



US00D697227S

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

(10) **Patent No.:** **US D697,227 S**
(45) **Date of Patent:** **** Jan. 7, 2014**

(54) **PIPETTE TIP HANDLING DEVICE SET**

(75) Inventor: **Arta Motadel**, San Diego, CA (US)

(73) Assignee: **Biotix, Inc.**, San Diego, CA (US)

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

(21) Appl. No.: **29/335,253**

(22) Filed: **Apr. 11, 2009**

Related U.S. Application Data

(63) Continuation-in-part of application No. 12/422,250,
filed on Apr. 11, 2009, now Pat. No. 8,460,622.

(51) **LOC (10) Cl.** **24-02**

(52) **U.S. Cl.**
USPC **D24/227**

(58) **Field of Classification Search**
USPC D24/185, 216–232, 127–128;
D6/406.1–406.3, 406.6; 422/58, 99,
422/102, 104, 297, 400, 560–564, 552,
422/509; D3/203.1, 304; D19/37;
206/363–370, 223, 563; 211/85.13,
211/126.14, 74

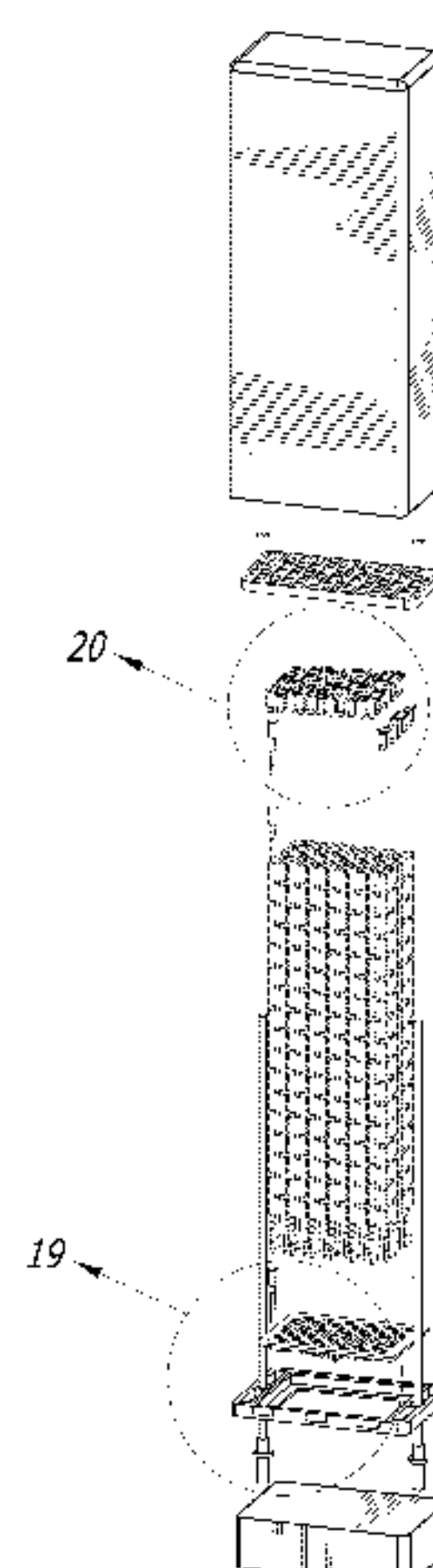
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,134,908 A 11/1938 Copeman
2,645,245 A 7/1953 Maisch
3,214,831 A 11/1965 Shellman et al.
3,853,217 A * 12/1974 Scordato et al. 206/223
3,937,322 A 2/1976 Cohen
D246,466 S 11/1977 Attree et al.
D264,810 S * 6/1982 Voltmann D24/226
D271,239 S * 11/1983 Lemieux et al. D24/230
D276,071 S * 10/1984 Malinoff D24/229
D283,162 S 3/1986 Godsey
D302,207 S 7/1989 Matkovich
5,048,957 A 9/1991 Berthold et al.
5,156,811 A 10/1992 White
D337,165 S 7/1993 Malinoff
5,324,482 A 6/1994 Scaramella et al.
D349,773 S * 8/1994 Malin et al. D24/216

5,392,914 A 2/1995 Lemieux et al.
5,426,911 A 6/1995 Poplin et al.
5,441,702 A 8/1995 Lemieux et al.
5,487,872 A 1/1996 Hafeman et al.
5,487,997 A 1/1996 Stolop
5,588,792 A 12/1996 Tiso
5,642,816 A 7/1997 Kelly et al.
5,779,984 A 7/1998 Kelly et al.
5,789,251 A 8/1998 Astle
5,915,284 A 6/1999 Metler et al.
D414,271 S * 9/1999 Mendoza D24/224
6,007,779 A 12/1999 Lemieux et al.
D420,139 S 2/2000 Ballin et al.
D420,142 S 2/2000 Ballin et al.
D420,743 S 2/2000 Monks
6,019,225 A 2/2000 Kalmakis et al.
6,054,099 A 4/2000 Levy
D441,091 S * 4/2001 Day D24/230
6,258,324 B1 7/2001 Yiu
6,286,678 B1 9/2001 Petrek
6,361,744 B1 3/2002 Levy
6,419,086 B1 7/2002 Vecchio
D463,031 S 9/2002 Slomski et al.
D463,863 S 10/2002 Carlson et al.
D464,734 S * 10/2002 Berna et al. D24/226
D469,544 S 1/2003 Lafond et al.
6,534,015 B1 3/2003 Viot et al.
D474,274 S 5/2003 Walters
D477,416 S * 7/2003 Roberts et al. D24/216
6,589,483 B1 7/2003 Maeda
6,640,981 B2 * 11/2003 Lafond et al. 211/74
6,752,967 B2 * 6/2004 Farina et al. 422/552
D492,792 S * 7/2004 Kokaisel et al. D24/226
6,759,012 B2 * 7/2004 Haslam et al. 422/509
6,830,732 B1 12/2004 Hoffman et al.
6,875,405 B1 4/2005 Mathus et al.
D529,622 S * 10/2006 Hadjis et al. D24/229
D533,948 S * 12/2006 Schaub et al. D24/229
716,936 A1 1/2007 Arnold et al.
7,169,361 B2 1/2007 Arnold, Jr. et al.
7,220,590 B2 5/2007 Moritz et al.
D556,338 S 11/2007 Coulling et al.
D556,339 S 11/2007 Coulling et al.
7,309,469 B2 12/2007 Anderson et al.
D562,463 S * 2/2008 Berndt et al. D24/226
7,335,337 B1 2/2008 Smith
D574,505 S * 8/2008 Muller-Cohn et al. D24/216
D574,506 S * 8/2008 Monks D24/224
D576,208 S 9/2008 Quercetti
D598,127 S * 8/2009 Lea D24/227
D601,713 S 10/2009 Lohn et al.
D601,714 S 10/2009 Lohn et al.
D608,013 S * 1/2010 Coulling et al. D24/224



D610,265 S *	2/2010	Lea	D24/227
D620,605 S	7/2010	Reitze	
D624,196 S	9/2010	Himmelsbach et al.	
D624,660 S	9/2010	Himmelsbach et al.	
D624,661 S	9/2010	Himmelsbach et al.	
7,820,115 B2 *	10/2010	Zatechka et al.	422/400
D628,306 S	11/2010	Blanc et al.	
D632,803 S	2/2011	Motadel et al.	
7,892,504 B2 *	2/2011	Taike et al.	422/562
D638,138 S	5/2011	Wong	
D638,953 S *	5/2011	Cavada et al.	D24/226
D645,156 S	9/2011	Reitze	
2003/0129089 A1	7/2003	Arnold et al.	
2004/0231438 A1	11/2004	Schwartz	
2005/0150808 A1	7/2005	Sarna et al.	
2007/0017870 A1	1/2007	Belov et al.	
2009/0092520 A1	4/2009	Moulton	
2009/0095091 A1	4/2009	Smith	
2009/0155123 A1	6/2009	Williams et al.	
2009/0255949 A1	10/2009	Motadel	
2010/0089938 A1	4/2010	Motadel	
2010/0258578 A1	10/2010	Motadel	
2010/0266457 A1	10/2010	Rethwisch et al.	
2011/0076205 A1	3/2011	Kelly et al.	

FOREIGN PATENT DOCUMENTS

KR	10-2002-0092768	12/2002
WO	WO 95/33563	12/1995
WO	WO 98/45041	10/1998
WO	WO 01/10556	2/2001
WO	WO 02/45857	6/2002
WO	WO 03/043739	5/2003
WO	WO 2009/126945	10/2009
WO	WO 2010/118374	10/2010

OTHER PUBLICATIONS

International Search Report and Written Opinion mailed on: Nov. 26, 2010 in International Application No. PCT/US2010/030611 filed on Apr. 9, 2010 and published as: WO 2010/118374 on: Oct. 14, 2010.

International Search Report and Written Opinion mailed on: Oct. 29, 2009 in International Application No. PCT/US2009/040289 filed on Apr. 11, 2009 and published as: WO 09/126945 on: Oct. 15, 2009.

Webpage printed from the internet on Feb. 21, 2008 at URL: <http://www.matrixtechcorp.com/handheld/pipettor.aspx?id=40>

MatrixTechnologies Thermo Scientific Matrix Liquid Handling Systems.

Nakane et al., "A Method for parallel automated thermal cycling of submicroliter samples," *Genome Research* vol. 11, Issue 3, 441-447, Mar. 2001.

Hile et al., "Microbiology Tray and Pipette Tracking as a Proactive Tangible User Interface," In *Proc. of the 2nd Int. Conf. on Pervasive Computing*, 2004.

