



US00D791745S

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

(10) **Patent No.:** **US D791,745 S**

(45) **Date of Patent:** **** Jul. 11, 2017**

(54) **ANTENNA**

(71) Applicant: **Airgain Incorporated**, San Diego, CA (US)

(72) Inventor: **Keyoor Gosalia**, Carlsbad, CA (US)

(73) Assignee: **Airgain Incorporated**, San Diego, CA (US)

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

(21) Appl. No.: **29/561,064**

(22) Filed: **Apr. 13, 2016**

(51) **LOC (10) Cl.** **14-03**

(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

7,061,437 B2	6/2006	Lin et al.	
D530,707 S *	10/2006	Chen	D14/230
7,148,849 B2	12/2006	Lin	
7,215,296 B2	5/2007	Abramov et al.	
D546,821 S	7/2007	Oliver	

(Continued)

OTHER PUBLICATIONS

<http://airgain.com/our-services/embedded-antennas/>—Retrieved Jan. 4, 2017.*

(Continued)

Primary Examiner — Manpreet Matharu

Assistant Examiner — Mojtaba Tehrani

(74) *Attorney, Agent, or Firm* — Clause Eight IPS; Michael Catania

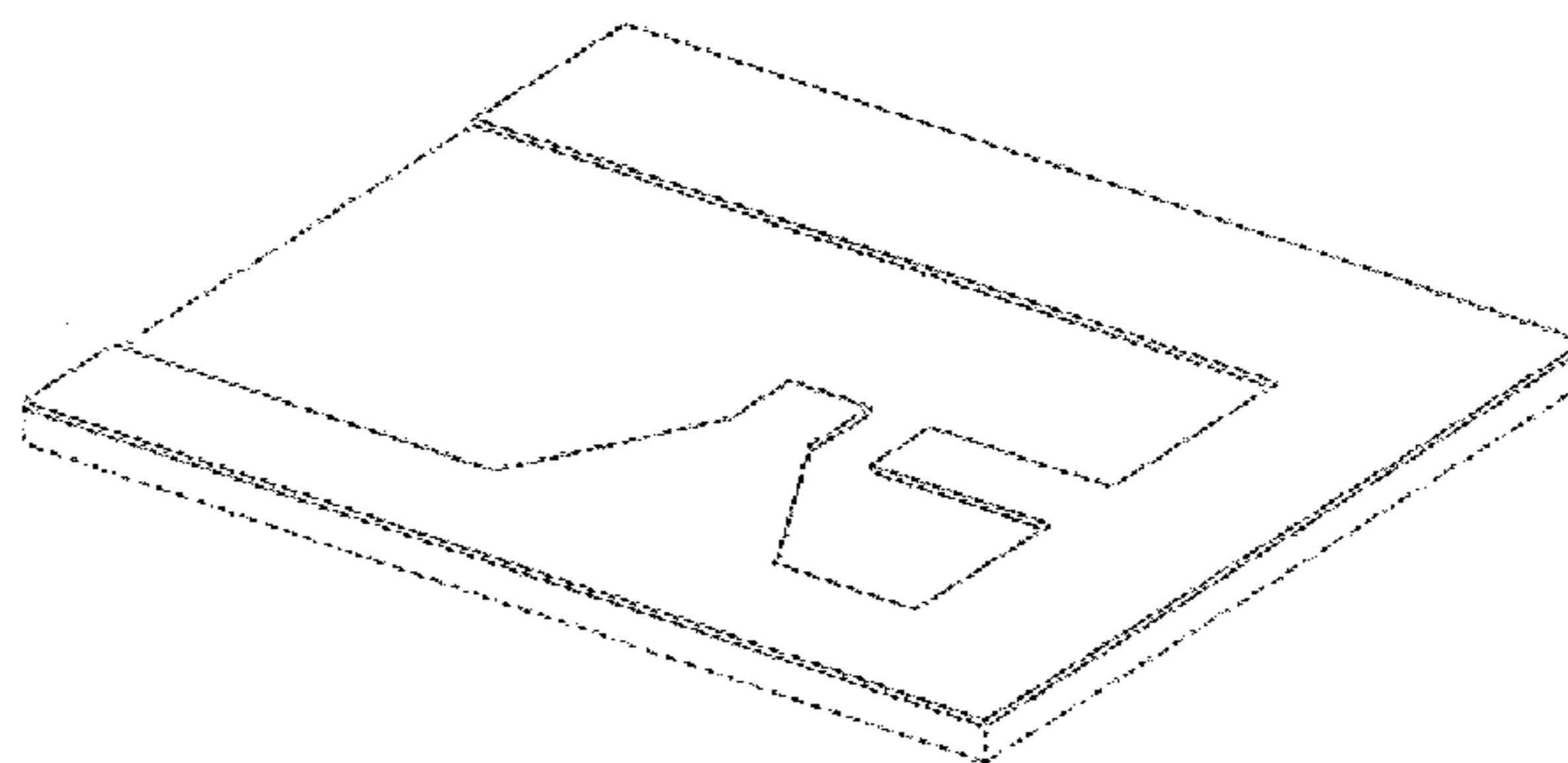
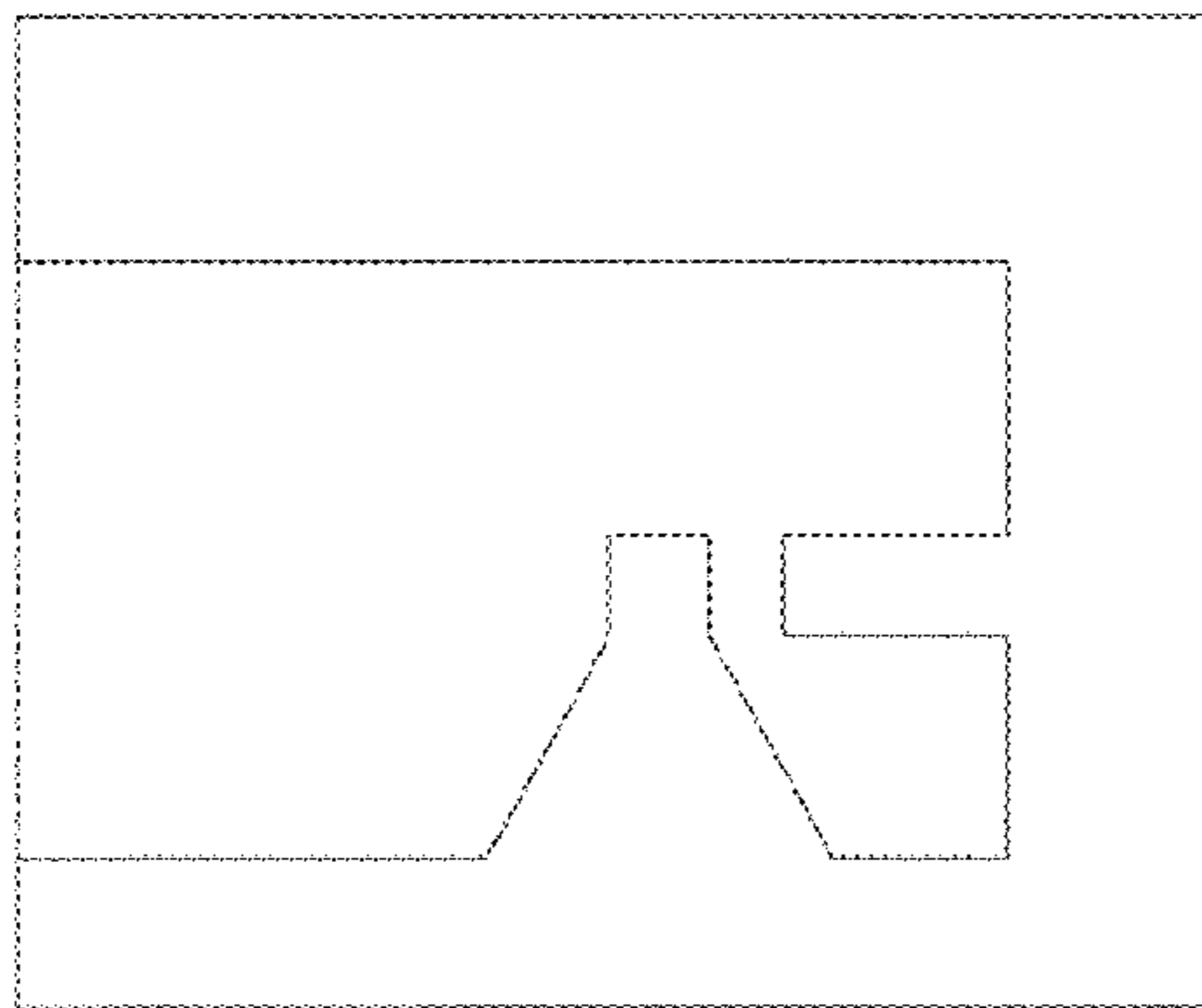
(57) **CLAIM**

