



US00D954042S

(12) **United States Design Patent** (10) **Patent No.:** **US D954,042 S**
Solomon (45) **Date of Patent:** **** *Jun. 7, 2022**

(54) **VIRTUALIZATION DEVICE**

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

(72) Inventor: **Mark Solomon**, San Jose, CA (US)

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

(*) Notice: This patent is subject to a terminal disclaimer.

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

(21) Appl. No.: **29/785,204**

(22) Filed: **May 24, 2021**

Related U.S. Application Data

(63) Continuation of application No. 29/760,428, filed on Dec. 1, 2020, now Pat. No. Des. 920,326, which is a continuation of application No. 29/697,290, filed on Jul. 7, 2019, now Pat. No. Des. 907,032.

(51) **LOC (13) Cl.** **14-02**

(52) **U.S. Cl.**
USPC **D14/336**; D19/60; D21/324

(58) **Field of Classification Search**
USPC D14/388, 389, 390, 318, 439, 443, 399, D14/336, 341, 342, 346, 356, 130, 218, D14/454, 455, 299, 371, 374, 378, 496, D14/432, 434, 457, 458, 129, 307; D21/324, 329, 333; D13/162, 164, 168; D19/59-61, 113; D24/186; D10/46, 61, D10/65, 70, 104.1, 106.9, 106.95, 108
CPC G06F 3/041; G06F 3/0412; G06F 3/0416; G06F 3/03545; G06F 3/03547; G06F 1/1601; G06F 1/1605; G06F 1/1067; G06F 1/1669; G06F 1/1643; G06F 1/166; G06F 1/1686; G06F 3/048; G06F 40/103; H04N 5/2252; H04N 5/2253; H04N 5/23218

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D263,824 S * 4/1982 Hagelbarger D14/130
D282,935 S * 3/1986 Shifflett D19/60
D284,084 S * 6/1986 Ferrara, Jr. D14/389
(Continued)

FOREIGN PATENT DOCUMENTS

WO 2006/027627 A1 3/2006
WO WO-2021007238 A1 * 1/2021 G06F 1/1686

OTHER PUBLICATIONS

Article entitled "Integrated Textbook: Augmenting Paper Textbooks with Digital Learning Support Using Digital Pens", by Chuang et al., dated 2006 (Year: 2006).

(Continued)

Primary Examiner — Marie D. Fast Horse

(74) *Attorney, Agent, or Firm* — VLP Law Group LLP; Michel Bohn

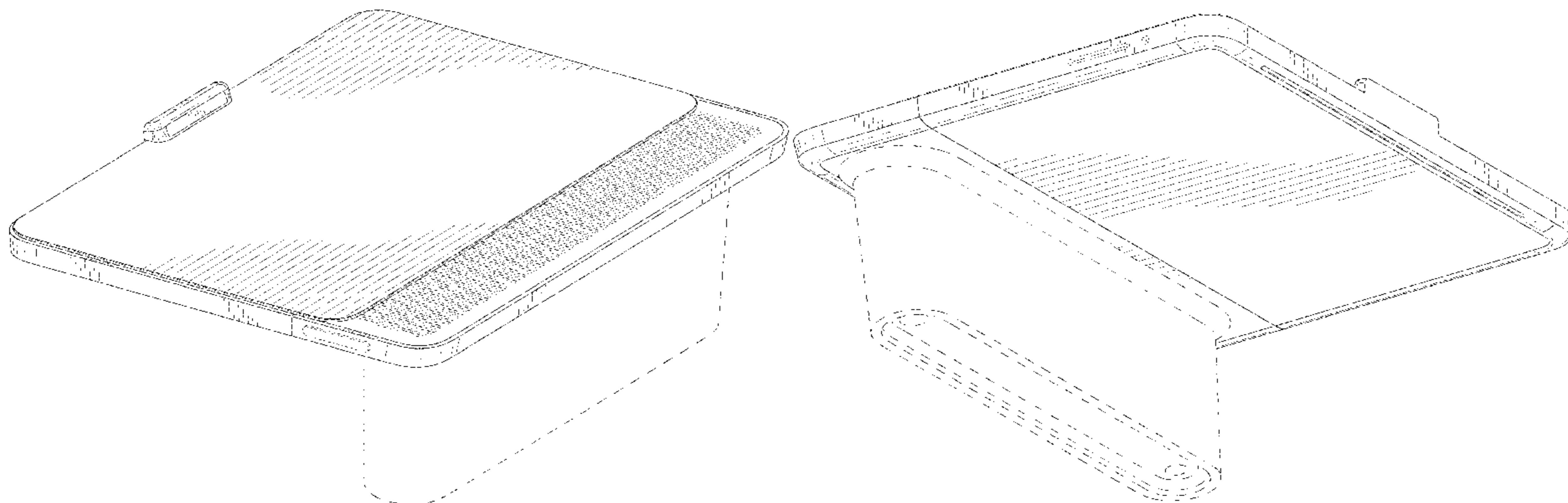
(57) **CLAIM**

The ornamental design for a virtualization device, as shown and described.

DESCRIPTION

FIG. 1 is a front, left perspective view of a virtualization device showing my new design;
FIG. 2 is a right, rear perspective view thereof;
FIG. 3 is a front view thereof;
FIG. 4 is a rear view thereof;
FIG. 5 is a left side view thereof;
FIG. 6 is a right side view thereof;
FIG. 7 is a bottom view thereof; and,
FIG. 8 is a top view thereof.
Within the drawings, the broken lines show unclaimed portions of the virtualization device, and form no part of the claimed design.

