



US00D878553S

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

(10) **Patent No.:** **US D878,553 S**
(45) **Date of Patent:** **** Mar. 17, 2020**

(54) **WEARABLE DRUG DELIVERY DEVICE**

CPC A61M 2005/14252; A61M 2005/1581;
A61M 5/14248; A61M 2005/14513;
A61M 2005/206

(71) Applicant: **Becton, Dickinson and Company,**
Franklin Lakes, NJ (US)

See application file for complete search history.

(72) Inventors: **Charles George Hwang,** Wellesley,
MA (US); **John Prudden,** Manchester,
MA (US); **Christopher Kovalchick,**
Bedford, MA (US); **Russell Cole,** River
Vale, NJ (US); **Andrew Allegretti,**
Edgewater, NJ (US); **Jeffrey Reed,**
Minden, NE (US); **Nir Swenson,**
Somerville, MA (US); **Gail Siewiorek,**
Winchester, MA (US); **Joseph**
Iskandar, Brighton, MA (US);
Alessandro Pizzochero, Chelmsford,
MA (US); **J. Richard Gyory,** Sudbury,
MA (US); **Justin Cumming,** Arlington,
MA (US); **Kurt Maw,** Salem, MA (US)

(56)

References Cited

U.S. PATENT DOCUMENTS

D370,011	S	5/1996	Lindeman
5,665,065	A	9/1997	Colman et al.
D389,139	S	1/1998	Oross
5,816,779	A	10/1998	Lawless et al.
5,913,180	A	6/1999	Ryan
6,006,239	A	12/1999	Bhansali et al.
D445,496	S	7/2001	Anderson
6,589,229	B1	7/2003	Connelly et al.
6,656,147	B1	12/2003	Gertsek et al.
6,656,148	B2	12/2003	Das et al.
6,685,675	B1	2/2004	Hadvary et al.
6,740,059	B2	5/2004	Flaherty
D495,303	S	8/2004	Coullahan
6,824,529	B2	11/2004	Gross et al.
6,843,782	B2	1/2005	Gross et al.
7,052,251	B2	5/2006	Nason et al.
D544,092	S	6/2007	Lewis
D564,087	S	3/2008	Yodfat et al.
D574,016	S	7/2008	Yodfat et al.
D577,118	S	9/2008	Yodfat et al.
7,517,440	B2	4/2009	Anex et al.
7,648,494	B2	1/2010	Kornerup et al.
7,678,079	B2	3/2010	Shermer et al.
7,708,717	B2	5/2010	Estes et al.
D622,885	S	8/2010	Garra
7,771,391	B2	8/2010	Carter
7,802,923	B2	9/2010	Arnold et al.
7,857,131	B2	12/2010	Vedrine
7,922,708	B2	4/2011	Estes et al.
7,927,306	B2	4/2011	Cross et al.
7,931,621	B2	4/2011	Cross et al.
7,938,801	B2	5/2011	Hawkins et al.
7,976,493	B2	7/2011	Carter
7,976,500	B2	7/2011	Adams et al.
8,062,253	B2	11/2011	Nielsen et al.
8,062,256	B2	11/2011	Carter et al.
8,114,064	B2	2/2012	Alferness et al.
8,128,596	B2	3/2012	Carter
8,128,597	B2	3/2012	Cross et al.
8,162,923	B2	4/2012	Adams et al.
8,210,172	B2	7/2012	Crowder
8,226,606	B2	7/2012	Adams et al.
8,226,607	B2	7/2012	Carter et al.
8,231,572	B2	7/2012	Carter et al.

(73) Assignee: **Becton, Dickinson and Company,**
Franklin Lakes, NJ (US)

(**) Term: **15 Years**

(21) Appl. No.: **29/696,080**

(22) Filed: **Jun. 25, 2019**

Related U.S. Application Data

(63) Continuation of application No. 29/552,312, filed on
Jan. 21, 2016, now Pat. No. Des. 857,191.

