



US00D645420S

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

(10) **Patent No.:** **US D645,420 S**  
(45) **Date of Patent:** **\*\* \*Sep. 20, 2011**

(54) **LIGHT EMITTING DIODE**  
(75) Inventors: **Takashi Kuwaharada**, Kagoshima (JP);  
**Tooru Aoyagi**, Kyoto (JP); **Tomoyuki**  
**Kusano**, Kagoshima (JP)

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

(Continued)

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

**FOREIGN PATENT DOCUMENTS**

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

JP D1298732 4/2007

(Continued)

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

**OTHER PUBLICATIONS**

(21) Appl. No.: **29/381,102**

U.S. Appl. No. 29/381,096, entitled "Light emitting diode", filed Dec. 15, 2010.

(22) Filed: **Dec. 15, 2010**

(Continued)

(30) **Foreign Application Priority Data**

Jun. 22, 2010 (JP) ..... 2010-015263

*Primary Examiner* — Selina Sikder

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

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

(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

(57) **CLAIM**

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

See application file for complete search history.

**DESCRIPTION**

(56) **References Cited**

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

**U.S. PATENT DOCUMENTS**

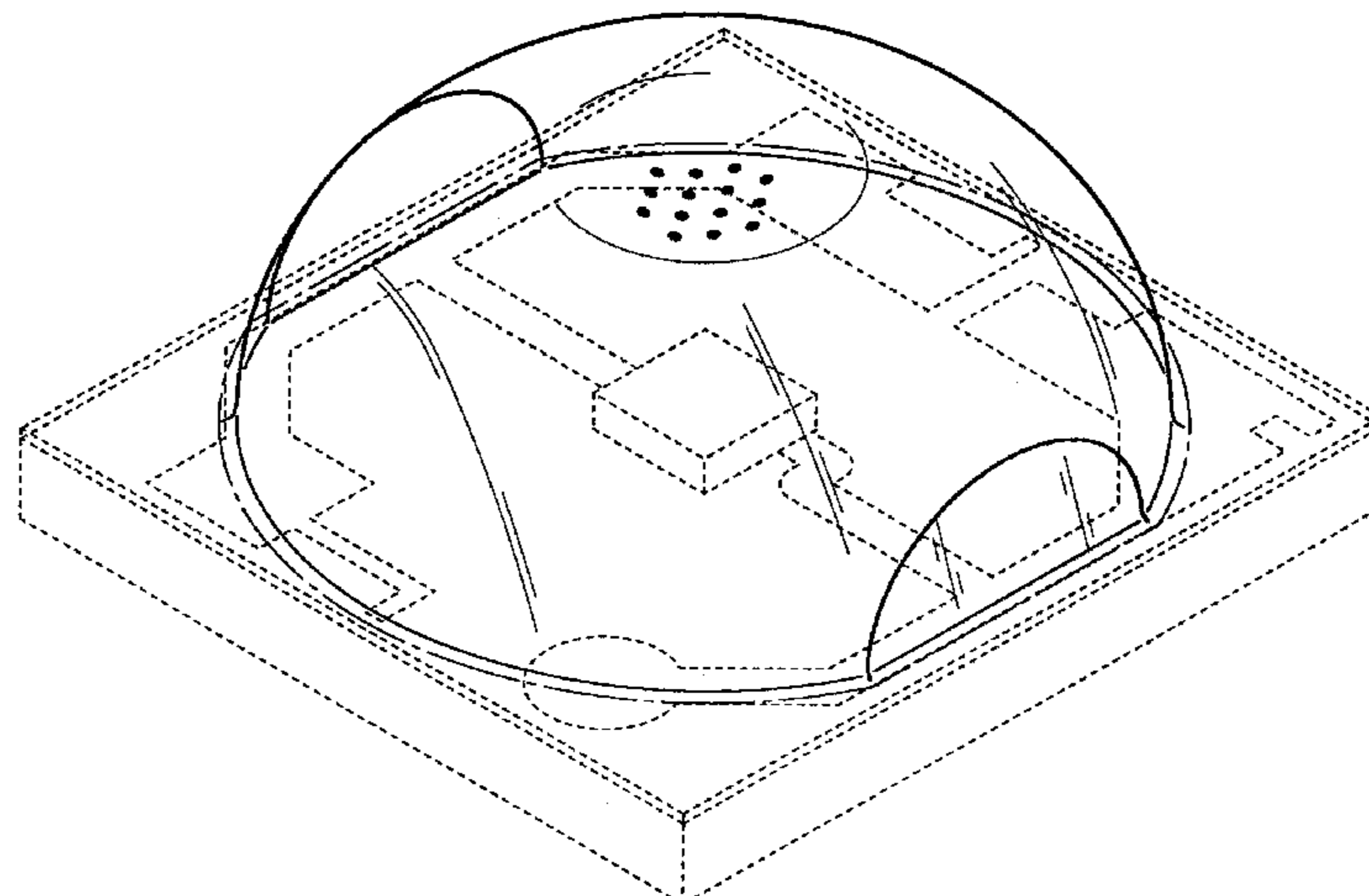
5,722,760 A \* 3/1998 Chien ..... 362/84  
7,211,835 B2 \* 5/2007 Ono ..... 257/99  
7,352,011 B2 \* 4/2008 Smits et al. .... 257/99  
D571,316 S 6/2008 Lee et al.  
D572,210 S 7/2008 Lee  
D573,550 S 7/2008 Lee  
D573,551 S 7/2008 Lee  
D575,244 S 8/2008 Lee  
D576,574 S 9/2008 Kobayakawa  
D578,671 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.

