



US00D529450S

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

(10) **Patent No.:** **US D529,450 S**

(45) **Date of Patent:** **** Oct. 3, 2006**

(54) **HEAT SINK**

2005/0247437 A1 * 11/2005 Ying et al. 165/104.33

(75) Inventors: **Masashi Miyazawa**, Nagano (JP);
Tomoaki Ikeda, Nagano (JP); **Toshiki Ogawara**, Nagano (JP)

FOREIGN PATENT DOCUMENTS

TW	480136	3/1991
TW	480137	3/1991
TW	514487	12/1991
TW	514488	12/1991

(73) Assignee: **Sanyo Denki Co., Ltd.**, Tokyo (JP)

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

* cited by examiner

(21) Appl. No.: **29/242,246**

Primary Examiner—Selina Sikder

(22) Filed: **Nov. 8, 2005**

(74) *Attorney, Agent, or Firm*—Rankin, Hill, Porter & Clark LLP

(30) **Foreign Application Priority Data**

(57) **CLAIM**

May 12, 2005 (JP) 2005-013654

The ornamental design for a heat sink, as shown and described.

(51) **LOC (8) Cl.** **13-03**

DESCRIPTION

(52) **U.S. Cl.** **D13/179**

(58) **Field of Classification Search** D13/179;
D23/370; 165/80.3, 104.33, 121, 122, 146,
165/180, 185; 174/16.3; 257/706, 707, 718–722;
361/271, 274.3, 695, 697, 700, 702, 704,
361/709–711

This article is used for cooling a heated electronic component such as a CPU which is typically used in a microcomputer and is mounted on the rear of the metallic base. FIG. 1 is a front side elevation view of the heat sink; FIG. 2 is a rear side elevation view; FIG. 3 is a right side elevation view; FIG. 4 is a left side elevation view; FIG. 5 is a top plan view; FIG. 6 is a bottom plan view; FIG. 7 is a perspective view as viewed from the front; FIG. 8 is a perspective view as viewed from the rear; FIG. 9 is a cross sectional view as taken along line 9–9 of FIG. 1; and, FIG. 10 is a cross sectional view as taken along line 10–10 of FIG. 5.

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,945,736	A *	8/1999	Rife et al.	257/719
6,446,708	B1	9/2002	Lai	
6,452,803	B1 *	9/2002	Liu	361/704
D476,958	S *	7/2003	Tsai	D13/179
D481,688	S *	11/2003	Lee et al.	D13/179
6,832,410	B1 *	12/2004	Hegde	165/80.3
6,883,593	B1 *	4/2005	Johnson et al.	165/80.3
6,913,072	B1 *	7/2005	Luo	165/104.21
7,025,125	B1 *	4/2006	Sheng et al.	165/104.33
2002/0195229	A1 *	12/2002	Hsieh et al.	165/80.3

This article is formed with a plurality of metallic fins which are integrally provided on a metallic base.

