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(12) **United States Design Patent**
Song

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(54) **AUTONOMOUS FLOOR-CLEANING APPARATUS**

(71) Applicant: **Hongli Song**, Beijing (CN)

(72) Inventor: **Hongli Song**, Beijing (CN)

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

(21) Appl. No.: **29/622,491**

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(51) **LOC (12) Cl.** **15-05**

(52) **U.S. Cl.**
USPC **D32/21**

(58) **Field of Classification Search**
USPC D32/15, 17, 18, 21-24, 31
CPC E04H 4/1654; A47L 9/2842; A47L 9/26;
A47L 9/325; A47L 9/009; A47L 11/34;
A47L 5/362; A47L 5/365; A47L 7/0004;
A47L 7/0019

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D556,961 S *	12/2007	Swyst	.....	D15/199
D659,311 S *	5/2012	Geringer	.....	D32/21
D660,530 S *	5/2012	Geringer	.....	D32/21
D669,235 S *	10/2012	Bassett	.....	D32/21
D670,877 S *	11/2012	Geringer	.....	D32/21
D690,478 S *	9/2013	Li	.....	D32/21
D771,333 S *	11/2016	Verhoorn	.....	D32/21
D771,884 S *	11/2016	Ninomiya	.....	D32/21

D781,512 S *	3/2017	Neumann	.....	D32/21
D835,869 S *	12/2018	Li	.....	D32/21
D840,617 S *	2/2019	Dou	.....	D32/21
D843,671 S *	3/2019	Chei	.....	D32/21
D860,559 S *	9/2019	Thackray	.....	D32/21
2012/0086389 A1 *	4/2012	Li	.....	A47L 9/2805 320/107
2012/0199006 A1 *	8/2012	Swett	.....	A47L 9/106 96/417
2012/0311813 A1 *	12/2012	Gilbert, Jr.	.....	A47L 11/24 15/347
2016/0051110 A1 *	2/2016	Cao	.....	A47L 9/009 15/324

