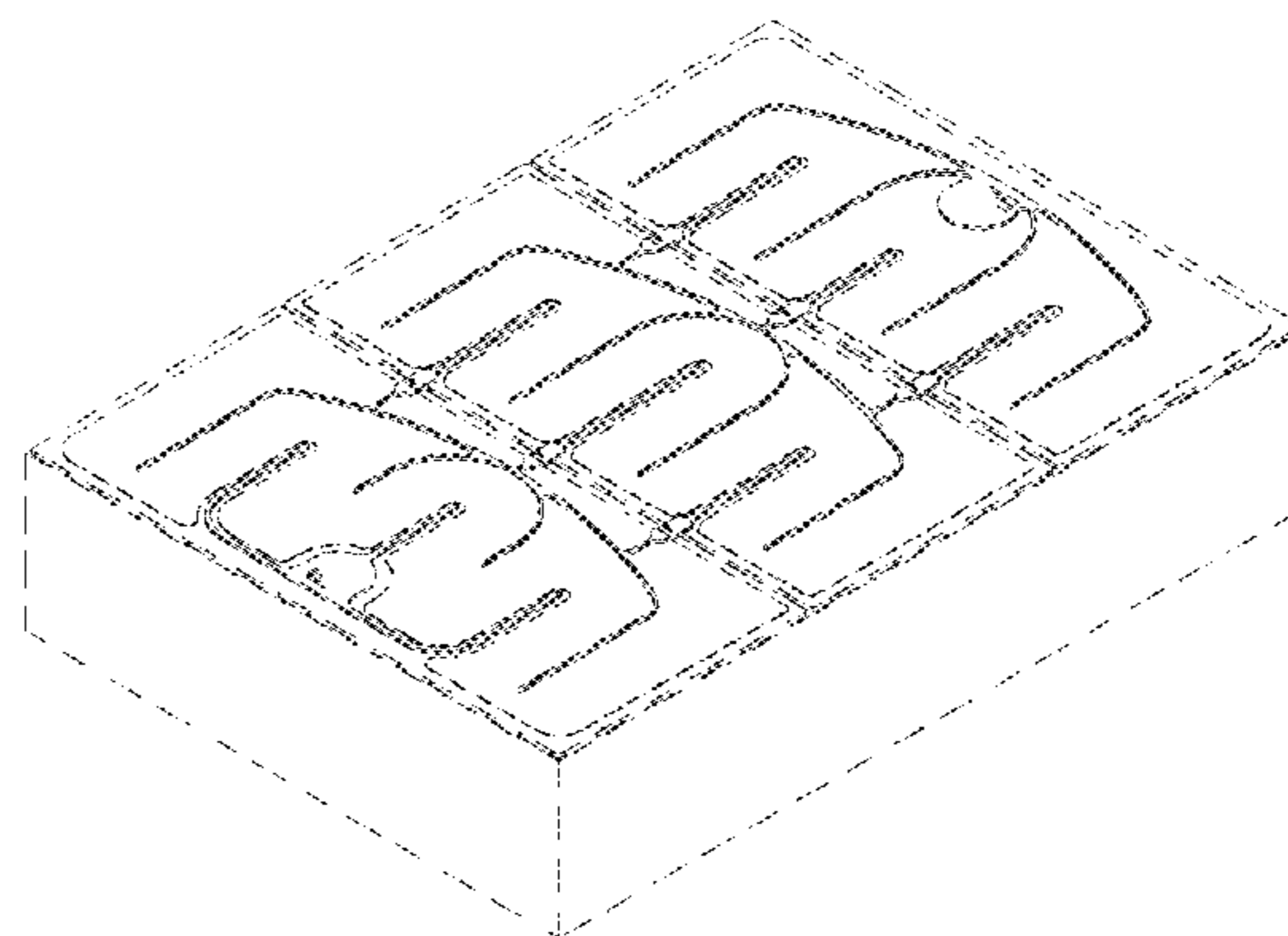
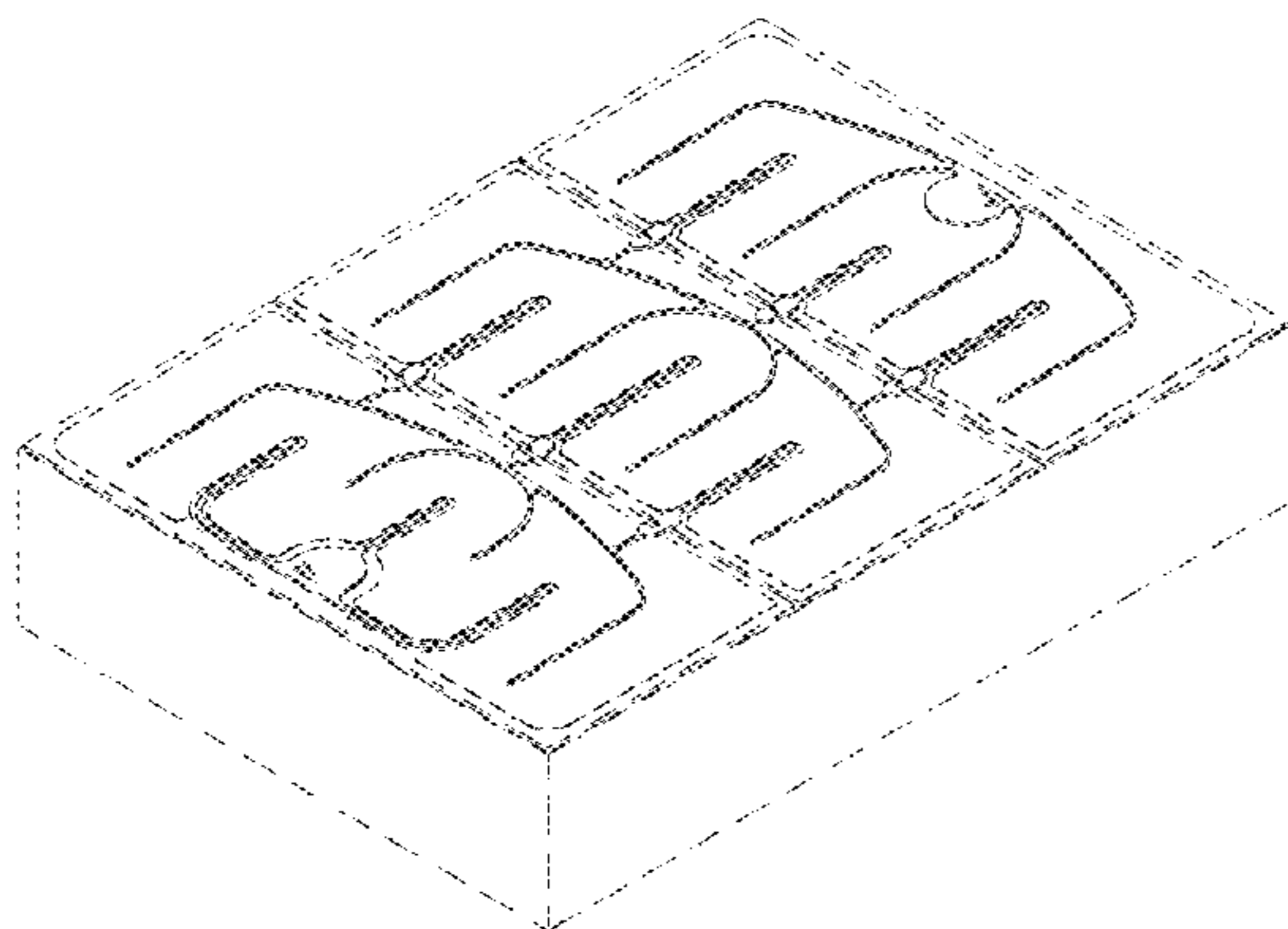
(57) **CLAIM**

