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

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(54) **LIGHT EMITTING DIODE**

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(52) **U.S. Cl.** **D13/180**

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D26/2, 120; 257/79, 80, 81, 88, 89, 95, 98,
257/99, 100, E33.058; 313/483, 498, 500;
362/555, 800

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,722,760	A *	3/1998	Chien	.....	362/84
7,211,835	B2 *	5/2007	Ono	.....	257/99
7,352,011	B2 *	4/2008	Smits et al.	.....	257/99
D571,316	S	6/2008	Lee et al.		
D572,210	S	7/2008	Lee		
D573,550	S	7/2008	Lee		
D573,551	S	7/2008	Lee		
D575,244	S	8/2008	Lee		
D578,671	S	10/2008	Kanayama et al.		
D581,884	S	12/2008	Yen		
D591,696	S	5/2009	Okada et al.		
D594,827	S	6/2009	Loh et al.		
D598,871	S	8/2009	Eberle et al.		
7,602,559	B2 *	10/2009	Jang et al.	.....	359/726
7,703,942	B2 *	4/2010	Narendran et al.	.....	362/231
D615,504	S *	5/2010	Keller et al.	.....	D13/180
7,709,853	B2 *	5/2010	Medendorp, Jr.	.....	257/99
D618,636	S	6/2010	Hsieh		

7,748,873	B2 *	7/2010	Kim et al.	.....	362/328
7,762,692	B2 *	7/2010	Lai et al.	.....	362/311.02
D623,610	S	9/2010	Mallory et al.		
7,798,678	B2 *	9/2010	Destain	.....	362/311.02
7,821,023	B2 *	10/2010	Yuan et al.	.....	257/98
D626,523	S	11/2010	Mallory et al.		
D628,965	S *	12/2010	Kuwaharada et al.	.....	D13/180
D628,966	S *	12/2010	Kuwaharada et al.	.....	D13/180
D636,741	S *	4/2011	Kuwaharada et al.	.....	D13/180
D636,742	S *	4/2011	Kuwaharada et al.	D13/180

(Continued)

FOREIGN PATENT DOCUMENTS

JP D1298732 4/2007

(Continued)

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(57) **CLAIM**

We claim the ornamental design for a light emitting diode, as shown and described.

DESCRIPTION

FIG. 1 is a top perspective view of a light emitting diode of the present invention;

FIG. 2 is a front view thereof;

FIG. 3 is a rear view thereof;

FIG. 4 is a first side view thereof;

FIG. 5 is a second side view thereof;

FIG. 6 is a top view thereof;

