



US00D572733S

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

(10) **Patent No.:** **US D572,733 S**  
(45) **Date of Patent:** **\*\* Jul. 8, 2008**

(54) **TOP PANEL FOR MICROWAVE  
INTRODUCTION WINDOW OF A PLASMA  
PROCESSING APPARATUS**

(75) Inventors: **Kinya Ota**, Amagasaki (JP); **Cai Zhong  
Tian**, Amagasaki (JP); **Junichi  
Kitagawa**, Amagasaki (JP)

(73) Assignee: **Tokyo Electron Limited**, Tokyo (JP)

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

(21) Appl. No.: **29/252,838**

(22) Filed: **Jan. 30, 2006**

(30) **Foreign Application Priority Data**

Jul. 29, 2005 (JP) ..... 2005-022106

(51) **LOC (8) Cl.** ..... **15-09**

(52) **U.S. Cl.** ..... **D15/138; D15/199**

(58) **Field of Classification Search** ..... D7/586,  
D7/587, 501, 553.6, 600.4; D8/70, 74; D9/445,  
D9/454, 456; D15/133, 144.1, 199, 122,  
D15/138, 139; 117/103; 118/723 AN, 723 ME,  
118/723 MP, 723 MW, 723 E, 723 ER; 216/69,  
216/67; 257/E21.252, 629, 631, E39.001;  
427/562, 571, 575; D1/126, 128; D6/455;  
D13/122, 138, 139, 157-177, 182; D18/17;  
156/242, 345; 175/374, 434; 204/298.38;  
219/420-424, 523, 530, 541, 544; 264/328.14,  
264/328.15, 328.16; 313/231.31; 315/111.21;  
407/113-118; 408/145; 425/547-550, 564,  
425/566, 570; 451/540-548; 700/121, 123

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

D239,437 S \* 4/1976 Boduch ..... D9/445  
4,048,845 A \* 9/1977 Gilbert ..... 73/45.5  
4,122,964 A \* 10/1978 Morris ..... 215/260  
4,213,537 A \* 7/1980 Caccavale ..... 220/215

D265,176 S \* 6/1982 Bock ..... D9/454  
4,779,748 A \* 10/1988 King ..... 215/256  
4,858,590 A \* 8/1989 Bailey ..... 126/36 H  
D309,109 S \* 7/1990 Allen ..... D9/436  
D315,309 S \* 3/1991 Baughman ..... D9/456

(Continued)

**FOREIGN PATENT DOCUMENTS**

EP 0592017 A2 \* 4/1994

**OTHER PUBLICATIONS**

Asian Sources Hardwares for World Markets, Nov. 1990, p. 251.

*Primary Examiner*—Sandra Snapp

*Assistant Examiner*—Patricia Palasik

(74) *Attorney, Agent, or Firm*—Oblon, Spivak, McClelland,  
Maier & Neustadt, P.C.

(57) **CLAIM**

The ornamental design for a top panel for microwave intro-  
duction window of a plasma processing apparatus, as shown  
and described.

**DESCRIPTION**

FIG. 1 is a front view of a top panel for microwave introduc-  
tion window of a plasma processing apparatus showing our  
new design;

FIG. 2 is a rear view thereof;

FIG. 3 is a right side view thereof;

FIG. 4 is a left side view thereof;

FIG. 5 is a top plan view thereof;

FIG. 6 is a bottom plan view thereof;