1 Claim, 5 Drawing Sheets

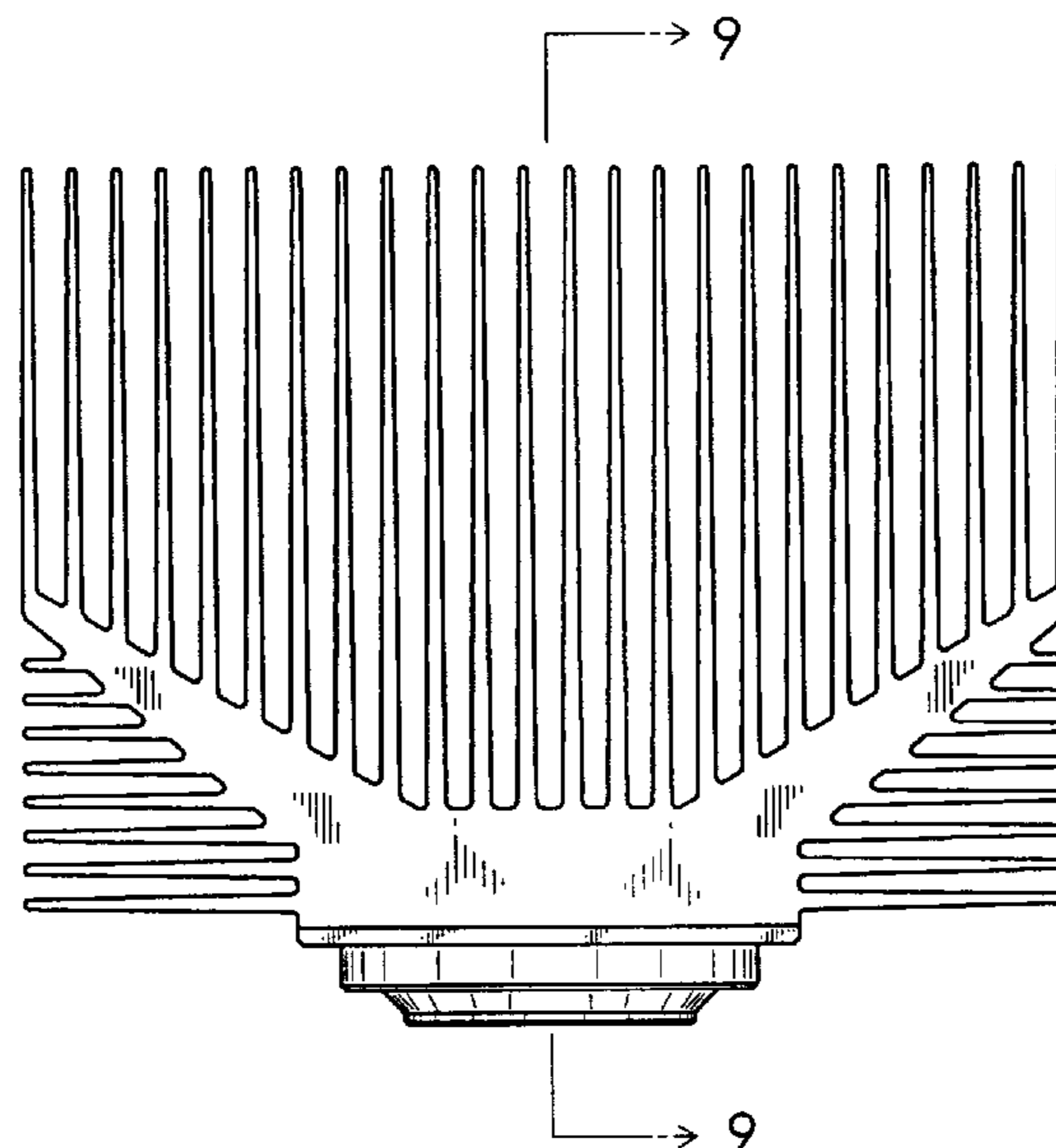


FIG. 1