* cited by examiner

Primary Examiner — Michelle E. Wilson

(74) *Attorney, Agent, or Firm* — Che-Yang Chen; Law Offices of Scott Warmuth

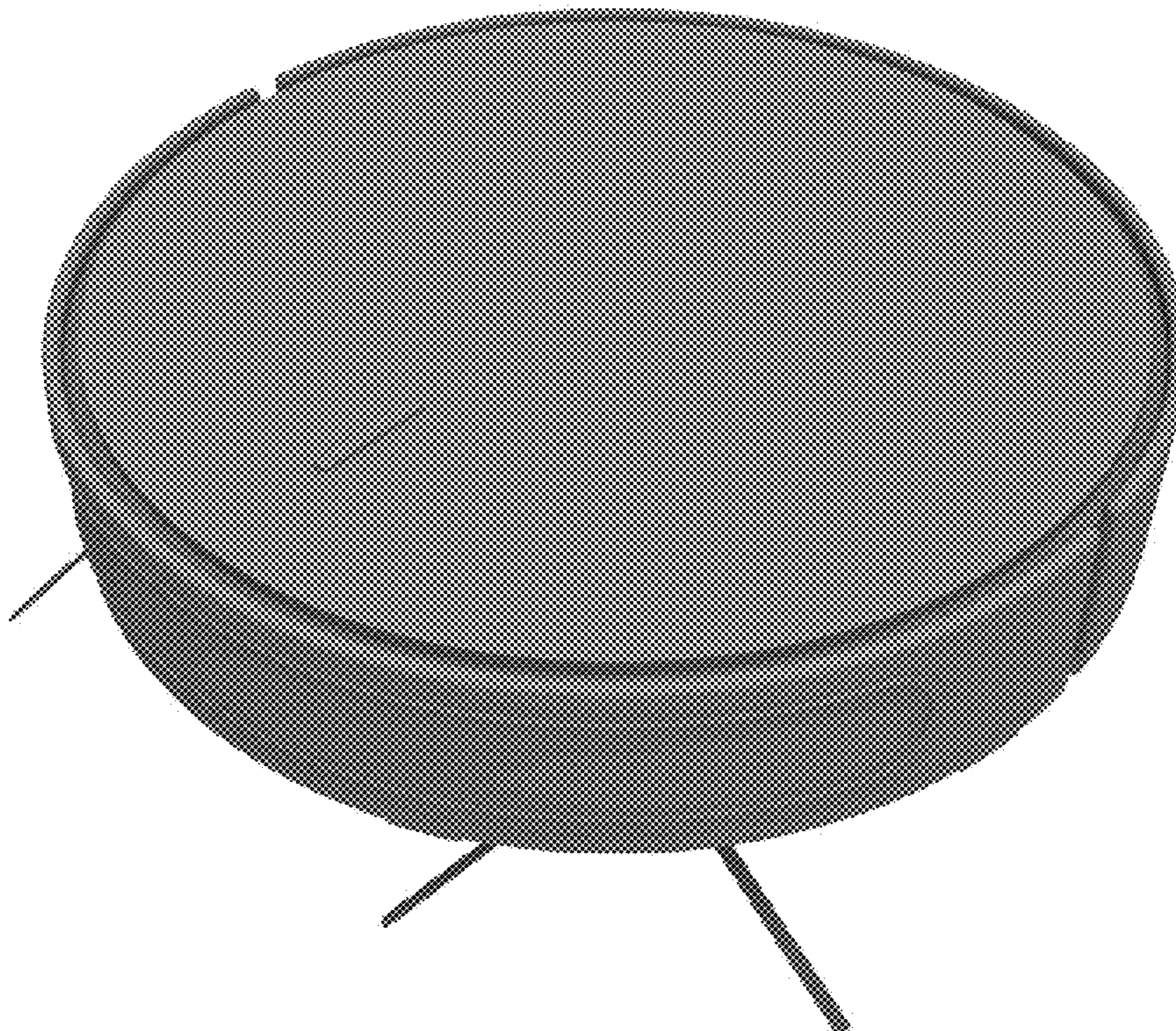
(57) **CLAIM**

The ornamental design for an autonomous floor-cleaning apparatus, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of the autonomous floor-cleaning apparatus showing my new design; FIG. 2 is a front elevational view thereof; FIG. 3 is a rear elevational view thereof; FIG. 4 is a left side elevational view thereof; FIG. 5 is a right side elevational thereof; FIG. 6 is a top plan view thereof; and, FIG. 7 is a bottom plan view thereof.

