



US00D645416S

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

(10) **Patent No.:** **US D645,416 S**

(45) **Date of Patent:** **** *Sep. 20, 2011**

(54) **LIGHT-EMITTING DIODE**

(75) Inventors: **Takashi Kuwaharada**, Kagoshima (JP);
Tooru Aoyagi, Kagoshima (JP);
Tomoyuki Kusano, Kagoshima (JP)

(73) Assignee: **Panasonic Corporation**, Osaka (JP)

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

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

(21) Appl. No.: **29/363,959**

(22) Filed: **Jun. 16, 2010**

(30) **Foreign Application Priority Data**

Dec. 22, 2009 (JP) 2009-029834

(51) **LOC (9) Cl.** **13-03**

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

(58) **Field of Classification Search** D13/180;
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	
D576,574	S	9/2008	Kobayakawa	
D578,671	S	10/2008	Kanayama et al.	
D581,884	S	12/2008	Yen	
D584,699	S	1/2009	Bando	
D591,696	S	5/2009	Okada et al.	

D591,697	S	5/2009	Andrews et al.	
D593,224	S	5/2009	Hanley	
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

(Continued)

FOREIGN PATENT DOCUMENTS

JP D1298732 4/2007

(Continued)

OTHER PUBLICATIONS

U.S. Appl. No. 29/363,947, entitled "Light-emitting diode", filed Jun. 16, 2010.

(Continued)

