



US00D811485S

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

(10) **Patent No.:** **US D811,485 S**  
(45) **Date of Patent:** **\*\* Feb. 27, 2018**

(54) **PROGRAMMING TILE**

D365,588 S 12/1995 Fernandez  
5,594,469 A \* 1/1997 Freeman ..... G05B 19/106  
345/157

(71) Applicant: **Tangible Play, Inc.**, Palo Alto, CA  
(US)

(Continued)

(72) Inventors: **Ariel Zekelman**, Palo Alto, CA (US);  
**Felix Hu**, Palo Alto, CA (US); **Eric**  
**Uchalik**, Palo Alto, CA (US)

FOREIGN PATENT DOCUMENTS

WO 2006027627 A1 3/2006

(73) Assignee: **Tangible Play, Inc.**, Palo Alto, CA  
(US)

OTHER PUBLICATIONS

Papert, "Mindstorms: Children, Computers, and Powerful Ideas,"  
1980 (11 pages).

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

(Continued)

(21) Appl. No.: **29/565,824**

*Primary Examiner* — Prabhakar G Deshmukh

(22) Filed: **May 24, 2016**

(74) *Attorney, Agent, or Firm* — Patent Law Works LLP

(51) **LOC (11) Cl.** ..... **21-01**

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

USPC ..... **D21/333**; D21/324; D14/406

(58) **Field of Classification Search**

USPC ..... D21/324, 328, 329, 333, 334, 445, 398;  
D14/346, 138 R, 496, 341, 345, 356,  
D14/203.1–203.8, 204; D19/59–64;  
382/103, 155, 162, 173–180, 232,  
382/236–239, 254, 276, 285, 312;  
273/236, 292, 293, 148 R, 148 B,  
273/459–461; 345/156–160, 173–178,  
345/501, 531, 1.1, 1.2, 30, 903, 901, 905;  
463/1, 7, 9, 11, 31–34; 434/81, 82, 85,  
434/128, 129, 155, 159, 276, 308, 365,  
434/317, 323, 324, 162–177

CPC .... A63F 1/00; A63F 7/38; A63F 13/00; A63F  
13/02; A63F 13/20; G06K 7/00; G06K  
9/00; G06K 9/46; G06K 9/4604

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D310,185 S 8/1990 Tick  
D351,890 S 10/1994 Rasmusson

(57) **CLAIM**

The ornamental design for a programming tile, as shown and  
described.

**DESCRIPTION**

FIG. 1 is a top, front, and left perspective view of a  
programming tile showing the new design.

FIG. 2 is an exploded top, front, and left perspective view  
thereof.

FIG. 3 is an exploded top, rear, and right perspective view  
thereof.

FIG. 4 is a bottom, front, and right perspective view thereof.

FIG. 5 is a top plan view thereof.

FIG. 6 is a bottom plan view thereof.

FIG. 7 is a left side elevation view thereof.

FIG. 8 is a right side elevation view thereof.

(Continued)

