



US00D798278S

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

(10) **Patent No.:** **US D798,278 S**

(45) **Date of Patent:** **** Sep. 26, 2017**

- (54) **ANTENNA**
- (71) Applicant: **Airgain Incorporated**, San Diego, CA (US)
- (72) Inventors: **Jindan Zhao**, Zhang Jia Gang (CN); **Wei Chang**, Zhang Jia Gang (CN)
- (73) Assignee: **Airgain Incorporated**, San Diego, CA (US)

- 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.

(Continued)

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

(21) Appl. No.: **29/568,699**

(22) Filed: **Jun. 20, 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.
- 7,148,849 B2 12/2006 Lin
- 7,215,296 B2 5/2007 Abramov et al.
- D546,821 S 7/2007 Oliver
- 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.

OTHER PUBLICATIONS

<http://embien.com/blog/ble-rf-layout-design-and-antenna-selection/>—Published Mar. 21, 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 an antenna, showing our 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;

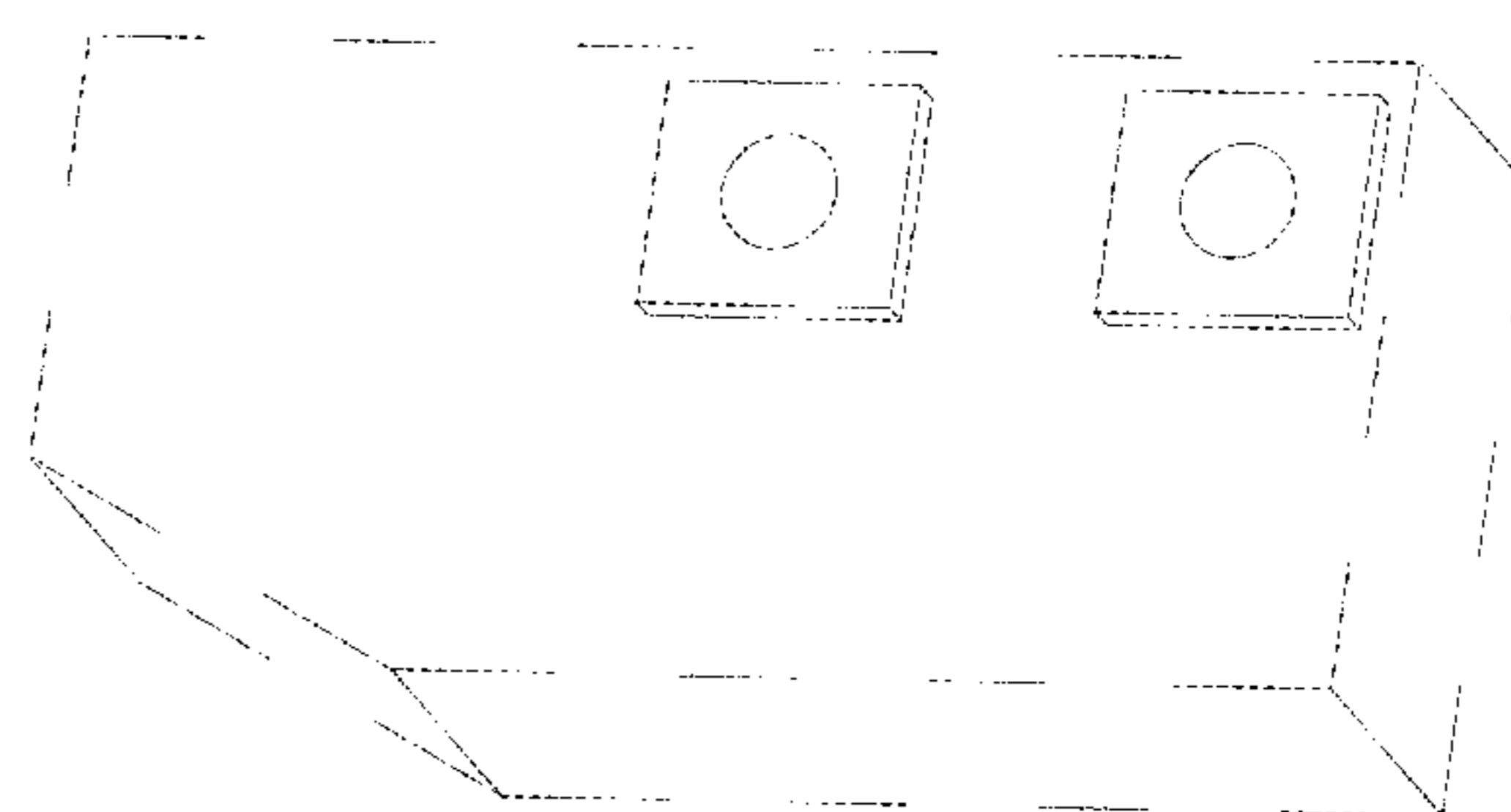
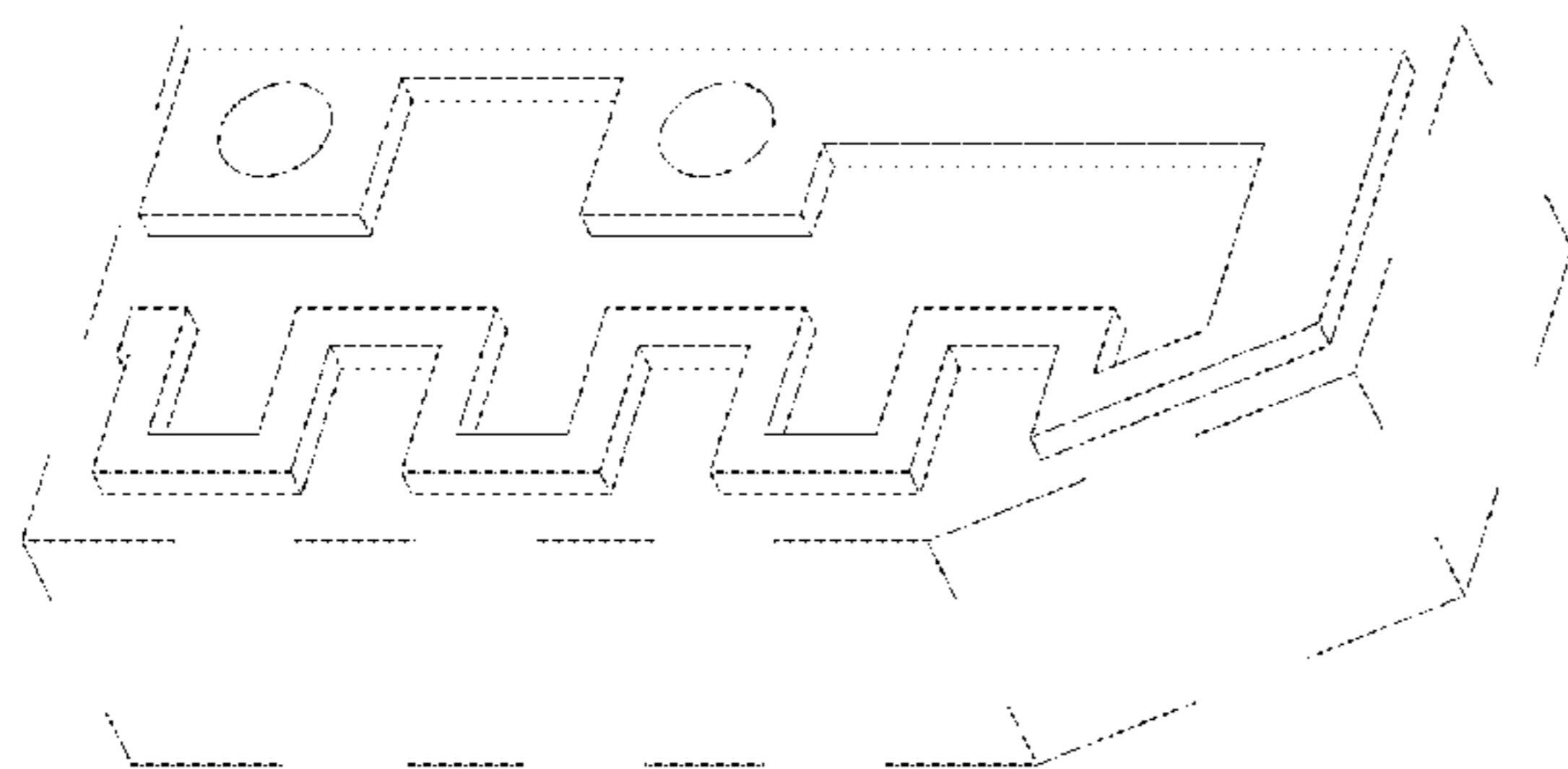
FIG. 6 is a bottom perspective view thereof;

FIG. 7 is a top plan view thereof, with unclaimed environment not shown; and,

FIG. 8 is a bottom plan 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, 2 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

