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

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(54) **INTRAORAL X-RAY SENSOR**

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

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(52) **U.S. Cl.** ..... **D24/187; D24/158; D24/176**  
(58) **Field of Classification Search** ..... **D24/167, D24/168, 186-187, 158, 176, 152; 378/39, 378/98.8, 168, 180, 191; 600/372-384, 391, 600/129, 142, 152; 607/62, 109, 121, 129, 607/139; 427/2.12**  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

D243,476 S	2/1977	Avery
4,057,732 A	11/1977	Klauser
4,259,583 A	3/1981	Albert
D272,943 S	3/1984	Stone et al.
4,866,750 A	9/1989	Chavarria et al.
D327,325 S	6/1992	Strand
5,331,166 A	7/1994	Crosetto et al.
D355,964 S	2/1995	Nelvig
5,434,418 A	7/1995	Schick
D361,619 S	8/1995	Phleps et al.
5,510,623 A	4/1996	Sayag et al.
D369,667 S	5/1996	Vincentis et al.
D378,614 S	3/1997	Jensen
D385,037 S	10/1997	Jensen
5,677,537 A	10/1997	Pfeiffer
5,691,539 A	11/1997	Pfeiffer

D409,307 S	5/1999	Phleps et al.
5,912,942 A	6/1999	Schick et al.
6,002,742 A	12/1999	Nelvig
6,030,119 A	2/2000	Tachibana et al.
6,033,111 A	3/2000	Winters et al.

(Continued)

**FOREIGN PATENT DOCUMENTS**

DE 19815637 10/1998

(Continued)

**OTHER PUBLICATIONS**

Spartiotis, Konstantinos, et al., "A Directly Converting High-Resolution Intra-Oral X-Ray Imaging Sensor", Nuclear Instruments and Methods in Physics Research, Section A, 501, pp. 594-601, Elsevier Science B.V., 2003.

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(57) **CLAIM**

We claim the ornamental design for an intraoral x-ray sensor, as shown and described.

**DESCRIPTION**

FIG. 1 is a back perspective view of an intraoral x-ray sensor showing our new design;

FIG. 2 is a top view thereof;

FIG. 3 is a bottom view thereof;

FIG. 4 is a left view thereof;

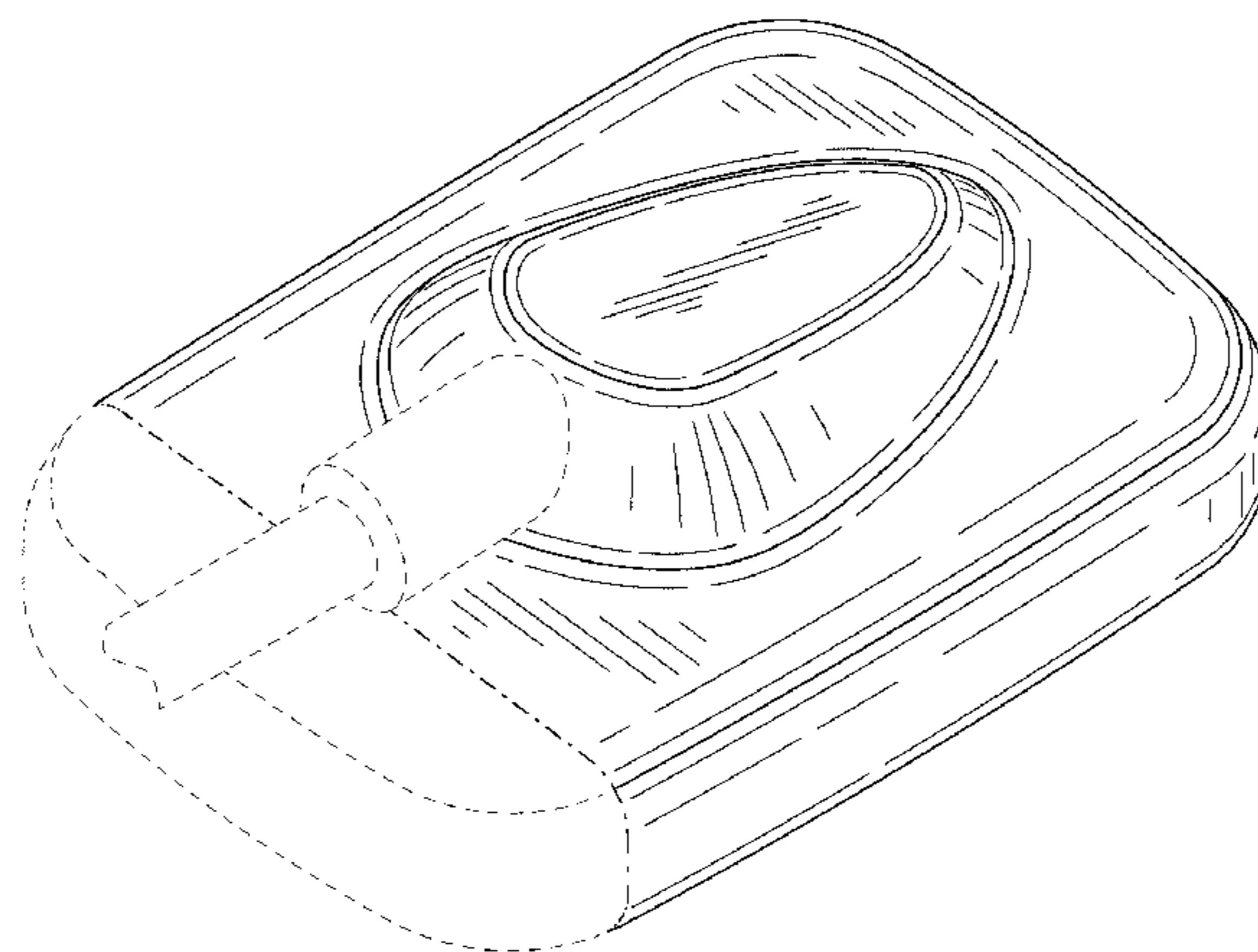
FIG. 5 is a right view thereof;