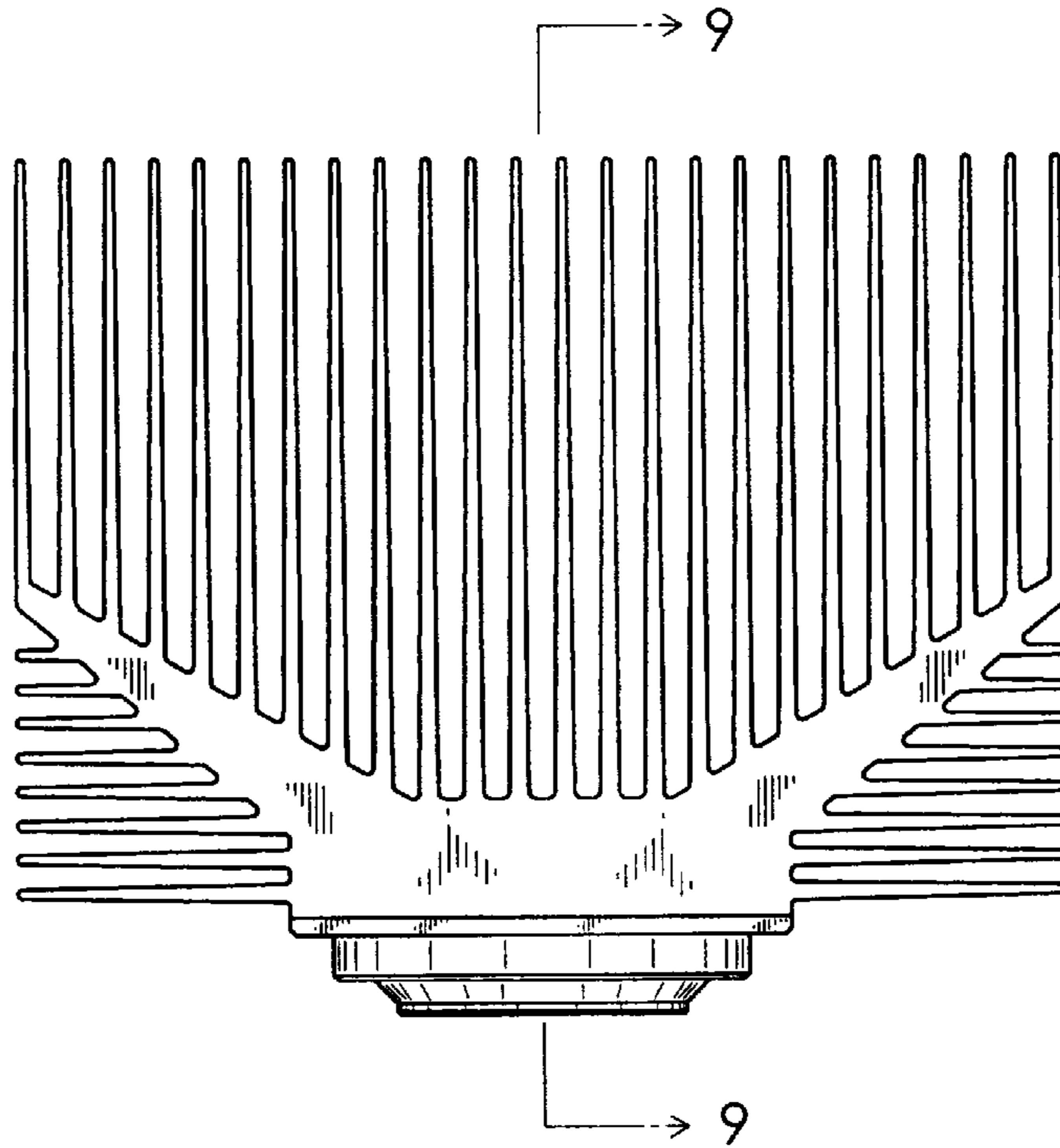


FIG. 2

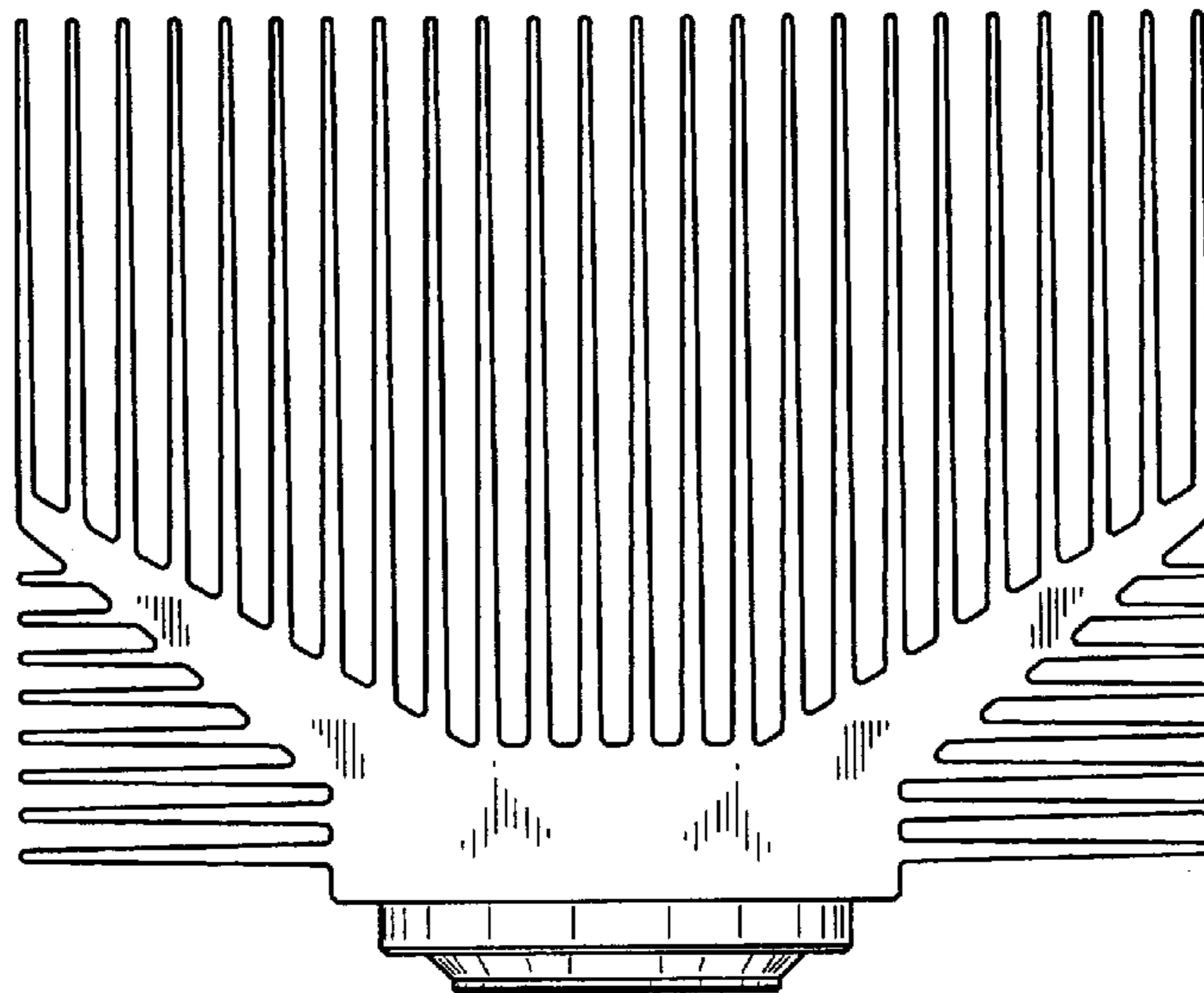


