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**Chang et al.**

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- (54) **ANTENNA**
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- D581,400 S \* 11/2008 Montgomery ..... D14/230
- 7,477,195 B2 1/2009 Vance
- D588,116 S \* 3/2009 Martinez ..... D14/230
- D592,195 S 5/2009 Wu et al.
- 7,570,215 B2 8/2009 Abramov et al.
- D599,334 S 9/2009 Chiang
- D606,053 S 12/2009 Wu et al.
- D607,442 S 1/2010 Su et al.
- D608,769 S 1/2010 Bufe
- D609,224 S \* 2/2010 Yang ..... D14/230

(Continued)

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

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(52) **U.S. Cl.**  
USPC ..... **D14/230**

(58) **Field of Classification Search**  
USPC ..... D14/138, 230-238.1, 299, 358; D13/182  
CPC ..... H01L 33/48; H01L 33/486; H01L 23/02;  
H05K 5/00; H01Q 13/10  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

- D275,100 S \* 8/1984 Mann ..... D14/236
- 6,081,242 A \* 6/2000 Wingo ..... H01Q 1/242  
333/32
- 7,061,437 B2 6/2006 Lin et al.
- 7,148,849 B2 12/2006 Lin
- 7,215,296 B2 5/2007 Abramov et al.
- D546,821 S 7/2007 Oliver
- D546,822 S \* 7/2007 Oliver ..... D14/230
- D549,696 S 8/2007 Oshima et al.
- 7,333,067 B2 2/2008 Hung et al.
- 7,336,959 B2 2/2008 Khitrik et al.
- D573,589 S 7/2008 Montgomery et al.
- D573,590 S \* 7/2008 Montgomery ..... D14/230
- 7,405,704 B1 7/2008 Lin et al.

**OTHER PUBLICATIONS**

<http://airgain.com/our-services/embedded-antennas/>—Retrieved Dec. 17, 2016.\*

(Continued)

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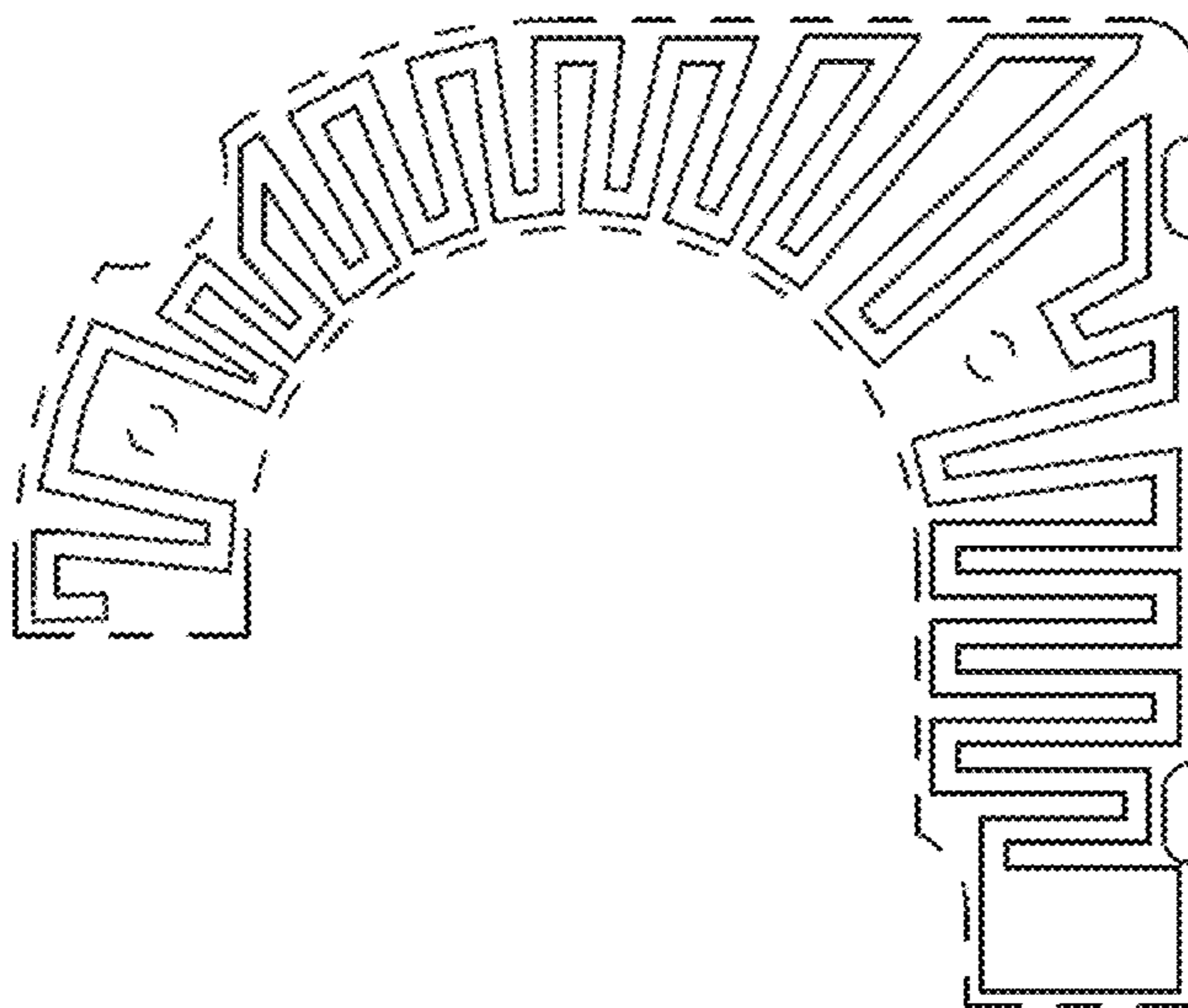
(57) **CLAIM**