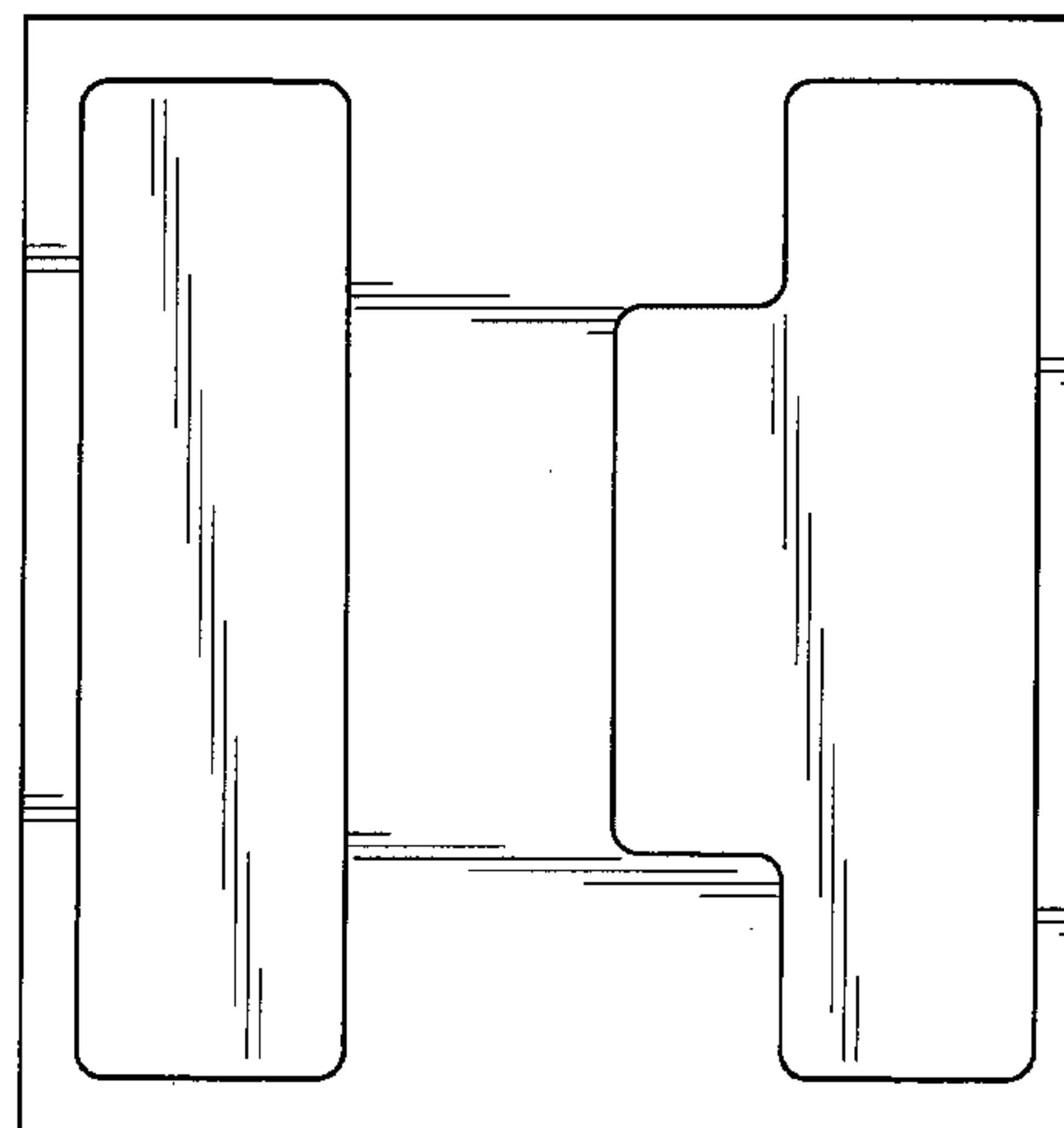
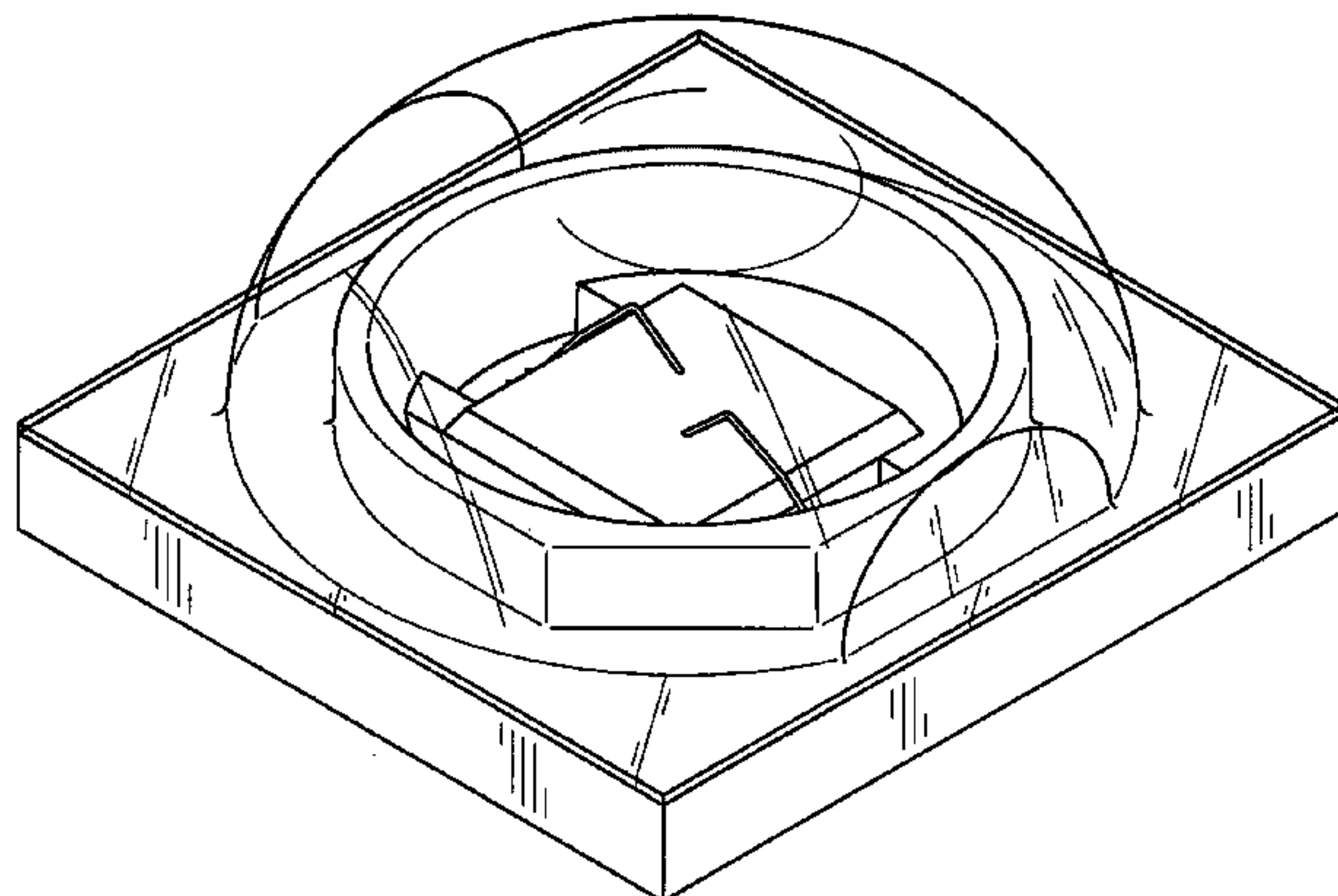
FIG. 7 is a bottom view thereof;

FIG. 8 is a cross-section view taken along the line 8—8 of FIG. 6; and,

FIG. 9 is a cross-section view taken along the line 9—9 of FIG. 6.