Office Action mailed on: May 24, 2011 in U.S. Appl. No. 12/577,003, filed Oct. 9, 2009, and published as 2010/0089938 on Apr. 15, 2010.

Office Action mailed on: Apr. 7, 2011 in U.S. Appl. No. 12/577,003, filed Oct. 9, 2009, and published as 2010/0089938 on Apr. 15, 2010.

International Preliminary Report on Patentability mailed on: Oct. 21, 2010 in International Application No. PCT/US2009/040289 filed on Apr. 11, 2009 and published as: WO 09/126945 on: Oct. 15, 2009.

Office Action mailed on: Dec. 14, 2011 in U.S. Appl. No. 12/422,250, filed Apr. 11, 2009, and published as 2009/0255949 on Oct. 15, 2009.

Office Action mailed on: Dec. 23, 2011 in U.S. Appl. No. 12/577,003, filed Oct. 9, 2009, and published as 2010/0089938 on Apr. 15, 2010.

Extended European Search Report dated: Nov. 4, 2011 in European Application No. EP09729893 filed on: Nov. 9, 2010.

Office Action mailed on: Jun. 27, 2012 in U.S. Appl. No. 12/422,250, filed Apr. 11, 2009, and published as 2009/0255949 on Oct. 15, 2009.

Office Action mailed on: Sep. 20, 2012 in U.S. Appl. No. 12/757,851, filed Apr. 9, 2010, and published as 2010/0258578 on Oct. 14, 2010.

* cited by examiner

Primary Examiner — T. Chase Nelson

Assistant Examiner — Mark Cavanna

(74) *Attorney, Agent, or Firm* — Grant Anderson LLP

(57)

CLAIM

The ornamental design for a pipette tip handling device set, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a distal barrier plate element of a pipette tip handling device set shown separately for clarity of illustration, showing my new design;

FIG. 2 is an enlarged partial view thereof;

FIG. 3 is a cross sectional view thereof taken along lines 3 of FIG. 1;

FIG. 4 is a greatly enlarged partial cross sectional view thereof;

FIG. 5 is a bottom view thereof;

FIG. 6 is an enlarged partial bottom view thereof;

FIG. 7 is a side view thereof;

FIG. 8 is a top perspective view of a base plate element of a pipette tip handling device set shown separately for clarity of illustration;

FIG. 9 is a bottom perspective view thereof;

FIG. 10 is a side view of a rod element of a pipette tip handling device set shown separately for clarity of illustration;

FIG. 11 is a bottom view of an actuator plate element of a pipette tip handling device set shown separately for clarity of illustration;

FIG. 12 is an enlarged partial perspective view thereof;

FIG. 13 is a side view thereof.

FIG. 14 is a top view of an actuator plate element of a pipette tip handling device set shown separately for clarity of illustration;

FIG. 15 shows a top perspective view thereof;

FIG. 16 shows an exploded perspective view of an automated pipette tip dispensing device of a pipette tip handling device set;

FIG. 17 shows a perspective view of an automated pipette tip dispensing device of a pipette tip handling device set;

FIG. 18 shows an exploded perspective view of a cartridge of a pipette tip handling device set. The actuator plate and proximal alignment members of the actuator plate as shown in FIG. 11 are shown separately for clarity of illustration;

FIG. 19 is an enlarged partial perspective view of the cartridge of a pipette tip handling device set shown in FIG. 18; and,

FIG. 20 is an enlarged partial perspective view of the proximal alignment members of the cartridge of a pipette tip handling device set shown in FIG. 18.

The broken lines in the drawings are for purposes of illustrating portions of the pipette tip handling device set, as well as environmental structure, which form no part of the claimed design.