Primary Examiner — Selina Sikder

(74) *Attorney, Agent, or Firm* — Brinks Hofer Gilson & Lione

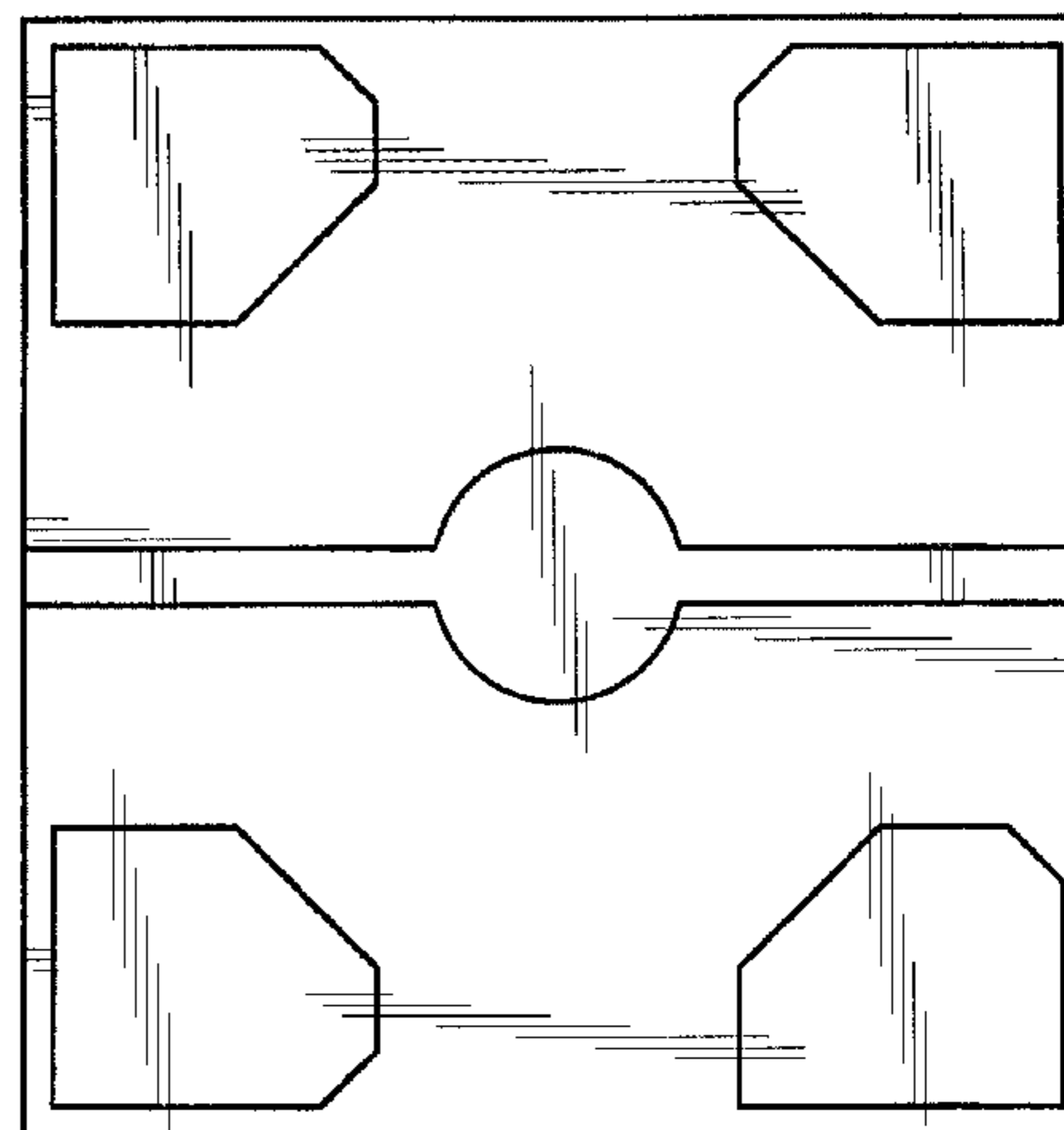
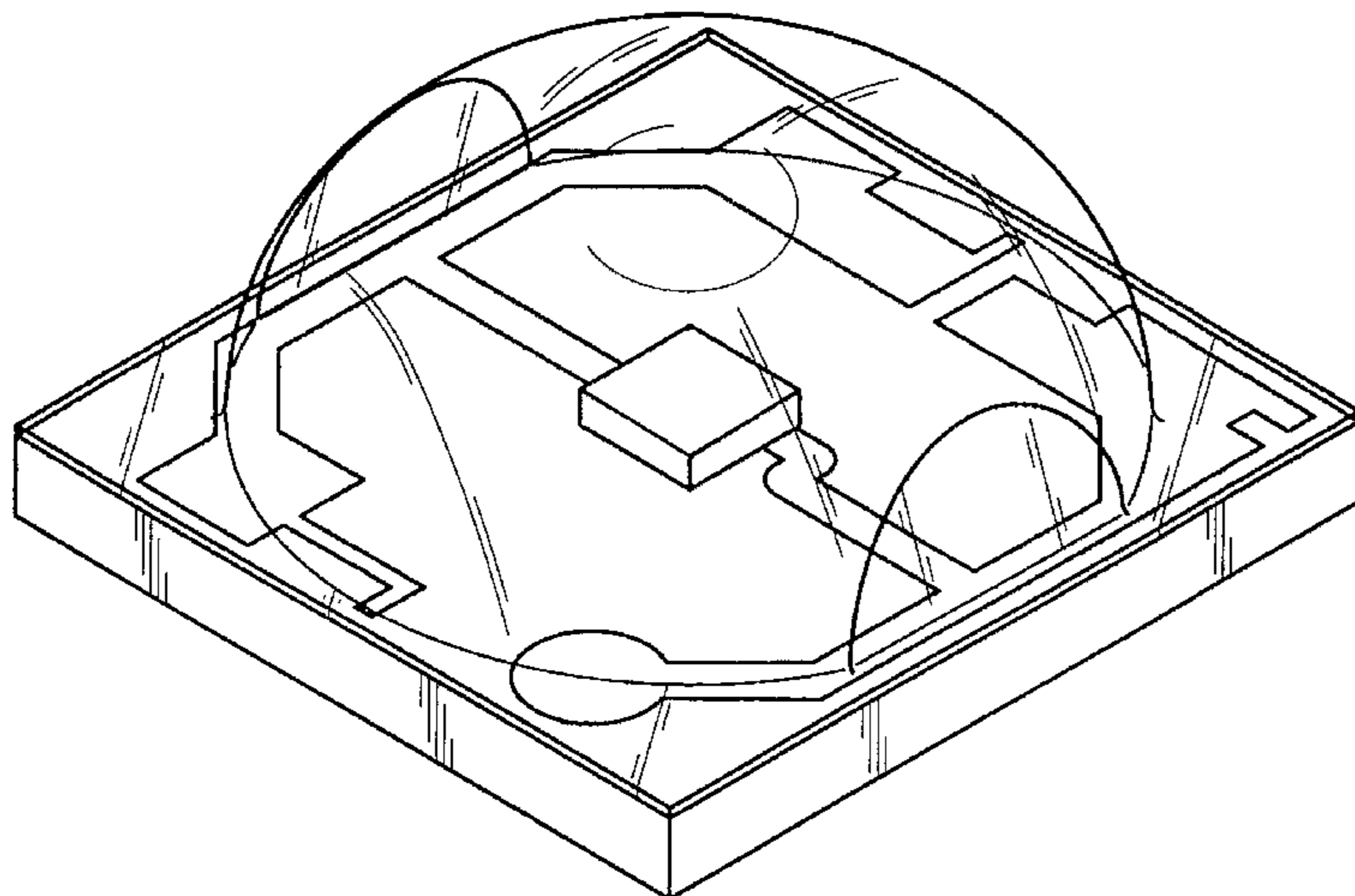
(57) **CLAIM**