The dome is composed of transparent resin and covers the substrate. In the cross-sectional views shown in FIGS. 8 and 9, a portion of the cross-sectional hatching is omitted to show the shape of the substrate.

1 Claim, 6 Drawing Sheets



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U.S. PATENT DOCUMENTS

D636,743	S *	4/2011	Kuwaharada et al.	D13/180
2004/0136197	A1 *	7/2004	Ishida	362/487
2004/0180459	A1 *	9/2004	Hsu	438/26
2004/0196663	A1 *	10/2004	Ishida et al.	362/539
2004/0227149	A1 *	11/2004	Ibbetson et al.	257/100
2005/0263785	A1 *	12/2005	Kim et al.	257/100
2006/0034097	A1 *	2/2006	Hahm et al.	362/555
2006/0081863	A1 *	4/2006	Kim et al.	257/98
2006/0273338	A1 *	12/2006	Lee et al.	257/99
2007/0029563	A1 *	2/2007	Amano et al.	257/98
2008/0002412	A1 *	1/2008	Tanaka et al.	362/307
2008/0007966	A1 *	1/2008	Ohkawa	362/608
2008/0013322	A1 *	1/2008	Ohkawa	362/311
2008/0054280	A1 *	3/2008	Reginelli et al.	257/98
2008/0087907	A1 *	4/2008	Park et al.	257/98
2008/0297020	A1 *	12/2008	Wanninger et al.	313/110
2009/0242914	A1 *	10/2009	Ku	257/98

FOREIGN PATENT DOCUMENTS

JP	D1298733	4/2007
JP	D1298938	4/2007
JP	D1308765	8/2007
JP	D1349724	1/2009
JP	D1349725	1/2009
JP	D1355076	4/2009
JP	D1363307	6/2009
JP	D1363679	6/2009
JP	D1363680	6/2009
JP	D1394065	8/2010
JP	D1394066	8/2010
JP	D1394067	8/2010
JP	D1394494	8/2010
JP	D1394495	8/2010
JP	D1394496	8/2010
JP	D1398521	10/2010