1 Claim, 6 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

- D289,291 S * 4/1987 Kapper D14/389
D299,473 S * 1/1989 Murphy D19/60
D299,491 S * 1/1989 Masuda D12/188
D304,338 S * 10/1989 Sermon D14/140.8
D310,521 S * 9/1990 Leung D14/390
D312,533 S 12/1990 Rolfs
D313,409 S * 1/1991 Chowdhree D14/389
D321,175 S * 10/1991 Tsuchiya D14/368
D322,777 S * 12/1991 Nishio D14/314
D324,210 S * 2/1992 Vossoughi D14/374
D333,814 S * 3/1993 Swanson D14/390
D336,053 S * 6/1993 Hayes D14/390
D346,618 S 5/1994 Holmes
D352,279 S * 11/1994 Foy D14/341
D361,784 S * 8/1995 Saddler D19/60
D362,270 S * 9/1995 Allen D19/60
D362,662 S * 9/1995 Baudot D14/389
D366,499 S * 1/1996 Fung D14/335
D370,892 S * 6/1996 Shima D14/314
D373,576 S * 9/1996 Liggett D14/341
D374,224 S * 10/1996 Starck D14/126
D380,231 S * 6/1997 Chow D19/60
D384,659 S * 10/1997 Suzuki D14/126
D388,065 S * 12/1997 Kawauchi D14/389
D393,461 S * 4/1998 Goto D14/126
D395,458 S * 6/1998 Smith D21/329
D396,217 S * 7/1998 Suzuki D14/336
D411,517 S * 6/1999 Lin D14/336
D413,595 S * 9/1999 Arie D14/126
D426,816 S * 6/2000 Lucente D14/336
D429,068 S 8/2000 Kleinsmith
6,175,954 B1 1/2001 Nelson et al.
D437,593 S * 2/2001 Keeler D14/336
D458,255 S * 6/2002 Hsu D14/373
D459,394 S * 6/2002 Obadiaru D19/60
D496,034 S * 9/2004 Guerrero D14/336
D517,512 S * 3/2006 Peng D14/129
D524,312 S * 7/2006 Young D14/375
D533,857 S * 12/2006 Bradley D14/126
7,181,363 B2 2/2007 Ratti et al.
D546,895 S * 7/2007 Chan D19/60
D563,405 S * 3/2008 Taniho D14/336
D576,177 S * 9/2008 Asanuma D14/496
D578,131 S * 10/2008 Horito D14/450
D597,057 S * 7/2009 Sheppard D14/142
D599,328 S * 9/2009 Derocher D14/218
D600,689 S * 9/2009 Jen D14/300
D607,883 S * 1/2010 Fujita D14/341
7,777,899 B1 8/2010 Hildreth
D624,535 S * 9/2010 Tsai D14/336
D634,316 S * 3/2011 Van Den Nieuwenhuizen
D638,019 S * 5/2011 Weisshaupt D14/434
D641,749 S * 7/2011 Leung D14/336
D642,174 S * 7/2011 Hirota D14/374
8,019,121 B2 9/2011 Marks et al.
D654,450 S * 2/2012 McManigal D14/129
8,126,264 B2 2/2012 Kaftory et al.
D660,736 S * 5/2012 Lee D10/108
D660,837 S * 5/2012 Libman D14/336
D662,089 S * 6/2012 Gougherty D14/224
D663,638 S * 7/2012 Lee D10/108
D665,687 S * 8/2012 Lee D10/108
8,274,535 B2 9/2012 Hildreth et al.
D669,049 S * 10/2012 Harper D14/129
D671,112 S * 11/2012 Harper D14/336
D674,801 S 1/2013 Wharram
D676,900 S * 2/2013 Ohno D18/4.4
D678,239 S * 3/2013 Bourne D14/150
D679,018 S * 3/2013 Fullerton D24/167
D688,249 S 8/2013 Wharram
D693,314 S * 11/2013 McKeage D13/162
D696,403 S * 12/2013 Noguchi D24/165
8,611,587 B2 12/2013 Horovitz
D697,060 S 1/2014 Yang
D697,506 S * 1/2014 Bianco D14/336
D697,910 S * 1/2014 Bianco D14/336
8,624,932 B2 1/2014 Hildreth et al.
D702,579 S * 4/2014 Lee D10/108
D704,693 S 5/2014 Kim
D708,184 S * 7/2014 Romanoff D14/422
D718,308 S * 11/2014 Nishizawa D14/389
D721,665 S * 1/2015 Klepper D14/125
D732,533 S * 6/2015 Hirota D14/389
D733,714 S 7/2015 Ballou et al.
9,152,173 B2 * 10/2015 Lee G06F 3/017
9,158,389 B1 * 10/2015 Sharma G06F 3/0304
9,160,915 B1 10/2015 Davies et al.
D742,371 S * 11/2015 Bopp D14/336
9,235,768 B1 * 1/2016 Pashintsev G06K 9/00496
D753,125 S 4/2016 Hsu et al.
D755,783 S * 5/2016 Shi D14/336
9,350,951 B1 5/2016 Rowe
D760,248 S 6/2016 Suarez
D766,288 S 9/2016 Lee et al.
9,472,113 B1 10/2016 Hwang et al.
D778,982 S * 2/2017 Beatty D18/4.5
D789,969 S 6/2017 Chaudhri et al.
D798,378 S * 9/2017 Kim D18/4.6
D807,884 S * 1/2018 Blanchette D14/389
D810,088 S 2/2018 Moore et al.
D812,622 S 3/2018 Moon
D816,081 S * 4/2018 Rosenberg D14/390
9,939,961 B1 4/2018 Sharma et al.
10,003,371 B1 6/2018 Given et al.
D824,406 S 7/2018 Cordova et al.
10,033,943 B1 7/2018 Sharma et al.
D825,596 S 8/2018 Cannata
D827,651 S 9/2018 Brown et al.
10,083,356 B2 * 9/2018 Sharma G06F 3/04845
D830,868 S * 10/2018 Kress D10/87
D834,573 S * 11/2018 Pell D14/336
D839,275 S 1/2019 Moore et al.
D844,010 S * 3/2019 Owens D14/434
D849,741 S * 5/2019 Wei D14/336
D850,440 S * 6/2019 Gentle D14/336
D852,211 S 6/2019 Choi et al.
D852,801 S 7/2019 Dukerschein et al.
D854,565 S 7/2019 McLaughlin et al.
D857,007 S * 8/2019 Pitallano D14/307
D860,233 S 9/2019 Chaudhri et al.
D871,500 S * 12/2019 Balar D18/4.5
D873,819 S * 1/2020 Harsacky D14/348
D877,747 S 3/2020 Belliveau
D880,327 S * 4/2020 Costabile D10/108
D882,598 S 4/2020 Belliveau
D902,202 S * 11/2020 Fung D14/341
D907,032 S * 1/2021 Solomon D14/336
D908,122 S * 1/2021 Luo D14/336
D919,653 S 5/2021 Everette et al.
D920,326 S * 5/2021 Solomon D14/336
D929,398 S * 8/2021 Lin D14/358
2005/0276164 A1 12/2005 Amron
2006/0115113 A1 6/2006 Lages et al.
2007/0101544 A1 5/2007 Hsieh et al.
2008/0018595 A1 1/2008 Hildreth et al.
2009/0273560 A1 * 11/2009 Kalanithi G06F 3/017
345/156
2009/0315740 A1 12/2009 Hildreth et al.
2010/0066763 A1 3/2010 MacDougall et al.
2010/0091110 A1 4/2010 Hildreth
2011/0199319 A1 8/2011 Moser
2011/0298724 A1 12/2011 Ameling et al.
2011/0316767 A1 * 12/2011 Avrahami G06F 1/1686
345/156
2012/0026098 A1 * 2/2012 Ladouceur G06F 1/1684
345/173
2012/0043235 A1 2/2012 Klement
2012/0229590 A1 * 9/2012 Barrus H04N 7/147
348/14.08
2012/0244922 A1 9/2012 Horovitz
2013/0147836 A1 6/2013 Small et al.
2013/0206614 A1 8/2013 O'Neill et al.
2013/0229773 A1 9/2013 Siddiqui et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

