



US00D722578S

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

(10) **Patent No.:** **US D722,578 S**

(45) **Date of Patent:** **** Feb. 17, 2015**

(54) **LIGHT-EMITTING DIODE CHIP**

(71) Applicant: **Kabushiki Kaisha Toshiba**, Minato-ku,
Tokyo (JP)

(72) Inventor: **Eiji Muramoto**, Kanazawa (JP)

(73) Assignee: **Kabushiki Kaisha Toshiba**, Tokyo (JP)

(**) Term: **14 Years**

(21) Appl. No.: **29/473,952**

(22) Filed: **Nov. 27, 2013**

(30) **Foreign Application Priority Data**

May 30, 2013 (JP) 2013-011991

May 30, 2013 (JP) 2013-012007

(51) **LOC (10) Cl.** **13-03**

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

(58) **Field of Classification Search**

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 33/483; H01L 33/486

USPC D13/180; D26/1; 257/79, 80, 81, 88,
257/89, 95, 98, 99, 100, E33.058; 313/483,
313/498, 500; 362/249.01, 49.02, 555

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

7,095,041 B2 * 8/2006 Cho et al. 257/13
D532,756 S * 11/2006 Lai D13/182
D534,506 S * 1/2007 Lai D13/182
D535,264 S * 1/2007 Lai D13/182
7,566,908 B2 * 7/2009 Zhao et al. 257/79
8,093,605 B2 * 1/2012 Kamei 257/98

8,188,493 B2 * 5/2012 Li et al. 257/91
D668,234 S 10/2012 Lee et al.
D669,869 S 10/2012 Lee et al.
D684,549 S * 6/2013 Chu et al. D13/180
D687,396 S * 8/2013 Chen et al. D13/180
8,653,498 B2 * 2/2014 Kimura et al. 257/13

(Continued)

FOREIGN PATENT DOCUMENTS

JP 1171984 4/2003
JP 1172389 4/2003
JP 1446745 7/2012

(Continued)

Primary Examiner — Selina Sikder

(74) *Attorney, Agent, or Firm* — Banner & Witcoff, Ltd.

(57) **CLAIM**

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

DESCRIPTION

FIG. 1 is a front, bottom and right side perspective view of a light-emitting diode chip, showing my new design;

FIG. 2 is a front view thereof;

FIG. 3 is a top view thereof;

FIG. 4 is a left side view thereof;

FIG. 5 is a right side view thereof;

FIG. 6 is a bottom view thereof;

FIG. 7 is a rear view thereof;

FIG. 8 is a front, bottom and right side perspective view of a second embodiment of the light-emitting diode chip, showing my new design;

FIG. 9 is a front view thereof;

FIG. 10 is a top view thereof;