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

DESCRIPTION

FIG. 1 is a top plan view of the first embodiment of an antenna, showing my new design;
 FIG. 2 is a front elevation view thereof;
 FIG. 3 is a bottom plan view thereof;
 FIG. 4 is a side elevation view thereof;
 FIG. 5 is a top perspective view thereof;
 FIG. 6 is a top plan view thereof with unclaimed environment not shown;
 FIG. 7 is a front elevation view thereof with unclaimed environment not shown;
 FIG. 8 is a top plan view of the second embodiment of an antenna;
 FIG. 9 is a front elevation view thereof;
 FIG. 10 is a bottom plan view thereof;
 FIG. 11 is a side elevation view thereof;
 FIG. 12 is a top perspective view thereof;
 FIG. 13 is a top plan view thereof with unclaimed environment not shown;
 FIG. 14 is a front elevation view thereof with unclaimed environment not shown;
 FIG. 15 is a top plan view of the third embodiment of an antenna;
 FIG. 16 is a front elevation view thereof;
 FIG. 17 is a bottom plan view thereof;
 FIG. 18 is a side elevation view thereof;
 FIG. 19 is a top perspective view thereof;
 FIG. 20 is a top plan view thereof with unclaimed environment not shown; and,
 FIG. 21 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, 3 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

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.
 7,405,704 B1 7/2008 Lin et al.
 7,477,195 B2 1/2009 Vance
 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
 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 D14/230

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.
 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 Bringuir
 D706,751 S * 6/2014 Chang D14/230
 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.
 8,854,265 B1 10/2014 Yang et al.
 D716,775 S 11/2014 Bidermann
 D741,301 S * 10/2015 He D14/230
 D747,297 S * 1/2016 He D14/230
 D763,832 S * 8/2016 Gosalia D14/230
 D780,723 S * 3/2017 Gosalia D14/230
 D781,823 S * 3/2017 Chang D14/230
 2002/0003499 A1 1/2002 Kouam 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.
 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

<https://www.aliexpress.com/item/5PCS-LOT-2-4G-6dbi-planar-antenna-wifi-module-antenna-high-gain-built-in-PCB-antenna/32686770707.html?spm=2114.40010508.4.19.9sV4vV>—Retrieved Apr. 11, 2017.*

