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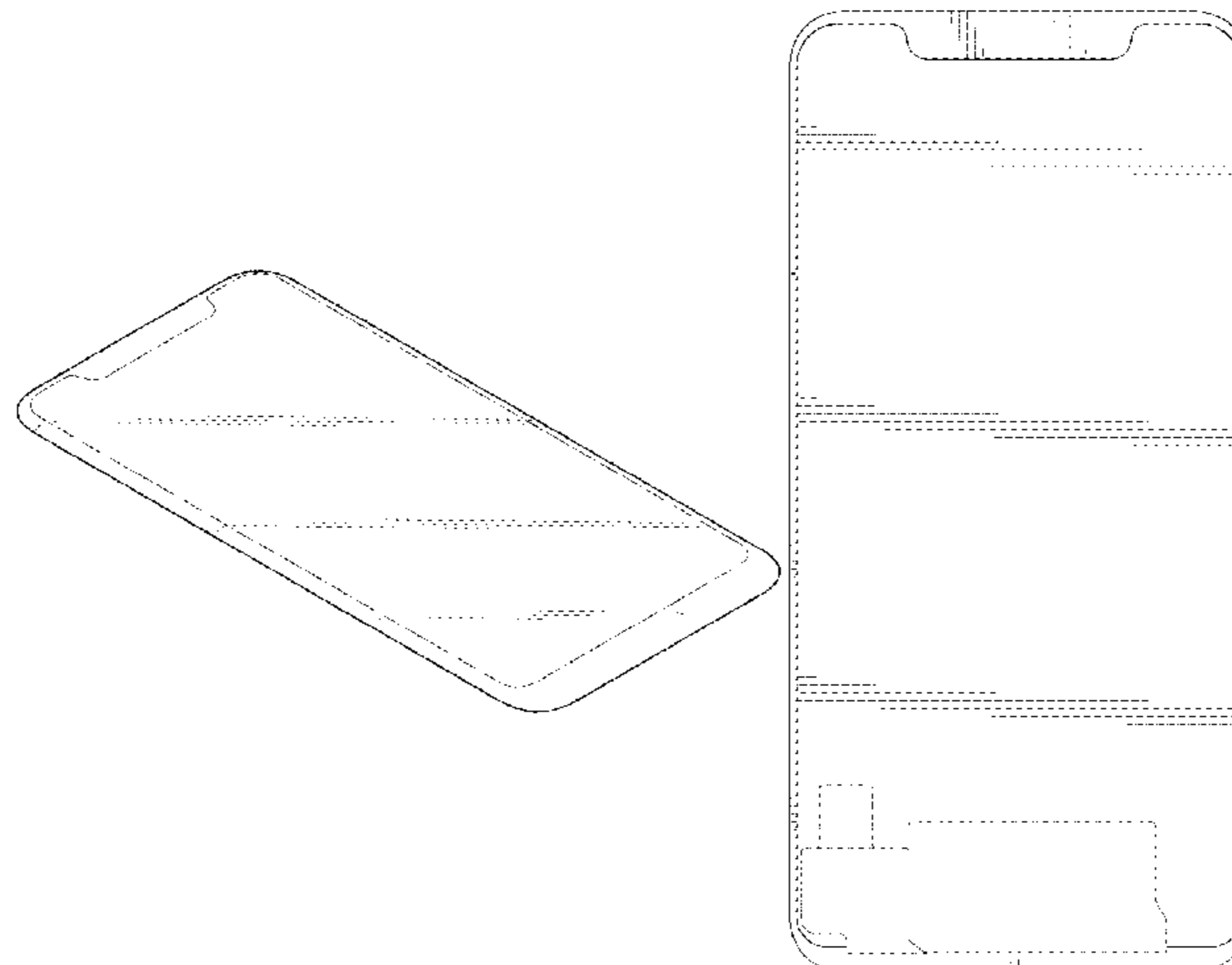
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- (54) **DISPLAY MODULE**
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USPC **D14/248**; D14/250; D14/439
- (58) **Field of Classification Search**
USPC D14/138 R, 138 AA, 138 C, 138 G, D14/140.11, 203.1, 203.3, 203.7, 250, D14/217, 371, 374, 289, 424, 432, 464, D14/214, 348, 505, 501-502, 405, 248, D14/439; 455/575.1, 575.8; D13/162, D13/184; D21/324-325, 329, 332; 359/391, 656, 811; D19/75-76
CPC C09J 7/00; C09J 7/29; C09J 2201/122; G06F 1/1626; H04B 1/3888
See application file for complete search history.

D447,517 S	9/2001	Flores, Jr. et al.	
D502,031 S *	2/2005	Cassidy	D20/40
D505,809 S *	6/2005	Cassidy	D3/319
D629,771 S	12/2010	Haspil et al.	
7,983,037 B2	7/2011	Zhang et al.	
8,116,073 B2	2/2012	Hung et al.	
D665,808 S	8/2012	Wang	
D693,785 S	11/2013	Sutherland et al.	
D728,469 S	5/2015	Castelli	
D732,540 S *	6/2015	Kang	D14/439
D735,175 S *	7/2015	Liu	D14/239
D735,176 S *	7/2015	Liu	D14/239
D749,053 S *	2/2016	Paihonen	D14/138 G
D772,199 S *	11/2016	Igarashi	D14/217
9,542,866 B1	1/2017	Cowan	
D786,246 S	5/2017	Park et al.	
D793,376 S *	8/2017	Kwon	D14/248
D794,005 S *	8/2017	Kwon	D14/248
D794,636 S	8/2017	Park et al.	
D796,496 S	9/2017	Lee	
D800,129 S *	10/2017	Wadsworth	D14/432
D800,131 S *	10/2017	Wadsworth	D14/432
D804,462 S	12/2017	Lamb	
D804,463 S	12/2017	Lamb	
D804,464 S	12/2017	Lamb	
D806,705 S	1/2018	Akana et al.	
D811,407 S	2/2018	Wadsworth et al.	
D814,452 S *	4/2018	Kwon	D14/248
D815,632 S	4/2018	Akana et al.	
D815,633 S	4/2018	Akana et al.	
D817,314 S	5/2018	Kwon et al.	
D817,945 S *	5/2018	Wadsworth	D14/250
9,979,425 B2	5/2018	Wolf, II	
D820,833 S	6/2018	Kim et al.	
D820,835 S	6/2018	Kim et al.	
D828,335 S	9/2018	Lin	
D828,828 S	9/2018	Kim et al.	
D829,205 S	9/2018	Akana et al.	
D832,266 S	10/2018	Akana et al.	
D832,267 S	10/2018	Akana et al.	
D832,829 S	11/2018	Kwon et al.	
D832,846 S	11/2018	Wadsworth et al.	
D832,847 S	11/2018	Wadsworth et al.	
D832,850 S	11/2018	Oh	
D833,439 S *	11/2018	MacDonald	D14/432
D833,440 S *	11/2018	Beaupre	D14/432
D833,441 S *	11/2018	Beaupre	D14/432
D833,442 S	11/2018	Wadsworth et al.	
D833,443 S *	11/2018	Wadsworth	D14/432
D834,024 S *	11/2018	Beaupre	D14/432
D834,550 S *	11/2018	Ryu	D14/138 G
D834,552 S	11/2018	Ryu et al.	
D835,623 S *	12/2018	Wadsworth	D14/432