1 Claim, 7 Drawing Sheets



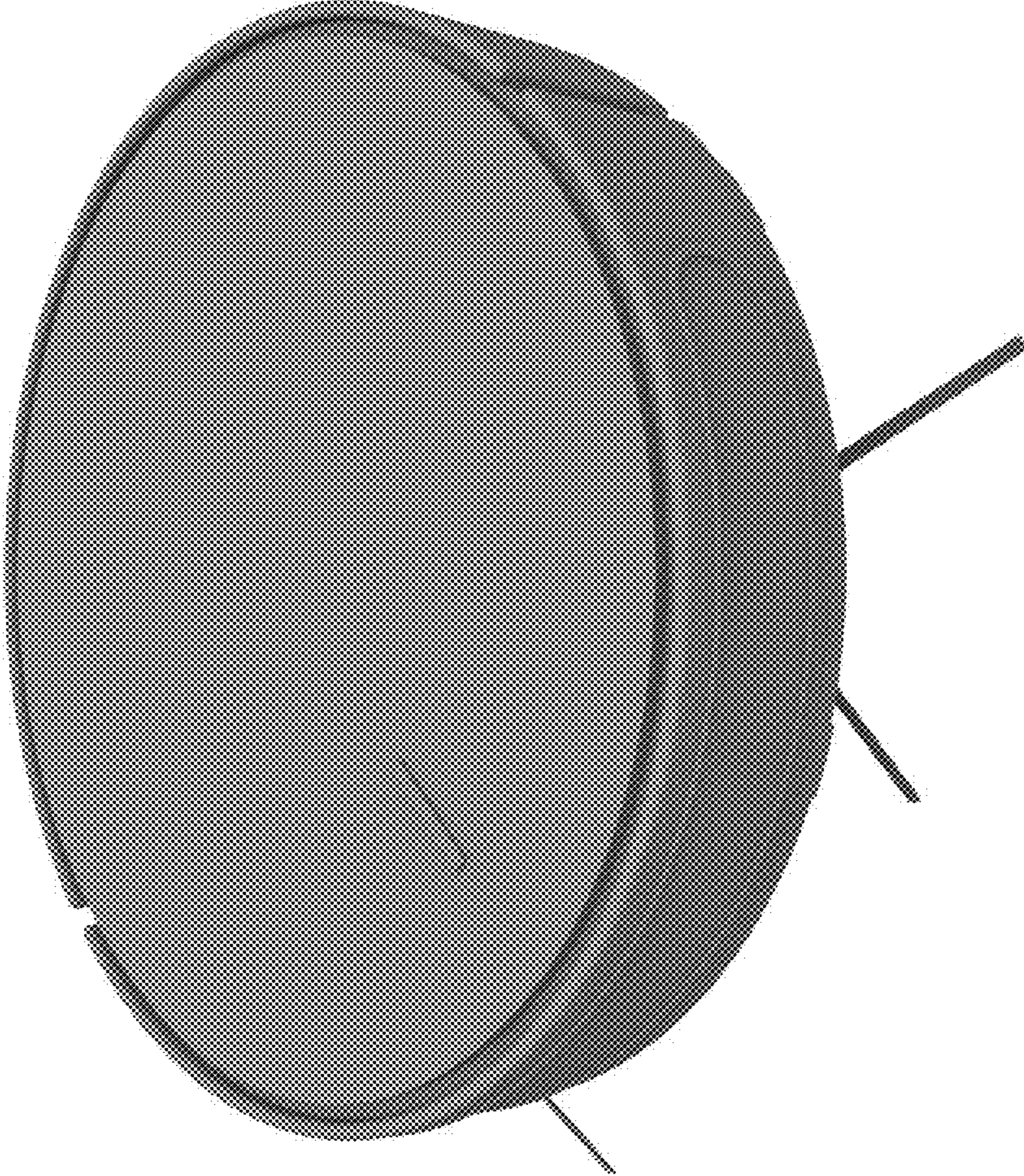


FIG. 1

