

US00D816845S

(12) **United States Design Patent** (10) **Patent No.:** **US D816,845 S**
Yamada et al. (45) **Date of Patent:** **** May 1, 2018**

(54) **RADIATION IRRADIATOR FOR PARTICLE BEAM TREATMENT EQUIPMENT**

(71) Applicant: **Mitsubishi Electric Corporation,**
Tokyo (JP)

(72) Inventors: **Wataru Yamada,** Tokyo (JP); **Fumie Otsubo,** Tokyo (JP)

(73) Assignee: **Mitsubishi Electric Corporation,**
Tokyo (JP)

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

(21) Appl. No.: **29/578,237**

(22) Filed: **Sep. 20, 2016**

(30) **Foreign Application Priority Data**

Mar. 25, 2016 (JP) 2016-006515
Mar. 25, 2016 (JP) 2016-006516
Mar. 25, 2016 (JP) 2016-006517
Mar. 25, 2016 (JP) 2016-006518
Mar. 25, 2016 (JP) 2016-006519

(51) **LOC (11) Cl.** **24-01**

(52) **U.S. Cl.**
USPC **D24/158**

(58) **Field of Classification Search**
USPC D24/107, 158-161, 185, 186, 187, 231,
D24/140, 183, 184
CPC A61N 5/1049; A61N 5/1078; A61N
2005/1061; A61N 2005/1063; A61N
6/4429; A61N 6/4435
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D394,316 S * 5/1998 Kodama D24/158
D427,685 S * 7/2000 Danby D24/158

D554,755 S * 11/2007 Iwasaki D24/158
7,659,528 B2 * 2/2010 Uematsu A61N 5/1049
250/493.1
D639,433 S * 6/2011 Dietz D24/158
D717,437 S * 11/2014 Yamada D24/158
D719,656 S * 12/2014 Yamada D24/158
D783,827 S * 4/2017 Arishima D24/158
2003/0083562 A1 * 5/2003 Bani-Hashemi A61N 5/1049
600/407
2004/0184579 A1 * 9/2004 Mihara A61N 5/1049
378/65

(Continued)

Primary Examiner — Anhdao Doan

(74) *Attorney, Agent, or Firm* — Studebaker & Brackett
PC

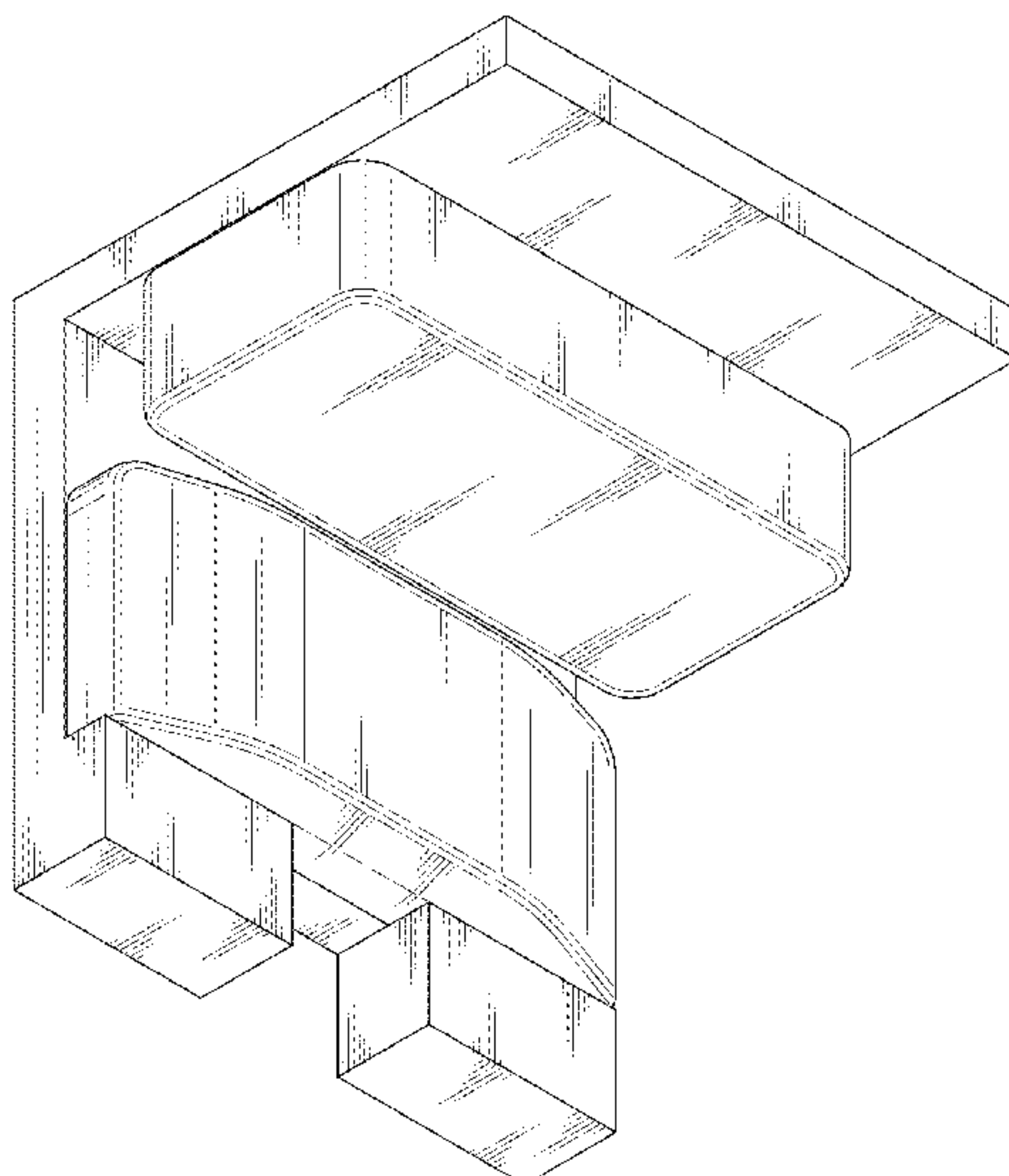
(57) **CLAIM**

The ornamental design for a radiation irradiator for particle beam treatment equipment, as shown and described.

DESCRIPTION

FIG. 1 is a front, bottom and left side perspective view of a radiation irradiator for particle beam treatment equipment, showing an initial embodiment of our new design;
FIG. 2 is a front view thereof;
FIG. 3 is a rear view thereof;
FIG. 4 is a top view thereof;
FIG. 5 is a bottom view thereof;
FIG. 6 is a left side view thereof;
FIG. 7 is a right side view thereof;
FIG. 8 is a front, bottom and left side perspective view of a radiation irradiator for particle beam treatment equipment, showing the second embodiment of our new design;
FIG. 9 is a front view thereof;
FIG. 10 is a rear view thereof;
FIG. 11 is a top view thereof;
FIG. 12 is a bottom view thereof;
FIG. 13 is a left side view thereof; and,
FIG. 14 is a right side view thereof.