* cited by examiner

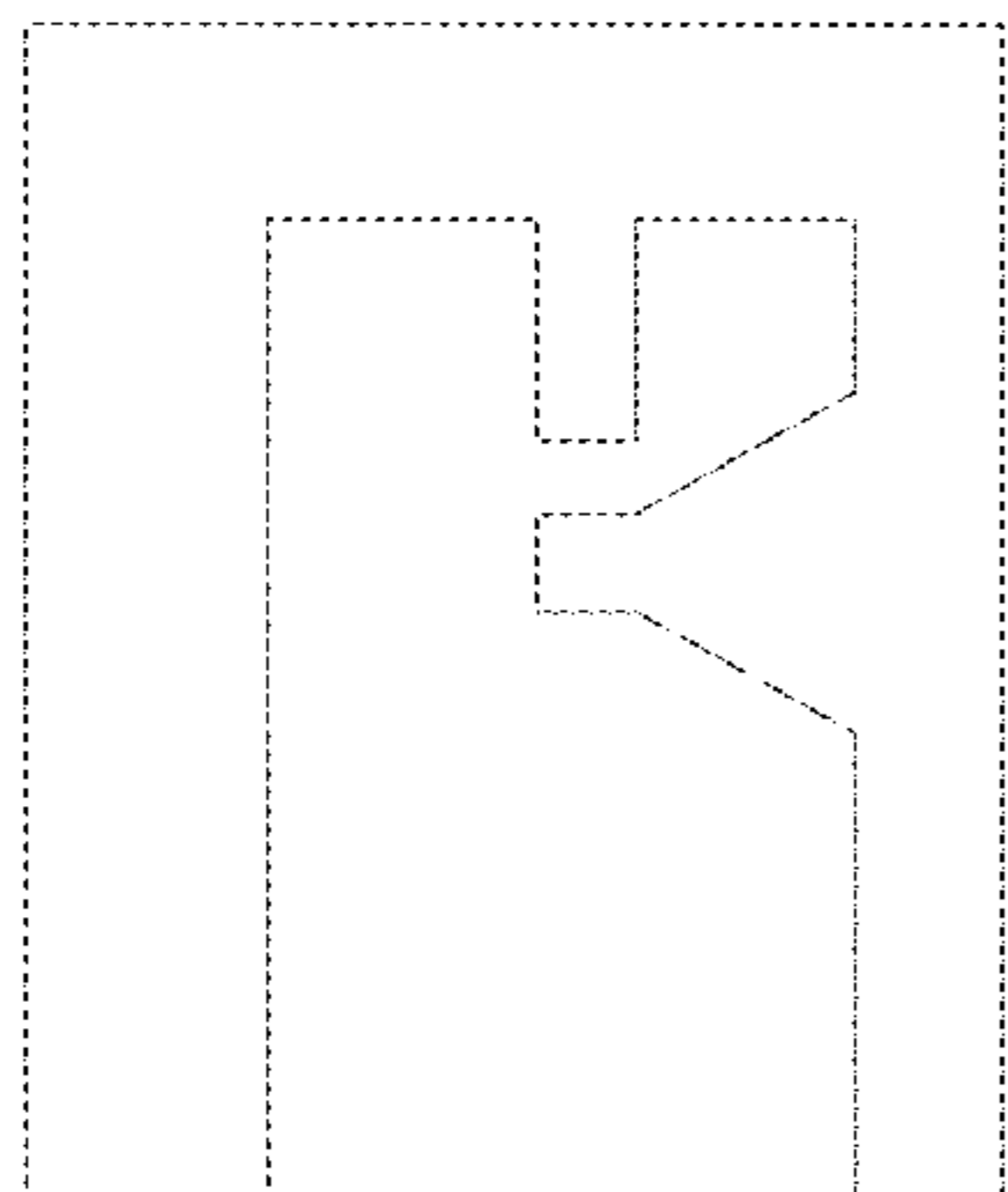
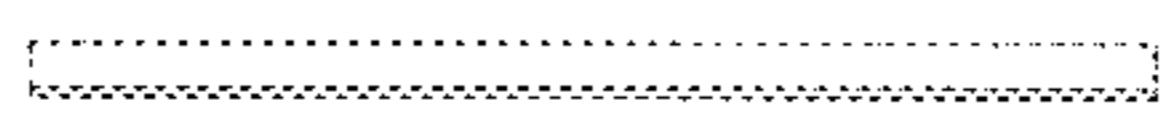
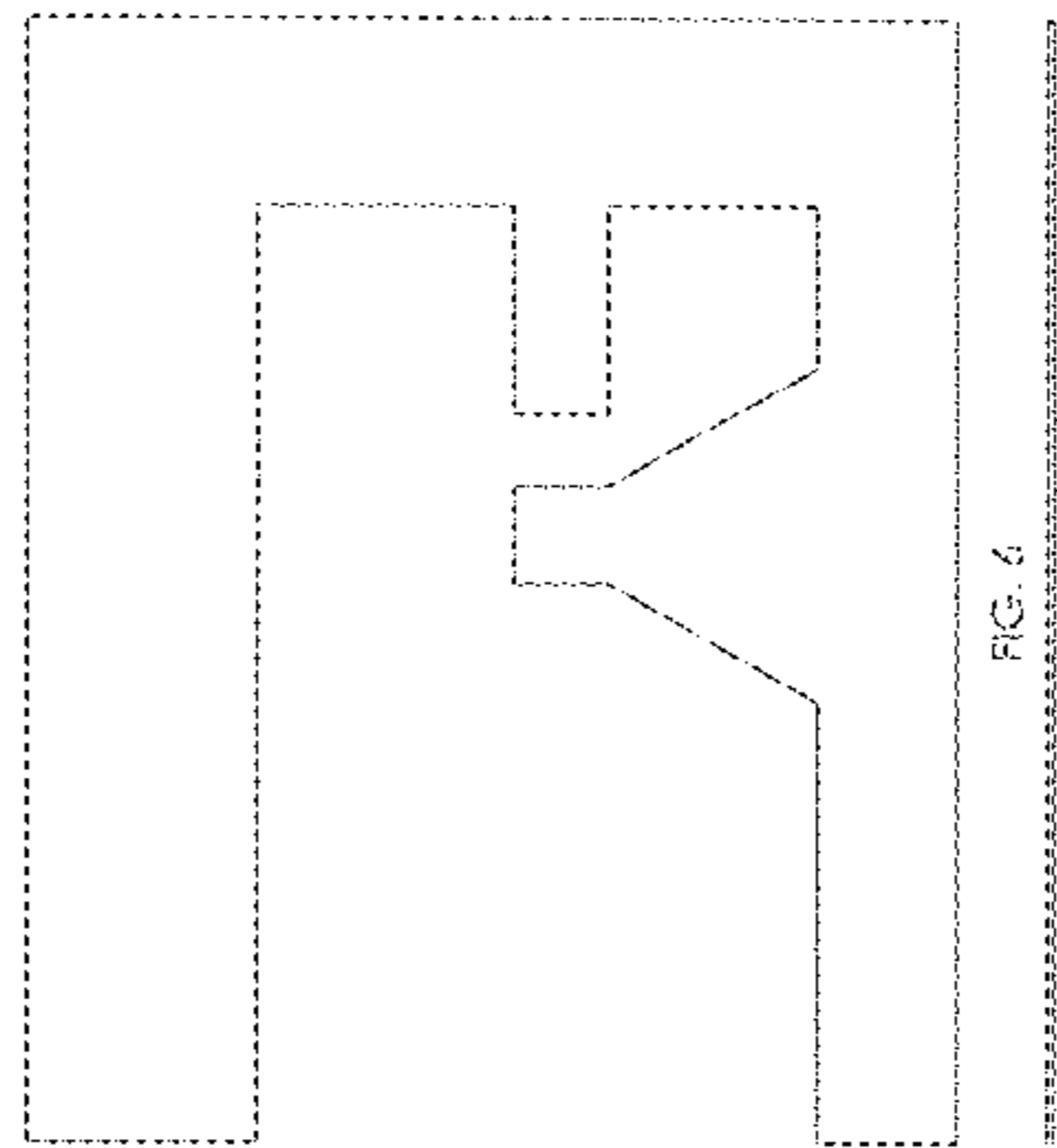