The ornamental design for a light-emitting diode array, as shown and described.

**DESCRIPTION**

FIG. 1 is a perspective view of a light-emitting diode array showing an embodiment of the new design; FIG. 2 is another 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 view thereof; FIG. 6 is a right side view thereof; FIG. 7 is a top plan view thereof; FIG. 8 is a bottom plan view thereof; FIG. 9 is a perspective view of a light-emitting diode array showing an alternative environment of the new design; FIG. 10 is another perspective view thereof; FIG. 11 is a front elevational view thereof; FIG. 12 is a rear elevational view thereof; FIG. 13 is a left side view thereof; FIG. 14 is a right side view thereof; FIG. 15 is a top plan view thereof; and, FIG. 16 is a bottom plan view thereof. The broken line showing is for the purpose of illustrating environmental structure only and forms no part of the claimed design.

**1 Claim, 12 Drawing Sheets**



(56)

**References Cited**

## U.S. PATENT DOCUMENTS

D770,401 S \* 11/2016 Kim ..... D13/180  
9,577,152 B2 \* 2/2017 Sato ..... H01L 33/387  
D782,426 S \* 3/2017 Yeh ..... D13/180  
D782,427 S \* 3/2017 Yeh ..... D13/180  
9,601,674 B2 \* 3/2017 Yeh ..... H01L 27/156  
D790,488 S \* 6/2017 Yeh ..... D13/180  
D797,065 S \* 9/2017 Yeh ..... D13/180  
D797,689 S \* 9/2017 Yeh ..... D13/180  
2011/0062484 A1 \* 3/2011 Tanaka ..... H01L 33/20  
257/99  
2011/0089442 A1 \* 4/2011 Jing ..... H01L 25/0753  
257/91  
2011/0156086 A1 \* 6/2011 Kim ..... H01L 33/38  
257/99  
2011/0278634 A1 \* 11/2011 Na ..... H01L 33/38  
257/99  
2013/0146929 A1 \* 6/2013 Kim ..... H01L 33/46  
257/98  
2013/0214320 A1 \* 8/2013 Onishi ..... H01L 33/44  
257/99  
2013/0234192 A1 \* 9/2013 Kim ..... H01L 33/0008  
257/98  
2014/0374785 A1 \* 12/2014 Oh ..... H01L 33/28  
257/98  
2015/0076536 A1 \* 3/2015 Ou ..... H01L 27/15  
257/91  
2015/0146426 A1 \* 5/2015 Yeh ..... H01L 27/156  
362/249.06  
2015/0187997 A1 \* 7/2015 Fan ..... H01L 33/38  
257/99  
2016/0020363 A1 \* 1/2016 Kitahama ..... H01L 33/46  
438/29

