US0D1060233S

(12) United States Design Patent

Akana et al.

(10) Patent No.: US D1,060,233 S
(45) Date of Patent: ** Feb. 4, 2025

(54) **CHARGING MODULE**

(71) Applicant: **Apple Inc.**, Cupertino, CA (US)

(72) Inventors: **Jody Akana**, San Francisco, CA (US); **Molly Anderson**, San Francisco, CA (US); **Bartley K. Andre**, Palo Alto, CA (US); **Shota Aoyagi**, San Francisco, CA (US); **Anthony Michael Ashcroft**, San Francisco, CA (US); **Marine C. Bataille**, San Francisco, CA (US); **Jeremy Bataillou**, San Francisco, CA (US); **Abidur Rahman Chowdhury**, San Francisco, CA (US); **Clara Geneviéve Marine Courtaigne**, Palo Alto, CA (US); **Markus Diebel**, San Francisco, CA (US); **Jonathan Gomez Garcia**, San Francisco, CA (US); **M. Evans Hankey**, San Francisco, CA (US); **Richard P. Howarth**, San Francisco, CA (US); **Jonathan P. Ive**, San Francisco, CA (US); **Julian Jaede**, San Francisco, CA (US); **Duncan Robert Kerr**, San Francisco, CA (US); **Peter Russell-Clarke**, San Francisco, CA (US); **Benjamin Andrew Shaffer**, San Jose, CA (US); **Joe Sung-Ho Tan**, Vienna (AT); **Clement Tissandier**, San Francisco, CA (US); **Eugene Antony Whang**, San Francisco, CA (US)

(73) Assignee: **Apple Inc.**, Cupertino, CA (US)

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

(21) Appl. No.: **29/818,038**

(22) Filed: **Dec. 6, 2021**

Related U.S. Application Data

(63) Continuation of application No. 29/744,879, filed on Jul. 31, 2020, now Pat. No. Des. 937,764.

(51) **LOC (15) Cl.** **13-02**

(52) **U.S. Cl.**
USPC **D13/108**

(58) **Field of Classification Search**
USPC D13/107, 108, 118, 119, 184, 199, 133, D13/146, 110
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

D630,163 S 1/2011 Yeh
D650,334 S ‡ 12/2011 Matsuoka D13/133
(Continued)

FOREIGN PATENT DOCUMENTS

EM 007848684-0004 ‡ 5/2020
JP 1614416 S ‡ 9/2018
KR 30-10467590000 ‡ 2/2020

OTHER PUBLICATIONS

"Ravpower Power Your Life" Japanese Patent Office Design Division, Document HC30012754, dated Sep. 14, 2018, by the JPO.

Primary Examiner — Christy Nemeth
(74) *Attorney, Agent, or Firm* — Sterne, Kessler, Goldstein & Fox P.L.L.C.