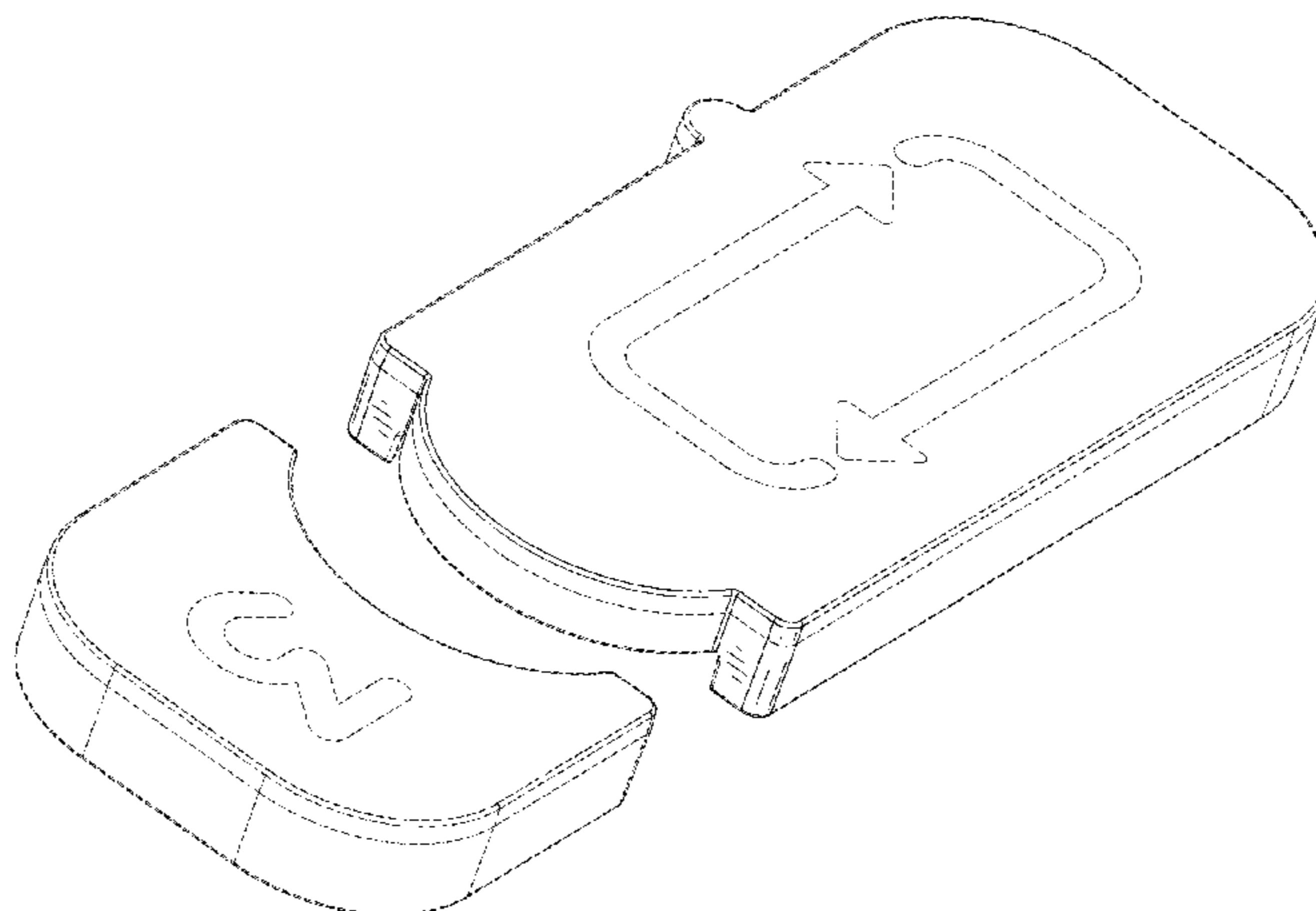


FIG. 9 is a front elevation view thereof; and,

FIG. 10 is a rear elevation view thereof.

Within the drawings, the broken lines illustrate unclaimed portions of the claimed design. The broken lines immediately adjacent the shade lines define the bounds of the claimed design. None of the broken lines form part of the claimed design.

### 1 Claim, 8 Drawing Sheets

(56)

#### References Cited

##### U.S. PATENT DOCUMENTS

D407,748	S *	4/1999	Tsang .....	D19/60
D409,895	S	5/1999	Schron, Jr. et al.	
6,043,805	A *	3/2000	Hsieh .....	G06F 3/0425 345/158
6,175,954	B1	1/2001	Nelson et al.	
D476,555	S	7/2003	Niwa	
6,614,422	B1 *	9/2003	Rafii .....	G06F 1/1626 345/156
6,650,318	B1 *	11/2003	Arnon .....	G03H 1/00 345/156
D531,668	S *	11/2006	Goodstriker .....	D19/60
D535,869	S	1/2007	Brunsteter	
7,210,631	B2 *	5/2007	Sali .....	G06K 7/14 235/462.04
D545,183	S	6/2007	French et al.	
D563,452	S	3/2008	Tan et al.	
7,777,899	B1	8/2010	Hildreth	
8,126,264	B2	2/2012	Kaftory et al.	
D658,977	S	5/2012	Riddell et al.	
8,225,260	B2 *	7/2012	Huynh .....	G06F 17/5072 716/116
8,274,535	B2	9/2012	Hildreth et al.	
8,341,582	B2 *	12/2012	Huynh .....	G06F 17/5063 707/769
D682,463	S	5/2013	Bernard	
8,611,587	B2	12/2013	Horovitz	
8,624,932	B2	1/2014	Hildreth et al.	
D698,781	S *	2/2014	Jun .....	D14/341
D716,362	S	10/2014	Generotti	
8,881,052	B2 *	11/2014	Strauss .....	G06F 9/4443 715/762
D726,804	S	4/2015	Voss	
9,003,340	B2 *	4/2015	Huynh .....	G06F 17/5063 716/108
9,158,389	B1	10/2015	Sharma et al.	
9,354,716	B1	5/2016	Sharma et al.	
2009/0273560	A1	11/2009	Kalanithi et al.	
2009/0315740	A1	12/2009	Hildreth et al.	
2010/0061637	A1 *	3/2010	Mochizuki .....	G06T 7/12 382/199
2010/0066763	A1	3/2010	MacDougall et al.	
2010/0091110	A1	4/2010	Hildreth	
2011/0298724	A1	12/2011	Ameling et al.	
2012/0244922	A1	9/2012	Horovitz	
2013/0321447	A1	12/2013	Horovitz et al.	