2013/0313142	A1	11/2013	Wen	
2013/0321447	A1	12/2013	Horovitz et al.	
2014/0118584	A1	5/2014	Lee et al.	
2014/0125580	A1	5/2014	Eun et al.	
2014/0176530	A1	6/2014	Pathre	
2014/0223279	A1	8/2014	Algreatly	
2014/0300642	A1	10/2014	Laine et al.	
2014/0379942	A1*	12/2014	Perek	G06F 9/541 710/14
2015/0072335	A1	3/2015	Pedanekar et al.	
2015/0084855	A1	3/2015	Song et al.	
2015/0124396	A1	5/2015	Ivanchenko	
2015/0138385	A1	5/2015	Kim	
2015/0172539	A1	6/2015	Neglur	
2015/0220806	A1	8/2015	Heller et al.	
2015/0222315	A1	8/2015	O'Neill et al.	
2015/0339532	A1	11/2015	Sharma et al.	
2015/0363003	A1	12/2015	Henriz	
2016/0239048	A1	8/2016	Mehandjiysky et al.	
2017/0132676	A1	5/2017	Mediratta et al.	
2017/0169598	A1*	6/2017	York	G06T 19/006
2017/0206693	A1	7/2017	Sharma et al.	
2017/0230585	A1*	8/2017	Nash	G06T 5/50
2017/0311053	A1	10/2017	Ganjam et al.	
2017/0344127	A1	11/2017	Hu et al.	
2018/0299996	A1*	10/2018	Kugler	G06F 3/017
2019/0075272	A1	3/2019	Horio et al.	
2019/0080173	A1	3/2019	Sharma et al.	
2019/0104373	A1	4/2019	Wodrich et al.	
2019/0156119	A1	5/2019	Sharma et al.	
2019/0206126	A1*	7/2019	Solomon	H04N 5/2251
2019/0313540	A1*	10/2019	Solomon	H05K 5/0247
2019/0347946	A1	11/2019	Beck et al.	
2020/0026737	A1	1/2020	Brown et al.	
2020/0143567	A1*	5/2020	Dukerschein	G06F 1/1632
2021/0004051	A1*	1/2021	Solomon	G06F 1/1686
2021/0004405	A1*	1/2021	Solomon	G06F 1/1686
2021/0006730	A1*	1/2021	Solomon	G06F 3/012

OTHER PUBLICATIONS

Article entitled "PUSTACK-Towards and augmented, scalable and personalized interface for paper textbooks", dated Sep. 27, 2013, by Ghandi et al. (Year: 2013).

Article entitled "Reflex: Adaptive Learning Beyond the Screen", by Gelsomini et al., dated Mar. 29, 2019 (Year: 2019).

