US00D823398S

(12) United States Design Patent

Zekelman et al.

(10) Patent No.: US D823,398 S
(45) Date of Patent: ** Jul. 17, 2018

(54) **PROGRAMMING TILE**

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

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

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

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

(21) Appl. No.: **29/602,845**

(22) Filed: **May 4, 2017**

Related U.S. Application Data

(63) Continuation of application No. 29/565,826, filed on May 24, 2016, now Pat. No. Des. 795,349.

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

(52) **U.S. Cl.**
USPC **D21/333**; D21/324; D14/496; D14/356; D19/60

(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, 3.1–3.4, 30, 903, 345/901, 905; 463/1, 7, 9, 11, 31–34; 434/81, 82, 85, 128, 129, 155, 159, 276, 434/308, 365, 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
D365,588	S	12/1995	Fernandez
5,594,469	A	1/1997	Freeman et al.
D407,748	S	4/1999	Tsang et al.
D409,895	S	5/1999	Schron, Jr. et al.
6,043,805	A	3/2000	Hsieh
6,175,954	B1	1/2001	Nelson et al.
D476,555	S	7/2003	Niwa

(Continued)

FOREIGN PATENT DOCUMENTS

WO	2006027627	A1	3/2006

OTHER PUBLICATIONS

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

(Continued)

Primary Examiner — Prabhakar G Deshmukh
(74) *Attorney, Agent, or Firm* — Patent Law Works LLP

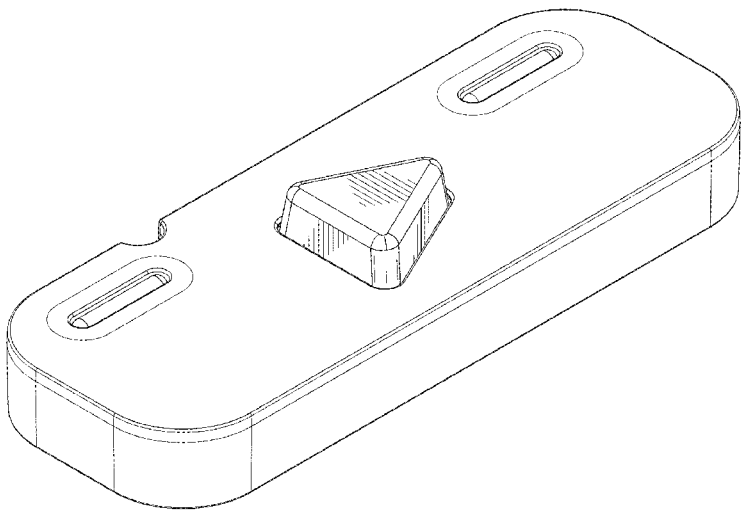
(57) **CLAIM**

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

DESCRIPTION

FIG. **1** is a top perspective view of a programming tile showing our new design;
FIG. **2** is a bottom perspective view thereof;
FIG. **3** is a top plan view thereof;
FIG. **4** is a bottom plan view thereof;
FIG. **5** is a left side elevational view thereof;
FIG. **6** is a right side elevational view thereof;
FIG. **7** is a front elevational view thereof; and,
FIG. **8** is a rear elevational view thereof.

1 Claim, 6 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

6,614,422	B1	9/2003	Rafii et al.	
6,650,318	B1	11/2003	Amon	
D531,668	S	11/2006	Goodstriker et al.	
D535,869	S	1/2007	Brunsteter	
7,210,631	B2	5/2007	Sali et al.	
D545,183	S	6/2007	French et al.	
D563,452	S	3/2008	Tan et al.	
7,358,601	B1 *	4/2008	Plants	H01L 25/18 257/686
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 et al.	
8,226,260	B2 *	7/2012	Whalan	A01M 29/10 362/152
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 et al.	
D716,362	S	10/2014	Generotti	
8,881,052	B2 *	11/2014	Strauss	G06F 9/4443 715/762
D719,928	S *	12/2014	Birger	D14/203.3
D726,804	S	4/2015	Voss	
9,003,340	B2	4/2015	Huynh et al.	
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 et al.	
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

McNerney, "Tangible Programming Bricks: An approach to making programming accessible to everyone," Jun. 1983 (86 pages).