(56) **References Cited**
U.S. PATENT DOCUMENTS

- 3,943,649 A 3/1976 Foley
- D249,766 S 10/1978 Munn



US D978,846 S

D836,115 S * 12/2018 Beaupre D14/432
 D840,382 S 2/2019 Ryu et al.
 D840,383 S 2/2019 Ryu et al.
 D840,987 S 2/2019 Ryu et al.
 D841,634 S 2/2019 Ryu et al.
 D844,011 S 3/2019 Lin
 D849,010 S 5/2019 Akana et al.
 D854,528 S 7/2019 Ryu et al.
 D855,042 S 7/2019 Ryu et al.
 D855,043 S 7/2019 Ryu et al.
 D855,044 S 7/2019 Cho et al.
 D855,599 S 8/2019 Ryu et al.
 D855,600 S 8/2019 Ryu et al.
 D856,337 S 8/2019 Akana et al.
 D856,338 S 8/2019 Akana et al.
 D863,245 S * 10/2019 Yuan D14/138 G
 D863,307 S 10/2019 Yi et al.
 D863,308 S 10/2019 Yi et al.
 D867,350 S 11/2019 Park et al.
 D868,057 S 11/2019 Kim et al.
 D870,706 S 12/2019 Lin
 D872,076 S 1/2020 Kim et al.
 D873,257 S * 1/2020 Park D14/248
 D873,258 S * 1/2020 Park D14/248
 D873,266 S 1/2020 Kim et al.
 D874,417 S 2/2020 Chong et al.
 D874,450 S 2/2020 Cha et al.
 D875,061 S 2/2020 Cho et al.
 D875,702 S * 2/2020 Kim D14/138 G
 D875,703 S * 2/2020 Kim D14/138 G
 D876,415 S 2/2020 Yi et al.
 D876,438 S 2/2020 Lin
 D877,110 S * 3/2020 Cho D14/138 G
 D877,710 S * 3/2020 Wu D14/138 G
 D879,064 S * 3/2020 Park D14/138 G
 D879,081 S * 3/2020 Kim D14/248
 D879,736 S * 3/2020 Park D14/138 G
 D883,942 S 5/2020 Cha et al.
 D883,945 S * 5/2020 Park D14/138 G
 D883,946 S 5/2020 Xu et al.
 D884,688 S 5/2020 Cha et al.
 D886,090 S 6/2020 Cha et al.
 D886,091 S 6/2020 Cha et al.
 D886,756 S 6/2020 Li et al.
 D886,757 S * 6/2020 Cho D14/138 G
 D886,813 S 6/2020 Cha et al.
 D888,030 S * 6/2020 Kim D14/248
 D888,701 S * 6/2020 Nam D14/248
 D890,152 S * 7/2020 Yi D14/248
 D893,490 S 8/2020 Akana et al.
 10,754,463 B2 8/2020 Kim
 D894,857 S 9/2020 Cha et al.
 D894,883 S 9/2020 Park et al.
 D895,627 S 9/2020 Akana et al.
 D897,979 S 10/2020 Choi et al.
 D900,112 S * 10/2020 Cho D14/439
 D900,778 S 11/2020 Cheng et al.
 D900,799 S 11/2020 Cho et al.
 D901,508 S * 11/2020 Akana D14/439
 D904,380 S * 12/2020 Seo D14/248
 D904,994 S * 12/2020 Lee D14/138 G
 D904,995 S * 12/2020 Baek D14/138 G
 D905,030 S * 12/2020 Seo D14/248
 D905,653 S 12/2020 Park et al.
 D905,669 S 12/2020 Park et al.
 D905,670 S * 12/2020 Seo D14/248
 D905,695 S 12/2020 Akana et al.
 D906,306 S * 12/2020 Akana D14/248
 D908,706 S 1/2021 Ahn et al.
 10,882,285 B2 * 1/2021 Kim C09J 7/29
 D912,057 S 3/2021 Chang
 D914,024 S 3/2021 Kim et al.
 D915,409 S * 4/2021 Koo D14/439
 D917,490 S * 4/2021 Lee D14/439
 D920,313 S * 5/2021 Seo D14/248
 11,009,911 B2 * 5/2021 Lin G06F 1/1637
 D922,999 S * 6/2021 Andre D14/341
 11,036,259 B2 * 6/2021 Chou G06F 1/1626
 11,050,911 B1 * 6/2021 Ondracek H04N 5/2254

D925,531 S 7/2021 Kim et al.
 D925,541 S 7/2021 Ahn et al.
 D926,176 S * 7/2021 Seo D14/248
 D926,765 S 8/2021 Akana et al.
 D926,770 S 8/2021 Akana et al.
 D928,144 S 8/2021 Satzger et al.
 11,093,006 B2 8/2021 Yu et al.
 11,106,076 B2 * 8/2021 Lee G02F 1/133512
 11,111,418 B2 * 9/2021 Colby B32B 27/283
 D933,655 S * 10/2021 Lyu D14/371
 D934,216 S * 10/2021 Seo D14/248
 D938,428 S * 12/2021 Akana D14/432
 D938,429 S * 12/2021 Akana D14/432
 D947,852 S * 4/2022 Lee D14/439
 2012/0309469 A1 12/2012 Fornara
 2014/0077690 A1 3/2014 Lee
 2015/0246514 A1 9/2015 LaColla et al.
 2015/0291854 A1 10/2015 Colby et al.
 2016/0286920 A1 * 10/2016 Lean H03K 17/9622
 2017/0297268 A1 10/2017 Witham et al.
 2017/0339261 A1 11/2017 Chiang
 2018/0196475 A1 7/2018 Bao et al.
 2018/0272669 A1 9/2018 Kim et al.
 2018/0307278 A1 10/2018 Mody et al.
 2019/0033922 A1 1/2019 Chou et al.
 2019/0047815 A1 2/2019 Kim
 2019/0098120 A1 3/2019 Deng
 2019/0215390 A1 7/2019 Liu et al.
 2019/0235574 A1 8/2019 Groves et al.
 2019/0339746 A1 11/2019 Kim et al.
 2020/0050047 A1 2/2020 Son et al.
 2020/0094467 A1 3/2020 Cho et al.
 2020/0117041 A1 4/2020 Nakamori et al.
 2020/0183523 A1 6/2020 Luo et al.
 2020/0198223 A1 6/2020 Sorensen et al.
 2020/0214154 A1 7/2020 Liang
 2020/0220958 A1 7/2020 Bian
 2020/0303664 A1 9/2020 Choi et al.
 2020/0305298 A1 9/2020 Lee et al.
 2020/0319677 A1 * 10/2020 Canning G06F 3/041
 2020/0348722 A1 * 11/2020 Lee G06F 1/1609
 2020/0355851 A1 11/2020 Yee et al.
 2020/0401227 A1 12/2020 Kim et al.
 2021/0183985 A1 * 6/2021 Lim H01L 27/3276
 2021/0204434 A1 * 7/2021 Hooton H05K 5/04
 2021/0204435 A1 * 7/2021 Choi H05K 5/04
 2021/0241984 A1 8/2021 Moon et al.
 2021/0252770 A1 8/2021 Lee et al.

