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

(10) **Patent No.:** **US D594,485 S**
(45) **Date of Patent:** **** *Jun. 16, 2009**

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

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

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

(Continued)

FOREIGN PATENT DOCUMENTS

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

EP 0592017 A2 * 4/1994

(*) Notice: This patent is subject to a terminal disclaimer.

Primary Examiner—Sandra Snapp
Assistant Examiner—Patricia Palasik
(74) *Attorney, Agent, or Firm*—Oblon, Spivak, McClelland,
Maier & Neustadt, P.C.

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

(57) **CLAIM**

(21) Appl. No.: **29/252,837**

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

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

(30) **Foreign Application Priority Data**

DESCRIPTION

Jul. 29, 2005 (JP) 2005-022104

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

(51) **LOC (9) Cl.** **15-09**

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

(58) **Field of Classification Search** D7/586,
D7/587, 501, 553.6, 600.4; D8/70, 74; D9/445,
D9/454, 456, 139, 158; D15/133, 144.1,
D15/199, 122, 138, 139; 117/103; 118/723 AN,
118/723 ME, 723 MP, 723 MW, 723 E, 723 ER;
216/69, 67; 257/E21.252, 252, 629, 631,
257/E39.001; 427/562, 571, 575; D1/126,
D1/128; D6/455; D13/122, 138, 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.

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 sectional view taken along line 8—8 of FIG. 7;

FIG. 9 is a perspective view thereof; and,

FIG. 10 is an enlarged detail view of the circled area 10 in FIG. 9.

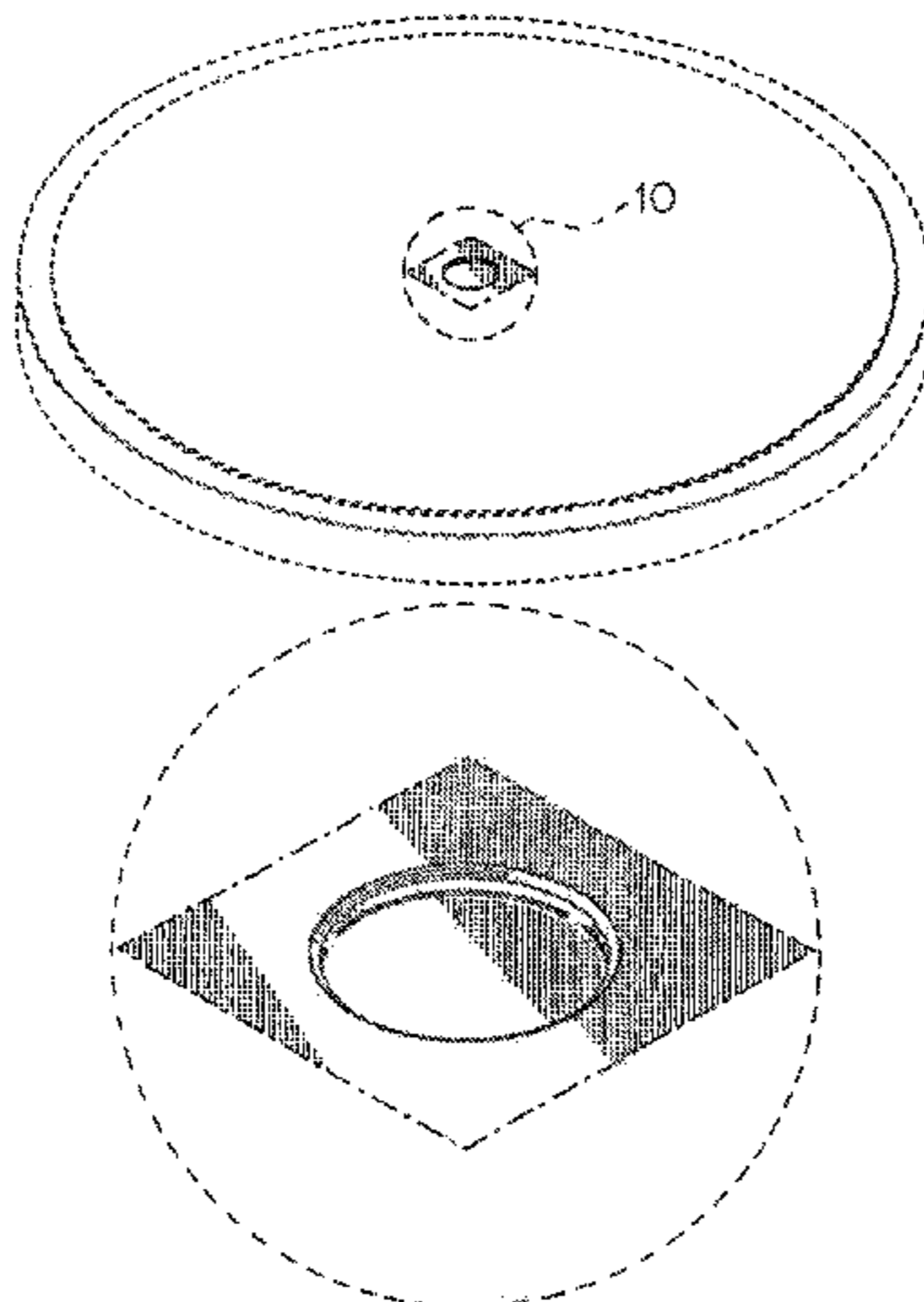
The broken line showing of the top panel for microwave introduction window of a plasma processing apparatus is included for the purpose of illustrating portions of the microwave introduction window of a plasma processing apparatus and forms no part of the claimed design.