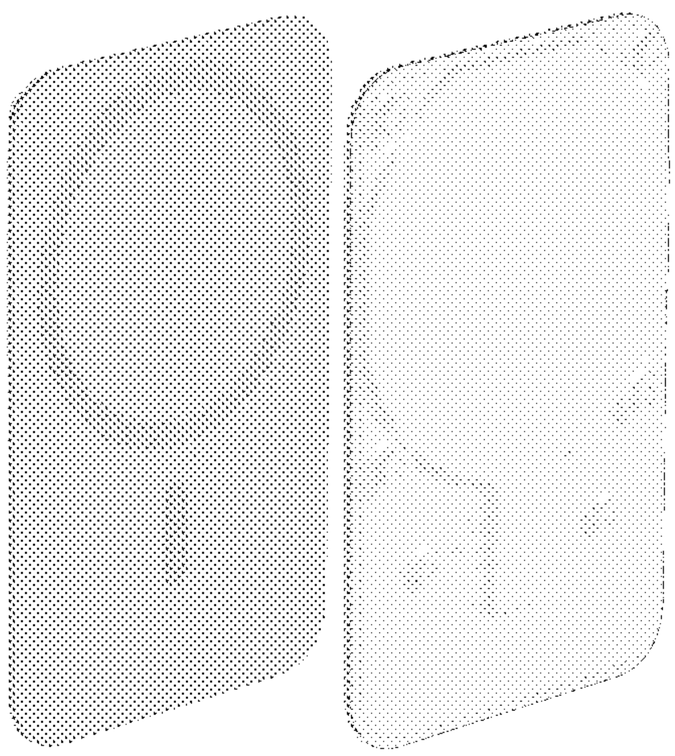
(57) **CLAIM**

The ornamental design for a charging module as shown and described.

DESCRIPTION

FIG. **1** is a top front perspective view of a charging module showing the claimed design;
FIG. **2** is a top rear perspective view thereof;
FIG. **3** is a bottom view thereof;
FIG. **4** is a top view thereof;
FIG. **5** is a left side view thereof;
FIG. **6** is a right side view thereof;
FIG. **7** is a front view thereof; and,
FIG. **8** is a rear view thereof.

(Continued)



The faded areas show portions of the charging module that form no part of the claimed design. The dot-dash broken lines denote the boundary of the claim and form no part of the claimed design.