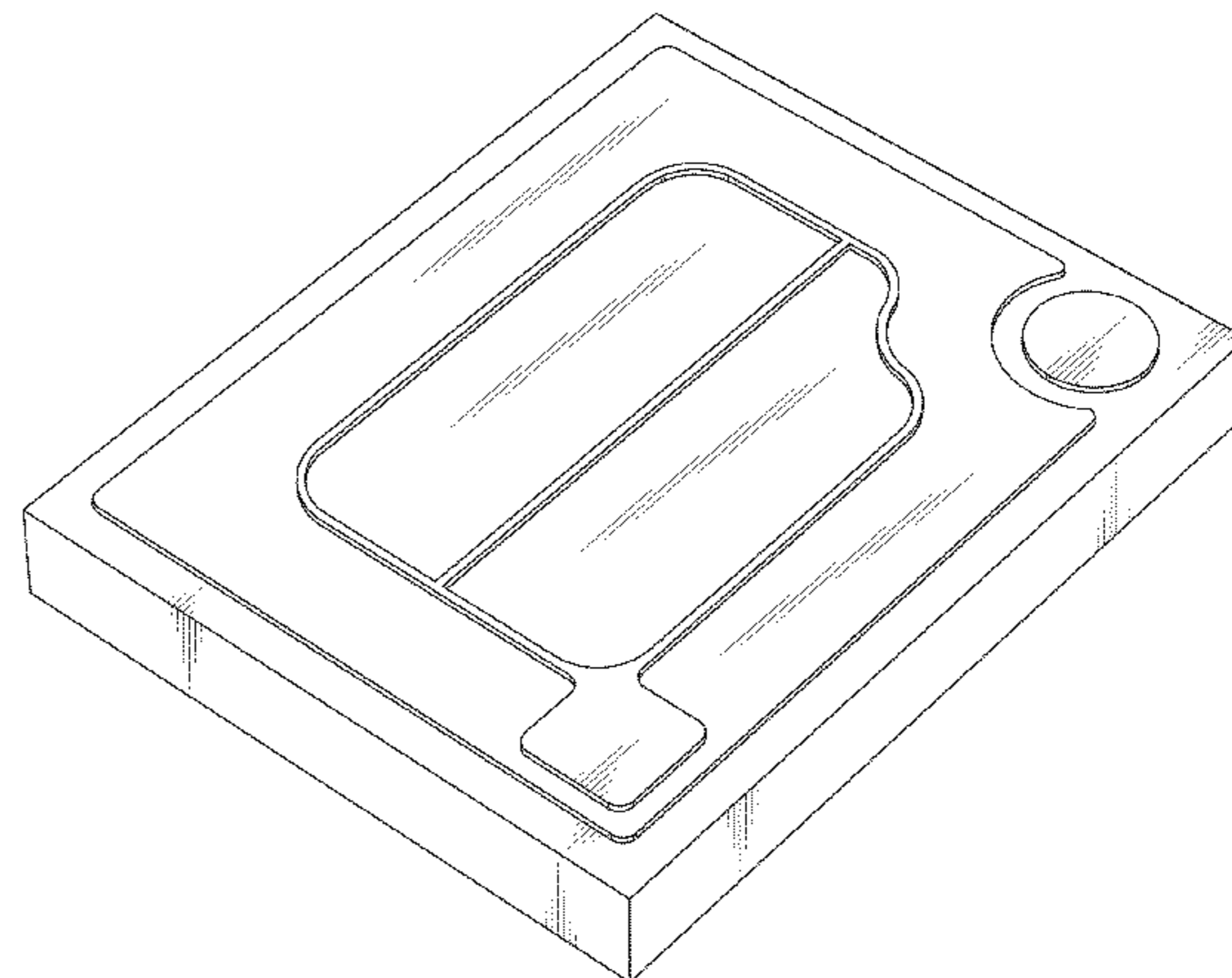
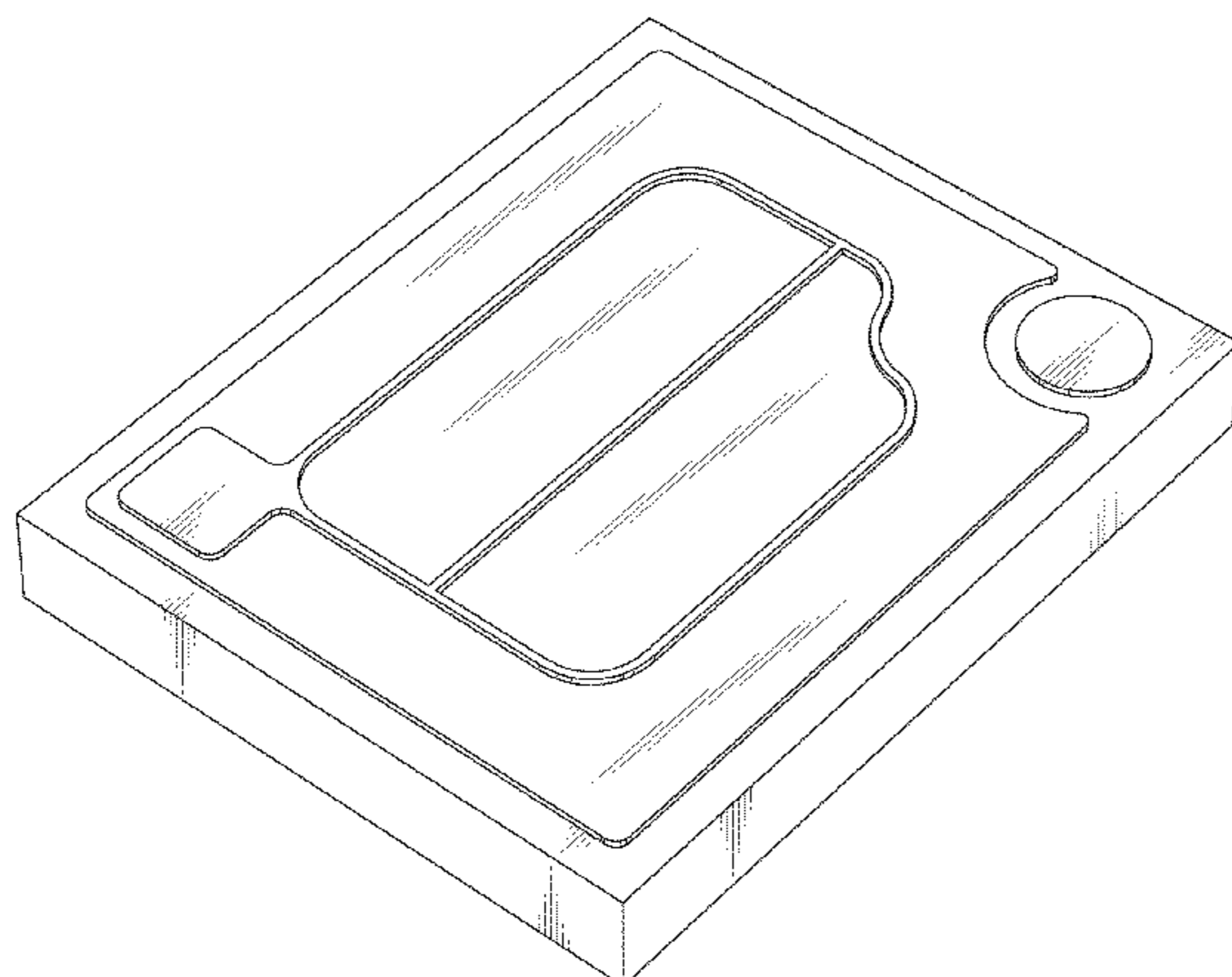
FIG. 11 is a left side view thereof;

FIG. 12 is a right side view thereof;

FIG. 13 is a bottom view thereof; and,

FIG. 14 is a rear view thereof.