FIG.3

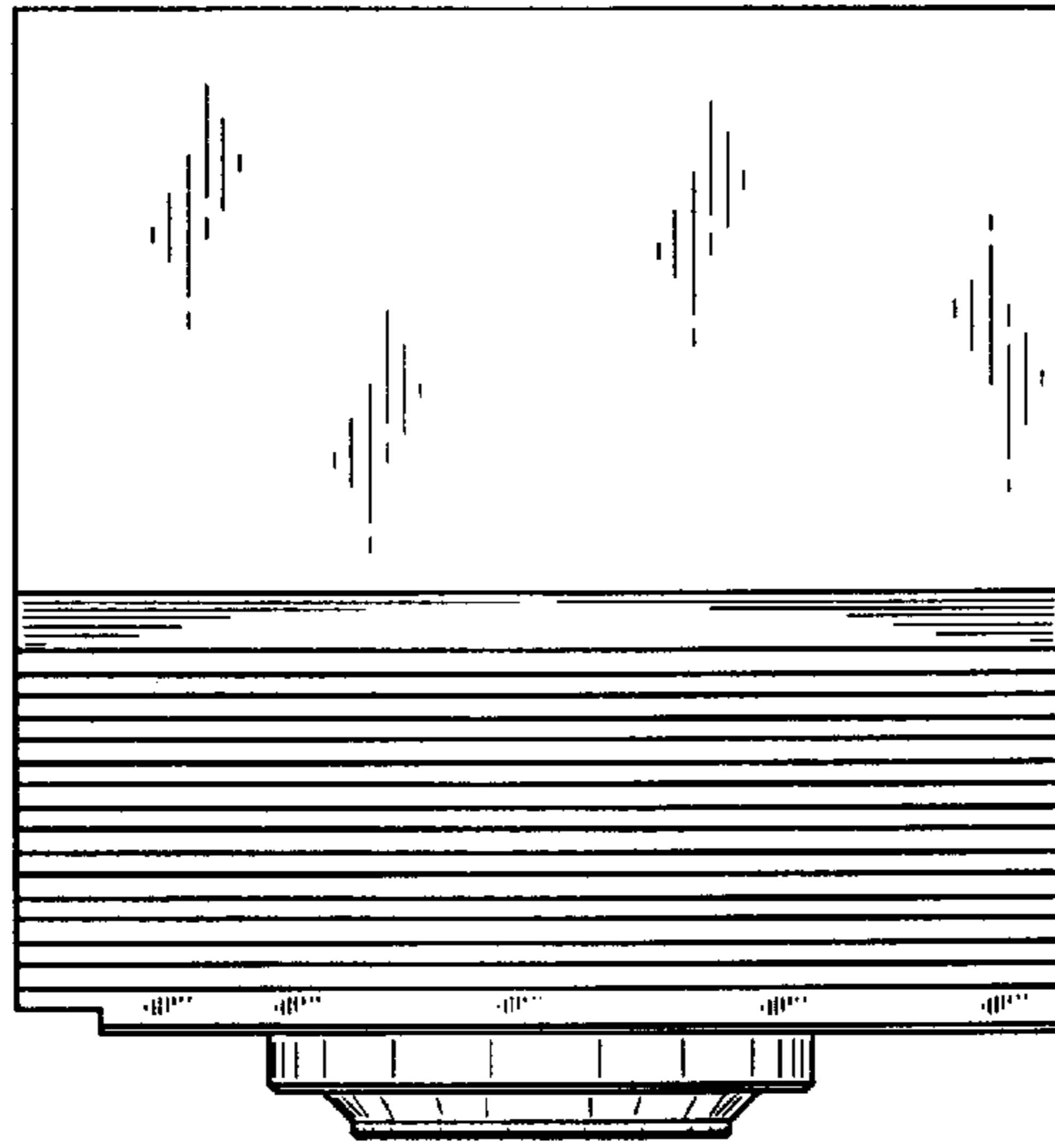


FIG.4