1 Claim, 11 Drawing Sheets

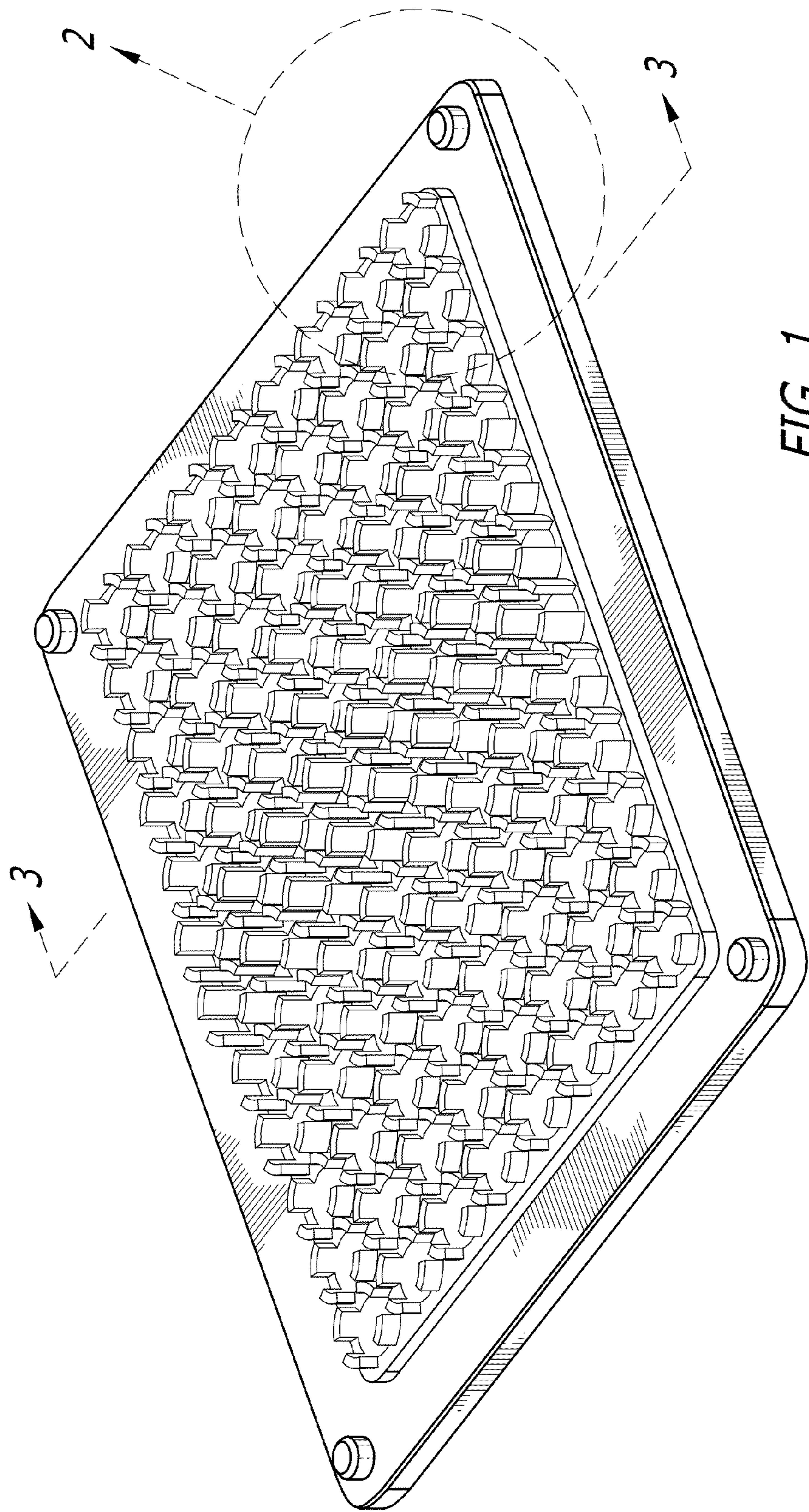


FIG. 1

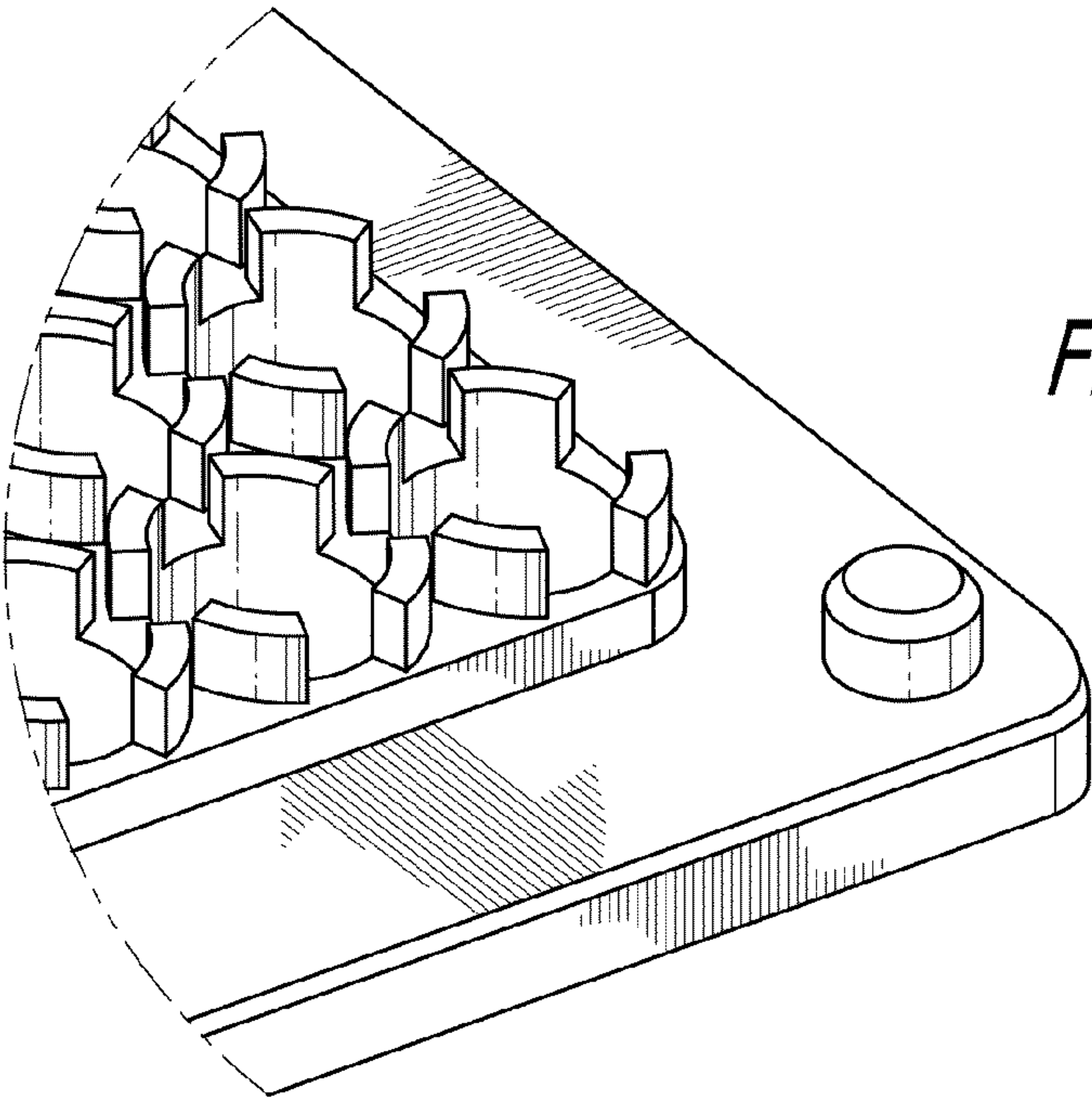


FIG. 2

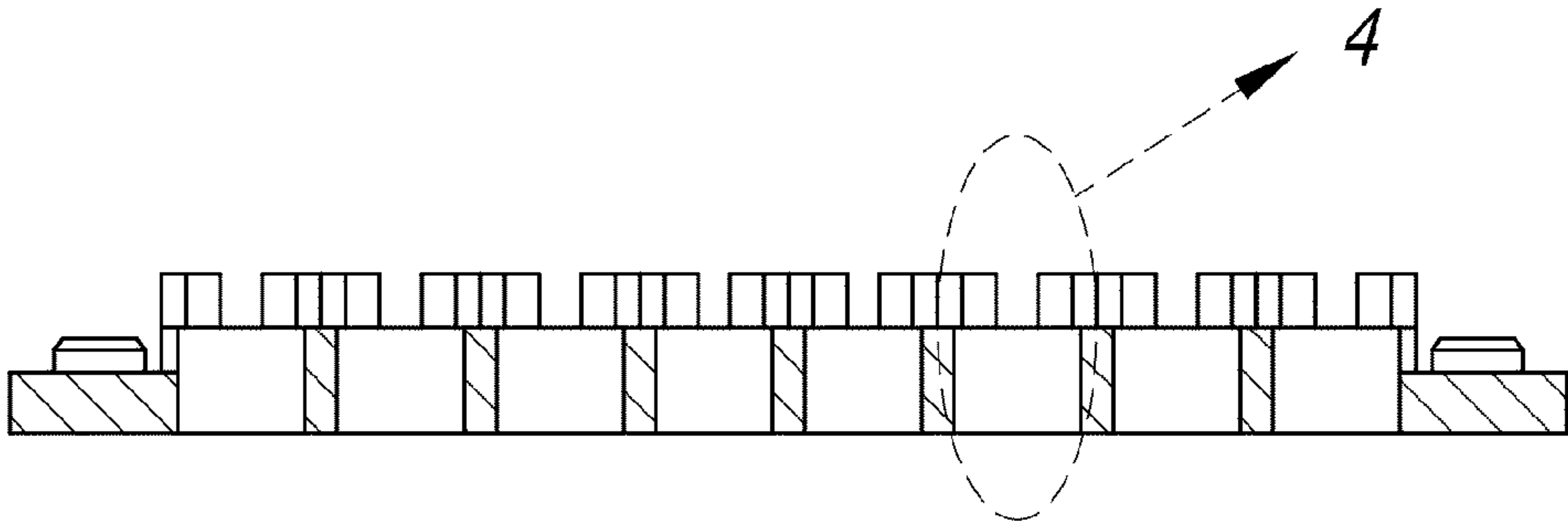


FIG. 3

