



US00D886751S

(12) **United States Design Patent** (10) **Patent No.:** **US D886,751 S**
Lee et al. (45) **Date of Patent:** **** *Jun. 9, 2020**

(54) **LIGHT EMITTING DIODE MODULE**

(71) Applicant: **Genesis Photonics Inc.**, Tainan (TW)

(72) Inventors: **Hao-Chung Lee**, Taoyuan (TW);
Xun-Xain Zhan, Tainan (TW);
Yu-Feng Lin, Tainan (TW)

(73) Assignee: **Genesis Photonics Inc.**, Tainan (TW)

(*) Notice: This patent is subject to a terminal disclaimer.

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

(21) Appl. No.: **29/598,781**

(22) Filed: **Mar. 29, 2017**

(30) **Foreign Application Priority Data**

Sep. 29, 2016 (TW) 105305754

(51) **LOC (12) Cl.** **13-03**

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

(58) **Field of Classification Search**

USPC D13/180; D26/1; D21/491
CPC ... H01L 25/167; H01L 25/0753; H01L 27/15;
H01L 27/156; H01L 31/02; H01L 33/00;
H01L 33/04; H01L 33/08; H01L 33/10;
H01L 33/20; H01L 33/38; H01L 33/42;
H01L 33/48; H01L 33/483; H01L 33/486

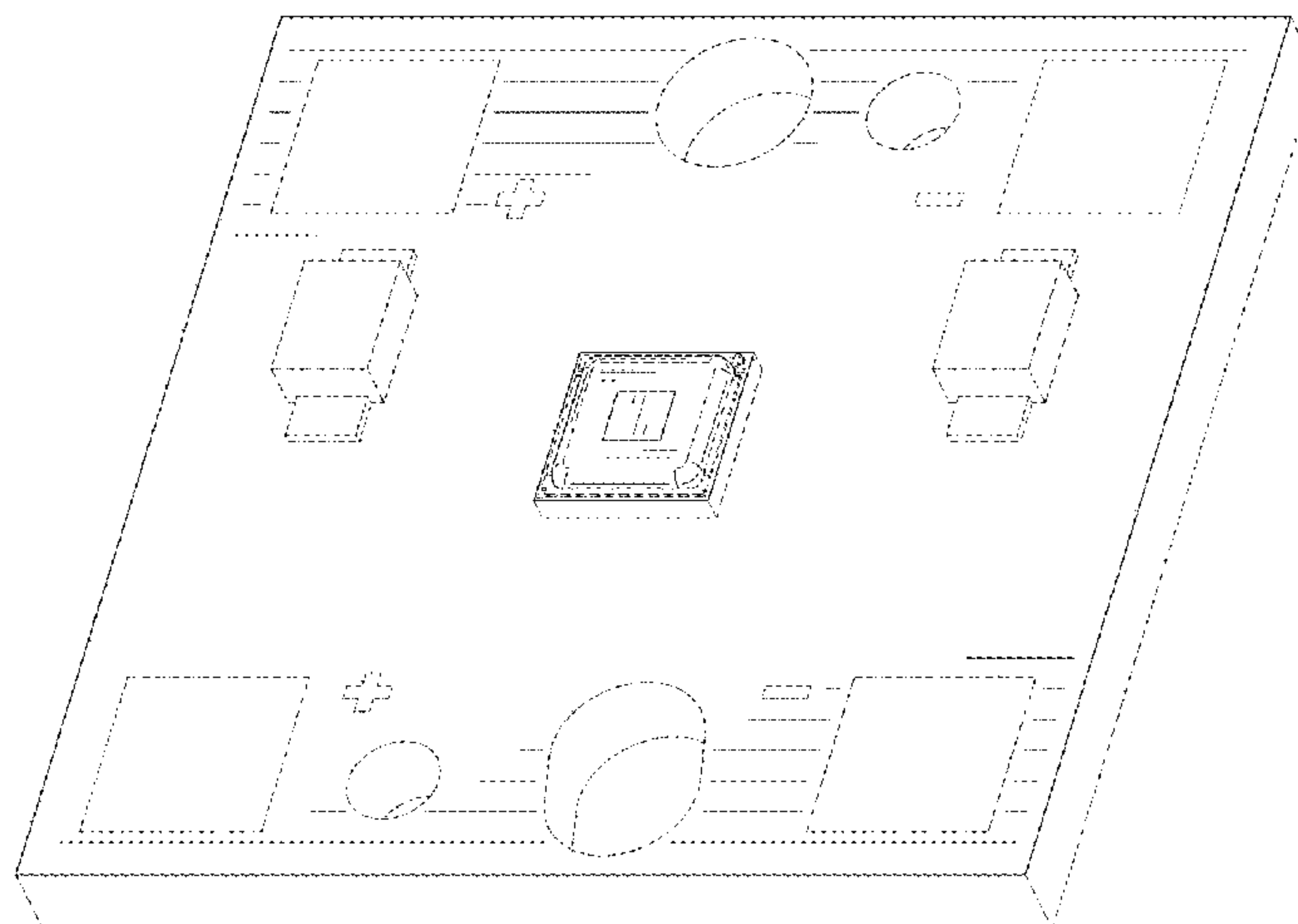
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D522,466 S 6/2006 Sumitani
D565,515 S 4/2008 Chen
D570,506 S 6/2008 Uemoto et al.
D575,245 S 8/2008 Yen
D611,436 S 3/2010 Ho
D625,694 S 10/2010 Morikawa et al.
D634,863 S 3/2011 Leung
D636,356 S 4/2011 Yamada

D636,900 S 4/2011 Chou et al.
D646,644 S 10/2011 Chen et al.
D646,645 S 10/2011 Chen et al.
D646,646 S 10/2011 Chen et al.
D646,647 S 10/2011 Chen et al.
D647,491 S * 10/2011 Chen D13/180
D647,492 S 10/2011 Imai et al.
D660,811 S * 5/2012 Miyoshi D13/180
D665,519 S 8/2012 Oyaizu
D667,145 S 9/2012 Bierhuizen et al.
D671,674 S 11/2012 Cho
D676,002 S 2/2013 Watanabe
D677,228 S * 3/2013 Miyoshi D13/180
D677,229 S * 3/2013 Miyoshi D13/180
8,531,126 B2 9/2013 Kaihotsu et al.
8,581,284 B2 11/2013 Seko
D710,811 S 8/2014 Chen et al.
D714,744 S 10/2014 Hsing Chen et al.
8,878,221 B2 11/2014 Lee et al.
D719,535 S 12/2014 Iino et al.
8,901,596 B2 12/2014 Huang
D733,670 S 7/2015 Hsing Chen et al.
D749,051 S 2/2016 Clark et al.
9,379,094 B2 * 6/2016 Wada H01L 33/46
D761,213 S * 7/2016 Lee D13/180
D761,214 S * 7/2016 Lee D13/180
D762,596 S 8/2016 Lee et al.
D768,093 S * 10/2016 Wada D13/180
D772,181 S 11/2016 Lee et al.
9,515,055 B2 12/2016 Britt et al.
D778,851 S 2/2017 Matsumoto et al.
D790,487 S 6/2017 Lee et al.
D796,456 S * 9/2017 Lee D13/180
9,953,956 B2 4/2018 Lee et al.
D825,499 S * 8/2018 Liu D13/180
D843,957 S * 3/2019 Liu D13/180
2006/0049422 A1 3/2006 Shoji
2006/0131600 A1 6/2006 Nakaoka et al.
2007/0080438 A1 * 4/2007 Yamanaka H01L 23/147
257/676
2009/0014739 A1 1/2009 Chiang et al.
2011/0186874 A1 8/2011 Shum
2012/0007076 A1 1/2012 Cho
2013/0128581 A1 * 5/2013 Hsu F21V 19/0015
362/249.02
2014/0239320 A1 * 8/2014 Miyoshi H01L 25/0753
257/88
2015/0204525 A1 * 7/2015 Shen F21K 9/20
362/231
2016/0118561 A1 * 4/2016 Hung H01L 33/62
257/88
2016/0282625 A1 * 9/2016 Fleck H01L 33/60
2016/0284666 A1 * 9/2016 Lee H01L 27/0248



2016/0358896	A1 *	12/2016	Jeon	H01L 25/0753
2017/0025572	A1 *	1/2017	Shichijo	H01L 33/20
2017/0263591	A1 *	9/2017	Abe	H01L 33/504
2017/0358724	A1 *	12/2017	Shichijo	H01L 27/156
2018/0190881	A1	7/2018	Lin	
2018/0190884	A1 *	7/2018	Chang	H01L 33/58
2018/0259137	A1 *	9/2018	Lee	F21S 2/00
2018/0301610	A1 *	10/2018	Xu	H01L 33/642
2019/0006554	A1 *	1/2019	Kususe	H01L 33/0075
2019/0067536	A1 *	2/2019	Oka	H01L 33/505

FOREIGN PATENT DOCUMENTS

JP	D1300883	5/2007
JP	D1504934	8/2014
KR	3004306900001	11/2006
TW	D109667	3/2006
TW	D125767	11/2008
TW	D136583	8/2010
TW	D140184	4/2011
TW	D141207	6/2011
TW	D141208	6/2011
TW	D141209	6/2011
TW	D141210	6/2011
TW	D146480	4/2012
TW	D161478	7/2014
TW	D161897	7/2014
TW	D173073	1/2016
TW	D174129	3/2016
TW	D174515	3/2016
TW	D176421	6/2016

OTHER PUBLICATIONS

“Notice of Allowance of Taiwan Related Application, application No. 105305755”, dated Sep. 20, 2017, p. 1-p. 5.

“Notice of Allowance of Related U.S. Appl. No. 29/598,780” dated Feb. 15, 2019, p. 1-p. 8.

Hao-Chung Lee et al., “Light Emitting Diode Module”, Unpublished U.S. Appl. No. 29/522,731, filed Apr. 2, 2015.

“Notice of Allowance of Related U.S. Appl. No. 29/522,731”, dated Mar. 9, 2016, p. 1-p. 11.

“Notice of Allowance of Taiwan Related Application, application No. 104301753”, dated Nov. 18, 2015, p. 1-p. 3.

“Notice of Allowance of Taiwan Related Application, application No. 104301807”, dated Sep. 25, 2015, p. 1-p. 3.

Hao-Chung Lee et al., “Light Emitting Diode Package”, Unpublished U.S. Appl. No. 29/598,780, filed Mar. 29, 2017.

“Notice of allowance of Taiwan Related Application No. 104301752”, dated Nov. 18, 2015, p. 1-p. 3.

“Notice of allowance of Related U.S. Appl. No. 29/522,733”, dated Mar. 2, 2016, p. 1-p. 11.

“Notice of allowance of Related U.S. Appl. No. 29/568,192”, dated Apr. 25, 2017, p. 1-p. 9.

“Notice of allowance of Taiwan Related Application No. 105305761”, dated Sep. 20, 2017, p. 1-p. 3.

“Notice of allowance of Taiwan Related Application No. 106304087”, dated Feb. 22, 2018, p. 1-p. 3.

“Notice of allowance of Taiwan Related Application No. 106304086”, dated Feb. 22, 2018, p. 1-p. 3.

“Notice of allowance of Taiwan Related Application No. 106304093”, dated Feb. 22, 2018, p. 1-p. 3.

“Notice of allowance of Taiwan Related Application No. 106304092”, dated Feb. 22, 2018, p. 1-p. 3.

“Notice of allowance of Taiwan Related Application No. 106304091”, dated Feb. 22, 2018, p. 1-p. 3.

“Notice of allowance of Taiwan Related Application No. 106304085”, dated Feb. 22, 2018, p. 1-p. 3.

“Notice of allowance of Related U.S. Appl. No. 29/598,778”, dated Mar. 27, 2018, p. 1-p. 17.

“Notice of allowance of Related U.S. Appl. No. 29/638,942”, dated Nov. 7, 2018, p. 1-p. 23.

“Notice of allowance of Taiwan Related Application No. 106301365”, dated Apr. 13, 2018, p. 1-p. 3.

“Notice of allowance of Taiwan Related Application No. 107301186”, dated Jul. 4, 2018, p. 1-p. 3.