1 Claim, 5 Drawing Sheets

(58) **Field of Classification Search**
CPC B60L 53/10; B60L 53/16; B60L 53/18; H02J 7/00; H02J 7/02; H02J 7/025; H02J 7/0013; H02J 7/0042; H02J 7/0044; H02J 7/0045; H02J 50/005; H02J 50/10; H05K 5/02; H05K 5/0217; H05K 5/0247; H01R 13/10; H01R 13/11
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D658,603	S	‡	5/2012	Egawa	D13/180
D674,391	S	‡	1/2013	Chatterjee et al.	
D682,199	S	‡	5/2013	Rautiainen	
D694,182	S	‡	11/2013	Lee et al.	
D718,236	S	‡	11/2014	Murray	
D719,505	S	‡	12/2014	Kim et al.	
D720,688	S	‡	1/2015	Popper et al.	
D722,962	S	‡	2/2015	Kim et al.	
D727,259	S	‡	4/2015	Hwang	
D735,131	S	‡	7/2015	Akana et al.	
D765,597	S		9/2016	Kim et al.	
D772,813	S	‡	11/2016	Wahl	
D777,103	S	‡	1/2017	Park	
D777,662	S	‡	1/2017	Price	D13/103
D786,193	S	‡	5/2017	Akana et al.	
D786,791	S	‡	5/2017	Jeong et al.	
D788,034	S	‡	5/2017	Gschwandtl	D13/108
D793,958	S	‡	8/2017	Rautiainen	
D795,182	S	‡	8/2017	Akana et al.	
D795,183	S	‡	8/2017	Akana et al.	
D796,434	S	‡	9/2017	Li	
9,787,129	B2	‡	10/2017	Green et al.	
D812,556	S	‡	3/2018	Xu	
D815,593	S	‡	4/2018	Alves et al.	
D816,029	S	‡	4/2018	Dai	D13/108
D821,309	S	‡	6/2018	Barnard	
D842,806	S	‡	3/2019	Song	D13/108
D849,683	S	‡	5/2019	Lee	
D850,370	S	‡	6/2019	Lee	
D850,371	S	‡	6/2019	Yun	
D856,925	S		8/2019	Chun	
D861,602	S	‡	10/2019	Feng	
D865,666	S	‡	11/2019	Roberts	D13/108
D865,667	S	‡	11/2019	Roberts	
D872,690	S		1/2020	Williams et al.	
D873,213	S		1/2020	Wu	
D875,041	S	‡	2/2020	Chen et al.	
D875,678	S	‡	2/2020	Kim et al.	
D876,356	S	‡	2/2020	Tanaka	
D877,070	S		3/2020	Lemelson et al.	
D878,290	S		3/2020	Lee	
D883,209	S	‡	5/2020	Liao	D13/110
D883,921	S	‡	5/2020	Ryu et al.	
D886,059	S		6/2020	Hu	
D886,734	S	‡	6/2020	Andersson	D13/108
D886,736	S		6/2020	Worthy	
D887,974	S	‡	6/2020	Chen et al.	
D887,977	S	‡	6/2020	Weinstein	H02J 7/0027 D13/108
D890,095	S	‡	7/2020	Liao	D13/110
D893,423	S		8/2020	Nishimura et al.	
D894,191	S	‡	8/2020	Turksu	D14/434
D900,737	S	‡	11/2020	Hsu	D13/108
D905,631	S		12/2020	Nauroy	
D906,009	S		12/2020	Entelis et al.	
D906,959	S		1/2021	Turksu et al.	
D908,621	S	‡	1/2021	Akana	D13/108
D909,968	S	‡	2/2021	Chen	D13/108
D911,955	S	‡	3/2021	Turksu	D13/108
D916,695	S	‡	4/2021	Lee	D14/253
D917,452	S	‡	4/2021	Lee	D14/253
D918,135	S	‡	5/2021	Akana	D13/108
D924,132	S	‡	7/2021	Turksu	D13/108
D937,764	S	*	12/2021	Akana	D13/107
D952,329	S	*	5/2022	Akana	D3/218
D952,562	S	*	5/2022	Akana	D13/119
D972,503	S	*	12/2022	Akana	D13/108
D976,820	S	*	1/2023	Hu	H02J 7/0025 D13/108
D978,077	S	*	2/2023	Li	D13/108
D1,008,952	S	*	12/2023	Leeds-Frank	D13/108
D1,009,787	S	*	1/2024	Li	D13/108
D1,011,287	S	*	1/2024	Li	D13/108
D1,011,288	S	*	1/2024	Li	D13/108
D1,014,432	S	*	2/2024	Sun	D13/108
D1,017,539	S	*	3/2024	Dong	D13/108
D1,019,550	S	*	3/2024	Sun	D13/108
D1,025,902	S	*	5/2024	Li	D13/103
D1,028,873	S	*	5/2024	Zhai	D13/108
D1,028,885	S	*	5/2024	Zeng	D13/108
D1,029,758	S	*	6/2024	Chen	D13/107
D1,030,665	S	*	6/2024	Li	D13/108
D1,031,650	S	*	6/2024	Gao	D13/110
D1,033,354	S	*	7/2024	Wu	D13/108
D1,040,739	S	*	9/2024	Chen	D13/103
2022/0045527	A1	*	2/2022	Karanikos	H01F 27/366