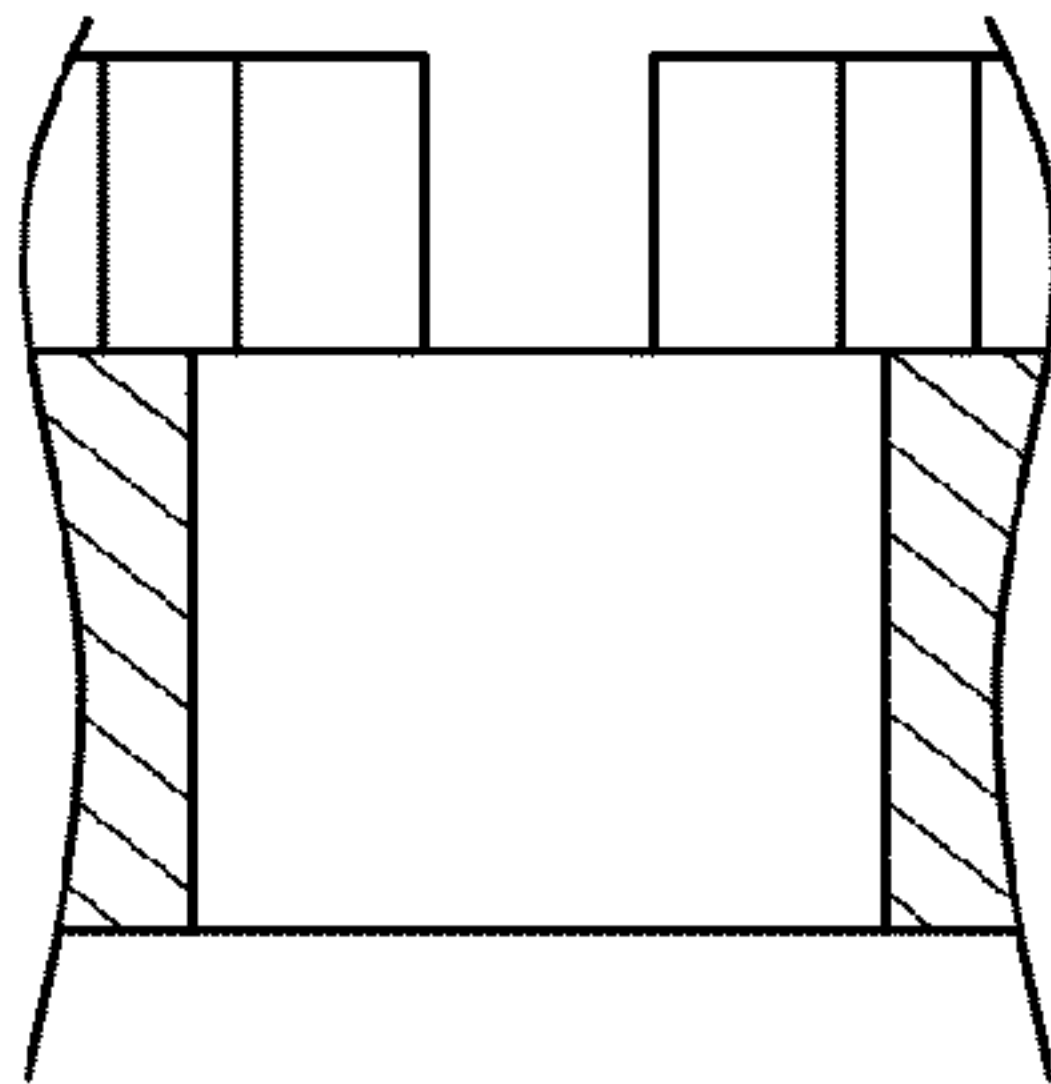


FIG. 4

FIG. 5

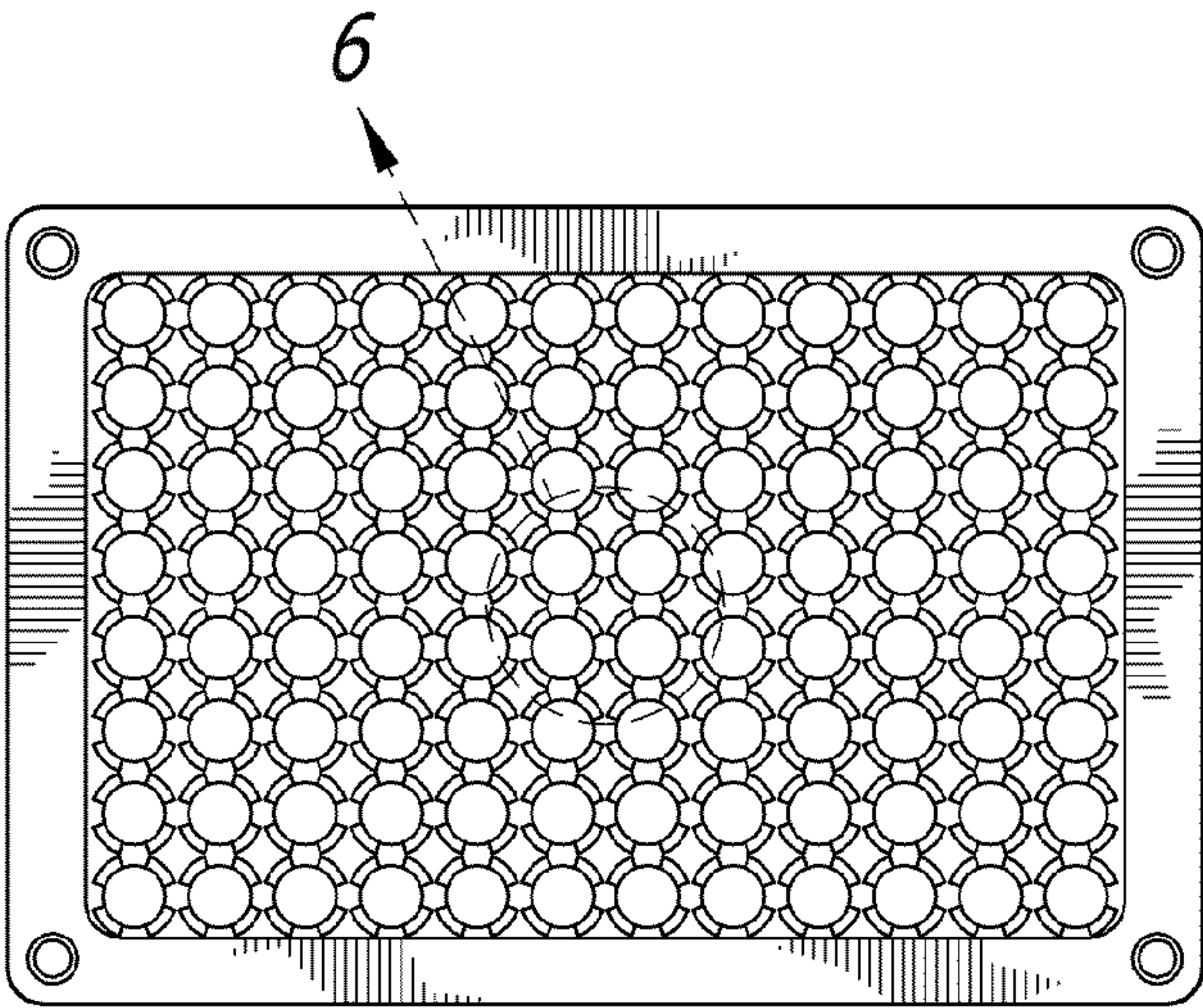


FIG. 6

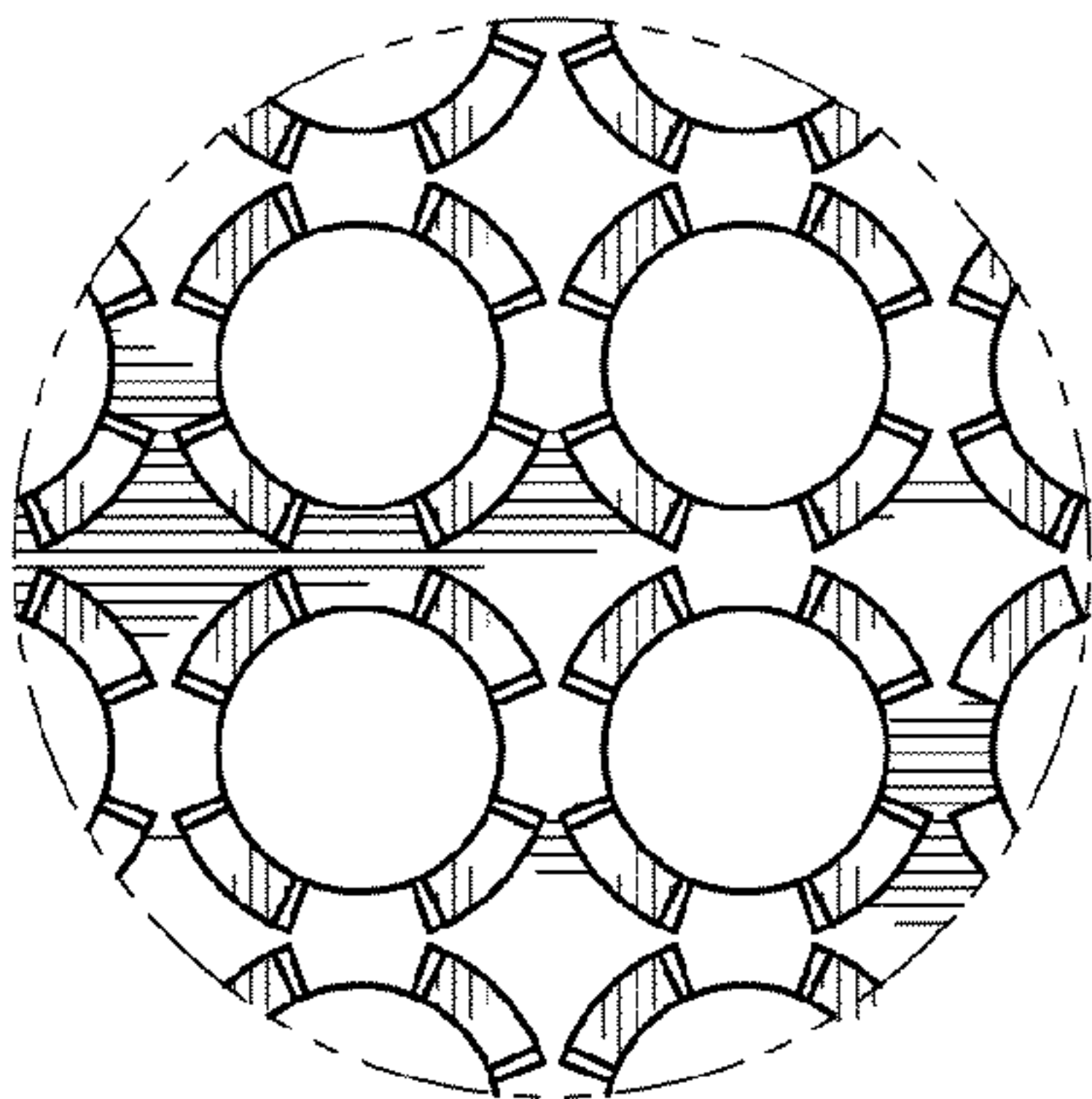
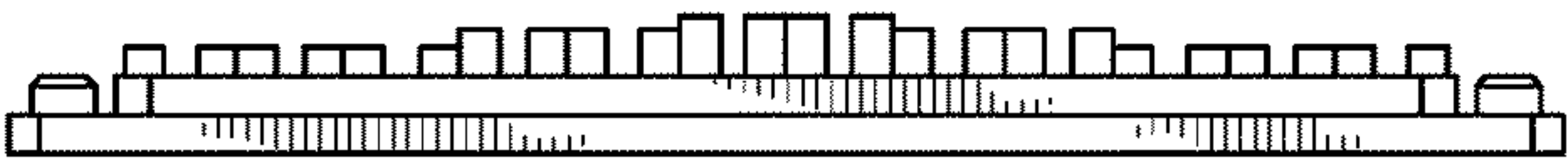