FIG. 4

FIG. 4

FIG. 1

FIG. 7

FIG. 2

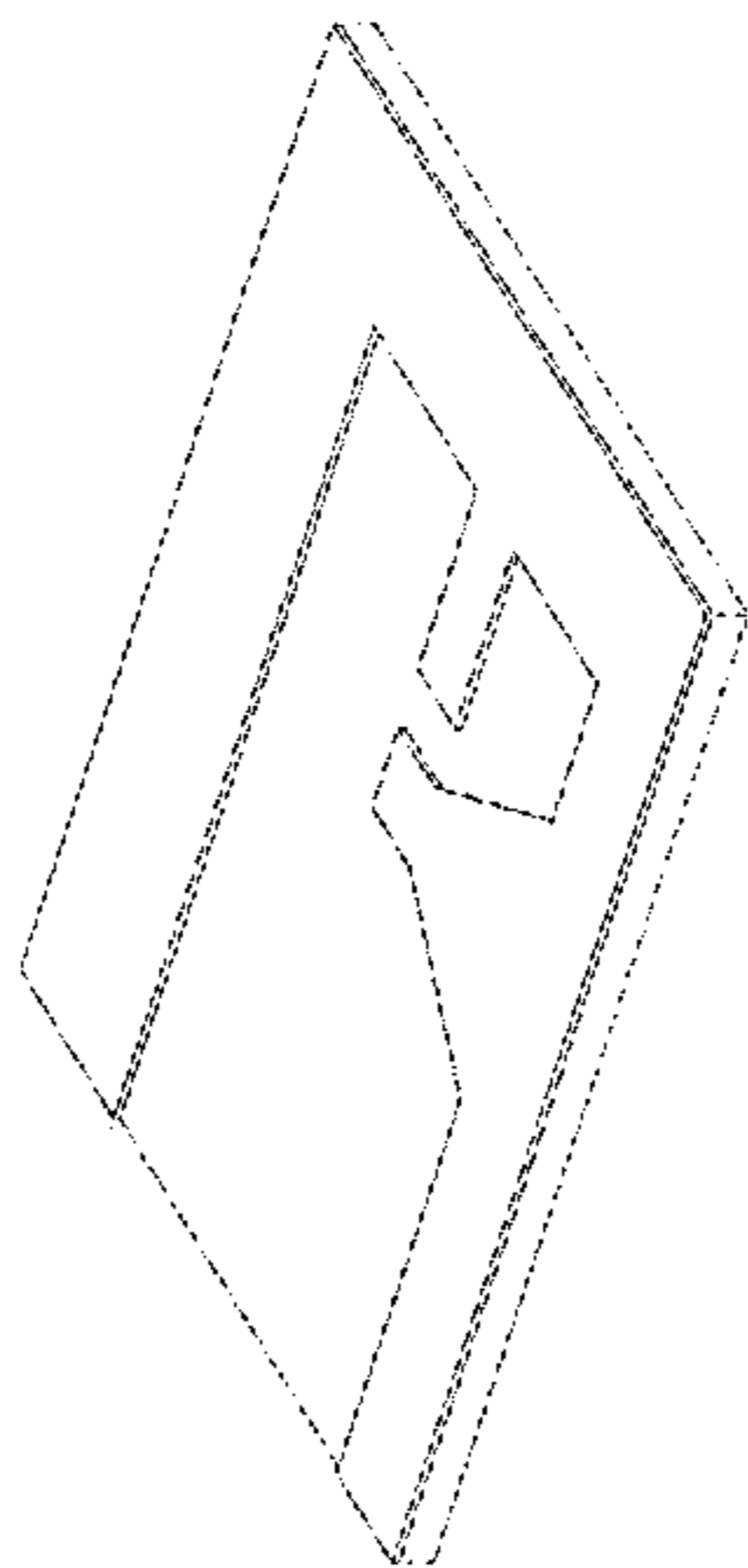


FIG. 5

FIG. 3

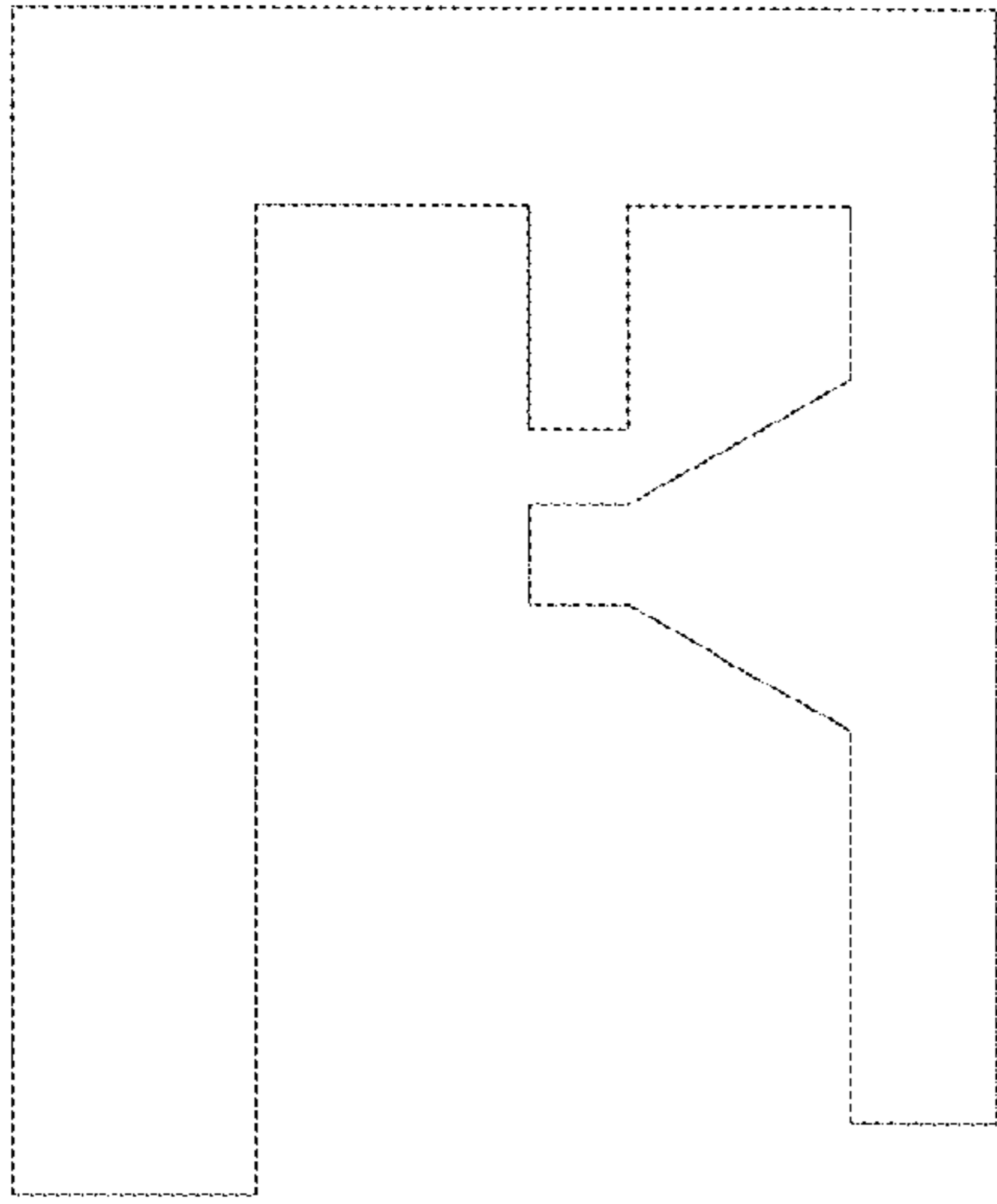


FIG. 13