\* cited by examiner

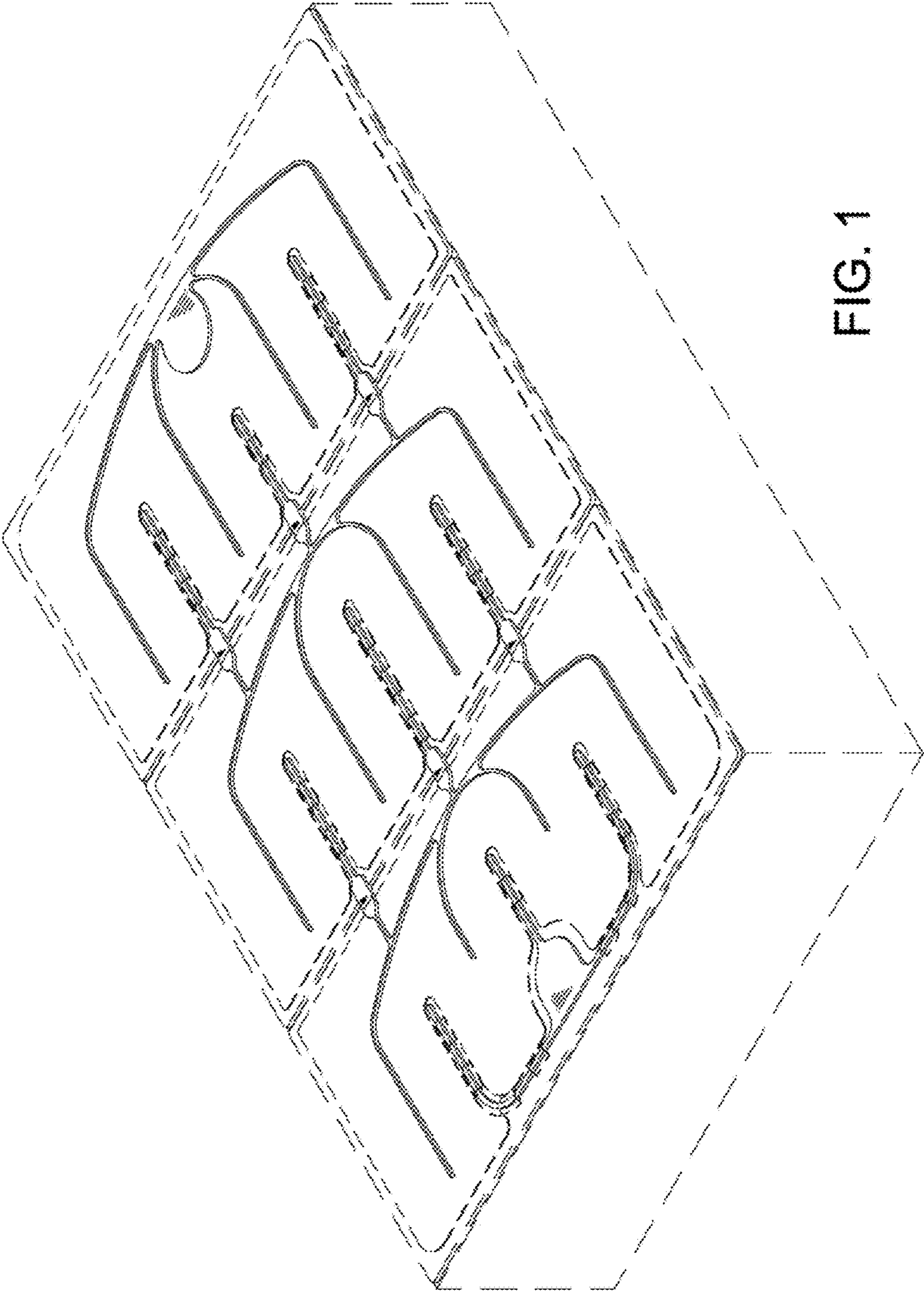


FIG. 1

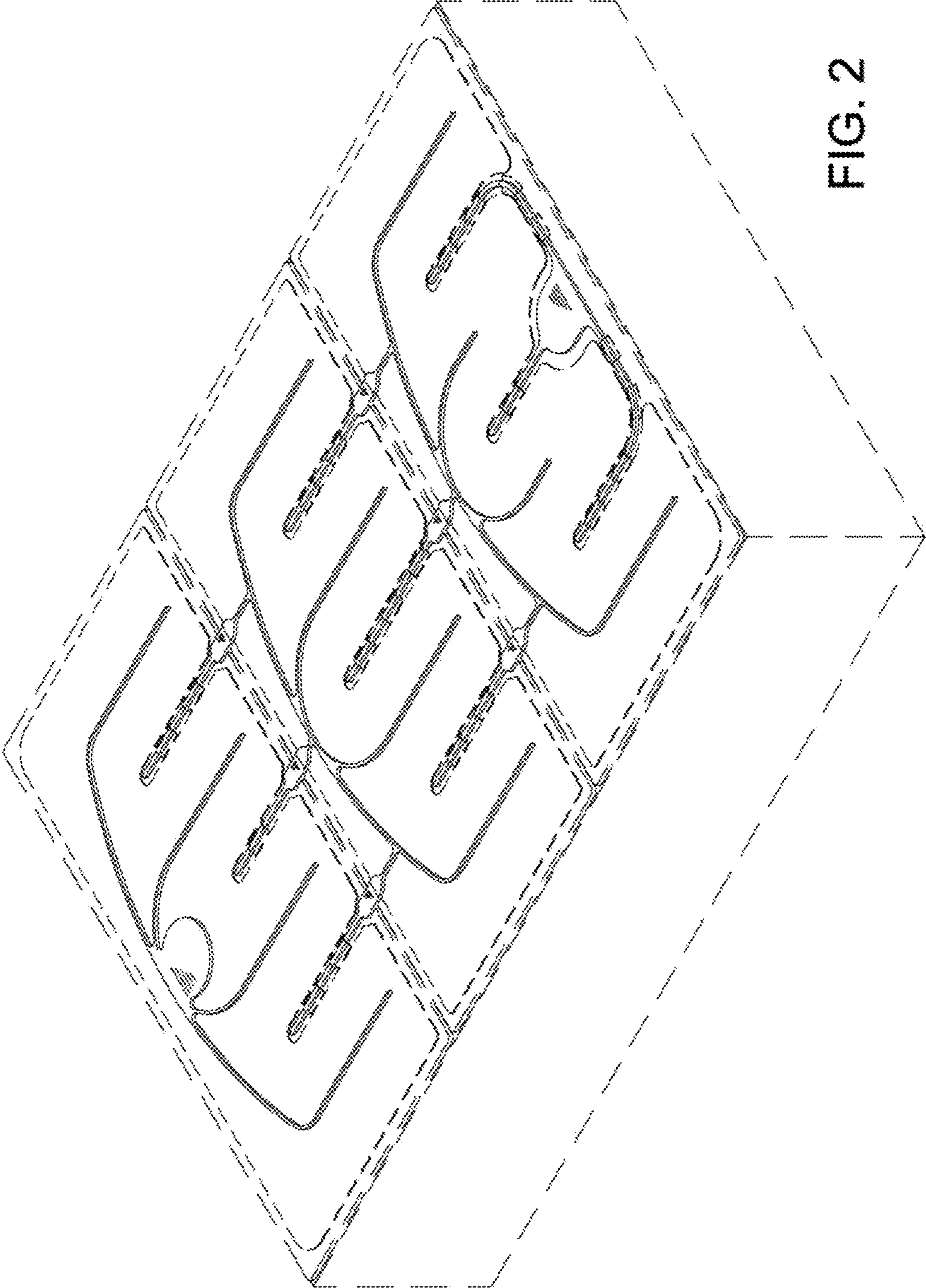


FIG. 2