* cited by examiner

FIG.1

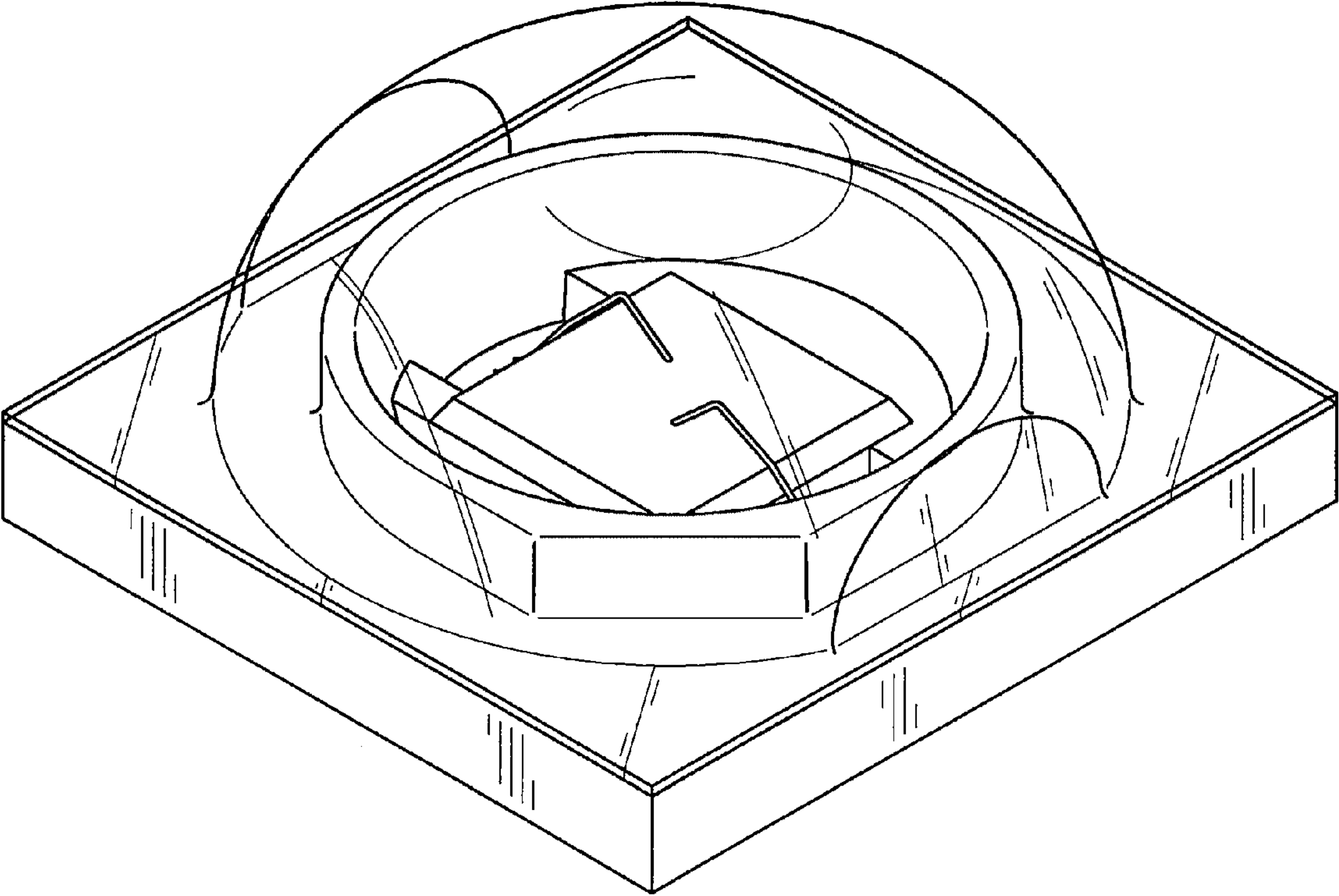


FIG.2