FIG. 7



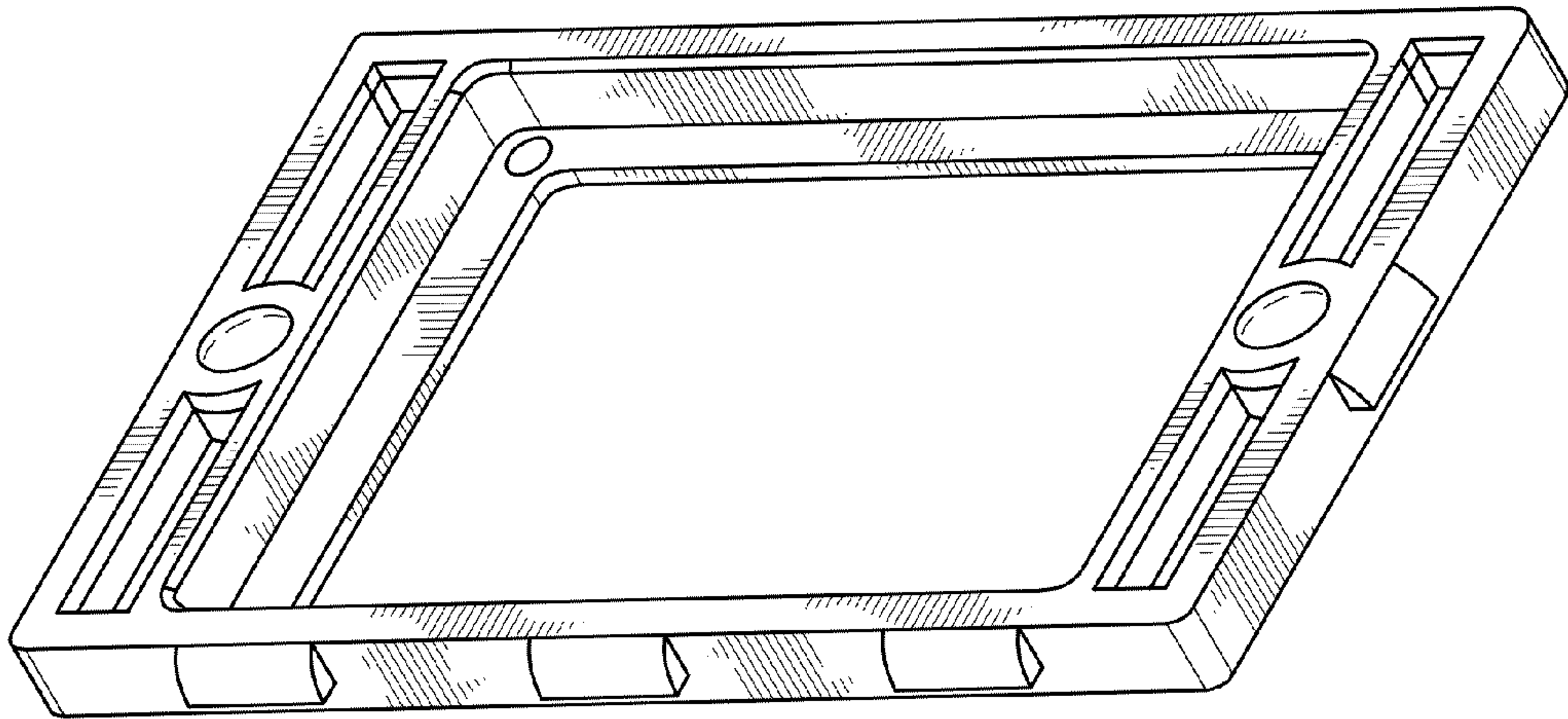


FIG. 8

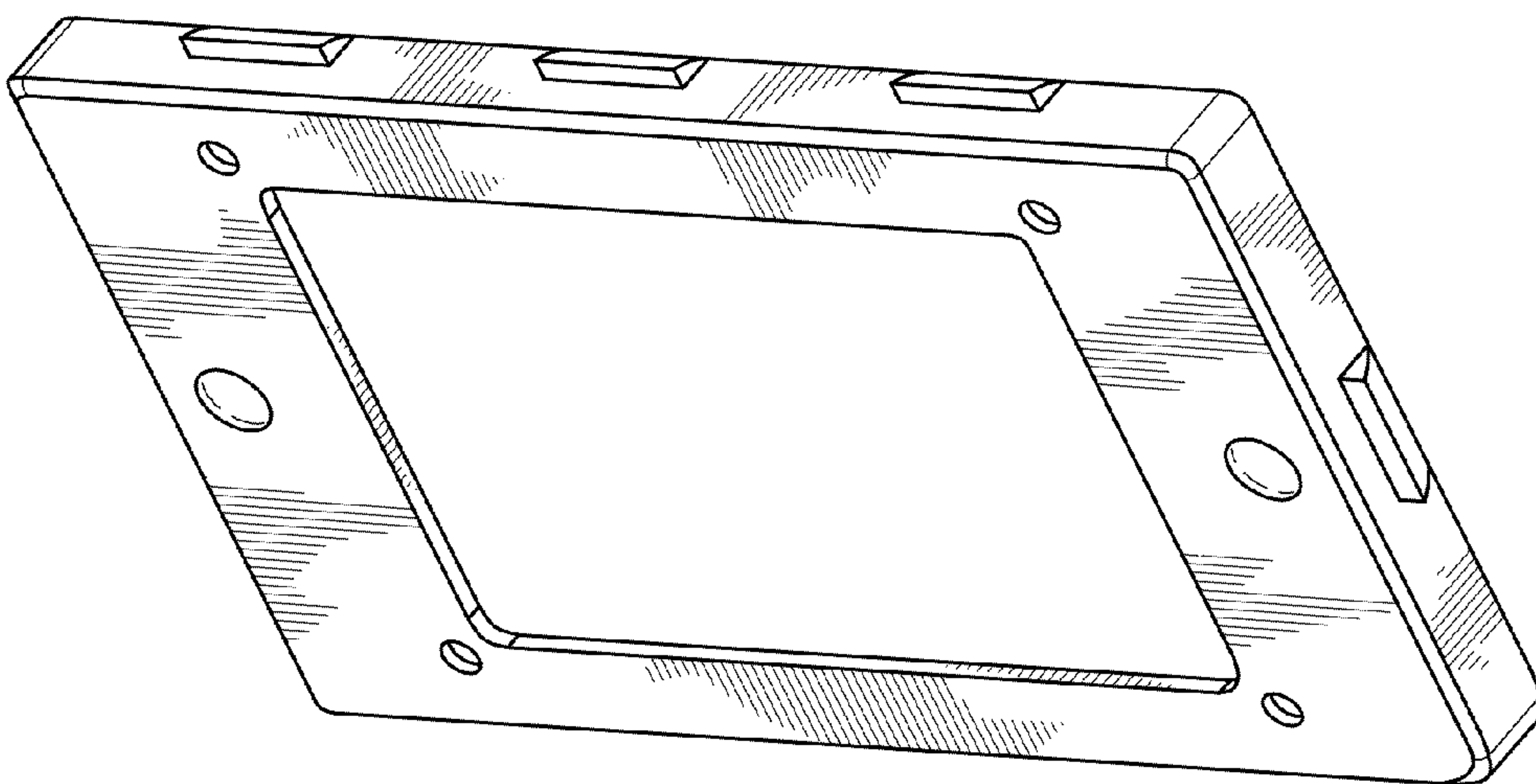


FIG. 9