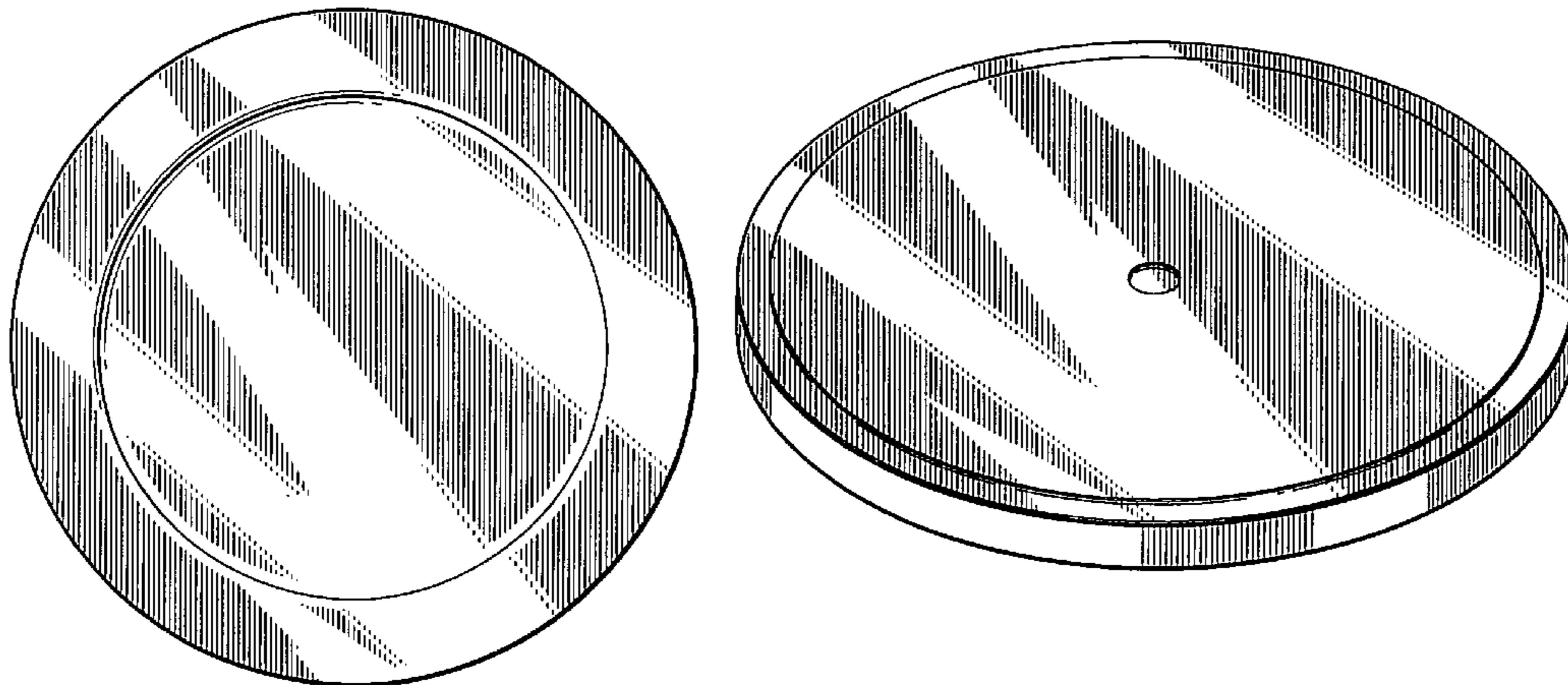
FIG. 7 is a sectional view taken along line 7—7 of FIG. 5;

FIG. 8 is an enlarged view taken along line 8—8 of FIG. 7;

FIG. 9 is an enlarged view taken along line 9—9 of FIG. 7;  
and,

FIG. 10 is a perspective view thereof.

**1 Claim, 4 Drawing Sheets**



# US D572,733 S

Page 2

---

## U.S. PATENT DOCUMENTS

D328,837	S	*	8/1992	Marsten et al.	.....	D7/585			
5,335,801	A	*	8/1994	Lee	.....	215/249			
D357,385	S	*	4/1995	Addison et al.	.....	D7/407			
5,486,131	A	*	1/1996	Cesna et al.	.....	451/56			
5,569,062	A	*	10/1996	Karlsruud	.....	451/285			
5,645,645	A	*	7/1997	Zhang et al.	.....	118/723 MW			
D386,792	S	*	11/1997	Miller	.....	D20/21			
D399,245	S	*	10/1998	Harden	.....	D18/15			
5,948,704	A	*	9/1999	Benjamin et al.	.....	438/715			
6,108,190	A	*	8/2000	Nagasaki	.....	361/234			
D442,864	S	*	5/2001	Davies	.....	D9/454			
6,345,718	B1	*	2/2002	Minogue	.....	206/540			
6,403,933	B1	*	6/2002	Strodtbeck et al.	.....	219/502			
6,578,853	B1	*	6/2003	Treur et al.	.....	279/121			
7,153,199	B1	*	12/2006	Decker	.....	451/343			
2003/0232151	A1	*	12/2003	Vukovic	.....	427/571			
2005/0194337	A1	*	9/2005	McDaniel	.....	211/165			
2005/0199159	A1	*	9/2005	Searer	.....	108/94			
2006/0049270	A1	*	3/2006	Wayne	.....	239/57			