1 Claim, 8 Drawing Sheets



(56)

References Cited

FOREIGN PATENT DOCUMENTS

U.S. PATENT DOCUMENTS

			JP	1447036	7/2012
			JP	1447037	7/2012
			JP	1447038	7/2012
8,742,449	B2 *	6/2014	Seo et al.	257/99	
8,779,441	B2 *	7/2014	Okabe	257/79	
2003/0006422	A1 *	1/2003	Miki et al.	257/99	
2003/0107053	A1 *	6/2003	Uemura et al.	257/200	

* cited by examiner

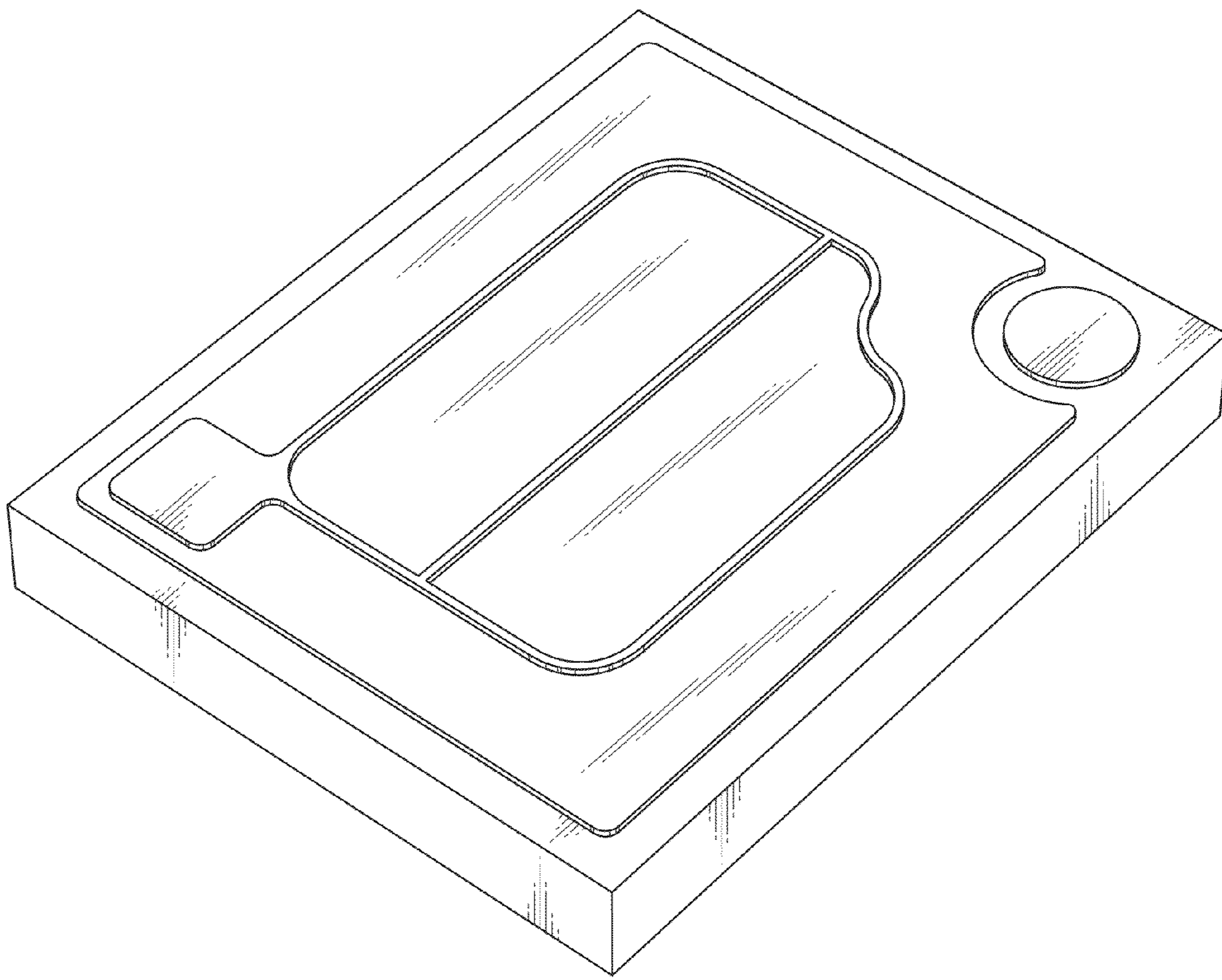


FIG. 1

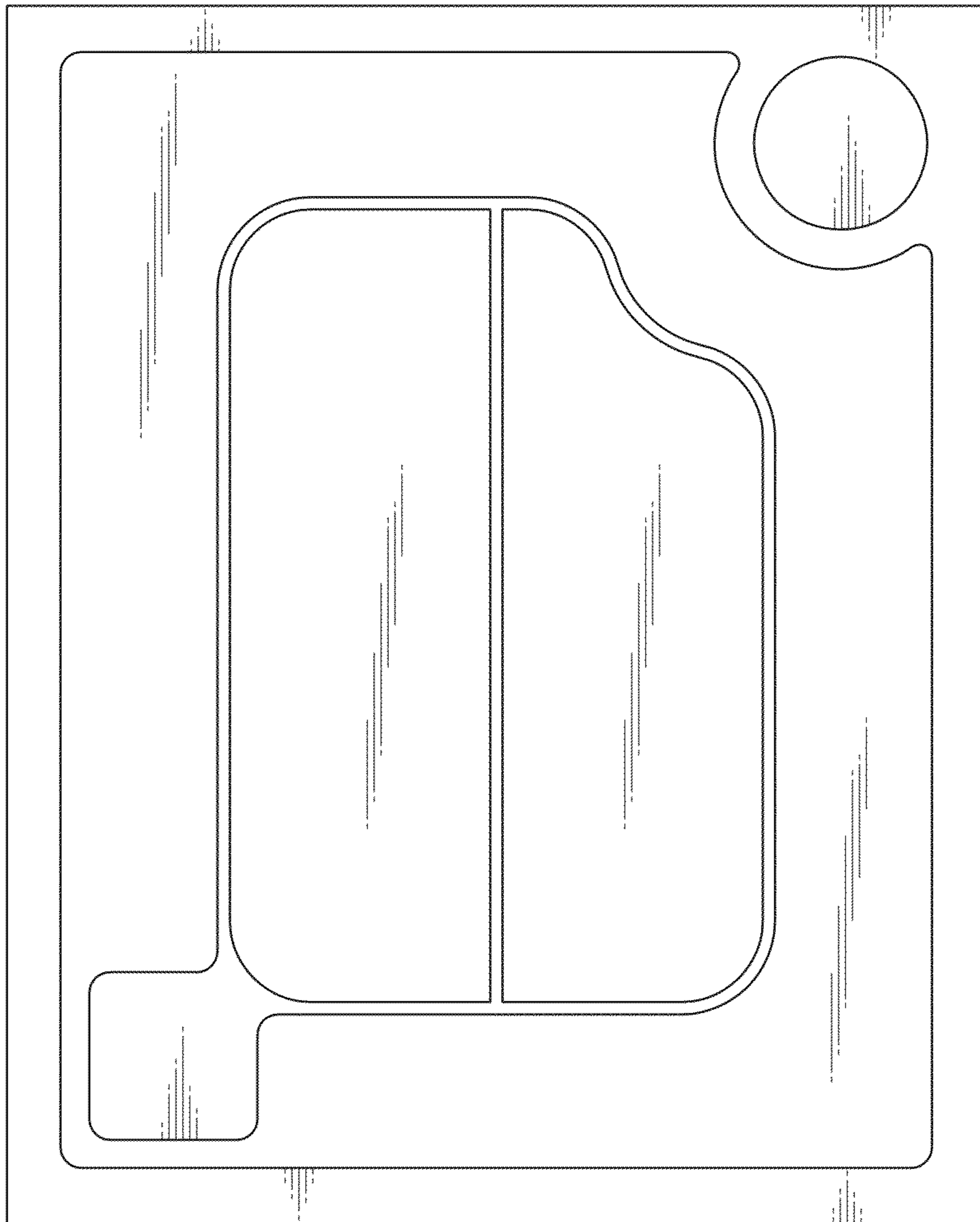


FIG. 2

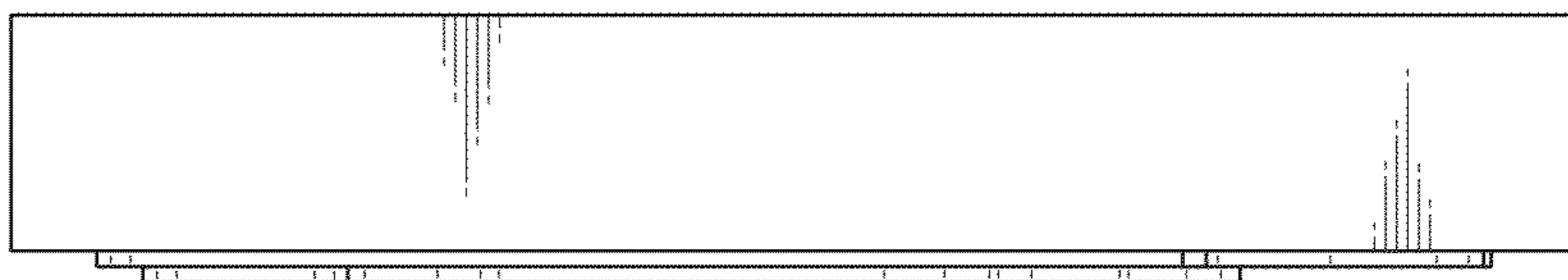


FIG. 3