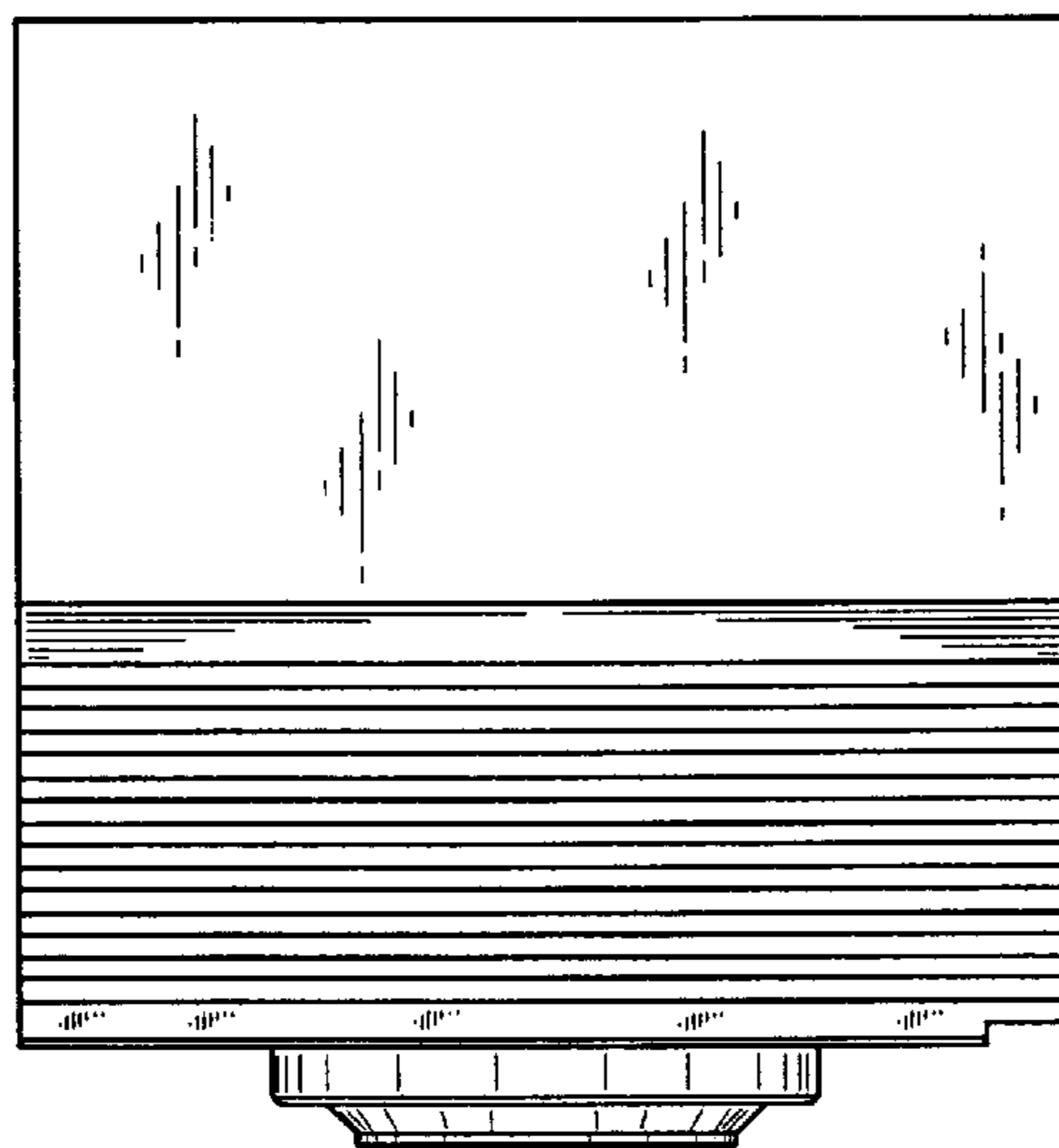


FIG.5

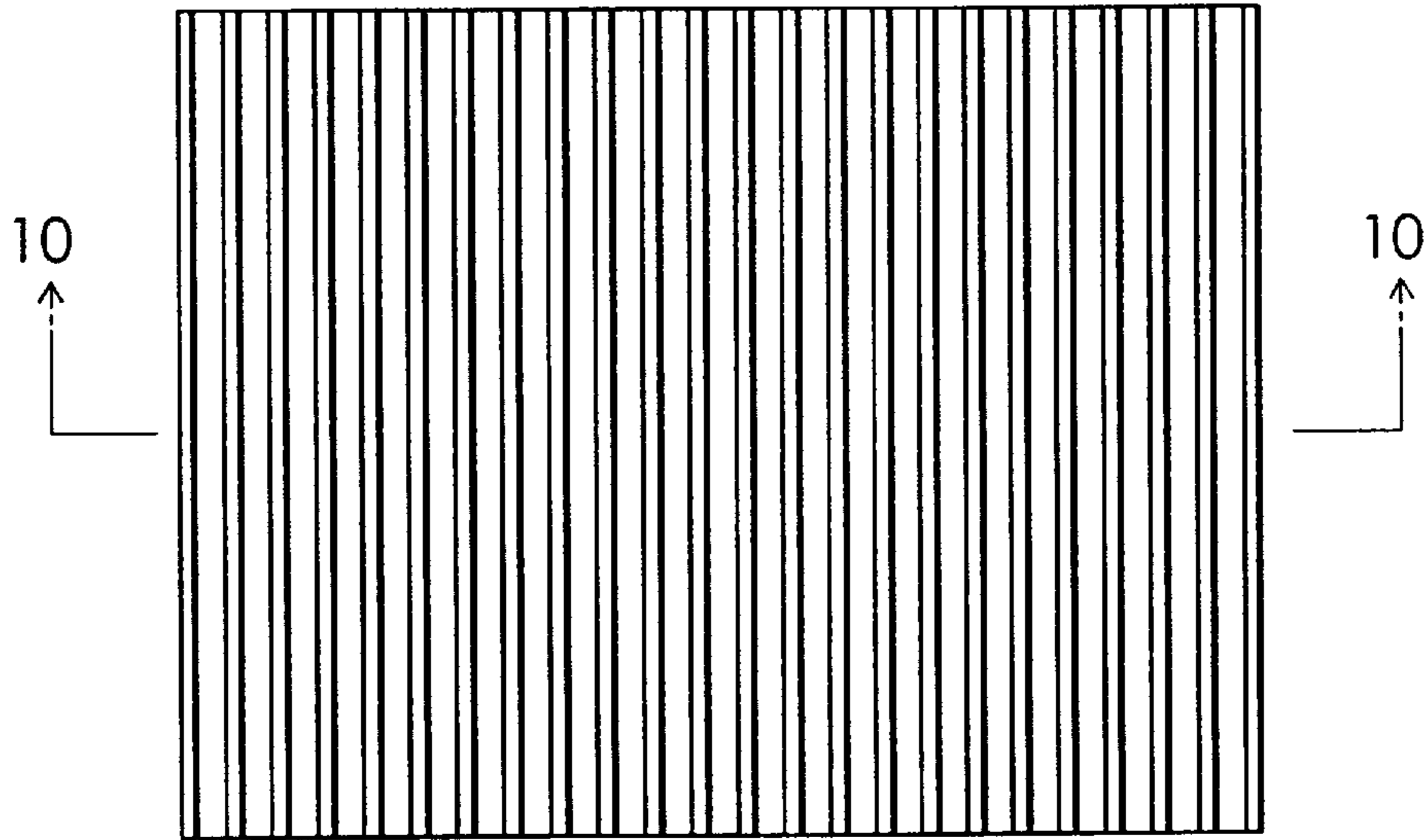