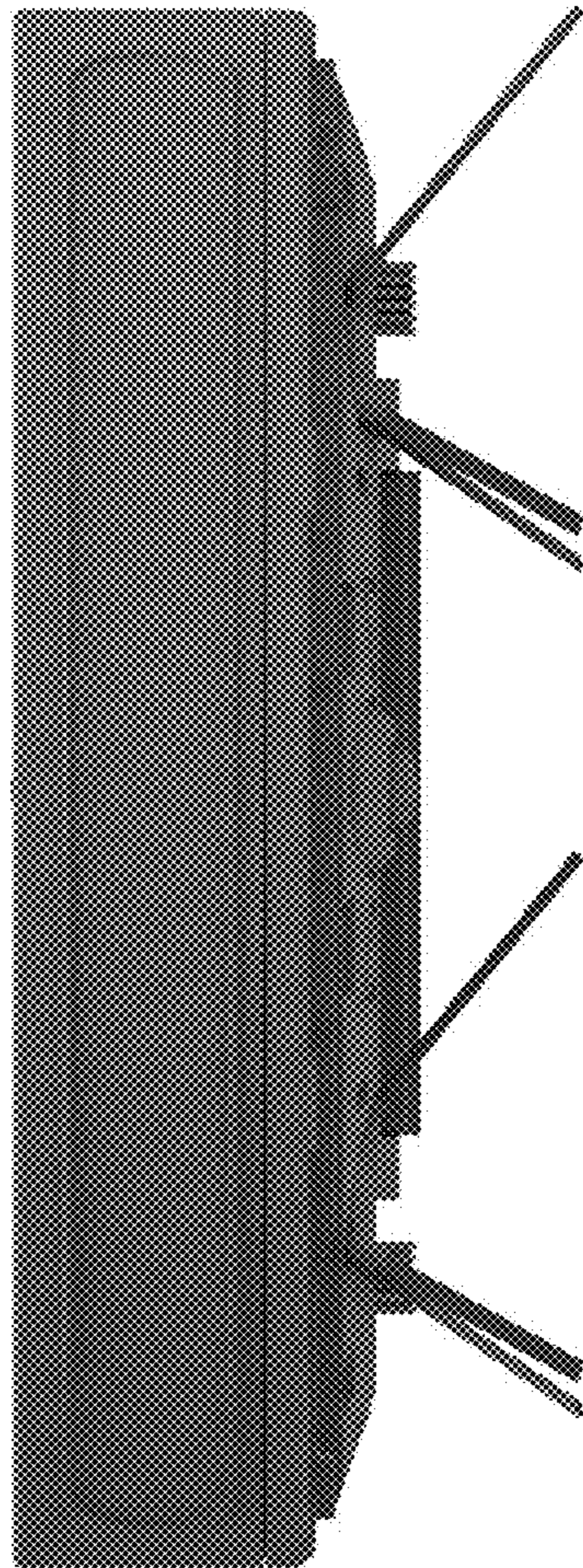


FIG. 2

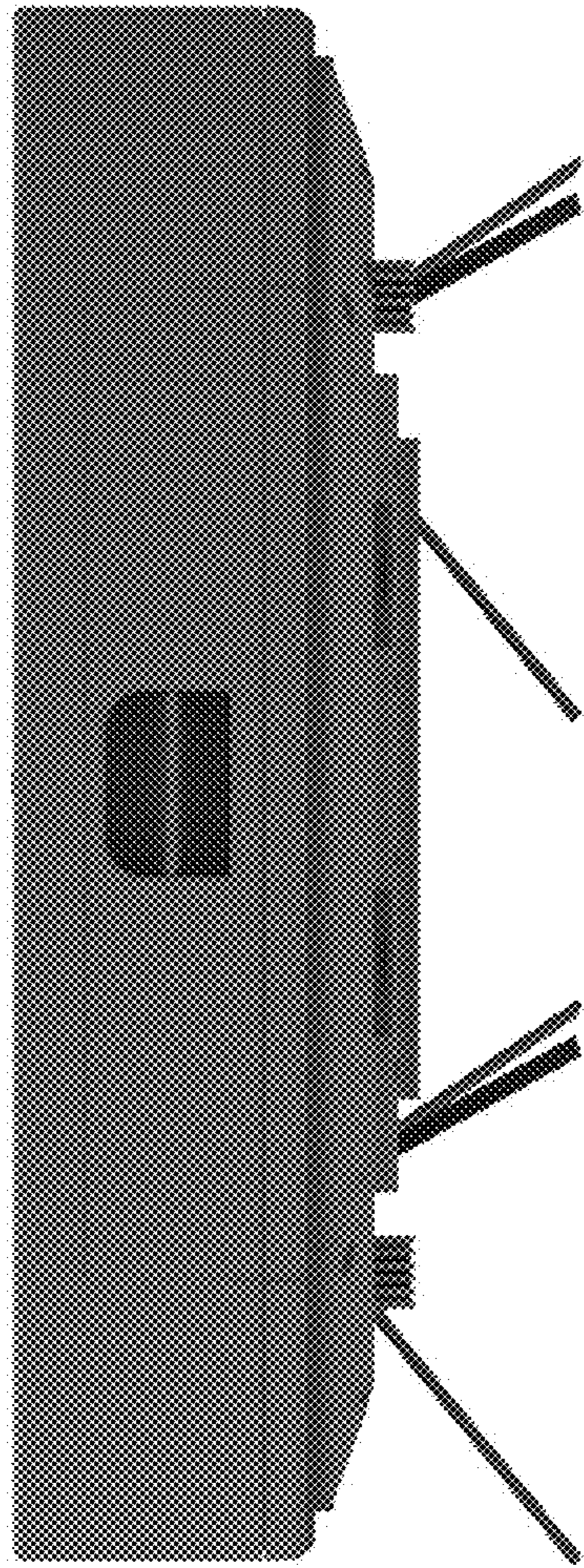