The ornamental design for an antenna, as shown and described.

**DESCRIPTION**

FIG. 1 is a top plan view of an antenna, showing our new design;  
FIG. 2 is a side elevation view thereof;  
FIG. 3 is a front elevation view thereof;  
FIG. 4 is a top perspective view thereof;  
FIG. 5 is a top plan view thereof, with unclaimed environment not shown; and,  
FIG. 6 is a front elevation view thereof, with unclaimed environment not shown.  
The broken line in the figure drawings represents unclaimed environment only and forms no part of the claimed design.

**1 Claim, 4 Drawing Sheets**



(56)

References Cited

U.S. PATENT DOCUMENTS

D612,368 S 3/2010 Yang et al.  
 7,705,783 B2 4/2010 Rao et al.  
 7,729,662 B2 6/2010 Abramov et al.  
 D621,819 S 8/2010 Tsai et al.  
 7,843,390 B2 11/2010 Liu  
 D633,483 S 3/2011 Su et al.  
 D635,127 S 3/2011 Tsai et al.  
 7,907,971 B2 3/2011 Salo et al.  
 D635,560 S 4/2011 Tsai et al.  
 D635,963 S 4/2011 Podduturi  
 D635,964 S 4/2011 Podduturi  
 D635,965 S 4/2011 Mi et al.  
 D636,382 S 4/2011 Podduturi  
 7,965,242 B2 6/2011 Abramov et al.  
 D649,962 S 12/2011 Tseng et al.  
 D651,198 S 12/2011 Mi et al.  
 D654,059 S 2/2012 Mi et al.  
 D654,060 S 2/2012 Ko et al.  
 D658,639 S 5/2012 Huang et al.  
 D659,129 S 5/2012 Mi et al.  
 D659,685 S 5/2012 Huang et al.  
 D659,688 S 5/2012 Huang et al.  
 8,175,036 B2 5/2012 Visuri et al.  
 8,184,601 B2 5/2012 Abramov et al.  
 D662,916 S 7/2012 Huang et al.  
 8,248,970 B2 8/2012 Abramov et al.  
 D671,097 S 11/2012 Mi et al.  
 8,310,402 B2 11/2012 Yang  
 D676,429 S 2/2013 Gosalia et al.  
 D678,255 S 3/2013 Ko et al.  
 8,423,084 B2 4/2013 Abramov et al.  
 D684,565 S 6/2013 Wei  
 D685,352 S 7/2013 Wei  
 D685,772 S 7/2013 Zheng et al.  
 D686,600 S 7/2013 Yang  
 D689,474 S 9/2013 Yang et al.  
 D692,870 S 11/2013 He  
 D694,738 S 12/2013 Yang  
 D695,279 S 12/2013 Yang et al.