Disessa, "Changing Minds Computers, Learning, and Literacy: How It Might Be," 2000, pp. 29-44 (17 pages).

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).

Horn, et al., "Designing Tangible Programming Languages for Classroom Use," 2007 (4 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 Apr. 2, 2014 (5 pages).

Hu, et al., "Strawbies: Explorations in Tangible Programming," 2015 (4 pages).

International Search Report and Written Opinion, dated Aug. 27, 2015, in PCT/US2015/032041 (14 pages).

"A robot teaching kids code & computer programming," retrieved from 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).

Horn, "Topcodes: Tangible Object Placement Codes," retrieved from http://users.eecs.northwestern.edu/~mhorn/topcodes/ Sep. 9, 2016 (2 pages).

* cited by examiner

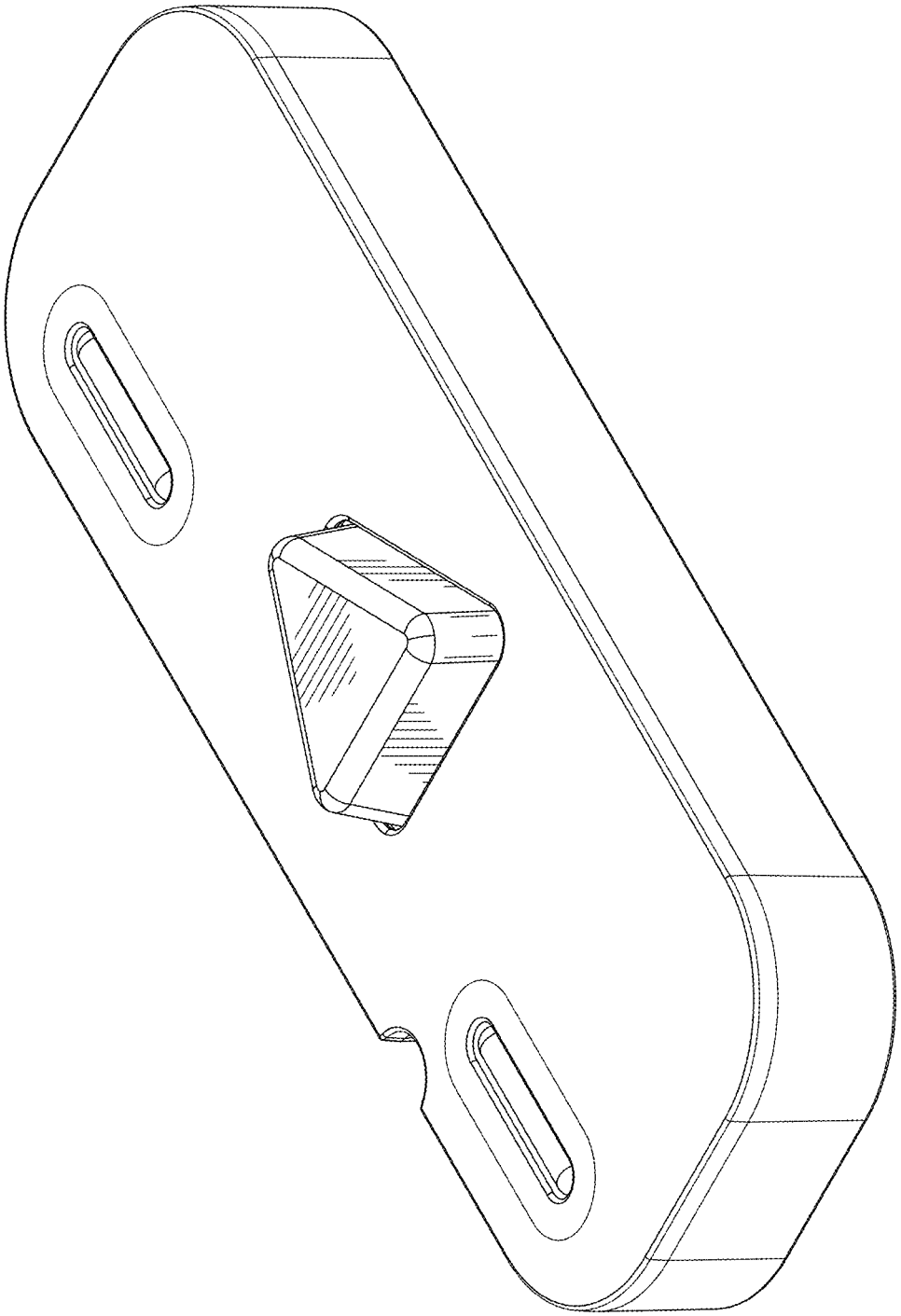


FIG. 1

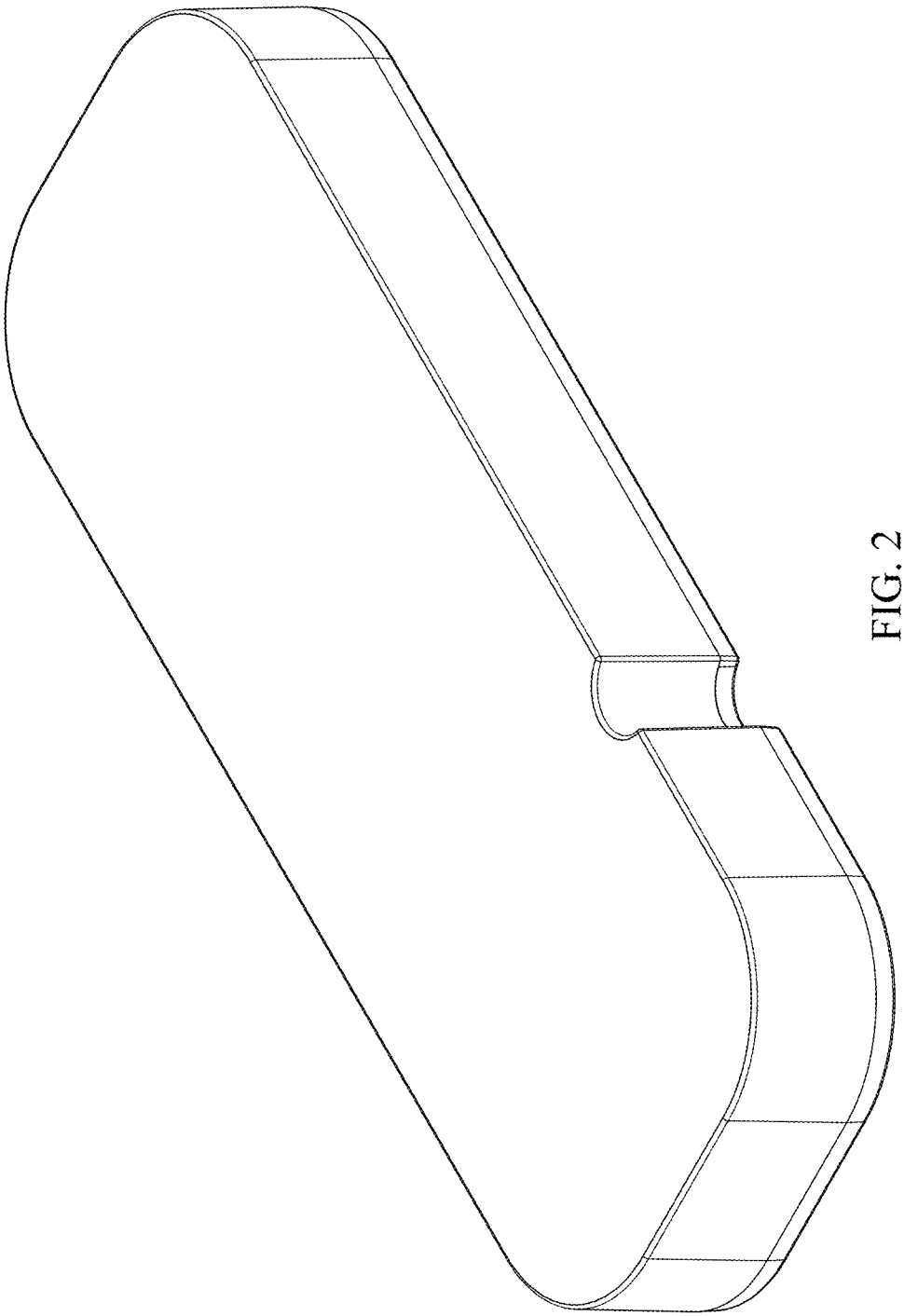


FIG. 2

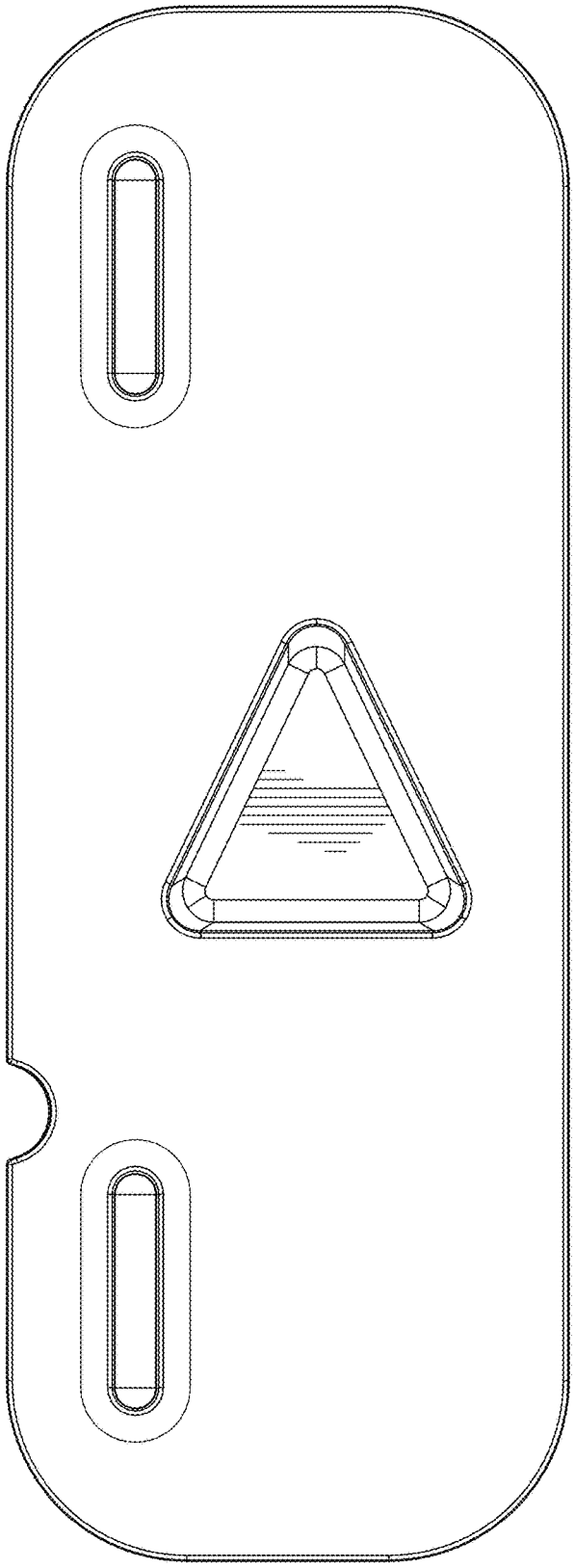


FIG. 3