“Notice of allowance of Taiwan Related Application No. 106303711”, dated Apr. 13, 2018, p. 1-p. 3.

“Notice of allowance of Taiwan Related Application No. 107301138”, dated Aug. 15, 2018, p. 1-p. 3.

“Notice of allowance of Taiwan Related Application No. 107301103”, dated Aug. 15, 2018, p. 1-p. 3.

“Office action of Taiwan Related Application No. 107301108”, dated Aug. 15, 2018, p. 1-p. 3.

“Office Action of Taiwan Related Application No. 107301117”, dated Aug. 15, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301132”, dated Aug. 15, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301126”, dated Aug. 15, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301113”, dated Aug. 15, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301112”, dated Aug. 15, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301111”, dated Aug. 15, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301133”, dated Aug. 15, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301134”, dated Aug. 15, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301135”, dated Aug. 15, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301136”, dated Aug. 15, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301137”, dated Aug. 15, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301125”, dated Aug. 15, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301124”, dated Aug. 15, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301121”, dated Jul. 27, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301114”, dated Jul. 27, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301128”, dated Jul. 27, 2018, pp. 1-3.

“Office Action of Taiwan Related Application No. 107301127”, dated Jul. 27, 2018, pp. 1-3.

“Notice of allowance of Taiwan Related Application No. 107301123”, dated Jul. 4, 2018, pp. 1-3.

“Notice of allowance of Taiwan Related Application No. 107301106”, dated Jul. 4, 2018, pp. 1-3.

“Notice of allowance of Taiwan Related Application No. 107301105”, dated Jul. 4, 2018, pp. 1-3.

“Notice of allowance of Taiwan Related Application No. 107301104”, dated Jul. 4, 2018, pp. 1-3.

“Notice of allowance of Taiwan Related Application No. 107301110”, dated Jul. 4, 2018, pp. 1-3.

“Notice of allowance of Taiwan Related Application No. 107301109”, dated Jul. 4, 2018, pp. 1-3.

“Notice of allowance of Taiwan Related Application No. 107301122”, dated Jul. 4, 2018, pp. 1-3.

* cited by examiner

Primary Examiner — Selina Sikder
(74) *Attorney, Agent, or Firm* — JCIPRNET

(57) CLAIM

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

DESCRIPTION

FIG. 1 is a perspective view of a first embodiment of the light emitting diode module showing our new design;

FIG. 2 is a front view of the light emitting diode module of FIG. 1;
 FIG. 3 is a rear view of the light emitting diode module of FIG. 1;
 FIG. 4 is a left view of the light emitting diode module of FIG. 1;
 FIG. 5 is a right view of the light emitting diode module of FIG. 1;
 FIG. 6 is a top view of the light emitting diode module of FIG. 1;
 FIG. 7 is a bottom view of the light emitting diode module of FIG. 1;
 FIG. 8 is a perspective view of a second embodiment of the light emitting diode module showing our new design;
 FIG. 9 is a front view of the light emitting diode module of FIG. 8;
 FIG. 10 is a rear view of the light emitting diode module of FIG. 8;
 FIG. 11 is a left view of the light emitting diode module of FIG. 8;
 FIG. 12 is a right view of the light emitting diode module of FIG. 8;
 FIG. 13 is a top view of the light emitting diode module of FIG. 8;
 FIG. 14 is a bottom view of the light emitting diode module of FIG. 8;
 FIG. 15 is a perspective view of a third embodiment of the light emitting diode module showing our new design;
 FIG. 16 is a front view of the light emitting diode module of FIG. 15;
 FIG. 17 is a rear view of the light emitting diode module of FIG. 15;
 FIG. 18 is a left view of the light emitting diode module of FIG. 15;
 FIG. 19 is a right view of the light emitting diode module of FIG. 15;

FIG. 20 is a top view of the light emitting diode module of FIG. 15;
 FIG. 21 is a bottom view of the light emitting diode module of FIG. 15;
 FIG. 22 is a perspective view of a fourth embodiment of the light emitting diode module showing our new design;
 FIG. 23 is a front view of the light emitting diode module of FIG. 22;
 FIG. 24 is a rear view of the light emitting diode module of FIG. 22;
 FIG. 25 is a left view of the light emitting diode module of FIG. 22;
 FIG. 26 is a right view of the light emitting diode module of FIG. 22;
 FIG. 27 is a top view of the light emitting diode module of FIG. 22;
 FIG. 28 is a bottom view of the light emitting diode module of FIG. 22;
 FIG. 29 is a perspective view of a fifth embodiment of the light emitting diode module showing our new design;
 FIG. 30 is a front view of the light emitting diode module of FIG. 29;
 FIG. 31 is a rear view of the light emitting diode module of FIG. 29;
 FIG. 32 is a left view of the light emitting diode module of FIG. 29;
 FIG. 33 is a right view of the light emitting diode module of FIG. 29;
 FIG. 34 is a top view of the light emitting diode module of FIG. 29; and,
 FIG. 35 is a bottom view of the light emitting diode module of FIG. 29.
 The broken lines in the drawings are included for the purpose of illustration and form no part of the claimed design.

