



US00D868046S

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

(10) **Patent No.:** **US D868,046 S**

(45) **Date of Patent:** **** Nov. 26, 2019**

(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.: **29/687,563**

(22) Filed: **Apr. 13, 2019**

Related U.S. Application Data

(62) Division of application No. 29/595,155, filed on Feb. 25, 2017, now Pat. No. Des. 846,535.

(51) **LOC (12) Cl.** **14-03**

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

(58) **Field of Classification Search**
USPC D14/137, 138 R, 138 AA, 148, 155, 167,
D14/168, 230-238, 240, 242, 265, 299,
D14/343, 358, 204, 214, 218, 221, 509,
D14/203.6, 216, 238.1

CPC H01Q 7/00; H01Q 13/10; H01Q 9/285;
H01Q 19/30; H01Q 19/12; H01Q 1/38;
H01Q 1/36; H01Q 1/0475; H01Q 1/034;
H05K 11/00; G05D 1/0234

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

7,061,437 B2 † 6/2006 Lin H01Q 9/0421
343/70
7,148,849 B2 † 12/2006 Lin H01Q 1/243
343/70
7,215,296 B2 † 5/2007 Abramov et al.

D546,821 S † 7/2007 Oliver D14/23
D549,696 S † 8/2007 Oshima D14/23
D555,154 S * 11/2007 Lin D14/230
7,333,067 B2 † 2/2008 Hung H01Q 1/36
343/70
7,336,959 B2 † 2/2008 Khitrik et al.
D573,589 S † 7/2008 Montgomery D14/23
7,405,704 B1 † 7/2008 Lin et al.
7,477,195 B2 † 1/2009 Vance H01Q 9/0457
343/70
D587,693 S * 3/2009 Ohshima D14/230
D592,195 S † 5/2009 Wu D14/23

(Continued)

OTHER PUBLICATIONS

Embedded Stamped Metal PIFA Antenna, online, no post date,
URL: <https://www.globalsources.com/gsol/1/WLAN-antenna/p/sm/1120446412.htm#1120446412>, retrieved Jun. 12, 2018.*

(Continued)

Primary Examiner — Jeffrey D Asch

Assistant Examiner — Rebekah A Caruso

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

(57) **CLAIM**

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

DESCRIPTION

FIG. 1 is a front elevation view of an antenna with a base in broken lines;

FIG. 2 is a side elevation view thereof;

FIG. 3 is a rear elevation thereof;

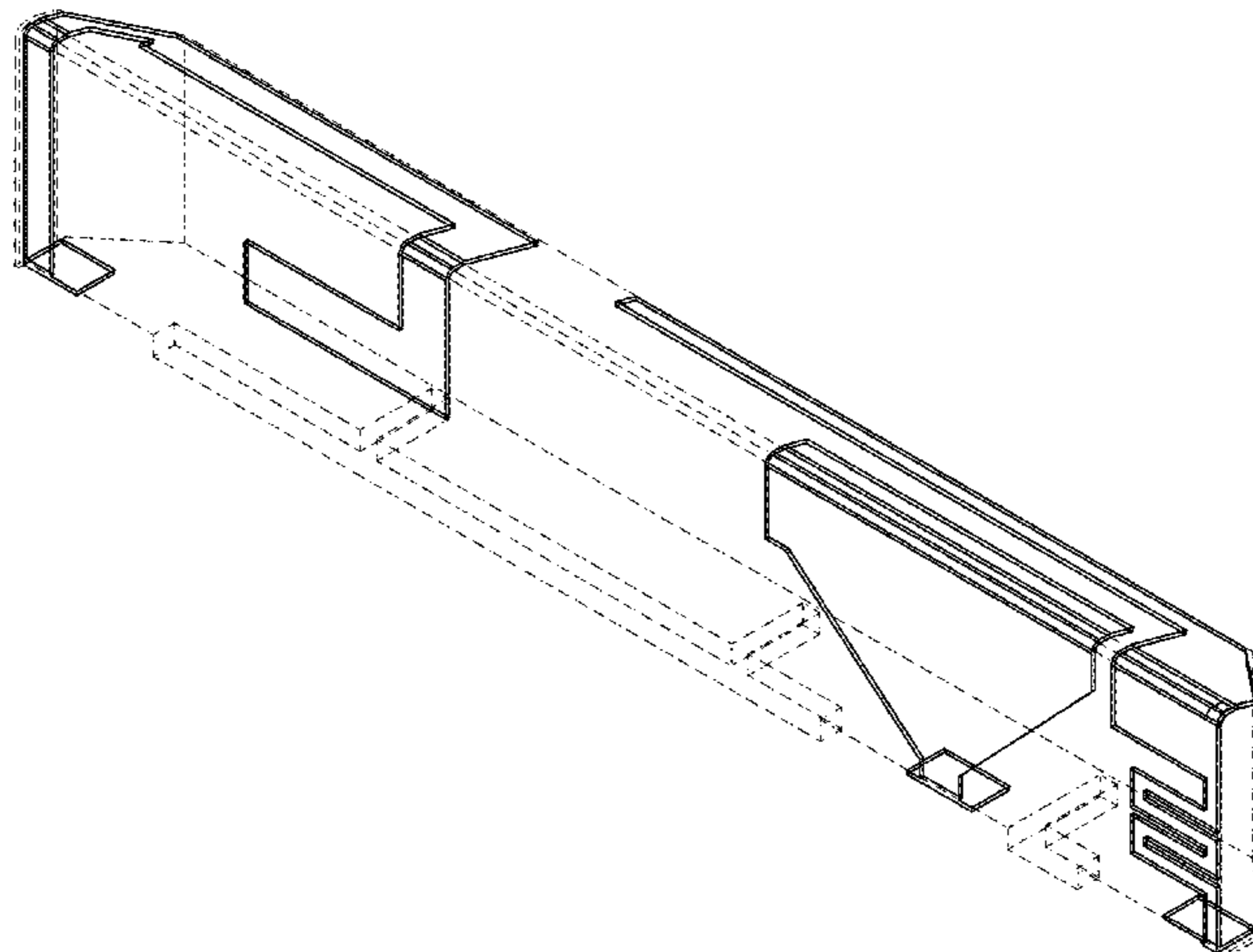
FIG. 4 is a bottom plan view thereof;