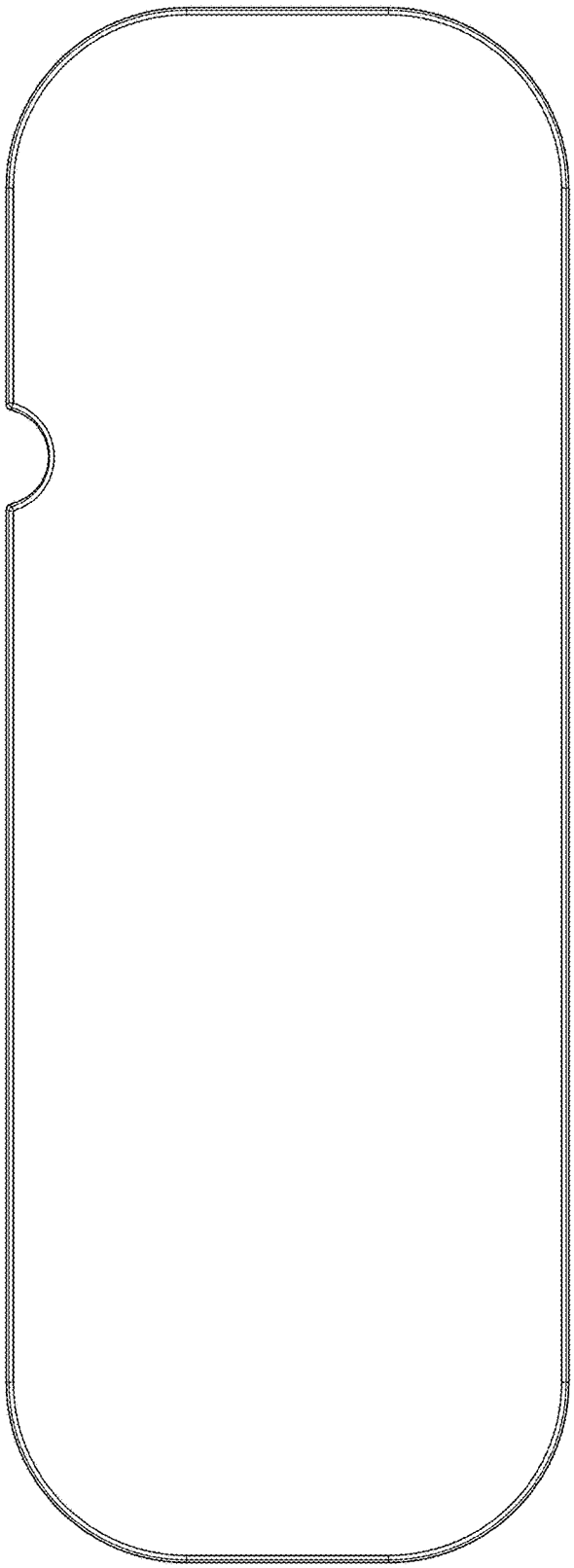


FIG. 4

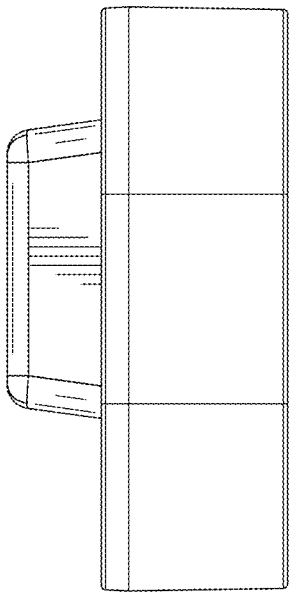


FIG. 5

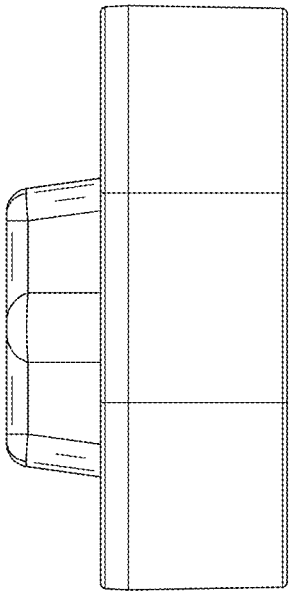


FIG. 6

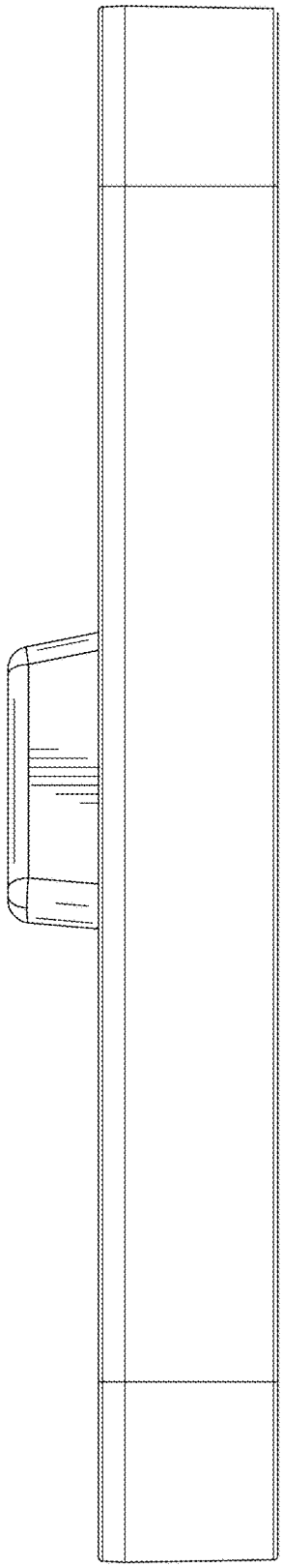


FIG. 7

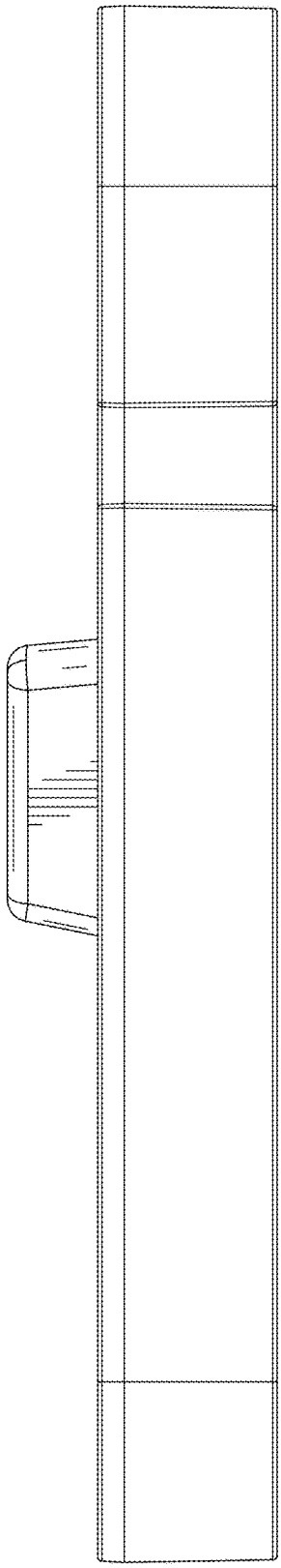


FIG. 8