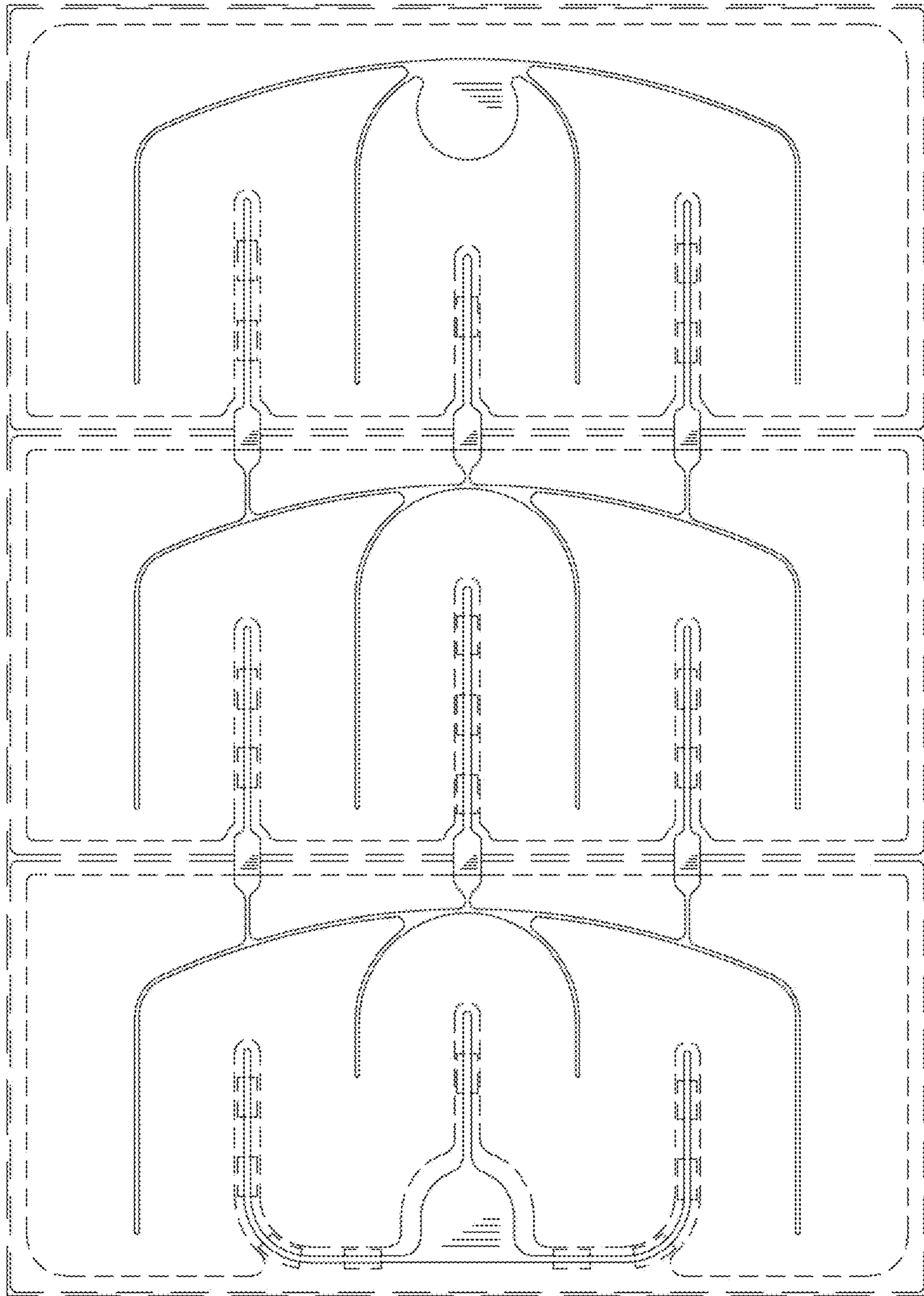


FIG. 3



FIG. 4

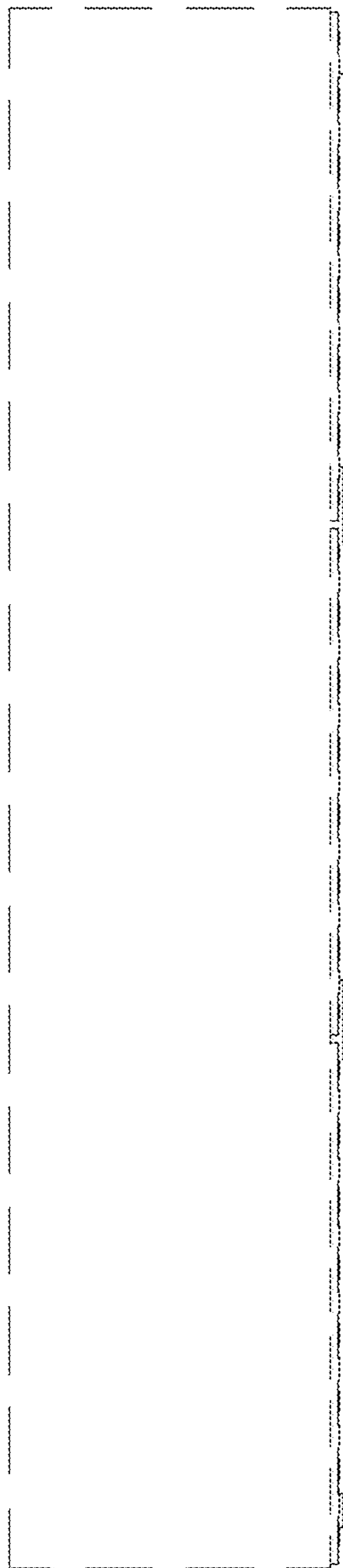


FIG. 5