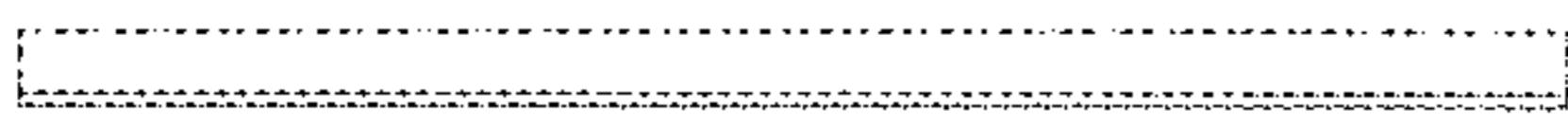


FIG. 11

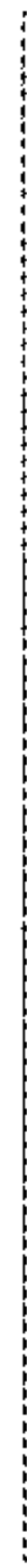


FIG. 14

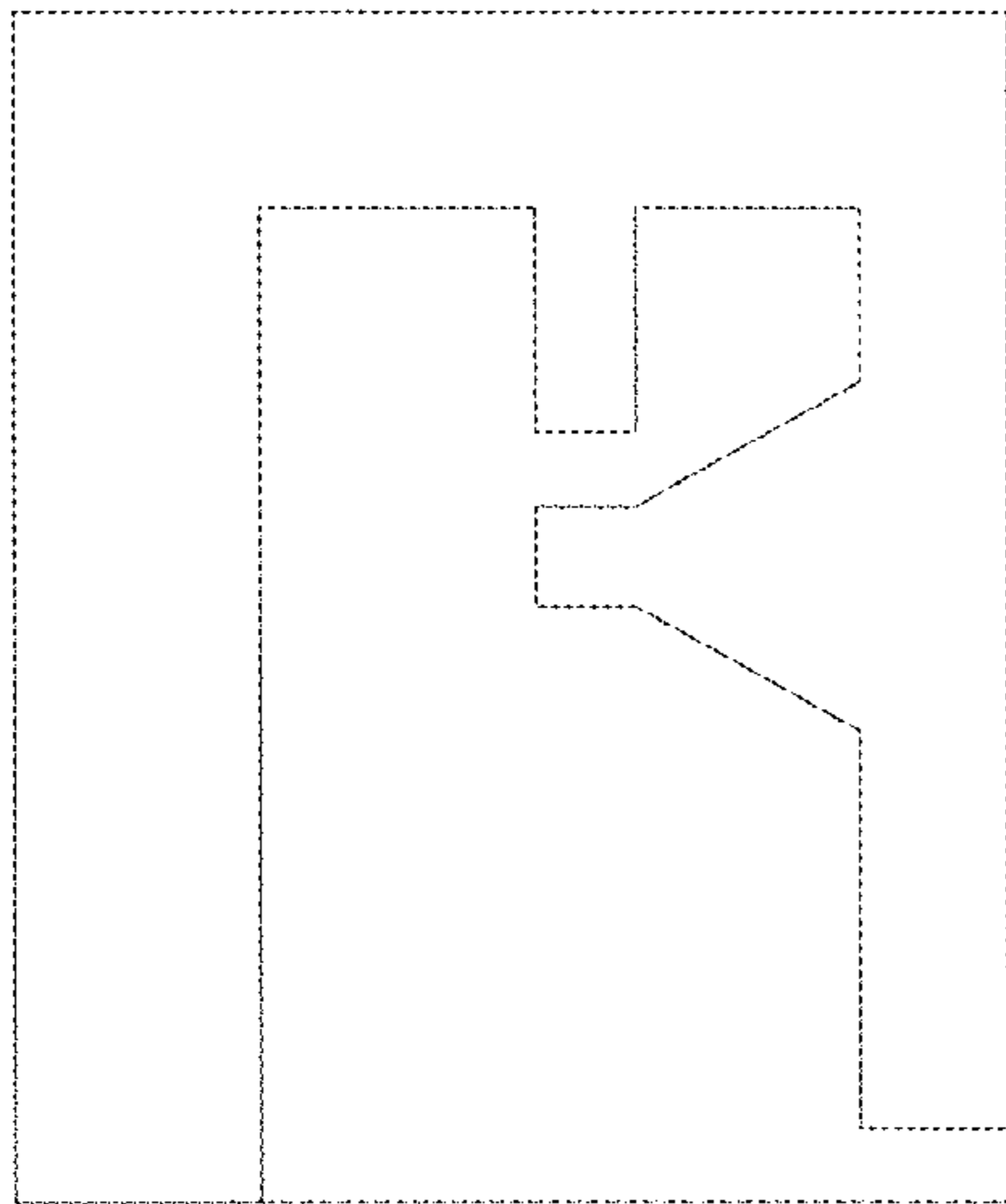


FIG. 8

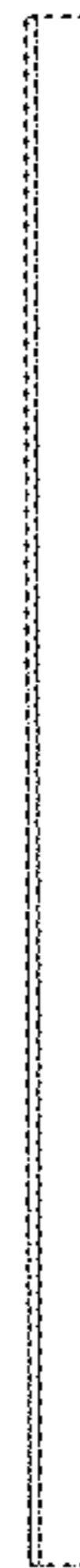