FIG.6

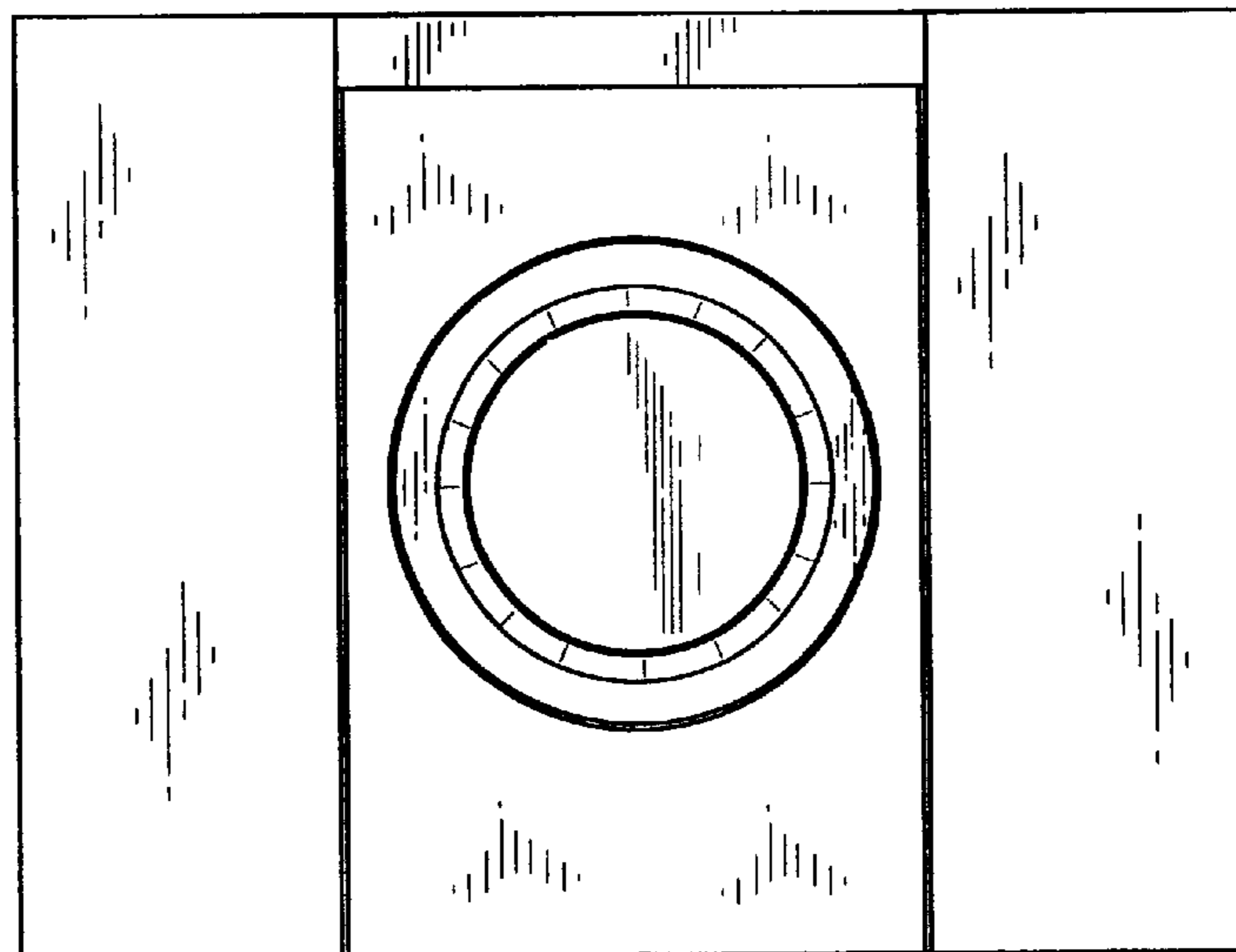


FIG. 7