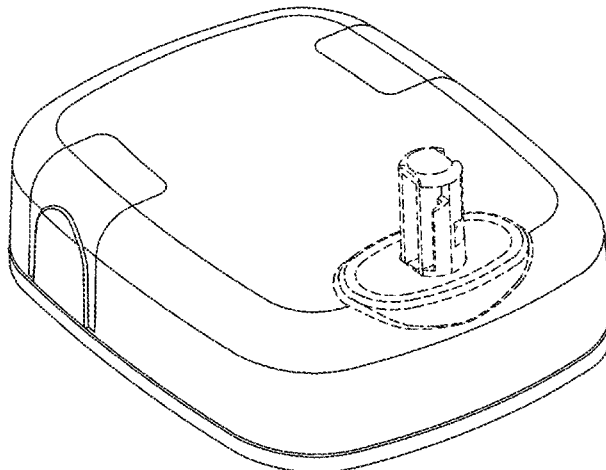
(51) **LOC (12) Cl.** **24-02**

(52) **U.S. Cl.**

USPC **D24/112**

(58) **Field of Classification Search**

USPC D24/112-114, 133, 186, 104, 130, 127,
D24/176, 108, 110, 220; 606/181, 185;
604/232, 187, 158, 164.08, 192, 263, 163,
604/181, 184, 198, 227, 168.01, 275,
604/890.1; D9/414, 424, 417, 426