FIG. 9

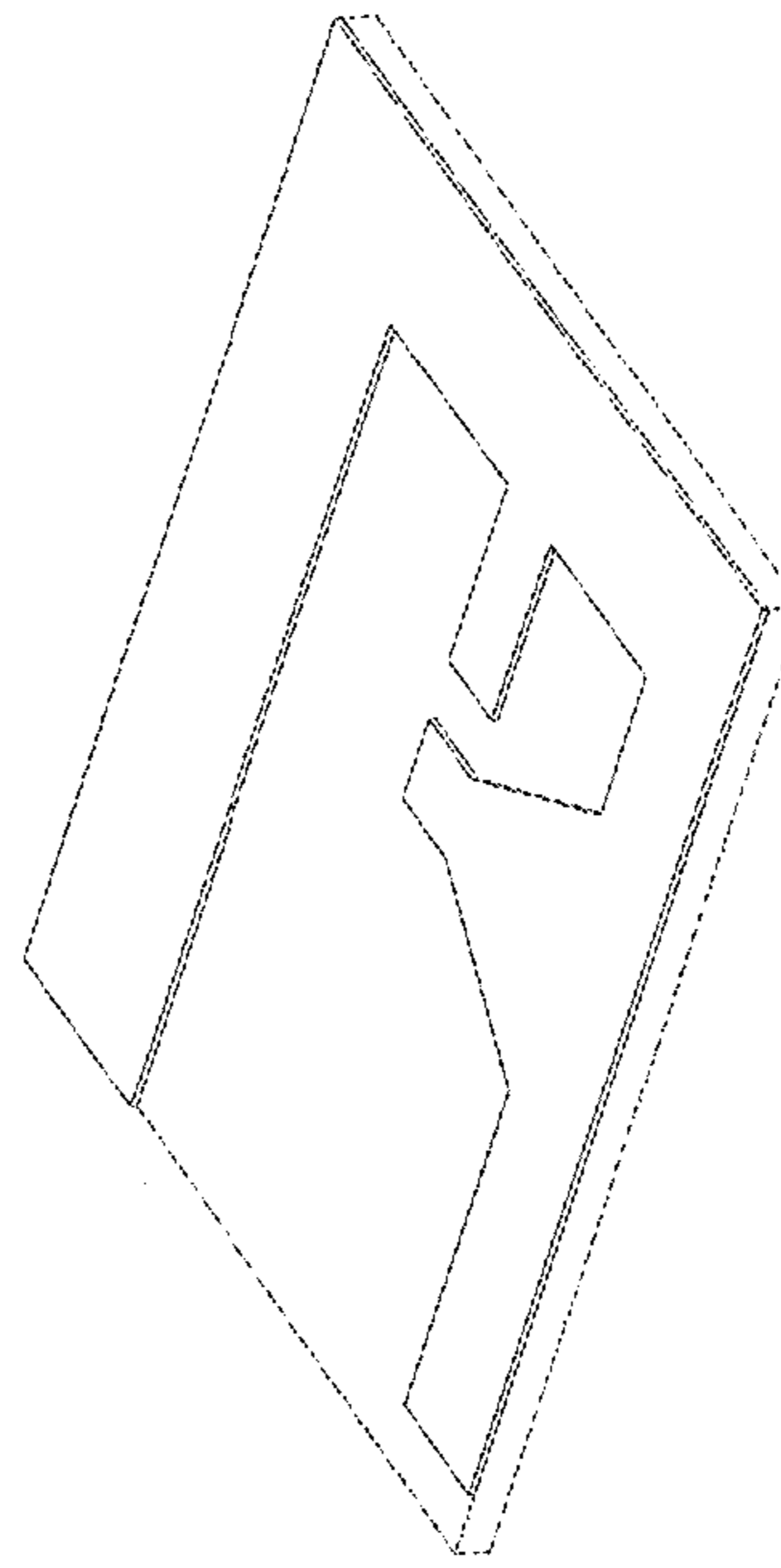


FIG. 12

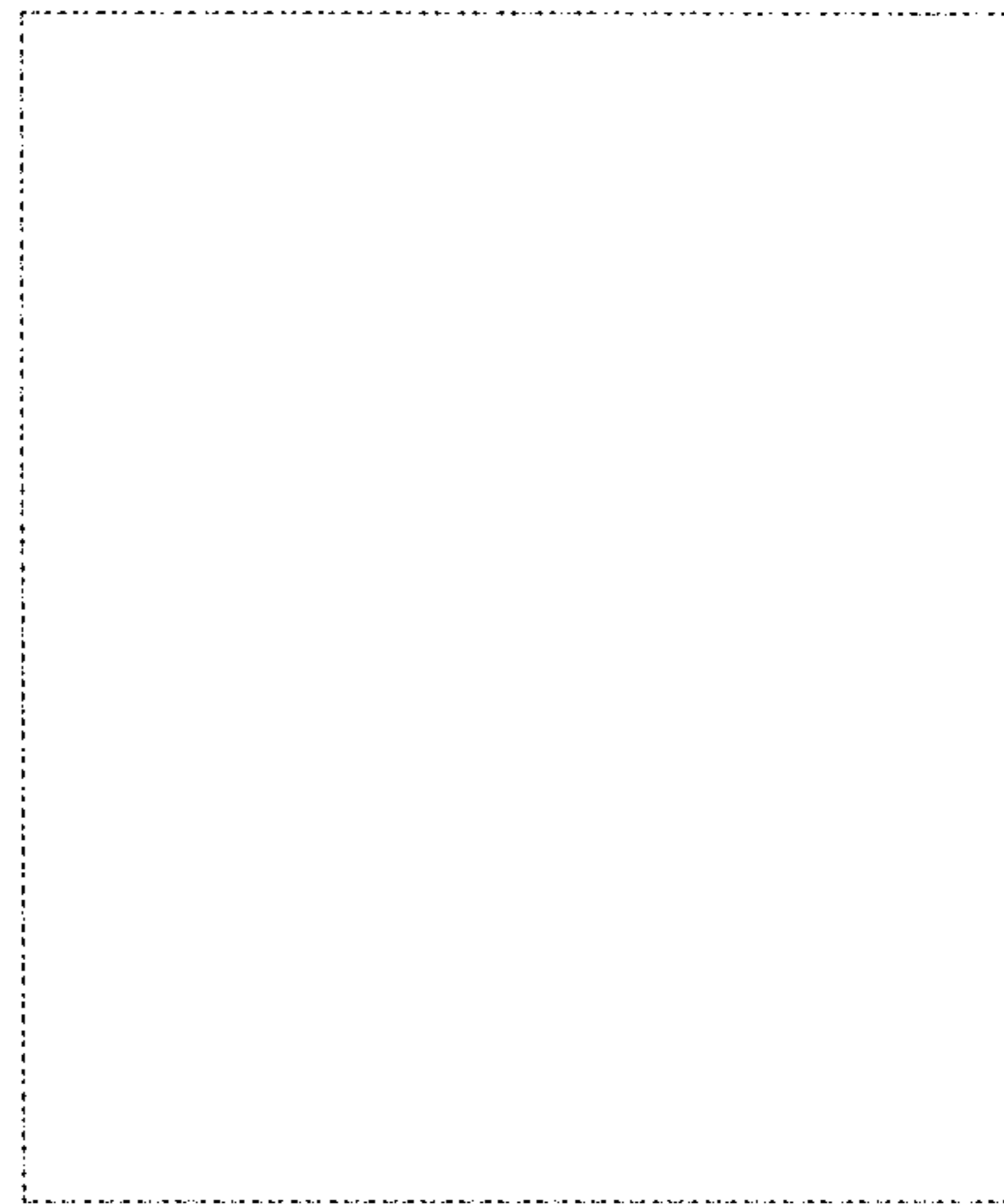


FIG. 10

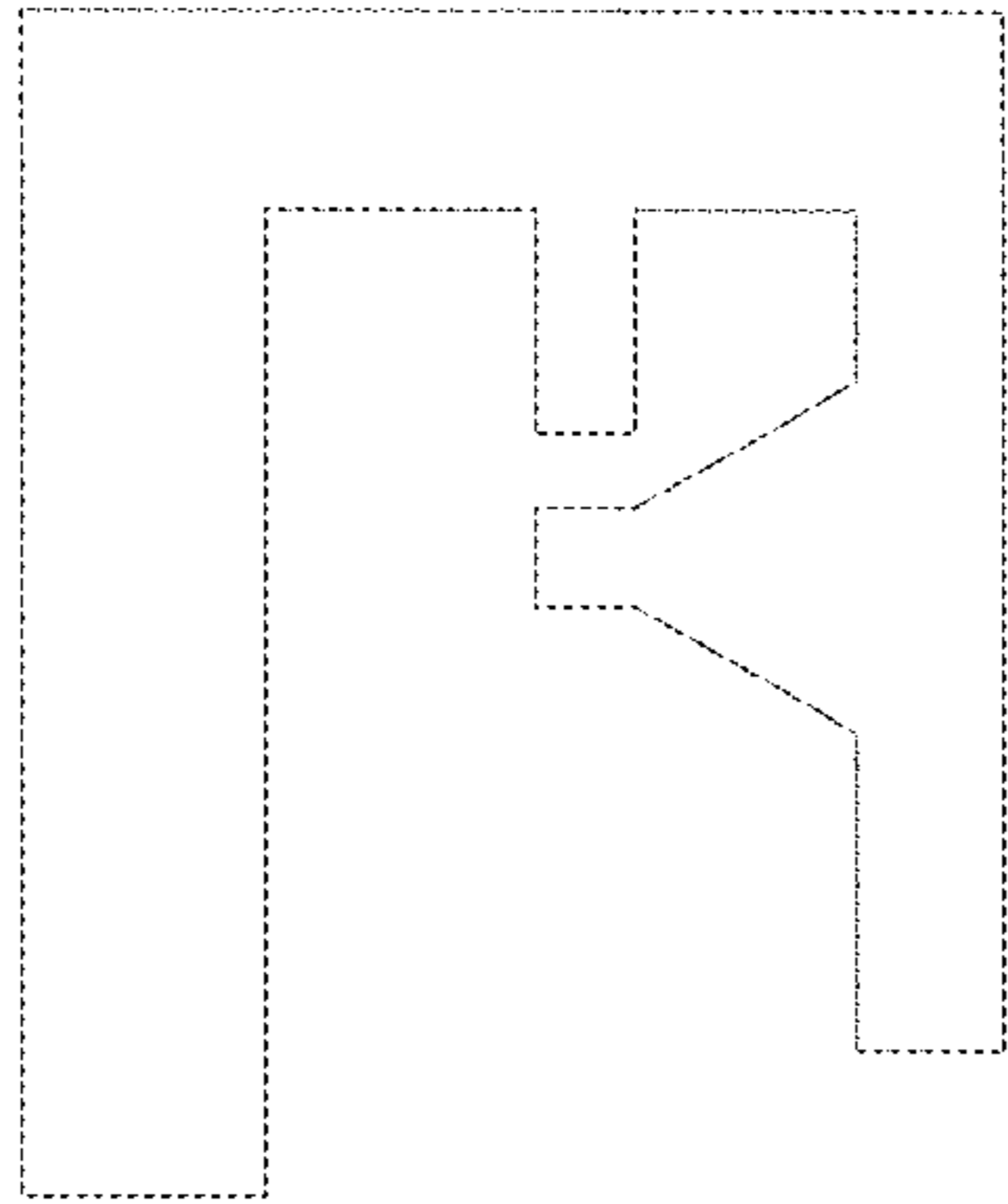