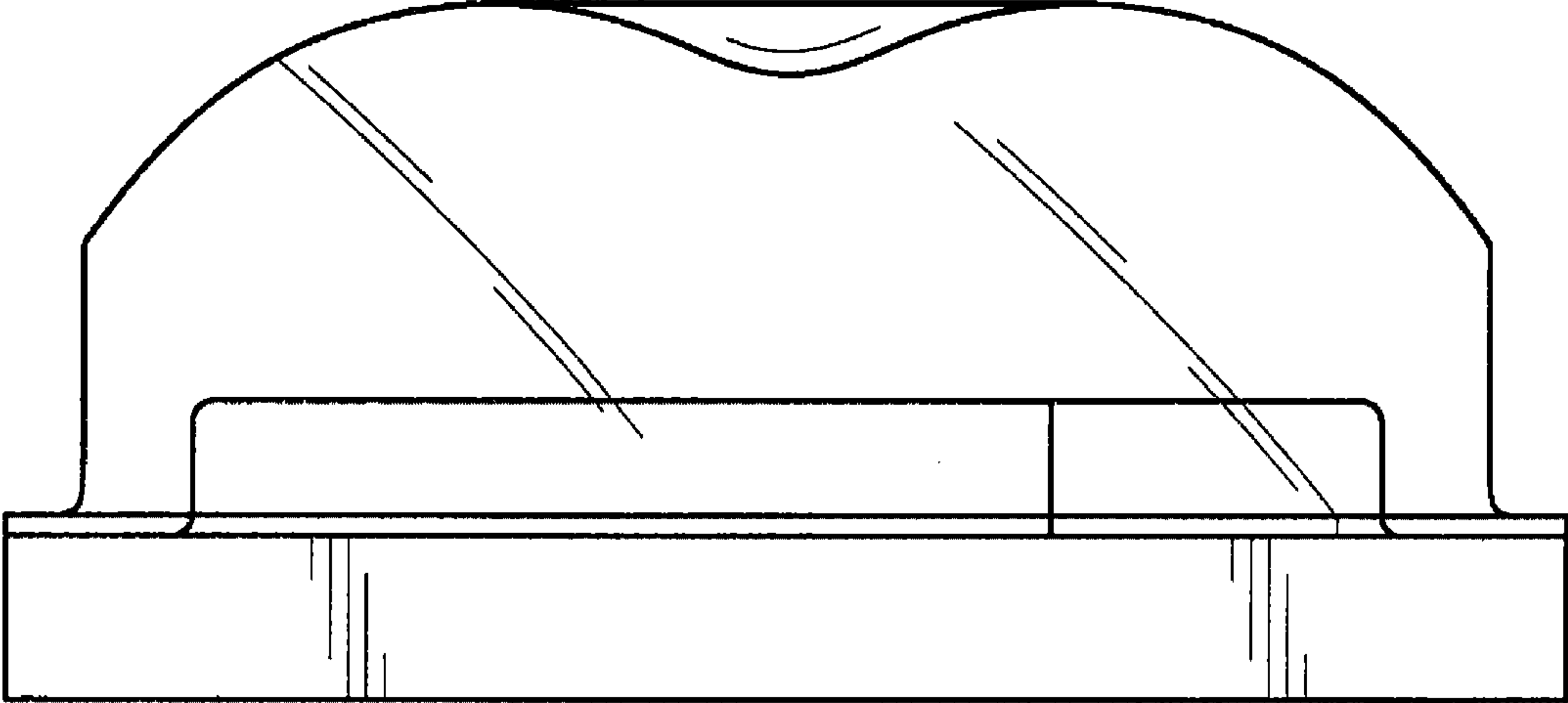


FIG.3

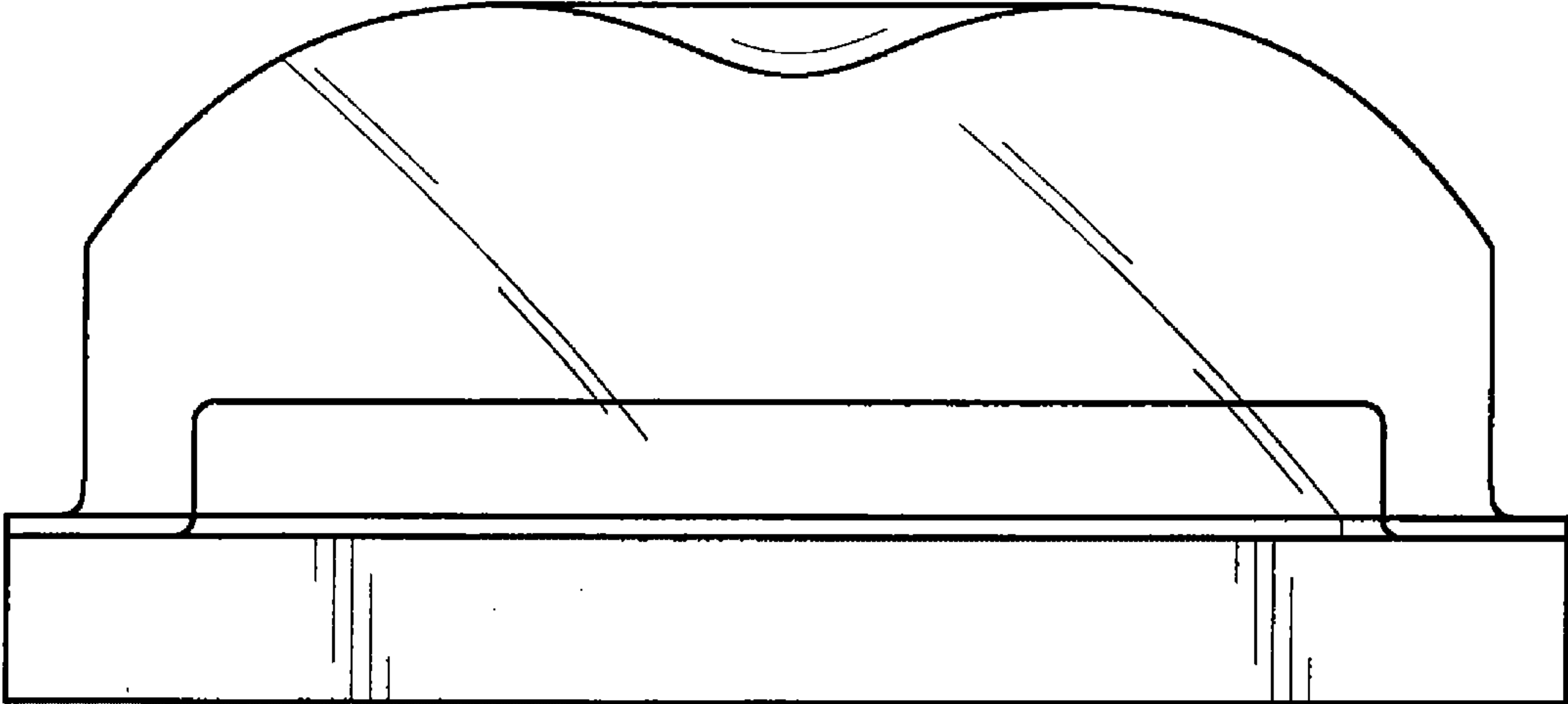