8,231,577 B2	7/2012	Carter et al.	2011/0319862 A1	12/2011	Friedman et al.
D667,382 S *	9/2012	Cosentino D13/168	2012/0053522 A1	3/2012	Yodfat et al.
8,267,921 B2	9/2012	Yodfat et al.	2012/0150115 A1	6/2012	Kamen et al.
8,337,486 B2	12/2012	Yodfat et al.	2012/0209241 A1	8/2012	Drew
8,352,041 B2	1/2013	Das et al.	2012/0215175 A1	8/2012	Alferness et al.
8,361,030 B2	1/2013	Carter	2013/0072872 A1	3/2013	Yodfat et al.
D675,516 S *	2/2013	Horton D9/424	2013/0138078 A1*	5/2013	Smith A61M 5/14248 604/506
8,409,151 B2	4/2013	Hawkins et al.	2013/0226092 A1	8/2013	Hawkins et al.
8,414,563 B2	4/2013	Kamen et al.	2014/0088504 A1	3/2014	King
8,449,504 B2	5/2013	Carter et al.	2014/0148756 A1	5/2014	Yodfat et al.
D684,685 S	6/2013	Schneider et al.	2014/0236086 A1	8/2014	Levesque et al.
D684,686 S	6/2013	Cronenberg	2014/0236087 A1	8/2014	Alderete, Jr. et al.
D685,083 S	6/2013	Schneider et al.	2015/0065959 A1	3/2015	Carter et al.
D685,084 S	6/2013	Guarraia et al.	2015/0250943 A1	9/2015	Momose
8,469,920 B2	6/2013	Mernoe et al.	2015/0292779 A1	10/2015	Chen
D687,140 S	7/2013	Guarraia et al.	2015/0306307 A1	10/2015	Cole
D687,141 S	7/2013	Schneider et al.	2016/0089491 A1*	3/2016	Smith A61M 5/1452 604/500
8,491,529 B2	7/2013	Yodfat et al.	2016/0303333 A1*	10/2016	Momose A61M 5/3298
D687,536 S	8/2013	Guarraia et al.	2017/0021096 A1*	1/2017	Cole A61M 5/158
D688,784 S	8/2013	Schneider et al.	2017/0021137 A1*	1/2017	Cole A61M 25/0606
8,500,692 B2	8/2013	Yodfat et al.	2017/0043101 A1*	2/2017	Cole A61M 25/0631
8,512,287 B2	8/2013	Cindrich et al.	2017/0348479 A1*	12/2017	Choate A61M 5/14248
D690,588 S *	10/2013	Pipes D9/424	2018/0028747 A1*	2/2018	Hanson A61M 5/1456
D696,394 S *	12/2013	Lu D24/110	2019/0022317 A1*	1/2019	Uddin G16H 20/17
8,613,719 B2	12/2013	Karratt et al.	2019/0038790 A1*	2/2019	McLaughlin A61L 2/206
8,753,310 B2	6/2014	Sullivan et al.	2019/0038828 A1*	2/2019	McLaughlin A61M 5/001
8,753,315 B2	6/2014	Alferness et al.	2019/0083702 A1*	3/2019	Nekouzadeh A61M 5/20
8,758,308 B2	6/2014	Alferness et al.	2019/0192765 A1*	6/2019	Kim A61M 5/142
8,795,230 B2	8/2014	Schoonmaker et al.	FOREIGN PATENT DOCUMENTS		
8,795,234 B2	8/2014	Kadamus et al.	CN	101801438 B	8/2013
8,808,269 B2	8/2014	Bazargan et al.	CN	103394143 A	11/2013
D714,266 S	9/2014	Okamura	WO	WO-2009013736 A1	1/2009
9,220,838 B2 *	12/2015	Soma A61M 1/36	WO	WO-2009045780 A2	4/2009
D747,456 S	1/2016	Sonderegger et al.	WO	WO-2009117466 A1	9/2009
D747,457 S	1/2016	Glace et al.	WO	WO-2015199981 A1	12/2015
D747,458 S	1/2016	Sonderegger et al.	OTHER PUBLICATIONS		
D747,459 S	1/2016	Sonderegger et al.	PAQ®, a Simple 3-Day Basal/Bolus Insulin Delivery Device, for People with Type 2 Diabetes, CeQur Corporation, Abstract from ATTD 2016, 9 th International Conference on Advanced Technologies & Treatments for Diabetes, Milan, Italy—Feb. 3-6, 2016, 1 page.		
9,254,373 B2	2/2016	Hørdum	Human Factor Testing Provided Valuable Input into the Iterative Optimization of PAQ®, CeQur Corporation, Abstract from ATTD 2016, 9 th International Conference on Advanced Technologies & Treatments for Diabetes, Milan, Italy—Feb. 3-6, 2016, 1 page.		
D754,842 S	4/2016	Sonderegger et al.	Validation of Adhesive Tape Optimization of PAQ®, a Simple 3-Day Wearable Basal/Bolus Insulin Delivery Device, in Normal Volunteers, CeQur Corporation, Abstract from ATTD 2016, 9 th International Conference on Advanced Technologies & Treatments for Diabetes, Milan, Italy—Feb. 3-6, 2016, 1 page.		
D754,843 S	4/2016	Sonderegger et al.	PAQ®, a Simple 3-Day Wearable Basal/Bolus Insulin Delivery Device, Designed for Discreet Diabetes Management, CeQur Corporation, Abstract from ATTD 2016, 9 th International Conference on Advanced Technologies & Treatments for Diabetes, Milan, Italy—Feb. 3-6, 2016, 1 page.		
D756,504 S	5/2016	Sonderegger et al.			
9,364,606 B2	6/2016	Cindrich et al.			
9,433,757 B2	9/2016	Constantineau et al.			
D769,438 S	10/2016	Crosby			
9,480,792 B2	11/2016	Constantineau et al.			
9,522,229 B2	12/2016	Sonderegger et al.			
9,522,231 B2	12/2016	Schneider et al.			
D794,770 S *	8/2017	Wu D24/108			
D806,232 S *	12/2017	Hwang D24/112			
D812,738 S *	3/2018	Wolford D24/111			
9,943,332 B2 *	4/2018	Chong A61M 5/14248			
D829,889 S *	10/2018	Hwang D24/112			
2005/0064917 A1 *	3/2005	Peng H04M 1/021 455/575.1			
2005/0238507 A1	10/2005	Dilanni et al.			
2006/0183984 A1	8/2006	Dobbles et al.			
2007/0282269 A1	12/2007	Carter et al.			
2007/0287960 A1	12/2007	Adams et al.			
2007/0299408 A1	12/2007	Alferness et al.			
2008/0051738 A1 *	2/2008	Griffin A61M 5/1413 604/273			
2008/0119790 A1	5/2008	Hawkins et al.			
2008/0167641 A1	7/2008	Hansen et al.			
2008/0249473 A1	10/2008	Rutti et al.			
2009/0088692 A1	4/2009	Adams et al.			
2009/0182277 A1	7/2009	Carter			
2009/0198215 A1 *	8/2009	Chong A61M 5/1413 604/506			
2009/0240240 A1	9/2009	Hines et al.			
2009/0247982 A1	10/2009	Krulevitch et al.			
2009/0254041 A1	10/2009	Krag			
2009/0281497 A1	11/2009	Kamen et al.			
2010/0049128 A1	2/2010	McKenzie et al.			
2010/0167385 A1	7/2010	Celentano et al.			
2010/0204657 A1	8/2010	Yodfat et al.			
2010/0234805 A1	9/2010	Kaufmann et al.			
2011/0098652 A1	4/2011	Hasted et al.			
2011/0282293 A1	11/2011	Hørdum			
2011/0306931 A1	12/2011	Kamen et al.			