1 Claim, 25 Drawing Sheets

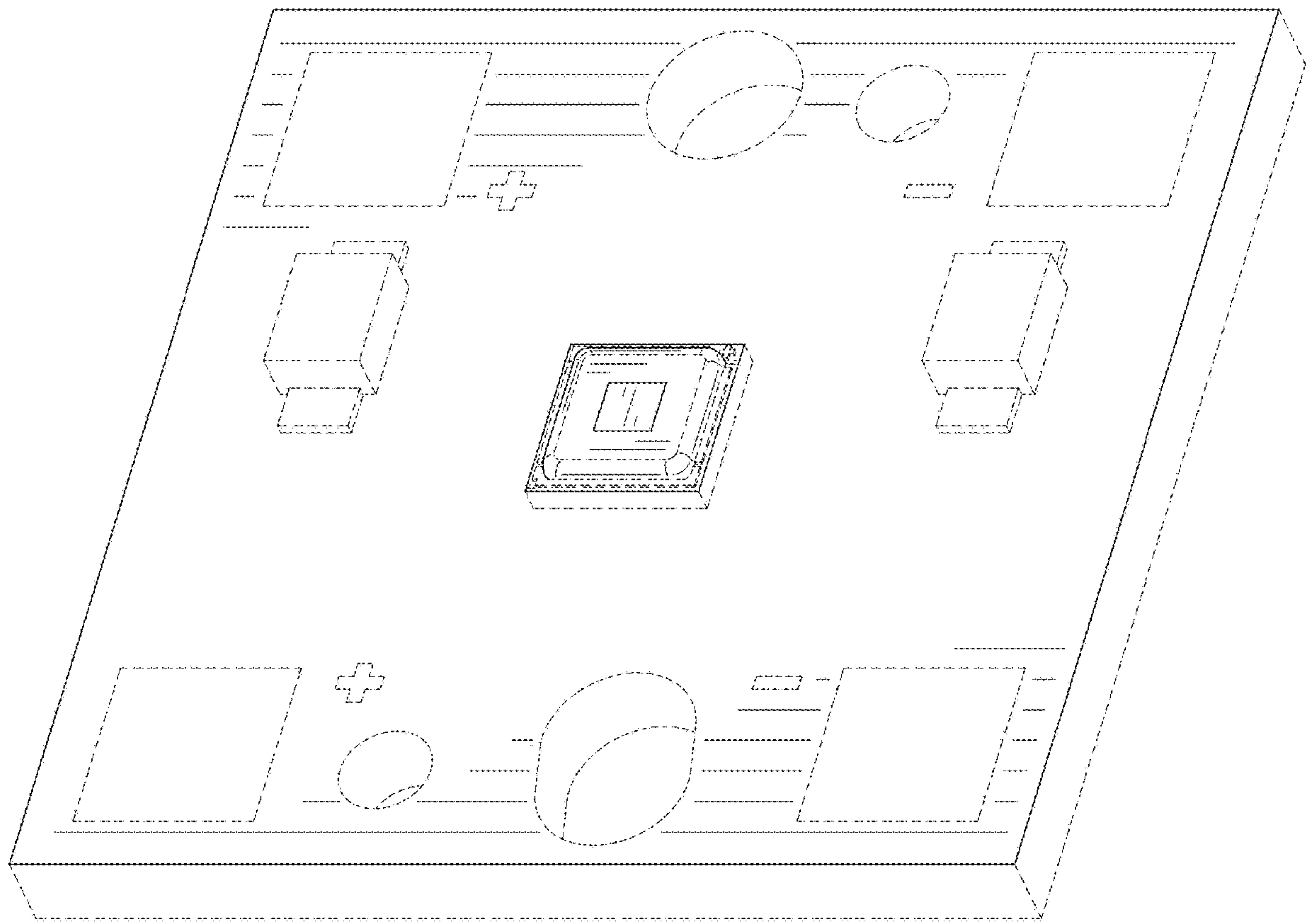


FIG. 1

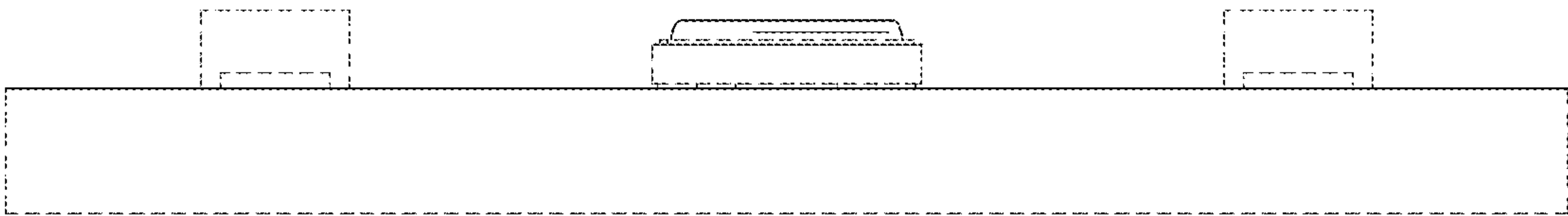


FIG. 2

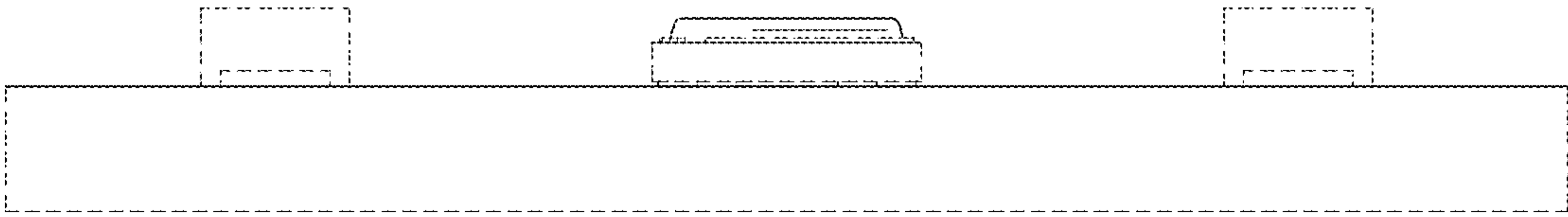


FIG. 3

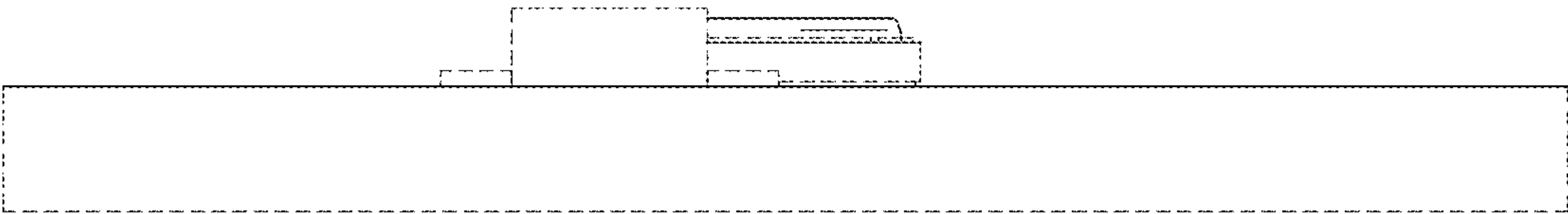


FIG. 4

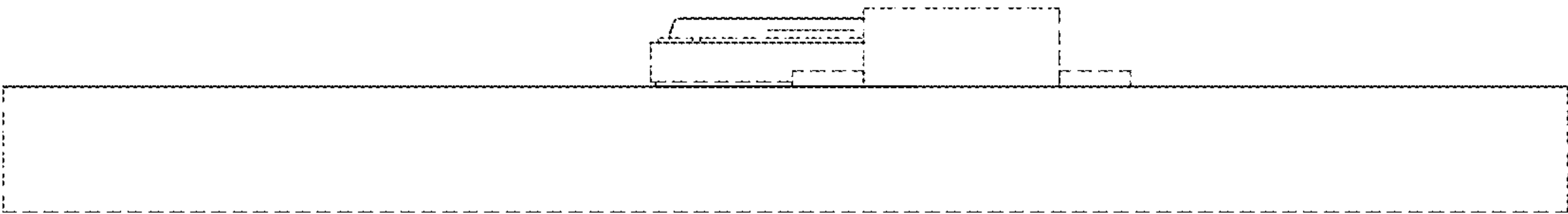


FIG. 5

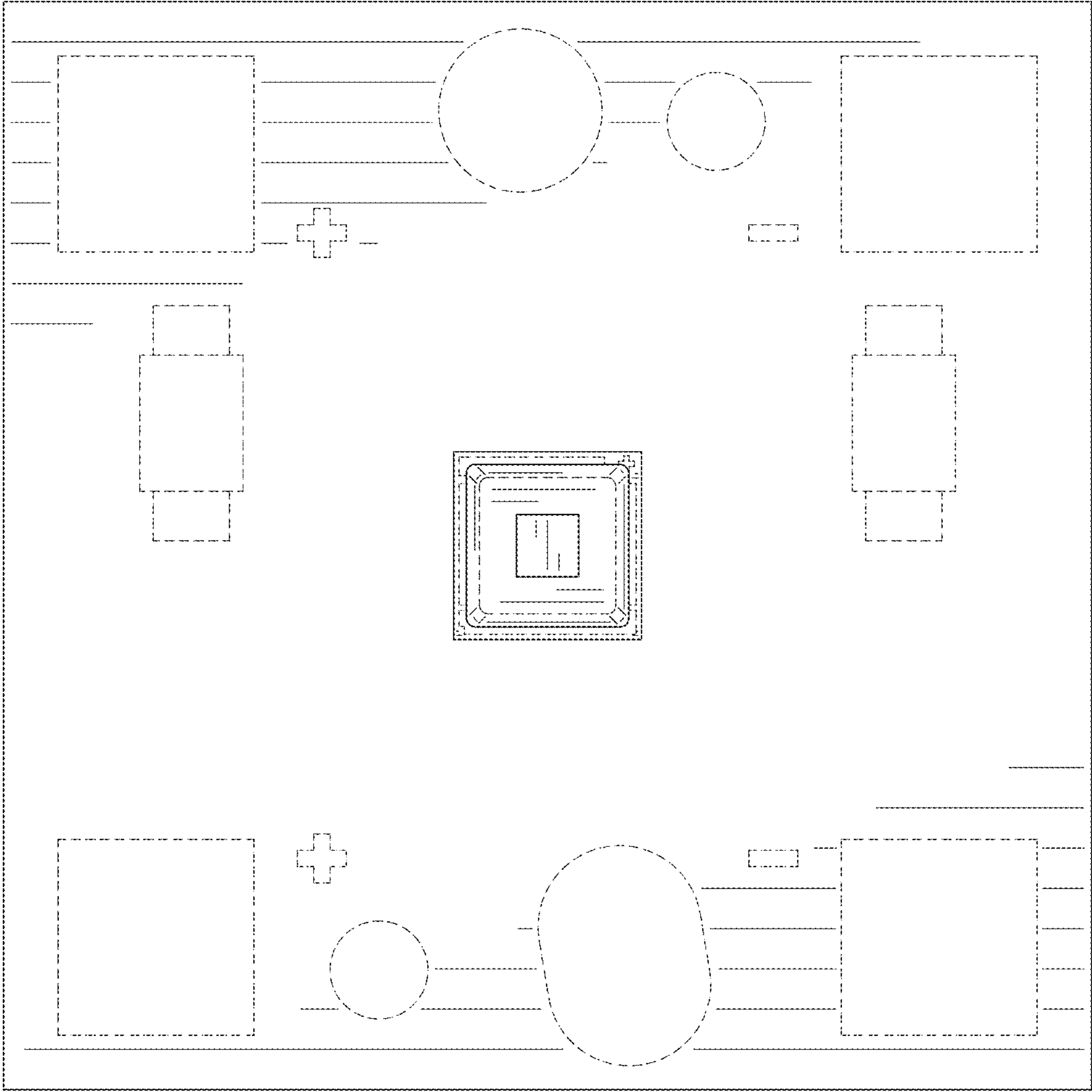