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; and,
FIG. 7 is a bottom view thereof.
The transparent dome is formed with a substantially conical recess at its top portion.

1 Claim, 7 Drawing Sheets



US D645,416 S

Page 2

U.S. PATENT DOCUMENTS

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
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

OTHER PUBLICATIONS

U.S. Appl. No. 29/363,949, entitled "Light-emitting diode", filed Jun. 16, 2010.
U.S. Appl. No. 29/363,954, entitled "Light-emitting diode", filed Jun. 16, 2010.
U.S. Appl. No. 29/363,955, entitled "Light-emitting diode", filed Jun. 16, 2010.
U.S. Appl. No. 29/363,957, entitled "Light-emitting diode", filed Jun. 16, 2010.
U.S. Appl. No. 29/381,096, entitled "Light emitting diode", filed Dec. 15, 2010.
U.S. Appl. No. 29/381,098, entitled "Light emitting diode", filed Dec. 15, 2010.
U.S. Appl. No. 29/381,101, entitled "Light emitting diode", filed Dec. 15, 2010.
U.S. Appl. No. 29/381,102, entitled "Light emitting diode", filed Dec. 15, 2010.
U.S. Appl. No. 29/381,103, entitled "Light emitting diode", filed Dec. 15, 2010.
U.S. Appl. No. 29/381,107, entitled "Light emitting diode", filed Dec. 15, 2010.