FIG. 20

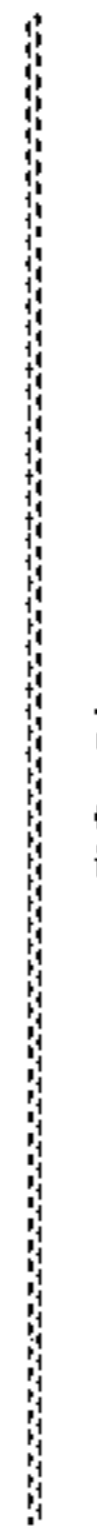


FIG. 21

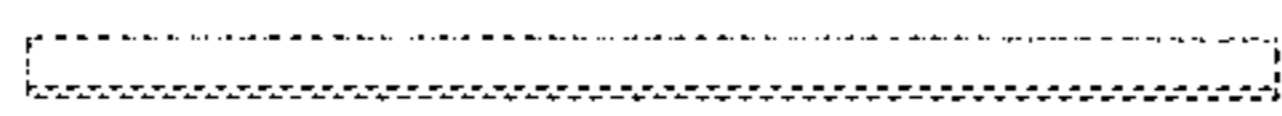


FIG. 18

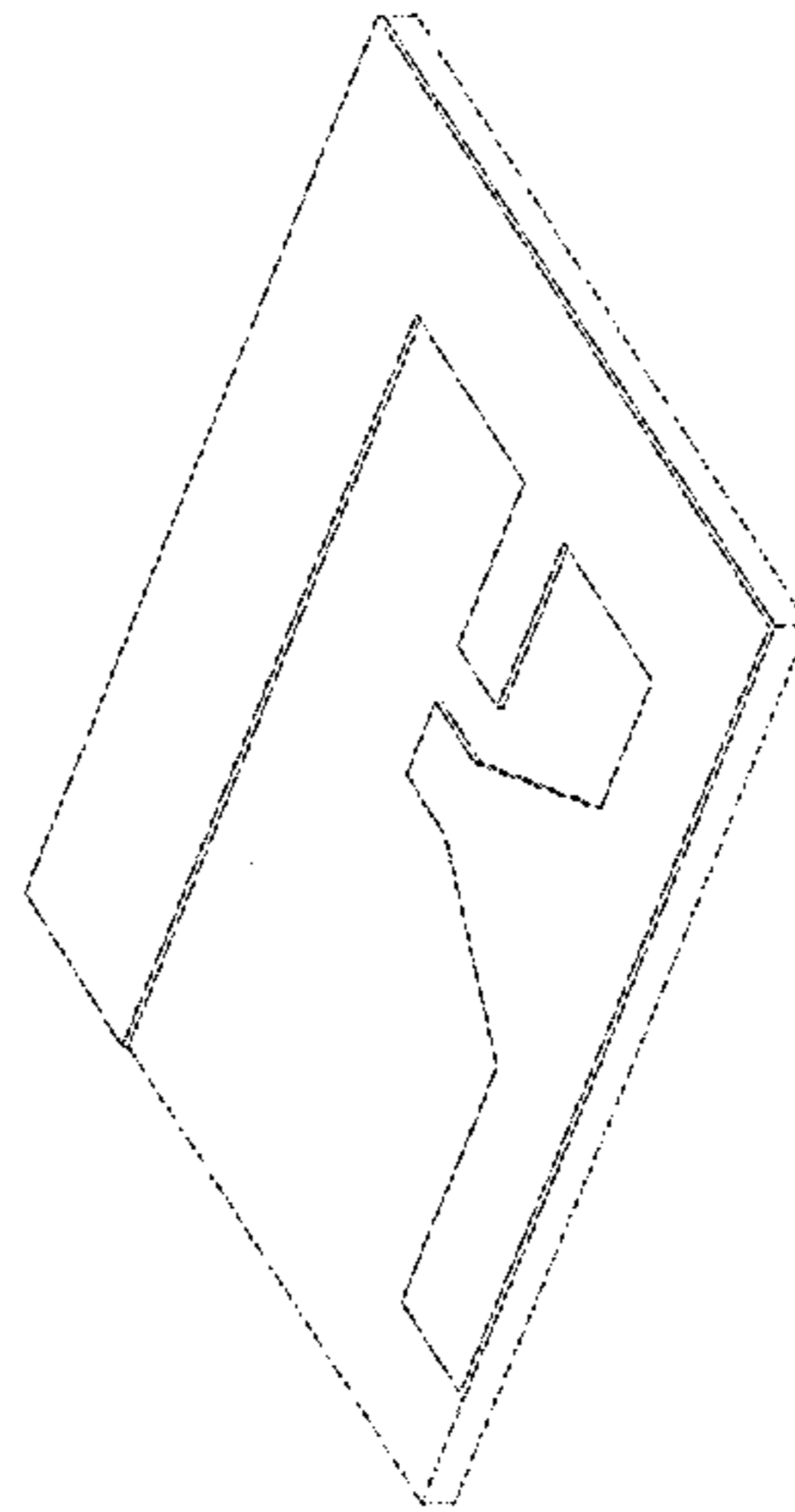