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 H01Q 1/38
 343/700 MS
 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.
 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 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.
 8,854,265 B1 10/2014 Yang et al.
 D716,775 S * 11/2014 Bidermann D14/230
 D763,834 S * 8/2016 Zheng D14/230
 D766,883 S * 9/2016 Yang D14/230
 D768,118 S * 10/2016 Chang D14/230
 D773,444 S * 12/2016 He D14/230
 D778,881 S * 2/2017 Zheng D14/230
 D780,724 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 Mumbru 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.sequoia.co.uk/siretta-echo-2-gsm-gprs-3g-and-wifi-pcb-antenna_p_1535.php—Retrieved Jun. 15, 2017.*

* cited by examiner

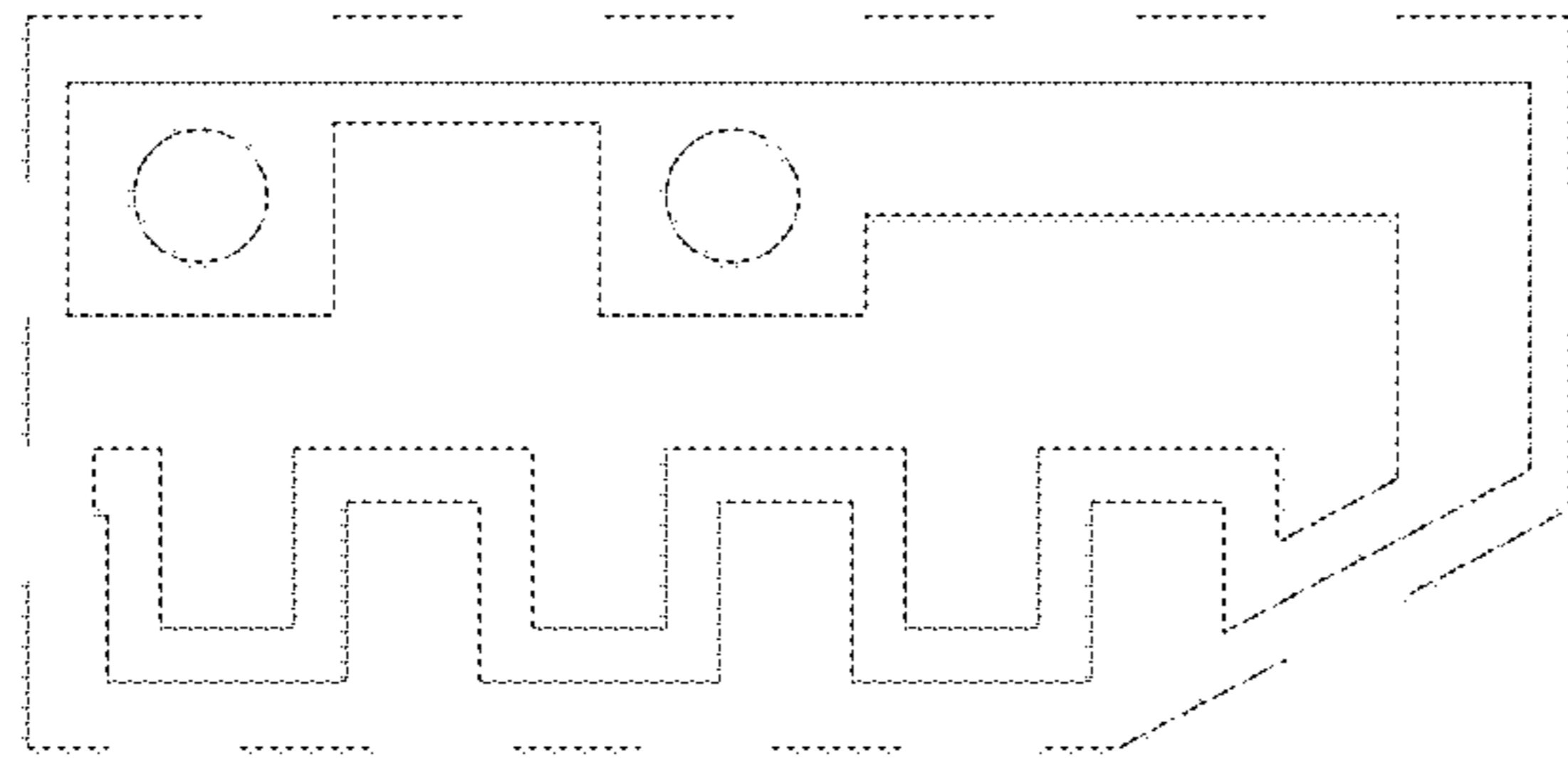