* cited by examiner

FIG.1

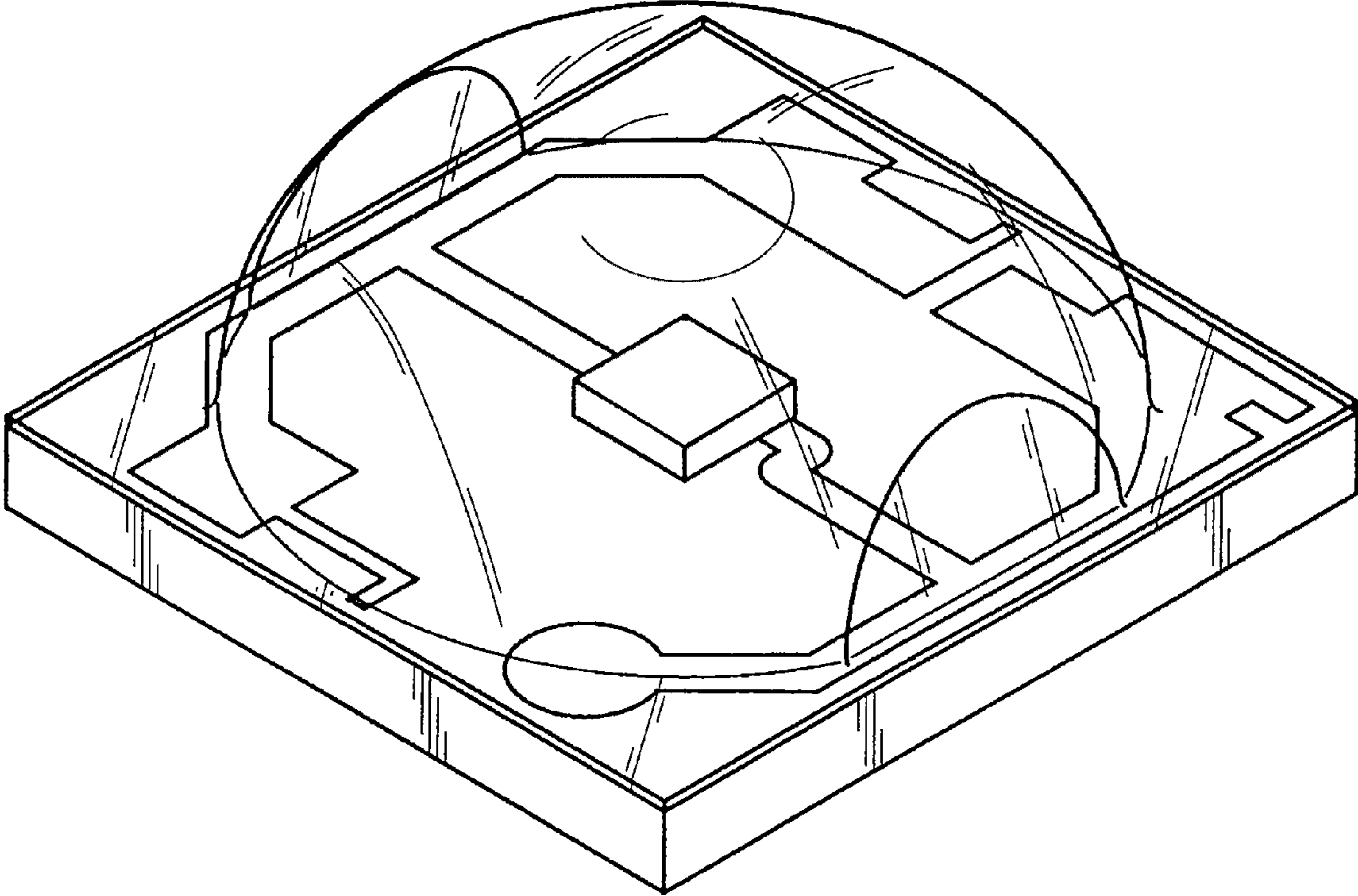