FOREIGN PATENT DOCUMENTS

CN	303805685	2/2016
CN	304980691	3/2018
CN	304725453	7/2018
CN	304894674	* 11/2018
CN	304980691	* 1/2019
CN	305385342	10/2019
CN	305482127	12/2019
CN	305924944	7/2020
CN	305970076	8/2020
CN	305996647	8/2020
JP	D1585966	9/2016
KR	301025955.0000	10/2019
KR	300974404.0000	* 10/2020

OTHER PUBLICATIONS

Screen Protector for Apple iPhone 11 Pro, JTech, amazon.com, published by JTech on Aug. 23, 2017 © 1996-2020 Amazon.com, Inc., online, site visited Jun. 26, 2020. Available at URL: <https://www.amazon.co.uk/JETech-Screen-Protector-Friendly-Tempered/dp/B075175151> (Year: 2017).*

IPhone X Screen Protector, various manufacturers, dgit.com, published by John Callaham on Oct. 27, 2017 © 2020 DGIT, online, site visited Feb. 21, 2020. Available from Internet, URL: <https://dgit.com/iphone-x-screen-protectors-52439/> (Year: 2017).*

IPhone X Screen Protector, Zagg, amazon.com, published by Zagg, customer review with images from on Dec. 17, 2017 © 1996-2020,

online, site visited Feb. 21, 2020. Available at URL: <https://www.amazon.com/ZAGG-InvisibleShield-Definition-Tempered-Protector/dp/B074SCLR2S/?tag=at88-20&th=1> (Year: 2017).*

iPhone X Screen Protector, Olixar, youtube.com, published by MobileFun on Nov. 3, 2017 © not listed, online, site visited Feb. 24, 2020. Available from Internet, URL: <https://www.youtube.com/watch?v=gqSrfYDbal> (Year: 2017).*

iPhone X OLED Screen, Apple, rewatechnology.com, published by Phryne on Nov. 23, 2017 © 2008-2018, online, site visited Nov. 13, 2020. Available at URL: <https://blog.rewatechnology.com/iphone-x-oled-screen-total-teardown/> (Year: 2017).*

X30 Front Panel, VIVO, gizchina.com, posted by Qayyum Ajneri on Jan. 26, 2018 © 2012-2020 GizChina.com, Inc., online, site visited Sep. 1, 2020. Available at URL: <https://www.gizchina.com/2018/01/26/alleged-vivo-x30-front-panel-leaks-another-notch-design-appears/> (Year: 2018).*

Restriction/Election Office Action issued in Design U.S. Appl. No. 29/647,774 by the USPTO, dated Jul. 7, 2020, 8 pages.

Replacement Parts for Samsung Galaxy, MEI HE-Parts, amazon.com, posted by MEI HE-Parts on Mar. 7, 2019 © 1996-2020 Amazon.com, Inc., online, site visited Sep. 1, 2020. Available at URL: <https://www.amazon.com/Replacement-Samsung-Original-Display-Cell-phone/dp/B07PHX3R7M?th=1> (Year: 2019).

X30 Front Panel Leaks, VIVO, gizchina.com, posted by Qayyum Ajneri on Jan. 26, 2018 © 2012-2020 GizChina.com, Inc., online, site visited Sep. 1, 2020. Available at URL: <https://www.gizchina.com/2018/01/26/alleged-vivo-x30-front-panel-leaks-another-notch-design-appears/> (Year: 2018).

Tempered Glass for Samsung Galaxy, Islandse_Mobile, amazon.com, published by Islandse_Mobile on Aug. 30, 2019 © 1996-2020 Amazon.com, Inc., online, site visited Sep. 4, 2020. Available at URL: <https://www.amazon.com/Islandse%F0%9F%92%96%F0%9F%92%96-Samsung-Tempered-Protector-Without/dp/B07TRK...> (Year: 2019).

OEM Back LCD Screen Sticker Part for Samsung Galaxy, brand not listed, oan.cl, author and date not listed © 2020 Shopping Online, online, site visited Sep. 4, 2020. Available at URL: <https://www.oan.cl/oem-back-lcd-screen-sticker-part-for-samsung-galaxy-a30-galaxy-a30s/> (Year: 2020).

U.S. Office Action dated Sep. 23, 2020, issued in U.S. Appl. No. 29/647,774, 14 pages.

U.S. Office Action dated Sep. 23, 2020, issued in U.S. Appl. No. 29/691,104, 14 pages.

Module for Samsung Galaxy, Samsung, hotcomputers.ru, author unlisted, published on Mar. 20, 2015 © Online store "HotComputers", online, site visited Jun. 29, 2020. Available URL: <https://www.hotcomputers.ru/product/zhk-matrica-tachskrin-ams499qp01-5-samsung-galaxy-s4-i9500-belyj-1920x1080-full-hd/> (Year: 2015).

U.S. Restriction Requirement dated Aug. 11, 2020, issued in U.S. Appl. No. 29/647,763, 7 pages.

U.S. Restriction Requirement dated Aug. 11, 2020, issued in U.S. Appl. No. 29/647,773, 7 pages.

U.S. Notice of Allowance dated Jun. 17, 2021, issued in U.S. Appl. No. 29/647,774 (8 pages).

U.S. Office action dated Jan. 1, 2021, issued in U.S. Appl. No. 29/647,763 (16 pages).

U.S. Office action dated Jan. 11, 2021, issued in U.S. Appl. No. 29/647,773 (14 pages).

U.S. Office Action dated Oct. 1, 2021, issued in U.S. Appl. No. 29/647,773 (12 pages).

U.S. Final Office Action dated Jan. 18, 2022, issued in U.S. Appl. No. 29/691,104 (8 pages).

Notice of Allowance for U.S. Appl. No. 29/647,763 dated May 24, 2022, 10 pages.

Notice of Allowance for U.S. Appl. No. 29/647,773 dated May 24, 2022, 10 pages.

NPL #1: Mate 20, Huawei, amazon.com, published by Huawei, first available on Aug. 10, 2018 © 1996-2020 Amazon.com, Inc., online, site visited May 16, 2022. Available at URL: <https://www.amazon.com/Huawei-Display-Battery-Unlocked-HMA-L29/dp/B07KMFRPR1> (Year: 2018).

NPL #2: Screen Protector for Huawei Mate 20, Mr. Shield, amazon.com, published by Mr. Shield, first available on Jan. 24, 2018 © 1996-2020 Amazon.com, Inc., online, site visited May 16, 2022. Available at URL: <https://www.amazon.com/Mr-Shield-Tempered-Protector-Lifetime-Replacement/dp/B07PJX9JWR> (Year: 2018).

U.S. Advisory Action dated Jun. 20, 2022, issued in U.S. Appl. No. 29/691,104 (4 pages).

U.S. Notice of Allowance dated Sep. 28, 2022, issued in U.S. Appl. No. 29/647,763 (8 pages).

U.S. Notice of Allowance dated Sep. 28, 2022, issued in U.S. Appl. No. 29/647,773 (8 pages).

U.S. Ex Parte Quayle Action dated Nov. 30, 2022, issued in U.S. Appl. No. 29/691,104 (6 pages).

* cited by examiner

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Assistant Examiner — Altaira J Swangin

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(57)

CLAIM

The ornamental design for display module, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a first embodiment of the display module according to the present design;
 FIG. 2 is a front view of the first embodiment thereof;
 FIG. 3 is a rear view of the first embodiment thereof;
 FIG. 4 is a left side view of the first embodiment thereof;
 FIG. 5 is a right side view of the first embodiment thereof;
 FIG. 6 is a top view of the first embodiment thereof;
 FIG. 7 is a bottom view of the first embodiment thereof;
 FIG. 8 is a perspective view of a second embodiment of the display module according to the present design;
 FIG. 9 is a front view of the second embodiment thereof;
 FIG. 10 is a rear view of the second embodiment thereof;
 FIG. 11 is a left side view of the second embodiment thereof;
 FIG. 12 is a right side view of the second embodiment thereof;
 FIG. 13 is a top view of the second embodiment thereof;
 FIG. 14 is a bottom view of the second embodiment thereof;
 FIG. 15 is a perspective view of a third embodiment of the display module according to the present design;
 FIG. 16 is a front view of the third embodiment thereof;
 FIG. 17 is a rear view of the third embodiment thereof;
 FIG. 18 is a left side view of the third embodiment thereof;
 FIG. 19 is a right side view of the third embodiment thereof;
 FIG. 20 is a top view of the third embodiment thereof; and,
 FIG. 21 is a bottom view of the third embodiment thereof.
 The broken lines shown in the drawings represent portions of the display module that form no part of the claimed design.

