



US00D923177S

(12) **United States Design Patent** (10) **Patent No.:** **US D923,177 S**
Wu et al. (45) **Date of Patent:** **** Jun. 22, 2021**

(54) **DRUG DELIVERY PUMP**
(71) Applicant: **UNL Holdings LLC**, New York, NY (US)

5,795,339 A 8/1998 Erskine
5,858,001 A 1/1999 Tsals et al.
D439,341 S * 3/2001 Tumey D15/7
(Continued)

(72) Inventors: **Kun-Chi Wu**, Princeton, NJ (US);
Nicholas J. Ciccarelli, Philadelphia, PA (US); **Conall Joseph Dempsey**, Philadelphia, PA (US); **John Burke**, Cambridge (GB)

FOREIGN PATENT DOCUMENTS

CN 300957349 S 7/2009
CN 302310385 S 1/2013
(Continued)

(73) Assignee: **UNL Holdings LLC**, New York, NY (US)

OTHER PUBLICATIONS

Decision of Patent Examination (Notice of Allowance) and Search Report dated, on Nov. 23, 2015, in related Taiwan Design Application No. 104302180, filed Apr. 27, 2015, and titled "Design for a Drug Delivery Device".
(Continued)

(**) Term: **15 Years**
(21) Appl. No.: **29/638,015**
(22) Filed: **Feb. 23, 2018**

Primary Examiner — Charles D Hanson
(74) *Attorney, Agent, or Firm* — Hamilton, Brook, Smith & Reynolds, P.C.

Related U.S. Application Data

(63) Continuation of application No. 29/508,588, filed on Nov. 7, 2014, now abandoned.
(51) **LOC (13) Cl.** **24-03**
(52) **U.S. Cl.**
USPC **D24/155**
(58) **Field of Classification Search**
USPC D24/107, 111, 127, 185, 186, 234
CPC A61M 2205/702; A61M 2202/0482; A61M 5/14232; A61M 5/142
See application file for complete search history.

(57) **CLAIM**

The ornamental design for a drug delivery pump, as shown and described.

DESCRIPTION

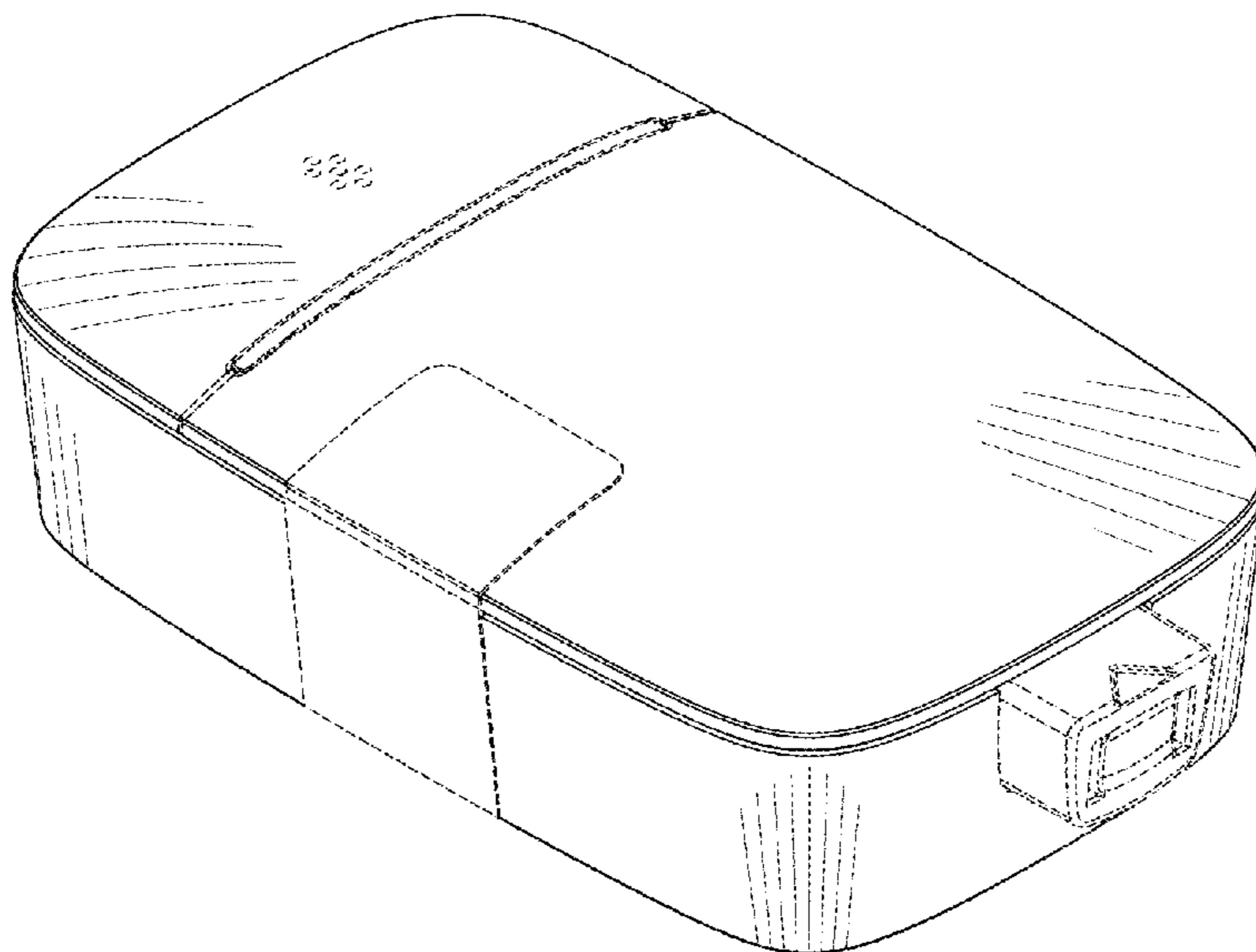
FIG. 1 is an isometric top perspective of a drug delivery pump;
FIG. 2 is another isometric perspective thereof;
FIG. 3 is a top view thereof;
FIG. 4 is a bottom view thereof;
FIG. 5 is a front view thereof;
FIG. 6 is back side view thereof;
FIG. 7 is a left side view thereof; and,
FIG. 8. is a right side view thereof.
The shade lines in the Figures show contour and not surface ornamentation.
Broken lines are for illustration purposes only and do not illustrate a part of the design sought to be patented.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,004,586 A 1/1977 Christensen et al.
4,673,400 A 6/1987 Martin
4,685,903 A 8/1987 Cable et al.
4,755,173 A 6/1988 Konopka et al.
4,840,620 A 6/1989 Kobayashi et al.
5,167,816 A 12/1992 Kruger et al.