FIG. 5 is a top plan view thereof; and,

FIG. 6 is a top perspective view thereof.

The broken lines are for illustration purposes only and form no part of the claimed invention.

1 Claim, 6 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

7,570,215 B2 † 8/2009 Abramov et al.
 D599,334 S † 9/2009 Chiang D14/23
 D603,851 S * 11/2009 Montgomery D14/230
 D606,053 S † 12/2009 Wu D14/23
 D607,442 S † 1/2010 Su D14/23
 D608,769 S † 1/2010 Bufe D14/23
 D612,368 S † 3/2010 Yang D14/23
 7,705,783 B2 † 4/2010 Rao H01Q 1/243
 343/70
 7,729,662 B2 † 6/2010 Abramov et al.
 D621,819 S † 8/2010 Tsai D14/23
 7,843,390 B2 † 11/2010 Liu H01Q 9/42
 343/70
 D633,483 S † 3/2011 Su D14/23
 D635,127 S † 3/2011 Tsai D14/23
 7,907,971 B2 † 3/2011 Salo et al.
 D635,560 S † 4/2011 Tsai D14/23
 D635,963 S † 4/2011 Podduturi D14/23
 D635,964 S † 4/2011 Podduturi D14/23
 D635,965 S † 4/2011 Mi D14/23
 D636,382 S † 4/2011 Podduturi D14/23
 7,965,242 B2 † 6/2011 Abramov et al.
 D649,962 S † 12/2011 Tseng D14/23
 D651,198 S † 12/2011 Mi D14/23
 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 D14/230
 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 D14/230
 D695,279 S † 12/2013 Yang et al.
 D695,280 S † 12/2013 Yang et al.
 8,654,030 B1 † 2/2014 Mercer
 D703,195 S * 4/2014 Zheng D14/230
 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 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