1 Claim, 21 Drawing Sheets

FIG. 1

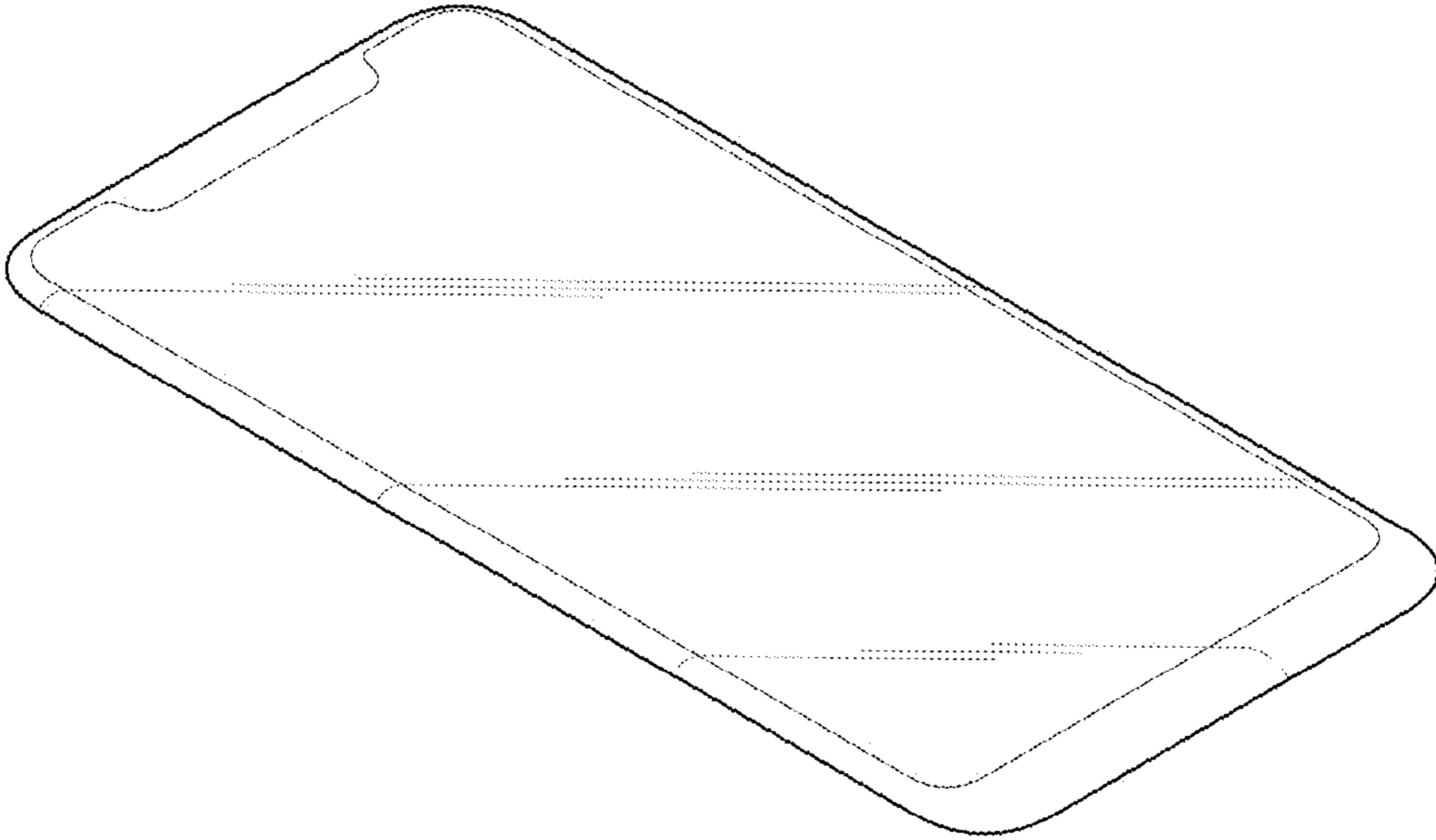


FIG. 2

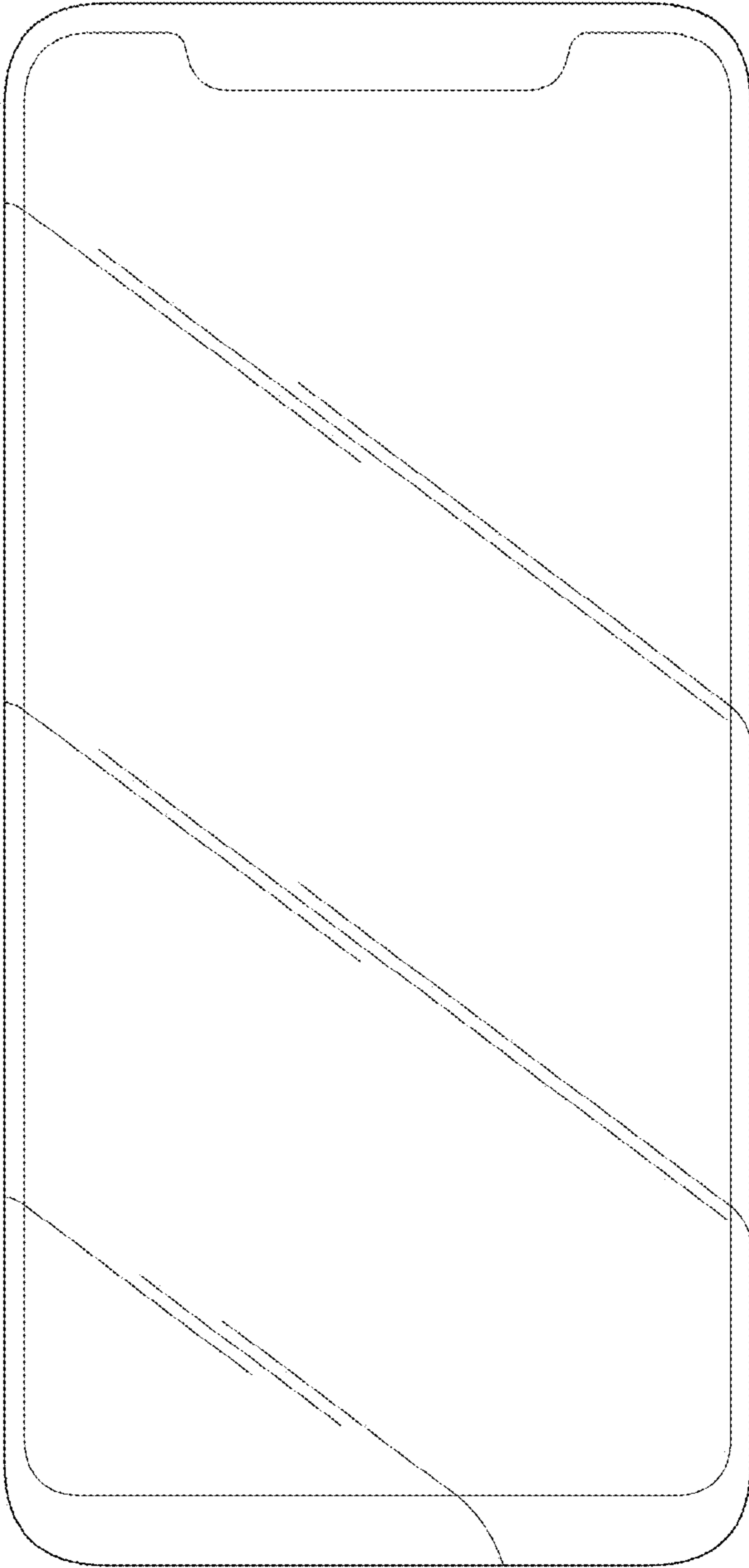


FIG. 3

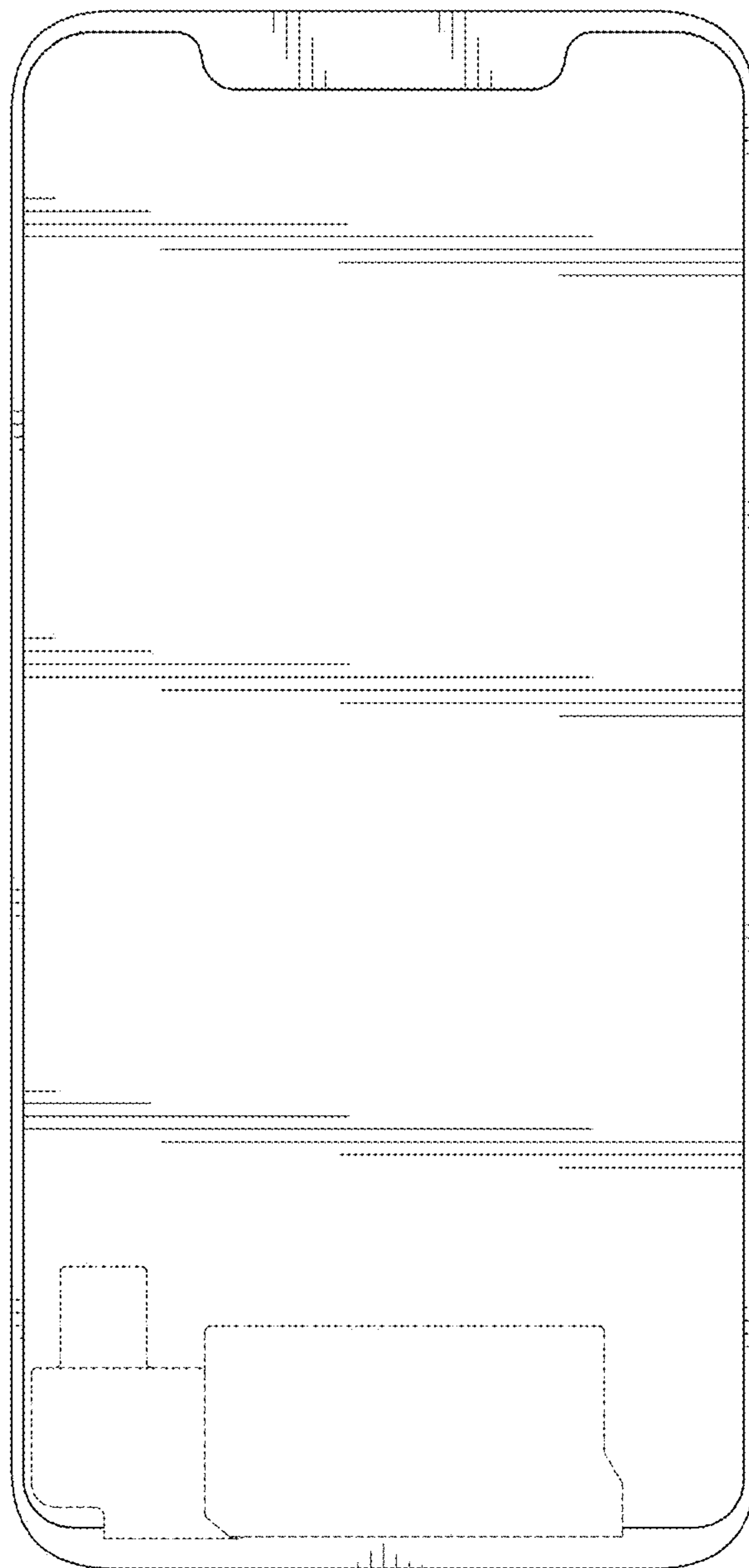