\* cited by examiner

FIG. 1



FIG. 2



FIG. 3



FIG. 4



FIG.5

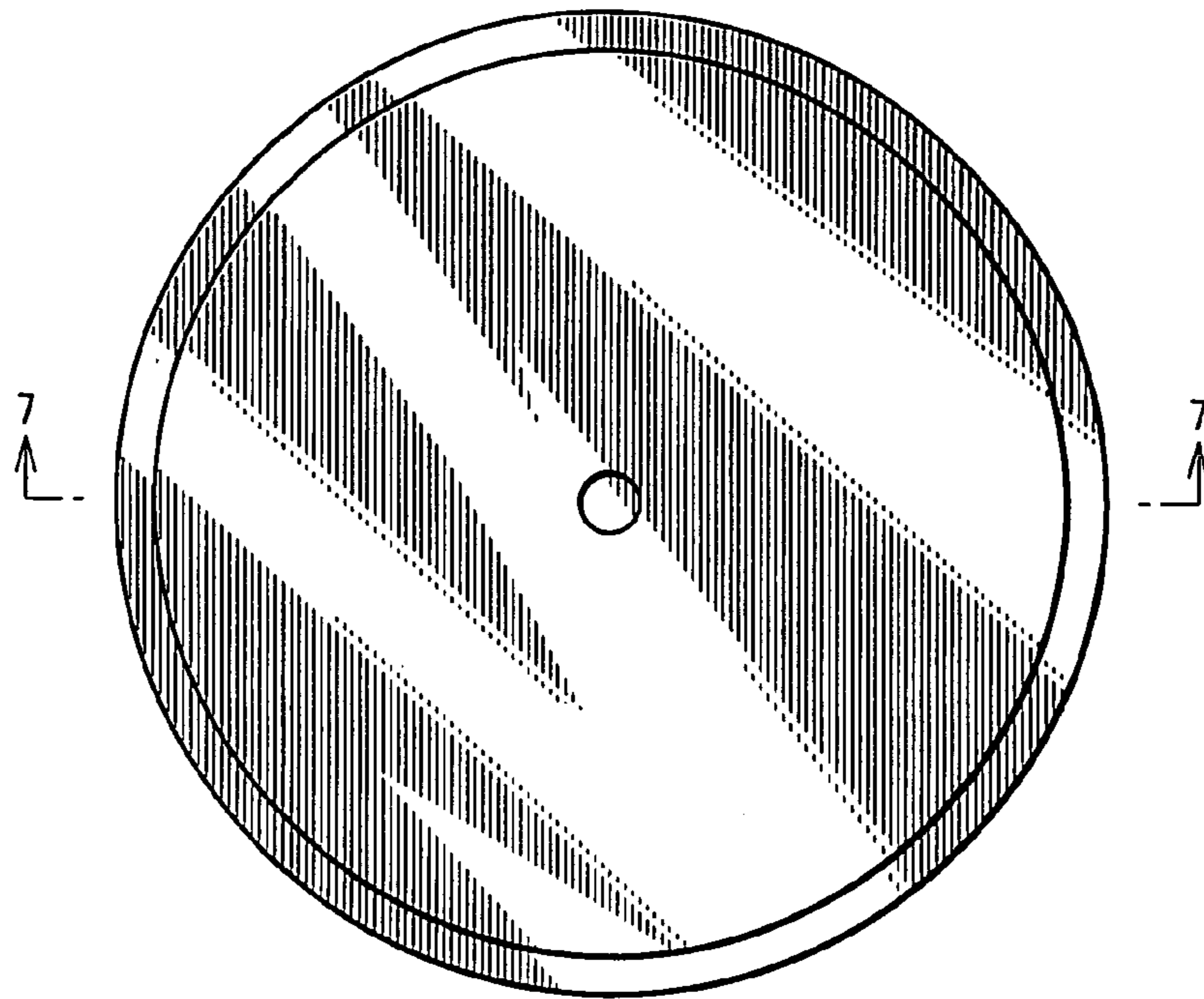


FIG.6

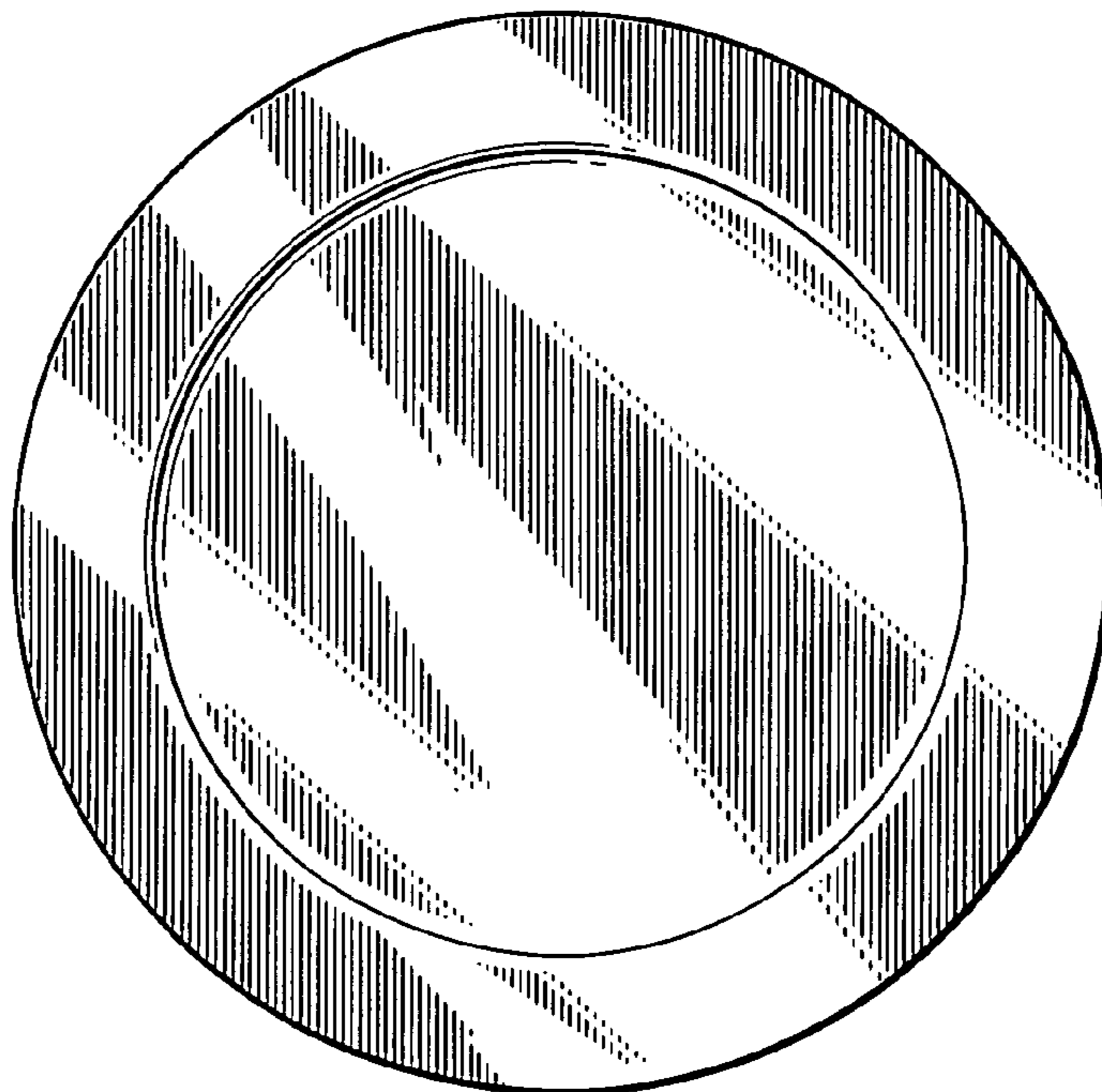