1 Claim, 14 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2006/0113482 A1* 6/2006 Pelizzari A61N 5/1049
250/370.09
2010/0195792 A1* 8/2010 Kunz A61B 6/4429
378/65
2017/0189724 A1* 7/2017 Liu A61N 5/1049

* cited by examiner

Fig. 1

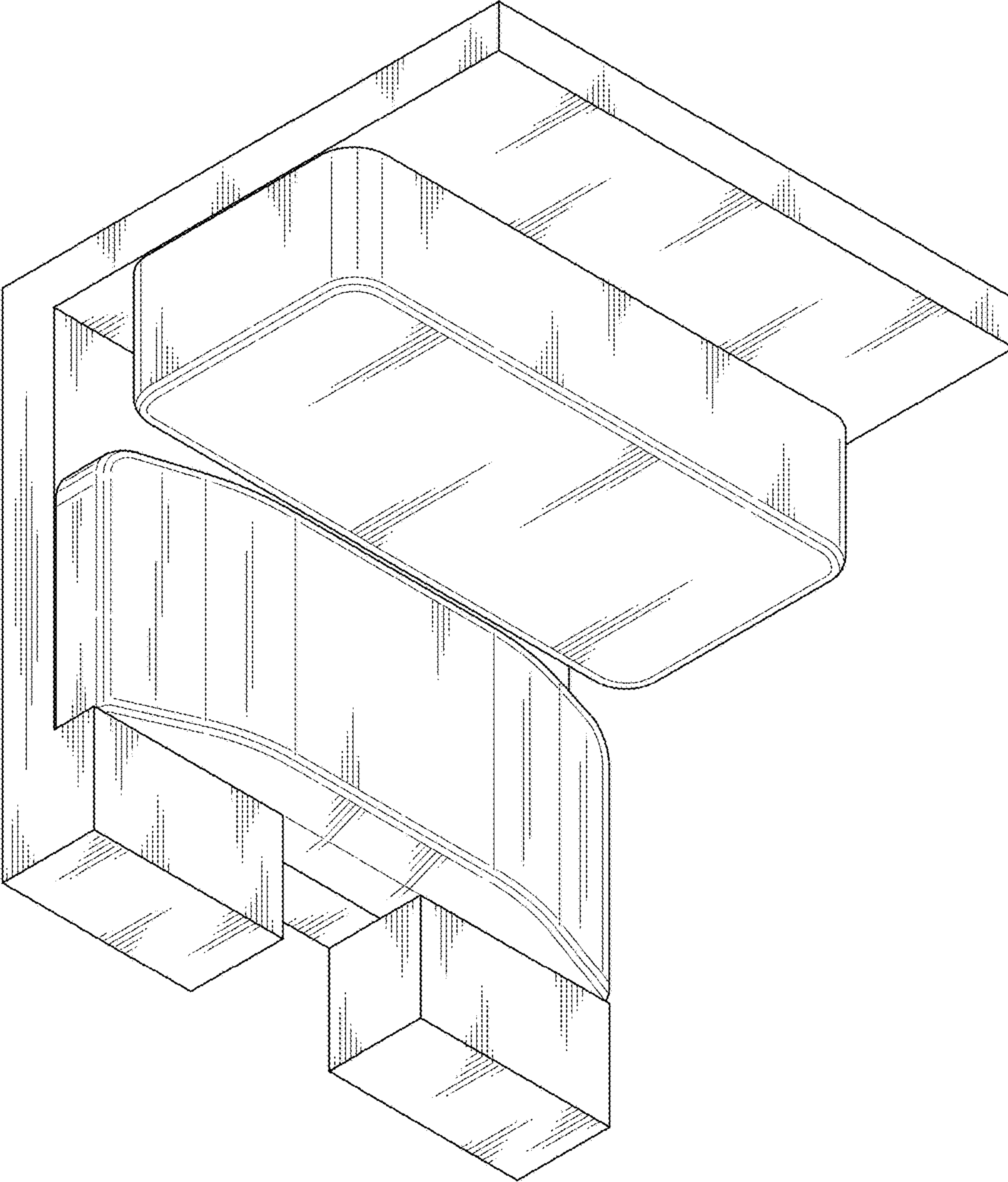


Fig. 2

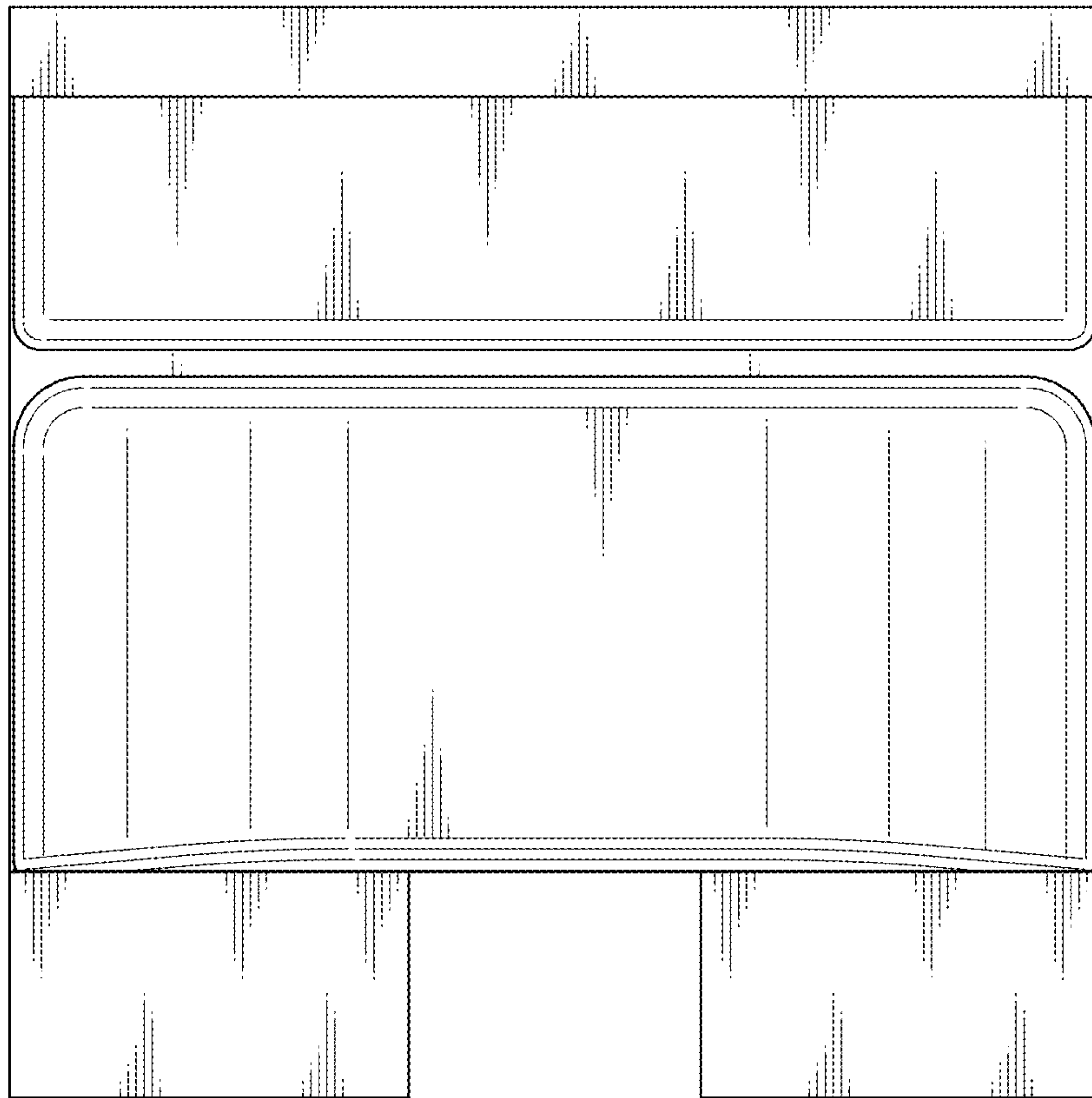


Fig. 3

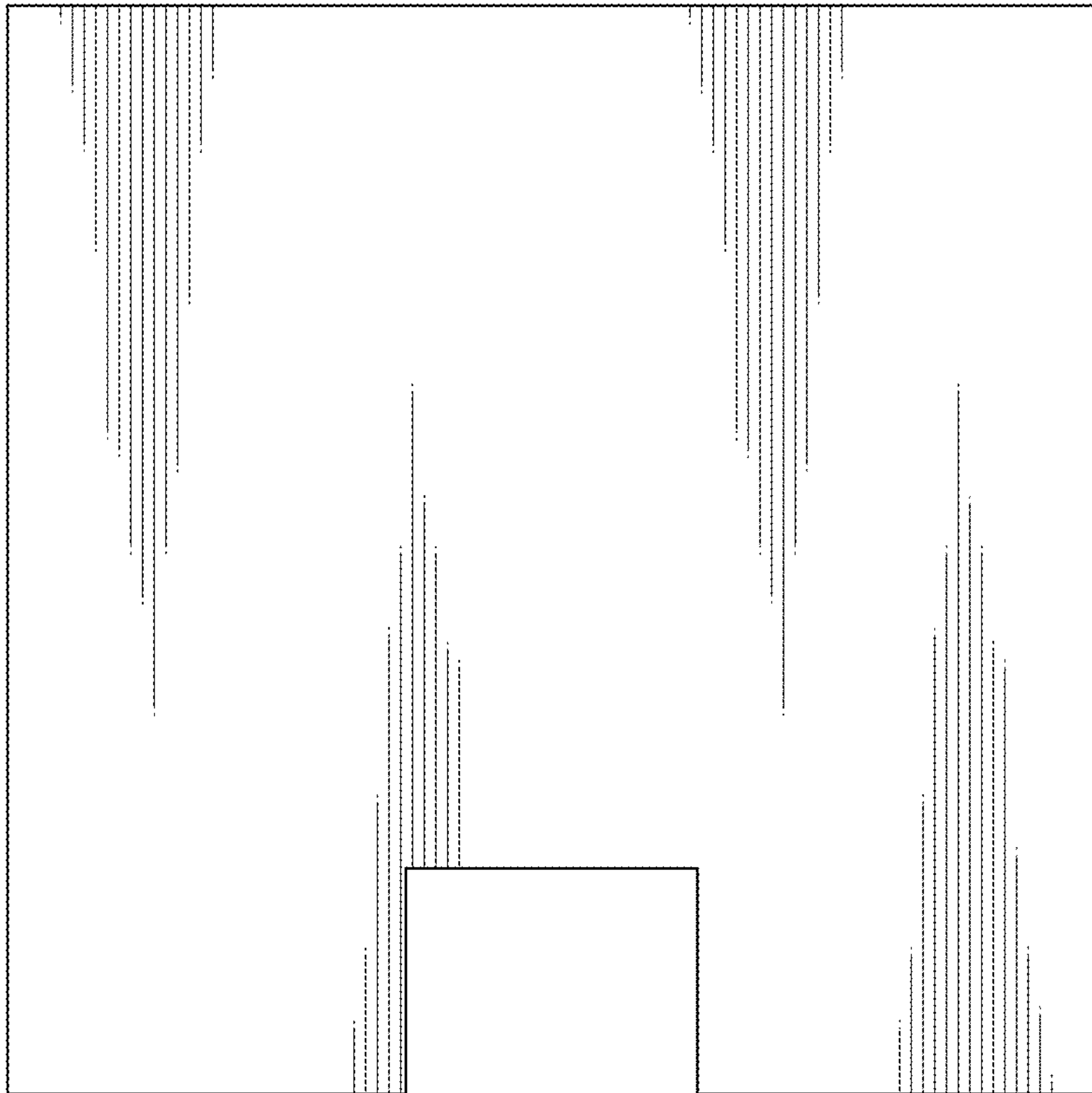


Fig. 4