FIG. 6

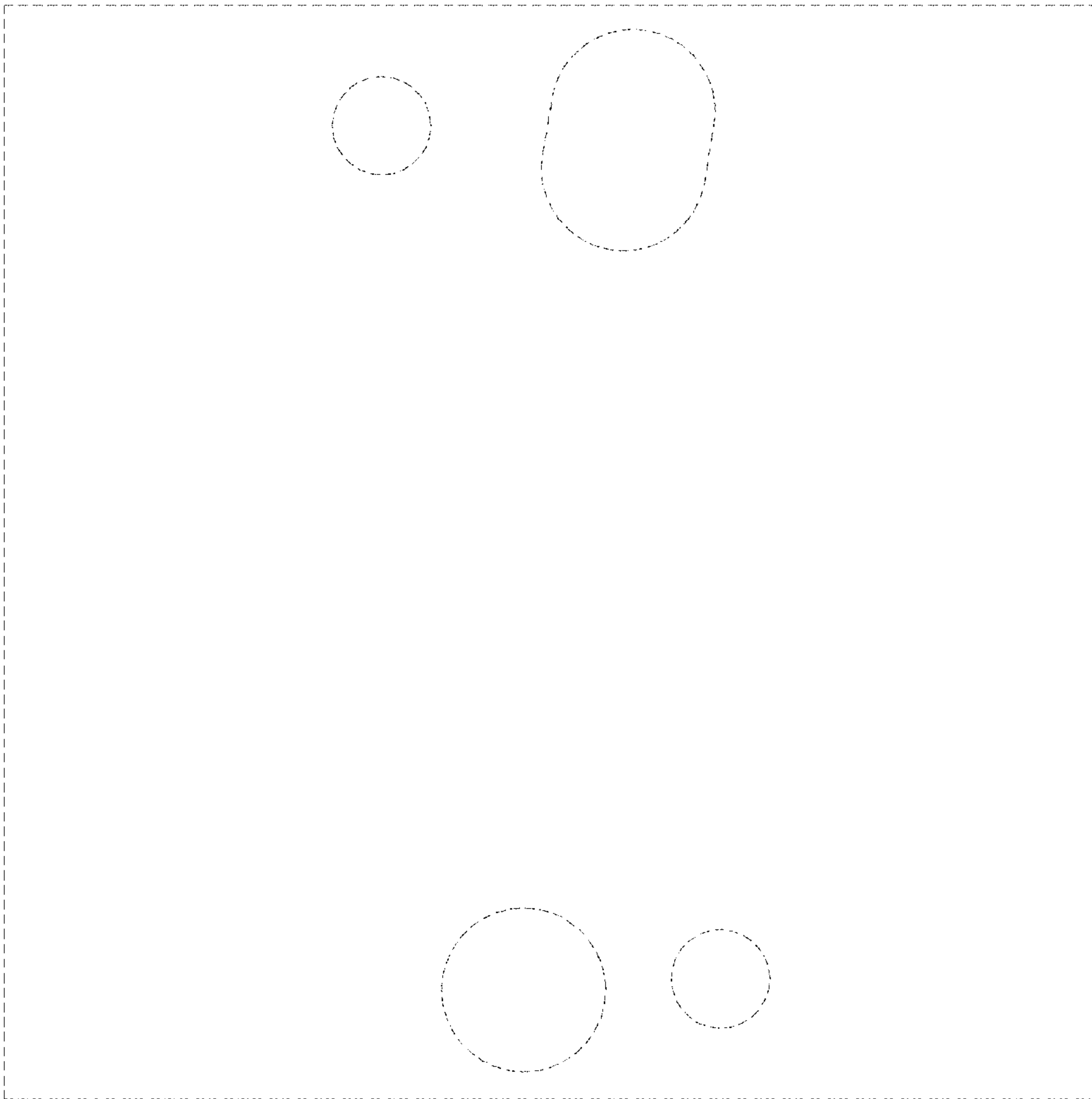


FIG. 7

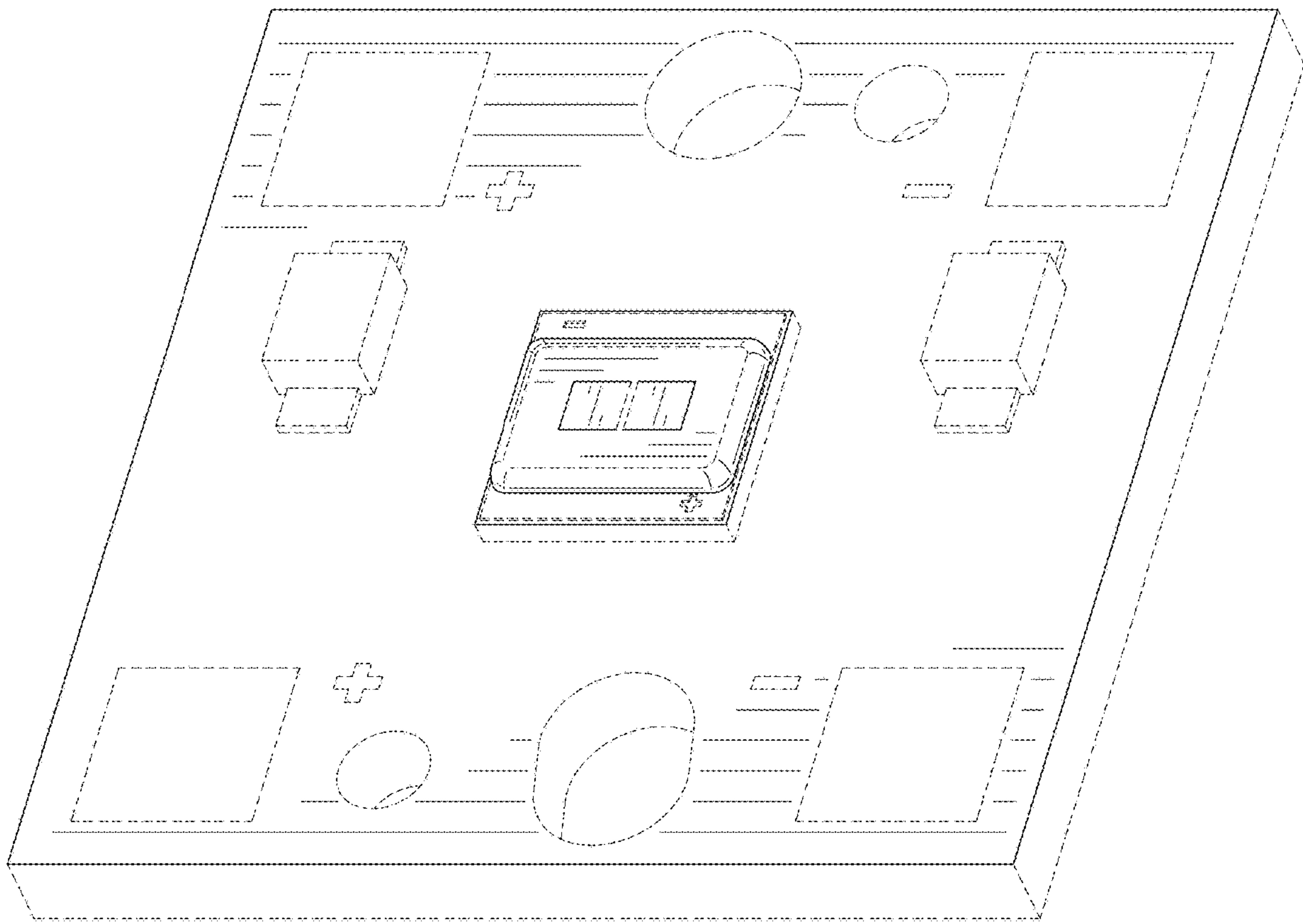


FIG. 8

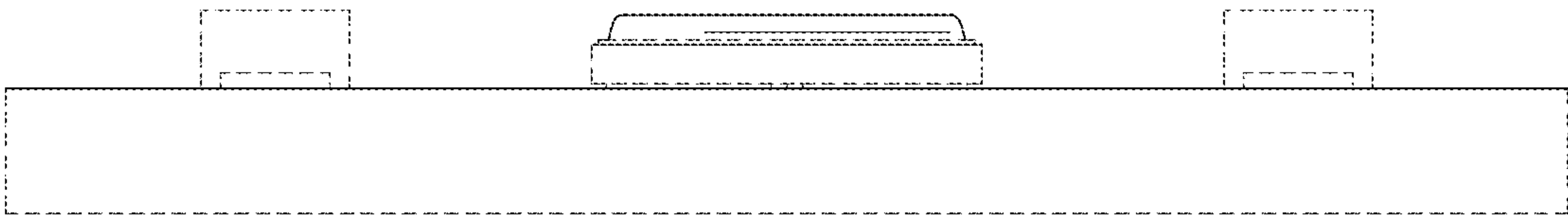


FIG. 9

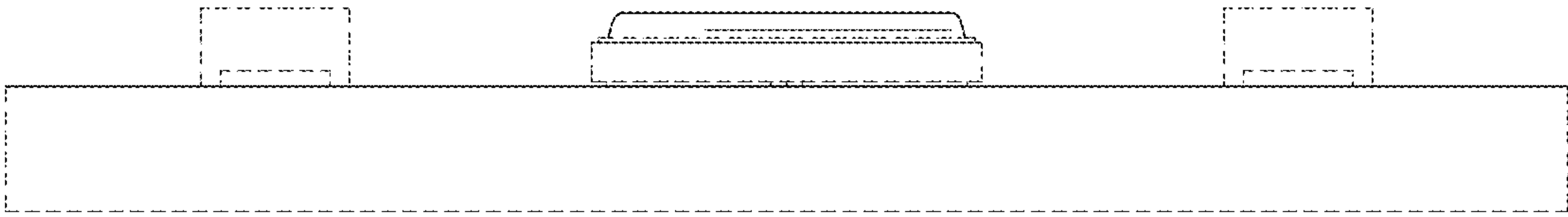


FIG. 10

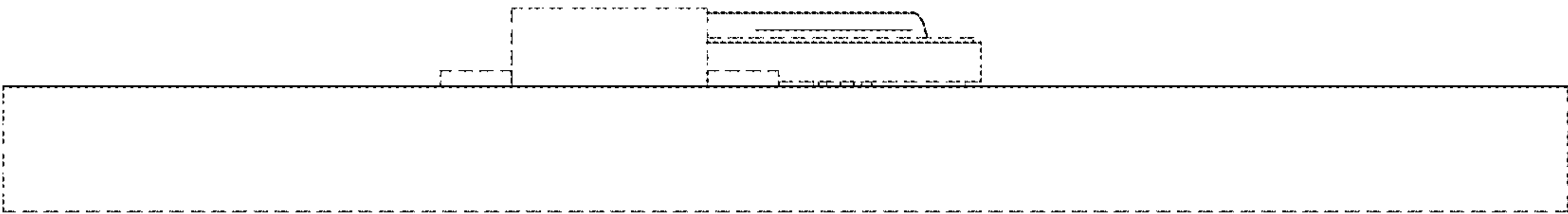


FIG. 11