1 Claim, 3 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

6,248,093	B1	6/2001	Moberg	
7,479,135	B2	1/2009	Richter et al.	
7,611,503	B2	11/2009	Spohn et al.	
7,803,134	B2	9/2010	Sharifi et al.	
629,503	A1	12/2010	Caffey et al.	
7,846,132	B2	12/2010	Gravesen et al.	
7,905,859	B2	3/2011	Bynum et al.	
7,967,795	B1	6/2011	Cabiri	
8,029,472	B2	10/2011	Leinsing et al.	
8,048,031	B2	11/2011	Shaw et al.	
8,157,769	B2	4/2012	Cabin	
8,167,844	B2	5/2012	Dillard, III	
8,187,232	B2	5/2012	Chong et al.	
D684,685	S *	6/2013	Schneider	D24/111
D685,084	S *	6/2013	Guarraia	D24/108
D687,536	S *	8/2013	Guarraia	D24/108
D688,784	S *	8/2013	Schneider	D24/108
D697,204	S *	1/2014	Maier	D24/111
D723,157	S *	2/2015	Clemente	D24/111
D745,142	S *	12/2015	O'Connor	D24/111
2004/0092878	A1	5/2004	Flaherty	
2007/0010789	A1	1/2007	Peter et al.	
2008/0132842	A1	6/2008	Flaherty	
2008/0269687	A1	10/2008	Chong et al.	
2009/0124979	A1	5/2009	Raymond et al.	
2009/0204077	A1	8/2009	Hasted et al.	
2011/0166509	A1	7/2011	Gross et al.	
2012/0035546	A1	2/2012	Cabin	
2012/0123354	A1	5/2012	Woehr	
2013/0066274	A1 *	3/2013	O'Connor	A61M 5/16877 604/151

FOREIGN PATENT DOCUMENTS

CN	302837574	S	6/2014
EP	1702635	A2	9/2006
EP	1341569	B1	1/2007
EP	1427471	B1	2/2008
EP	1695727	B1	7/2008
EP	1513580	B1	3/2009
EP	2077128	A1	7/2009

EP	2379134		10/2011
EP	2429612		3/2012
EP	2433663		3/2012
TW	564146		11/2003
TW	580361		3/2004
TW	D159360		3/2014
WO	WO 99/48546	A1	9/1999
WO	WO 2003/024504	A2	3/2003
WO	WO 2003/103763	A1	12/2003
WO	WO 2004/062714	A1	7/2004
WO	WO 2005/037350	A2	4/2005
WO	WO 2008/024808	A2	2/2008
WO	WO 2010/077807	A1	7/2010
WO	WO 2010/084113		7/2010
WO	WO 2010/112377		10/2010
WO	WO 2010/132196		11/2010
WO	WO 2011/006652		1/2011
WO	WO 2011/090956		7/2011
WO	WO 2011/121023		10/2011
WO	WO 2012/131044		10/2012

OTHER PUBLICATIONS

International Search Report and Written Opinion dated, on Feb. 28, 2013, in PCT/US2012/053241, filed Aug. 30, 2012, and titled "Drive Mechanism for Drug Delivery Pumps With Integrated Status Indication".

International Search Report and Written Opinion dated, on Mar. 28, 2013, in PCT/US2012/053174, filed Aug. 30, 2012, and titled "Insertion Mechanism for a Drug Delivery Pump".