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 broken line showing of light emitting diode is included for the purpose of illustrating environment and forms no part of the claimed design. Additionally, the unevenly broken lines in the drawings define the limits of the claimed design.

The transparent dome is formed with a substantially conical recess at its top portion.

**1 Claim, 7 Drawing Sheets**



# US D645,420 S

Page 2

## U.S. PATENT DOCUMENTS

|              |      |         |                        |            |
|--------------|------|---------|------------------------|------------|
| 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    |
| 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. 29/381,098, 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. 29/381,103, entitled "Light emitting diode", filed Dec. 15, 2010.
- U.S. Appl. No. 29/381,107, entitled "Light emitting diode", filed Dec. 15, 2010.
- U.S. Appl. No. 29/363,947, entitled "Light-emitting diode", filed Jun. 16, 2010.
- 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. 29/363,959, entitled "Light-emitting diode", filed Jun. 16, 2010.

\* cited by examiner

FIG.1

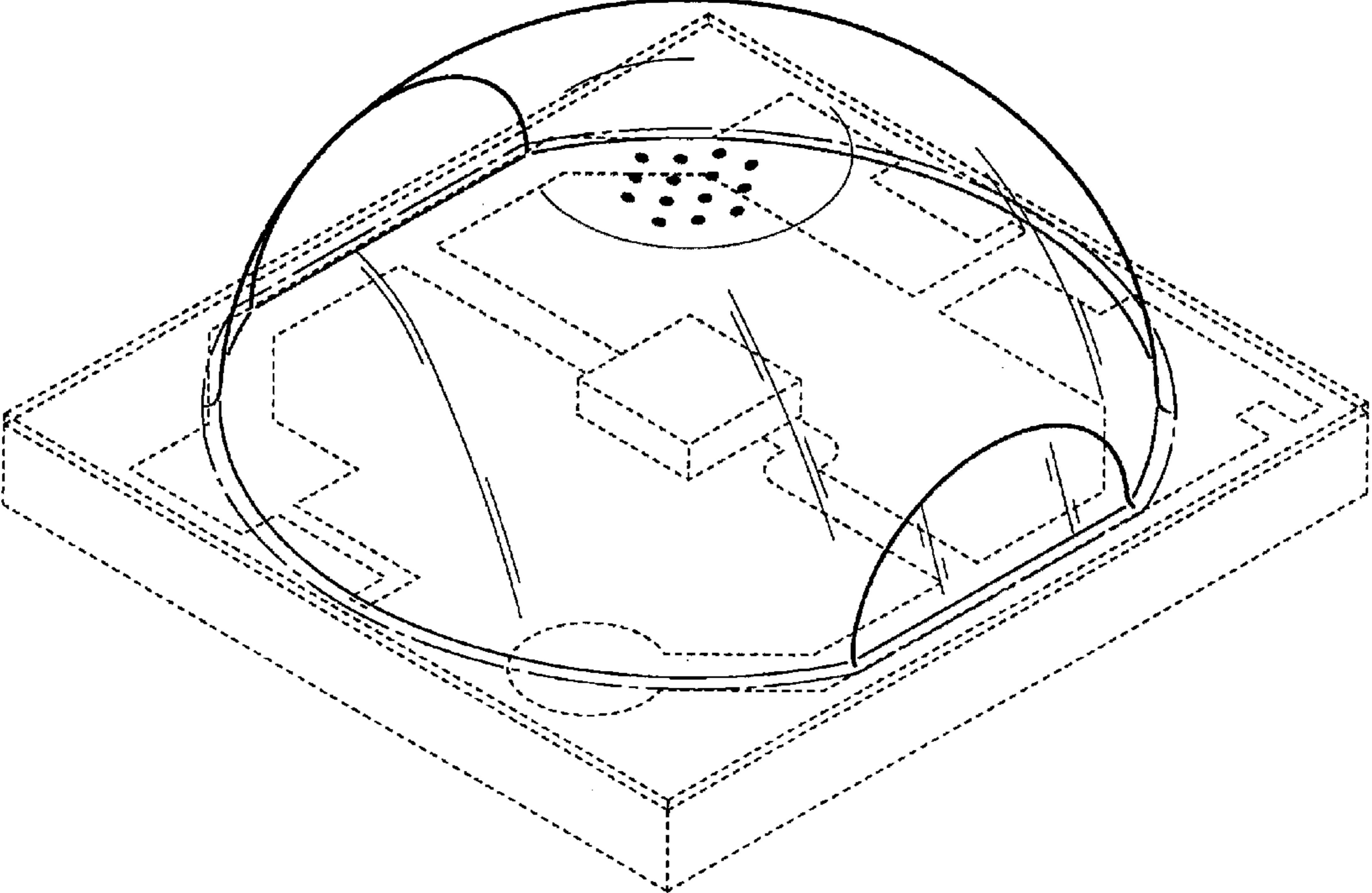


FIG.2