FIG. 6 is a front view thereof; and,

FIG. 7 is a back view thereof.

The broken-line showing of the environment is for illustrative purposes only and forms no part of the claimed design. The broken lines which define the boundaries of the claimed design form no part thereof.

**1 Claim, 3 Drawing Sheets**



# US D629,524 S

Page 2

## U.S. PATENT DOCUMENTS

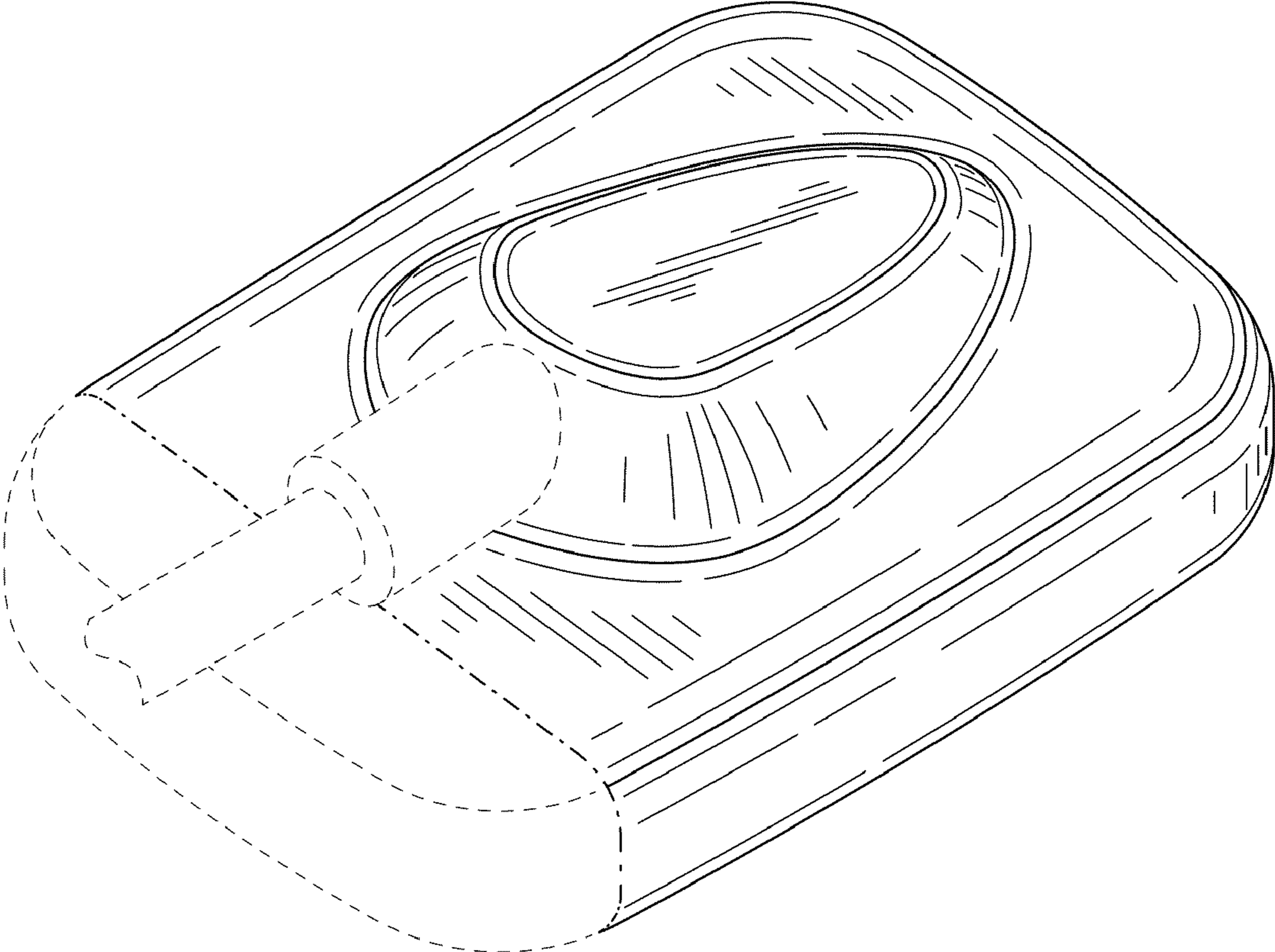
6,042,267 A 3/2000 Muraki et al.  
6,069,935 A 5/2000 Schick et al.  
6,169,781 B1 1/2001 Doebert et al.  
6,203,195 B1 3/2001 Willis  
6,244,866 B1 6/2001 Campbell  
6,320,934 B1 11/2001 Carroll et al.  
6,343,875 B1 2/2002 Eppinger et al.  
6,404,854 B1 6/2002 Carroll et al.  
6,527,442 B2 3/2003 Carroll  
D478,666 S 8/2003 Cianciosi  
6,652,141 B1 11/2003 Cianciosi  
D493,892 S 8/2004 Royzen et al.  
D495,799 S 9/2004 Hirsch et al.  
6,811,312 B2 11/2004 Bratslavsky et al.  
6,833,548 B2 12/2004 Homme et al.  
D504,722 S 5/2005 Cianciosi  