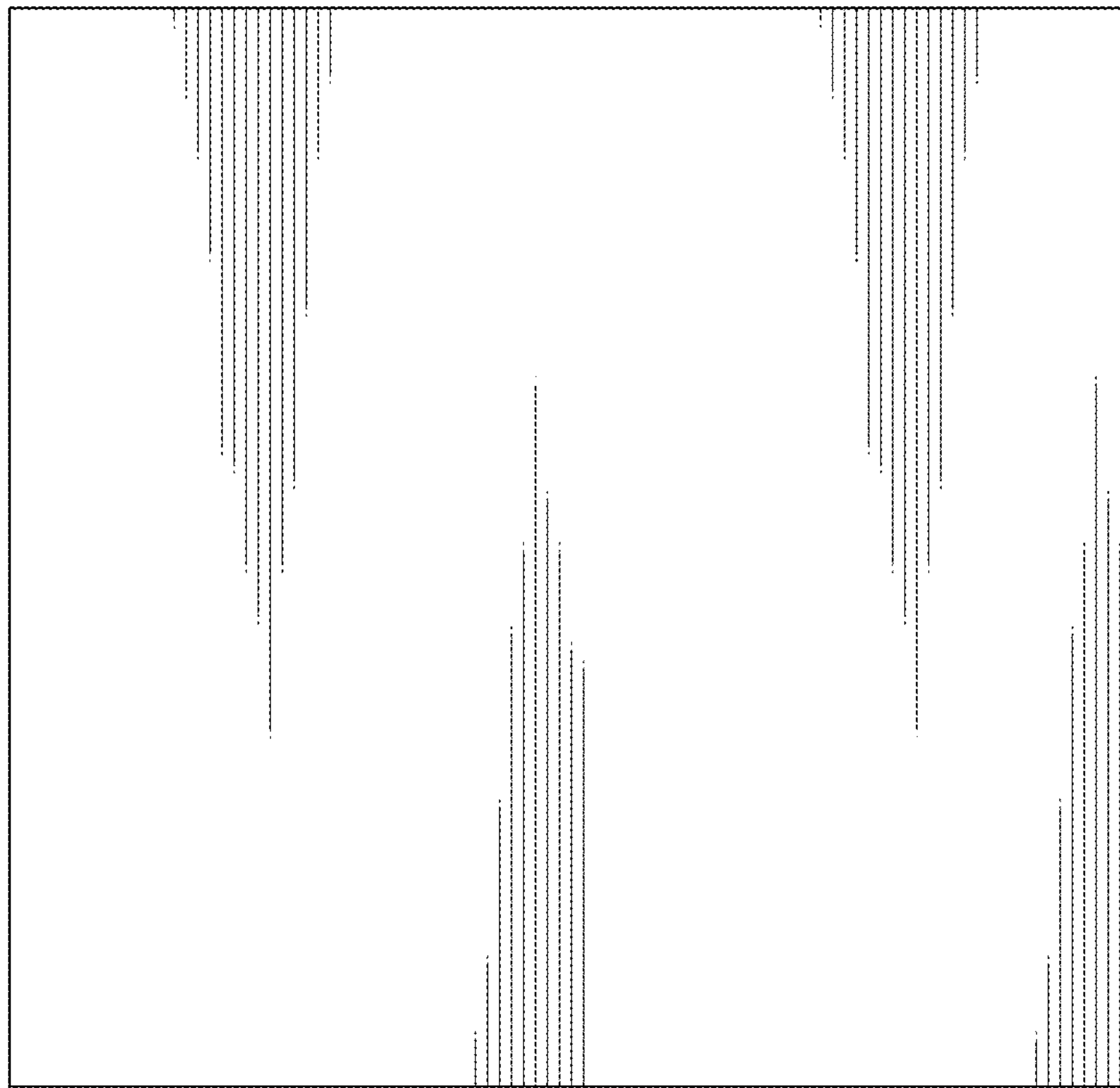


Fig. 5

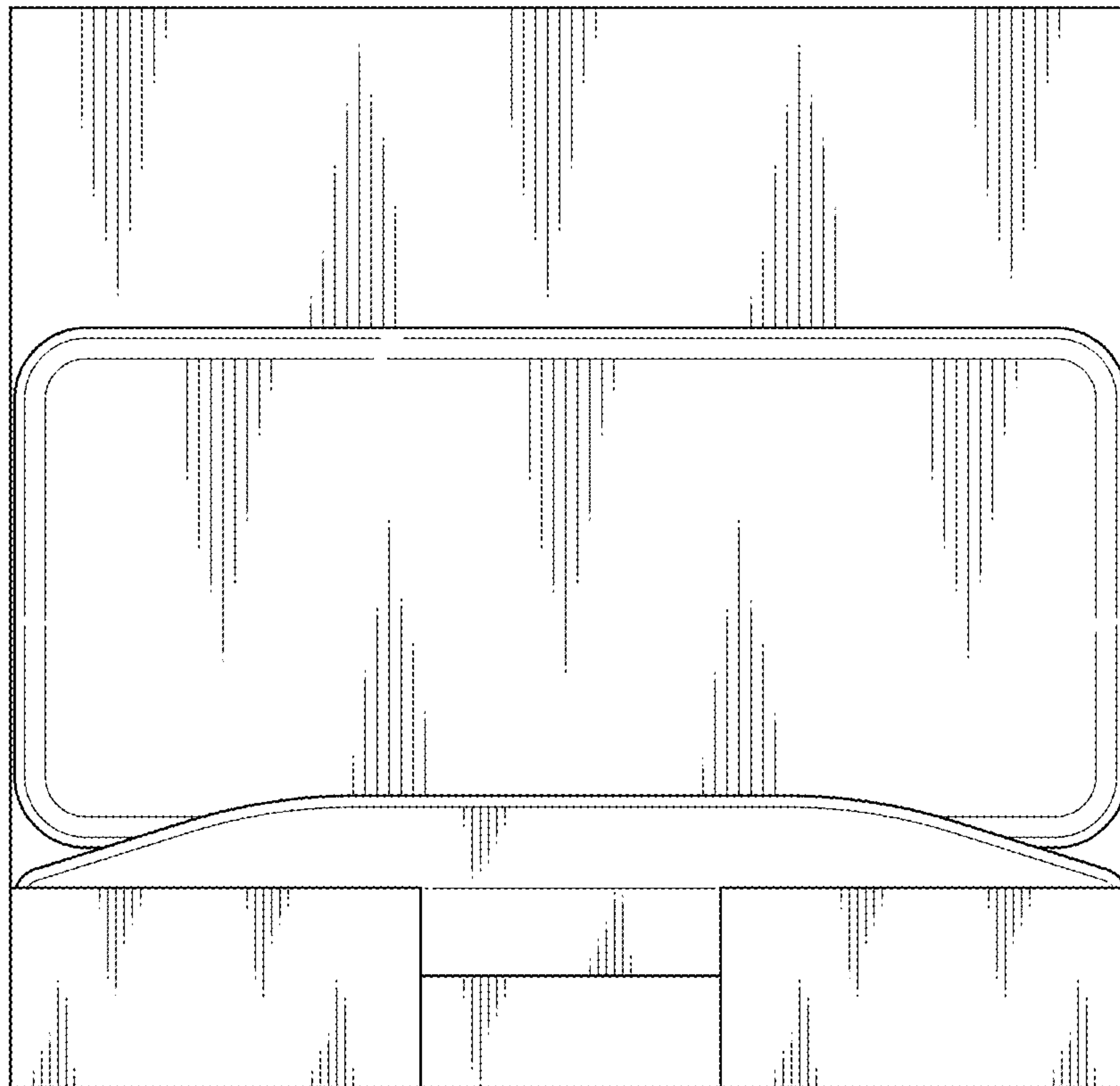


Fig. 6

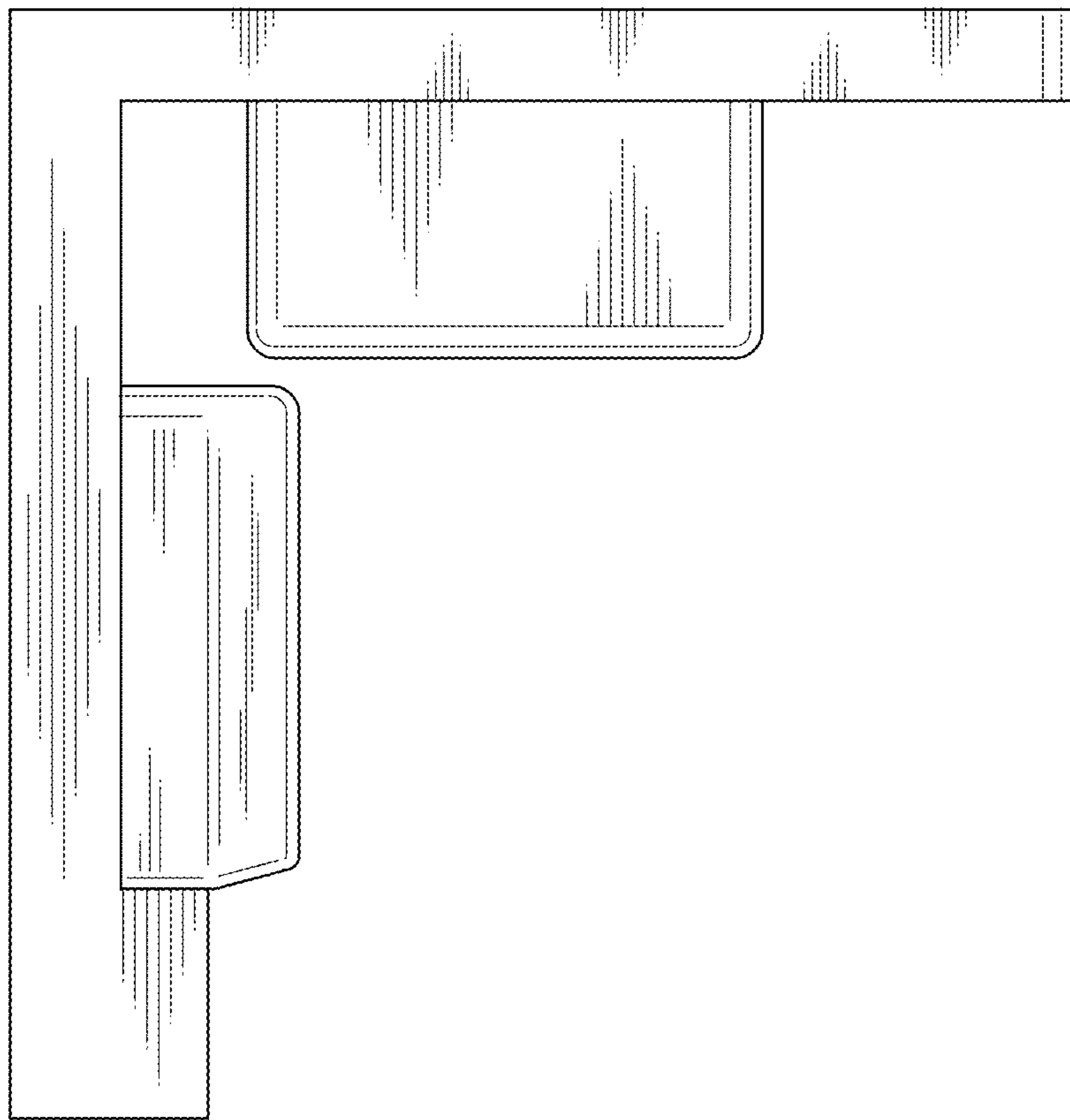