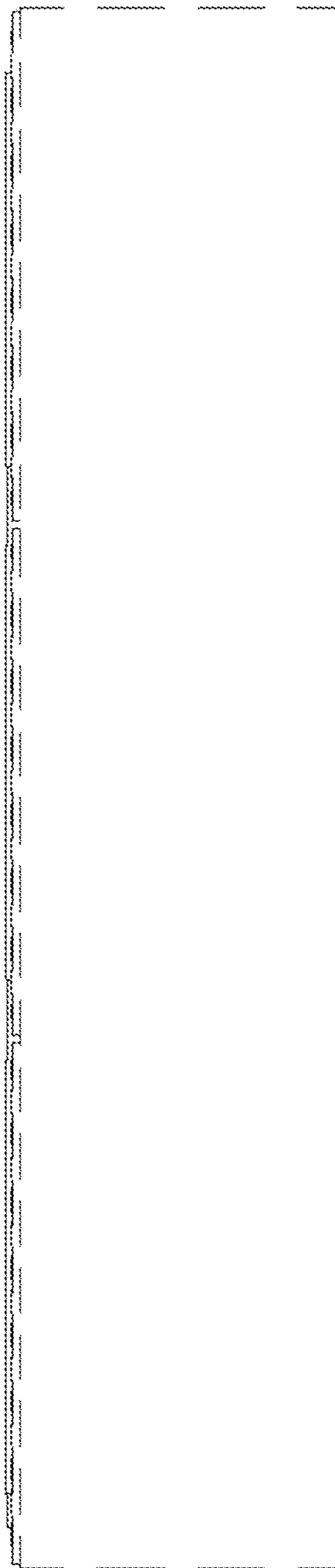


FIG. 6

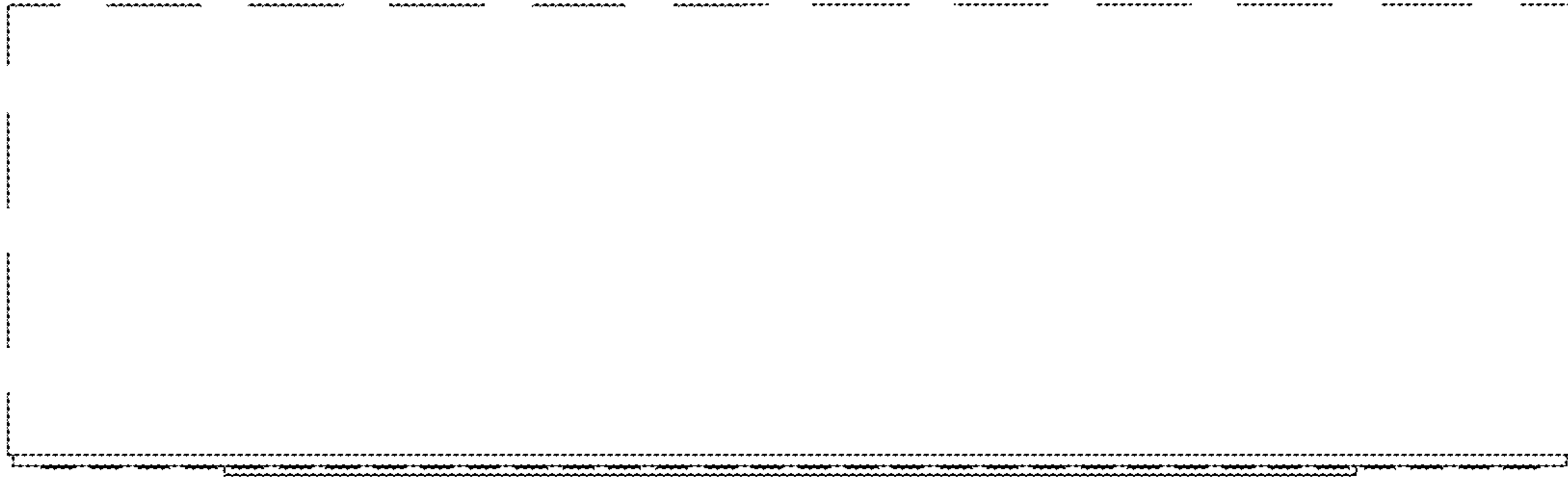


FIG. 7

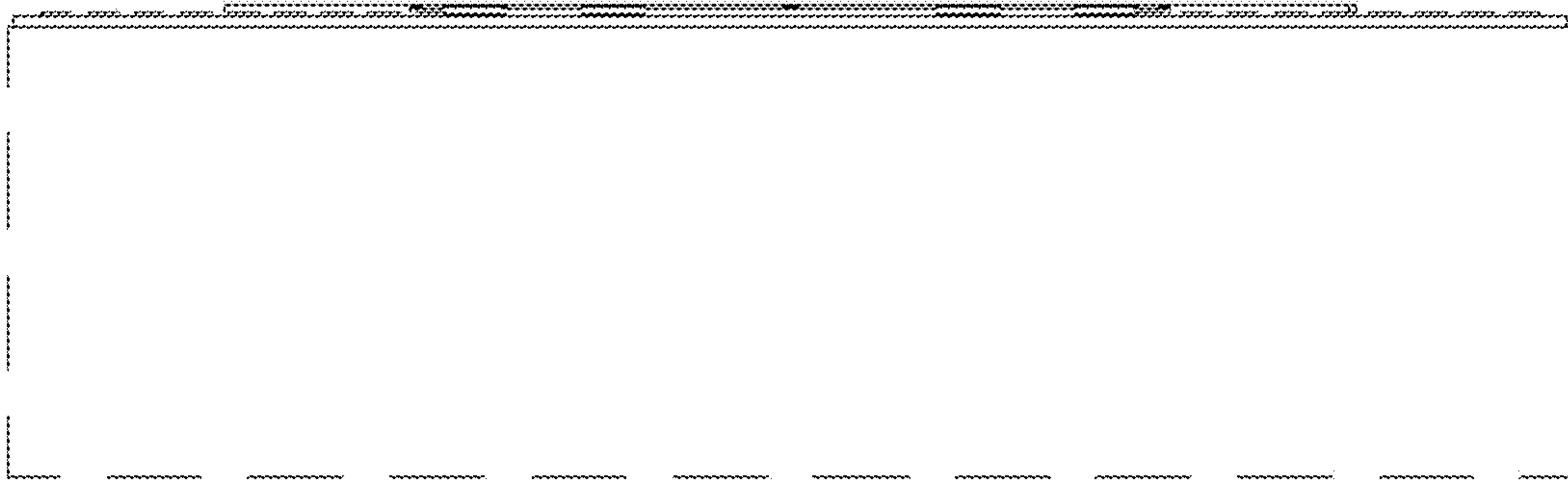