#### OTHER PUBLICATIONS

- Cuban, "Oversold and underused: Computers in the classroom," 2009 (258 pages).
- McNerney, "From turtles to tangible programming bricks: explorations in physical Language design," *Personal Ubiquit Computing*, 2004 (12 pages).
- Montemayor, et al., "Tools for Children to Create Physical Interactive StoryRooms," *Computers in Entertainment*, vol. 2, No. 1, 2004 (24 pages).
- Schweikardt, et al., "The Robot is the Program: Interacting with roBlocks," 2008 (2 pages).
- Wyeth, "How Young Children Learn to Program with Sensor, Action, and Logic Blocks," *The Journal of the Learning Sciences*, vol. 17, No. 4, Oct.-Dec. 2008 (35 pages).
- Yardi, "Scratch: Programming for All," *Communications of the ACM*, vol. 52, No. 11, Nov. 2009 (8 pages).
- Sipitakiat, et al., "Robo-Blocks: Desining Debugging Abilities in a Tangible Programming System for Early Primary School Children," 2012 (8 pages).
- Horn, et al., "Tangible Interaction and Learning: the case for a hybrid approach," *Personal Ubiquit Computing*, 2012 (11 pages).
- Pedersen, "Grab and Touch: Empirical Research on Tangible Computing and Touch Interaction," Nov. 2012 (75 pages).
- Flannery, et al., "Designing ScratchJr: Support for Early Childhood Learning Through Computer Programming," 2013 (10 pages).
- Chawla, et al., "Dr. Wagon: A 'stretchable' toolkit for tangible computer programming," 2013 (4 pages).
- Weintrop, et al., "RoboBuilder: A Computational Thinking Game," 2013 (2 pages).
- Sapounidis, et al., "Tangible versus graphical user interfaces for robot programming: exploring cross-age children's preferences," 2013 (12 pages).
- Oh, et al., "The Digital Dream Lab: Tabletop Puzzle Blocks for Exploring Programmatic Concepts," 2013 (6 pages).
- Horn, "The Role of Cultural Forms in Tangible Interaction Design," 2013 (8 pages).
- Horn, et al., "Translating Roberto to Omar: Computational Literacy, Stickerbooks, and Cultural Forms," 2013 (8 pages).
- Wikipedia, "Tangible user interface," retrieved from [http://en.wikipedia.org/w/index.php?title=Tangible\\_user\\_interface&oldid=549052909](http://en.wikipedia.org/w/index.php?title=Tangible_user_interface&oldid=549052909) Apr. 2, 2014 (5 pages).
- Hu, et al., "Strawbies: Explorations in Tangible Programming," 2015 (4 pages).
- International Search Report and Written Opinion, mailed Aug. 27, 2015, in PCT/US2015/032041 (14 pages).
- Horn, "Topcodes: Tangible Object Placement Codes," retrieved from <http://users.eecs.northwestern.edu/~mhorn/topcodes/> Sep. 9, 2016 (2 pages).
- McNerney, "Tangible Programming Bricks: An approach to making programming accessible to everyone," Jun. 1983 (86 pages).
- Horn, et al., "Designing Tangible Programming Languages for Classroom Use," 2007 (4 pages).
- "A robot teaching kids code & computer programming," retrieved from [www.primotoys.com](http://www.primotoys.com) Jun. 9, 2016 (8 pages).
- "Toys for learning about technology. Playfully!" *KinderLab Robotics*, retrieved from <http://kinderlabrobotics.com> Jun. 9, 2016 (2 pages).
- "Project Bloks—Research," retrieved from <http://projectblocks.withgoogle.com/research/> Sep. 9, 2016 (9 pages).
- Disessa, "Changing Minds Computers, Learning, and Literacy: How It Might Be," 2000, pp. 29-44 (17 pages).