Article entitled "Textbook Information Sharing Method based on ISBN Augmented Reality", dated 2013, by Choel (Year: 2013).

Article entitled "Tica: An Environment for Exploring Tangible vs Screen-Based Programming", by Wilkie et al., dated 2017 (Year: 2017).

"Article entitled 'Augmented Paper System: A Framework for User's Personalized Workspace', dated 2013, by Bhardwaj et al. (Year: 2013).

Diego Moya, "Tangible user interface", <http://en.wikipedia.org/w/index.php?title=Tangible.sub.-user.sub.-inter-face&oldid=549052909>, Apr. 6, 2013, (5 pages).

Extended European Search Report, EP 15796779.5, dated Dec. 7, 2017 (10 pages).

First Examination Report of Indian Design Application No. 325417-001, dated Feb. 21, 2020 (2 pages).

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

International Search Report and Written Opinion received for PCT Patent Application No. PCT/US20/41051, dated Sep. 28, 2020, 11 pages.

International Search Report and Written Opinion received for PCT Patent Application No. PCT/US2019/060341, dated Jan. 27, 2020, 11 pages.

International Search Report and Written Opinion, PCT/US20/41057, dated Nov. 20, 2020 (12 pages).

International Written Opinion received for PCT Patent Application No. PCT/US19/060341, dated Jan. 27, 2020, 9 pages.

Jankovic et al., "Developing a modular active spherical vision system", In: Proceedings of the 2005 IEEE International Conference on Robotics and Automation, Jan. 2005, Retrieved on Oct. 24, 2020 (Oct. 24, 2020) from <https://www.researchgate.net/profile/Michael_Naish/publication/221072996_Developing_a_Modular_Active_Spherical_Vision_System/links/02e7e53ac59d019aae000000/Developing-a-Modular-Active-Spherical-Vision-System.pdf>.

Khandelwal et al., "Teaching Table: Tangible Mentor for Pre-K Math Education," 1st International Conference on Tangible and Embedded Interaction, Feb. 15, 2007 (4 pages).

Lochtefeld et al., "Little Projected Planet: An Augmented Reality Game for Camera Projector Phones," Jan. 1, 2010 (4 pages).

Mueller et al., "A Physical Three-Way Interactive Game Based on Table Tennis," Interaction Design Group, Department of Information System, The University of Melbourne Australia, Dec. 3, 2007 (7 pages).

Outgoing—ISA/210—International Search Report dated Sep. 28, 2020 for WO Application No. PCT/US20/041066.

Outgoing Written Opinion of the ISA dated Sep. 28, 2020 for WO Application No. PCT/US20/041066.

Pedersen, "Grab and Touch: Empirical Research on Tangible Computing and Touch Interaction", University of Copenhagen, Denmark, Department of Computer Science, Faculty of Science, Nov. 2012 (75 pages).

YouTube video entitled "Getting Creative with Osmo Monster", uploaded on Jul. 28, 2016, available at <https://www.youtube.com/watch?v=PBEQfnbiBoQ>, by Osmo (Year: 2016).

YouTube video entitled "It Worked: Osmo Coding Awbie #HopIntoCoding", uploaded on Mar. 20, 2018, available at <https://www.youtube.com/watch?v=I3HD20PBKks>, by Gonzales (Year: 2018).

YouTube video entitled "UNBOXING & LEIS PLAYi-Osmo Coding Jam & Coding Duo!—Full Review!", uploaded on Jan. 31, 2018, available at <https://www.youtube.com/watch?v=yPz6MJ2xaE4>, by KhanFlicks (Year: 2018).