FIG. 8



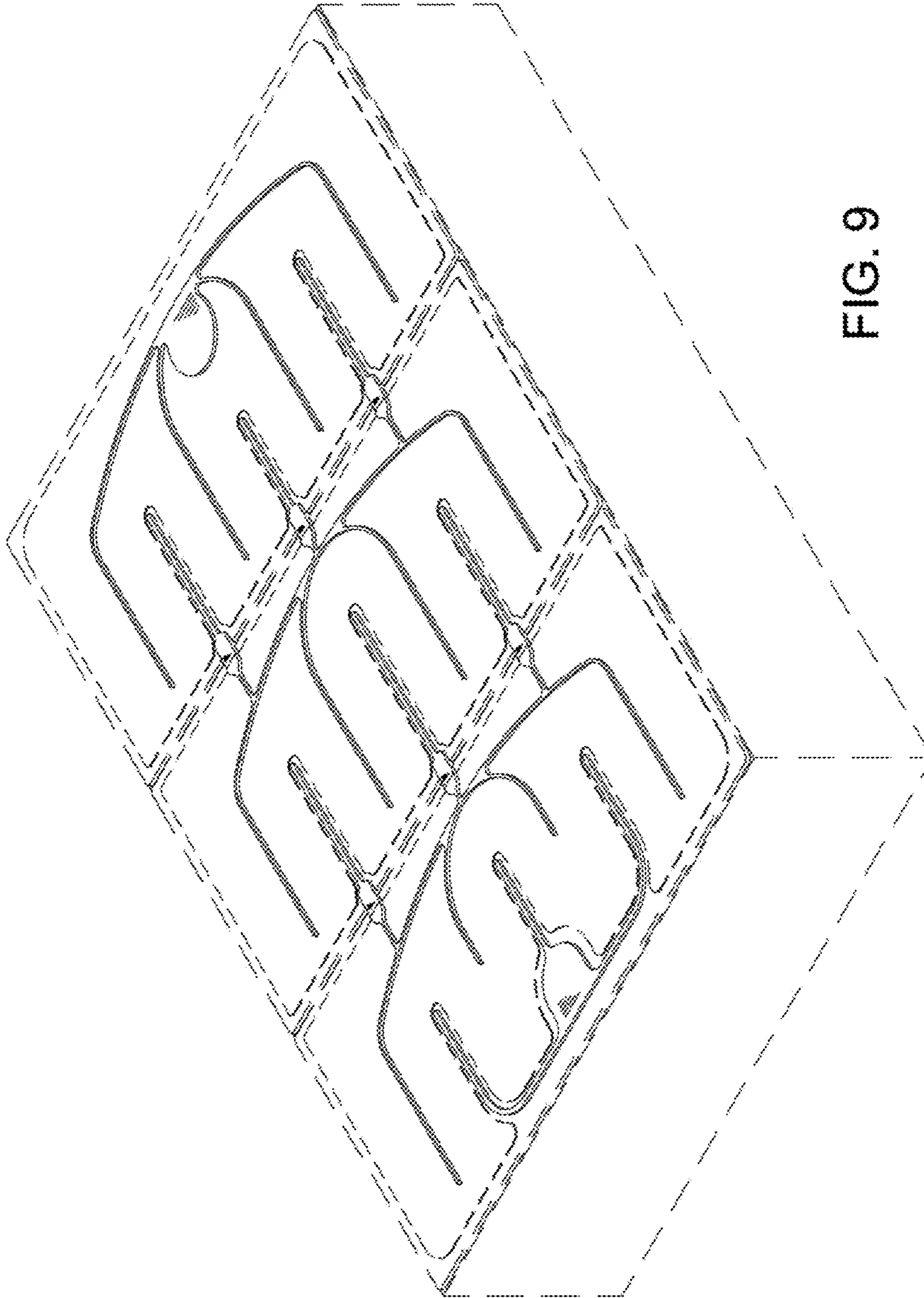


FIG. 9

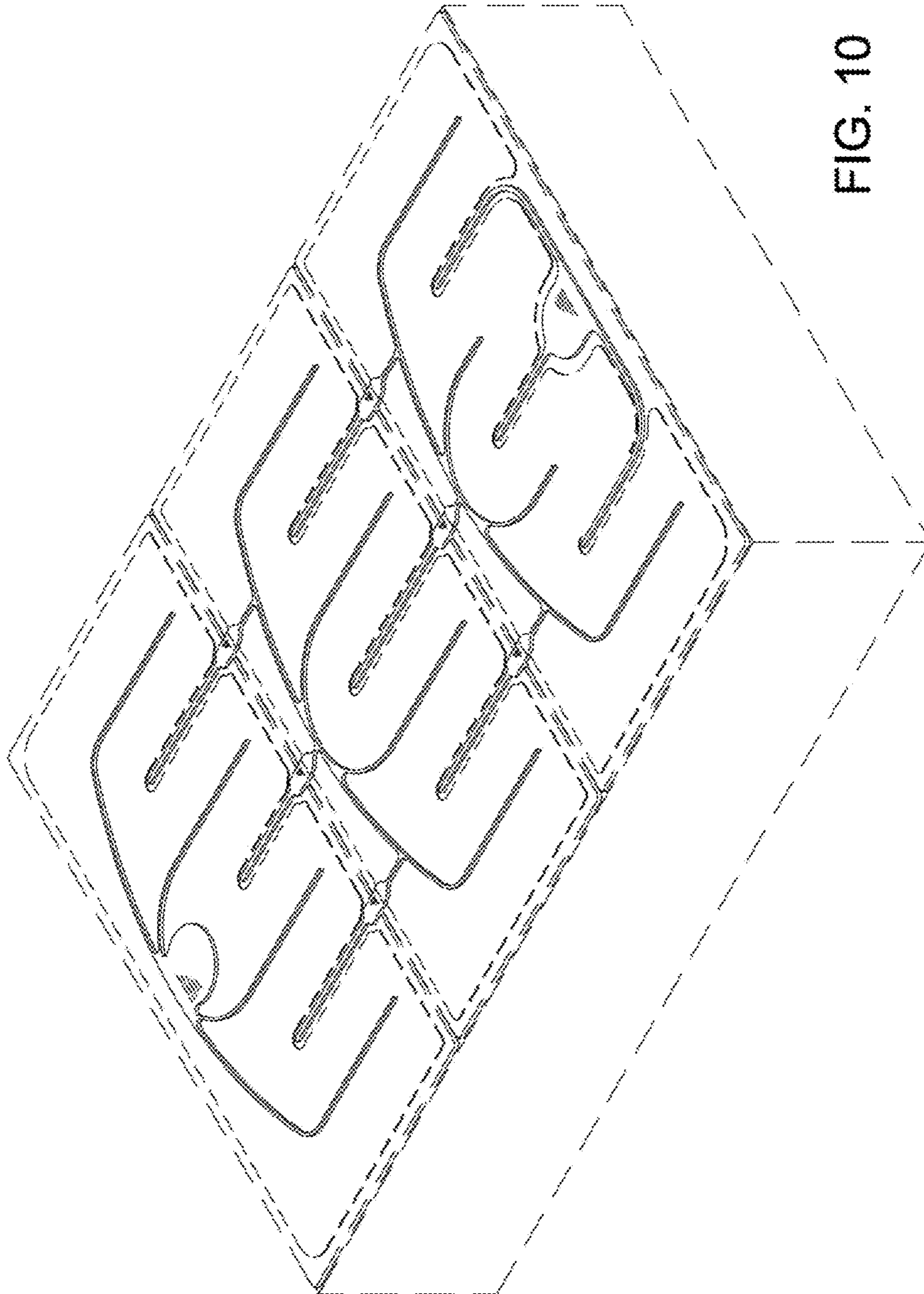