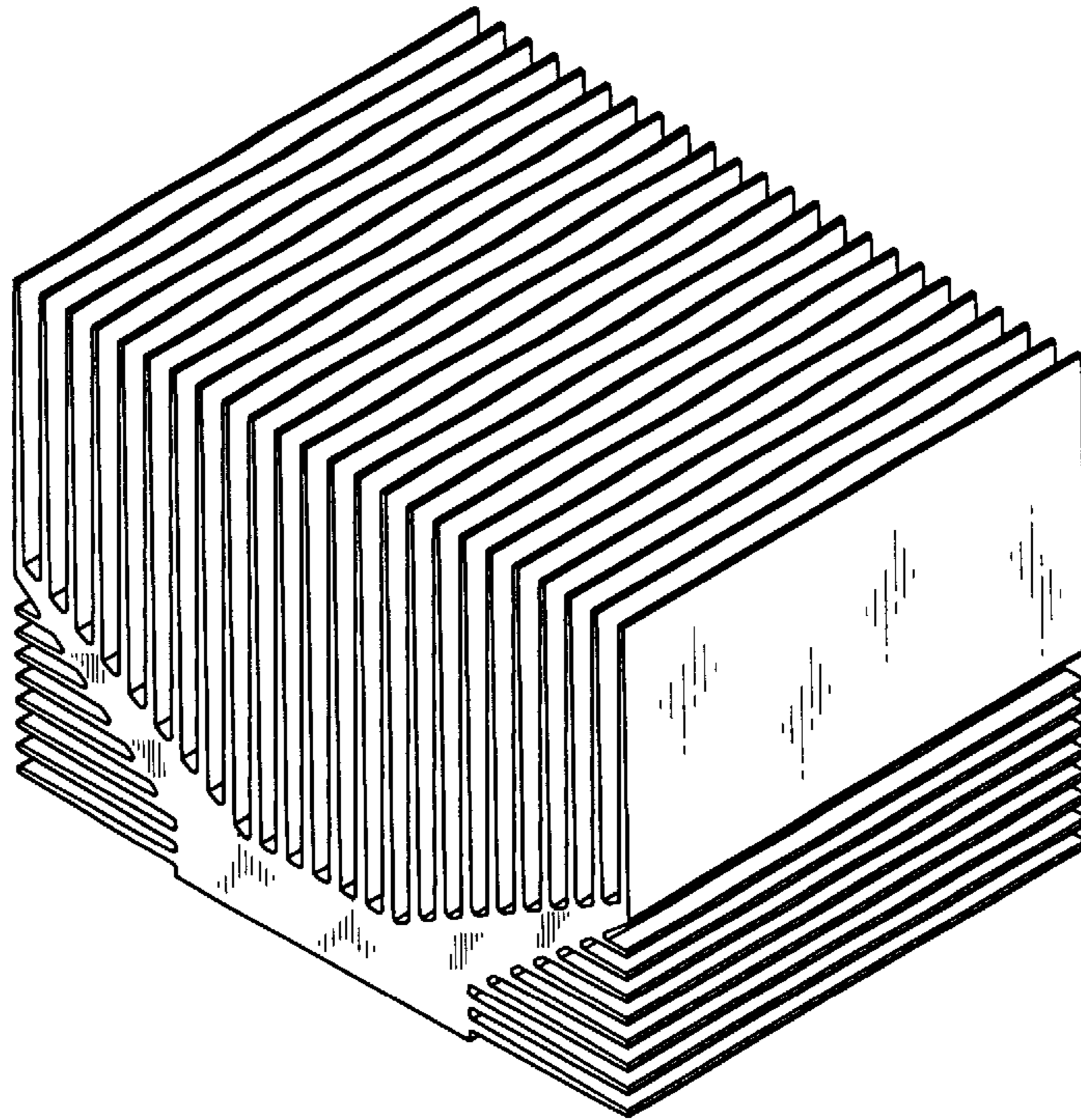


FIG. 8

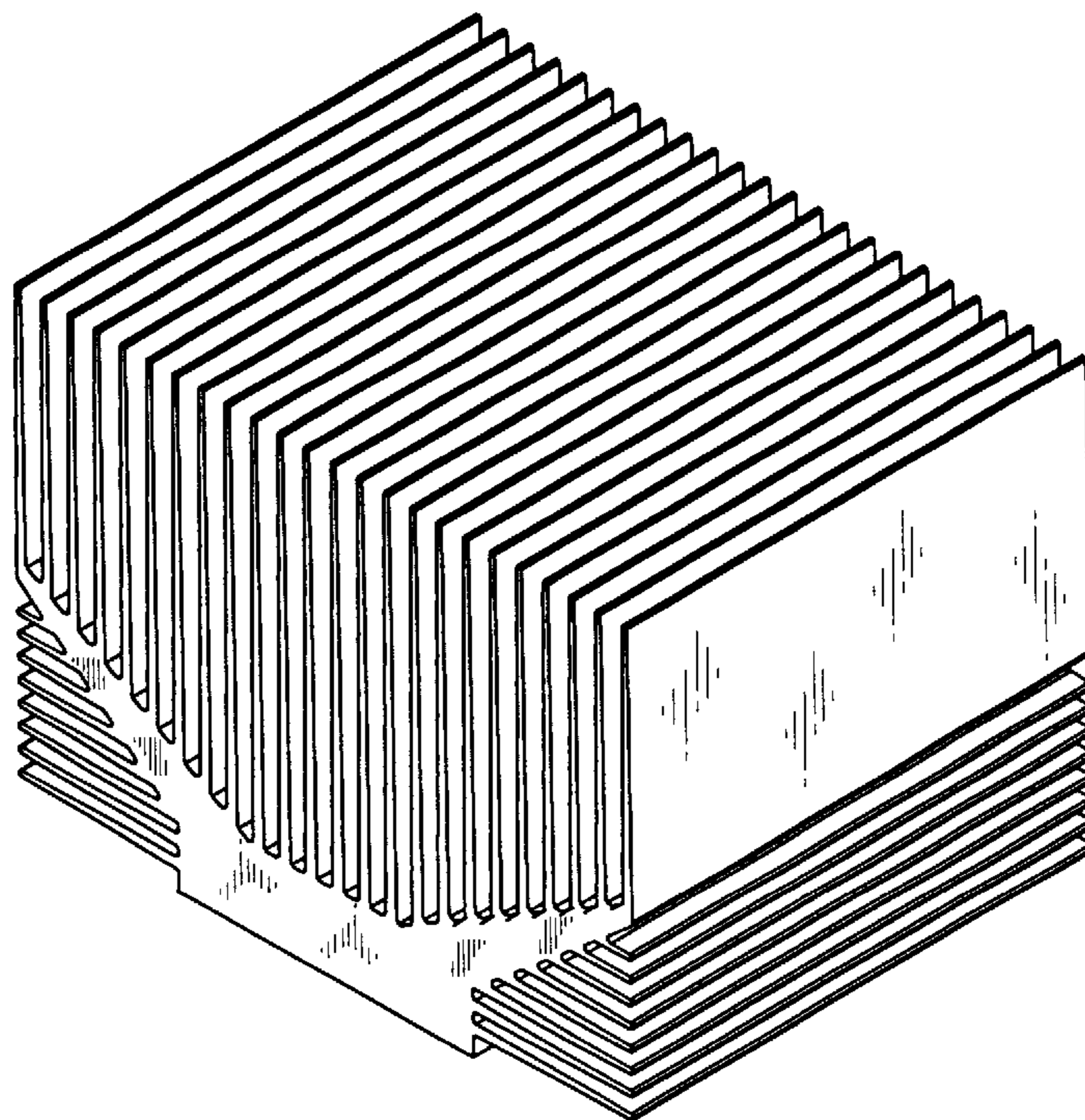