FIG. 1

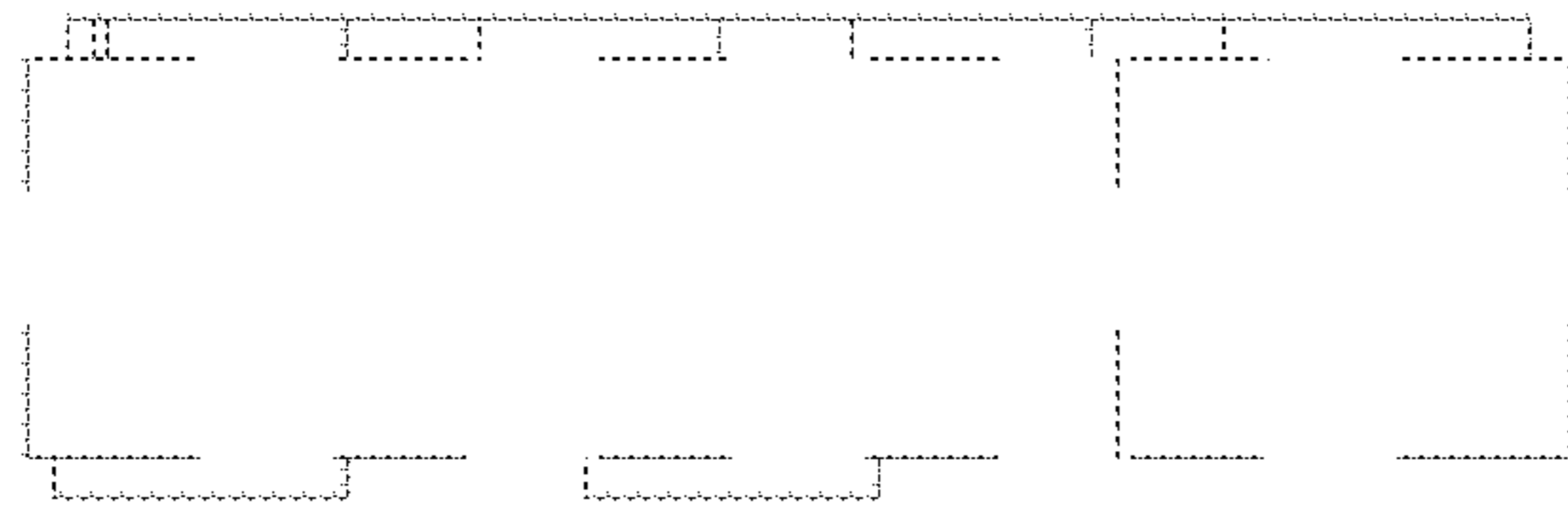


FIG. 2

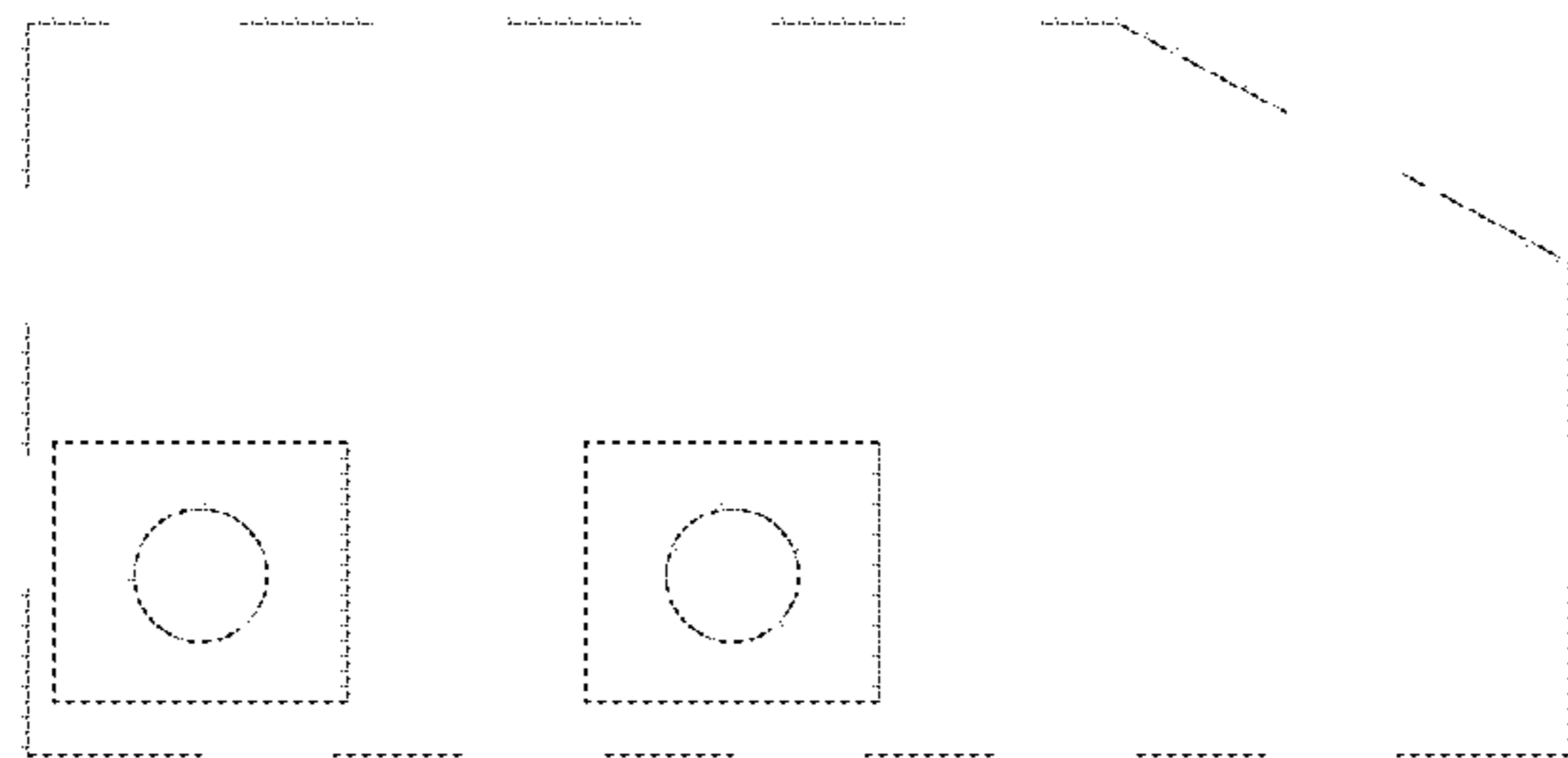


FIG. 3

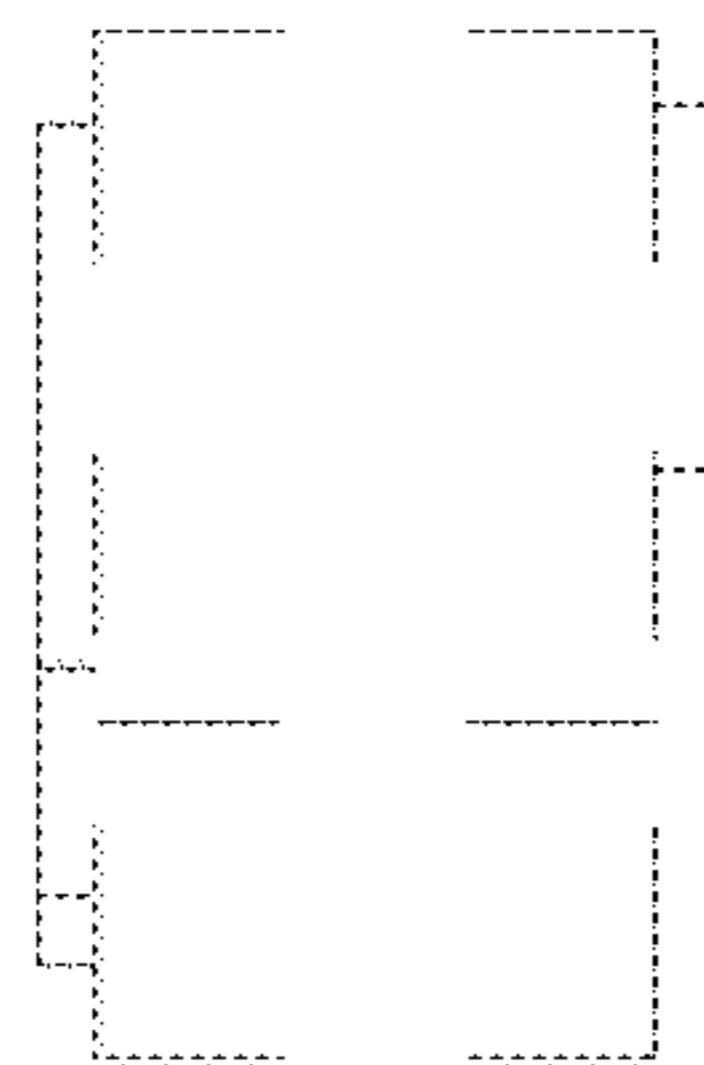


FIG. 4