FIG. 19

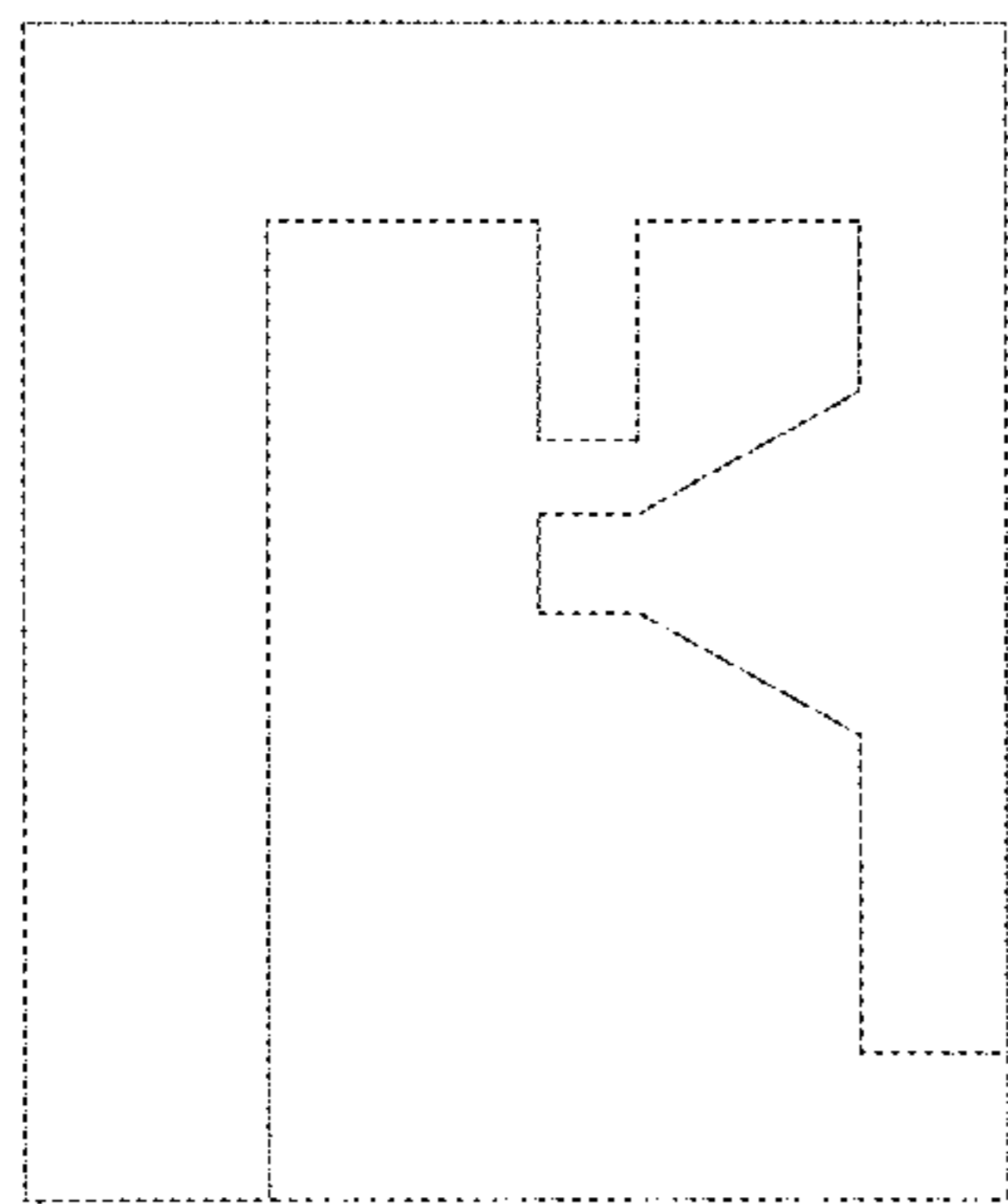


FIG. 15

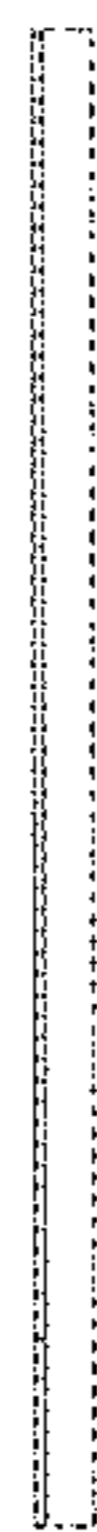


FIG. 14

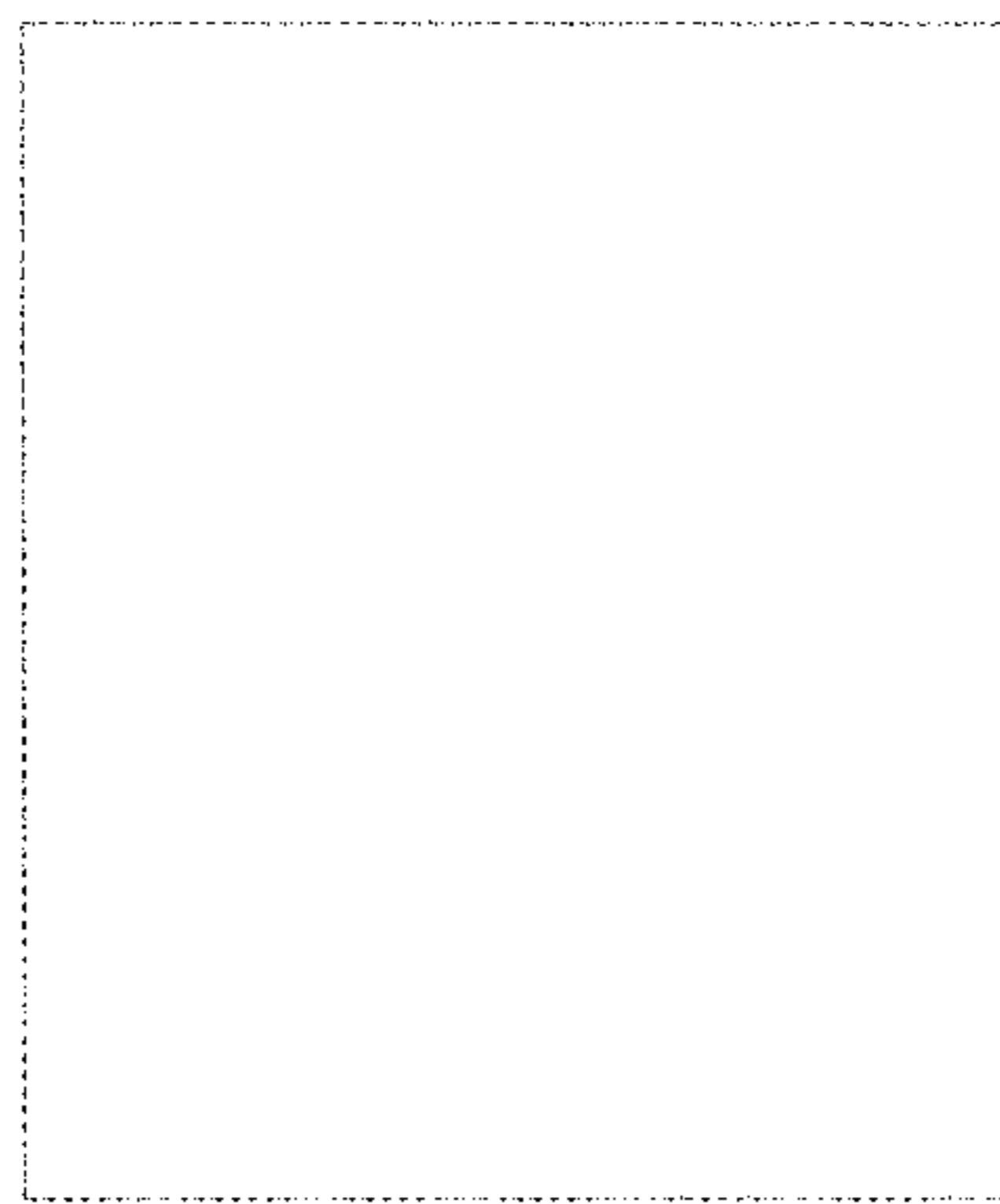


FIG. 17