Fig. 7

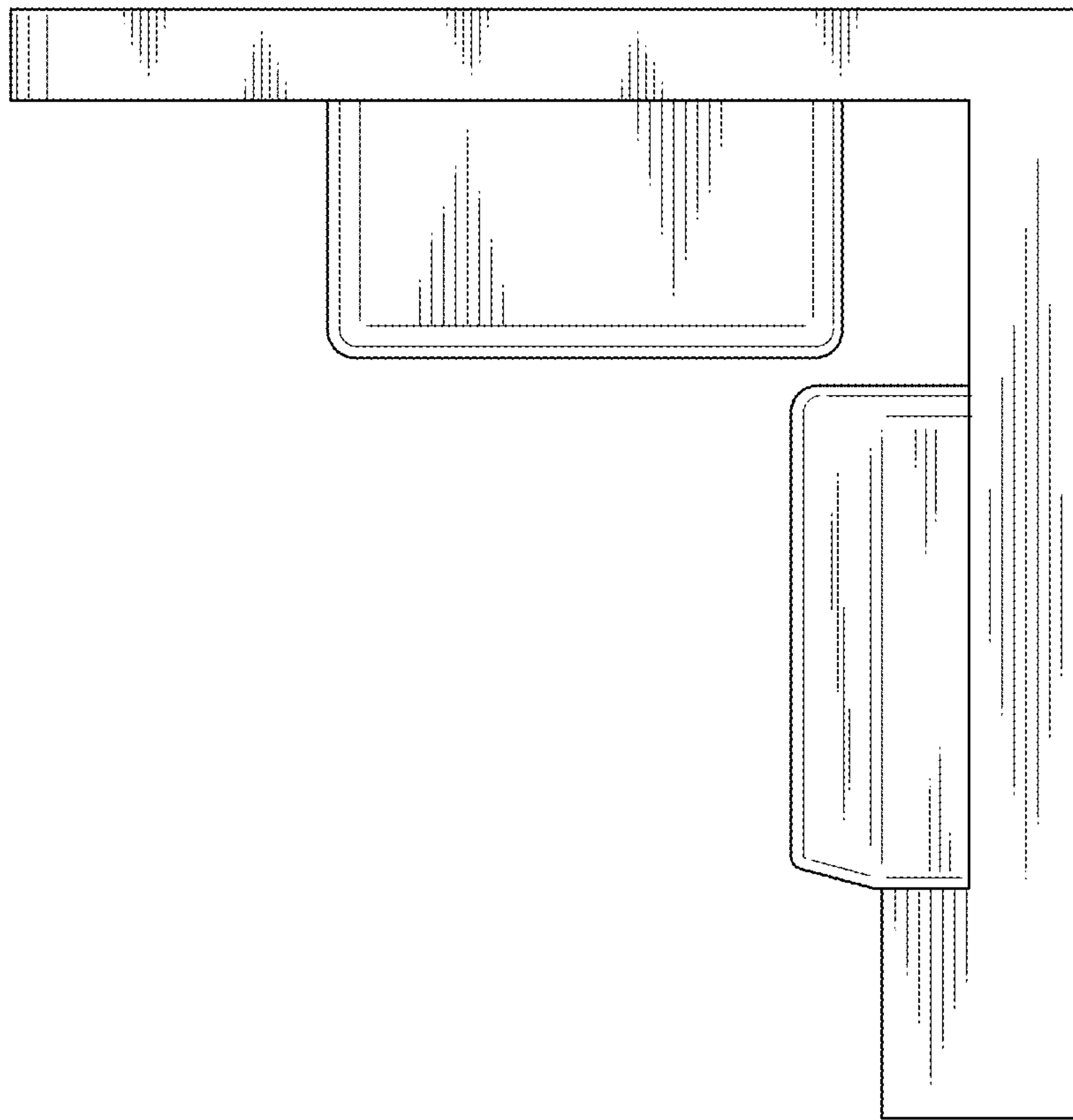


Fig. 8

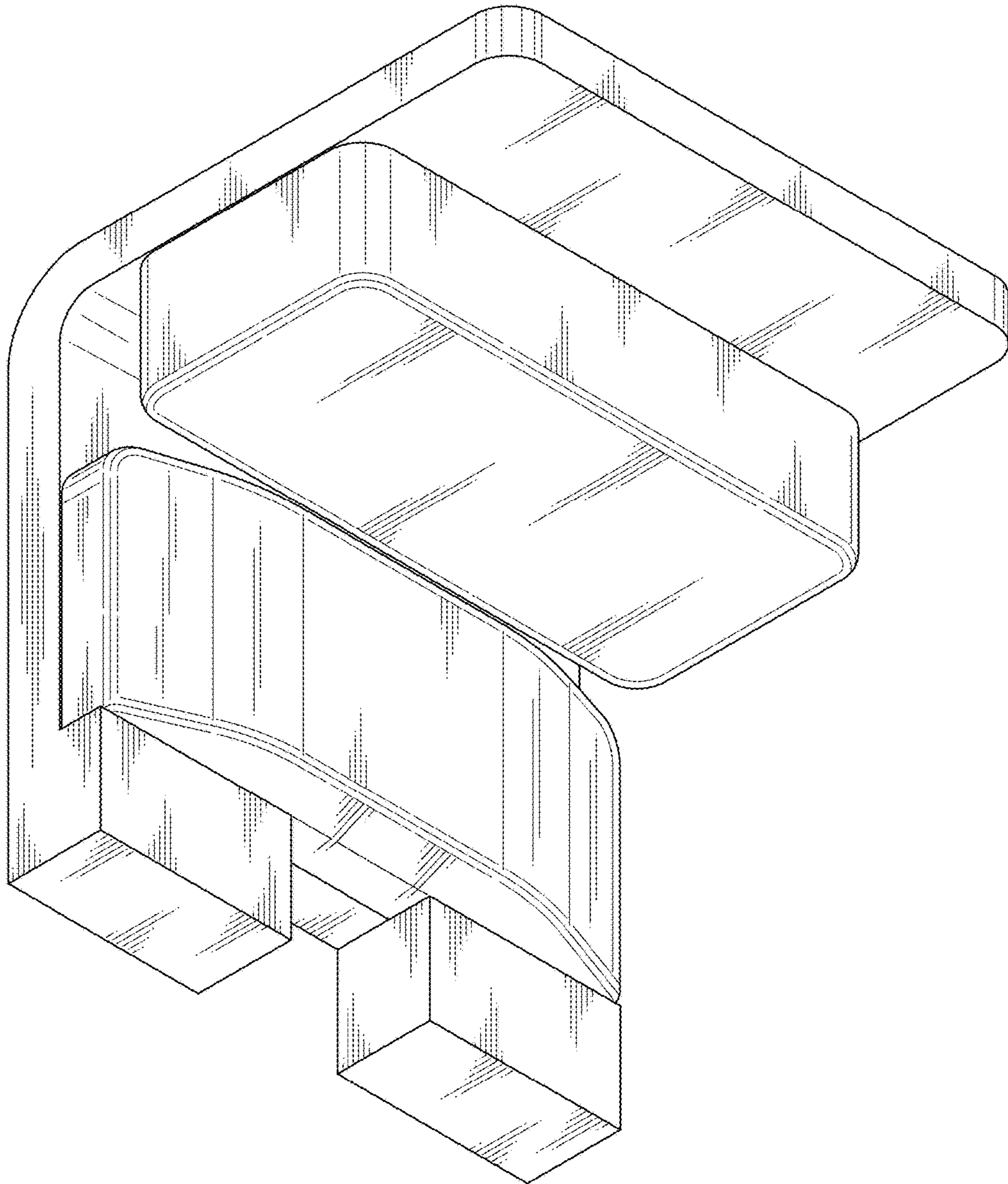


Fig. 9