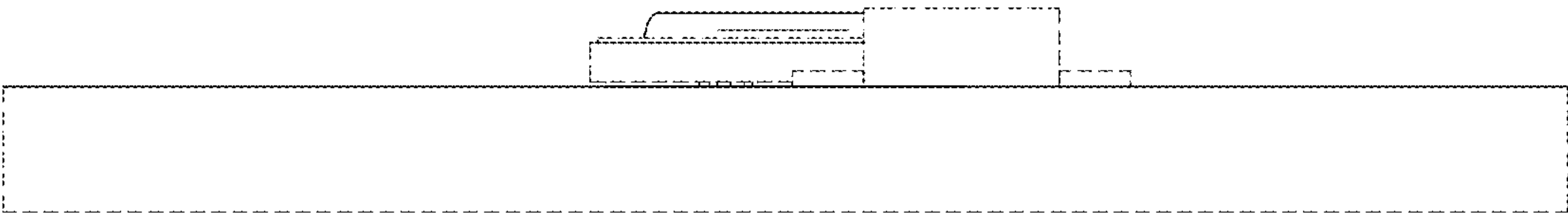


FIG. 12

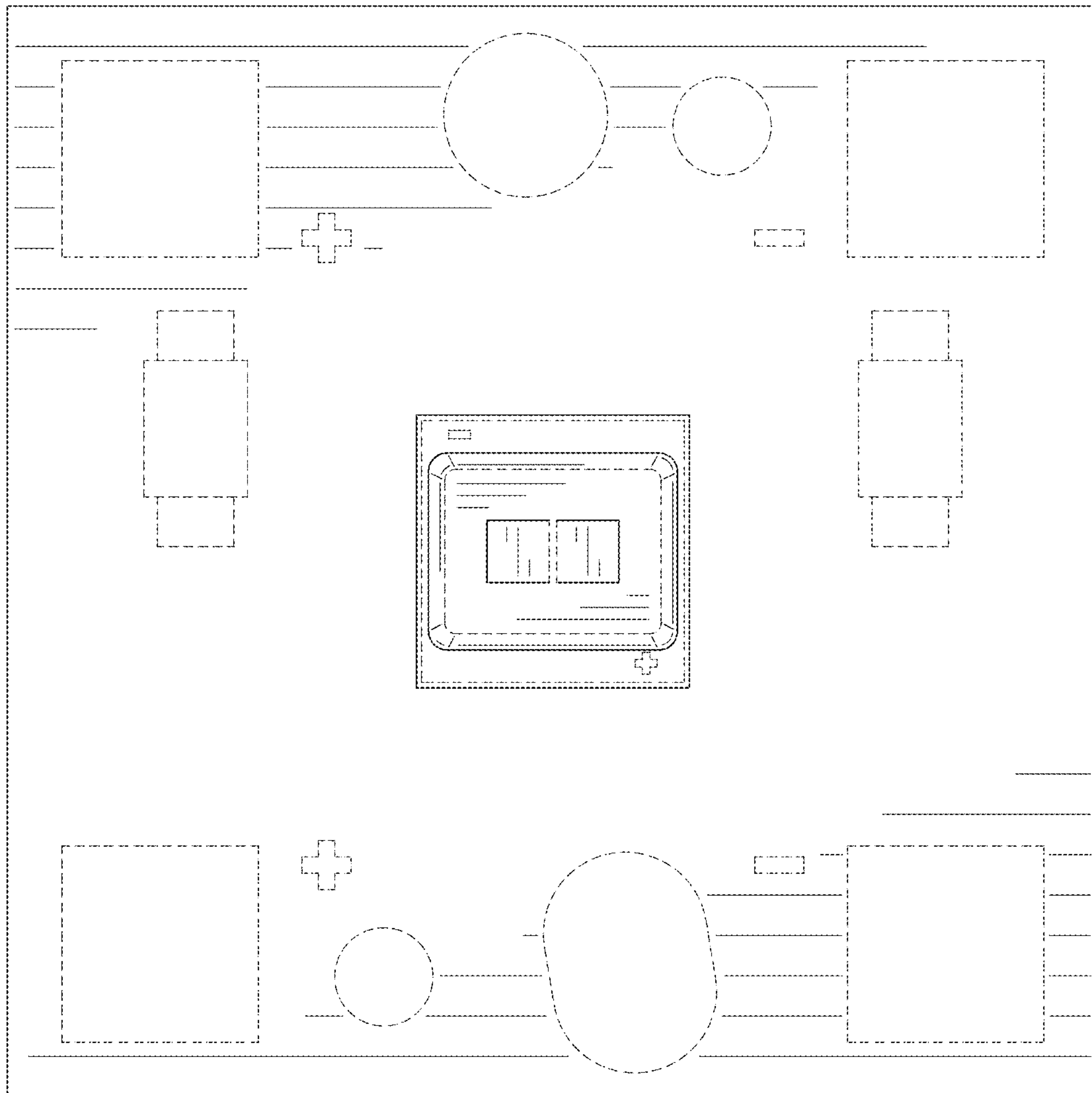


FIG. 13

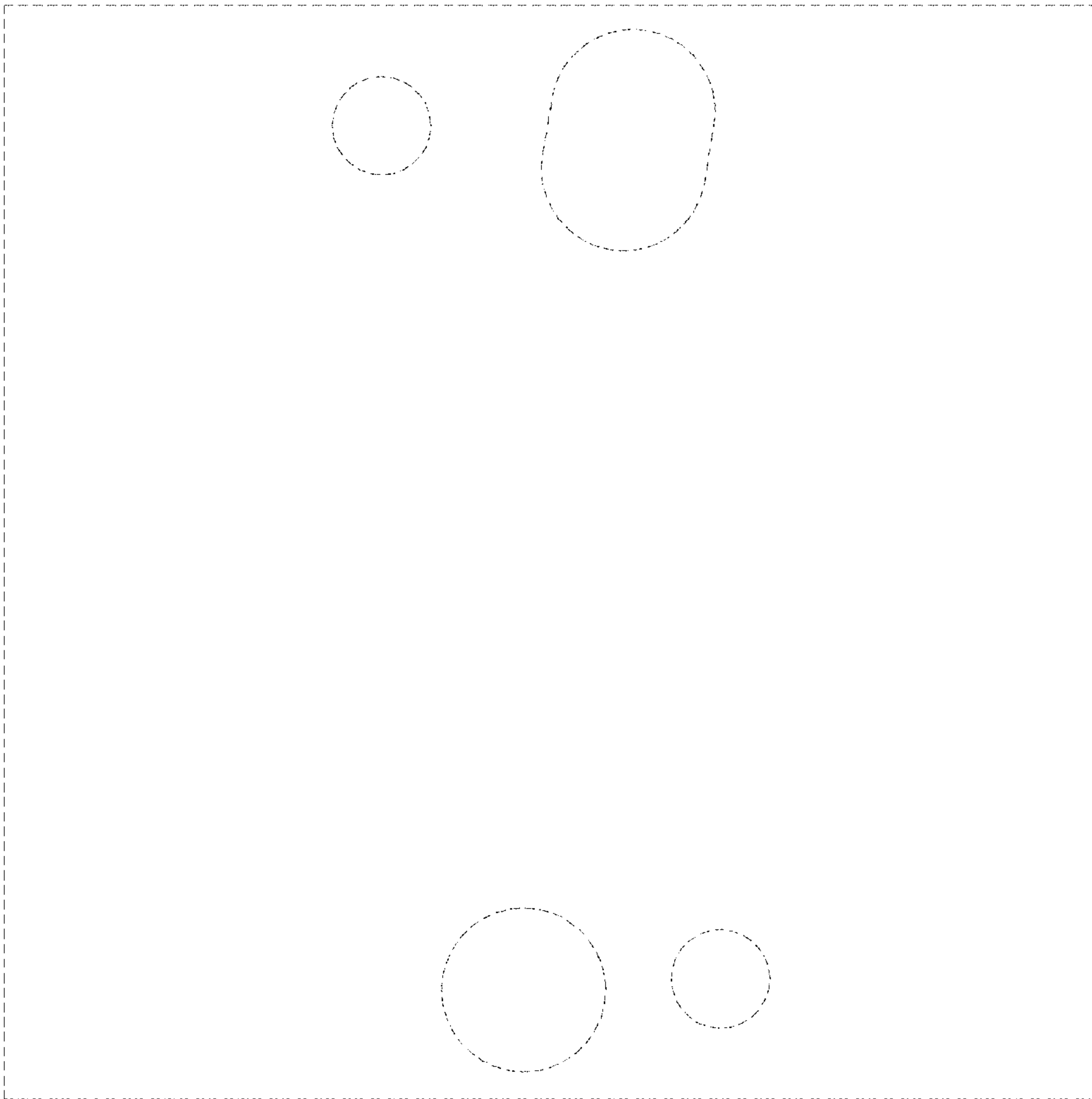


FIG. 14

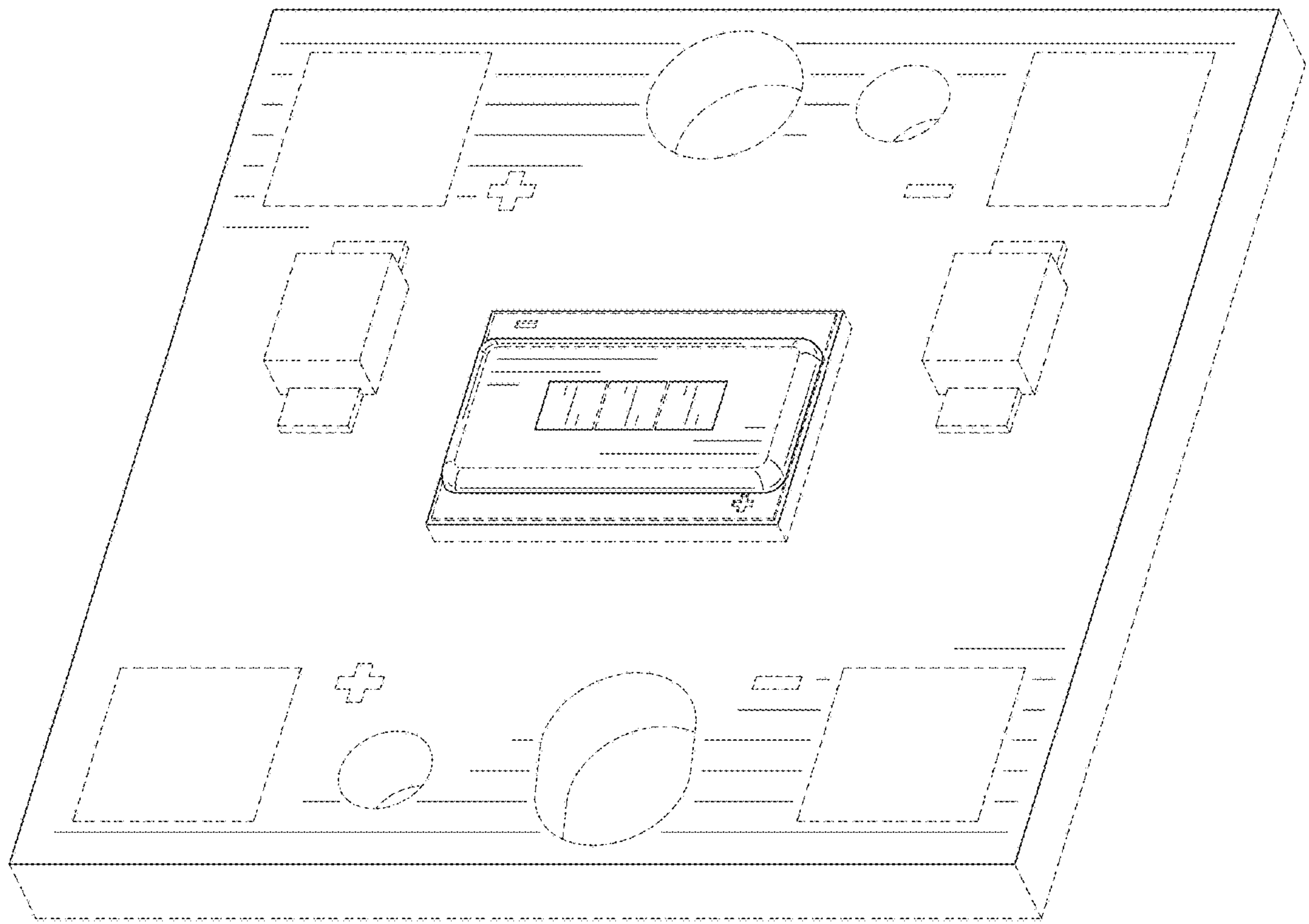


FIG. 15

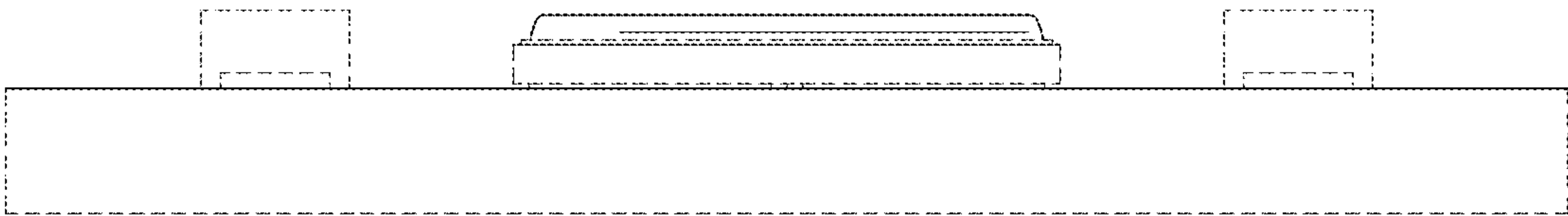


FIG. 16

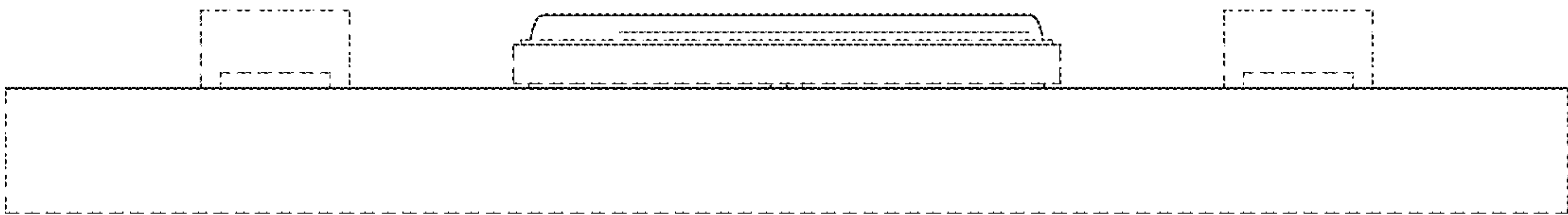


FIG. 17