FIG. 10

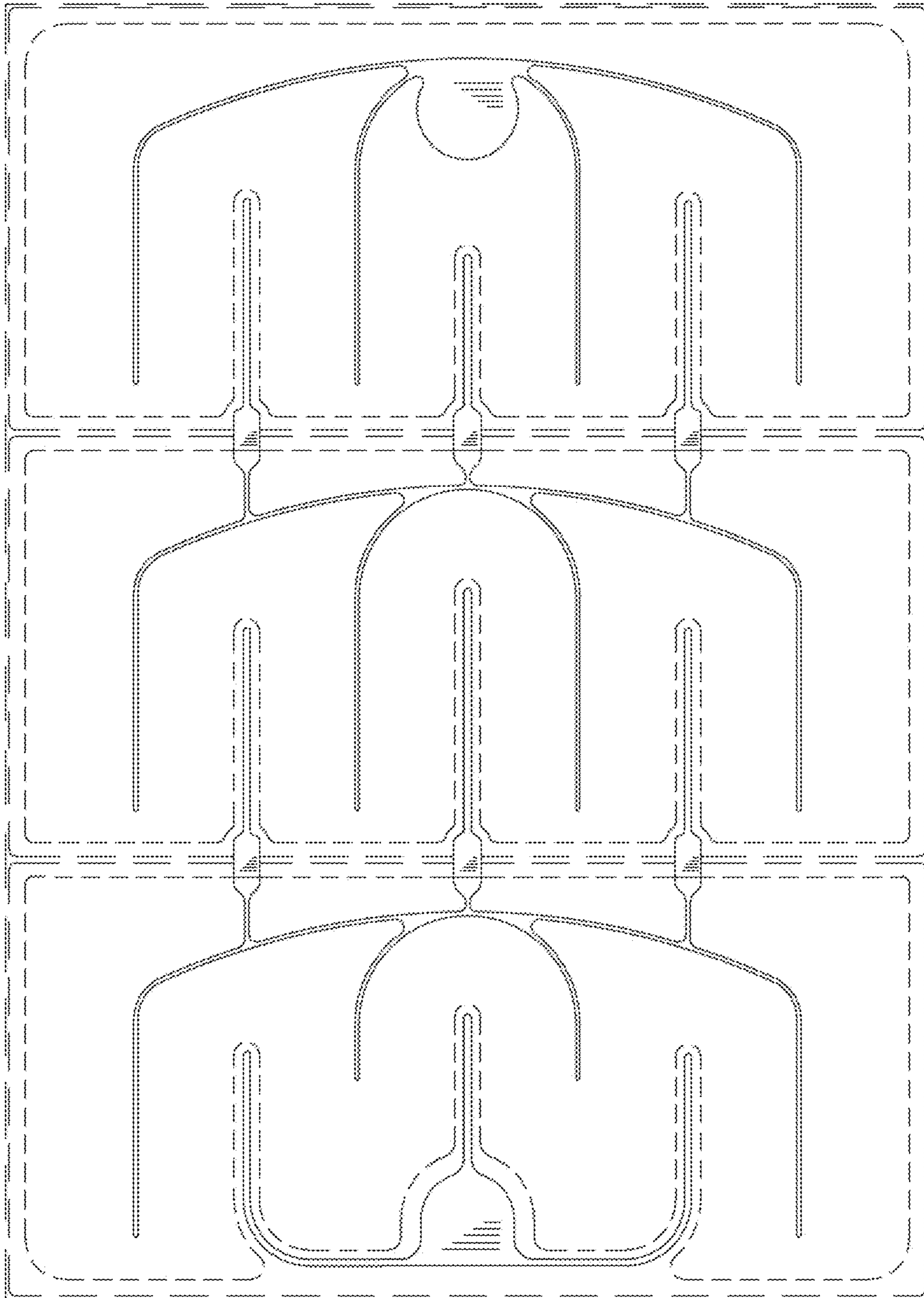


FIG. 11



FIG. 12

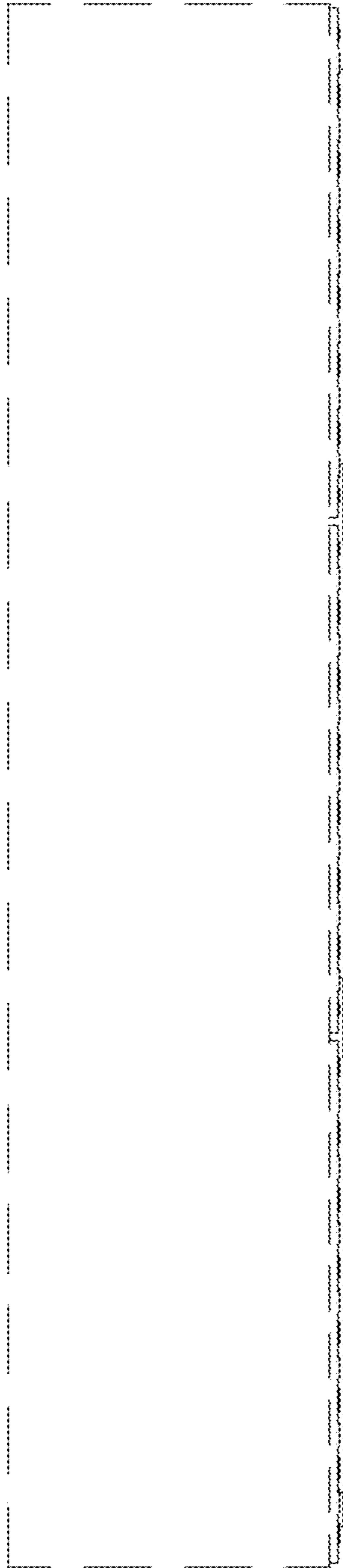


