US0D1060896S

(12) United States Design Patent

Chen et al.

(10) Patent No.: US D1,060,896 S
(45) Date of Patent: ** Feb. 4, 2025

(54) **CLEANING MACHINE**

(71) Applicant: **Intelligent Cleaning Equipment Holdings Co. Ltd.**, Tortola (VG)

(72) Inventors: **Simon Nai Pong Chen**, Dongguan (CN); **Stefano Daniele Abelli**, Piacenza PC (IT); **Gianfranco Ghirarduzzi**, Piacenza PC (IT); **Lianhua Yang**, Dongguan (CN)

(73) Assignee: **Intelligent Cleaning Equipment Holdings Co. Ltd.**, Tortola (VG)

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

(21) Appl. No.: **29/837,459**

(22) Filed: **May 5, 2022**

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

(52) **U.S. Cl.**
USPC **D32/15**

(58) **Field of Classification Search**
USPC D4/100, 102, 119, 127, 128, 137; D32/15, 16, 19, 20, 40, 41, 42, 45
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

D273,621 S * 4/1984 Haub D32/16
4,759,094 A * 7/1988 Palmer A47L 11/30 220/666

(Continued)

FOREIGN PATENT DOCUMENTS

CN 101141908 A 3/2008
CN 201414755 Y * 3/2010

(Continued)

OTHER PUBLICATIONS

Floor Scrubber, posted Nov. 19, 2021 [online], [retrieved Dec. 20, 2023]. Retrieved from internet, https://www.amazon.com/Self-Propelled-Scrubber-Complete-Squeegee-RT50D/dp/B09M864RXM (Year: 2021).*

(Continued)

Primary Examiner — Khawaja Anwar
Assistant Examiner — Taylor O Mortorff
(74) *Attorney, Agent, or Firm* — Wilson Sonsini Goodrich & Rosati

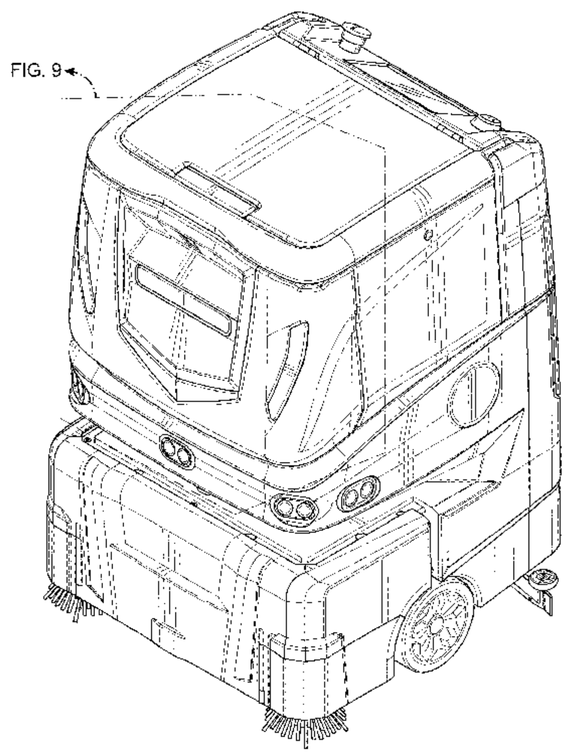
(57) **CLAIM**

The ornamental design for a cleaning machine as shown and described.