\* cited by examiner

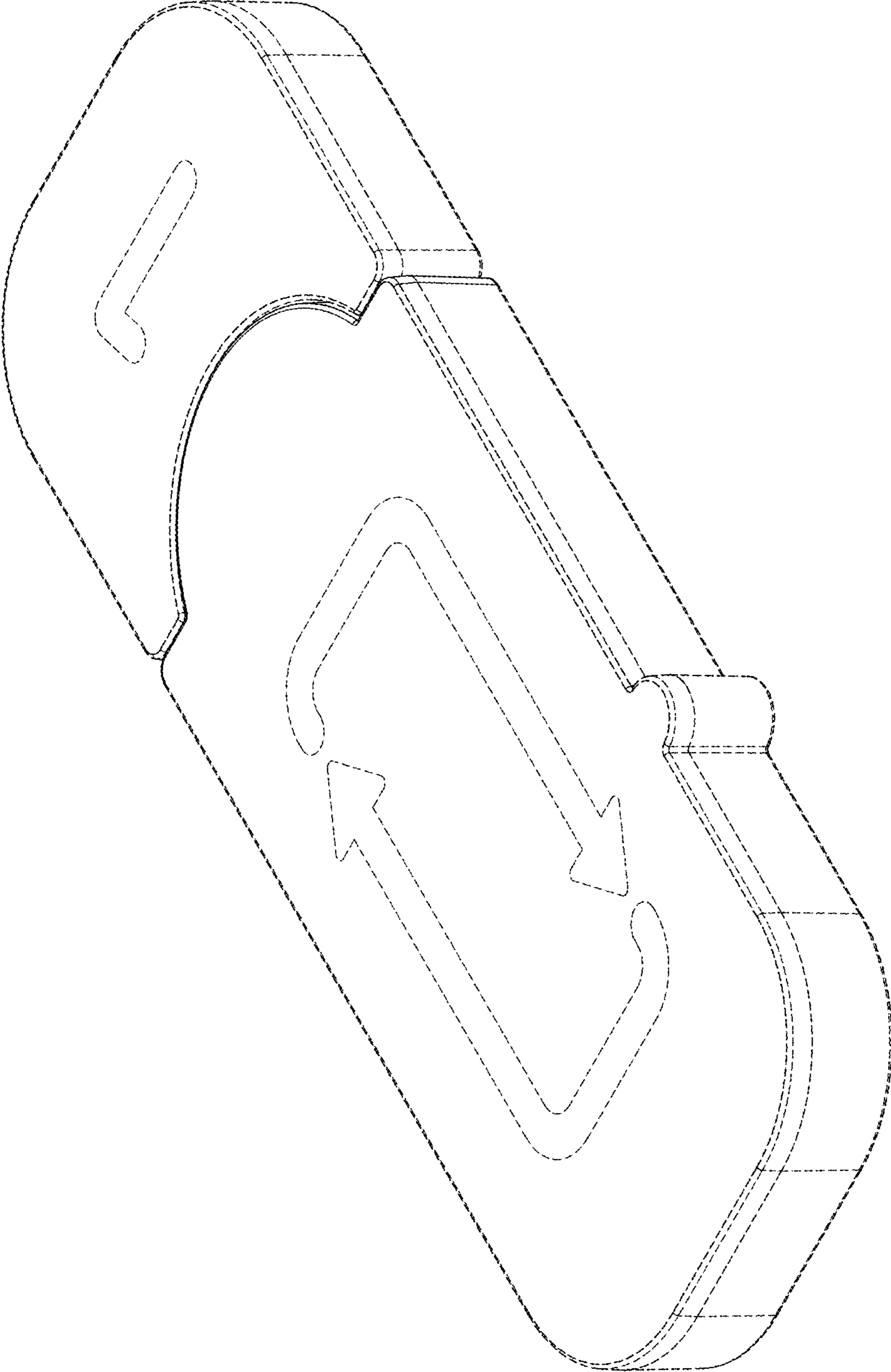


FIG. 1