FIG.7

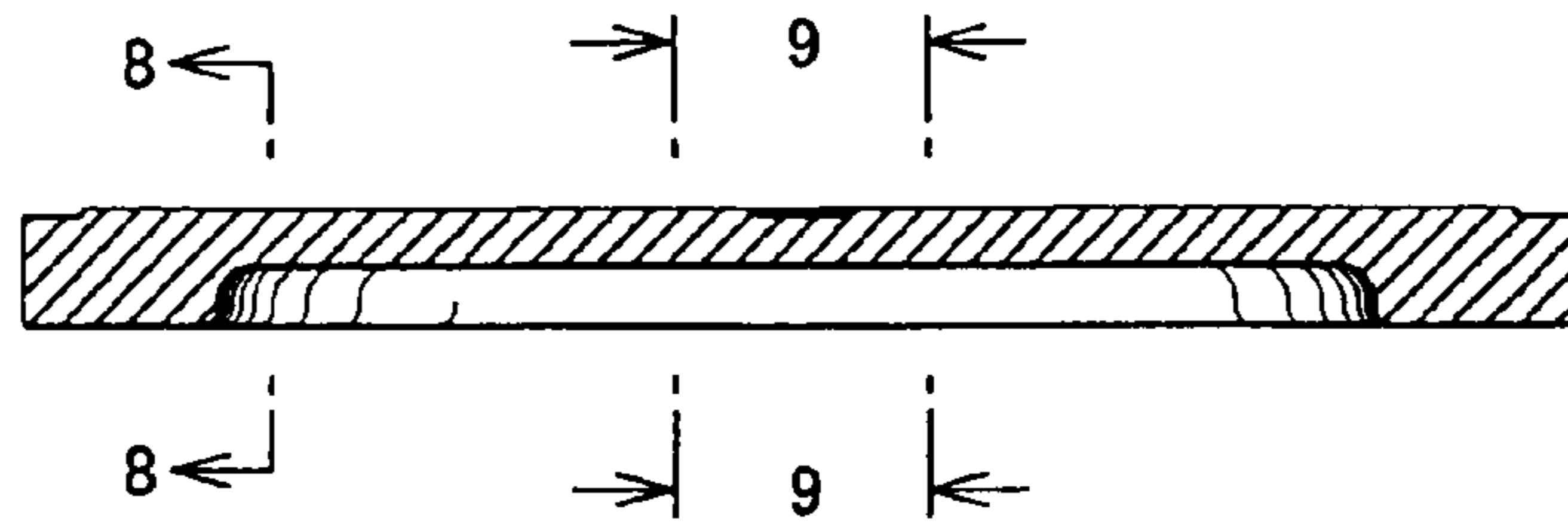


FIG.8

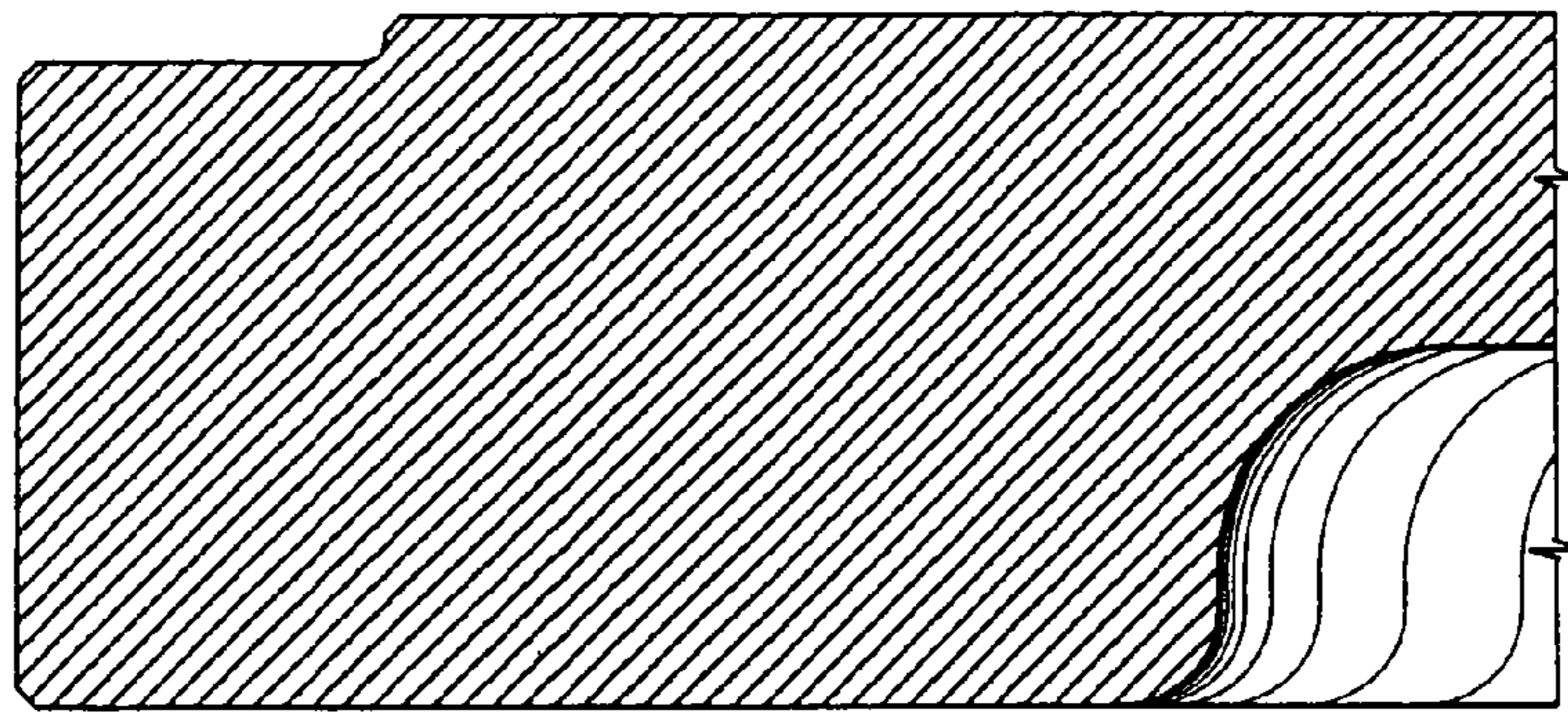