9,337,532 B2 * 5/2016 Vanjani H01Q 1/243
 D765,062 S * 8/2016 Zheng D14/230
 9,432,070 B2 † 8/2016 Mercer
 D768,116 S * 10/2016 Zheng D14/230
 D778,882 S * 2/2017 Zheng D14/230
 D792,381 S * 7/2017 He D14/230
 D792,870 S * 7/2017 Zheng D14/230
 D792,871 S * 7/2017 Zheng D14/230
 D795,848 S * 8/2017 Zheng D14/230
 D801,957 S * 11/2017 He D14/230
 D807,864 S * 1/2018 He D14/230
 9,912,043 B1 * 3/2018 Yang H01Q 1/24
 D819,610 S * 6/2018 Zheng 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
 G06K 19/07749
 340/57
 2007/0030203 A1 † 2/2007 Tsai H01Q 9/42
 343/70
 2008/0150829 A1 † 6/2008 Lin G06F 1/1616
 343/86
 2009/0002244 A1 † 1/2009 Woo H01Q 1/38
 343/70
 2009/0058739 A1 † 3/2009 Konishi G06F 1/1616
 343/70
 2009/0135072 A1 * 5/2009 Ke H01Q 1/36
 343/700 MS
 2009/0262028 A1 † 10/2009 Mumburu H01Q 5/371
 343/70
 2010/0097272 A1 * 4/2010 Kim H01Q 1/243
 343/700 MS
 2010/0164821 A1 * 7/2010 Huang H01Q 9/0414
 343/767
 2010/0188297 A1 † 7/2010 Chen H01Q 1/243
 343/70
 2010/0309067 A1 † 12/2010 Tsou H01Q 3/26
 343/72
 2011/0006950 A1 † 1/2011 Park H01Q 9/0407
 343/70
 2011/0043408 A1 * 2/2011 Shi H01Q 1/48
 343/700 MS
 2011/0148716 A1 * 6/2011 Sotoma H01Q 1/243
 343/700 MS
 2012/0038514 A1 † 2/2012 Bang H05K 1/16
 343/70
 2012/0229348 A1 † 9/2012 Chiang H01Q 1/2266
 343/70
 2012/0242546 A1 † 9/2012 Hu H01Q 1/243
 343/70

OTHER PUBLICATIONS

Embedded Stamped Metal PIFA Antenna, online, no post date, <URL: <http://www.globalsources.com/gsol/I/WLAN-antenna/p/sm/1120446412.htm#1120446412> >, retrieved Sep. 15, 2018. †