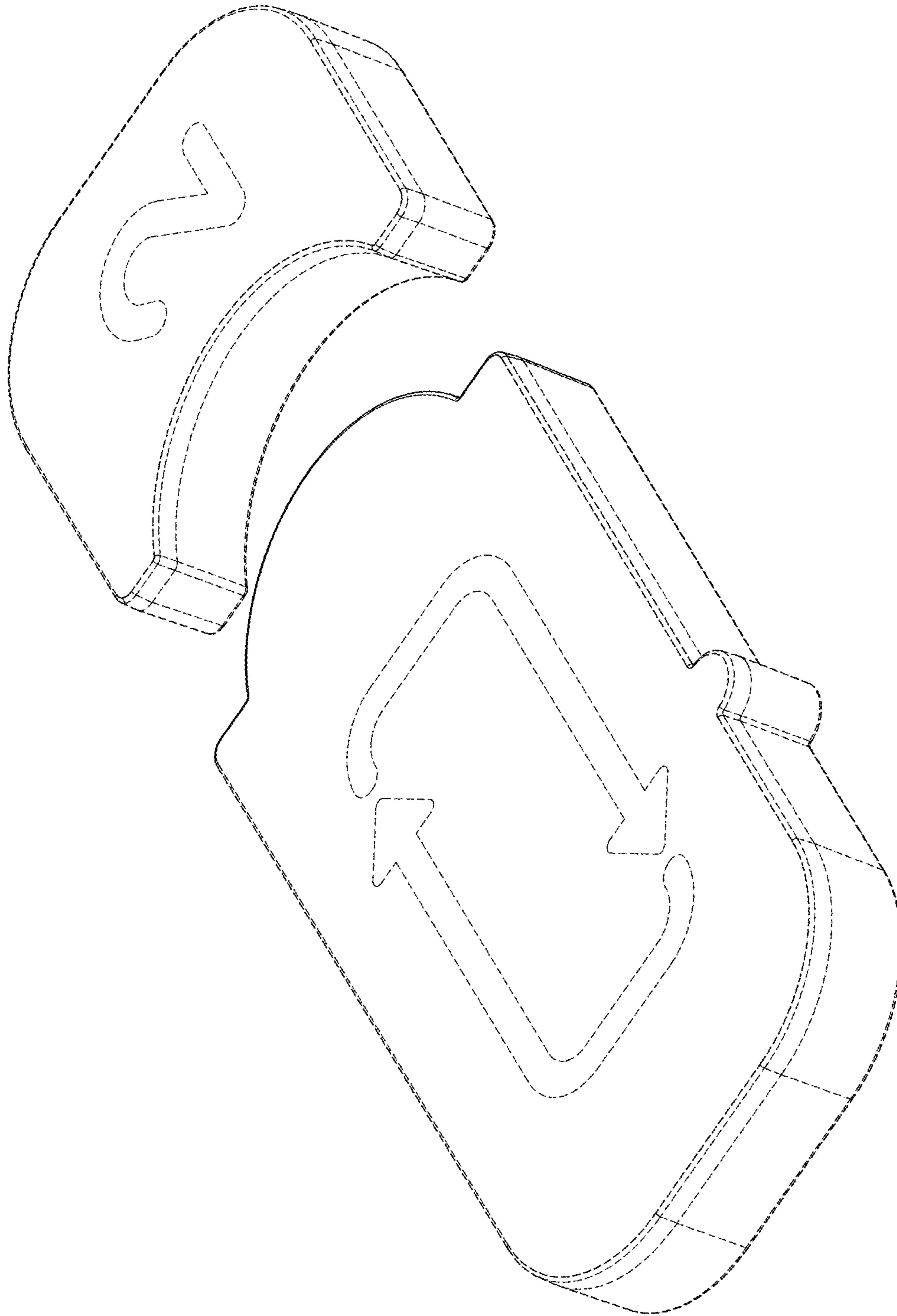


FIG. 2

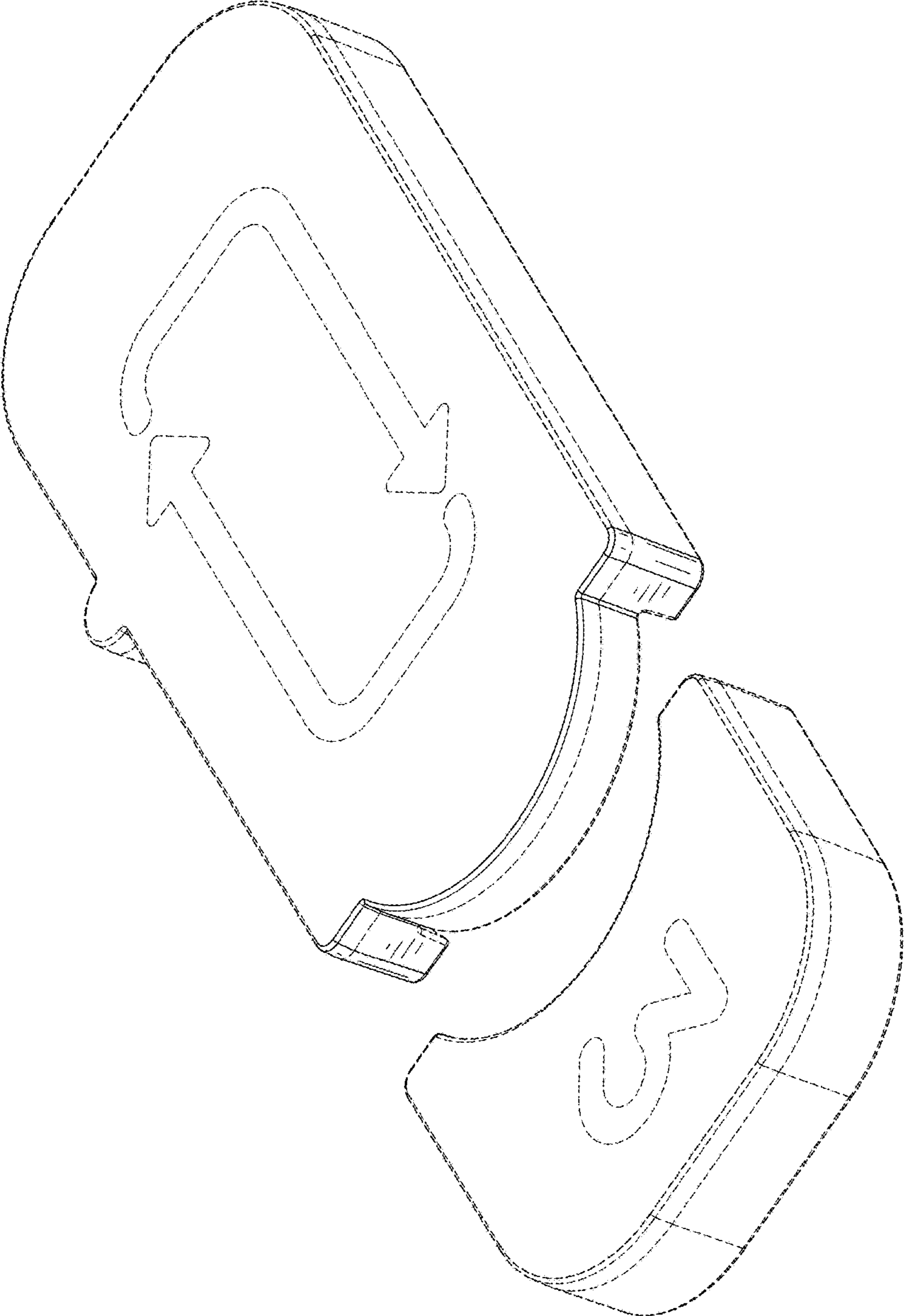


FIG. 3