FIG.9

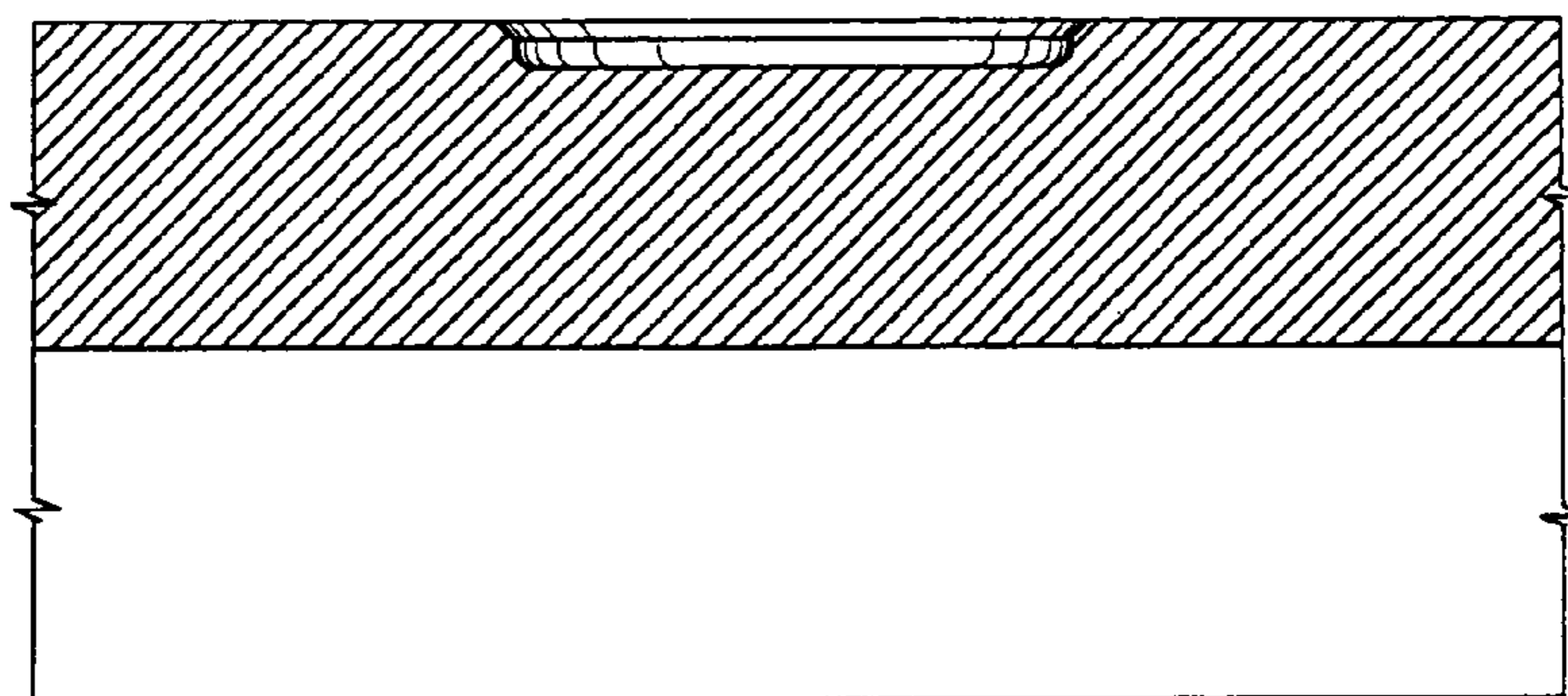


FIG.10