* cited by examiner

Primary Examiner — Nathan M Johnston
(74) Attorney, Agent, or Firm — Dickinson Wright PLLC
(57)

CLAIM

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

DESCRIPTION

FIG. 1 is a top perspective view of a wearable drug delivery device showing our new design;

FIG. 2 is a bottom perspective view thereof;
FIG. 3 is a top plan view thereof;
FIG. 4 is a left side elevation view thereof;
FIG. 5 is a right side elevation view thereof;
FIG. 6 is a front elevation view thereof;
FIG. 7 is a back elevation view thereof; and,
FIG. 8 is a bottom plan view thereof.
The broken lines show portions of the design that form no part of the claimed design.

1 Claim, 6 Drawing Sheets

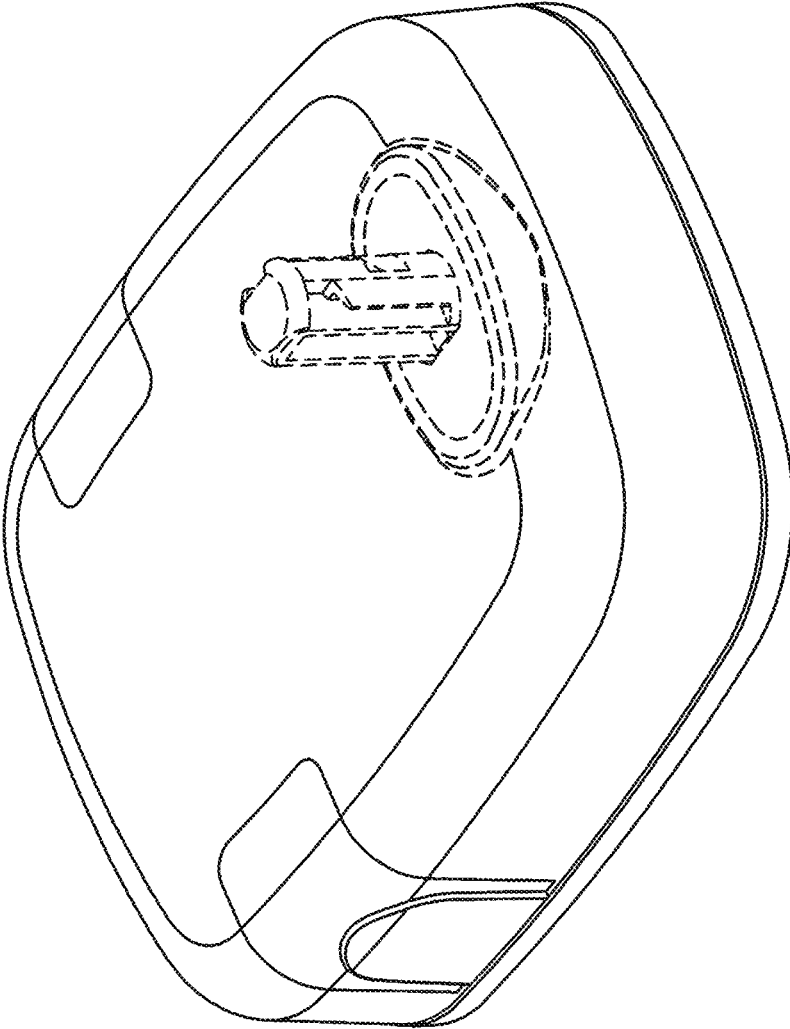


FIG.1

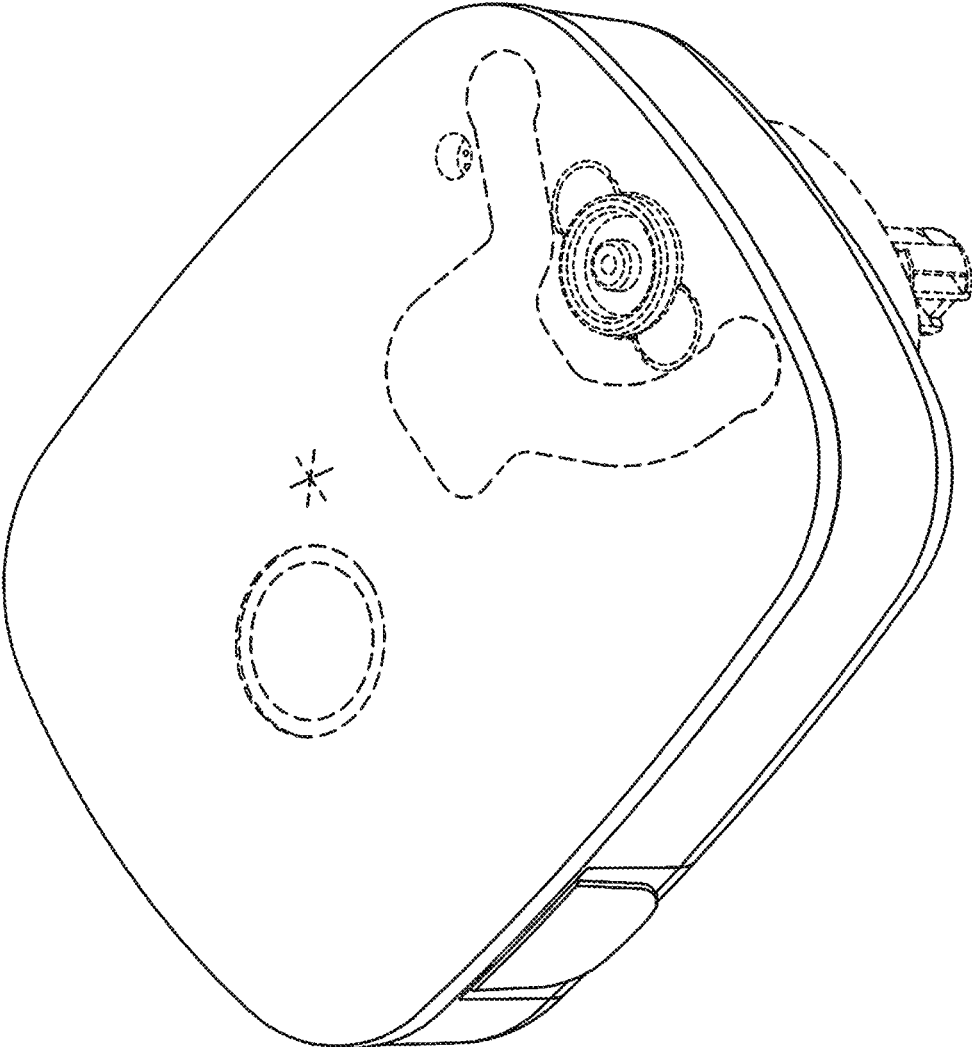


FIG.2

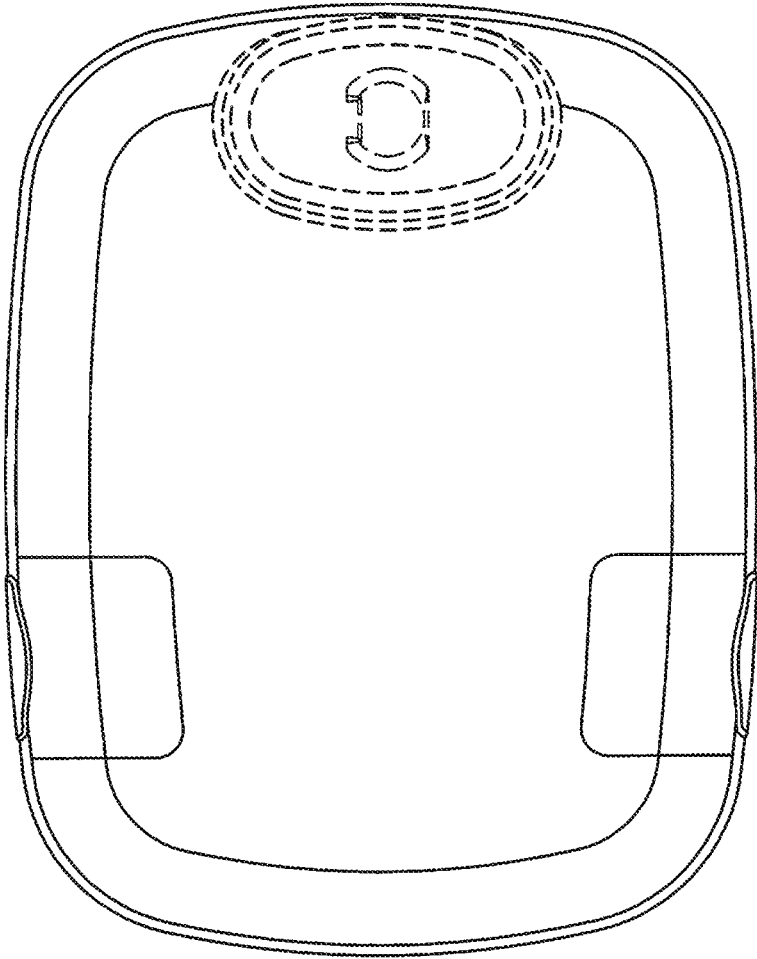