International Search Report and Written Opinion dated, on Feb. 18, 2013, in PCT/US2012/054861, filed Sep. 12, 2012, and titled "Sterile Fluid Pathway Connection to Drug Containers for Drug Delivery Pumps".

Restriction Requirement for U.S. Appl. No. 29/508,588, consisting of 6 pages, dated Jun. 6, 2016, titled "Drug Delivery Device".

Final Rejection for U.S. Appl. No. 29/508,588, consisting of 5 pages, dated Nov. 18, 2016, titled "Drug Delivery Device".

Advisory Action for U.S. Appl. No. 29/508,588, consisting of 3 pages, dated Feb. 24, 2017, titled "Drug Delivery Device".

Notice of Abandonment for U.S. Appl. No. 29/508,588, consisting of 2 pages, dated Mar. 28, 2018, titled "Drug Delivery Device".

* cited by examiner

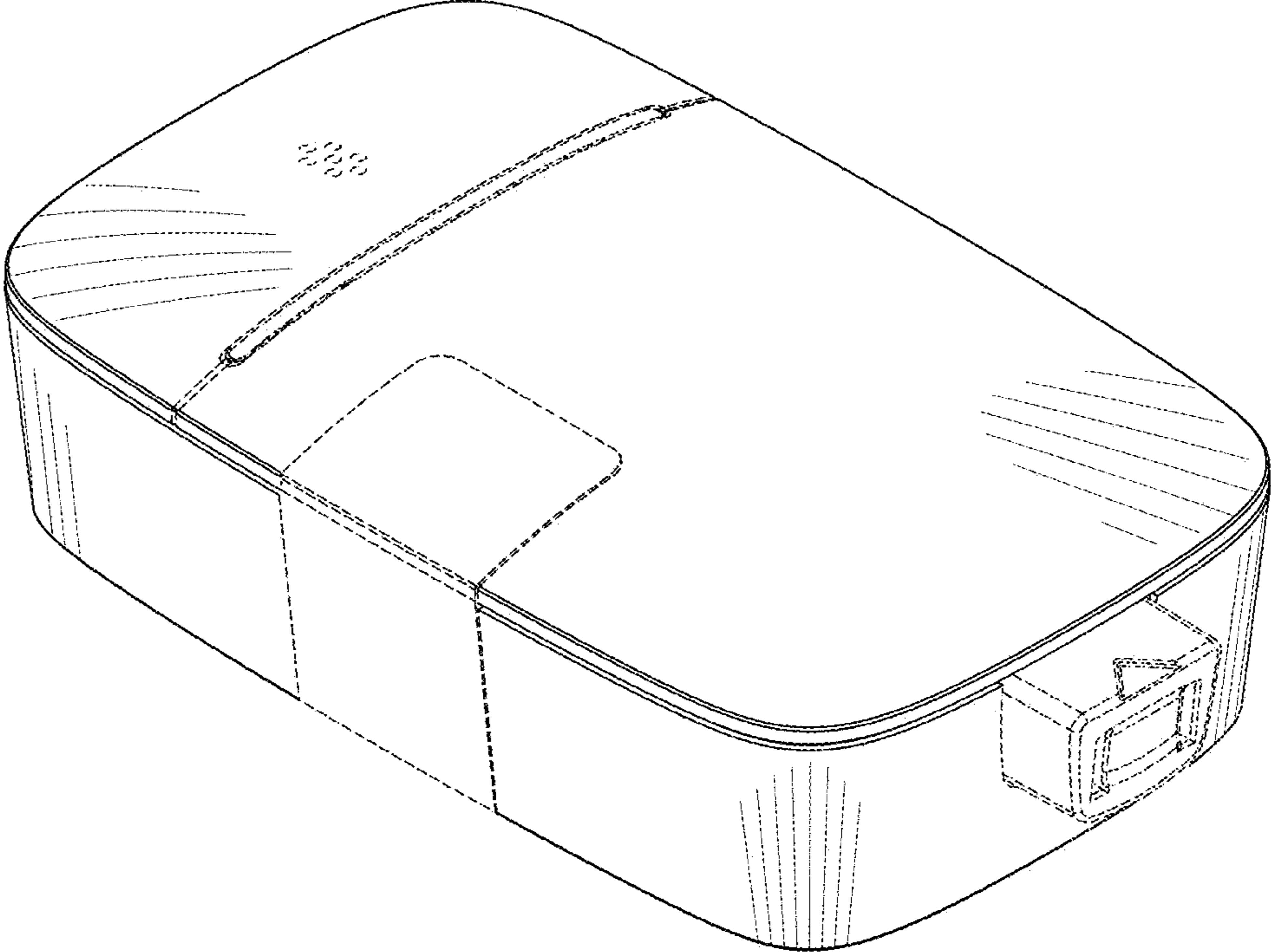