6,919,569 B2 7/2005 Homme et al.  
6,932,505 B2 8/2005 Yao et al.  
D511,004 S 10/2005 Masuda  
D511,384 S 11/2005 Masuda  
6,974,253 B2 12/2005 Ihalainen  
7,033,075 B2 4/2006 Landis et al.  
7,036,985 B2 5/2006 Puente et al.  
7,090,395 B2 8/2006 Glazer  
7,091,465 B2 8/2006 Miyaguchi  
7,172,339 B2 2/2007 Diederich  
7,195,395 B2 3/2007 Quarry et al.  
7,210,847 B2 5/2007 Hack  
7,281,847 B2 10/2007 Kokkaliaris et al.  
D565,184 S 3/2008 Royzen

7,360,948 B2 4/2008 Razzano et al.  
7,425,095 B2 9/2008 Schmulenson et al.  
7,462,807 B2 12/2008 Caupain et al.  
D587,375 S 2/2009 Mao et al.  
7,563,026 B2 7/2009 Mandelkern et al.  
7,661,880 B2 2/2010 Calderwood et al.  
D615,203 S \* 5/2010 Hirsch et al. .... D24/152  
D618,803 S \* 6/2010 Lash et al. .... D24/168  
2004/0188625 A1 9/2004 Schulze-Ganzlin  
2006/0257816 A1 11/2006 Klemola et al.  
2006/0262461 A1 11/2006 Wood  
2008/0118028 A1 5/2008 Stantchev