FIG. 13

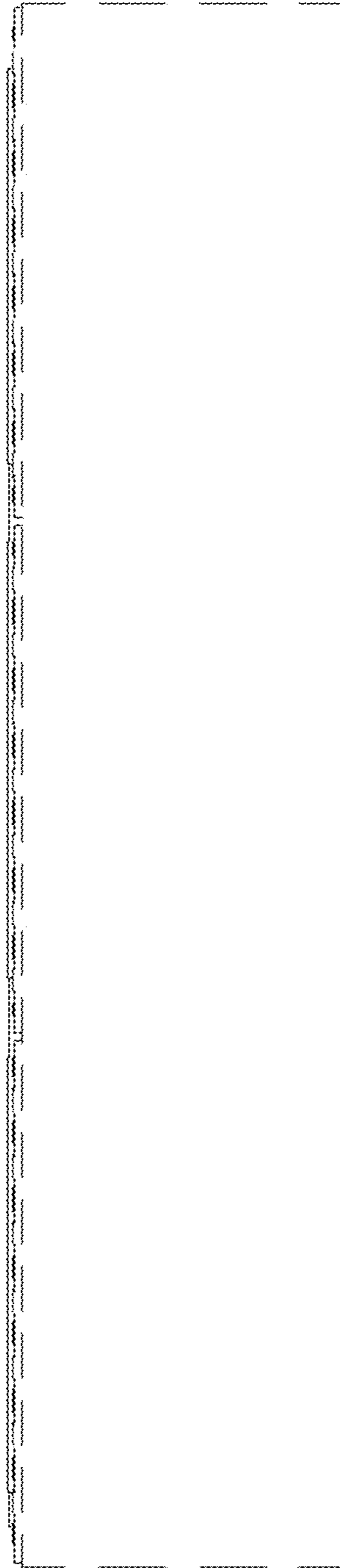


FIG. 14

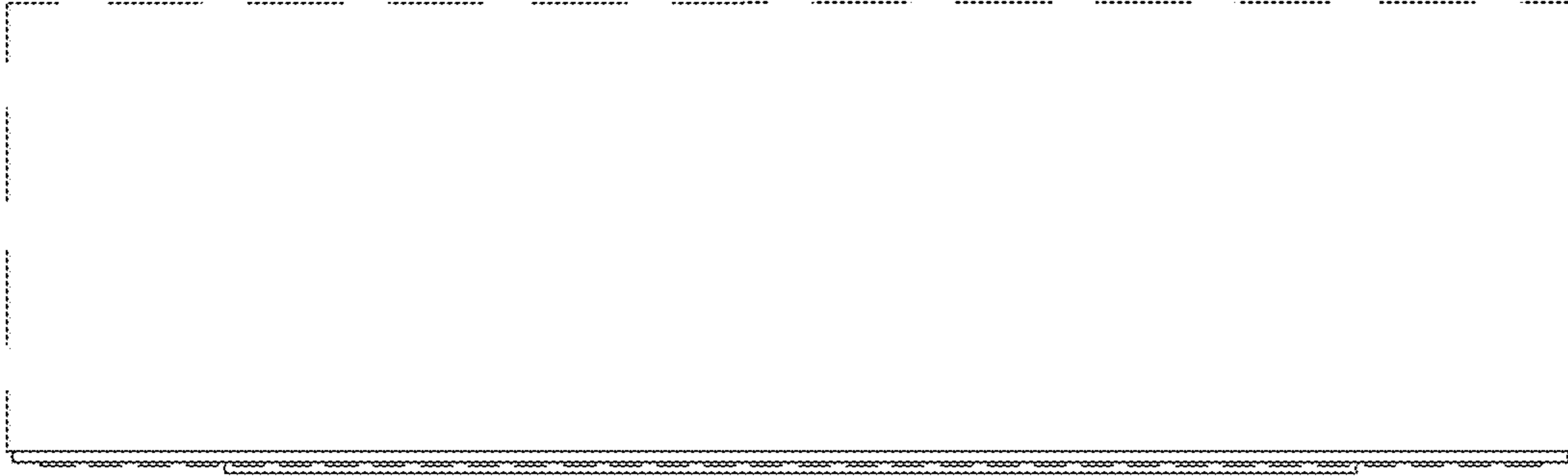


FIG. 15



FIG. 16