(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

1 Claim, 4 Drawing Sheets



US D594,485 S

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U.S. PATENT DOCUMENTS

4,858,590	A *	8/1989	Bailey	126/39 H	5,948,704	A *	9/1999	Benjamin et al.	438/715
D309,109	S *	7/1990	Allen	D9/436	6,108,190	A *	8/2000	Nagasaki	361/234
D315,309	S *	3/1991	Baughman	D9/456	D442,864	S *	5/2001	Davies	D9/454
D328,837	S *	8/1992	Marsten et al.	D7/585	6,345,718	B1 *	2/2002	Minogue	206/540
5,335,801	A *	8/1994	Lee	215/249	6,403,933	B1 *	6/2002	Strodtbeck et al.	219/502
D357,385	S *	4/1995	Addison et al.	D7/407	6,578,853	B1 *	6/2003	Treur et al.	279/121
5,486,131	A *	1/1996	Cesna et al.	451/56	7,153,199	B1 *	12/2006	Decker	451/343
5,569,062	A *	10/1996	Karlsruud	451/285	2003/0232151	A1 *	12/2003	Vukovic	427/571
5,645,645	A *	7/1997	Zhang et al.	118/723 MW	2005/0194337	A1 *	9/2005	McDaniel	211/165
D386,792	S *	11/1997	Miller	D20/21	2005/0199159	A1 *	9/2005	Searer	108/94
D399,245	S *	10/1998	Harden	D18/15	2006/0049270	A1 *	3/2006	Wayne	239/57