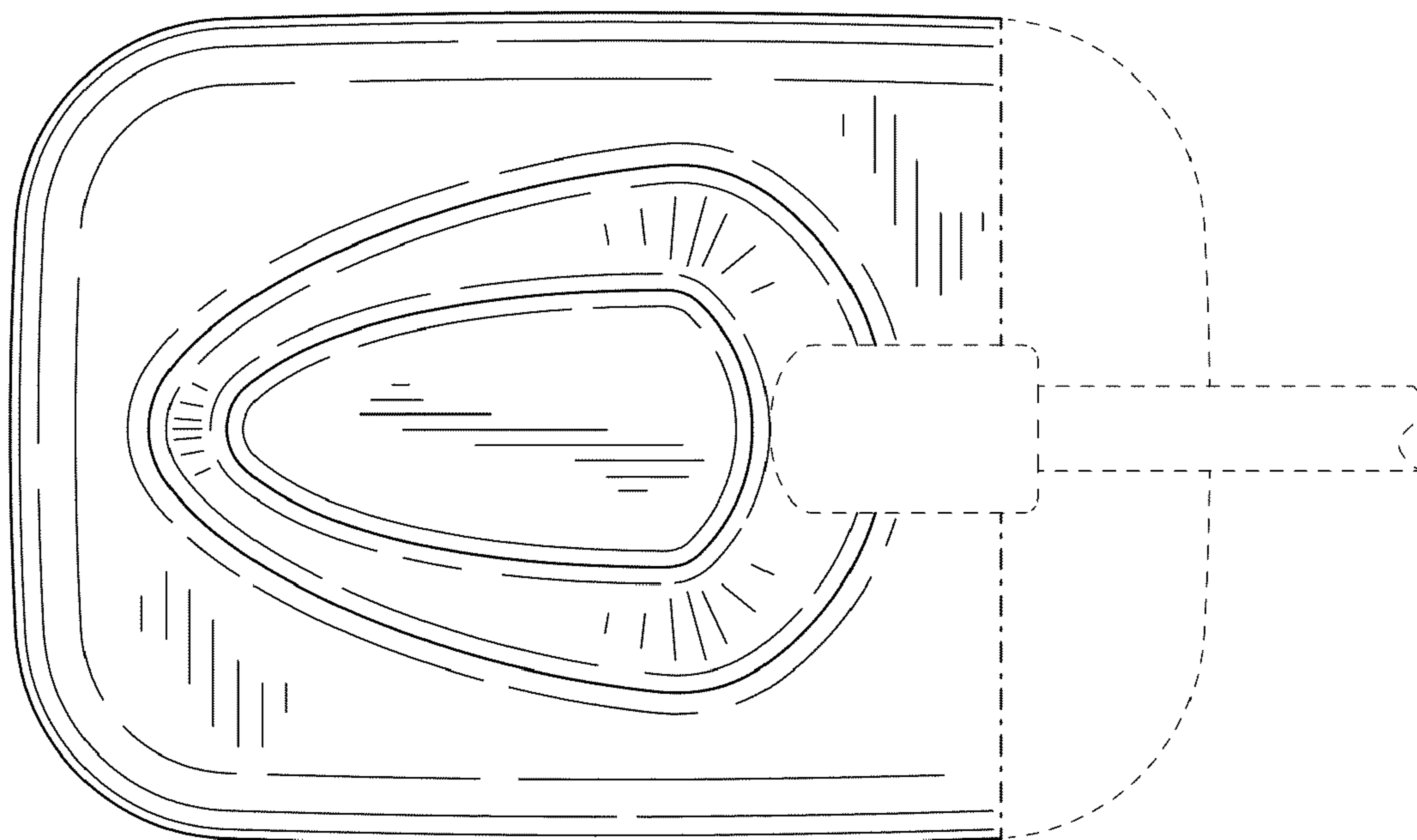
## FOREIGN PATENT DOCUMENTS

EP 1230896 8/2002  
EP 1255401 11/2002  
EP 1378201 1/2004  
EP 1623673 2/2006  
WO 92/22188 12/1992  
WO 96/32064 10/1996  
WO 2006/004528 1/2006  
WO 2006/089003 8/2006  
WO 2006/103126 10/2006  
WO 2007/003495 1/2007  
WO 2007/022246 2/2007  
WO 2007/030381 3/2007  
WO 2007/142925 12/2007  
WO 2008/058865 5/2008  
WO 2008/103460 8/2008