* cited by examiner
‡ imported from a related application

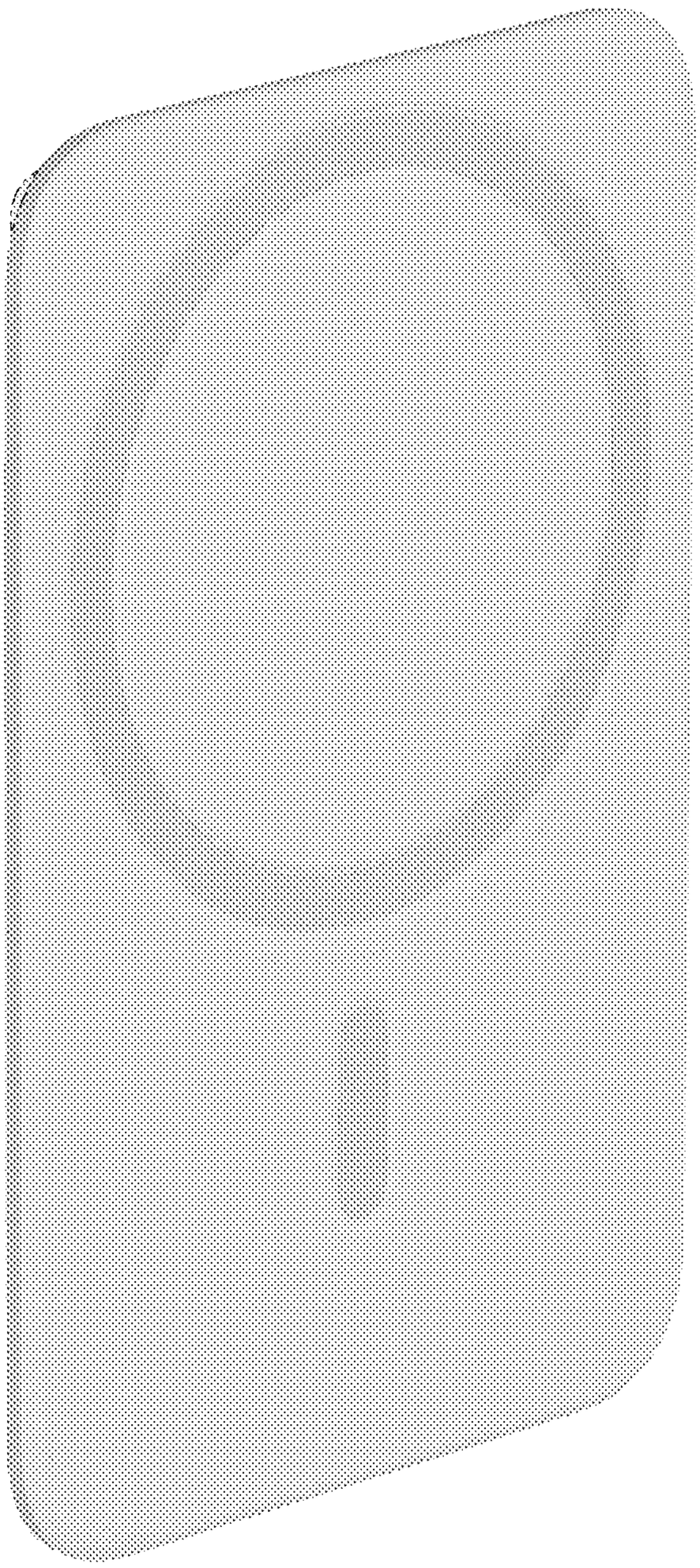


FIG. 1