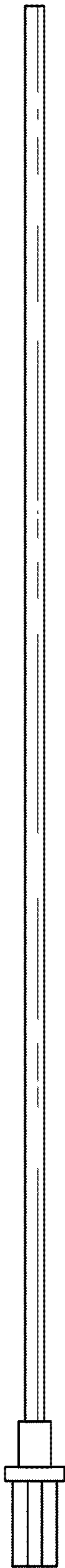


FIG. 10

FIG. 11

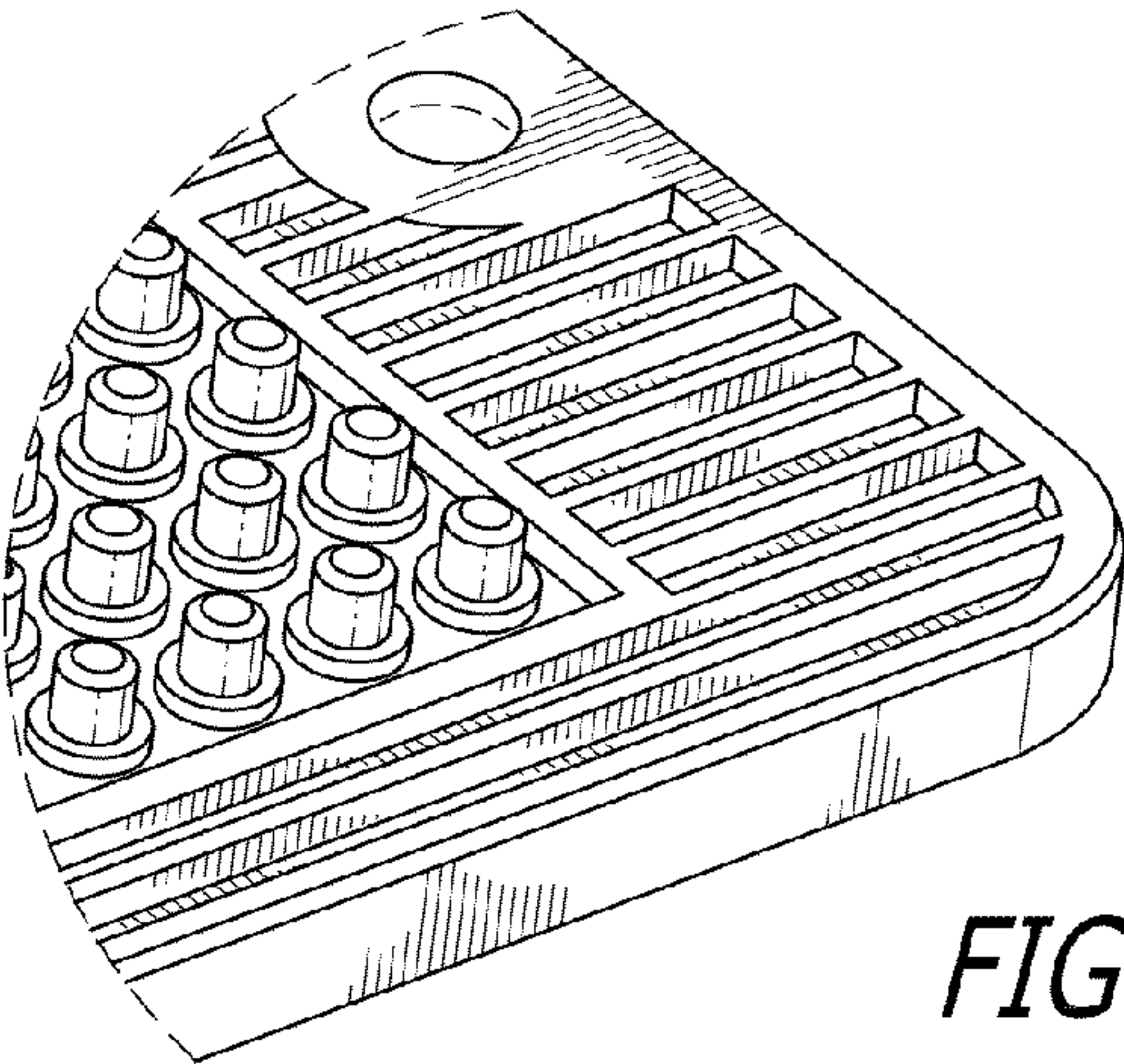
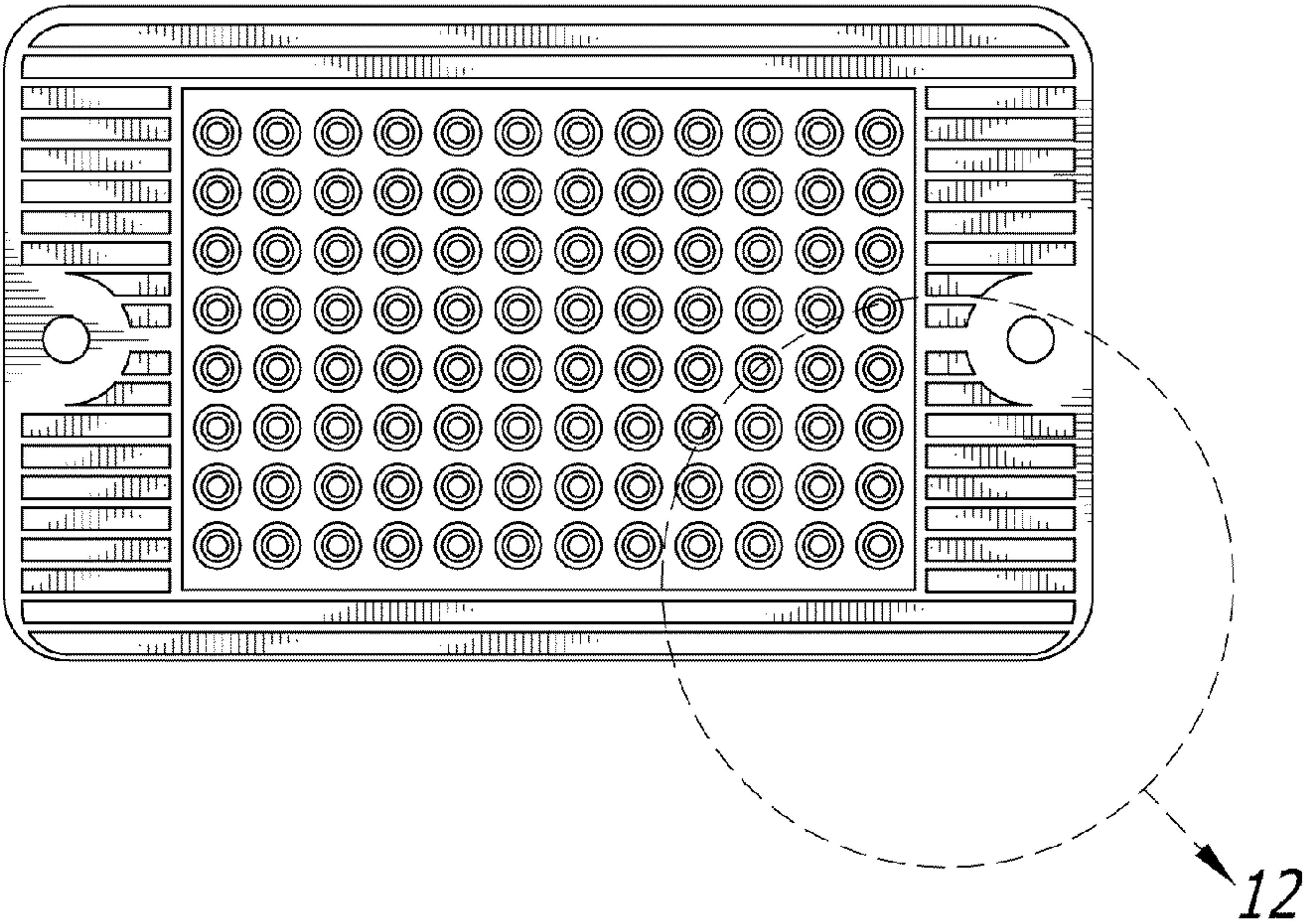