FIG. 4



FIG. 5



FIG. 6

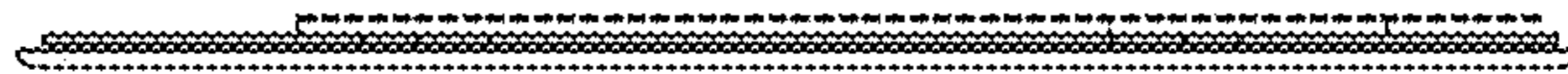


FIG. 7

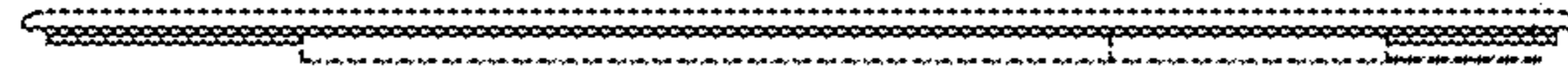


FIG. 8

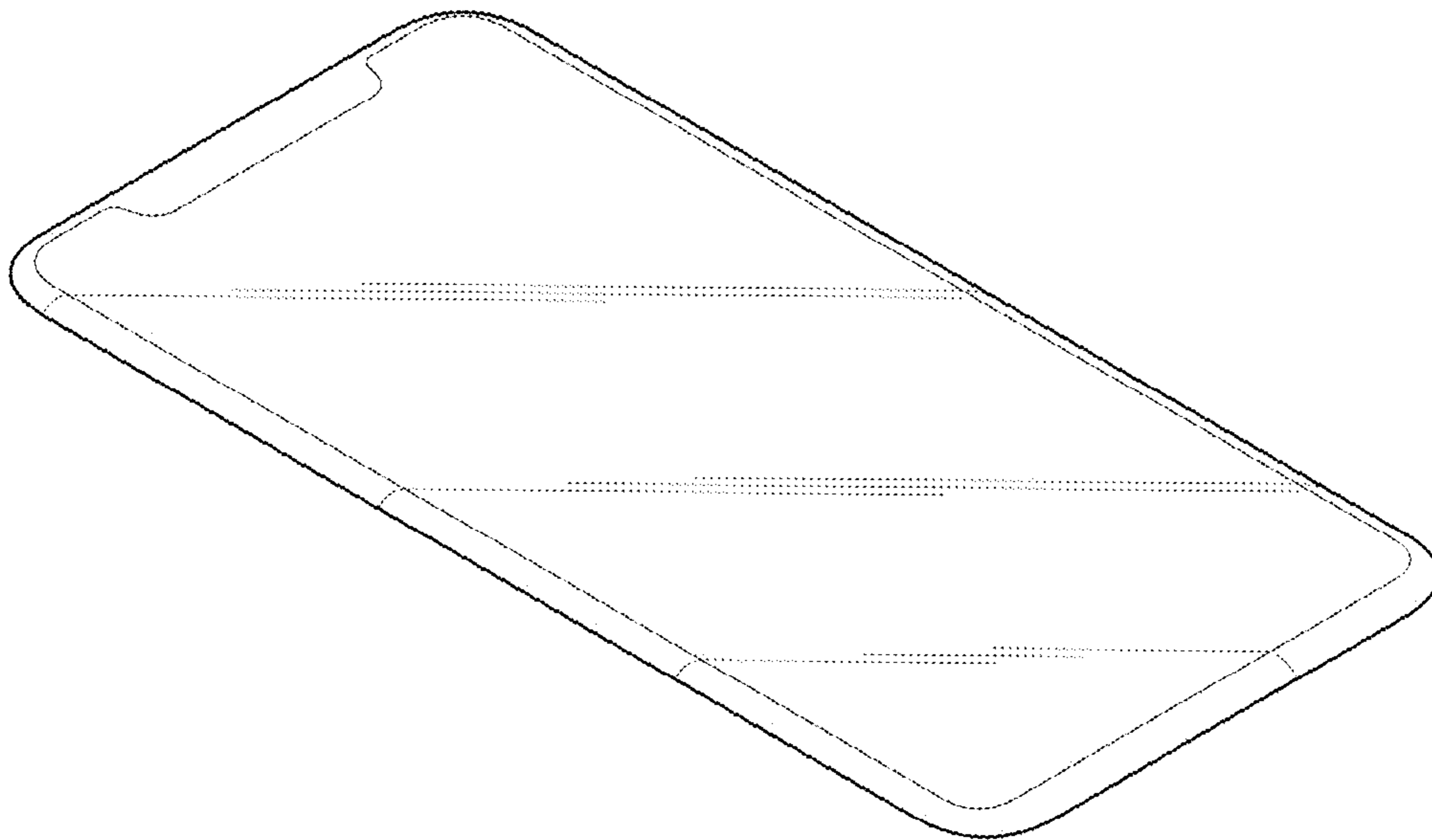