FIG. 2

FIG. 3

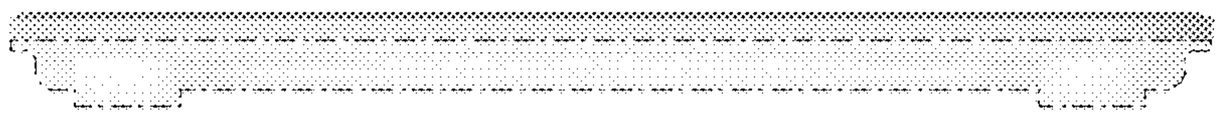


FIG. 4

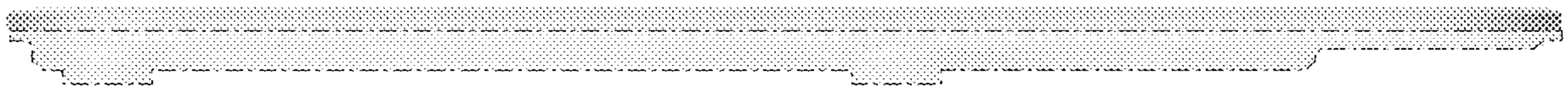


FIG. 5

FIG. 6

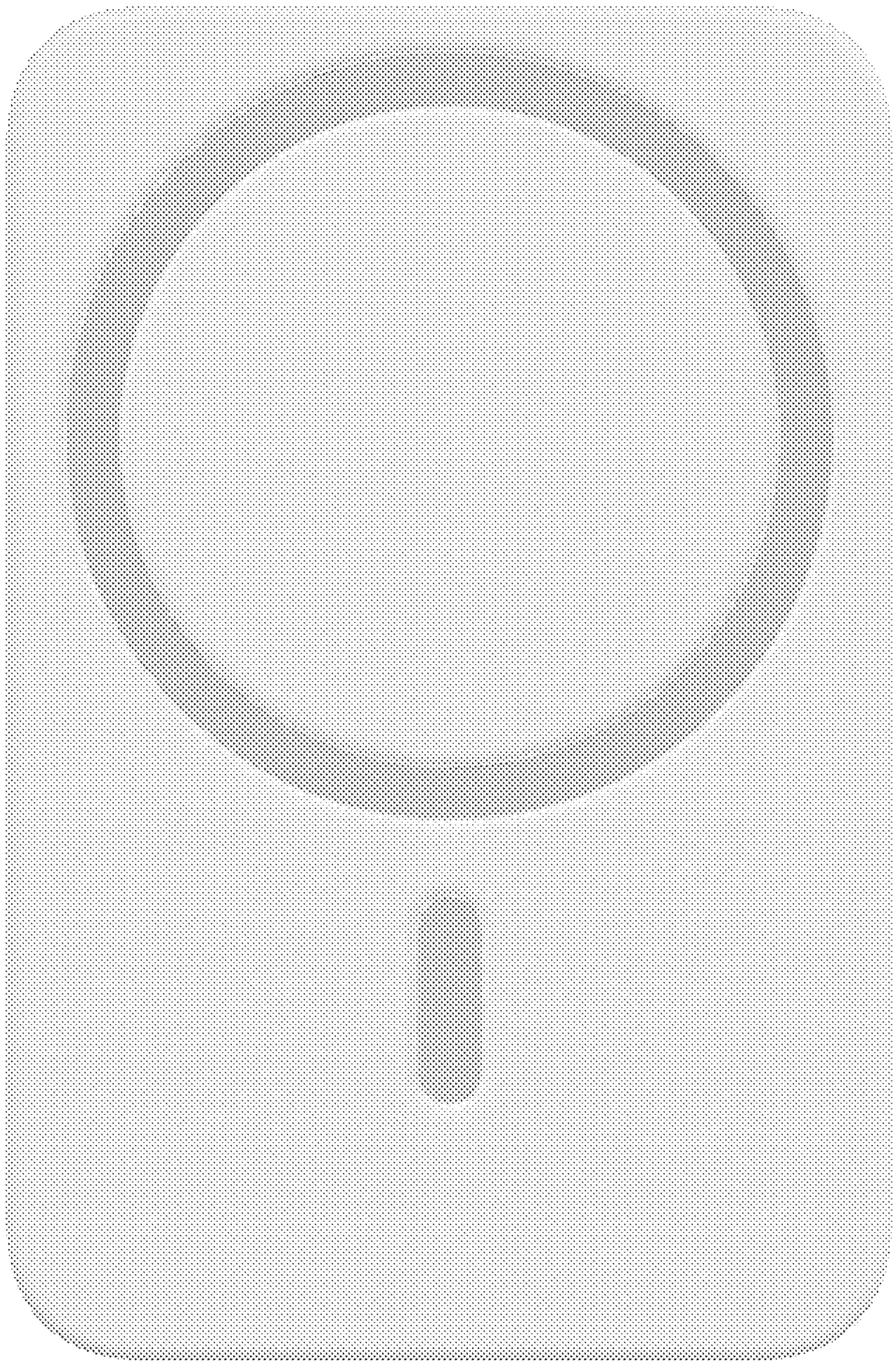


FIG. 7

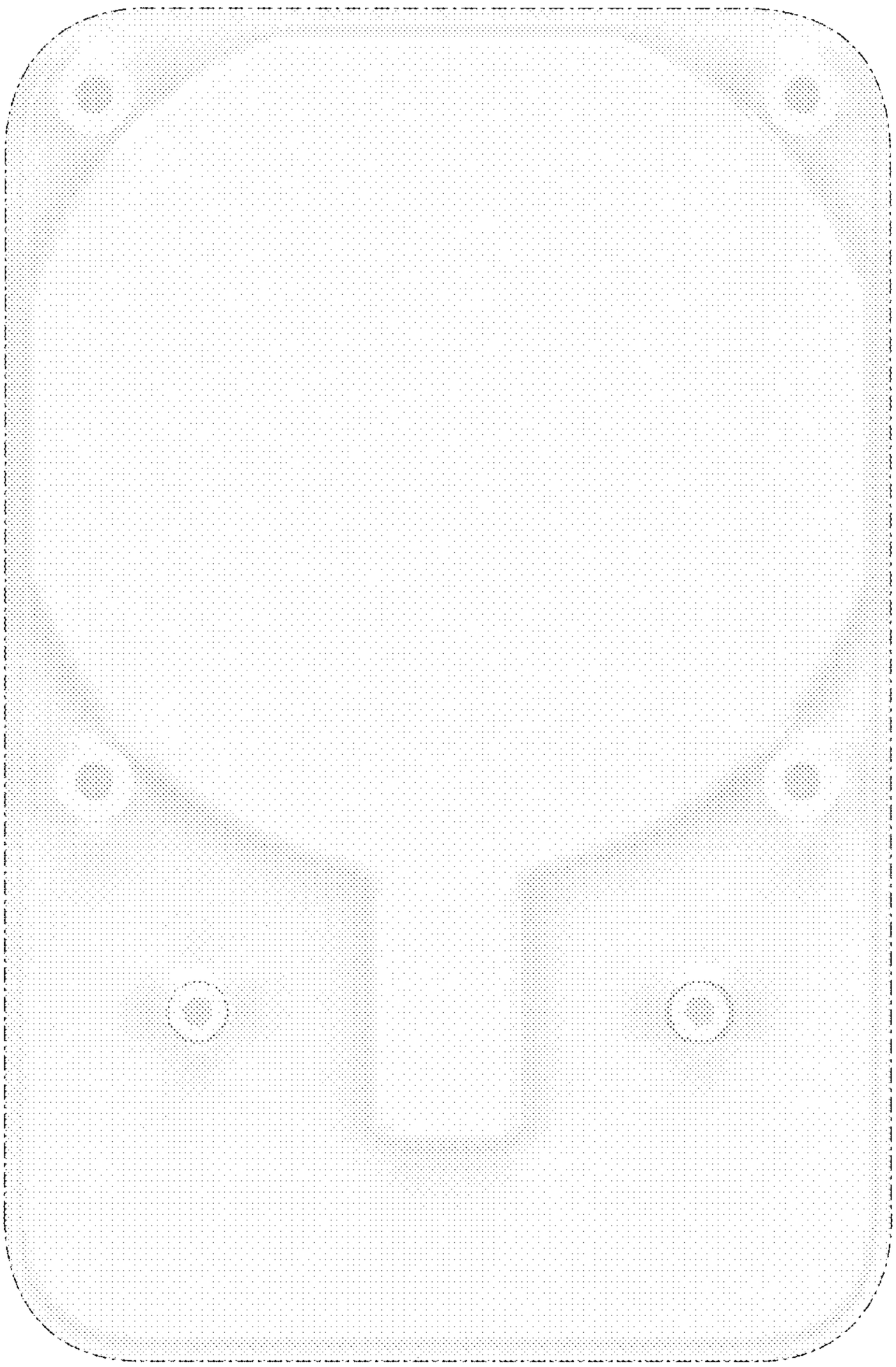


FIG. 8