FIG.3

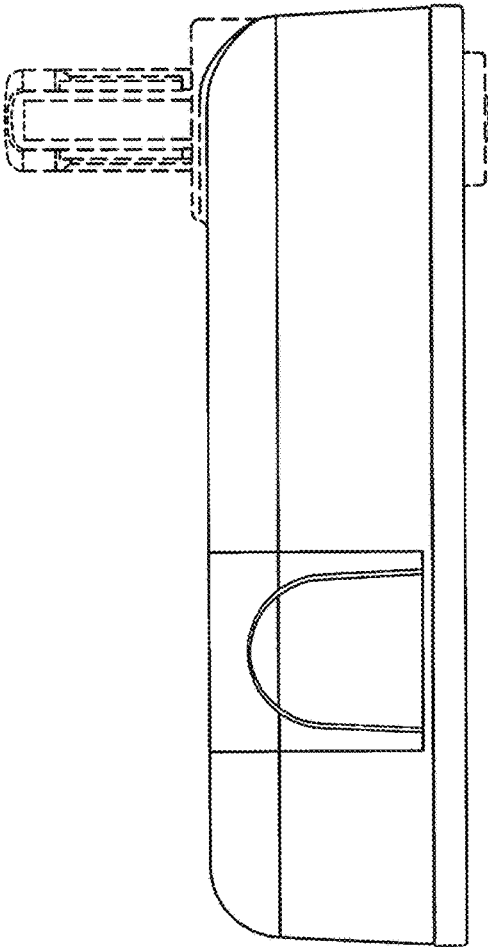


FIG. 4

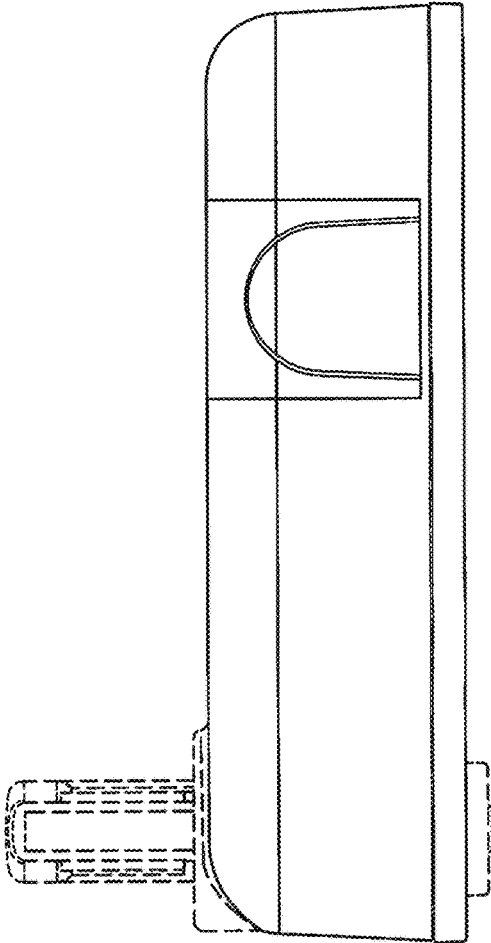


FIG. 5

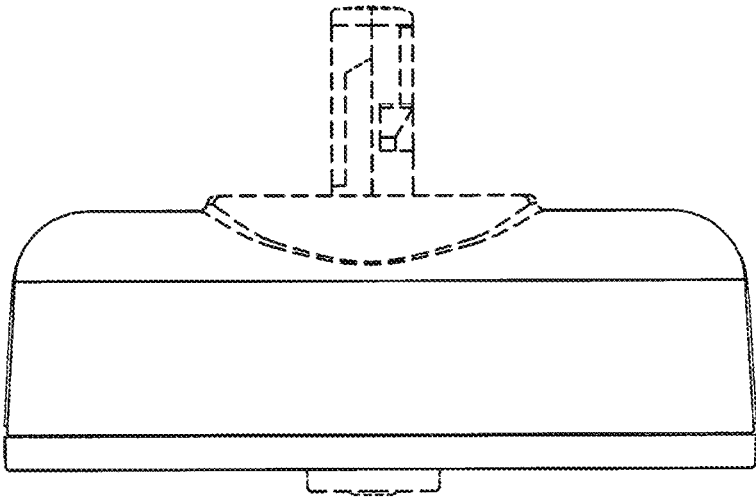


FIG. 6

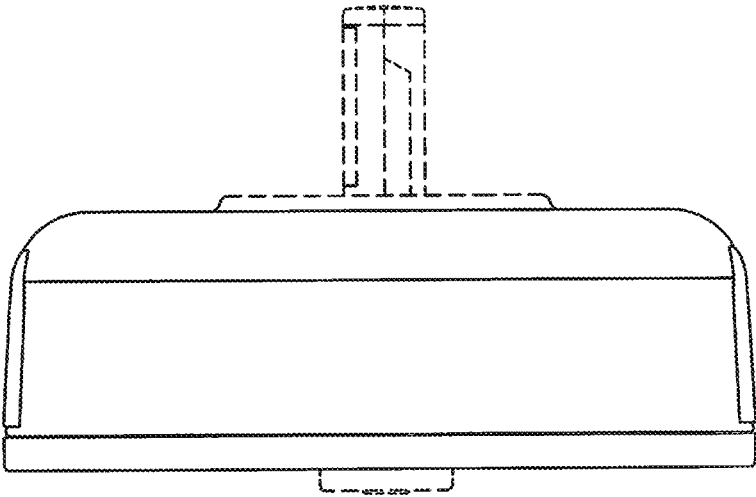


FIG. 7

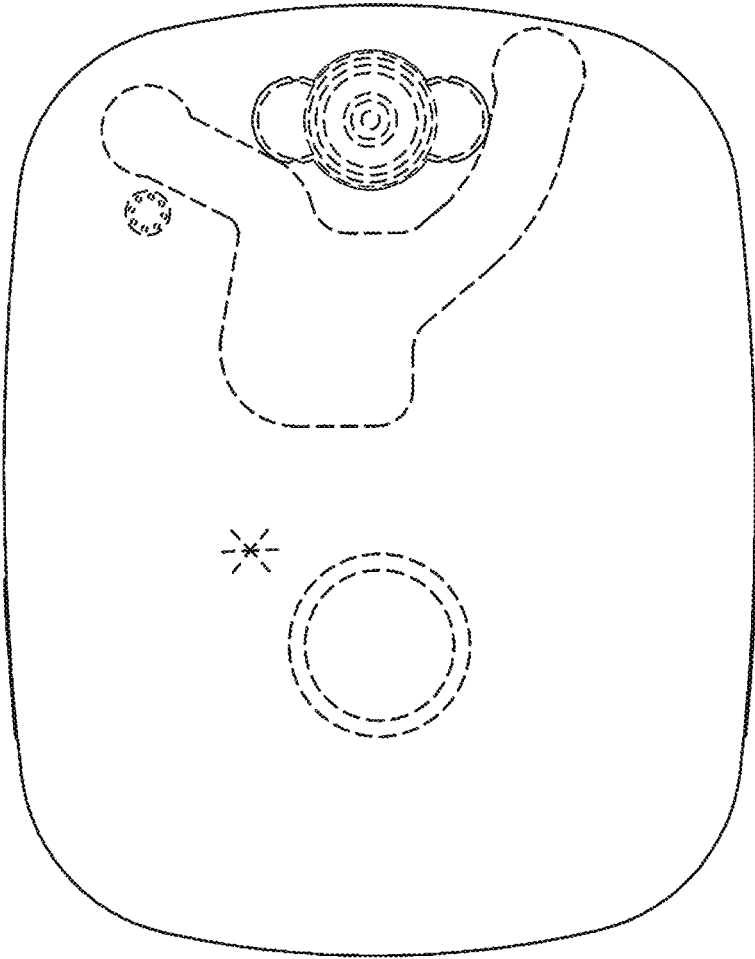


FIG.8