FIG. 3

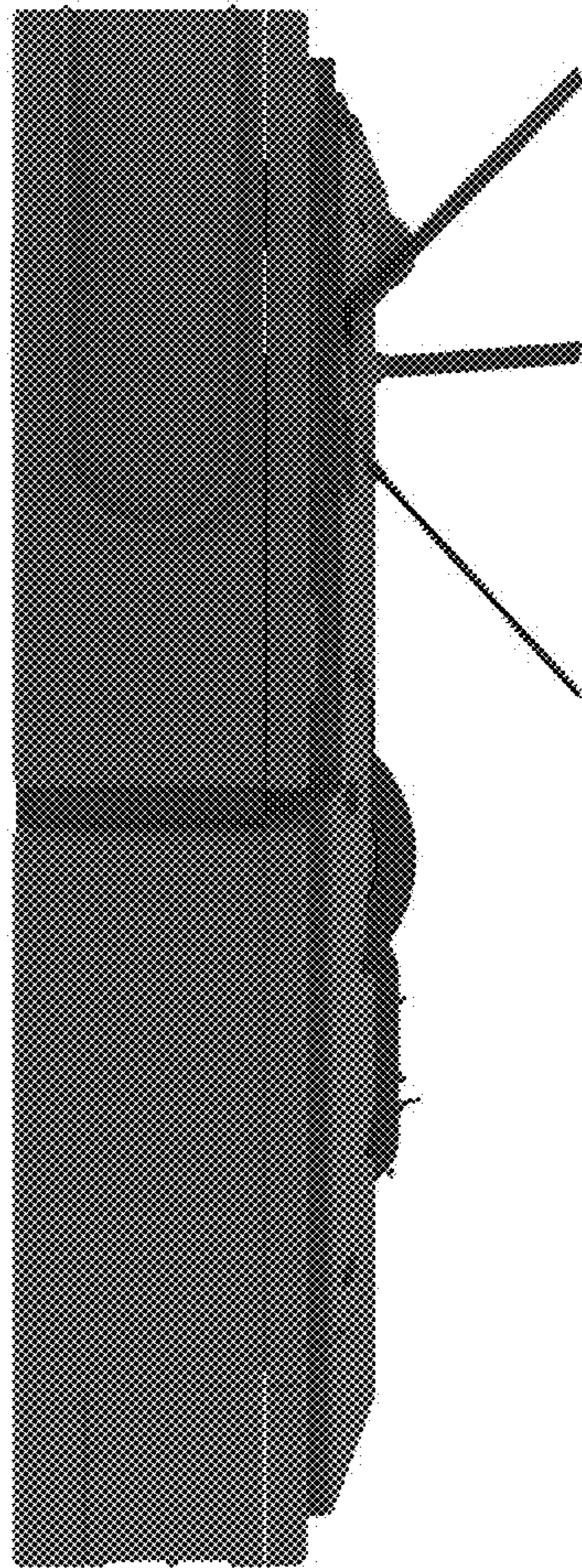


FIG. 4