* cited by examiner

FIG.1



FIG.2

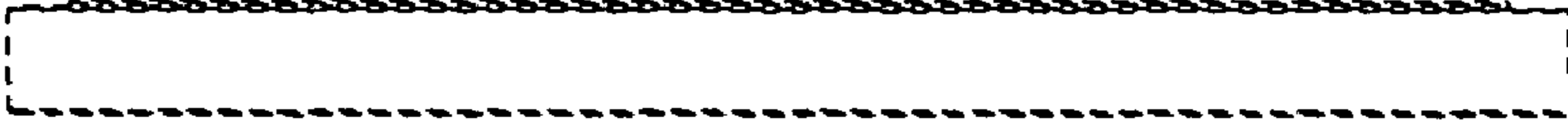


FIG.3

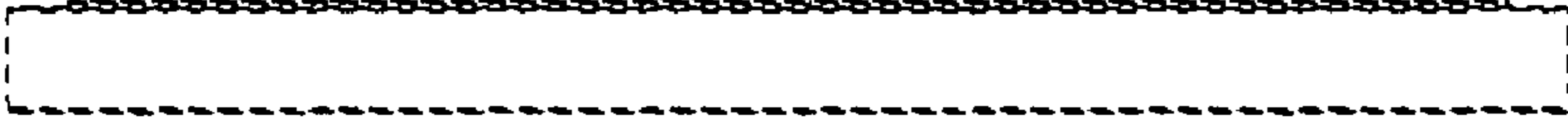


FIG.4



FIG.5

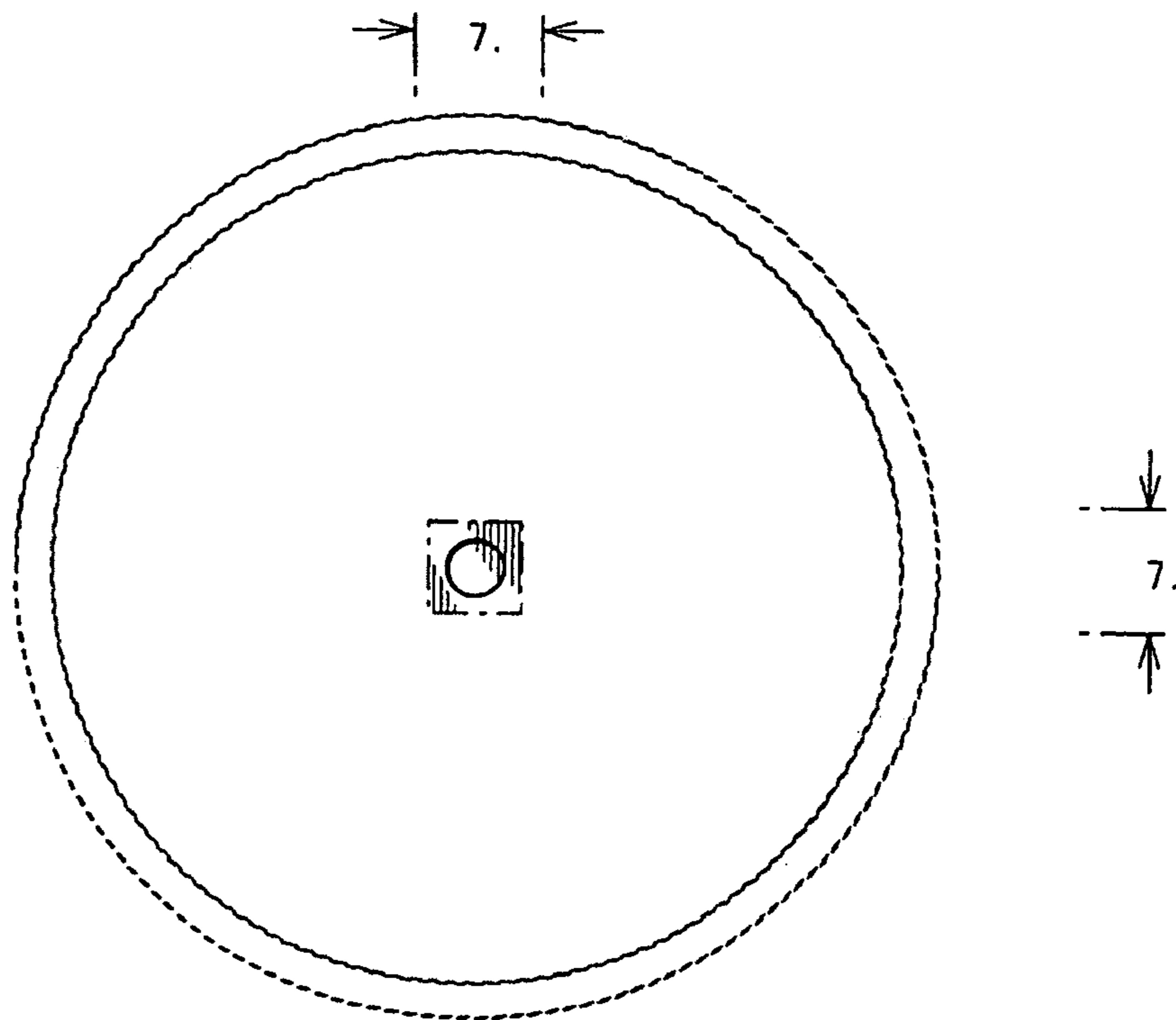


FIG.6