FIG.2

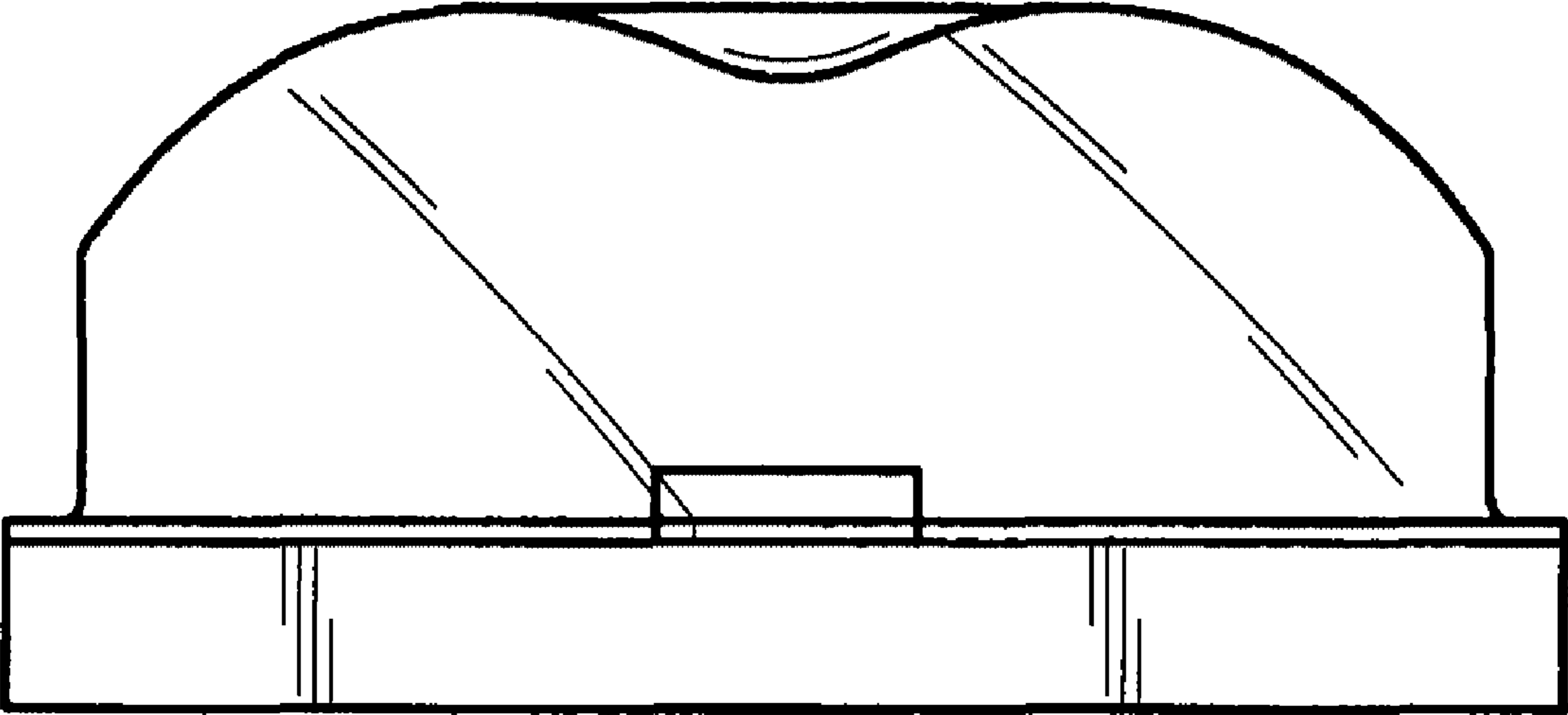


FIG.3