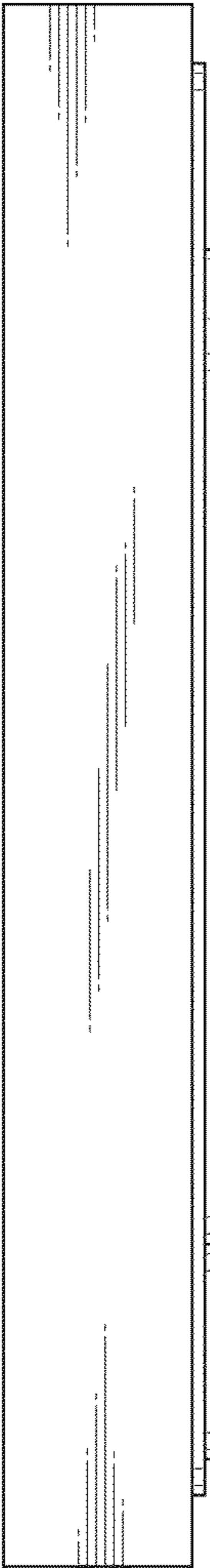


FIG. 4

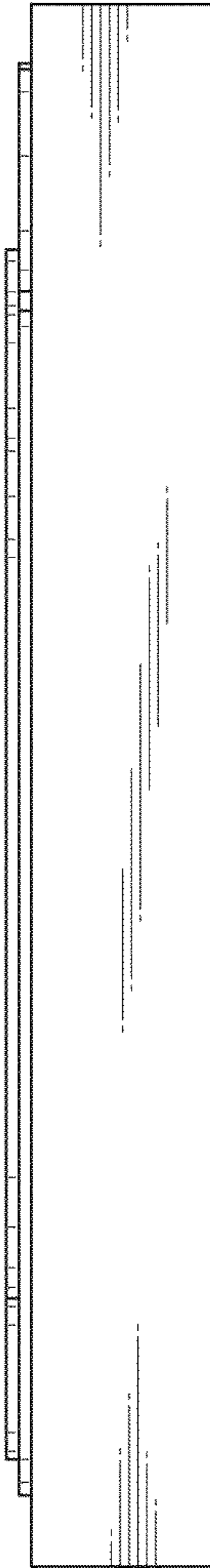


FIG. 5

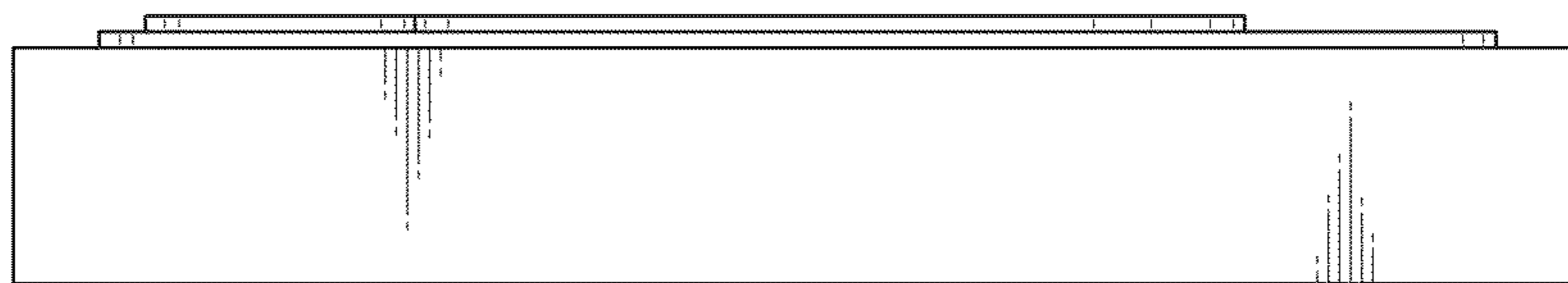


FIG. 6

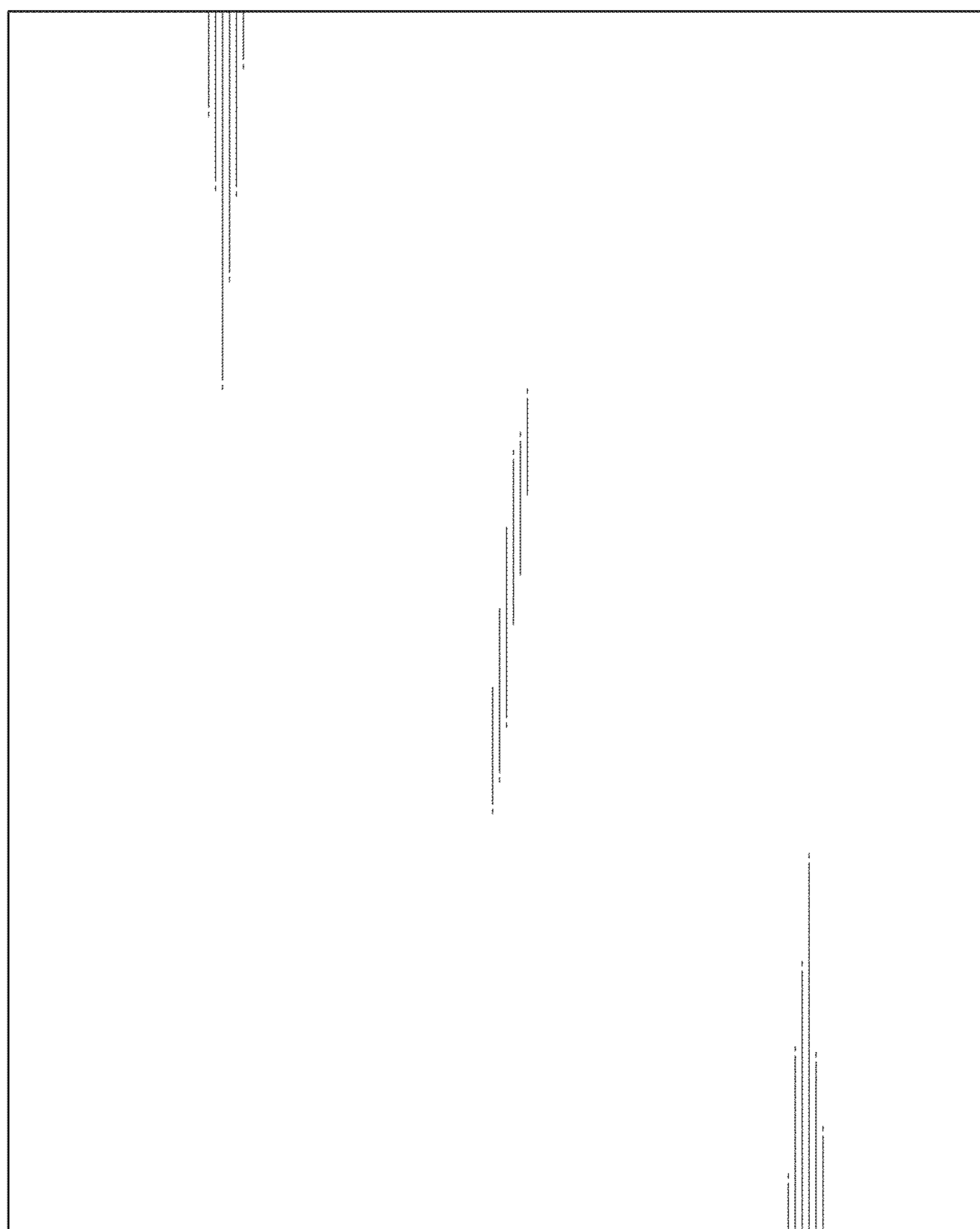