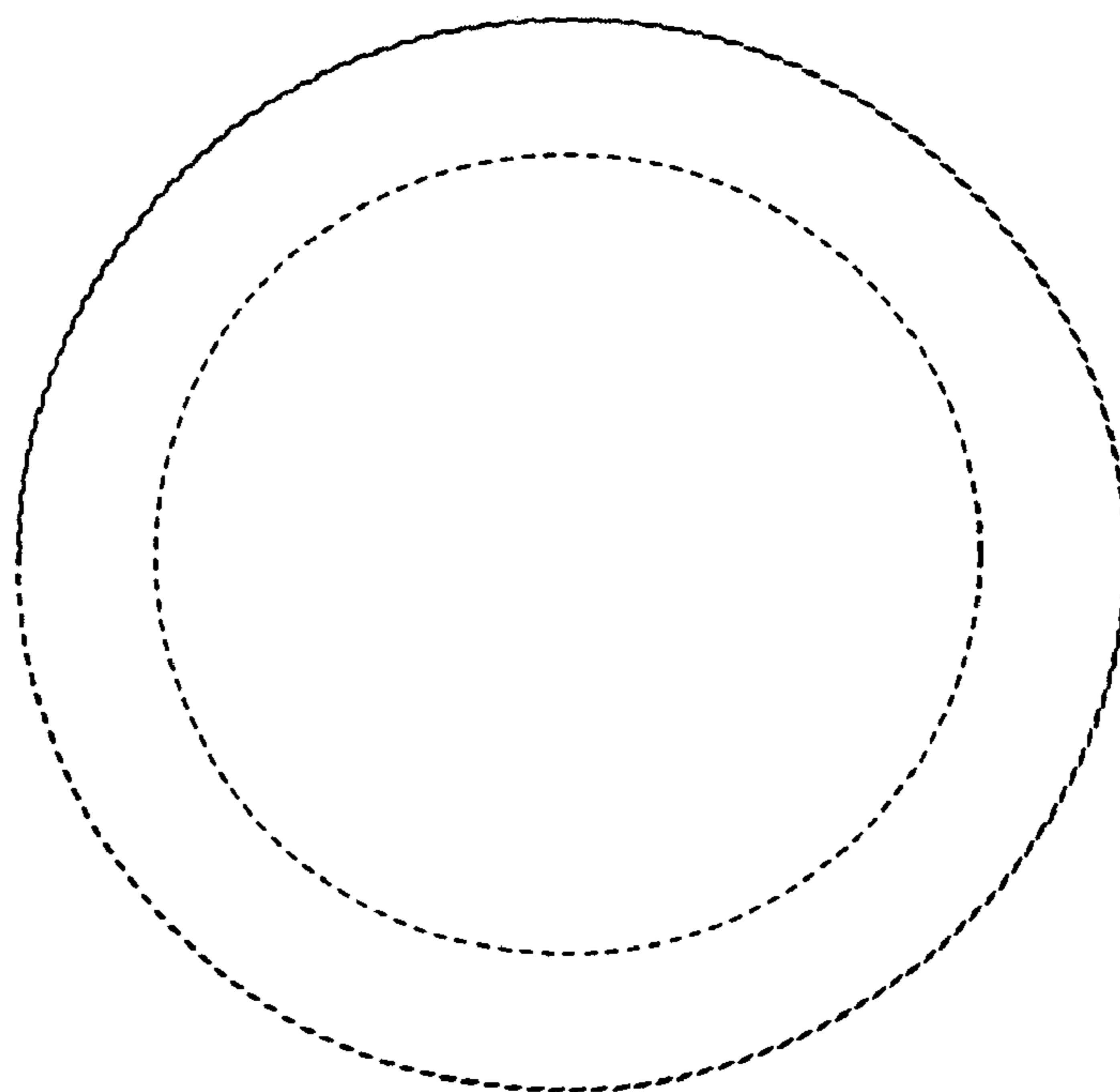


FIG.7

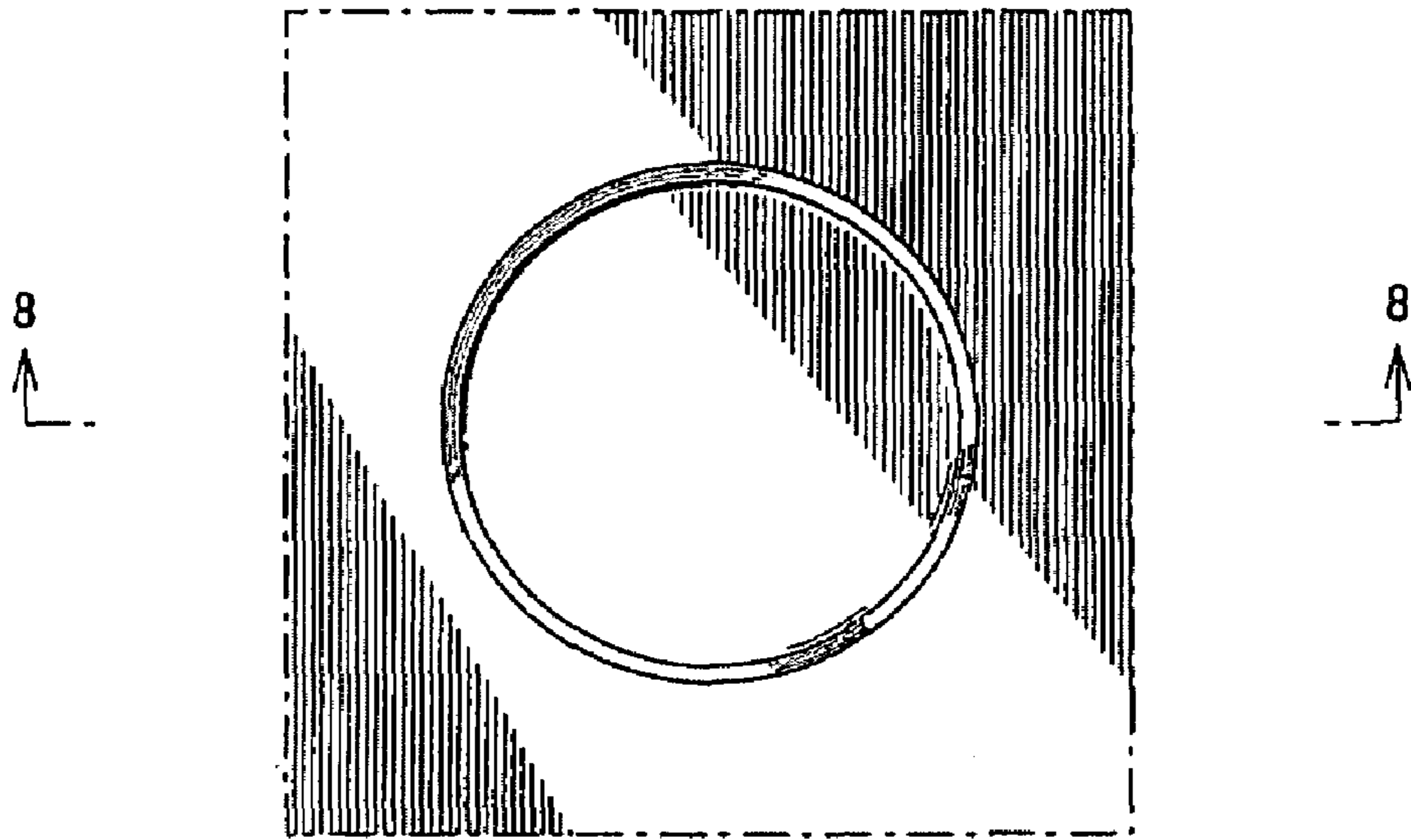


FIG.8