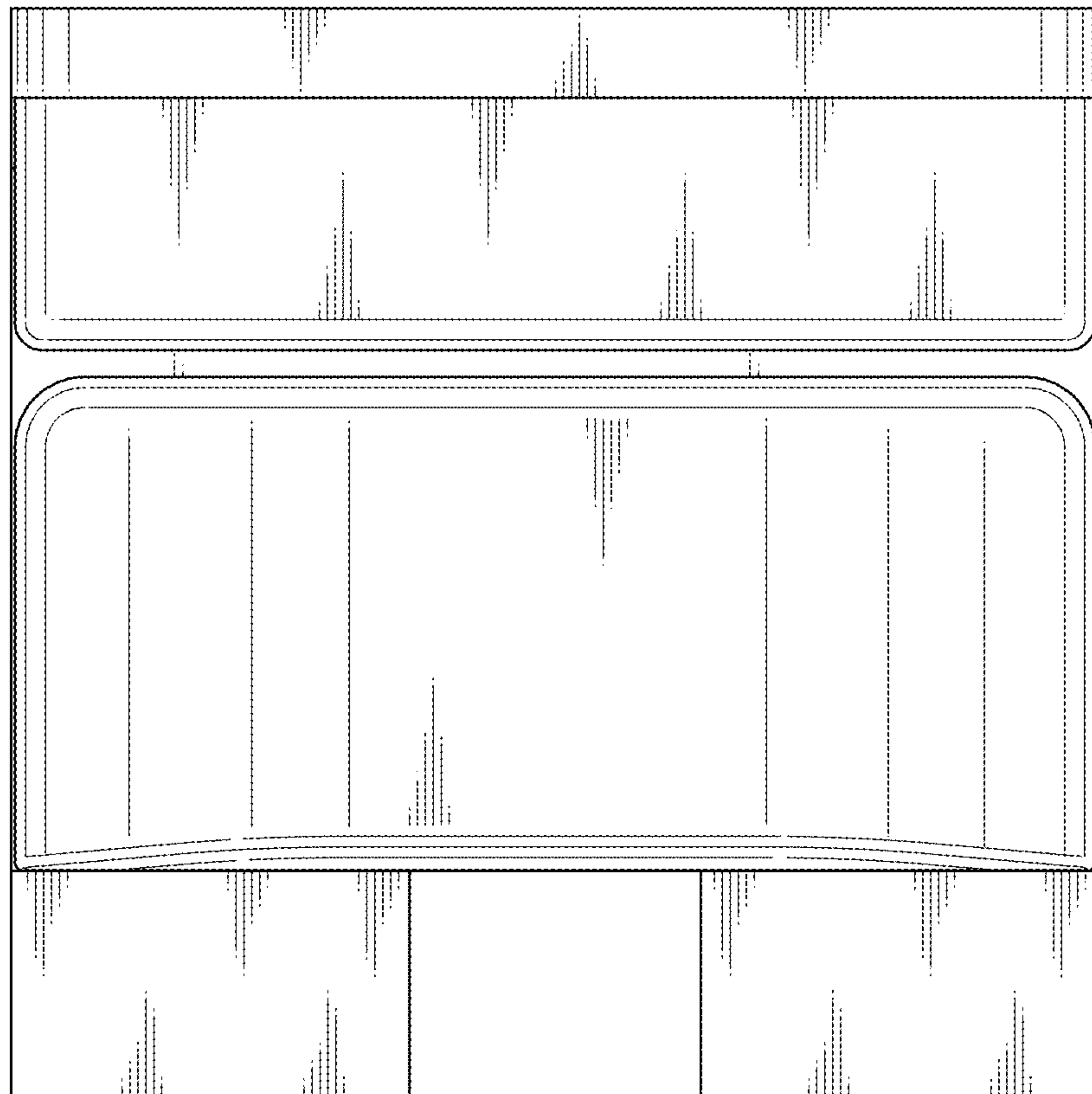


Fig. 10

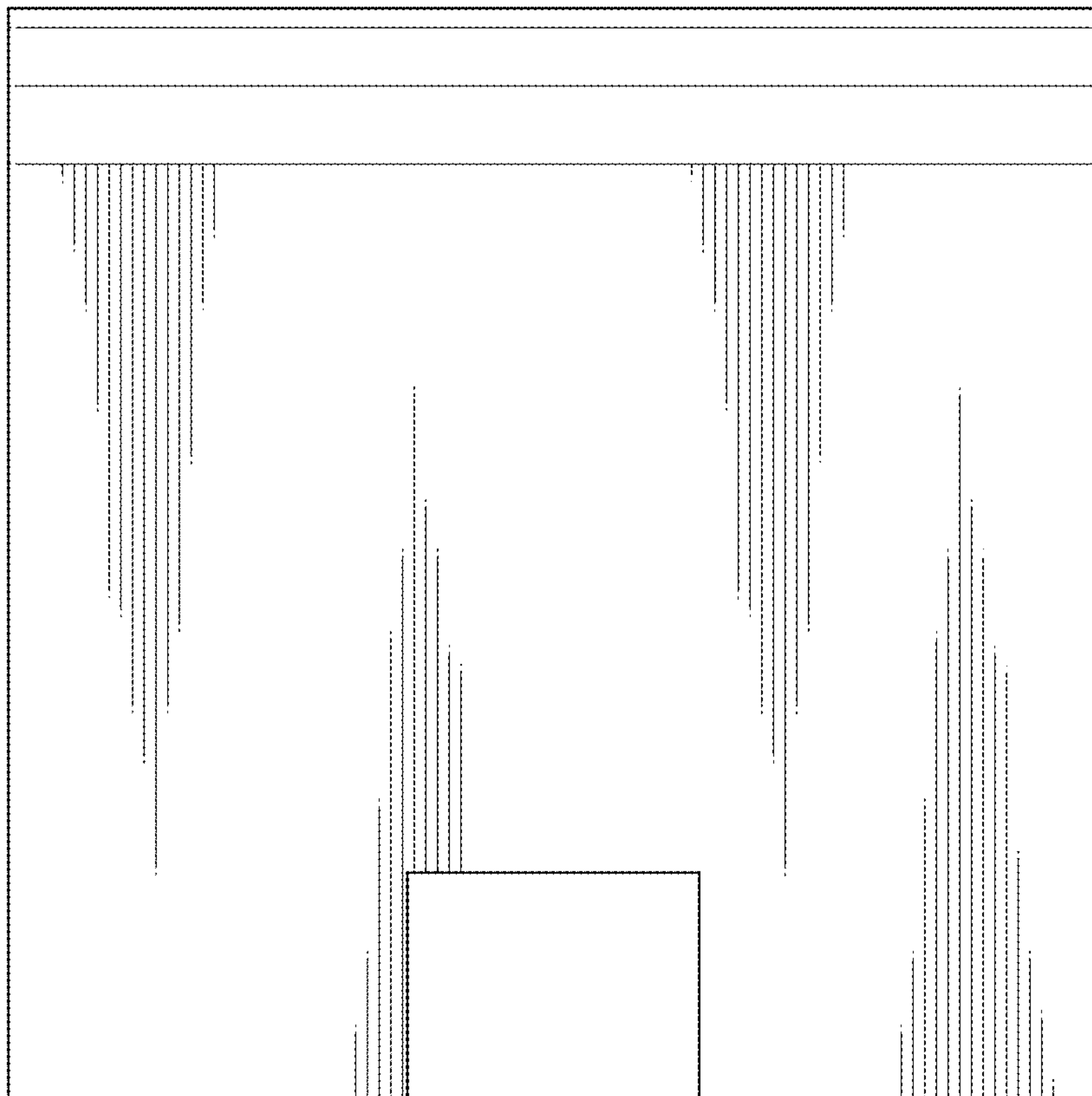


Fig. 11

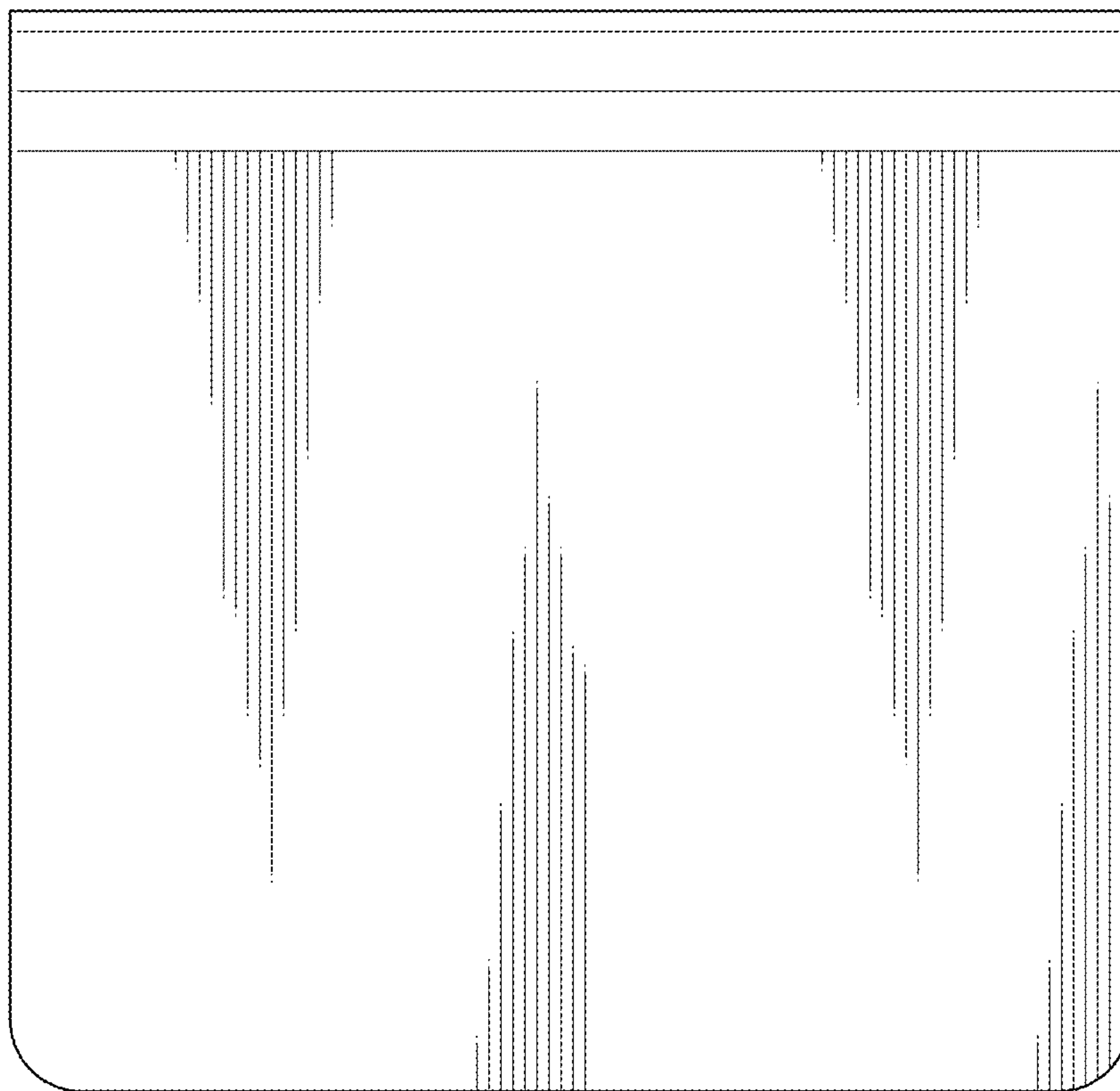