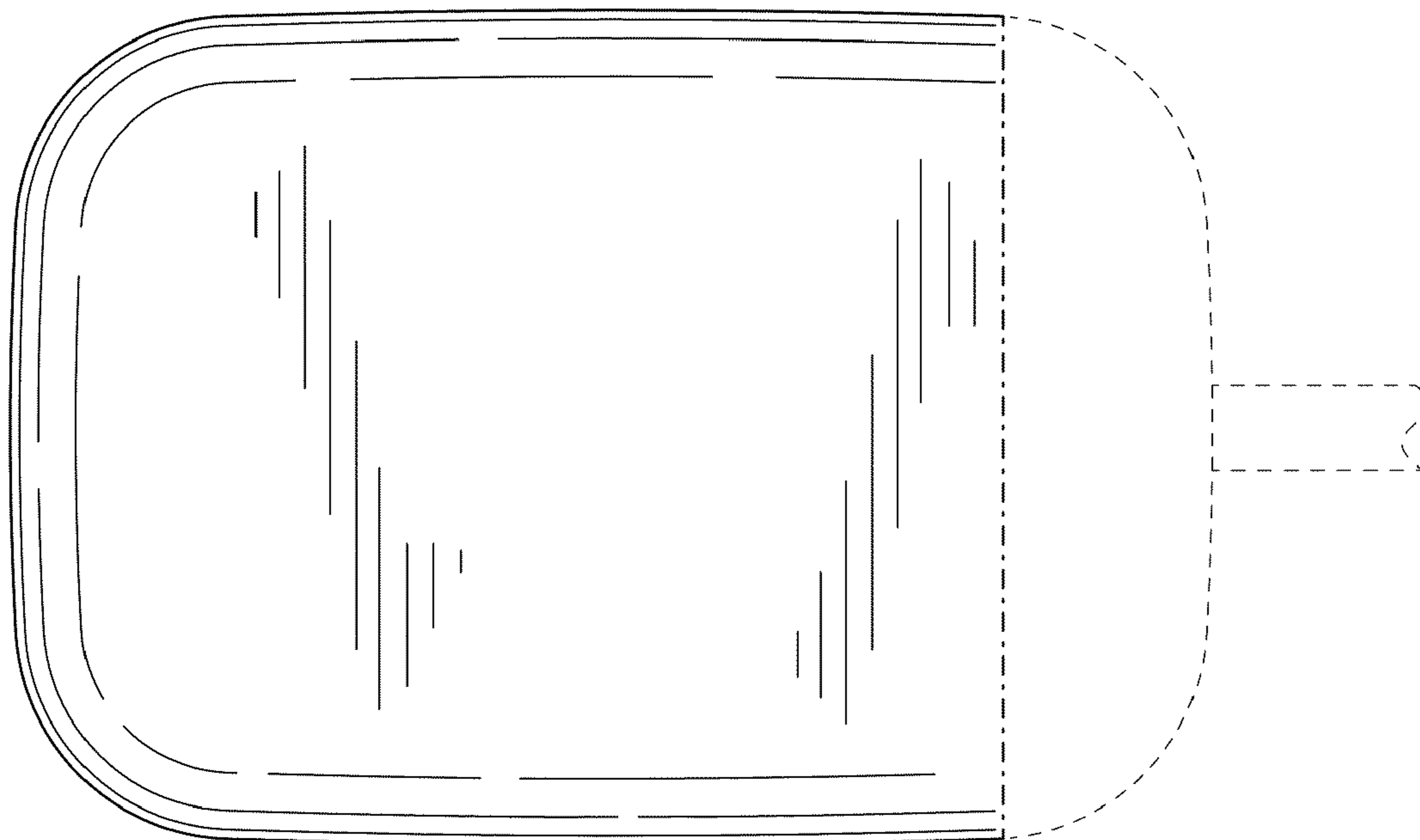
\* cited by examiner