FIG. 7

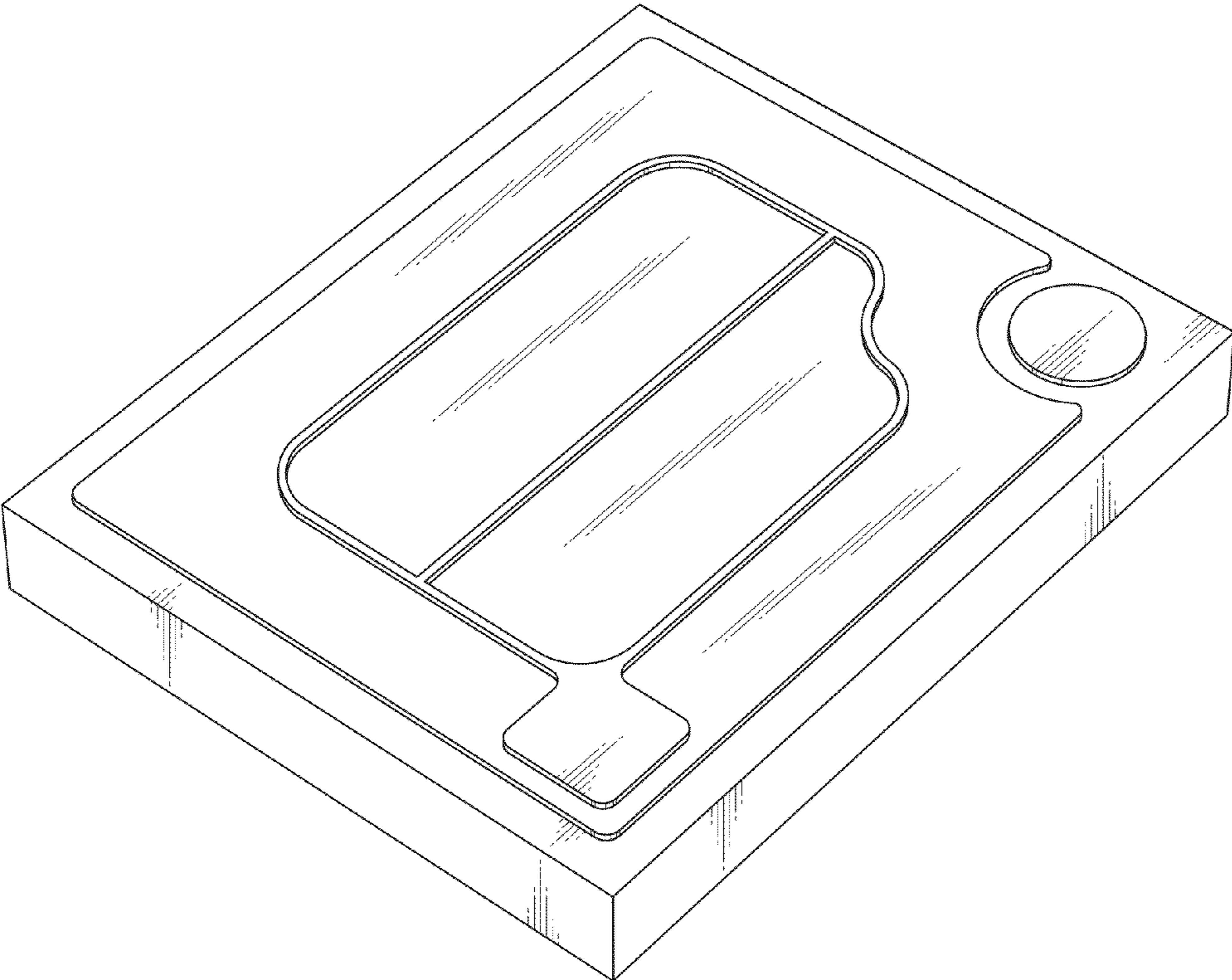


FIG. 8

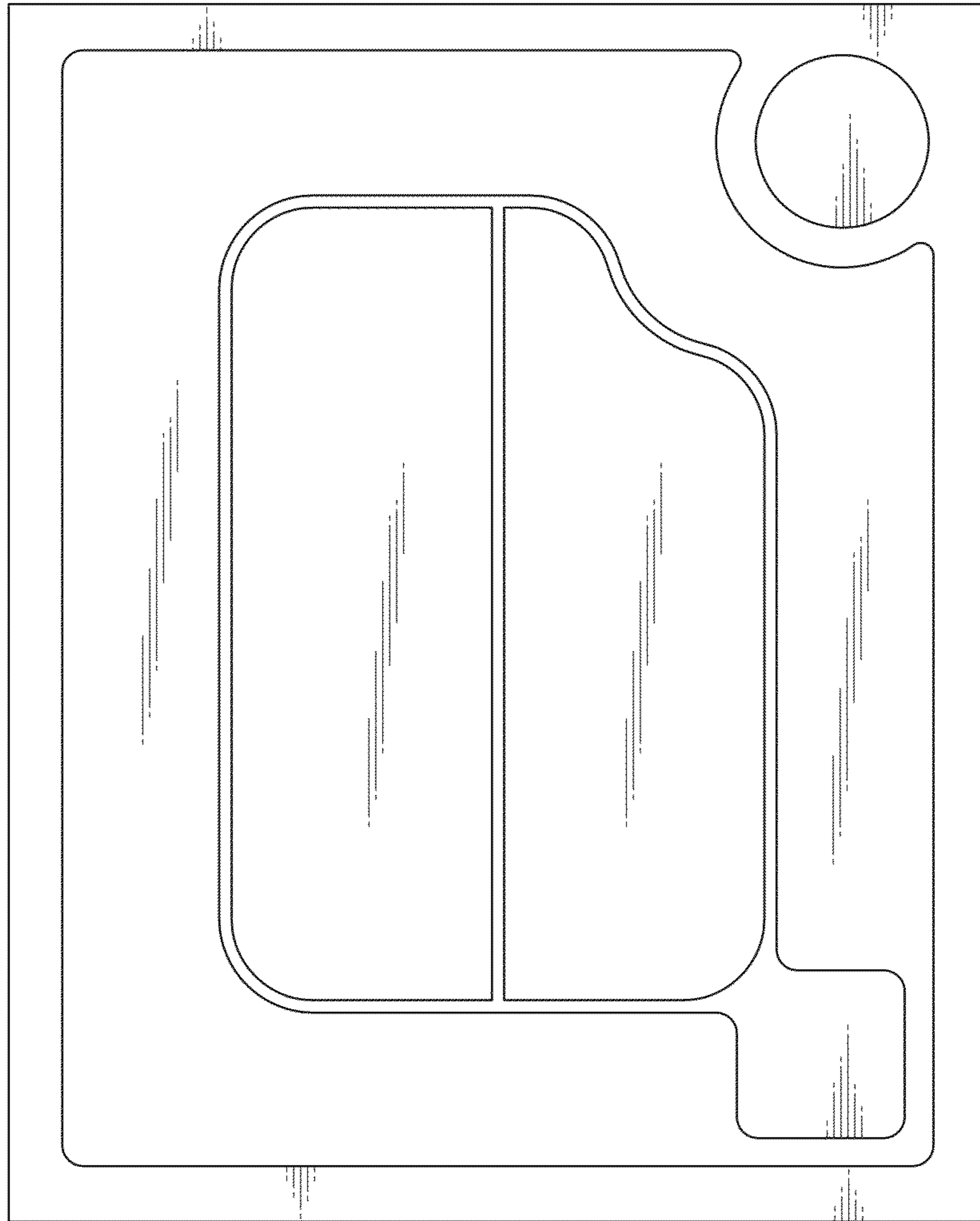


FIG. 9



FIG. 10

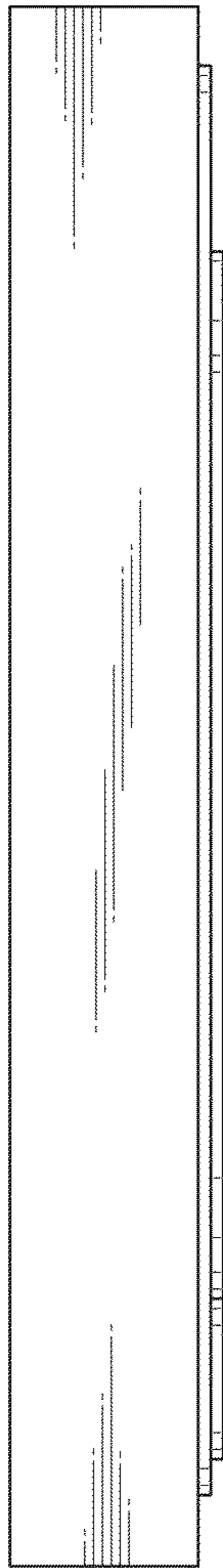