FIG. 1

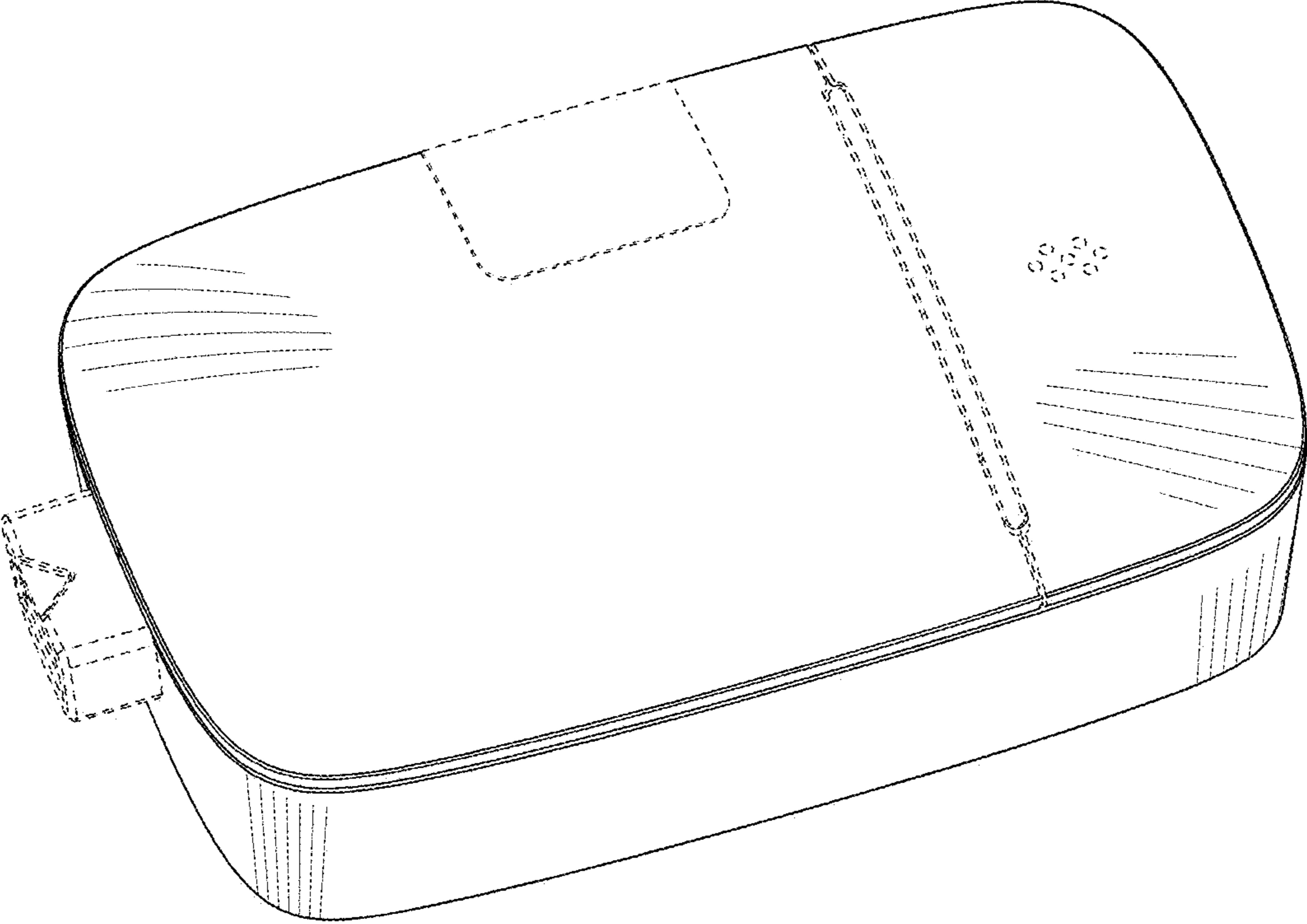


FIG. 2

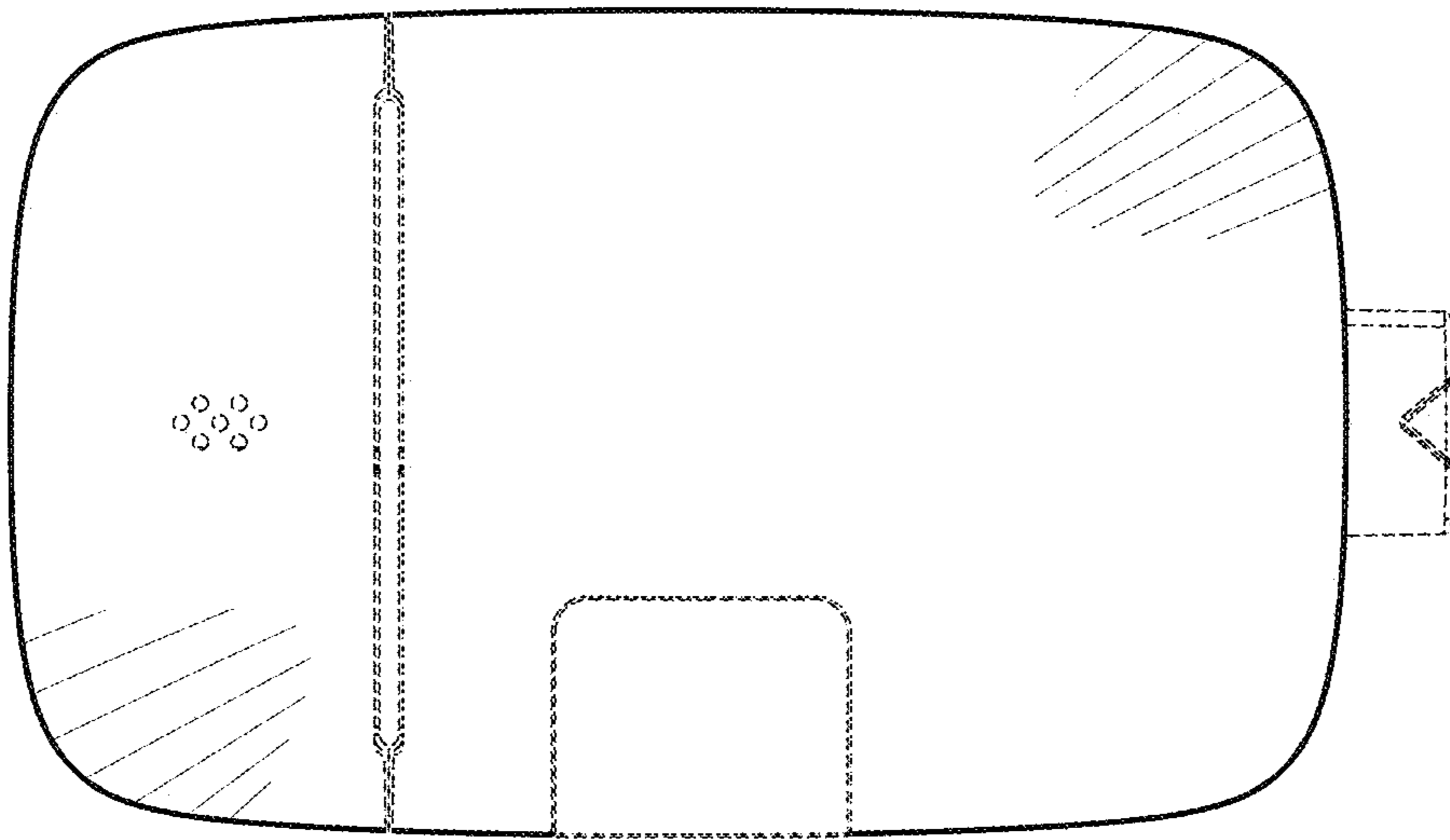


FIG. 3

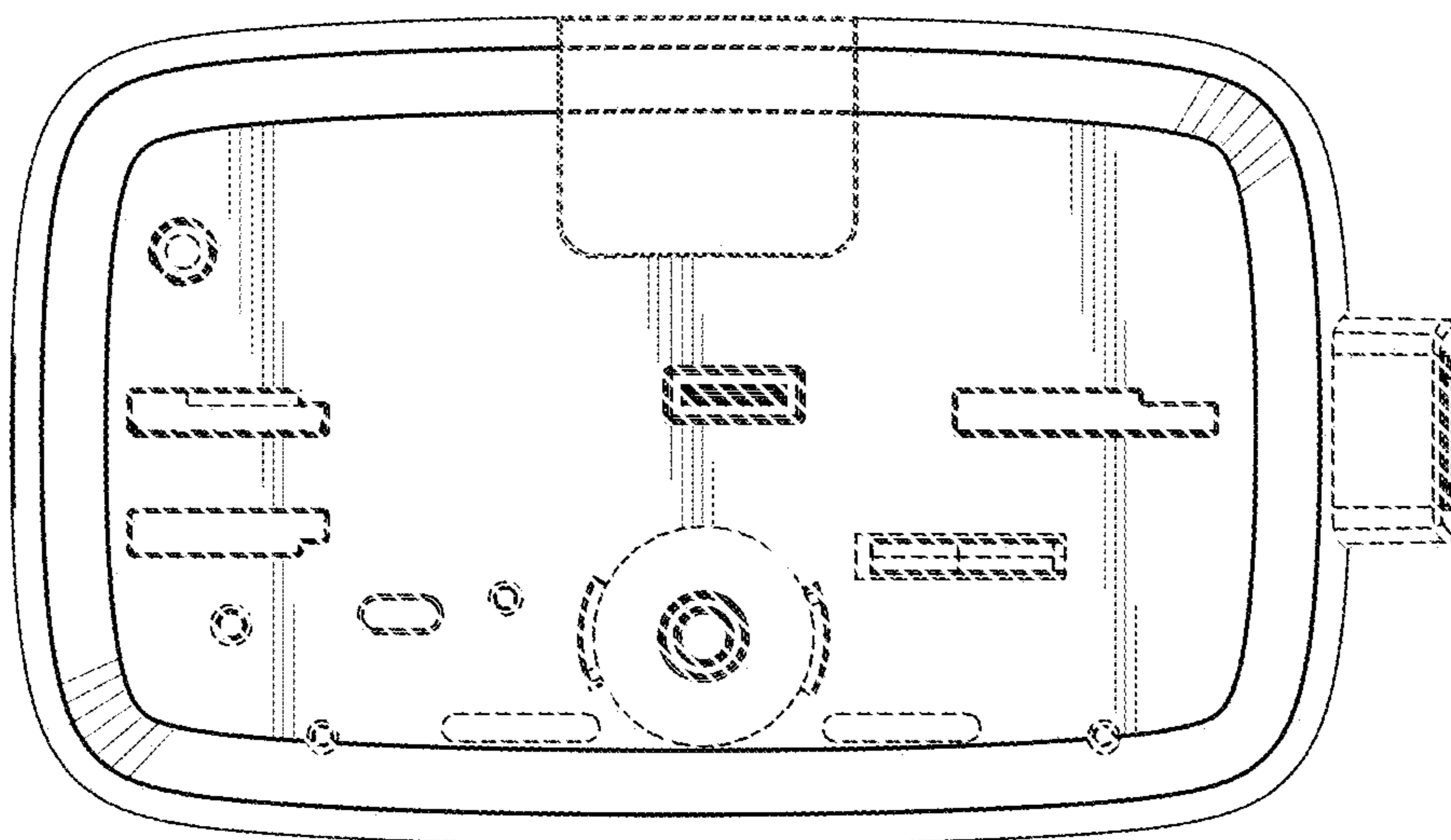


FIG. 4