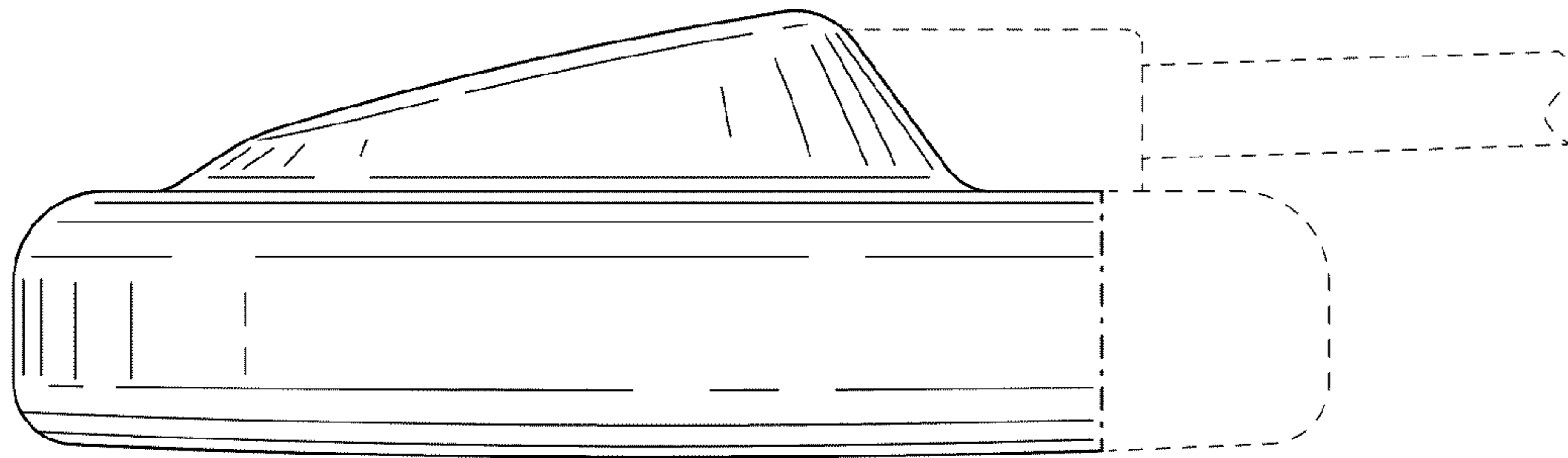
**FIG. 1**



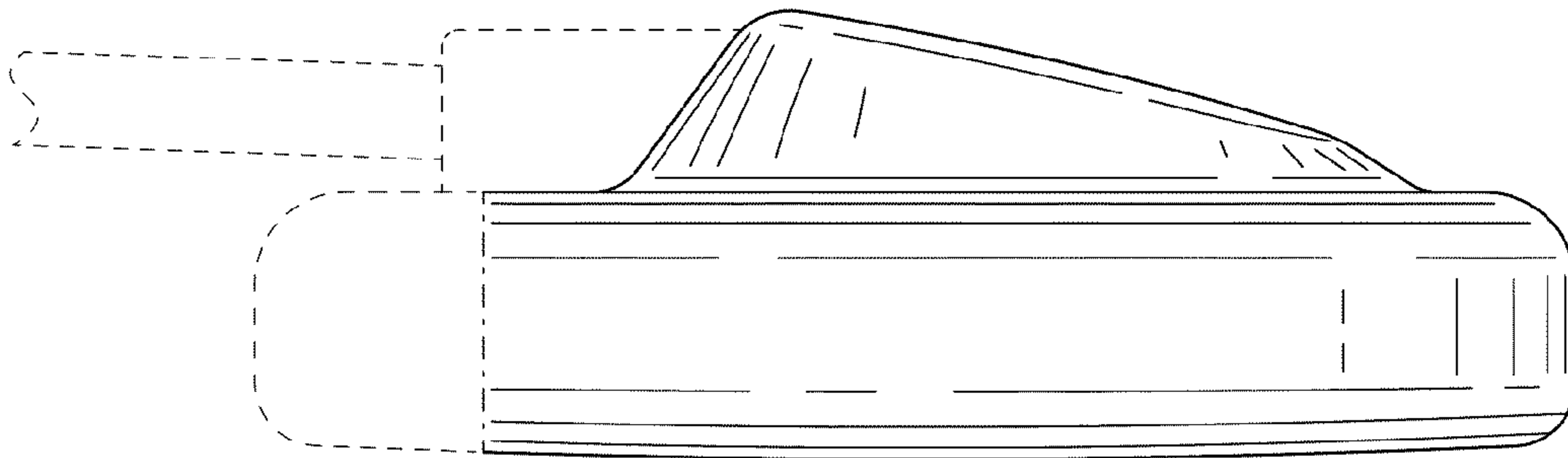