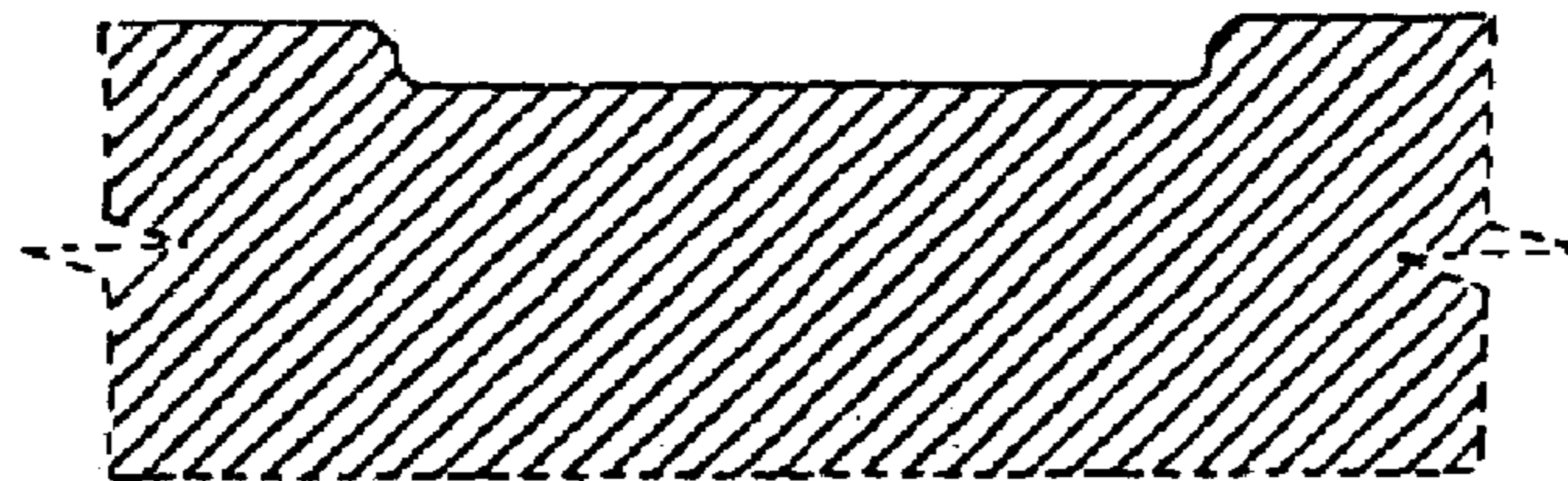


FIG. 9

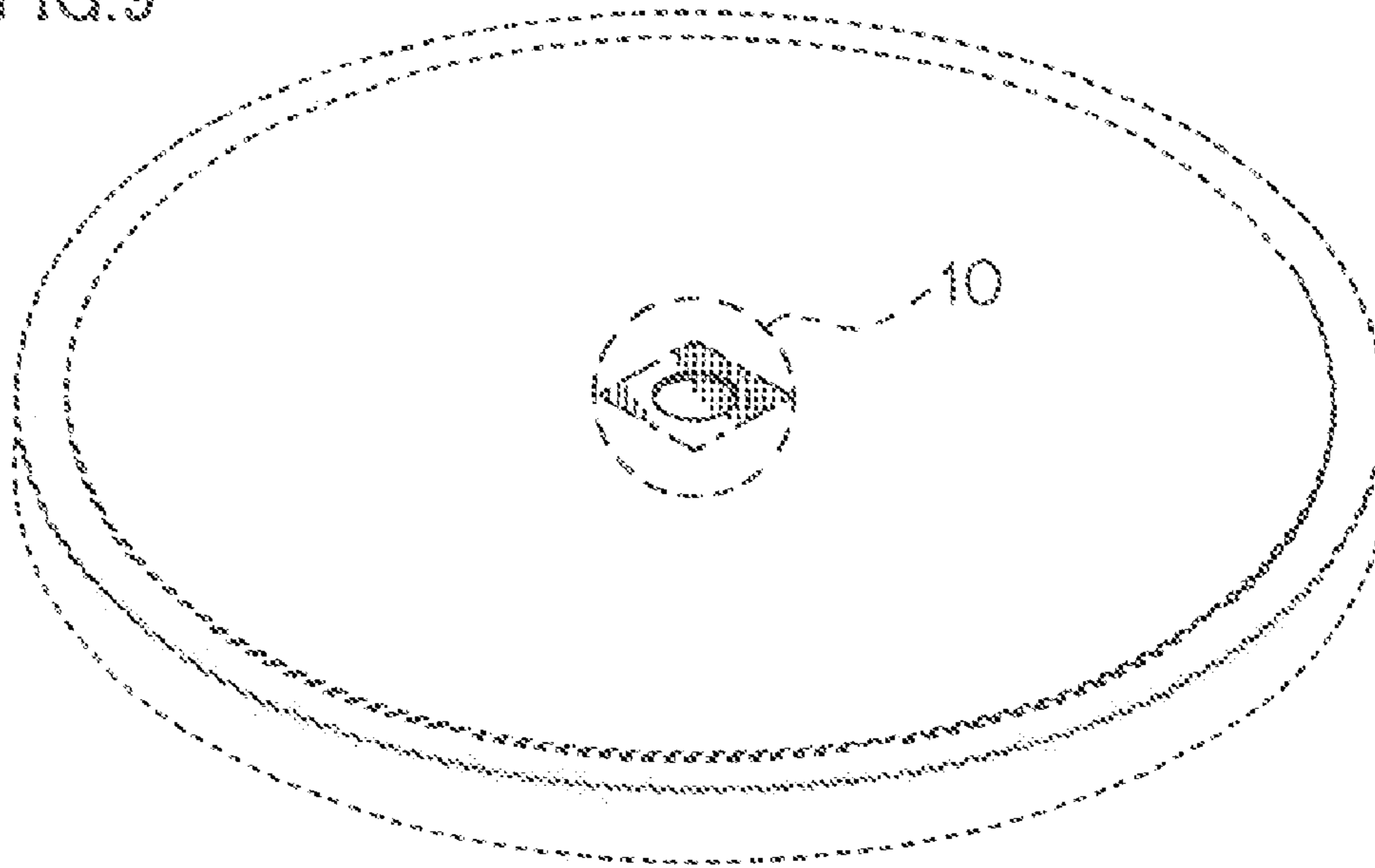


FIG. 10