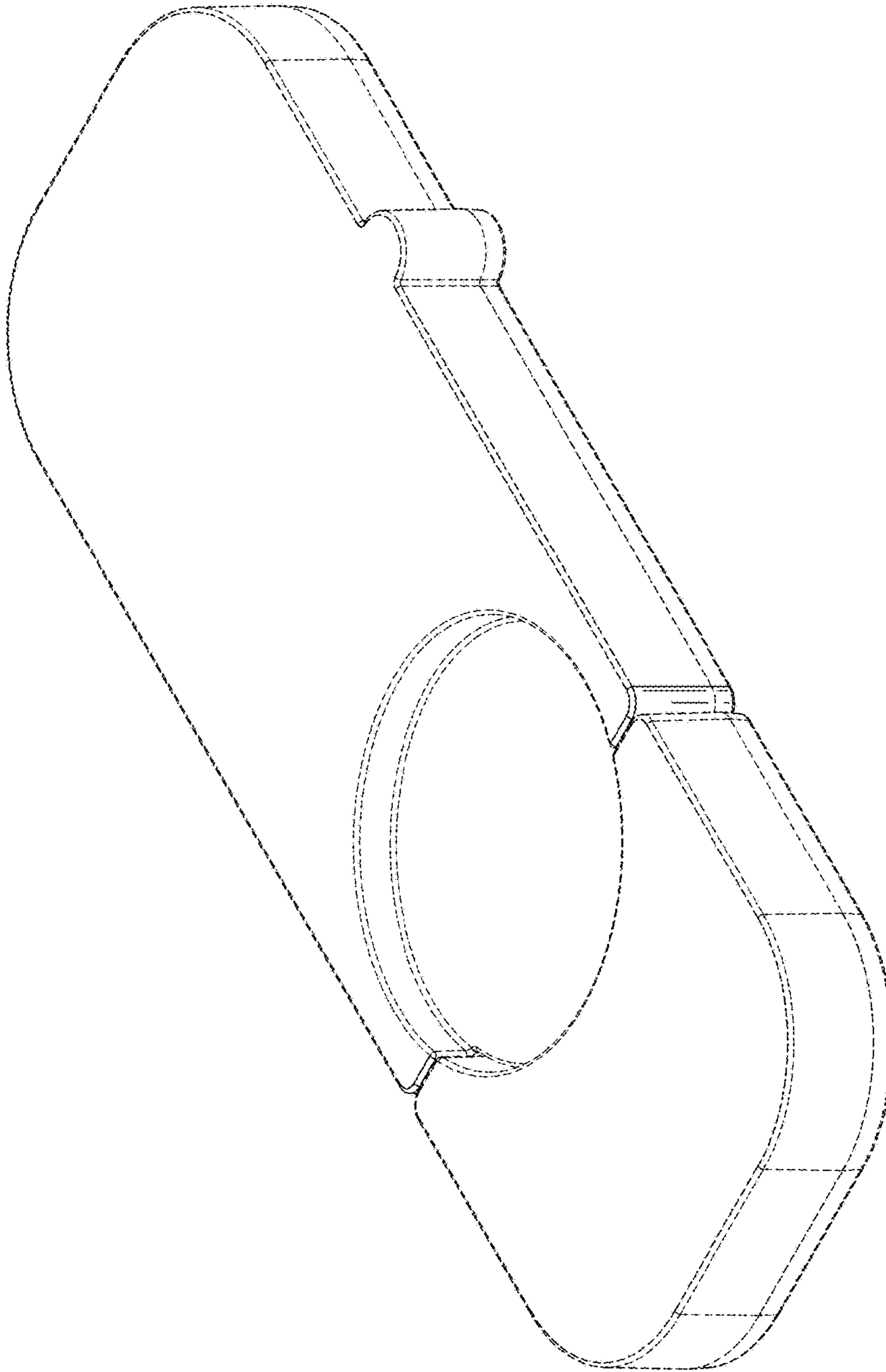


FIG. 4

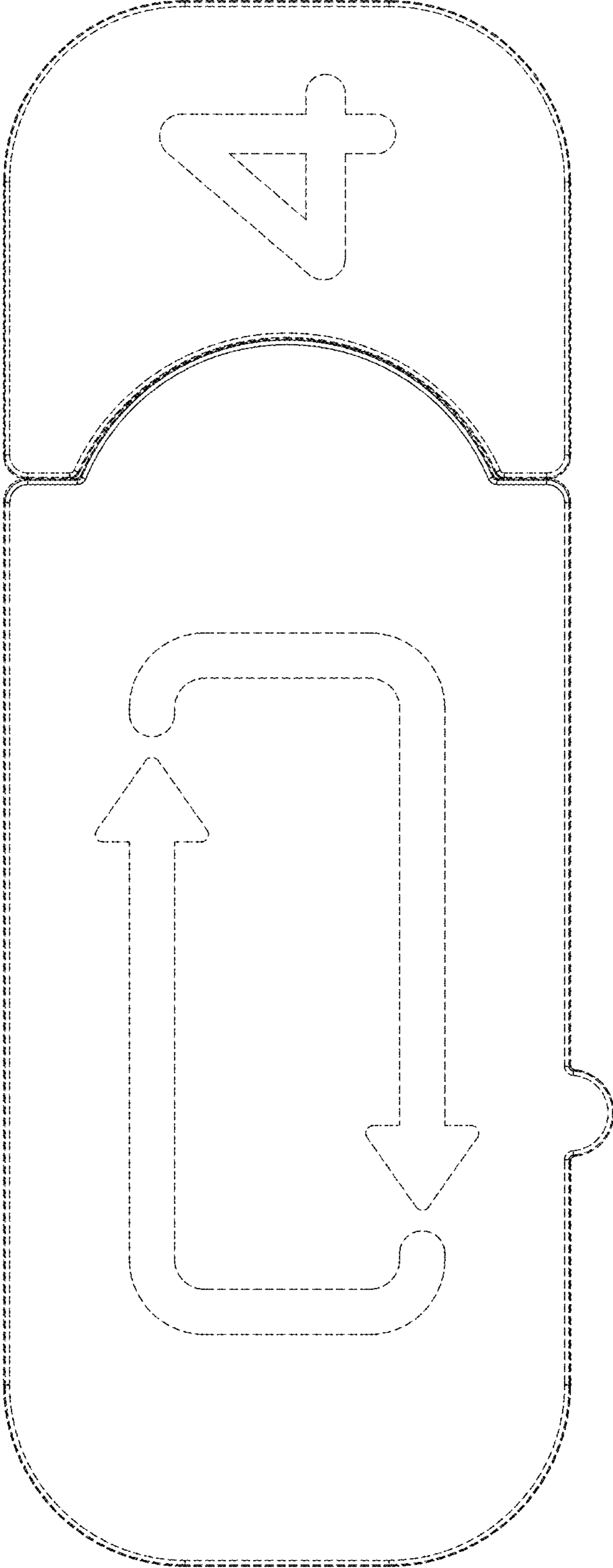