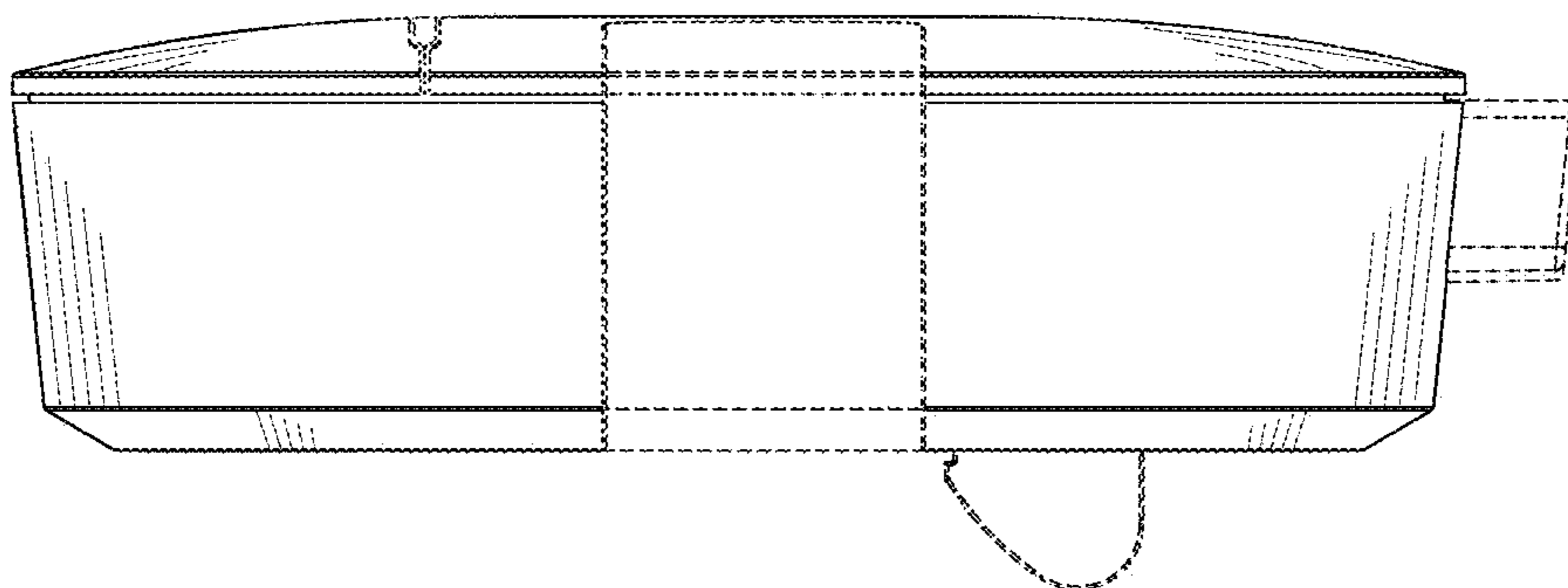


FIG. 5

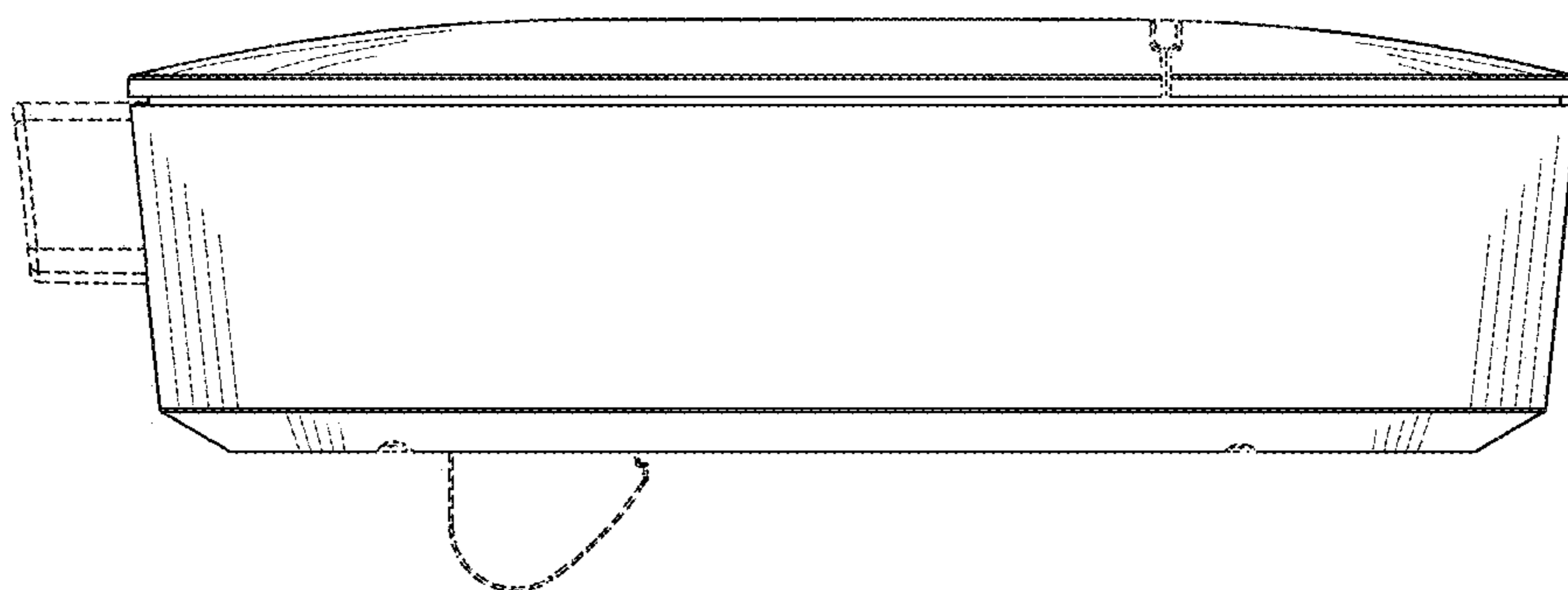


FIG. 6

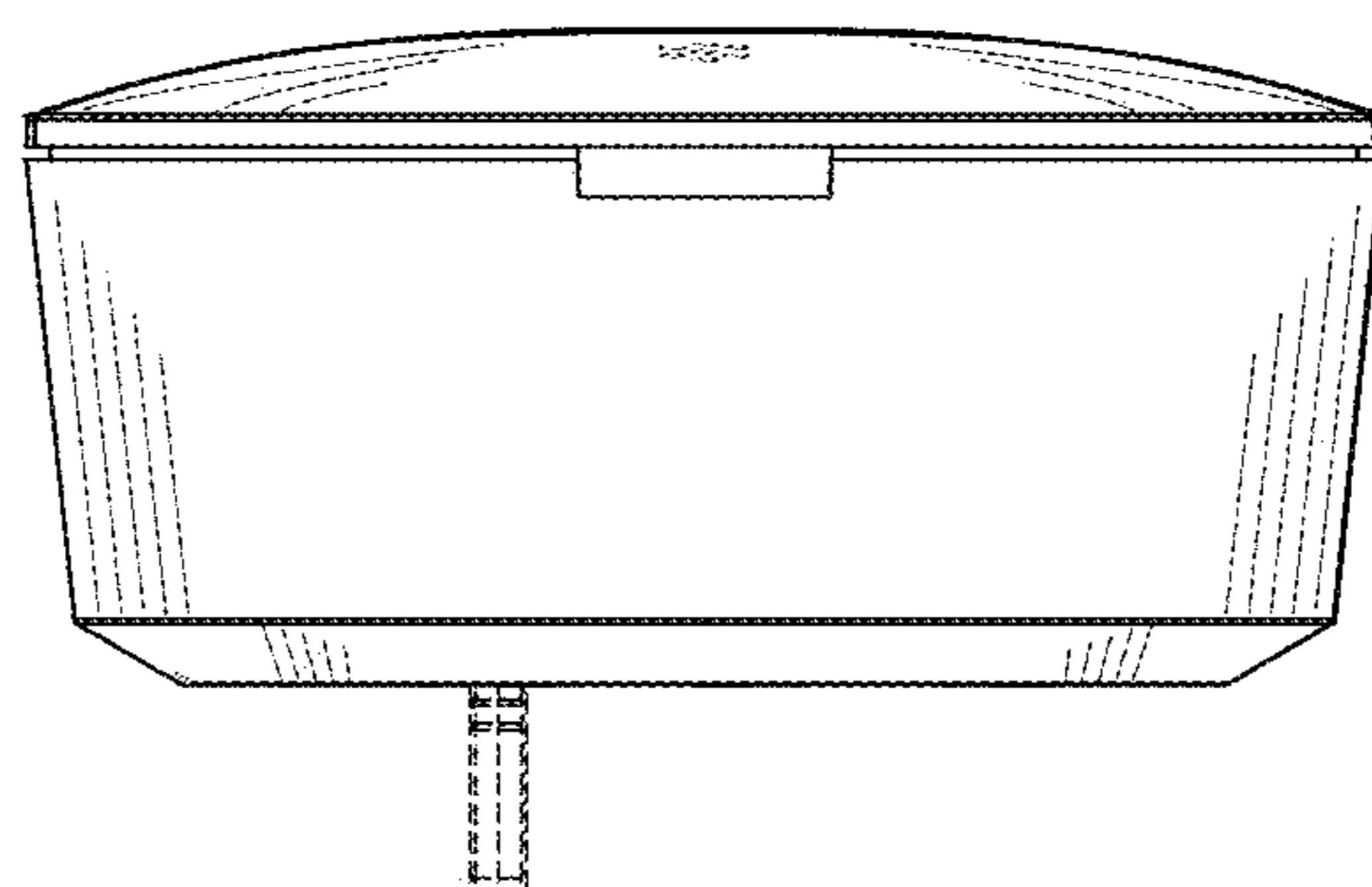


FIG. 7

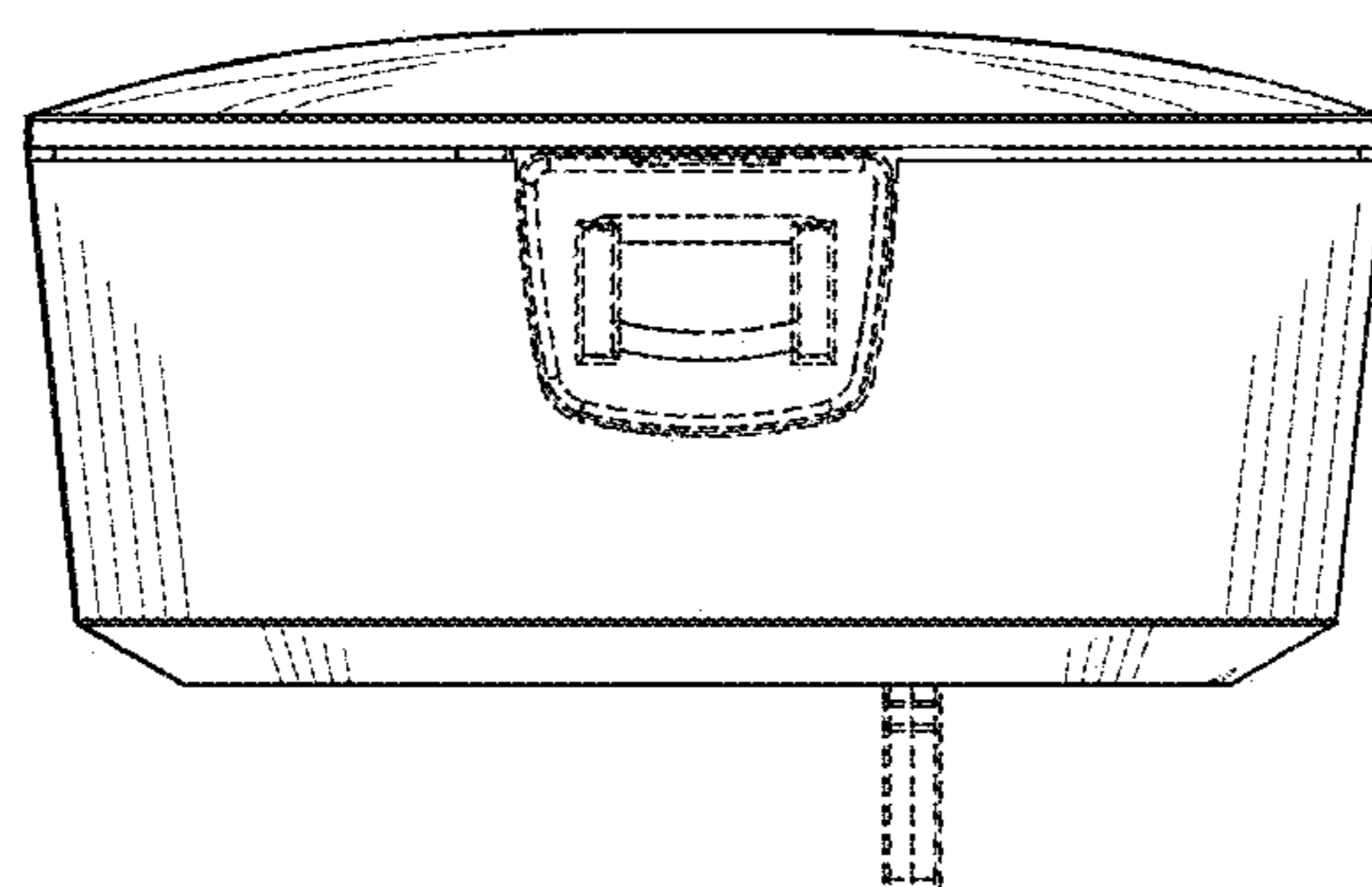


FIG. 8