FIG. 9

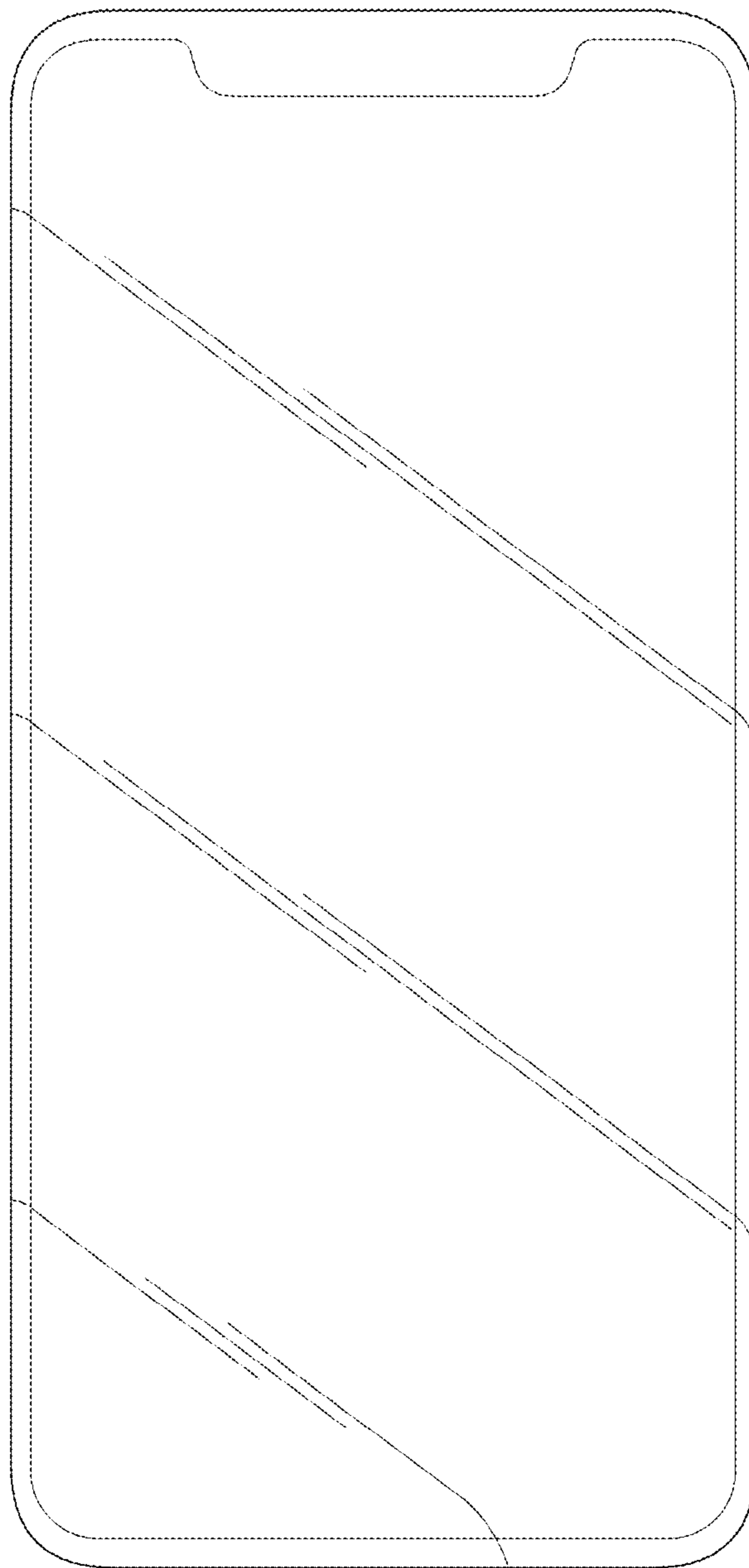


FIG. 10

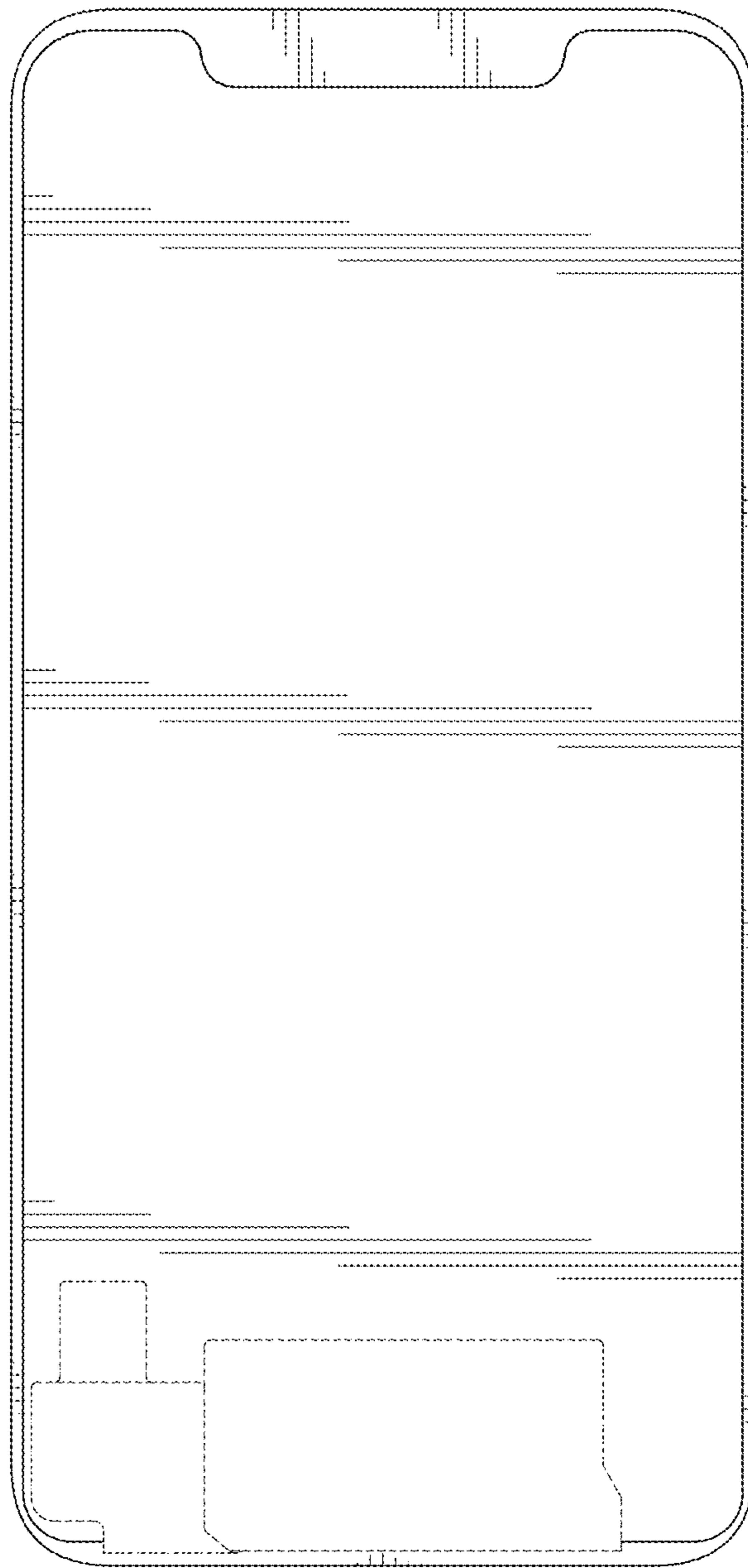


FIG. 11



FIG. 12

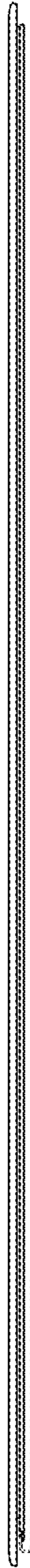