FIG. 12

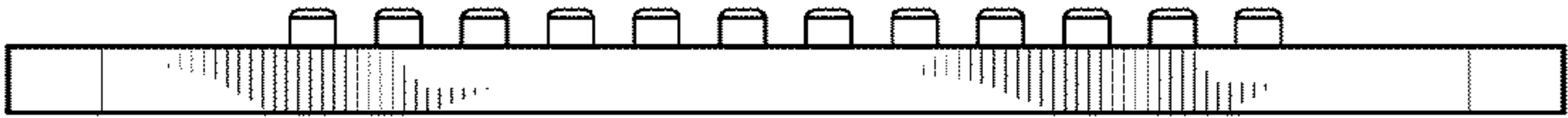


FIG. 13

FIG. 14

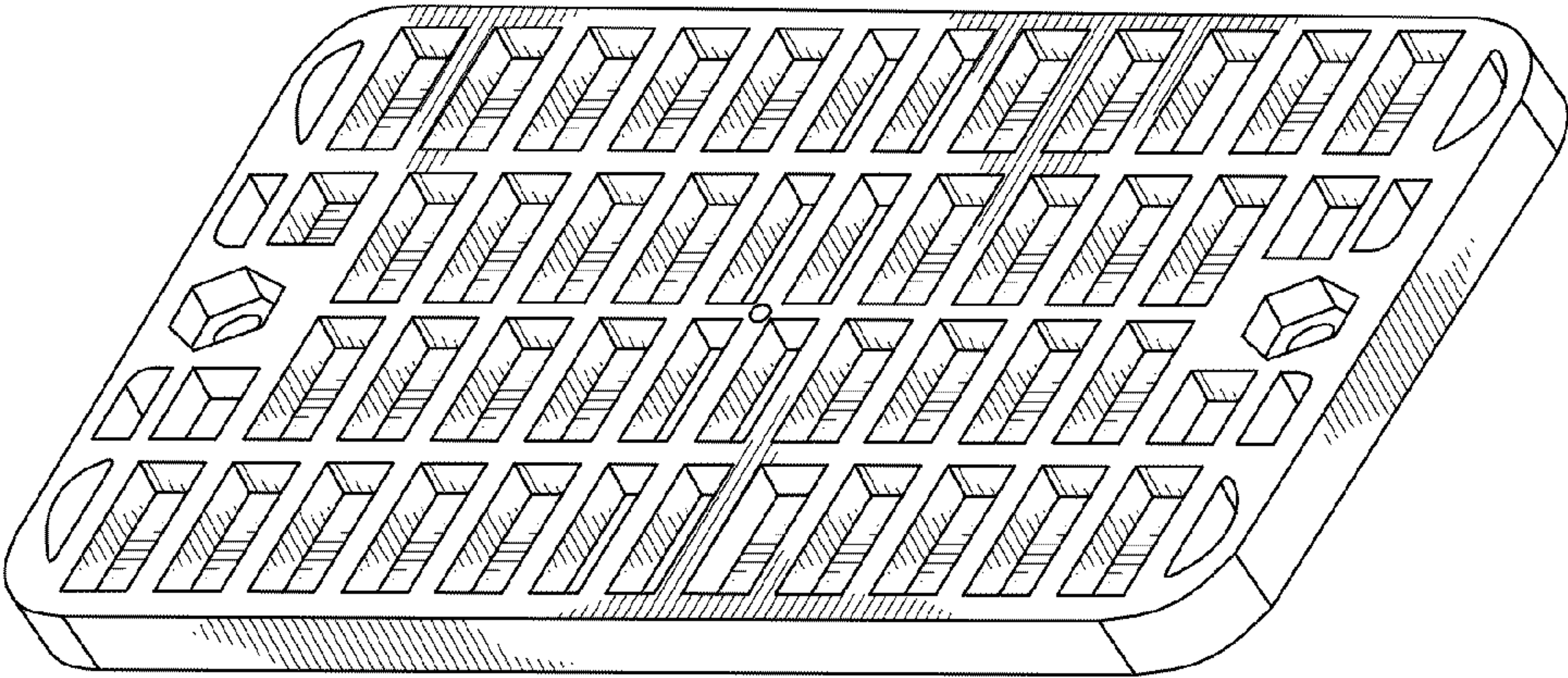
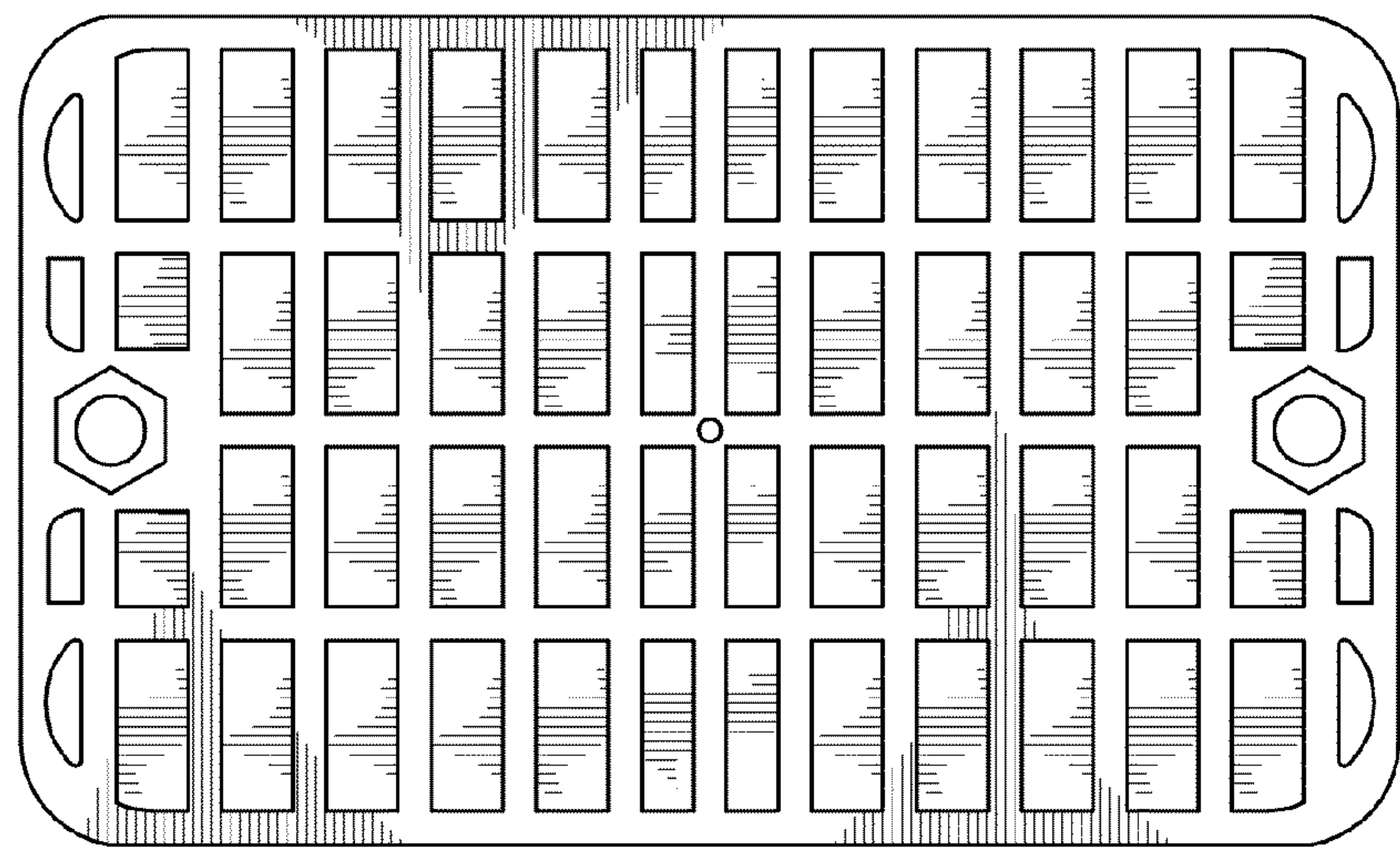
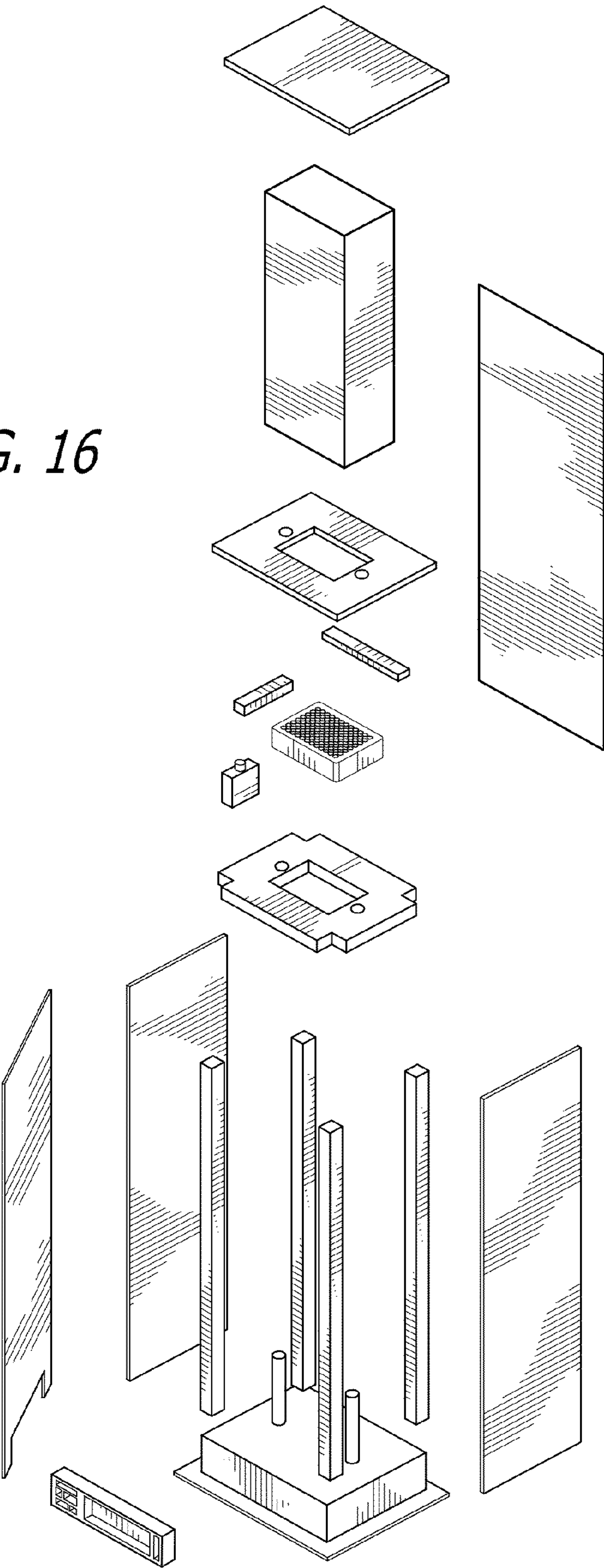