**FIG. 2**



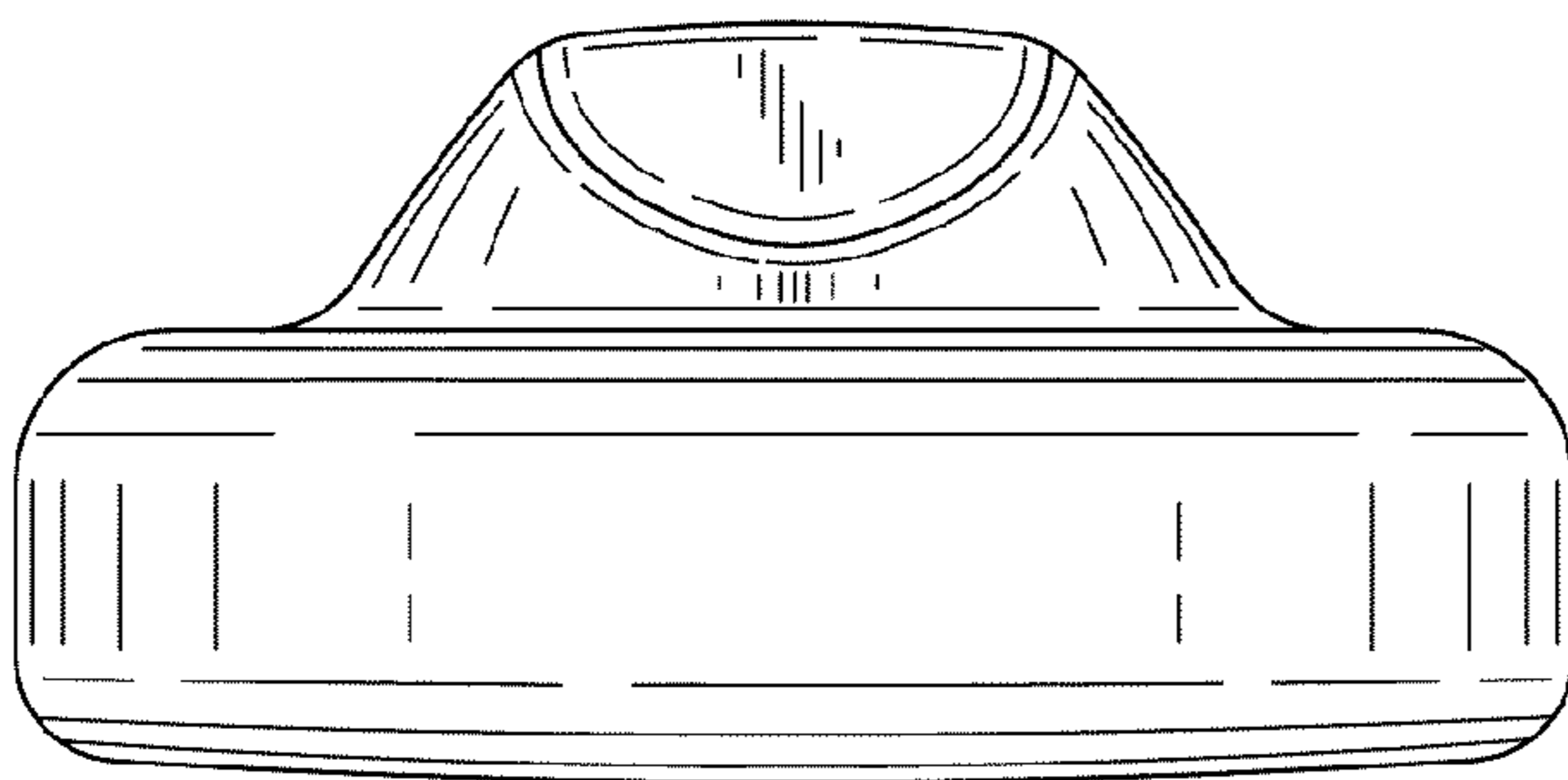
**FIG. 3**