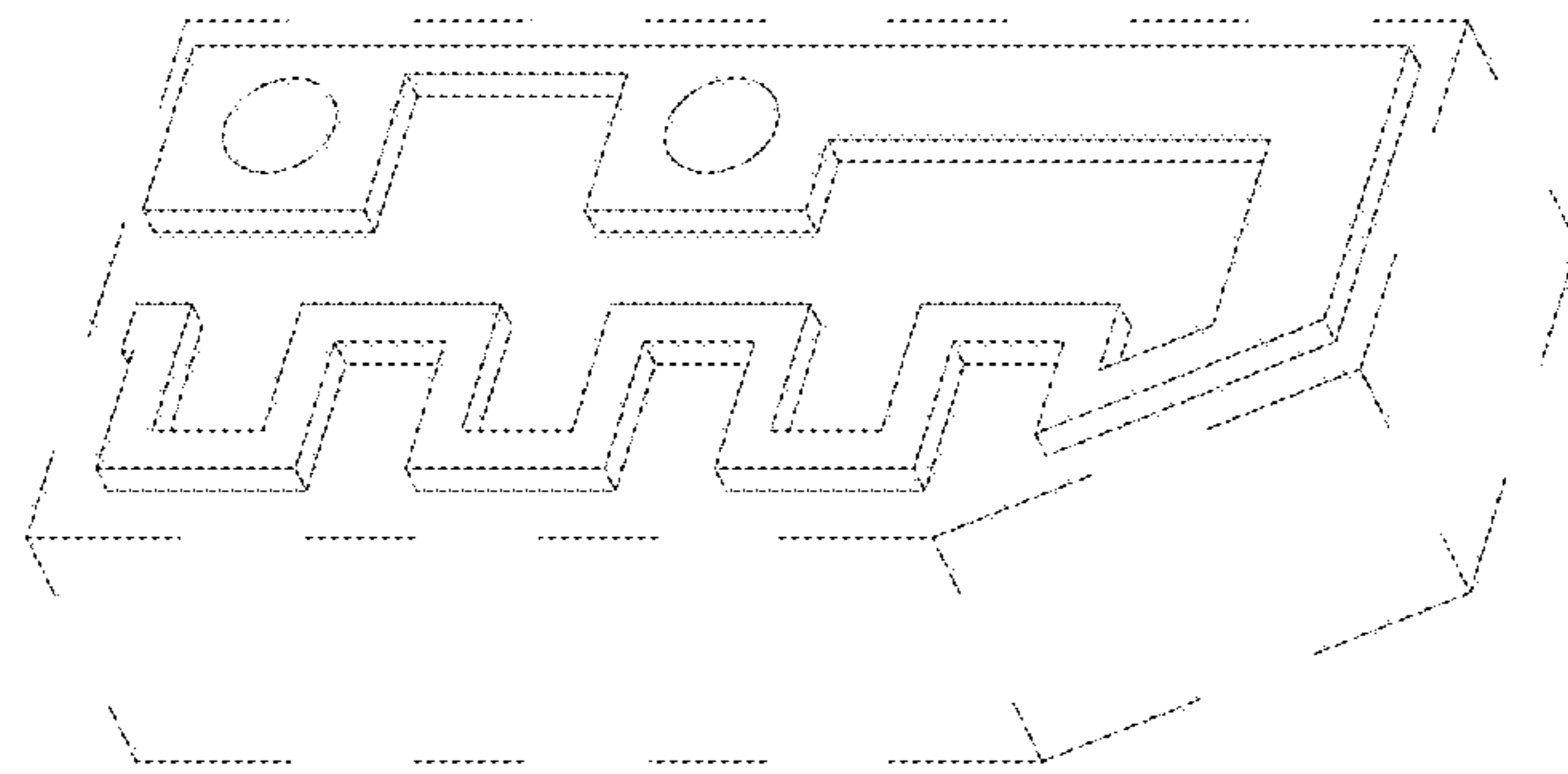


FIG. 5

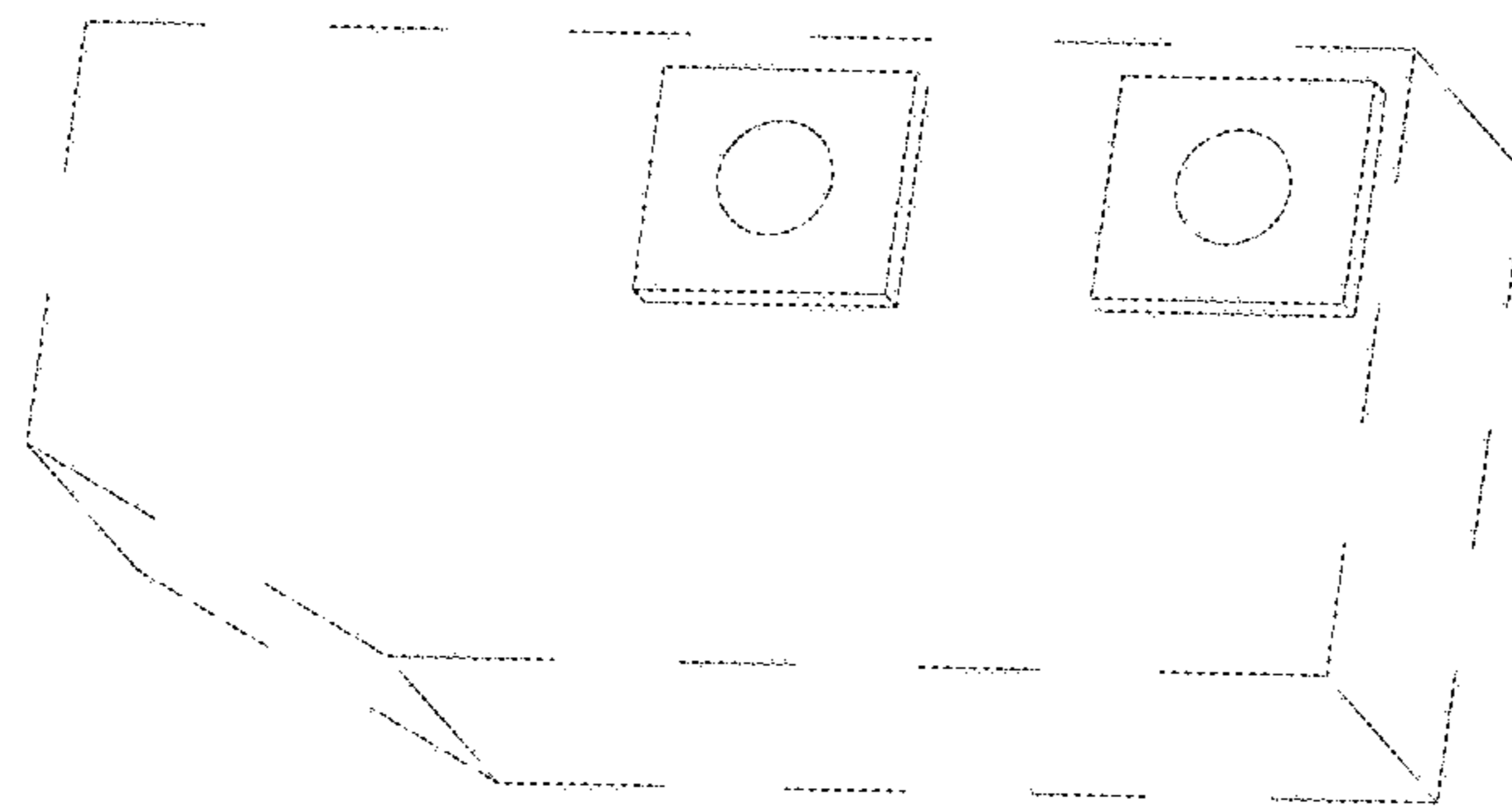


FIG. 6

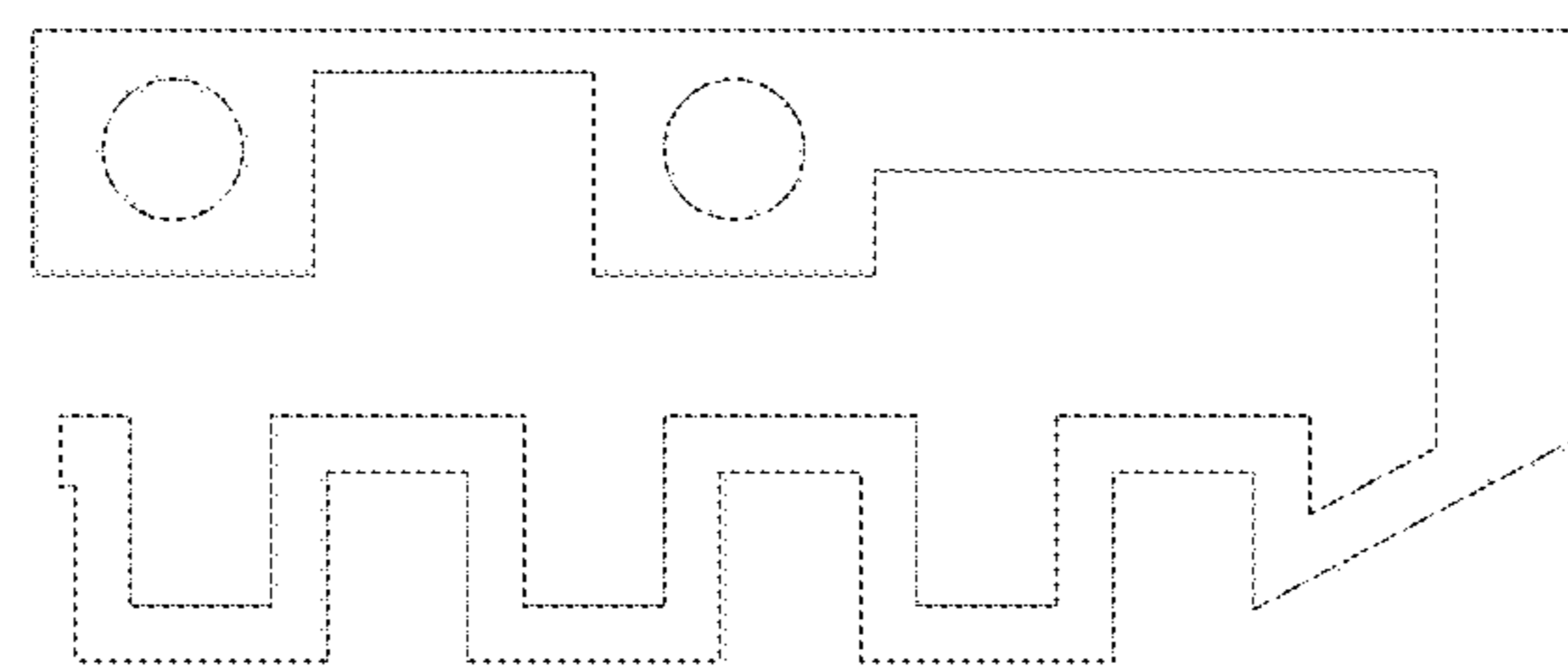


FIG. 7

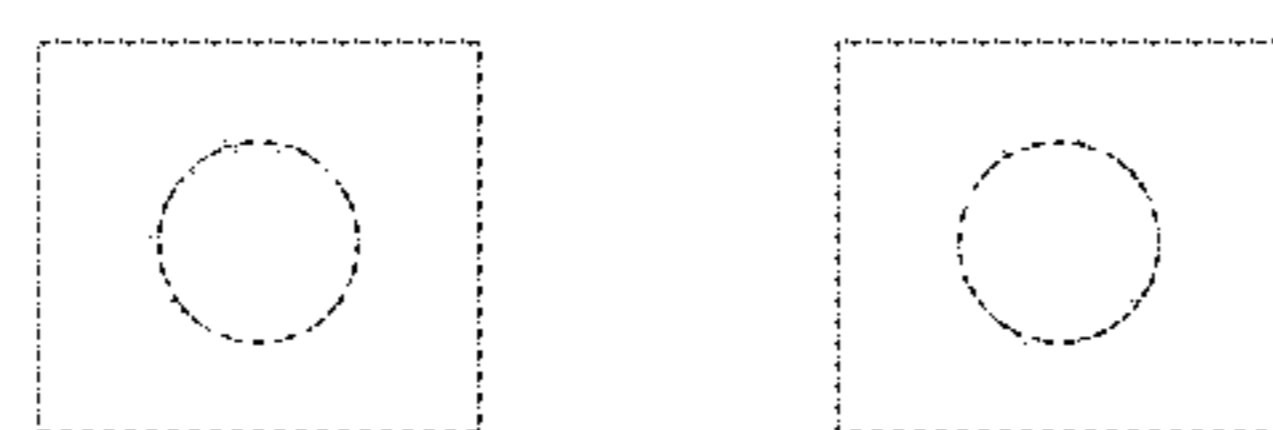


FIG. 8