FIG. 5

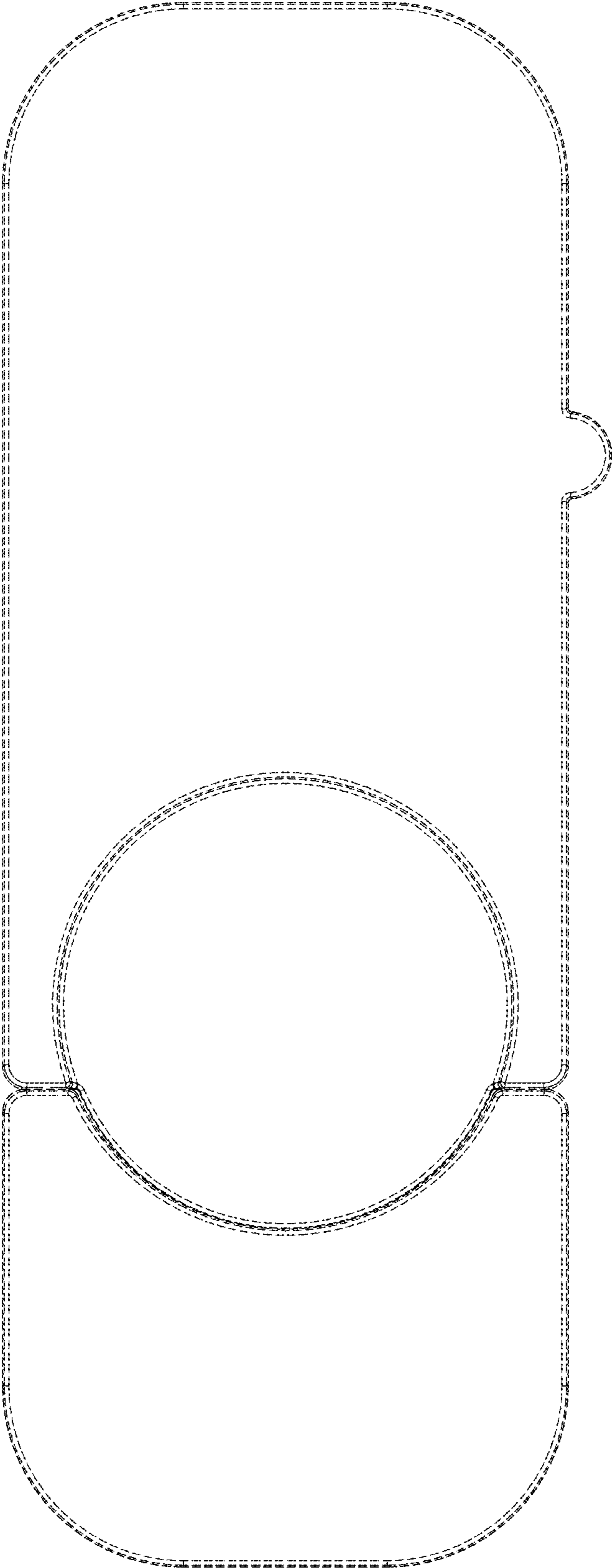


FIG. 6



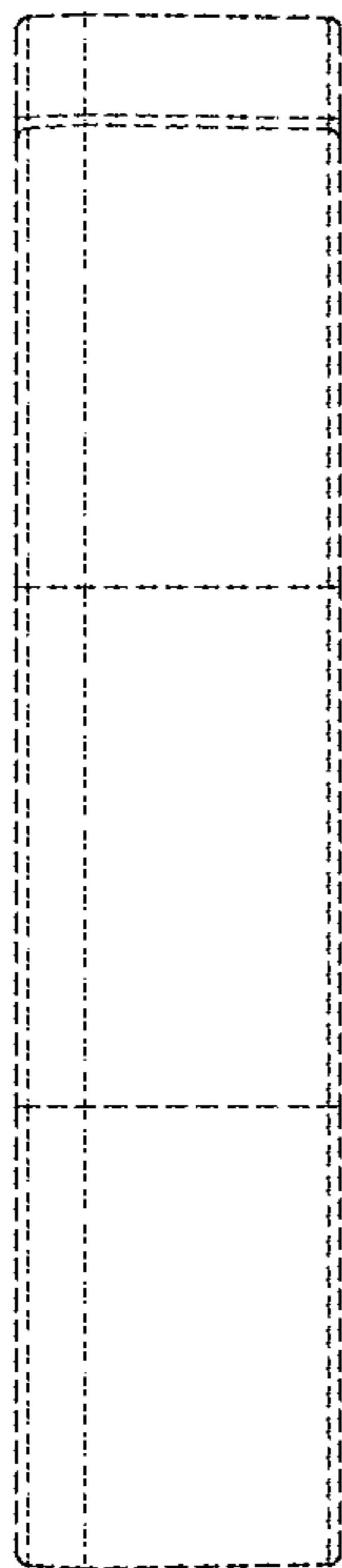