* cited by examiner

† imported from a related application

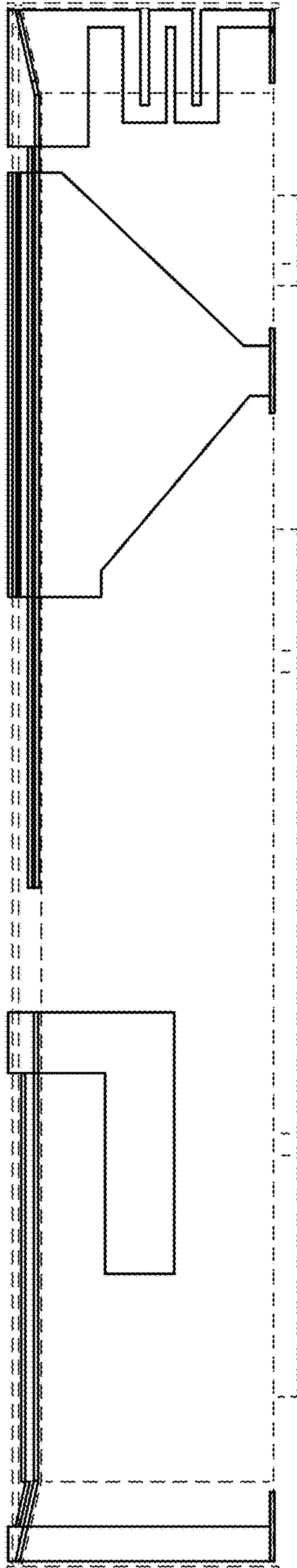


FIG. 1

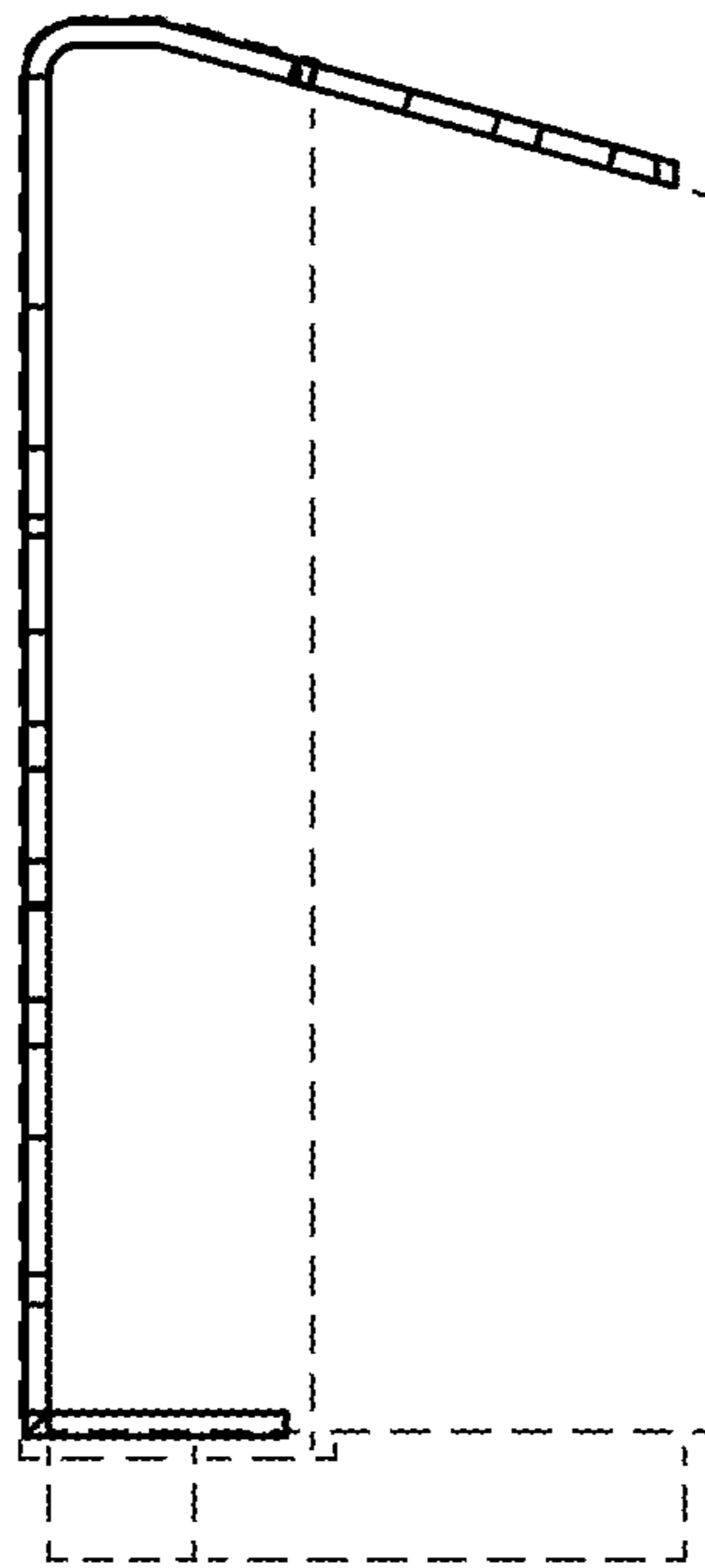


FIG. 2