D695,280 S 12/2013 Yang et al.  
 D698,764 S \* 2/2014 Zeng ..... D14/230  
 D703,195 S 4/2014 Zheng  
 D703,196 S 4/2014 Zheng  
 D706,247 S 6/2014 Zheng et al.  
 D706,750 S 6/2014 Bringuier  
 D706,751 S 6/2014 Chang et al.  
 D708,602 S 7/2014 Gosalia et al.  
 D709,053 S 7/2014 Chang et al.  
 D710,832 S 8/2014 Yang  
 D710,833 S 8/2014 Zheng et al.  
 D711,859 S \* 8/2014 Man ..... D14/230  
 8,854,265 B1 10/2014 Yang et al.  
 D716,775 S 11/2014 Bidermann  
 2002/0003499 A1 1/2002 Kouarn et al.  
 2004/0222936 A1 11/2004 Hung et al.  
 2005/0073462 A1 4/2005 Lin et al.  
 2005/0190108 A1 9/2005 Lin et al.  
 2006/0208900 A1 9/2006 Tavassoli Hozouri  
 2007/0030203 A1 2/2007 Tsai et al.  
 2008/0150829 A1 6/2008 Lin et al.  
 2008/0198089 A1 \* 8/2008 Hsiao ..... H01Q 1/38  
 343/850  
 2009/0002243 A1 \* 1/2009 Dahlstrom ..... H01Q 1/243  
 343/702  
 2009/0002244 A1 1/2009 Woo  
 2009/0058739 A1 3/2009 Konishi  
 2009/0135072 A1 5/2009 Ke et al.  
 2009/0262028 A1 10/2009 Mumburu et al.  
 2010/0188297 A1 7/2010 Chen et al.  
 2010/0309067 A1 12/2010 Tsou et al.  
 2011/0006950 A1 1/2011 Park et al.  
 2012/0038514 A1 2/2012 Bang  
 2012/0229348 A1 9/2012 Chiang  
 2012/0242546 A1 9/2012 Hu et al.

OTHER PUBLICATIONS

[http://www.fyxkj.com/EN/channels/35\\_2.html](http://www.fyxkj.com/EN/channels/35_2.html)—Retrieved Dec. 19, 2016.\*