FIG. 7

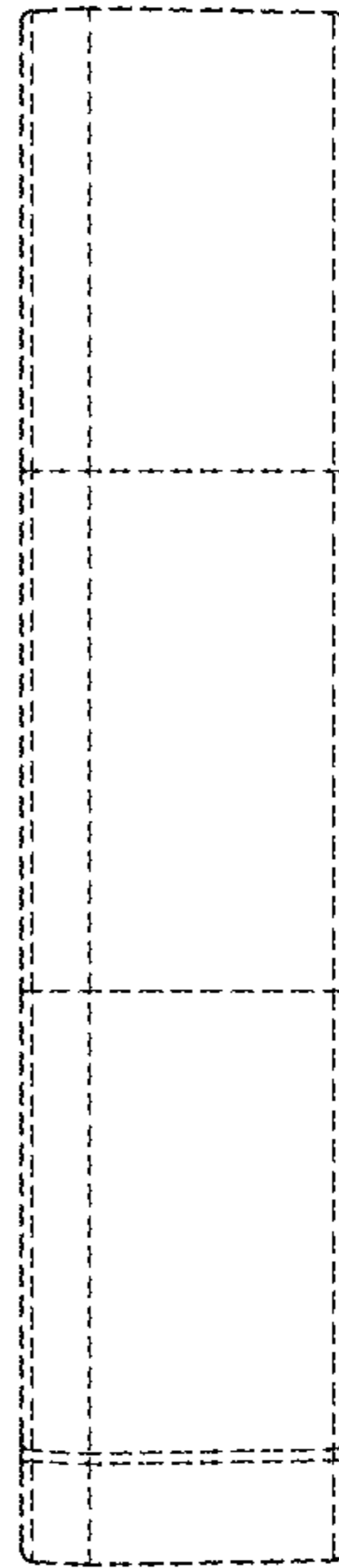


FIG. 8



FIG. 9



FIG. 10