FIG. 11

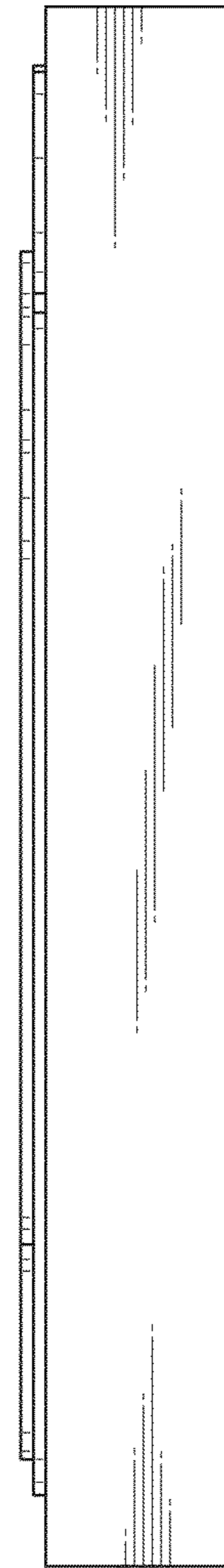


FIG. 12

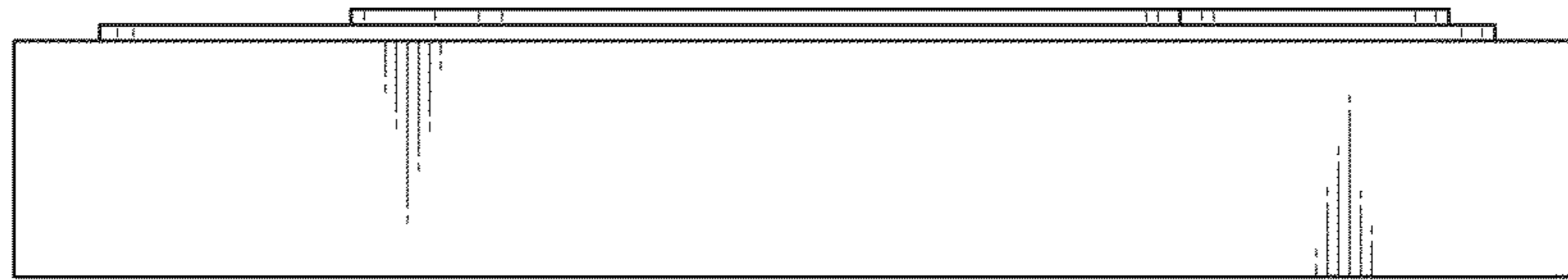


FIG. 13

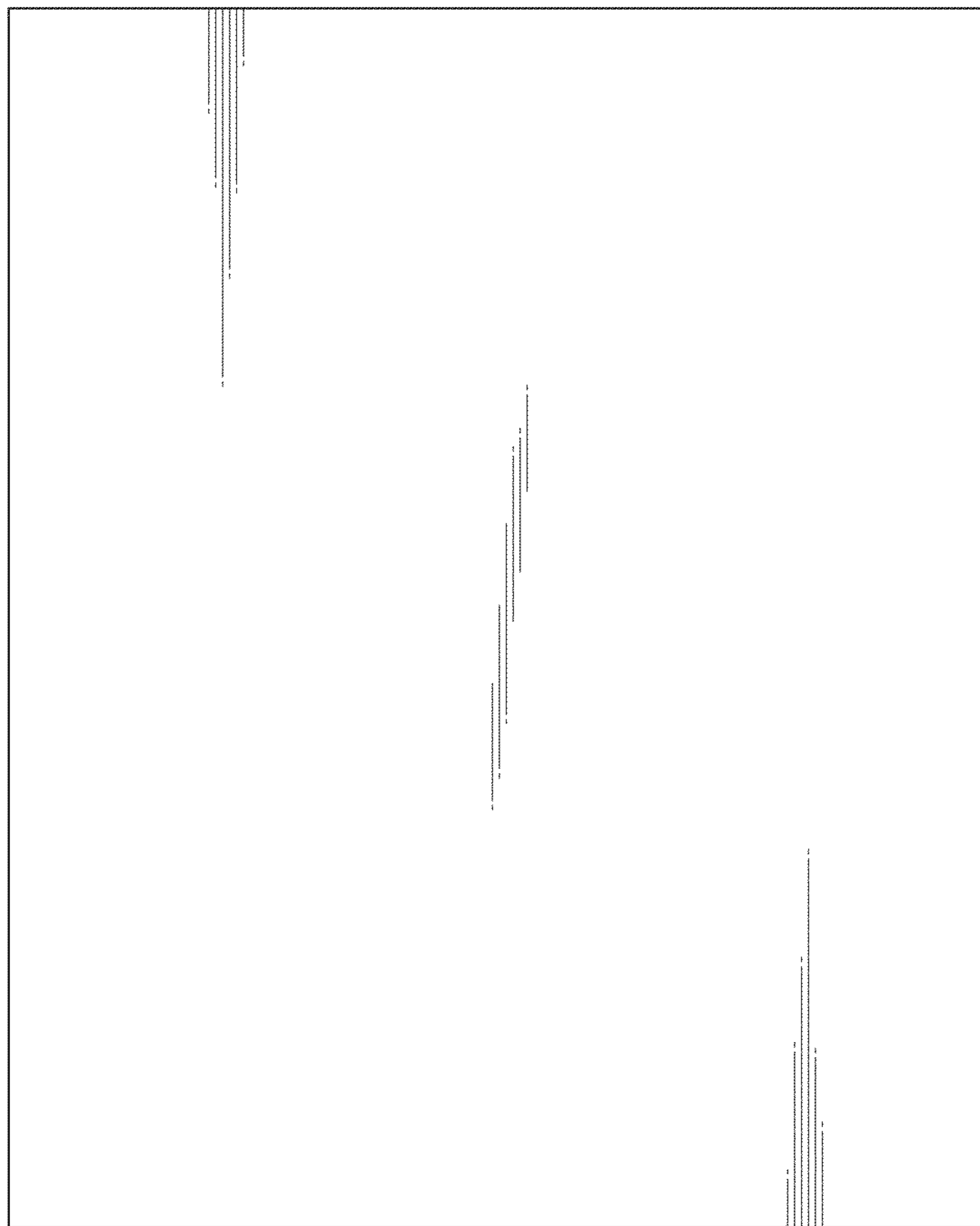


FIG. 14