\* cited by examiner

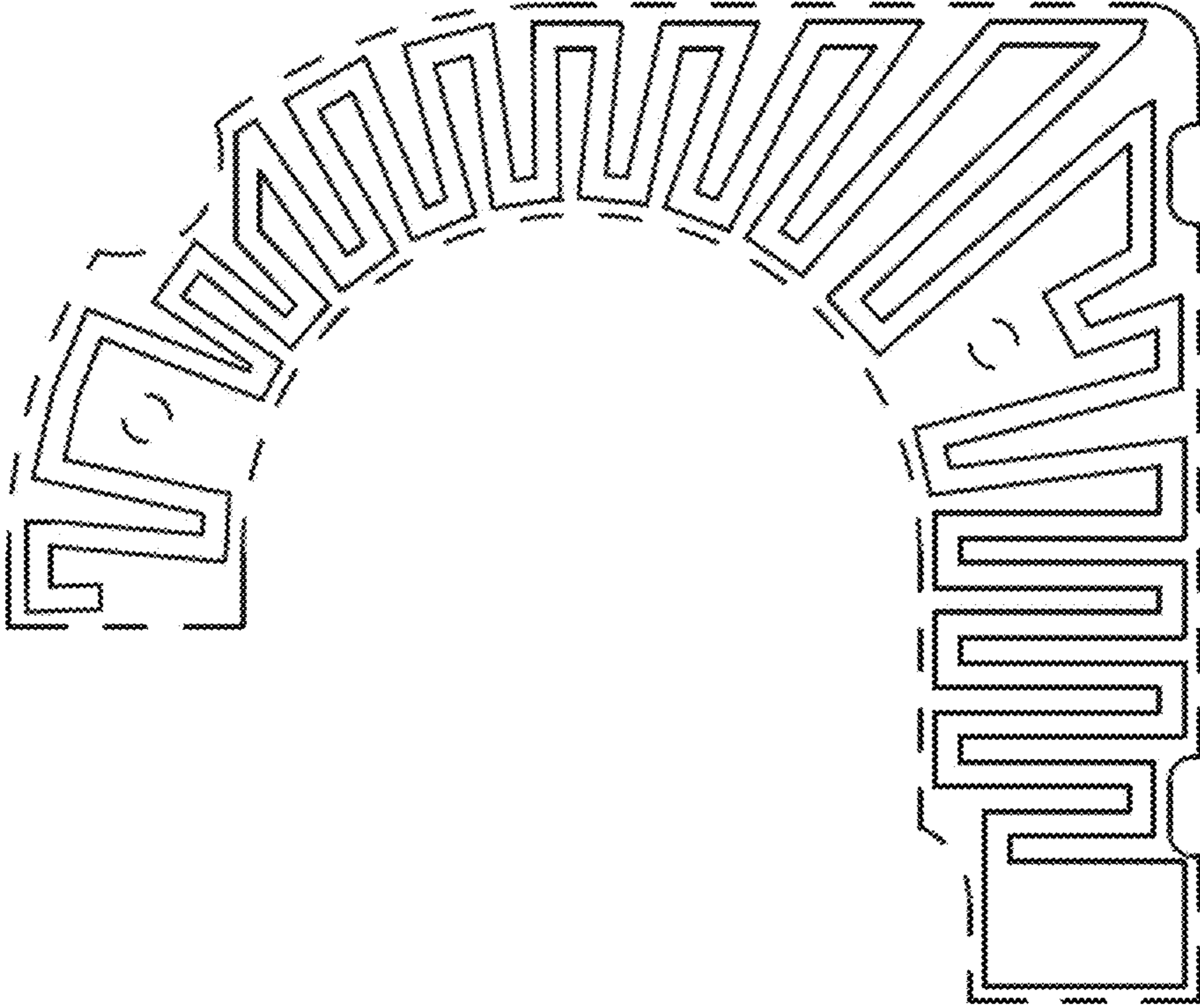


FIG. 1

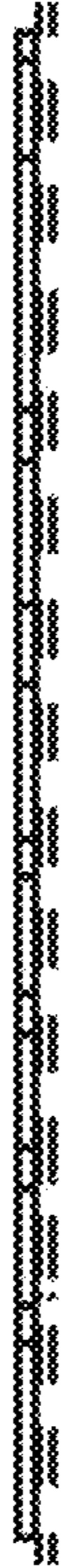