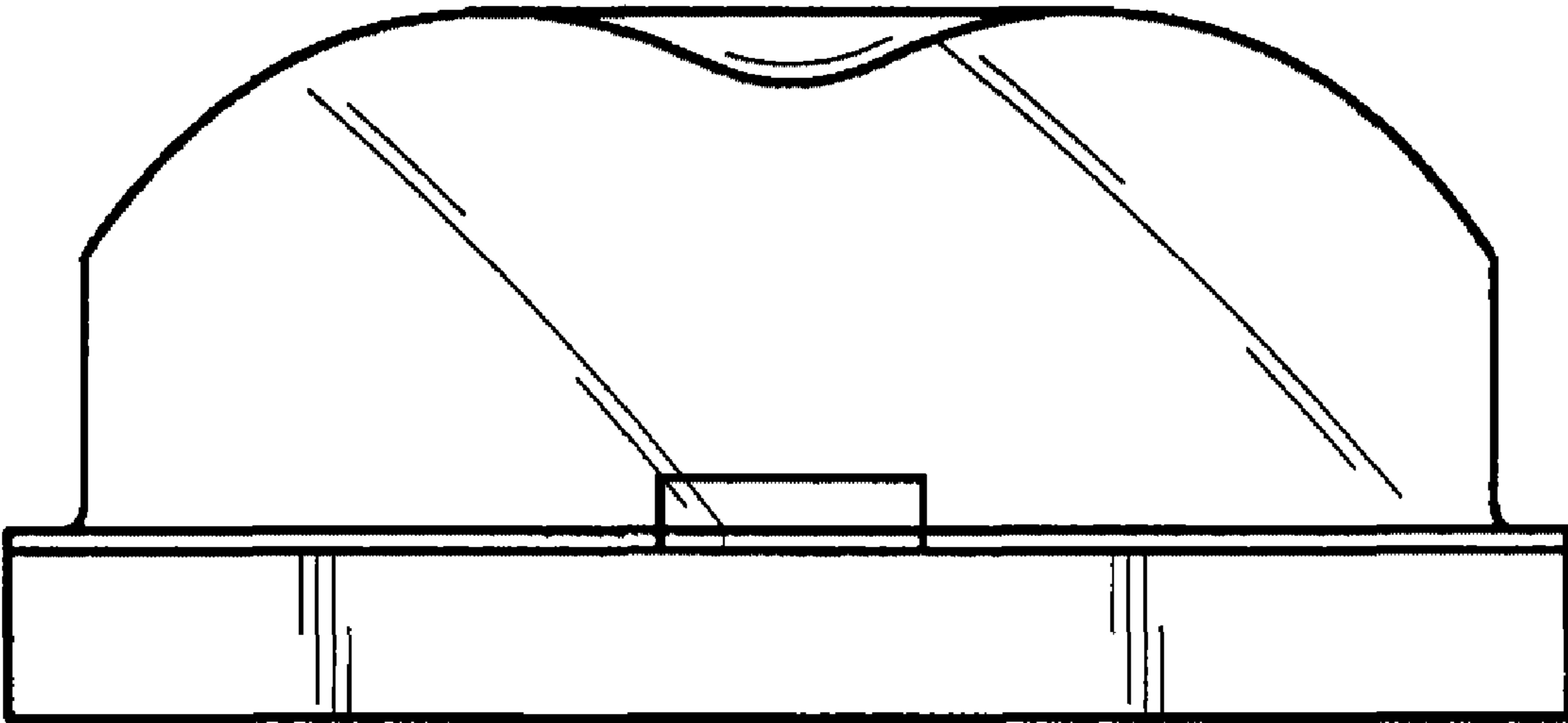


FIG.4