* cited by examiner

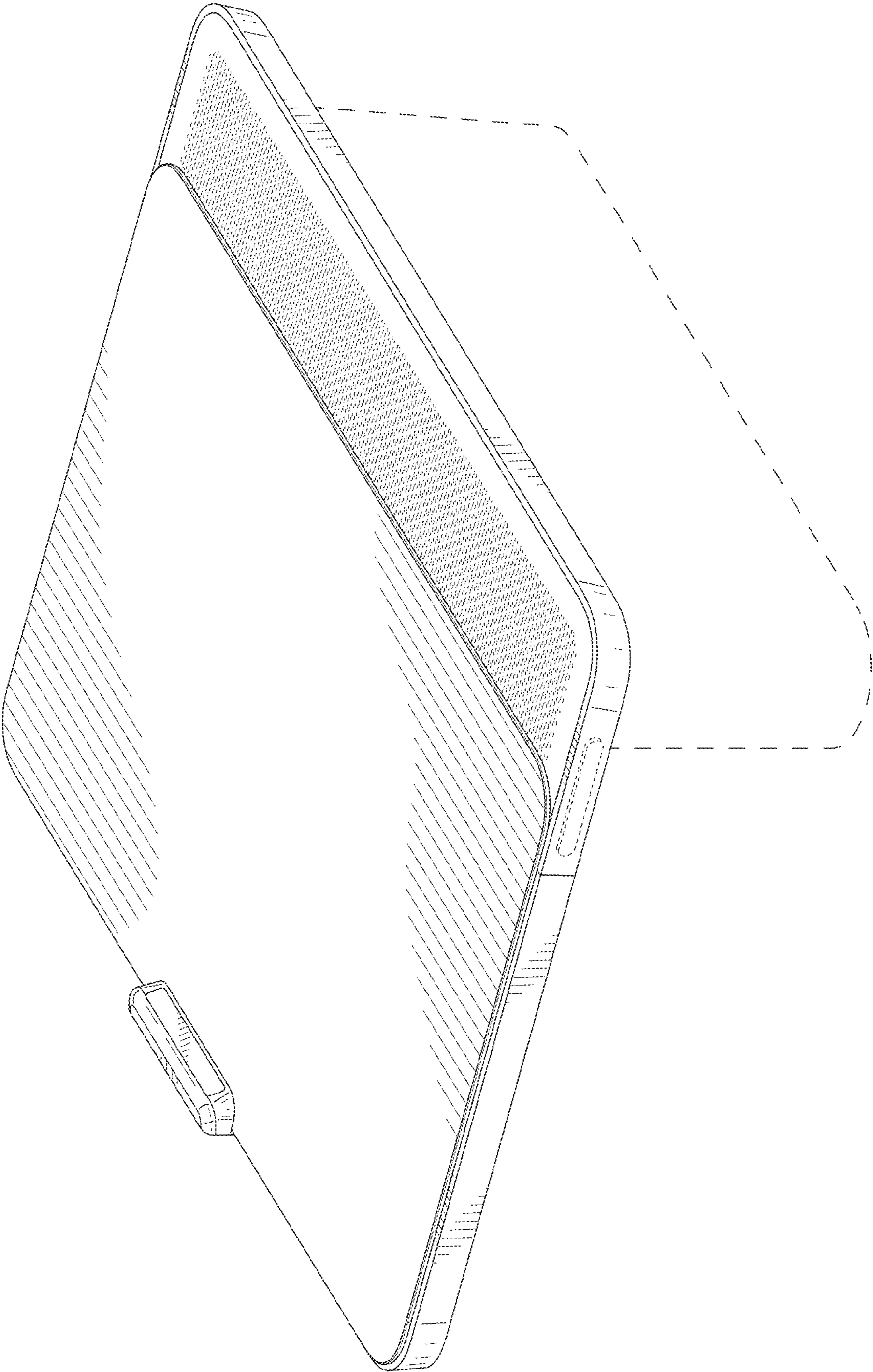


FIG. 1

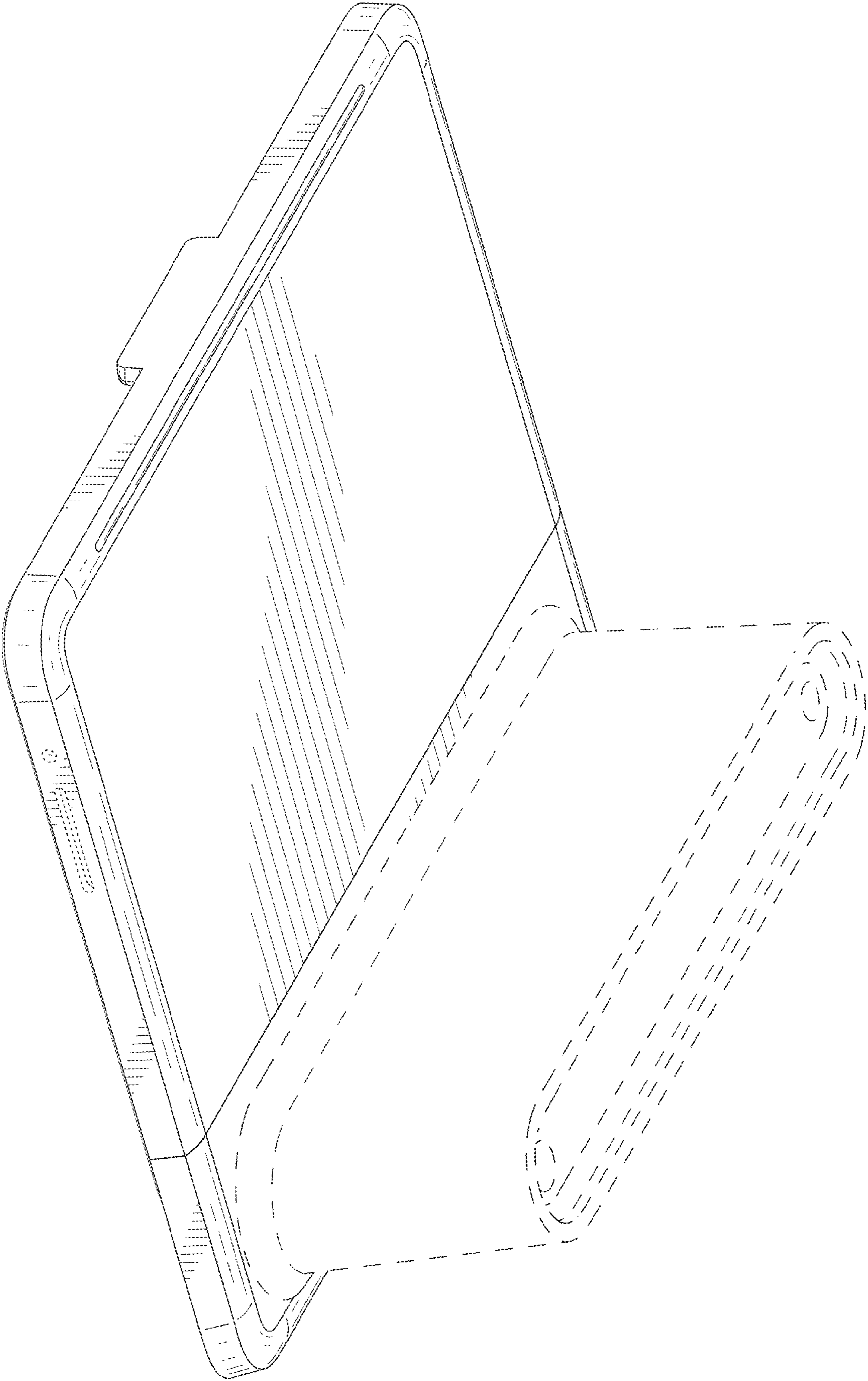