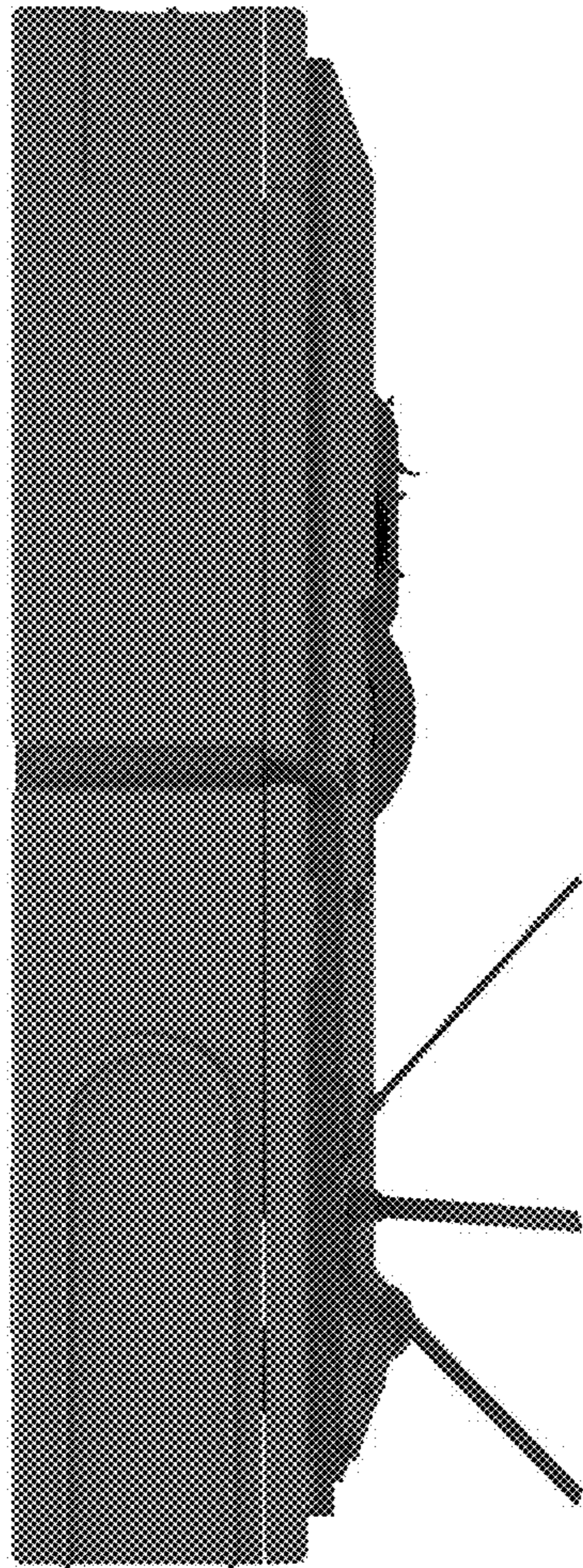


FIG. 5

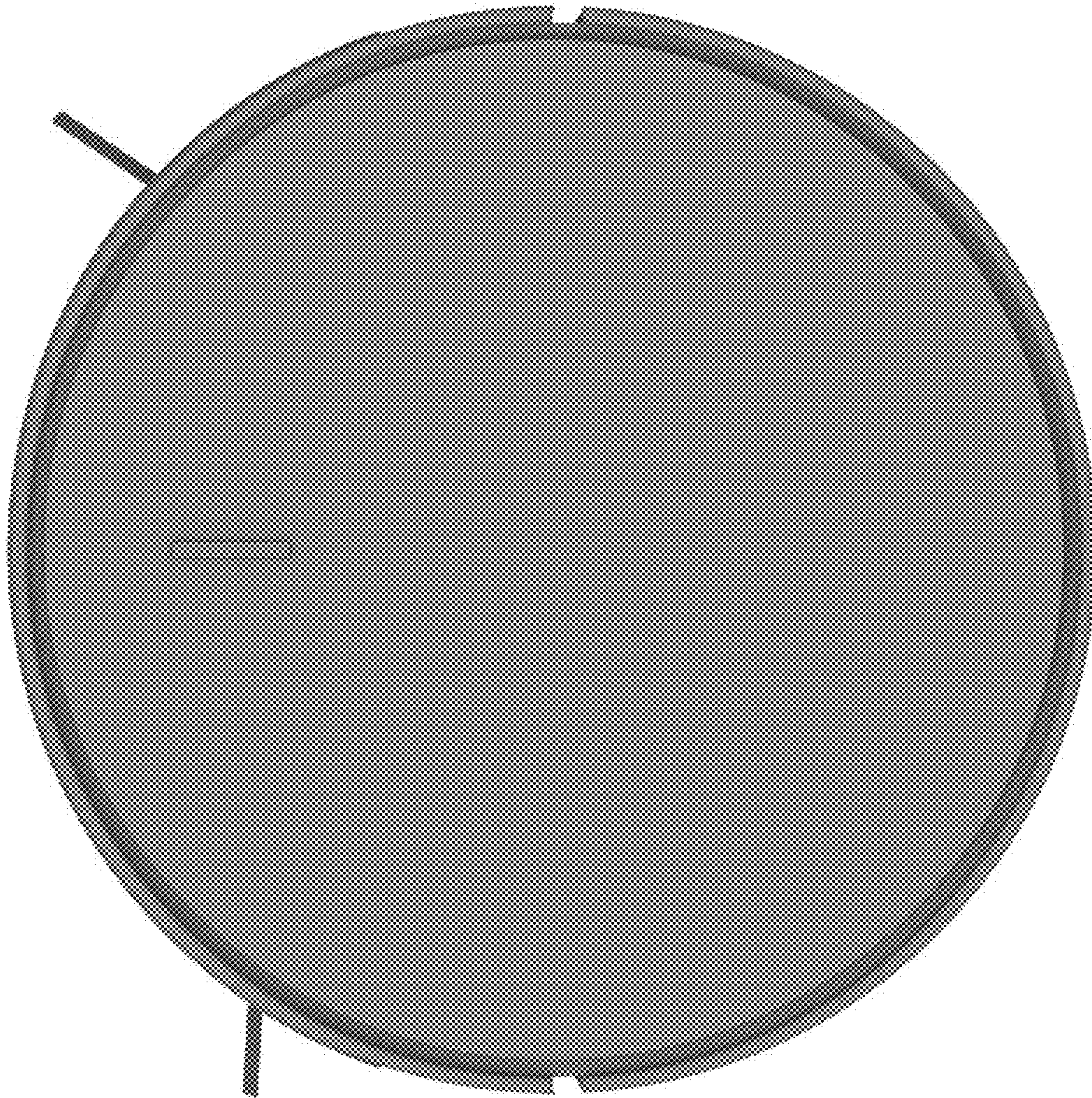