FIG. 2

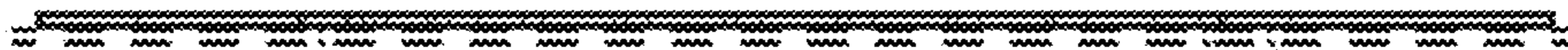


FIG. 3

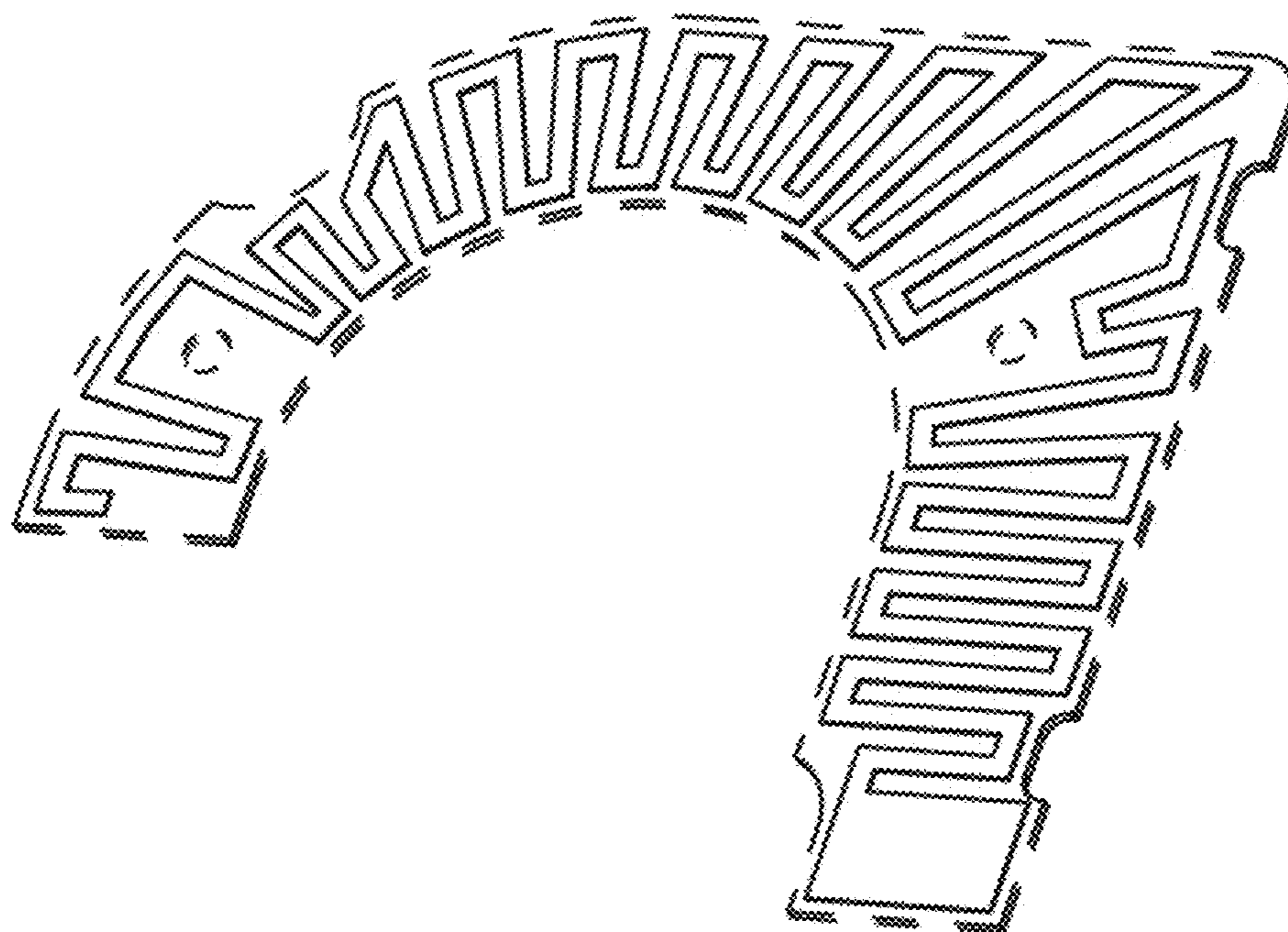