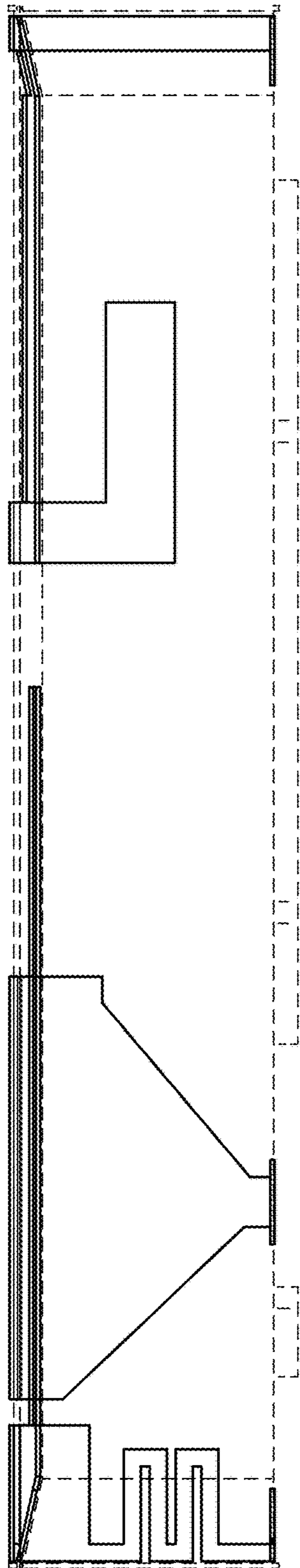


FIG. 3

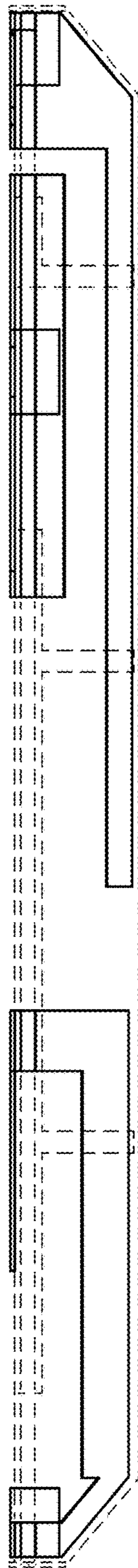


FIG. 4

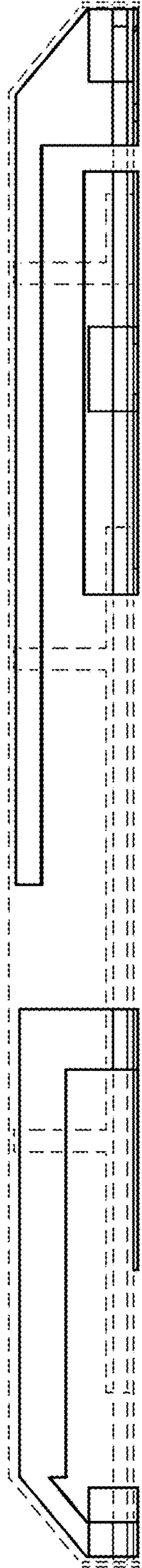


FIG. 5

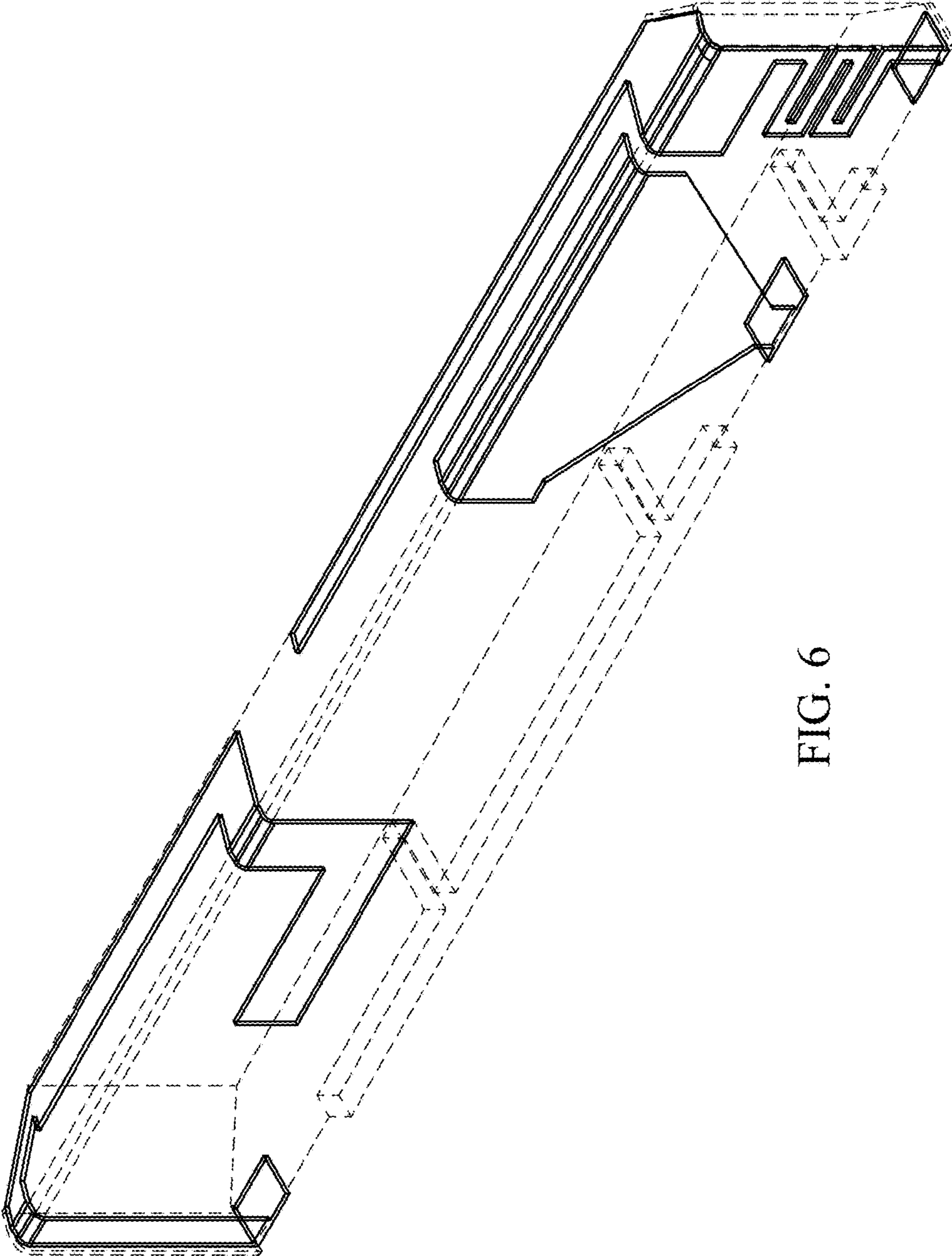


FIG. 6