FIG. 2

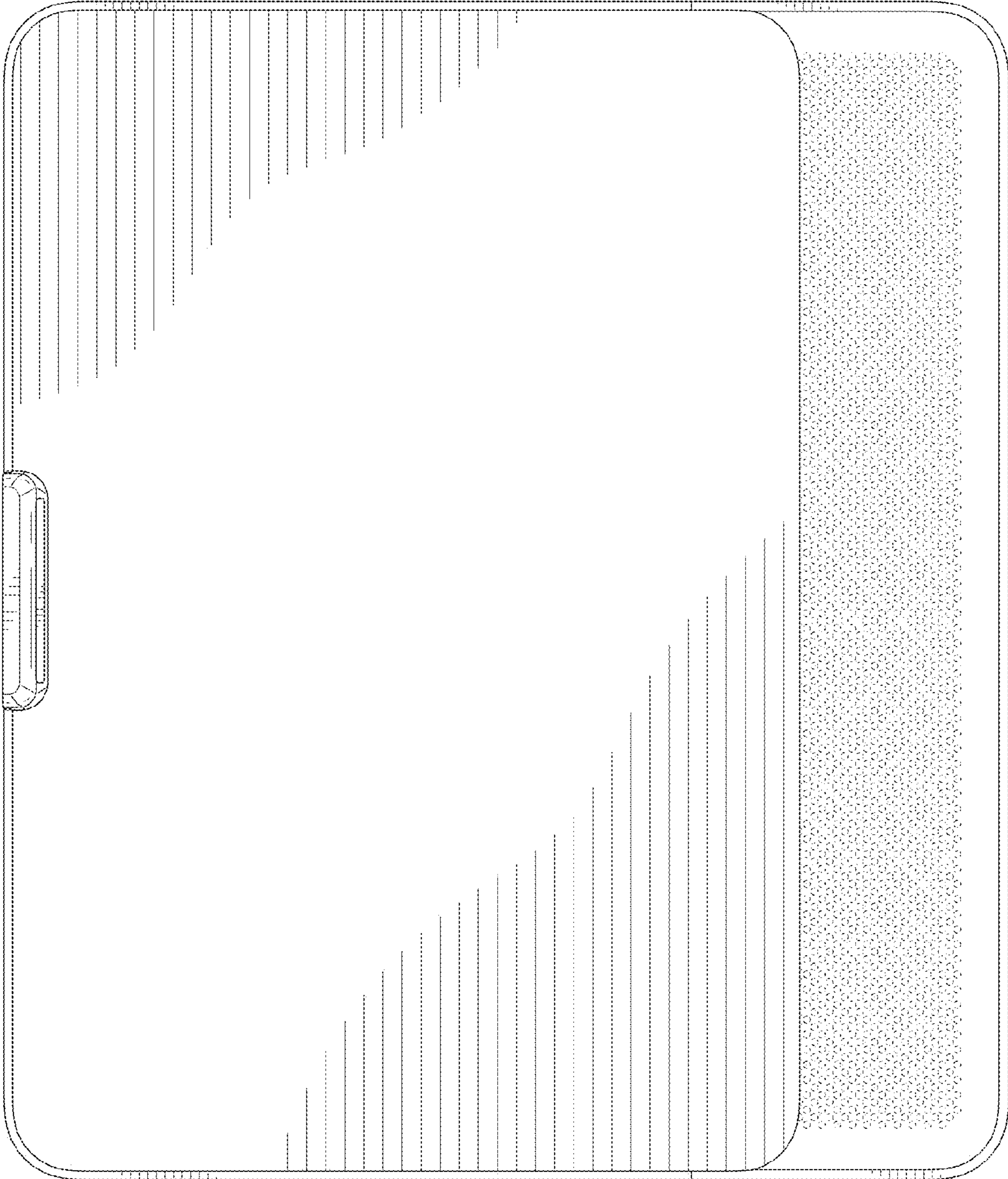


FIG. 3

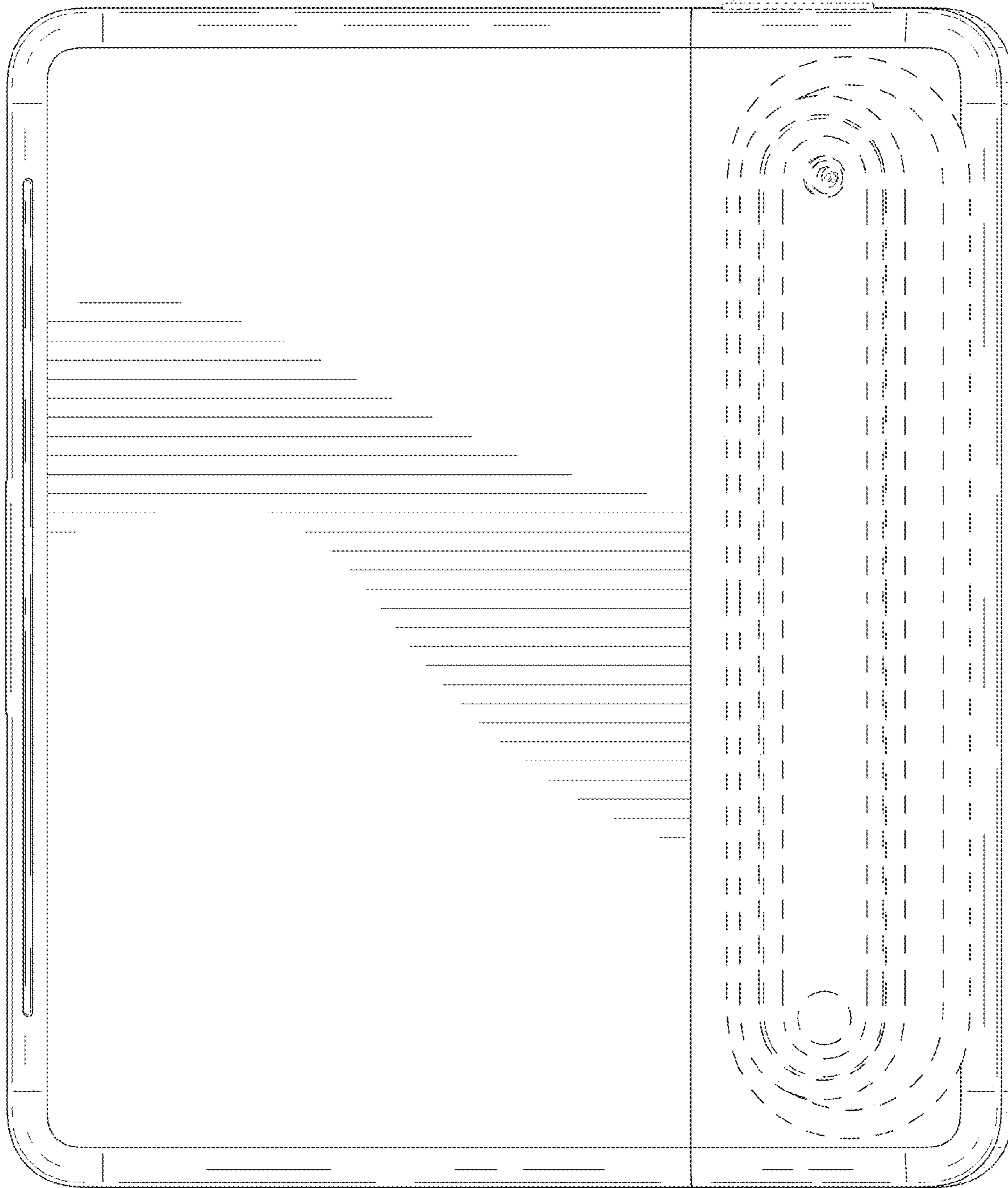