FIG.4

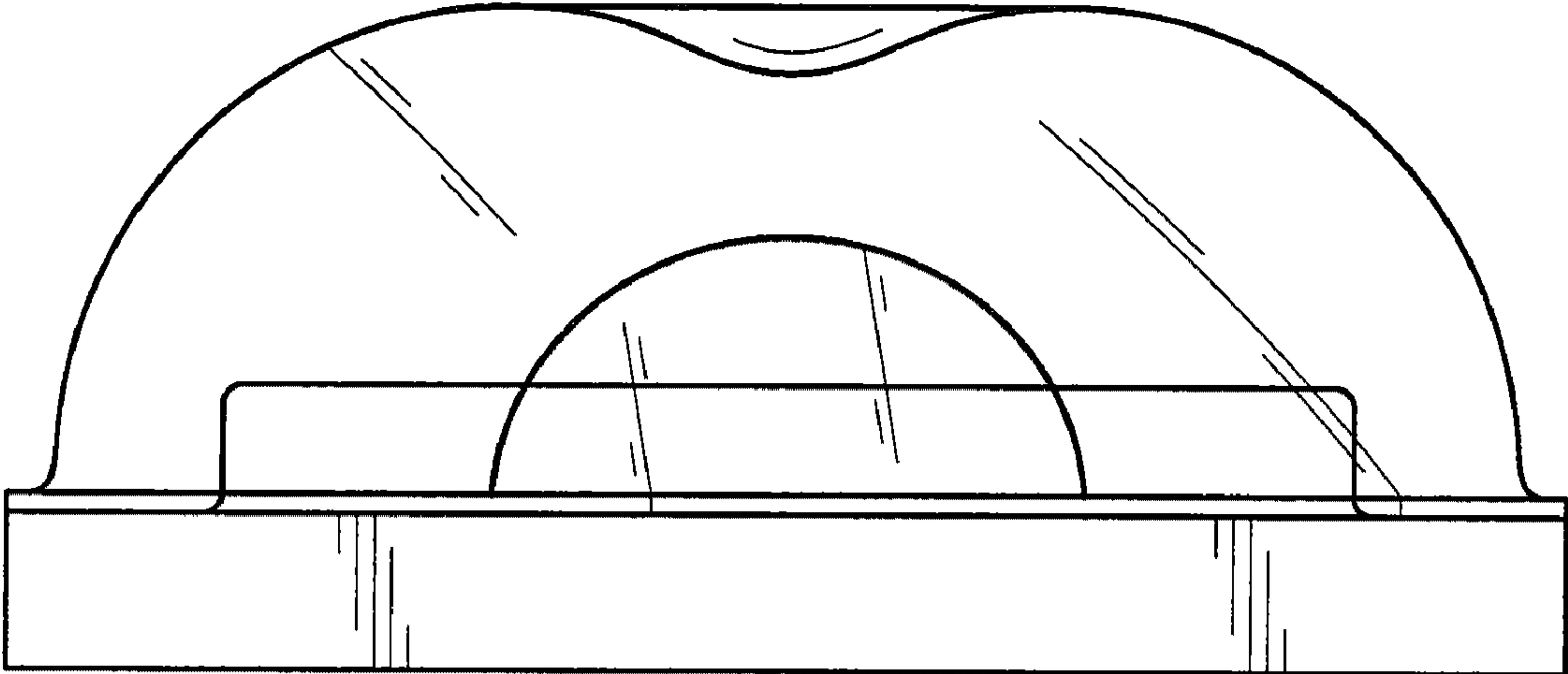


FIG.5

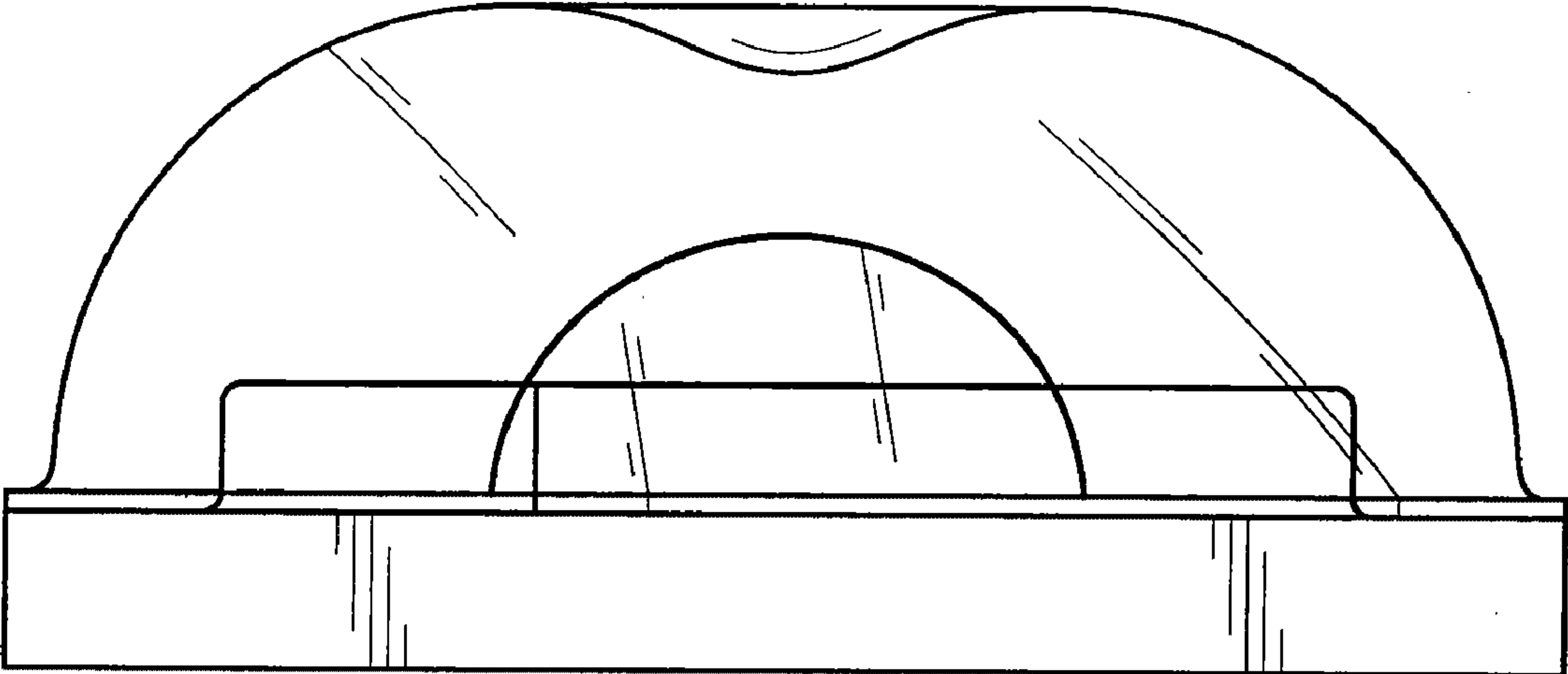