FIG. 13

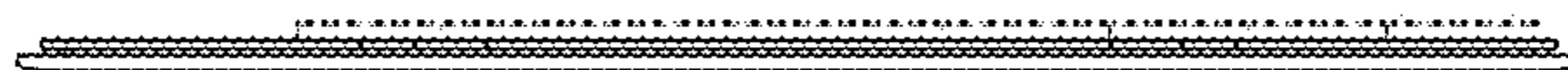


FIG. 14

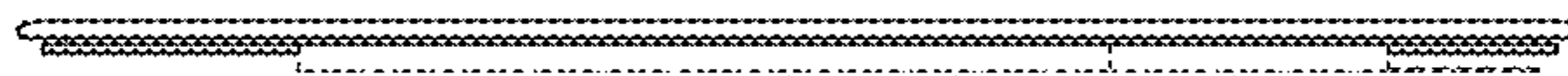


FIG. 15

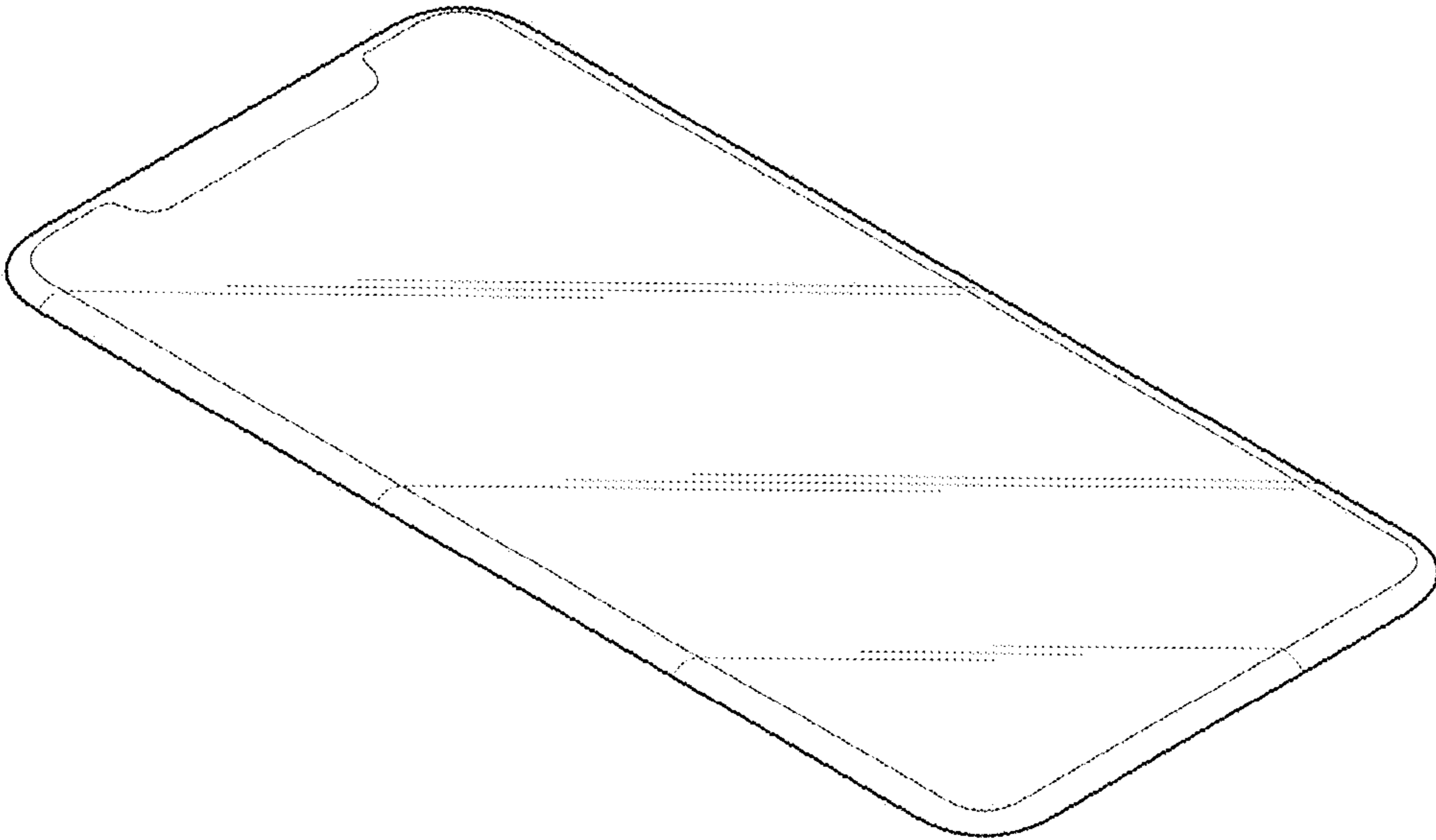


FIG. 16