DESCRIPTION

FIG. **1** is a front perspective view of a cleaning machine in accordance with an embodiment;
FIG. **2** is a rear perspective view of the cleaning machine of FIG. **1**;
FIG. **3** is a front view of the cleaning machine of FIG. **1**;
FIG. **4** is a rear view of the cleaning machine of FIG. **1**;
FIG. **5** is a left view of the cleaning machine of FIG. **1**;
FIG. **6** is a right view of the cleaning machine of FIG. **1**;
FIG. **7** is a top view of the cleaning machine of FIG. **1**;
FIG. **8** is a bottom view of the cleaning machine of FIG. **1**;
FIG. **9** is a perspective view of the cleaning machine of FIG. **1**;
FIG. **10** is a front perspective view of a cleaning machine in accordance with another embodiment;
FIG. **11** is a rear perspective view of the cleaning machine of FIG. **10**;
FIG. **12** is a front view of the cleaning machine of FIG. **10**;
FIG. **13** is a rear view of the cleaning machine of FIG. **10**;
FIG. **14** is a left view of the cleaning machine of FIG. **10**;
FIG. **15** is a right view of the cleaning machine of FIG. **10**;
FIG. **16** is a top view of the cleaning machine of FIG. **10**;
FIG. **17** is a bottom view of the cleaning machine of FIG. **10**; and,
FIG. **18** is a perspective view of the cleaning machine of FIG. **10**.

(Continued)



The broken lines in the drawings represent various features or elements of the cleaning machine that form no part of the claimed design.

1 Claim, 18 Drawing Sheets

(58) **Field of Classification Search**
CPC A47L 13/10; A47L 13/11; A47L 13/26; A47L 13/28; A47L 11/00; A47L 11/02; A47L 11/10; A47L 11/14; A47L 11/145; A47L 11/16; A47L 11/161; A47L 11/28; A47L 11/282; A47L 11/283; A47L 11/29; A47L 11/292; A47L 11/293
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,805,256	A *	2/1989	Mason	A47L 11/4061 15/385
4,854,005	A *	8/1989	Wiese	A47L 11/305 15/401
D332,158	S *	12/1992	Bothun	D32/15
5,383,251	A *	1/1995	Whitaker	A47L 11/305 15/352
5,411,716	A *	5/1995	Thomas	B01F 21/00 422/264
5,454,138	A *	10/1995	Mondigo	A47L 11/4005 15/354
D369,446	S *	4/1996	Smith	D32/19
5,566,422	A *	10/1996	Geyer	A47L 11/4016 15/353
7,320,149	B1	1/2008	Huffman et al.	
8,001,651	B2	8/2011	Chang	
9,868,208	B2	1/2018	Meier	
9,873,196	B2	1/2018	Szatmary et al.	
10,213,921	B2	2/2019	Meier	
10,241,514	B2	3/2019	Passot et al.	
10,545,074	B2	1/2020	Meier	
10,807,230	B2	10/2020	Szatmary et al.	
D910,943	S *	2/2021	Burchard	D32/16
11,400,595	B2	8/2022	Williams et al.	
2002/0050023	A1 *	5/2002	Stuchlik	A47L 11/30 15/98
2003/0070252	A1 *	4/2003	Pedlar	A47L 11/4077 15/401
2003/0070697	A1 *	4/2003	Field	B01J 13/0095 134/102.1
2005/0022844	A1	2/2005	Field et al.	
2005/0115015	A1 *	6/2005	Legatt	A47L 11/30 15/401
2006/0048331	A1 *	3/2006	Rau	A47L 11/4047 15/340.2
2011/0047730	A1 *	3/2011	Krausnick	A47L 11/305 15/49.1
2011/0197381	A1 *	8/2011	Nelson	B60S 1/3801 15/250.4
2012/0137464	A1	6/2012	Thatcher et al.	
2013/0212814	A1	8/2013	Shinler et al.	
2013/0292146	A1	11/2013	Fellhauer et al.	
2015/0096133	A1 *	4/2015	Kauffman	A47L 11/4058 15/98
2015/0313433	A1 *	11/2015	Ruffo	A47L 11/283 15/320
2016/0270617	A1 *	9/2016	Kauffman	A47L 11/282
2016/0338563	A1 *	11/2016	Larson	A47L 11/4069
2016/0360942	A1 *	12/2016	Pedlar	A47L 11/4083
2017/0049288	A1	2/2017	Knutson et al.	
2017/0235312	A1	8/2017	Yoshino	
2018/0296052	A1 *	10/2018	Chen	A47L 11/4011
2018/0344114	A1	12/2018	Scholten et al.	
2018/0361583	A1	12/2018	Williams et al.	
2019/0171210	A1	6/2019	Passot et al.	
2019/0290089	A1	9/2019	Johnson et al.	
2020/0150003	A1	5/2020	Meier	
2020/0175640	A1	6/2020	Meier et al.	
2020/0288933	A1 *	9/2020	Pope	A47L 11/085
2021/0137341	A1 *	5/2021	Dammkoehler	A47L 11/4002
2021/0244250	A1	8/2021	Dhindsa et al.	