FIG.6

→9

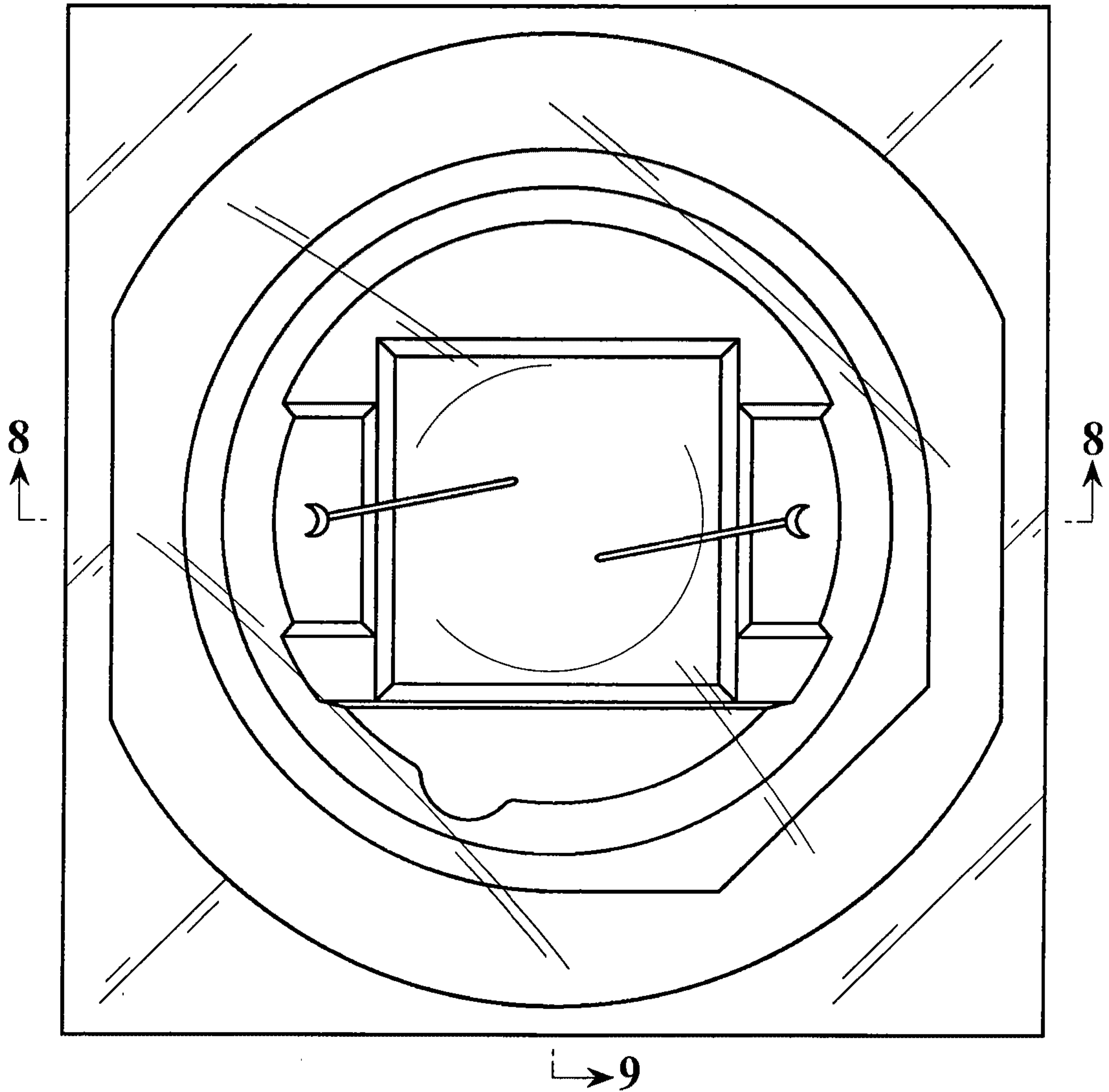


FIG.7