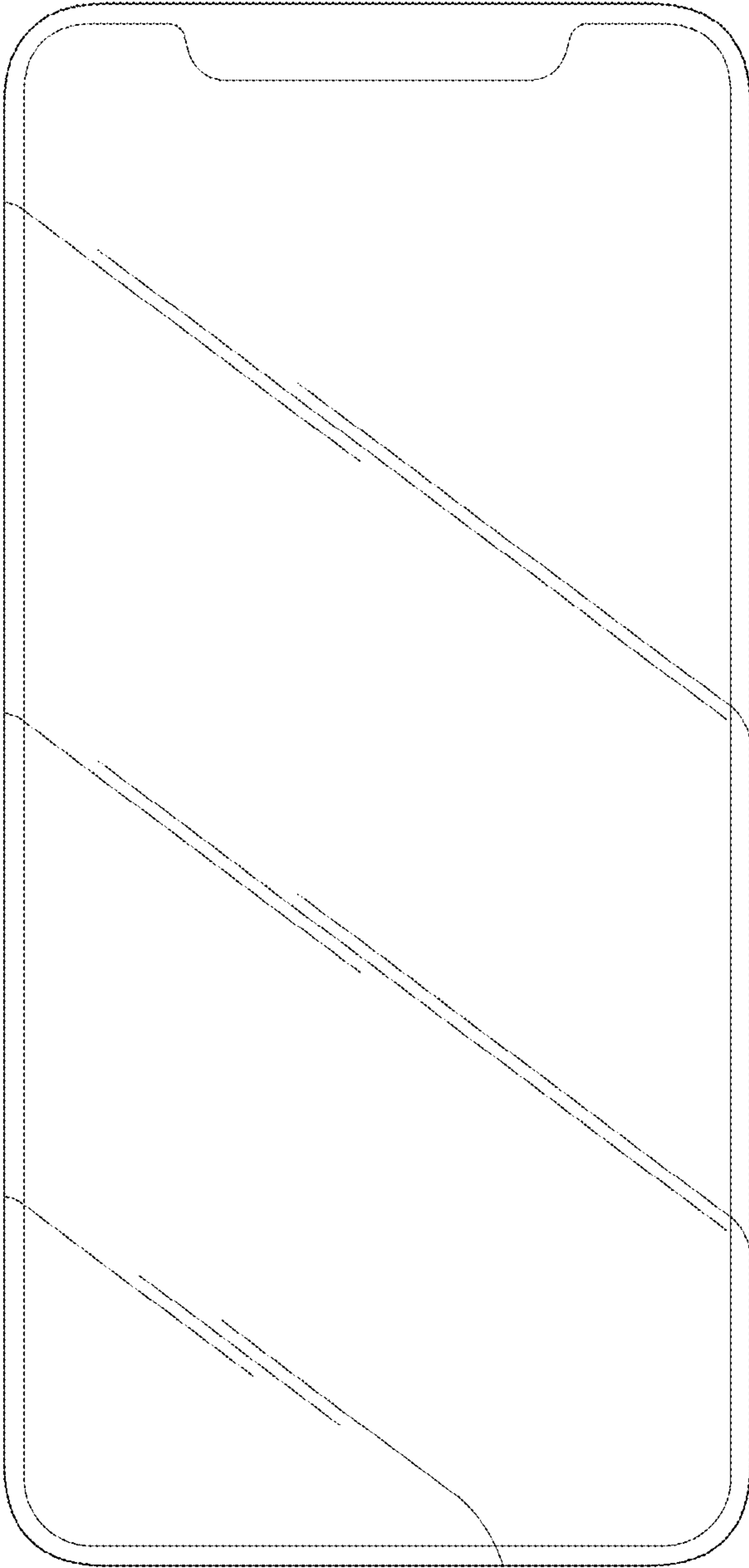


FIG. 17

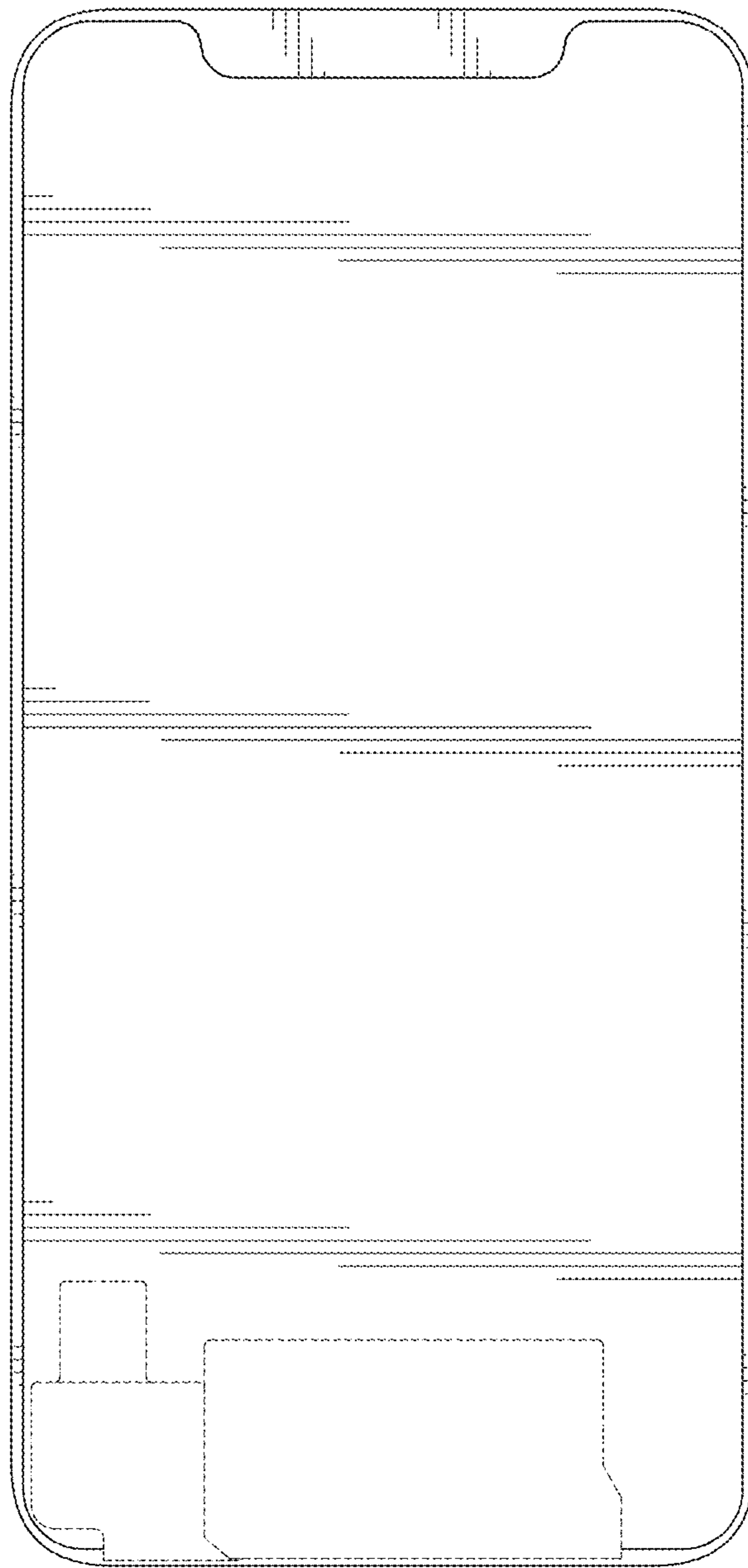


FIG. 18



FIG. 19



FIG. 20

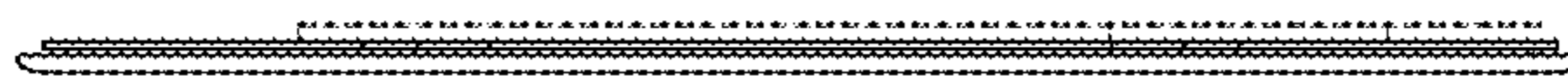


FIG. 21