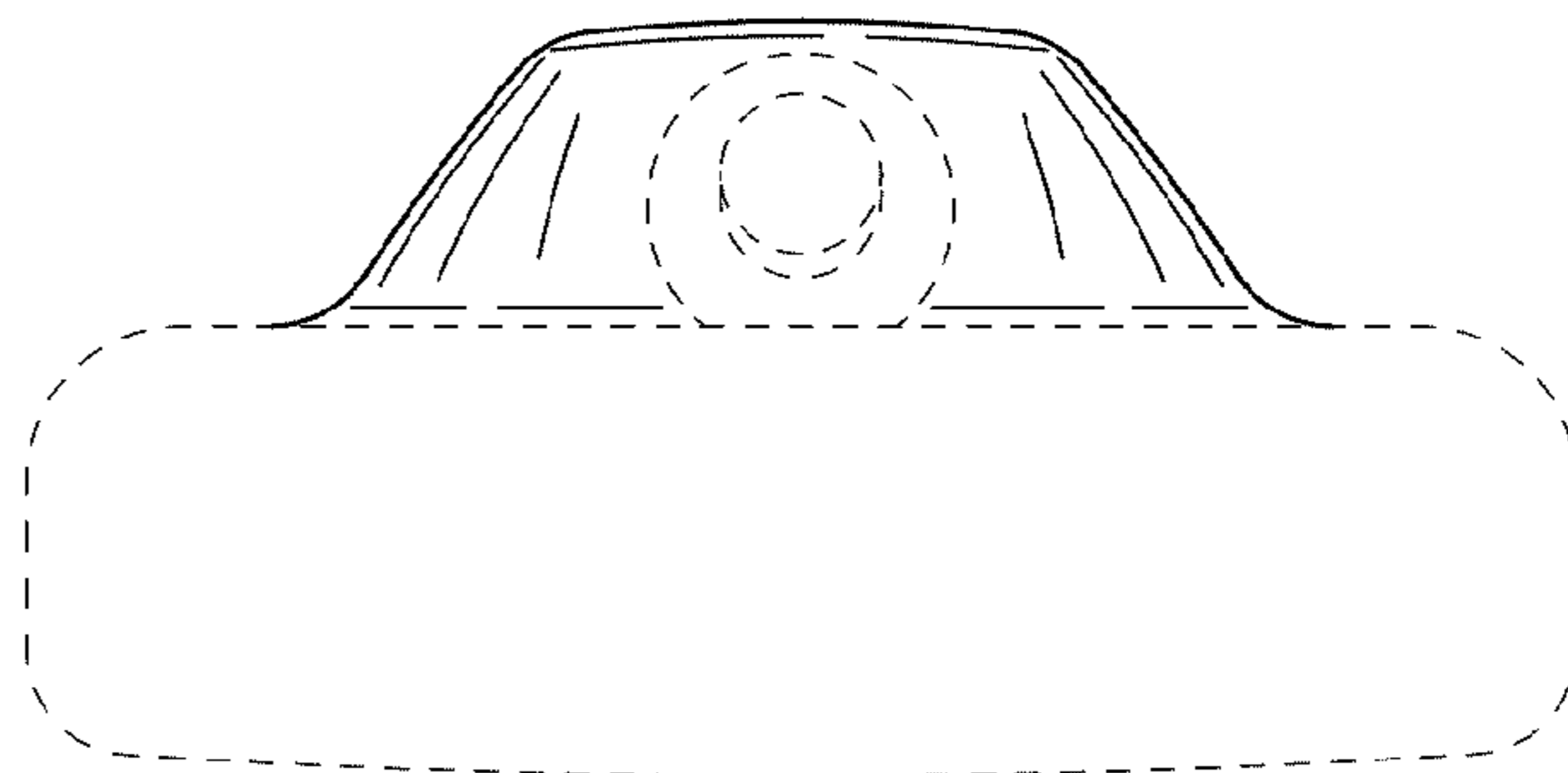
**FIG. 4**



**FIG. 5**



**FIG. 6**



**FIG. 7**