FIG. 6

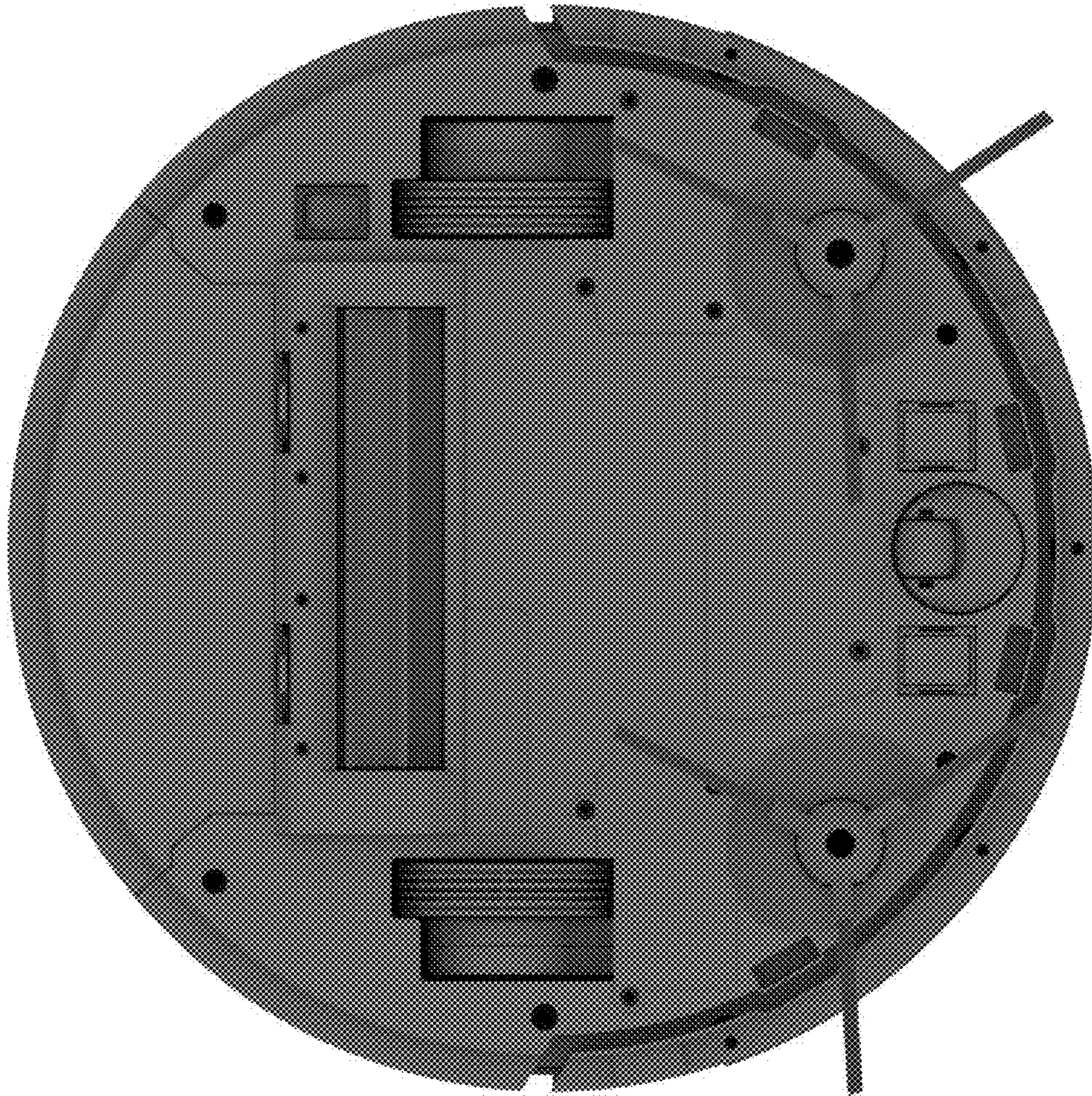


FIG. 7