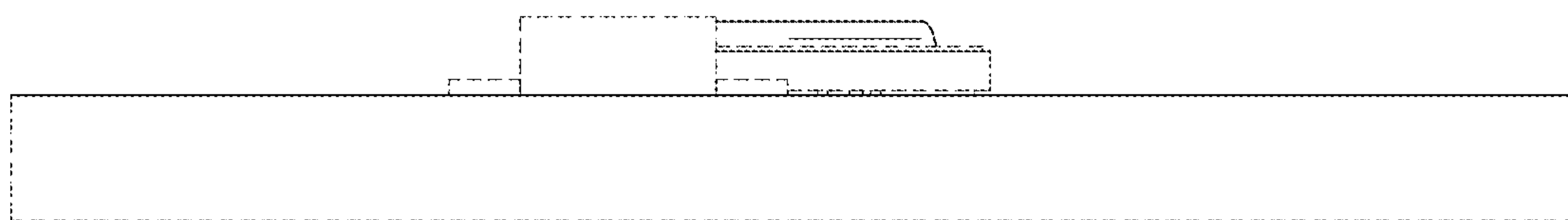


FIG. 18

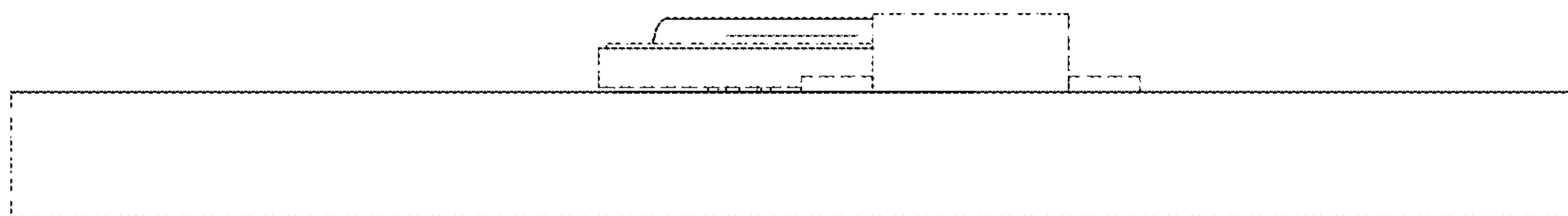


FIG. 19

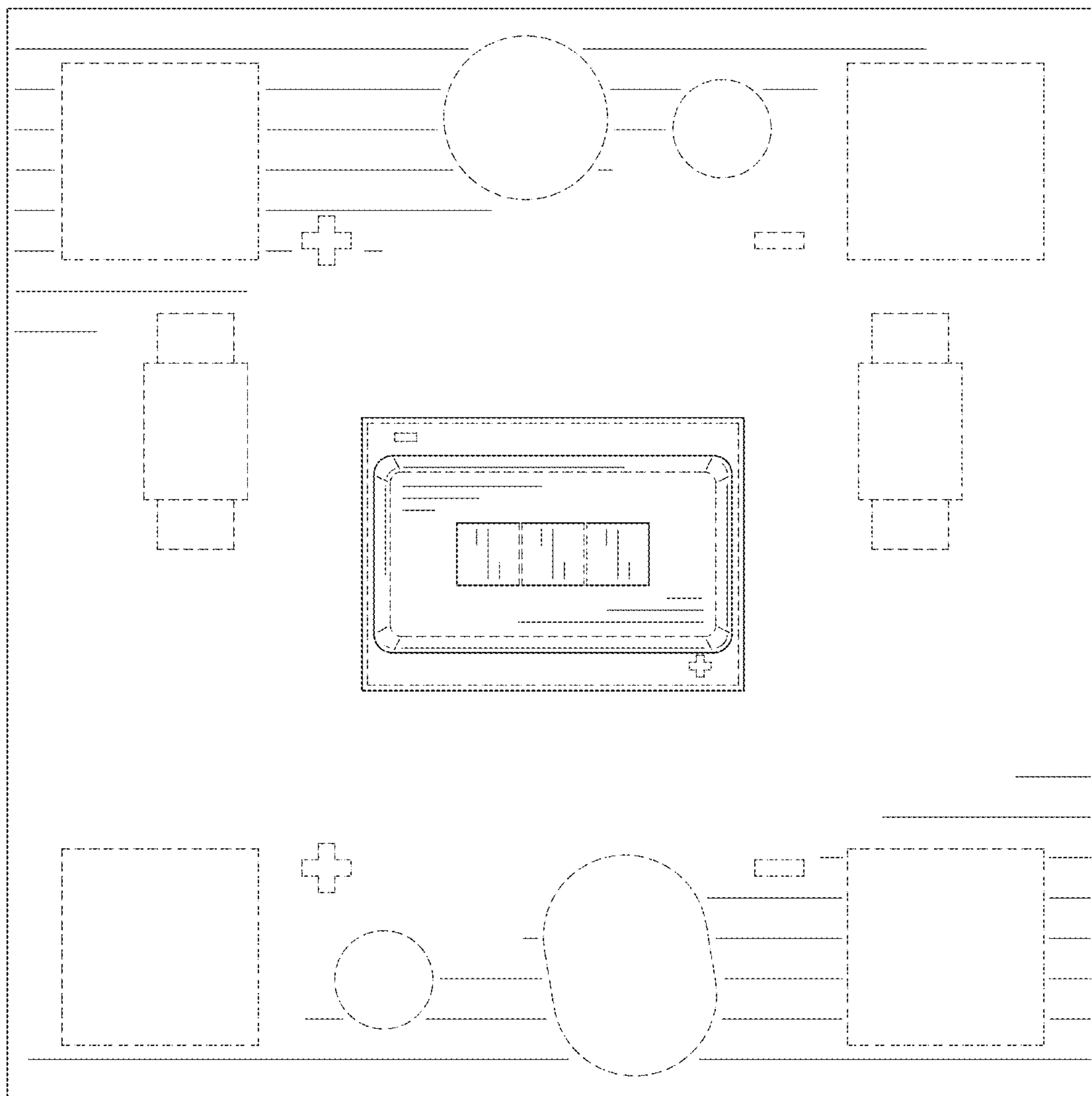


FIG. 20

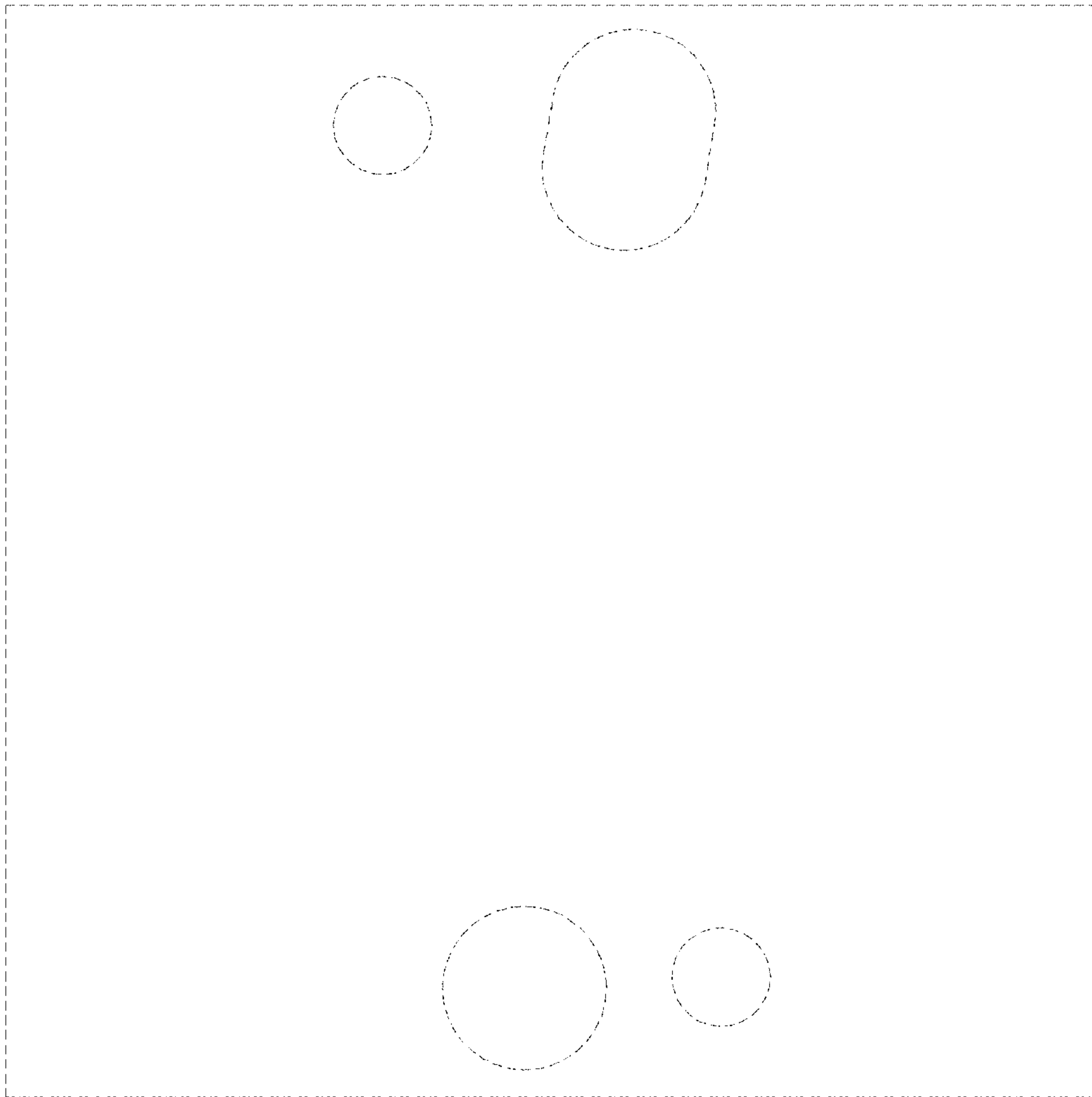


FIG. 21

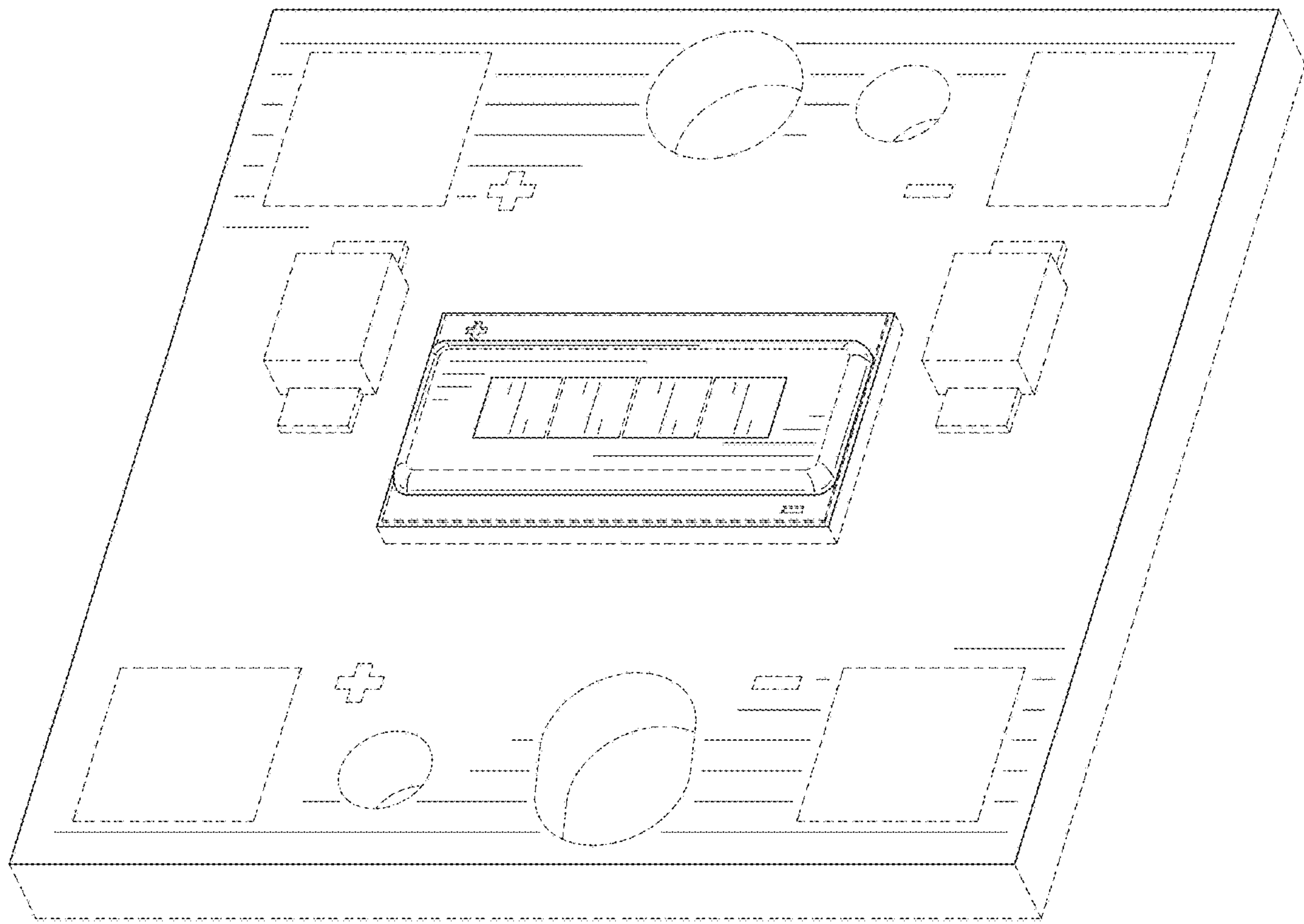


FIG. 22

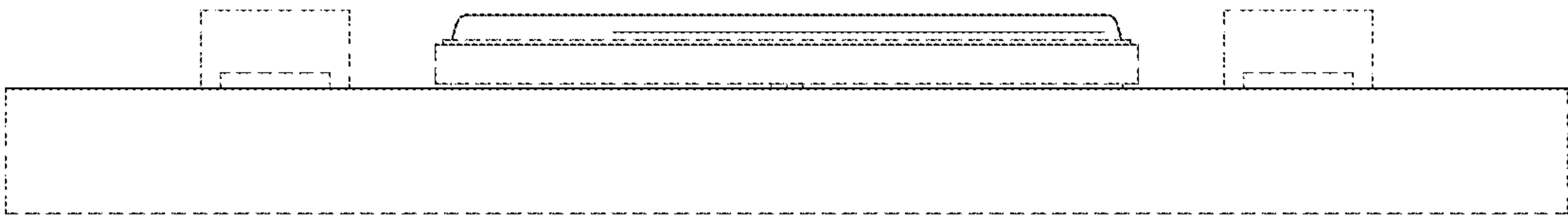


FIG. 23