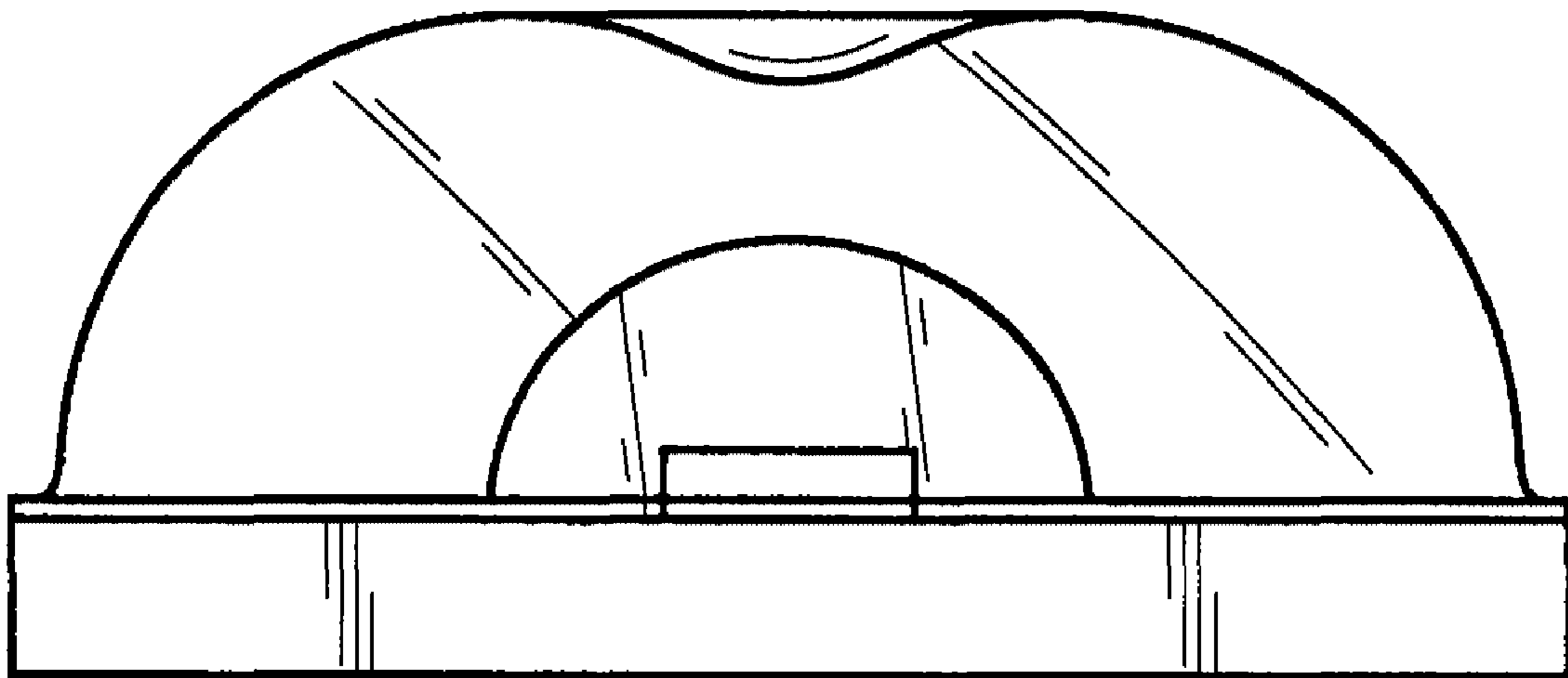


FIG.5

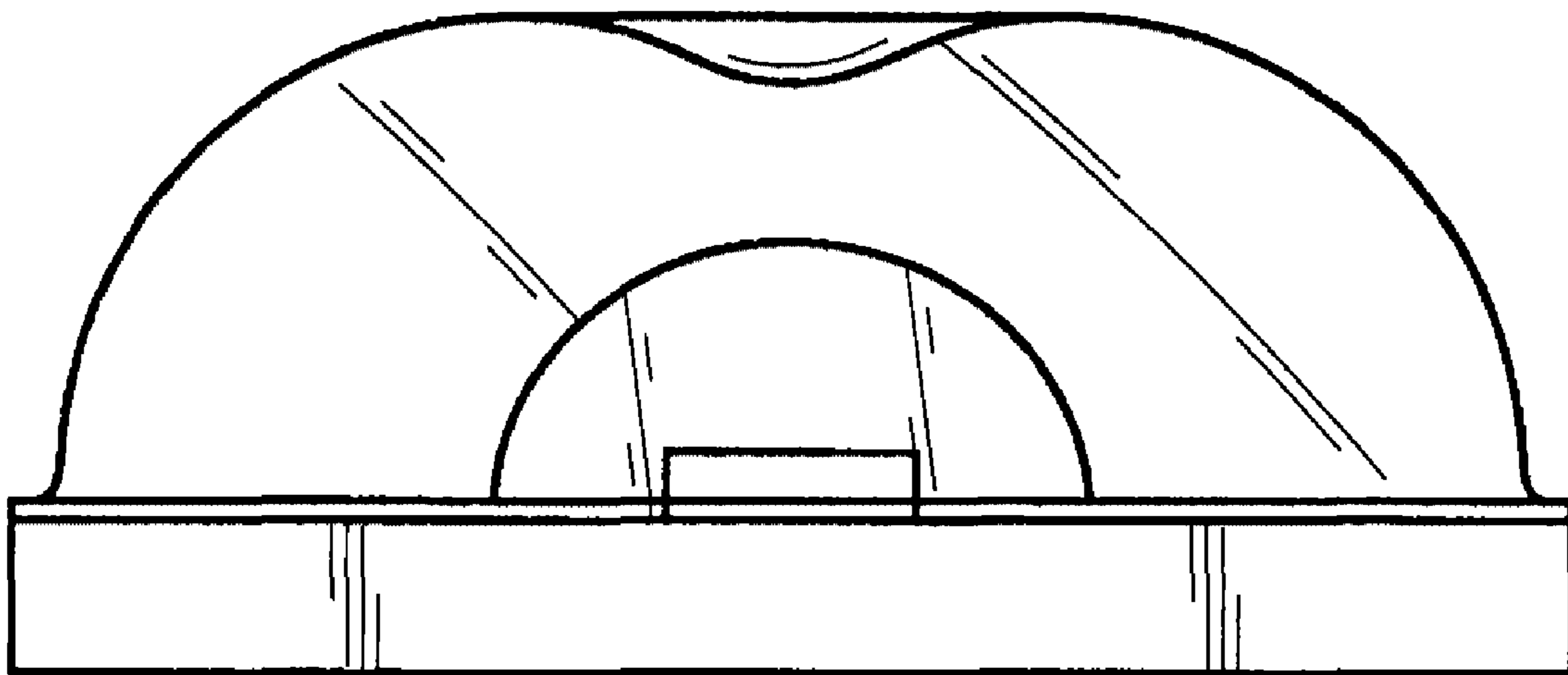