FIG. 4

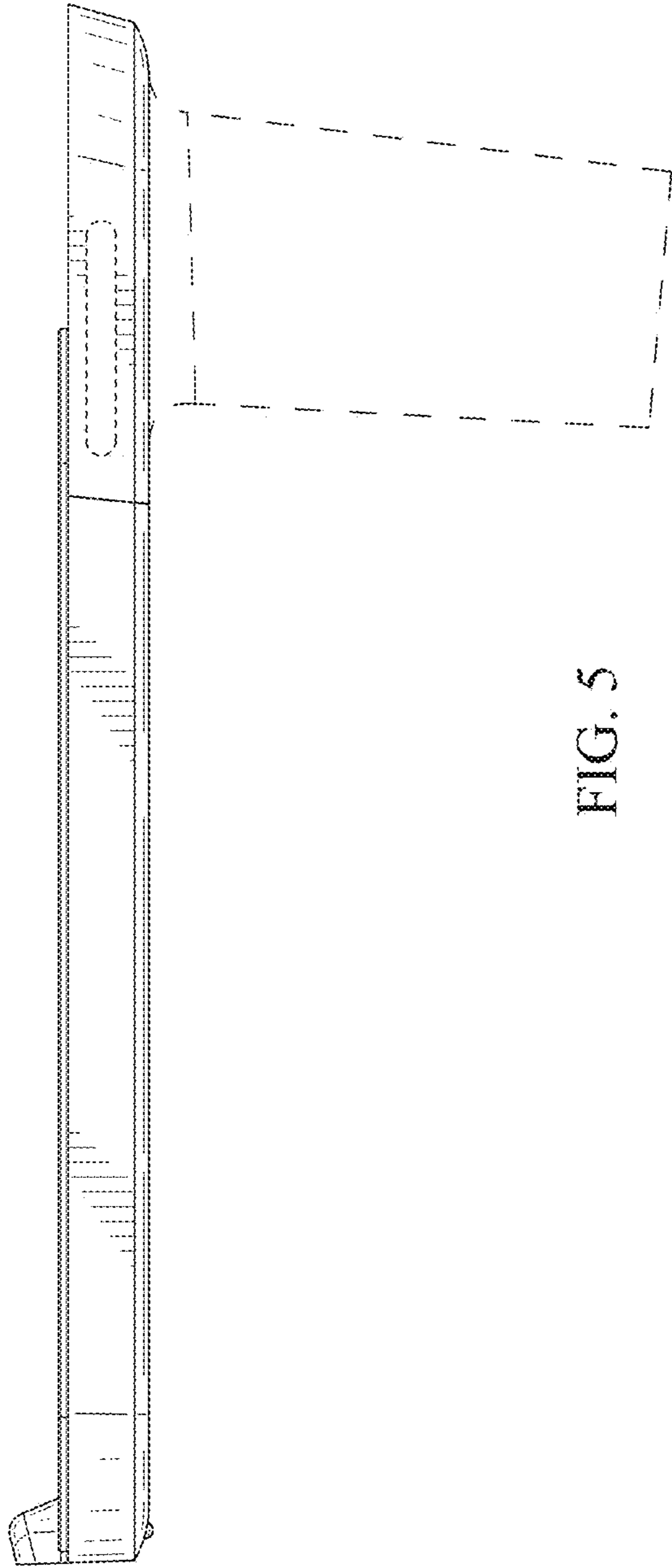


FIG. 5

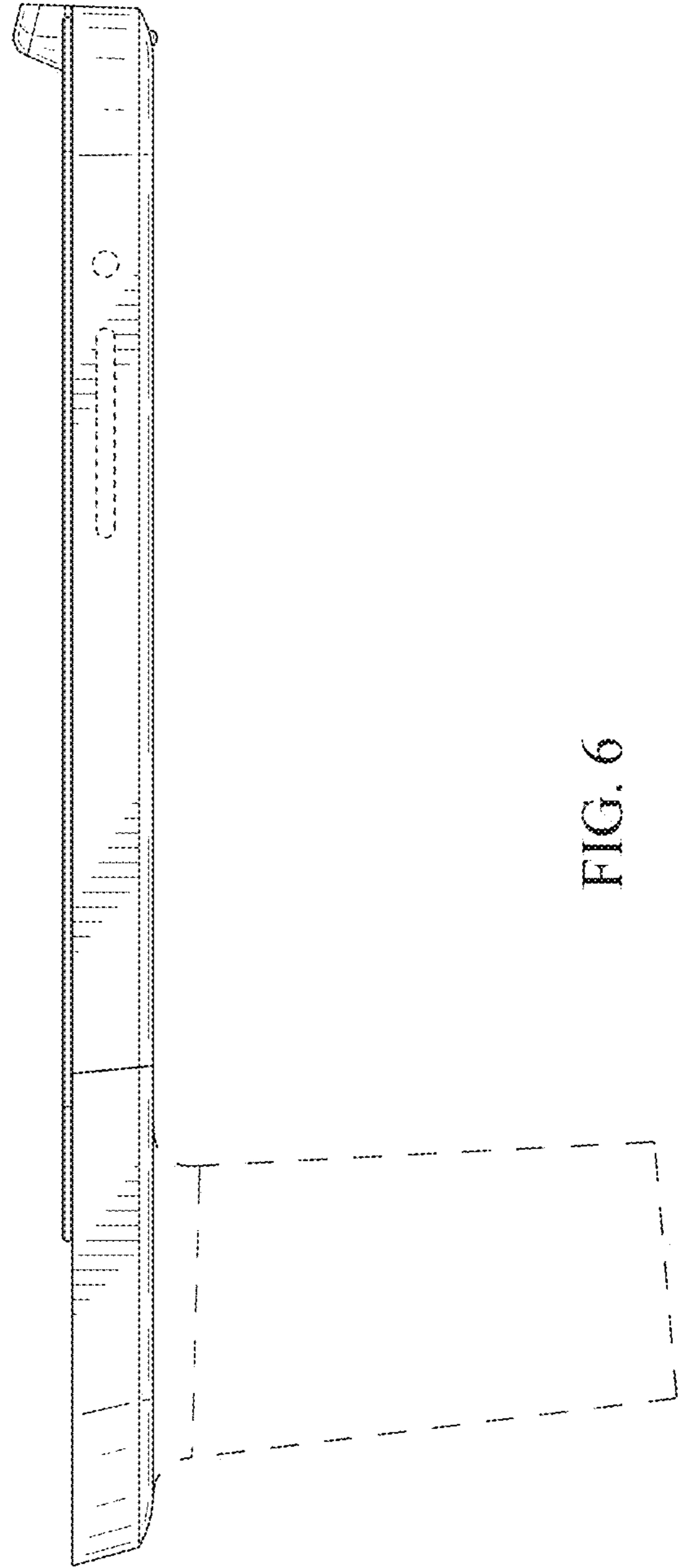