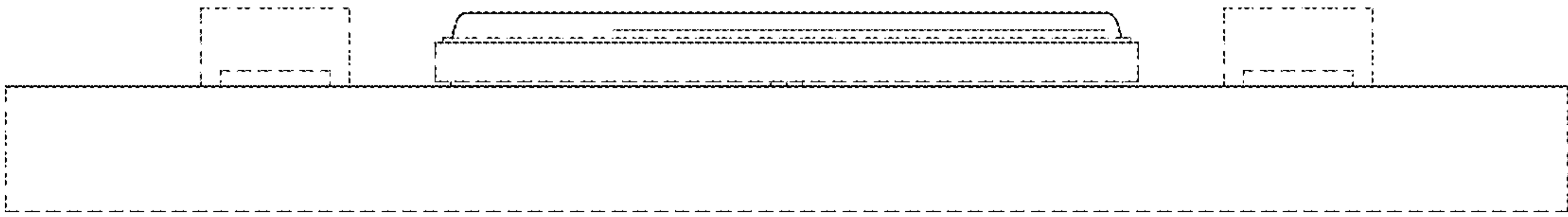


FIG. 24

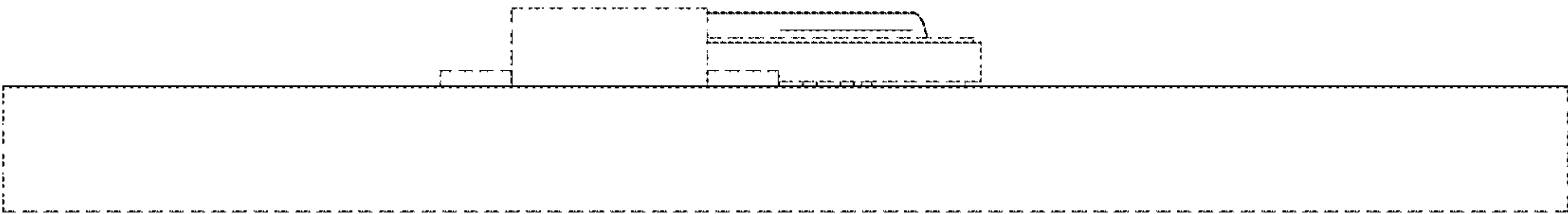


FIG. 25

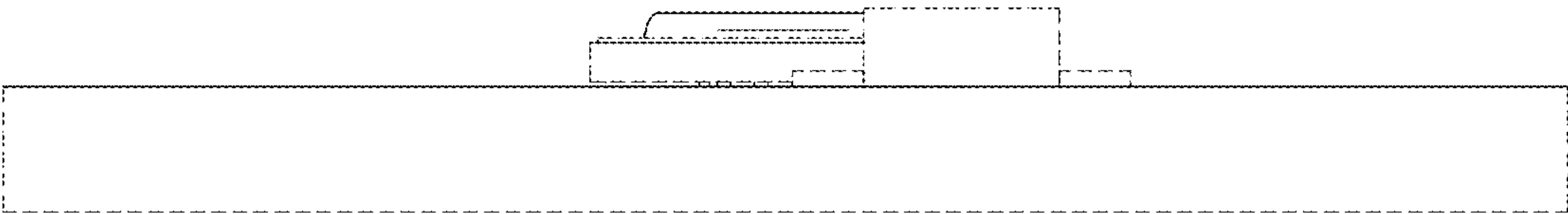


FIG. 26

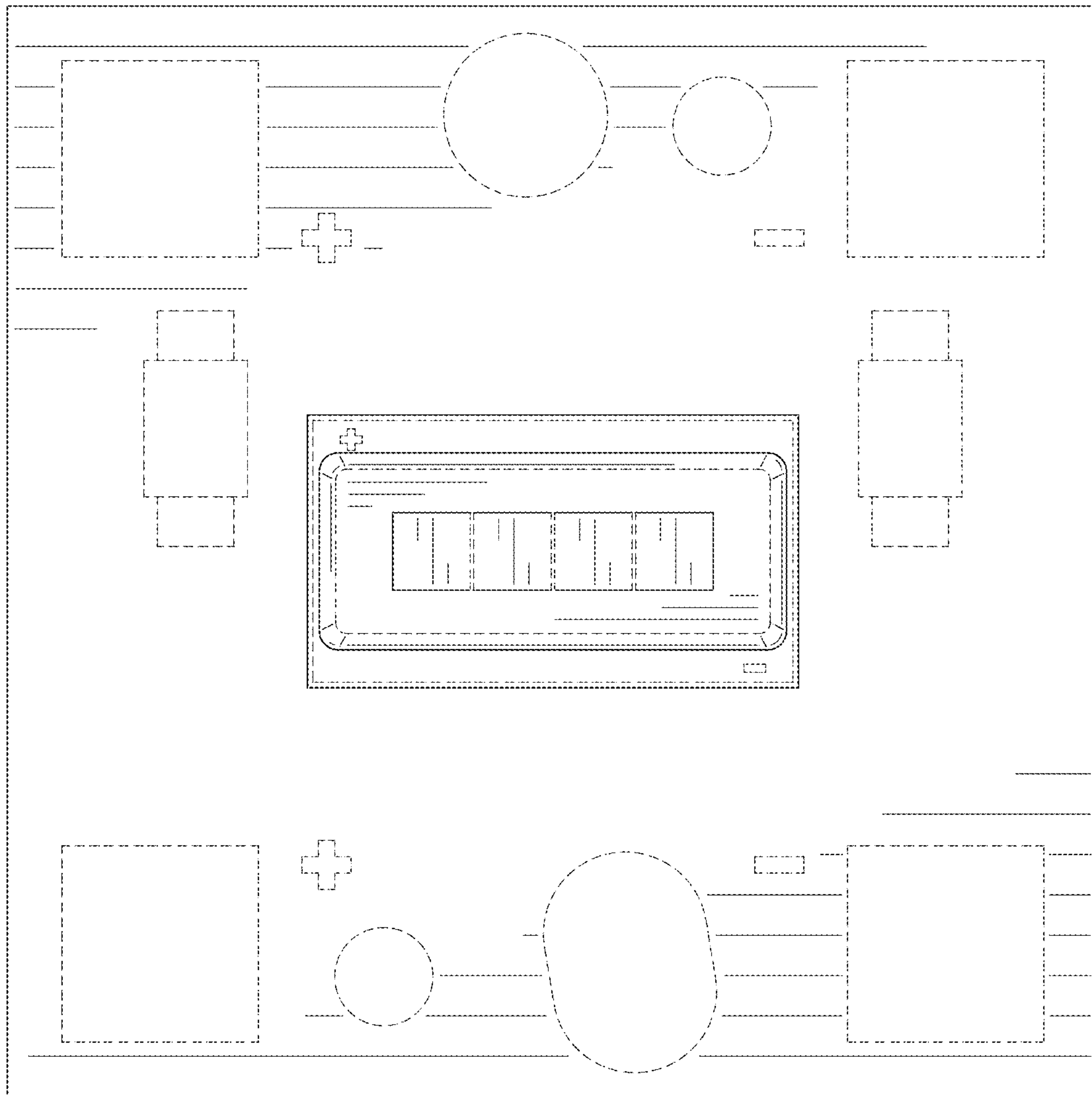


FIG. 27

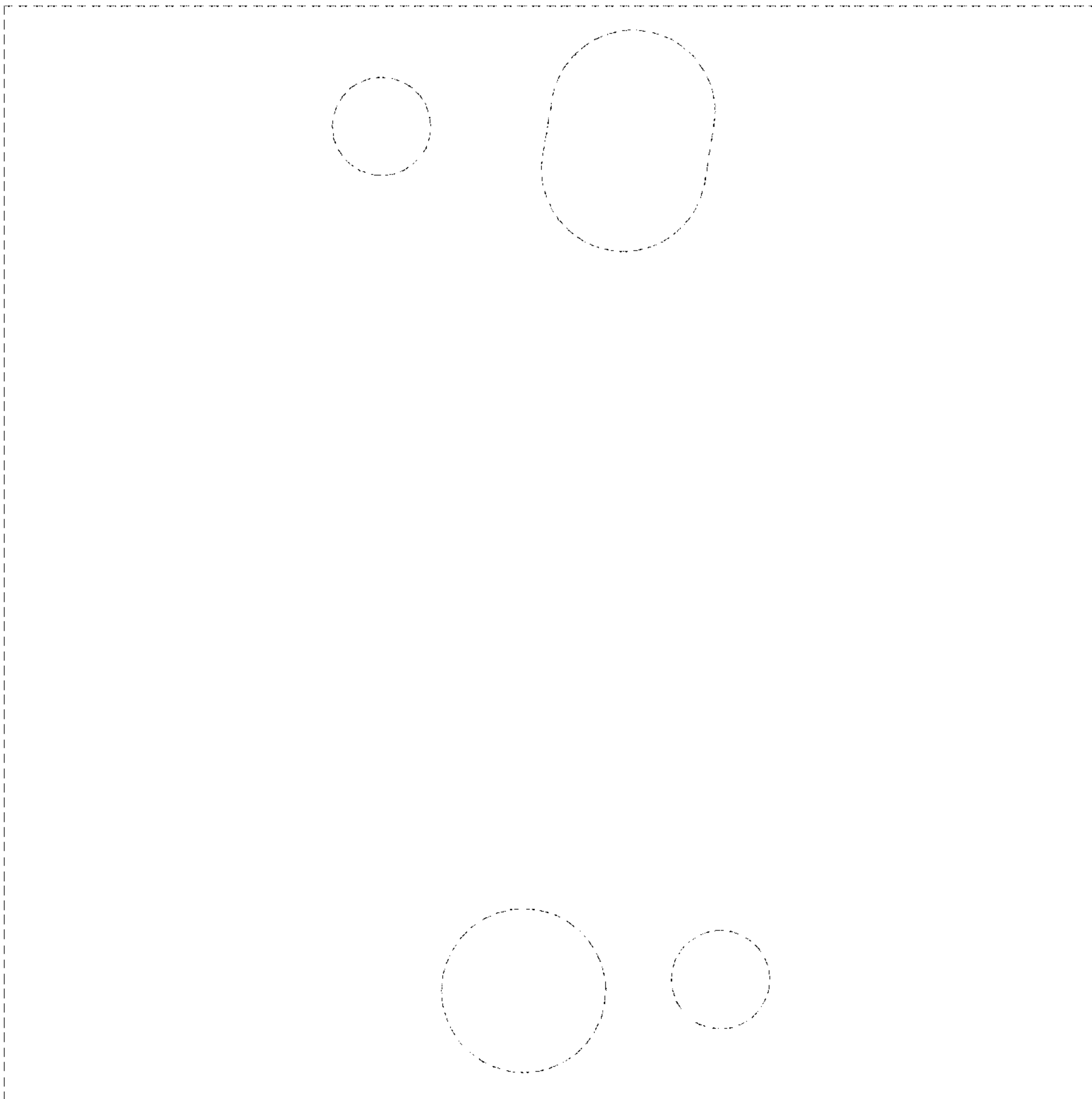


FIG. 28

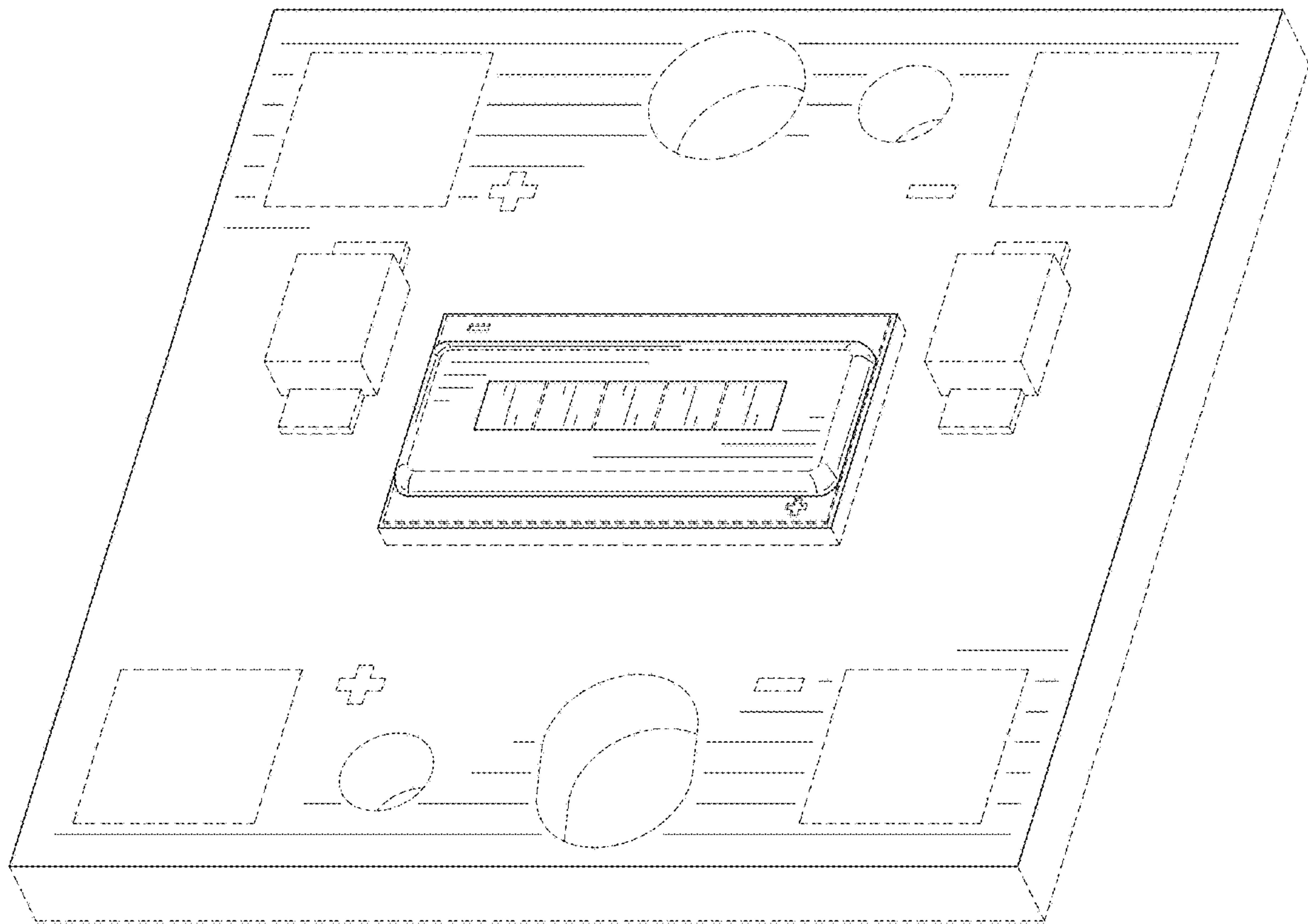


FIG. 29