FIG.6

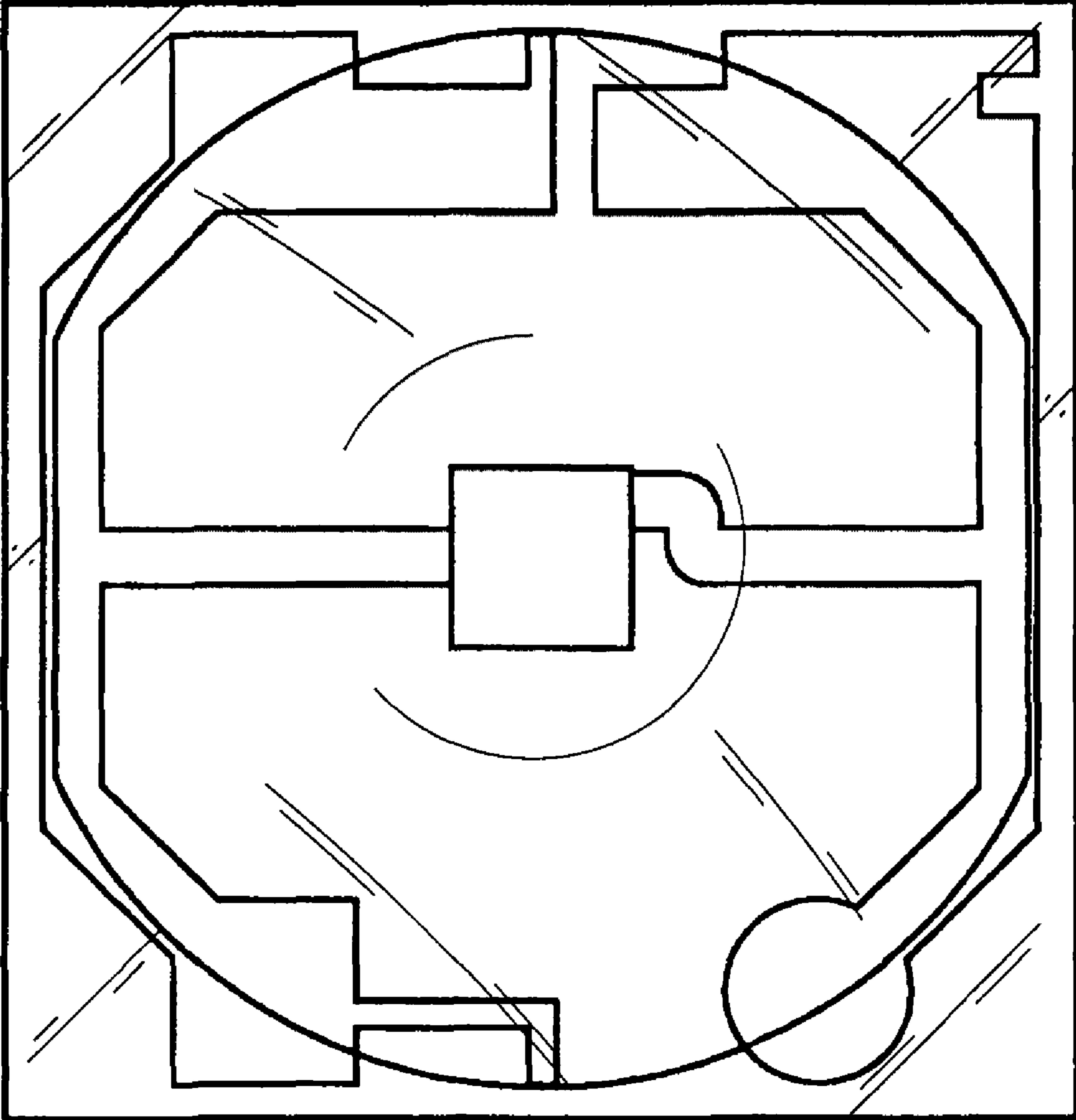


FIG.7