FIG.9

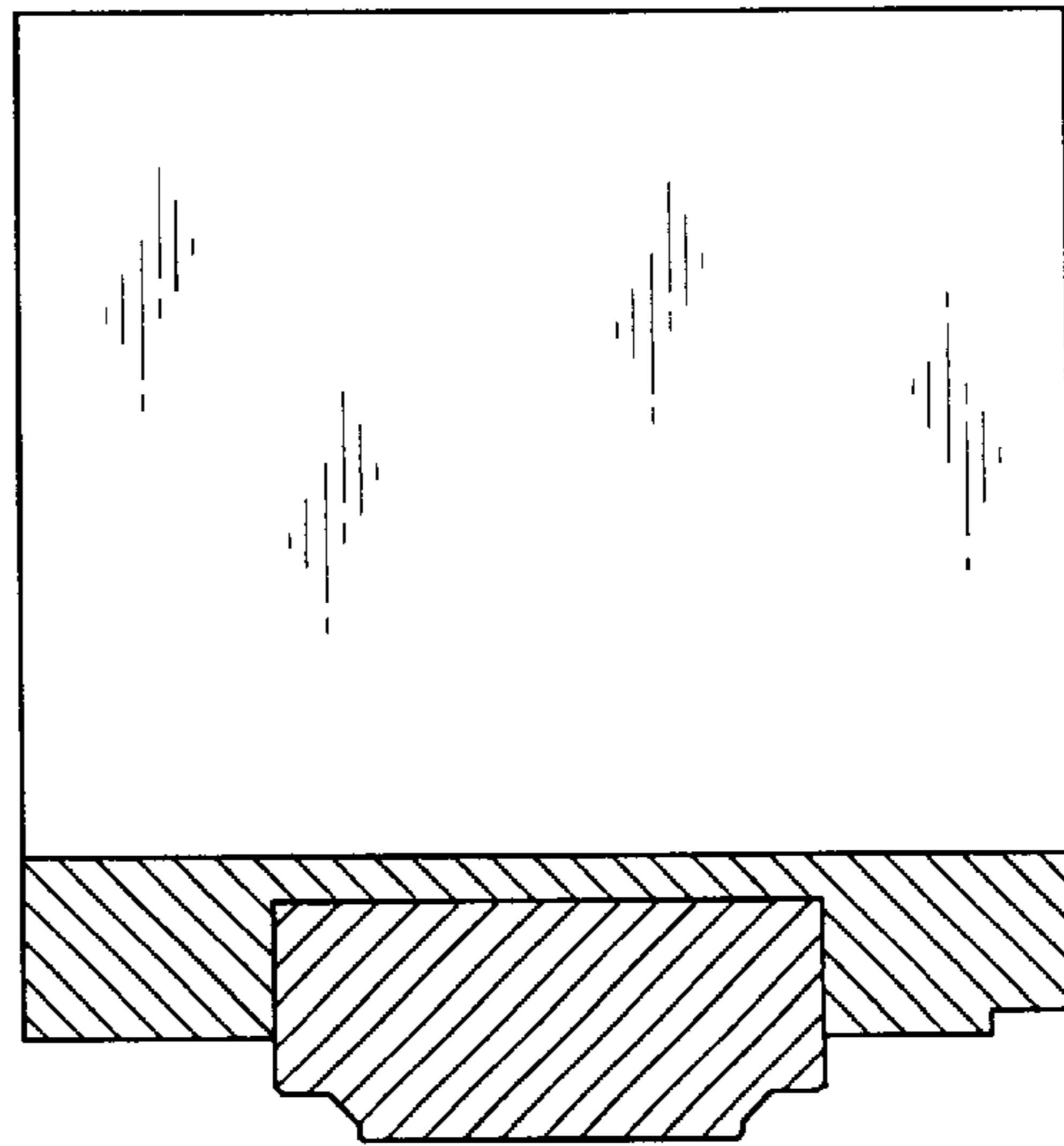


FIG.10