Fig. 12

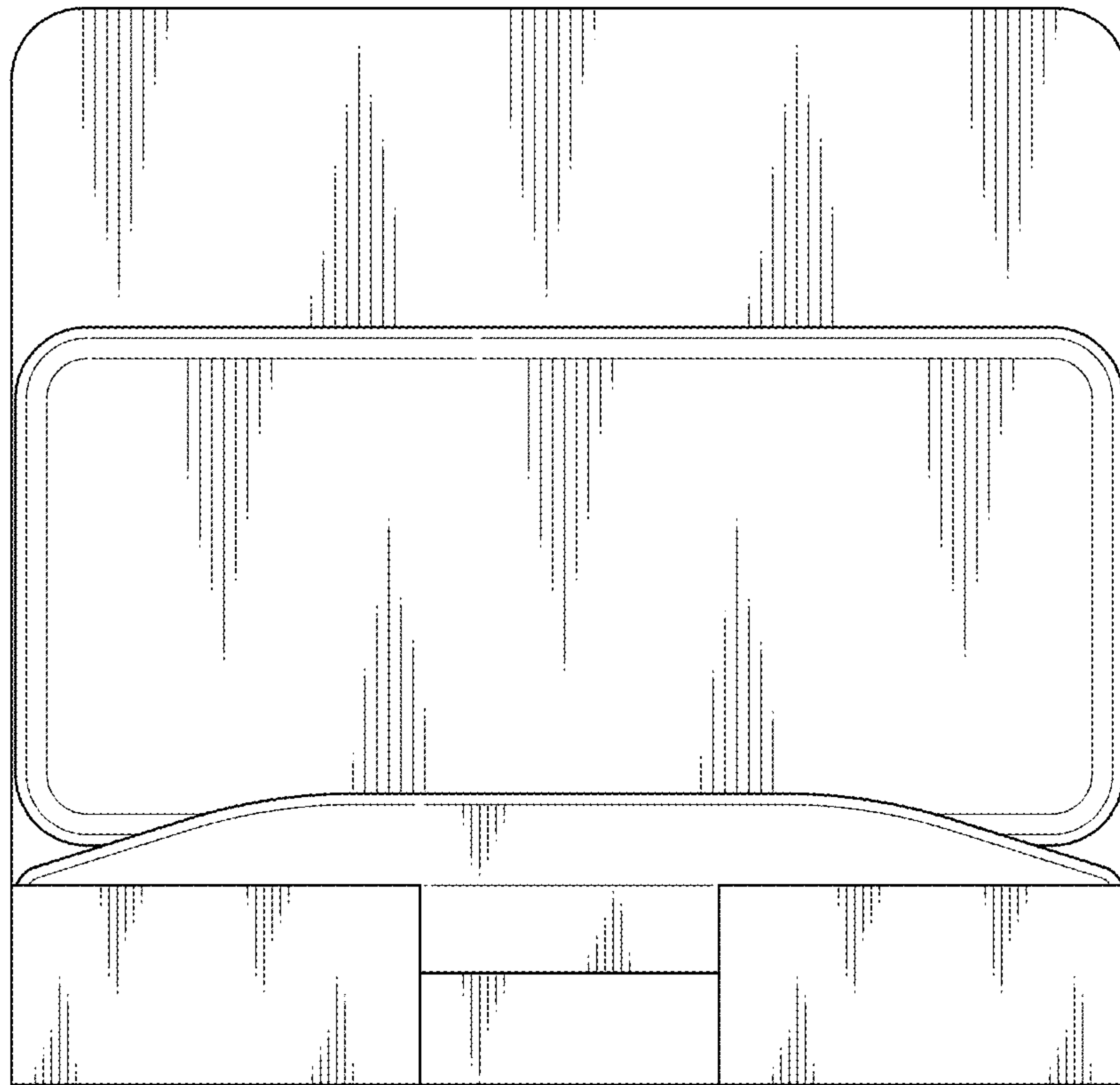


Fig. 13

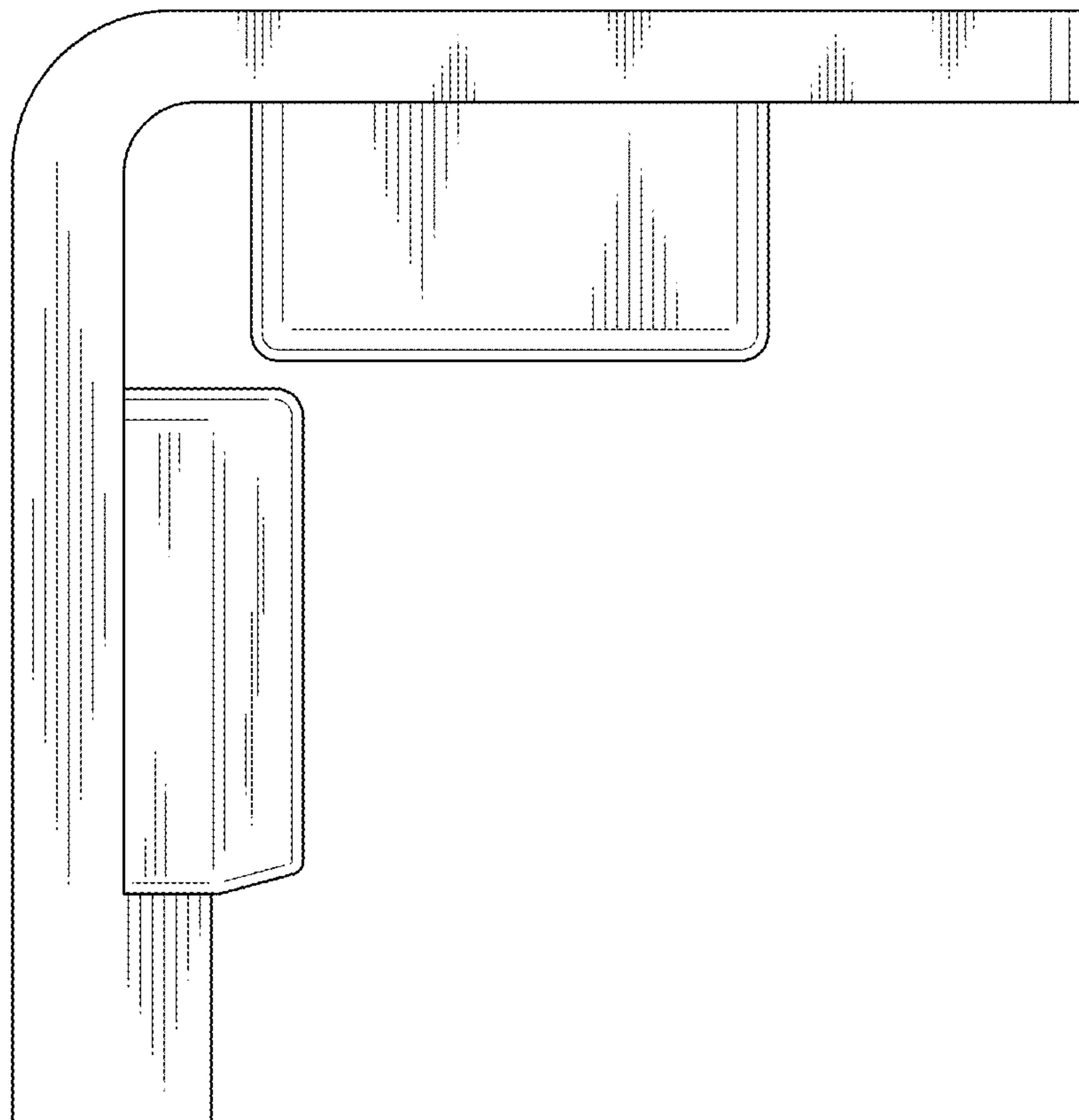


Fig. 14