FIG. 15

FIG. 16



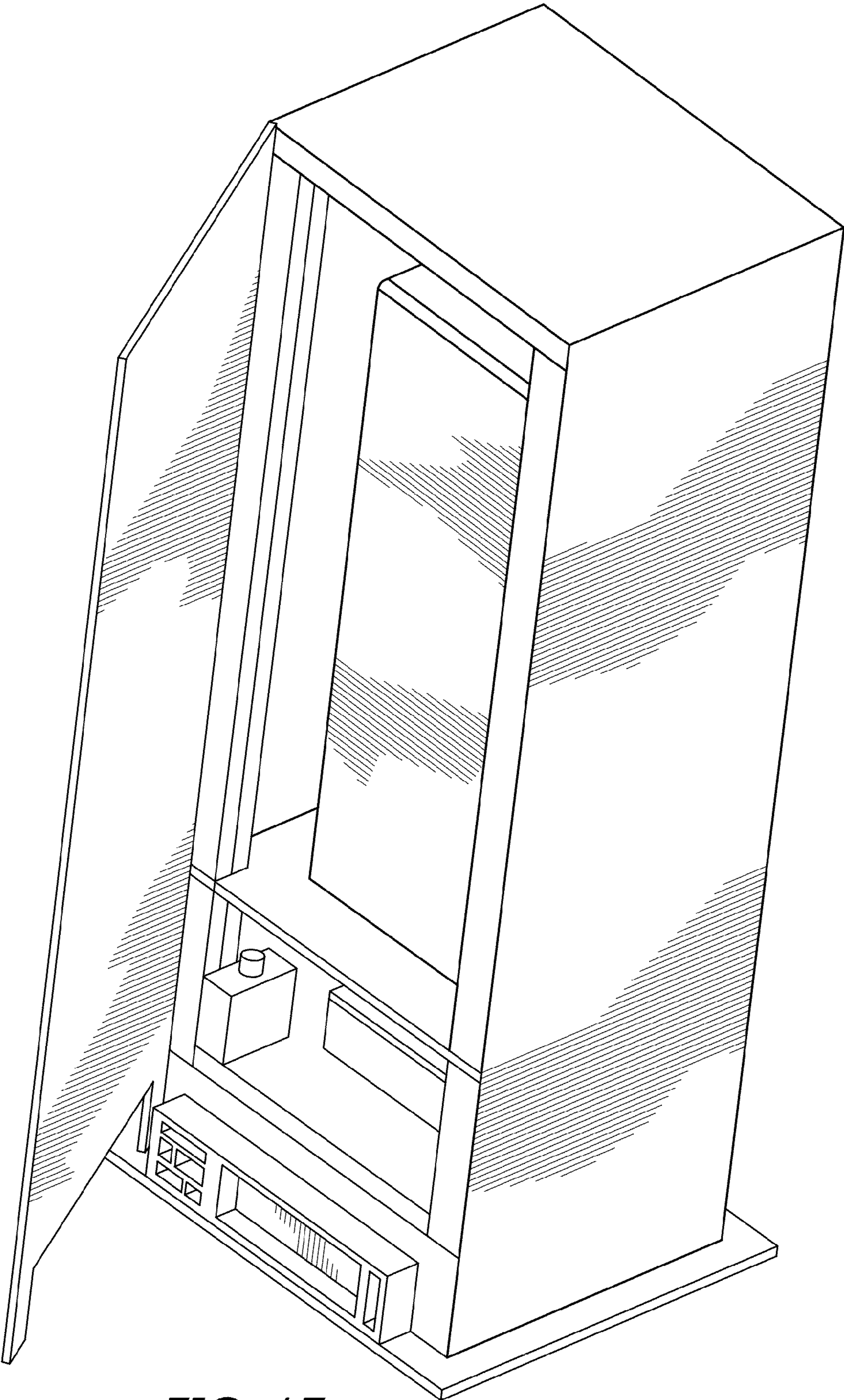


FIG. 17

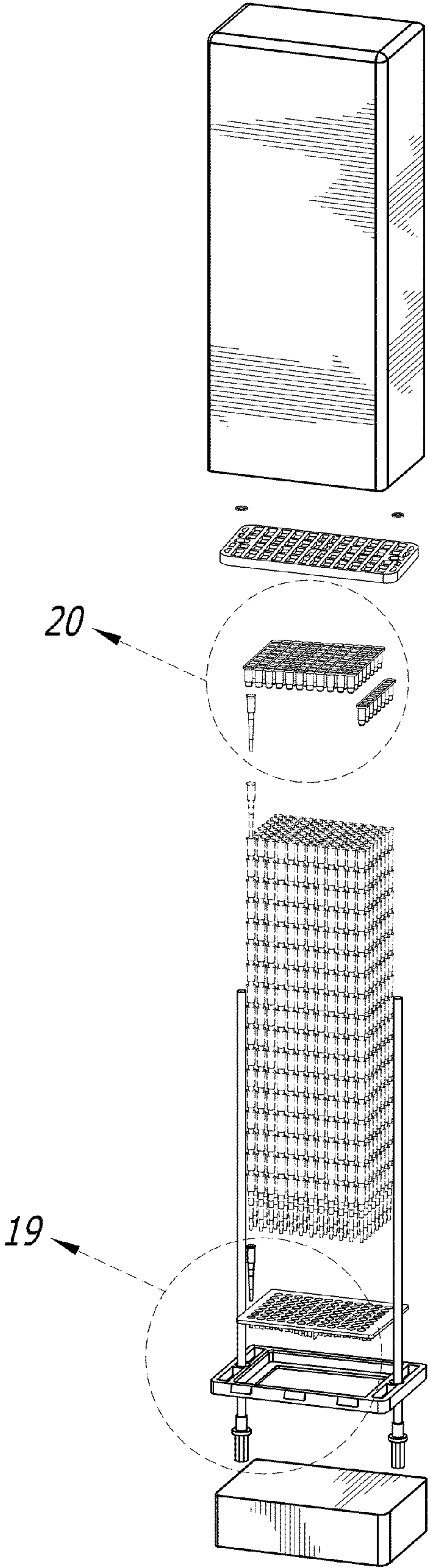


FIG. 18

FIG. 19

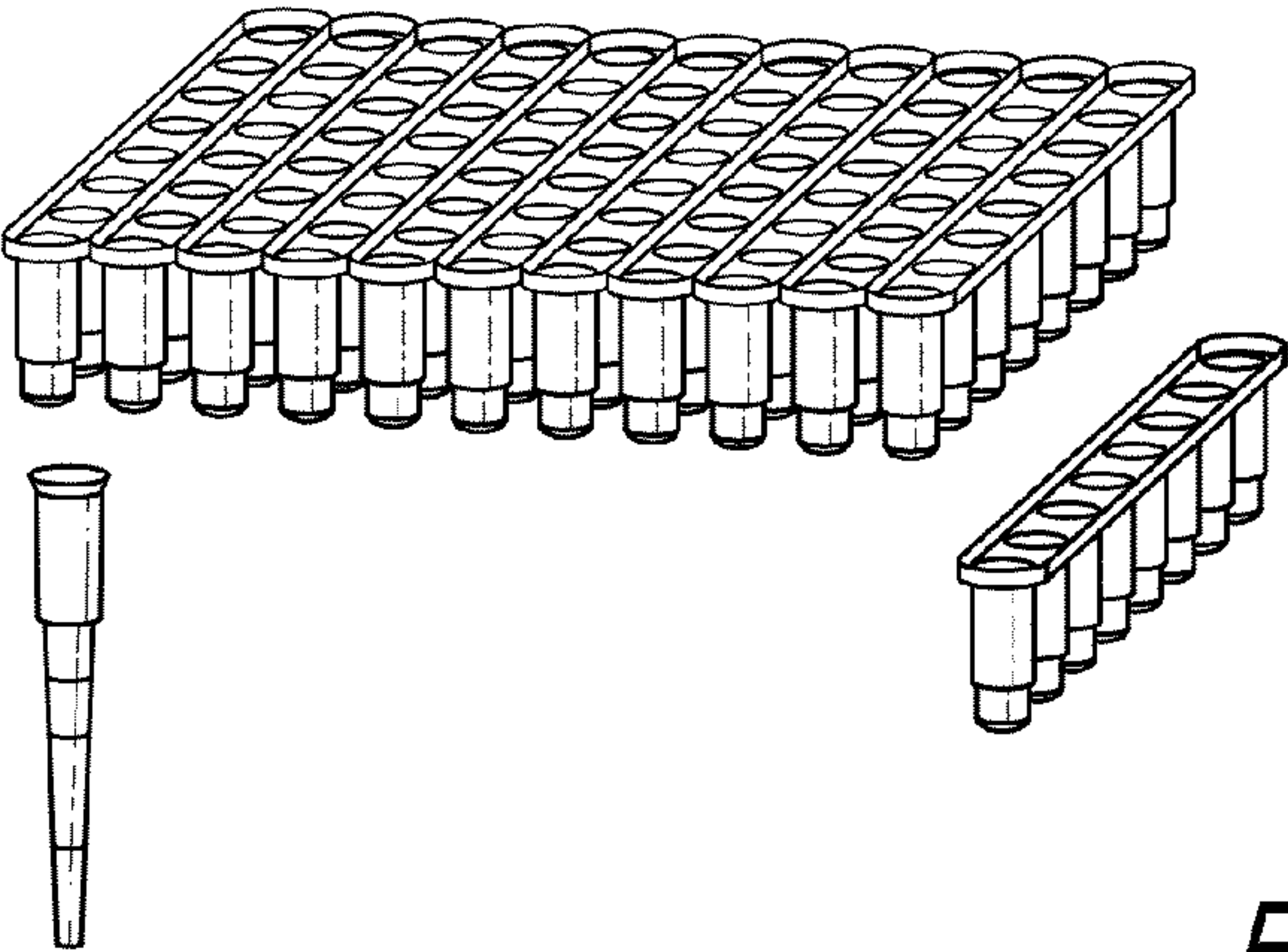
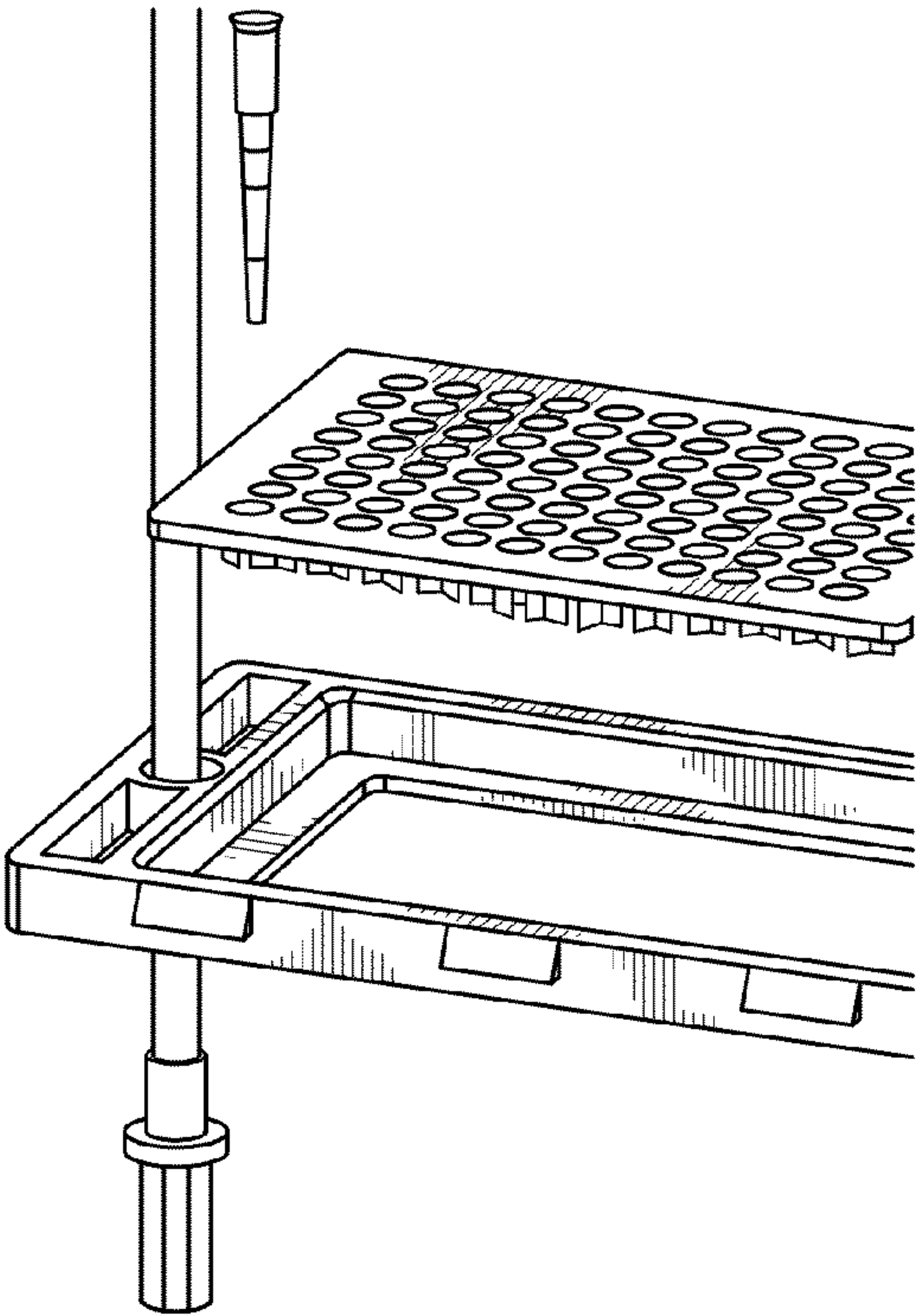


FIG. 20