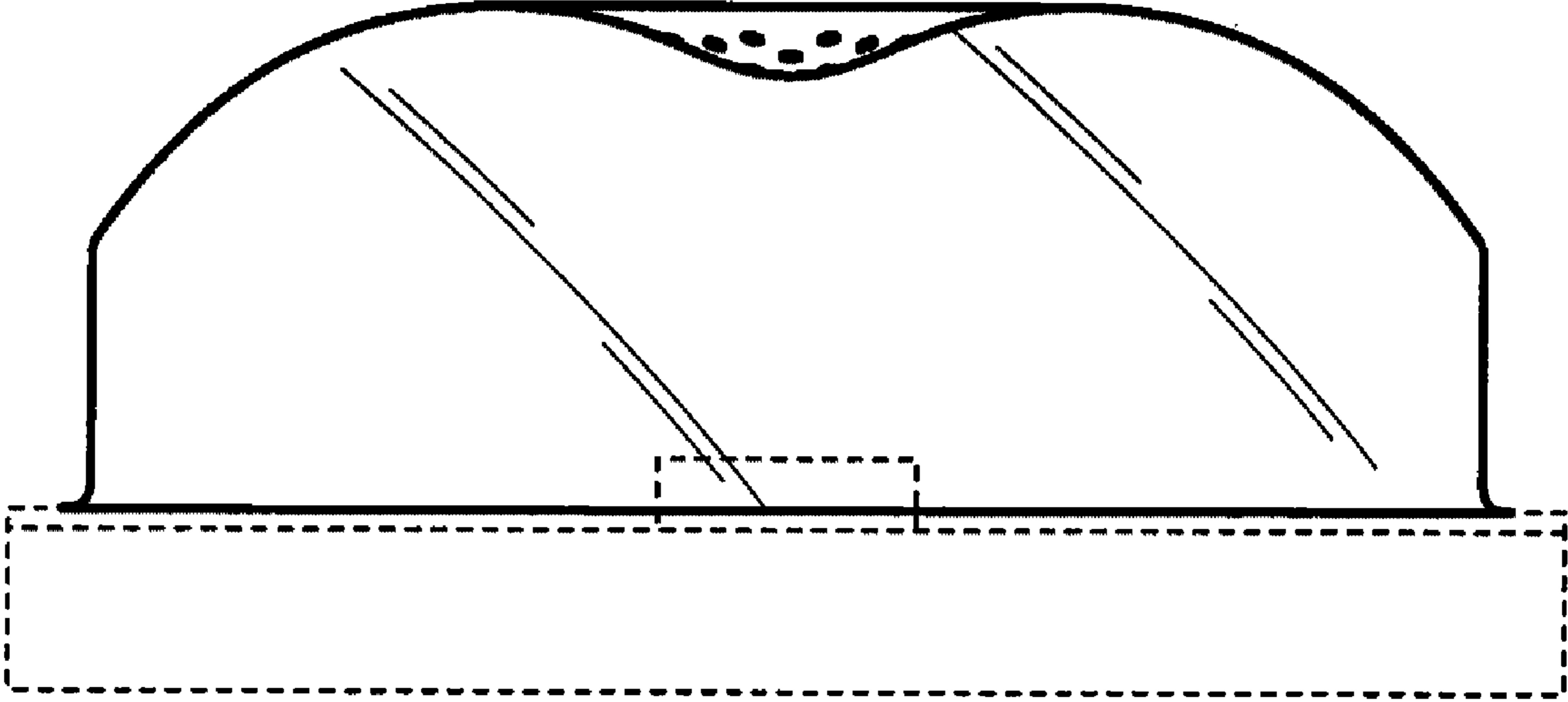


FIG.3

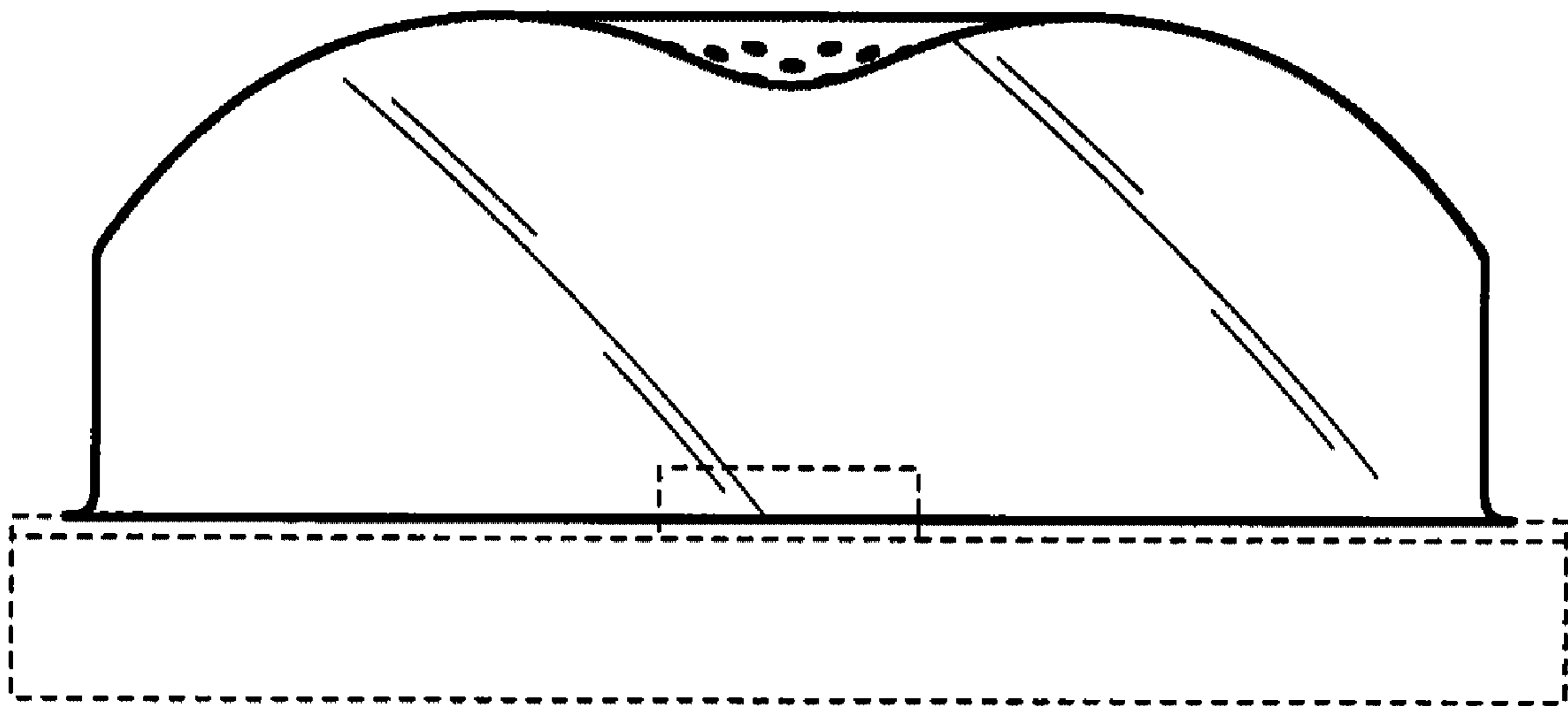


FIG.4

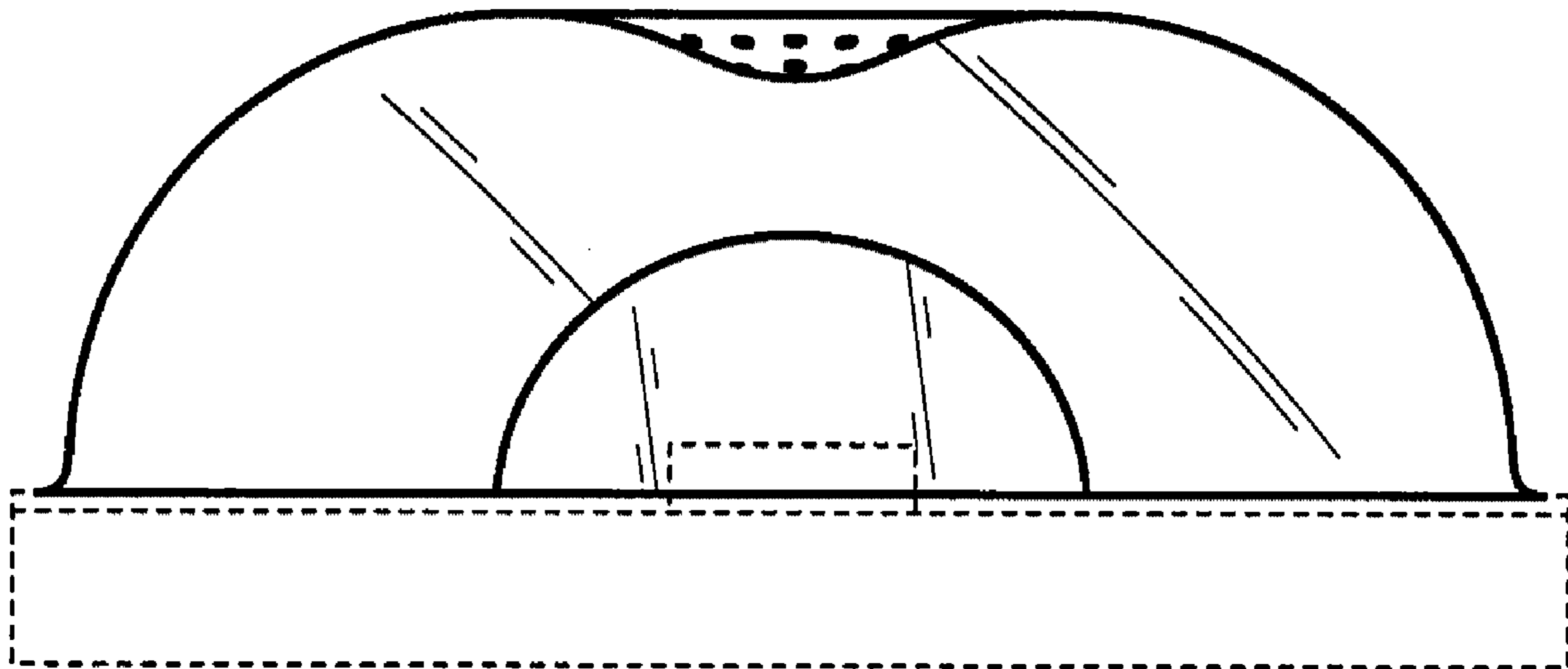


FIG.5

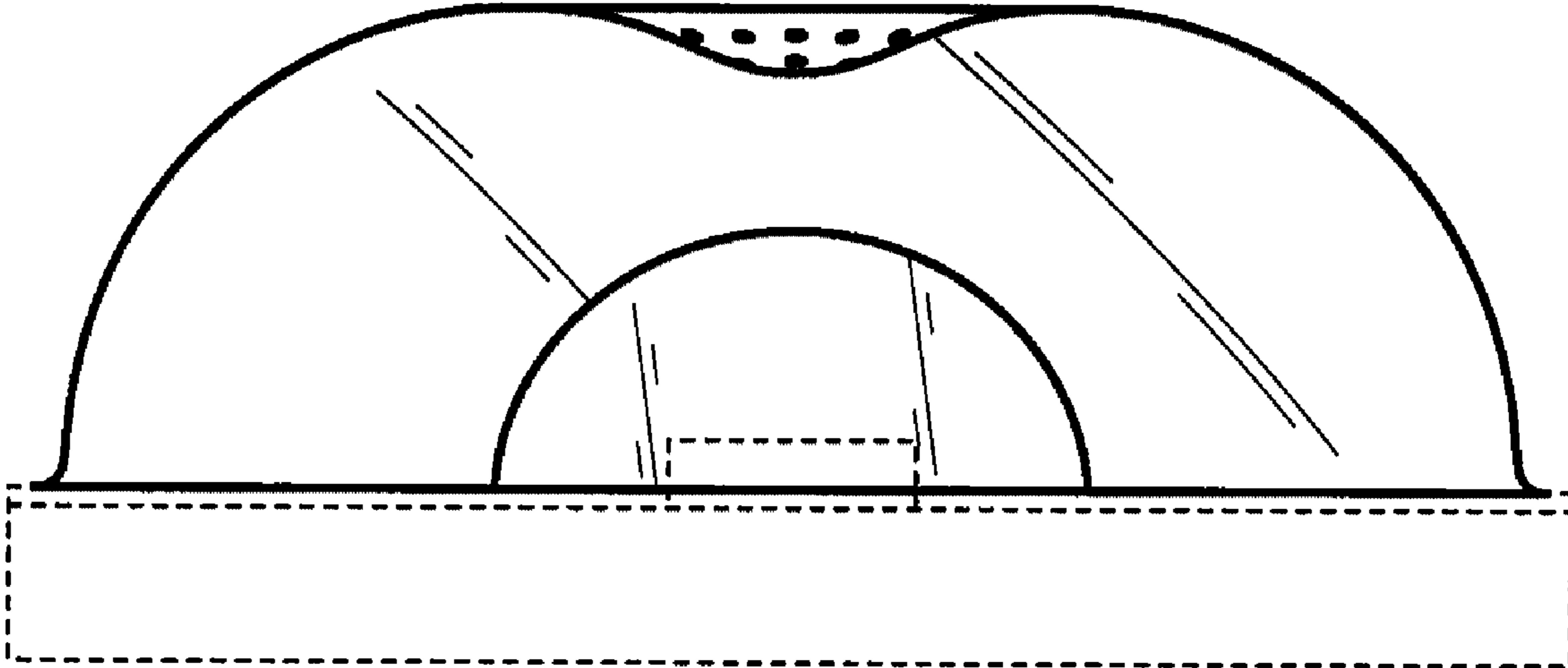


FIG.6

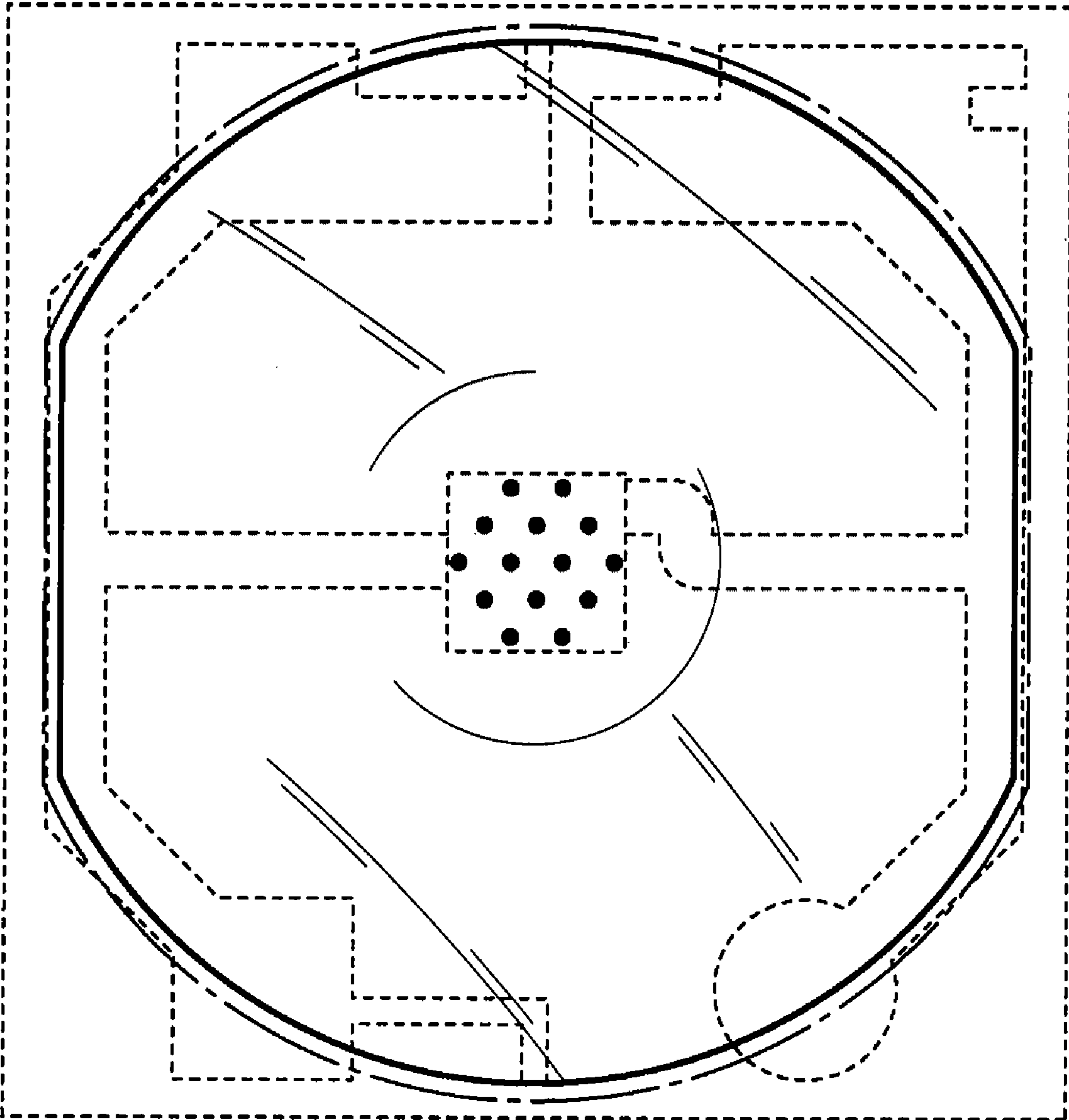




FIG.7