FIG. 4

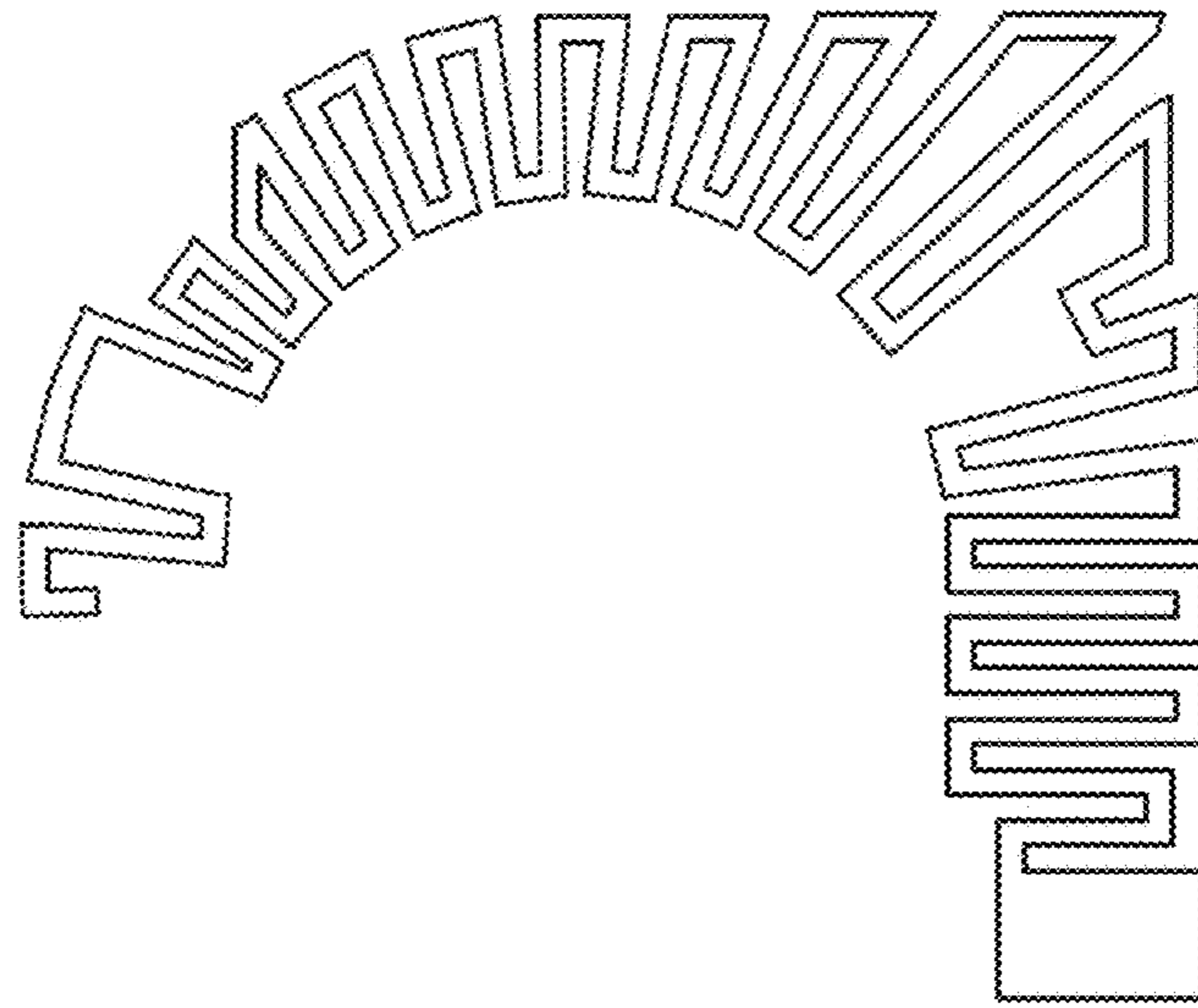


FIG. 5

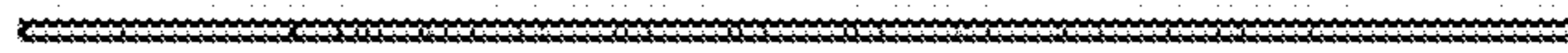


FIG. 6