FIG. 6

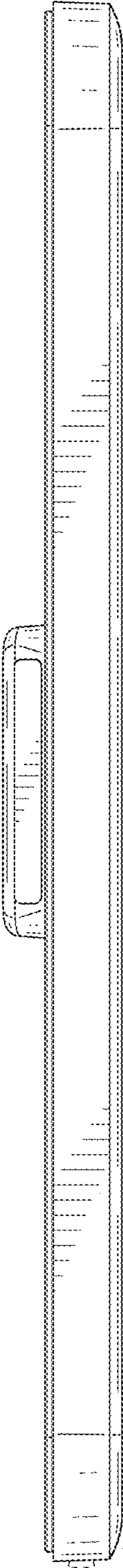


FIG. 7

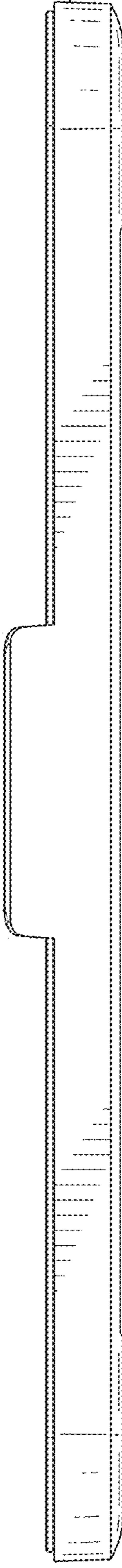


FIG. 8