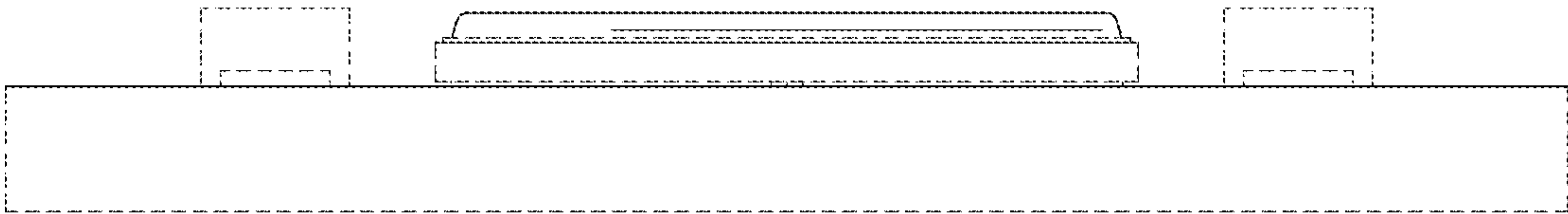


FIG. 30

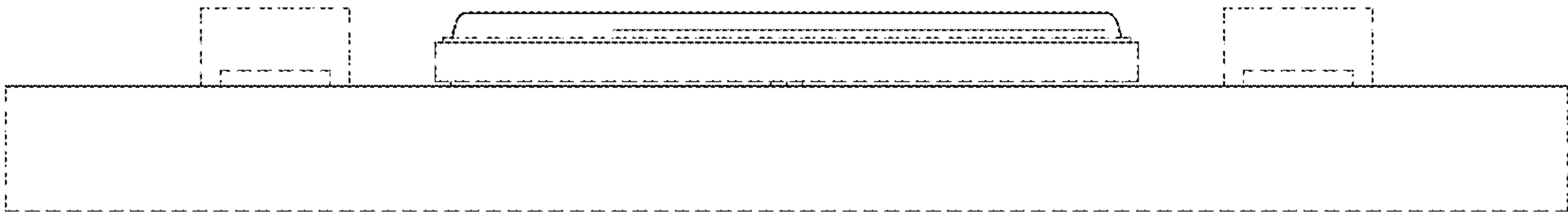


FIG. 31

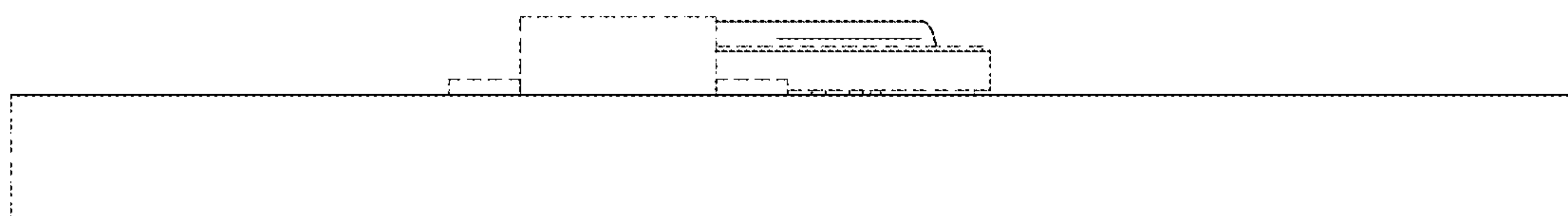


FIG. 32

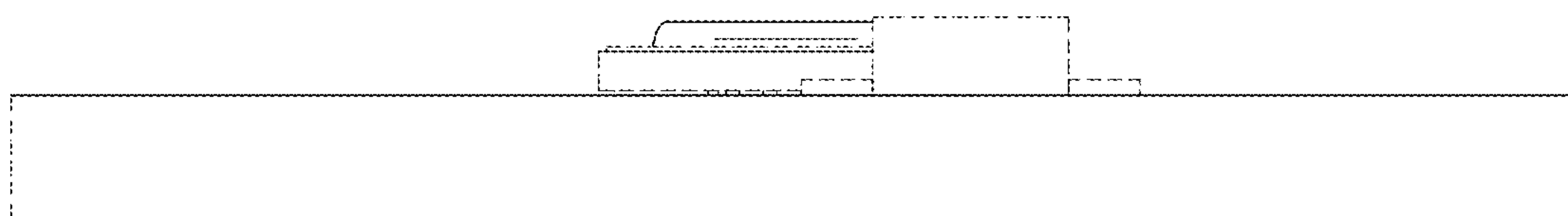


FIG. 33

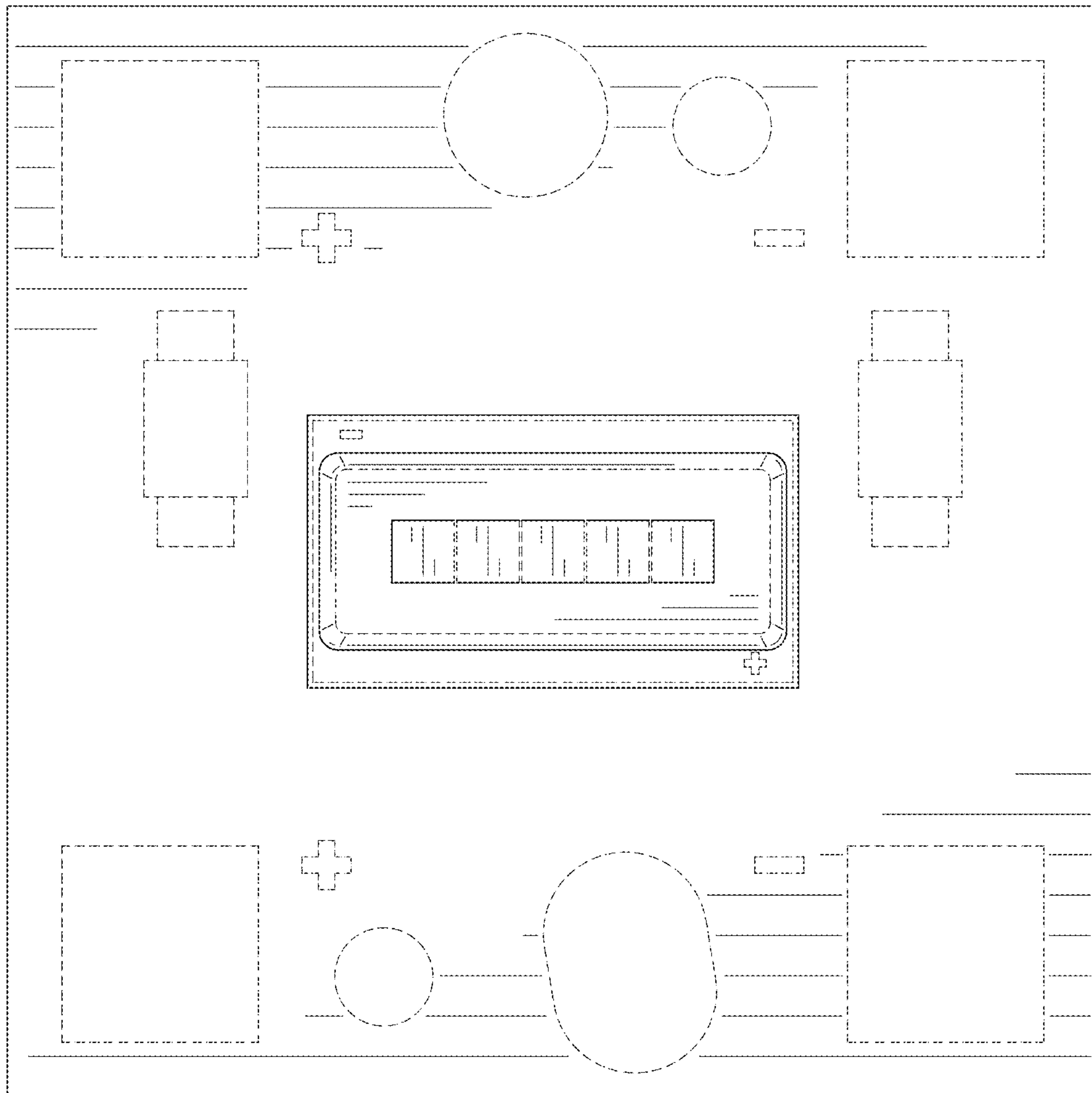


FIG. 34

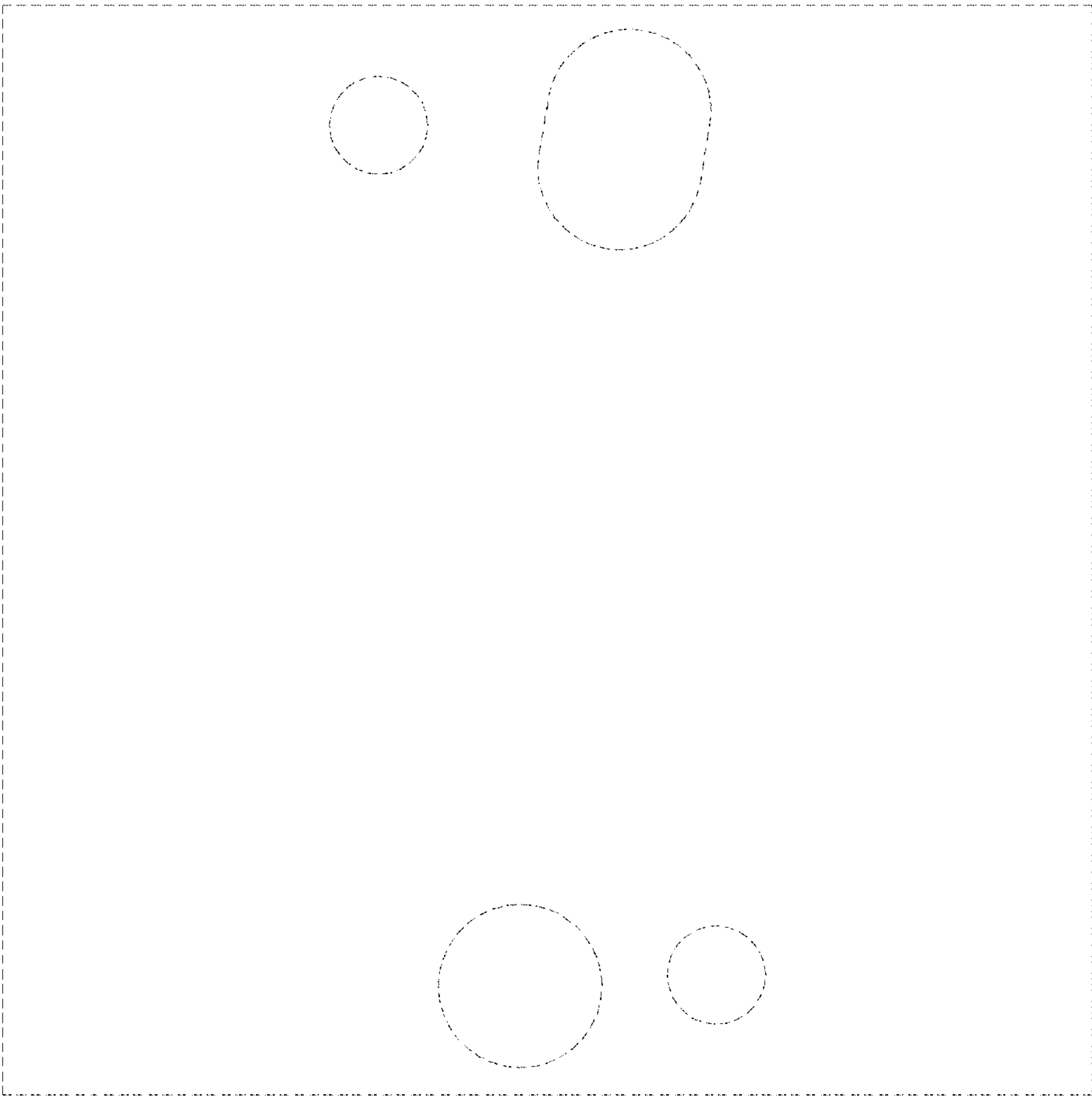


FIG. 35