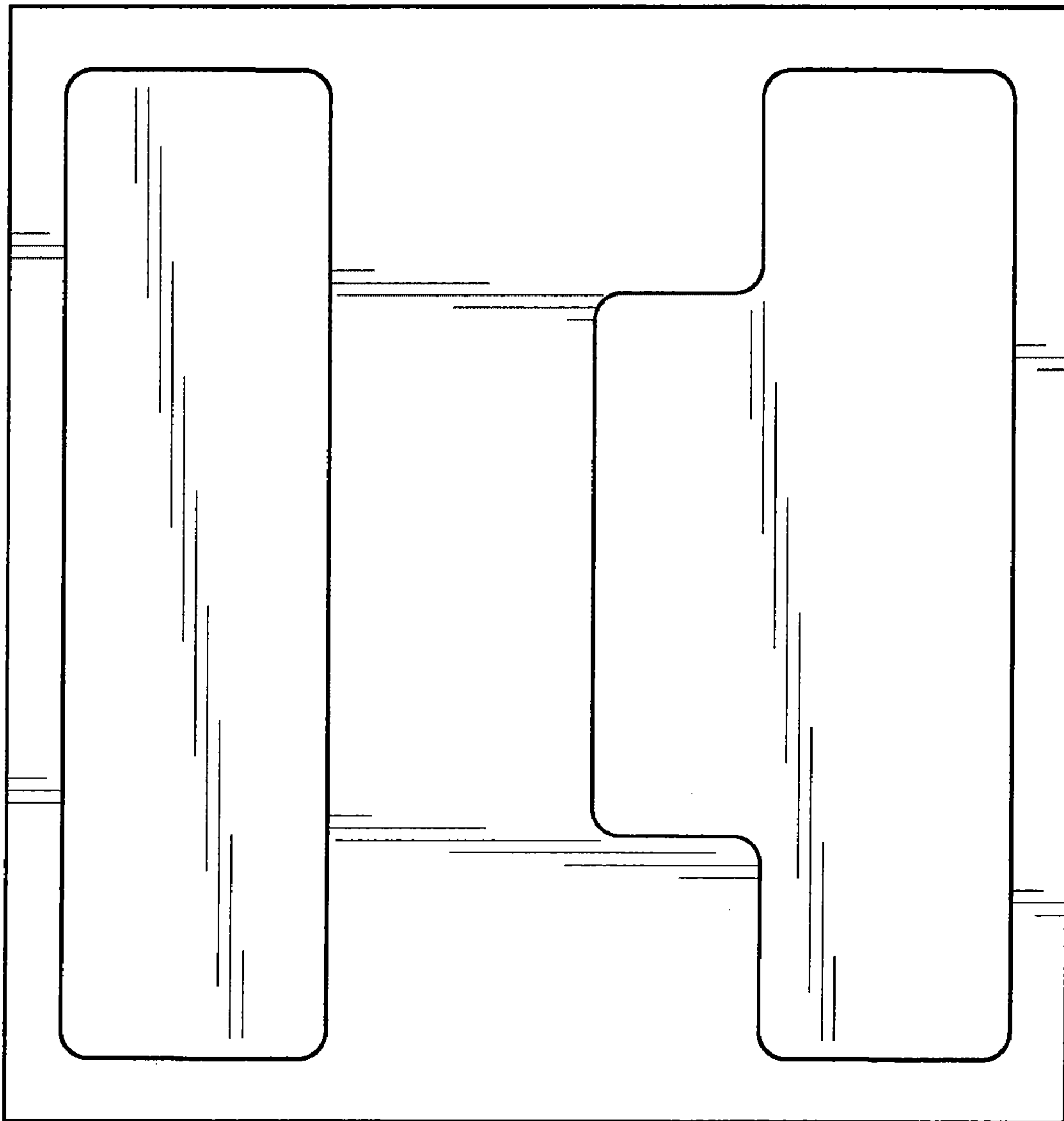


FIG.8

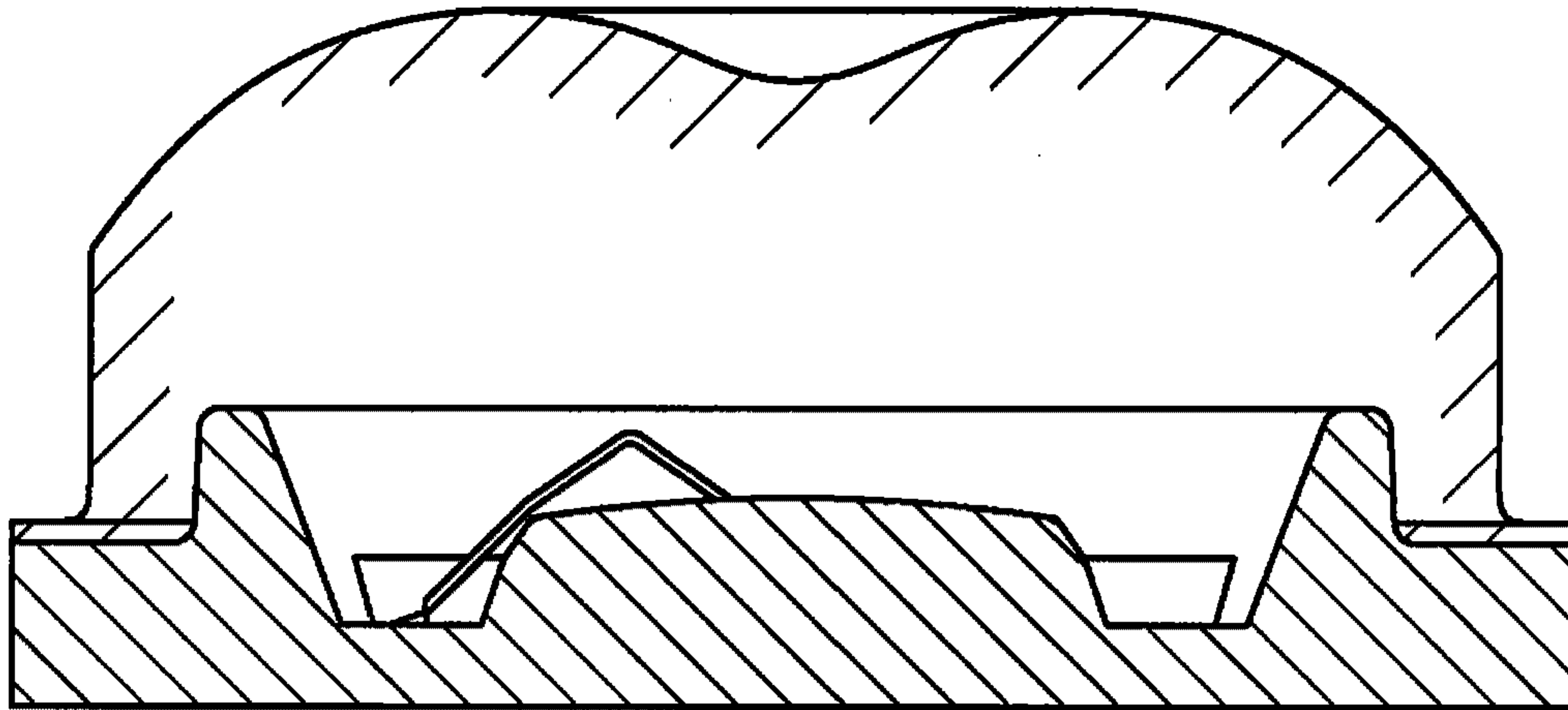


FIG.9