FOREIGN PATENT DOCUMENTS

CN	103549920	A	2/2014	
CN	105581741	A	5/2016	
CN	205268062	U *	6/2016	
CN	205283719	U *	6/2016	
CN	106535730	A	3/2017	
CN	108784557	A *	11/2018	A47L 11/30
CN	108937759	A	12/2018	
CN	111531563	A	8/2020	
CN	111714037	A	9/2020	
CN	213488633	U *	6/2021	
CN	214678807	U	11/2021	
CN	113876261	A	1/2022	
CN	114010113	A *	2/2022	
CN	114145675	A	3/2022	
DE	202005011999	U1 *	11/2005	A47L 11/03
DE	102005039095	A1 *	2/2007	B24D 9/085
EP	2752726	A1	7/2014	
EP	3903657	A1 *	11/2021	A47L 11/283
JP	08299239	A *	11/1996	
JP	11113821	A *	4/1999	
WO	WO-9314684	A1 *	8/1993	A47L 11/30
WO	WO-0074549	A2 *	12/2000	A47L 11/03
WO	WO-2004073477	A1 *	9/2004	A47L 11/30
WO	WO-2006121783	A1 *	11/2006	A47L 11/24
WO	WO-2017215943	A1 *	12/2017	B24B 23/02
WO	WO-2020176838	A1	9/2020	
WO	WO-2023212871	A1	11/2023	
WO	WO-2023213011	A1	11/2023	

OTHER PUBLICATIONS

Powered Floor Scrubber, posted May 15, 2021 [online], [retrieved Dec. 20, 2023]. Retrieved from internet, https://www.amazon.com/SUNMAX-RT50-Scrubber-Squeegee-14-5-gal/dp/B094Z56KHX (Year: 2021).*

Co-pending U.S. Appl. No. 17/935,311, inventors Chen; Simon Nai Pong et al., filed Sep. 26, 2022.

Co-pending U.S. Appl. No. 29/865,186, inventors Chen; Simon Nai Pong et al., filed Jul. 13, 2022.

Guangzhou Aike Robot. Aike robot iSmart Mini world premier, making every effort to create a multi-scenario service robot ecology. Dec. 5, 2021. Website: https://mp.weixin.qq.com/s/7O2JhjNv_AnDyzWvtAbgDQ.

Hangzhou Lishi Technology Co., Ltd. Cleaning integrated cleaning robot. Nov. 2, 2021. Website: https://mp.weixin.qq.com/s/859aqUdTrp_AhQsjG82u6g.

Sun'An, Wang. Modeling, simulation and similarity of electromechanical systems. Jiaotong University Press 2016 (in Chinese). English Abstract retrieved online on Sep. 1, 2023 from: https://baike-baidu-com.translate.goog/item/%E5%BB%BA%E6%A8%A1%E3%80%81%E4%BB%BF%E7%9C%9F%E4%B8%8E%E6%9C%BA%E7%94%B5%E7%B3%BB%E7%BB%9F%E7%9A%84%E7%9B%B8%E4%BC%BC?_x_tr_sl=zh-CN&_x_tr_tl=en&_x_tr_hl=en&_x_tr_pto=sc.

* cited by examiner

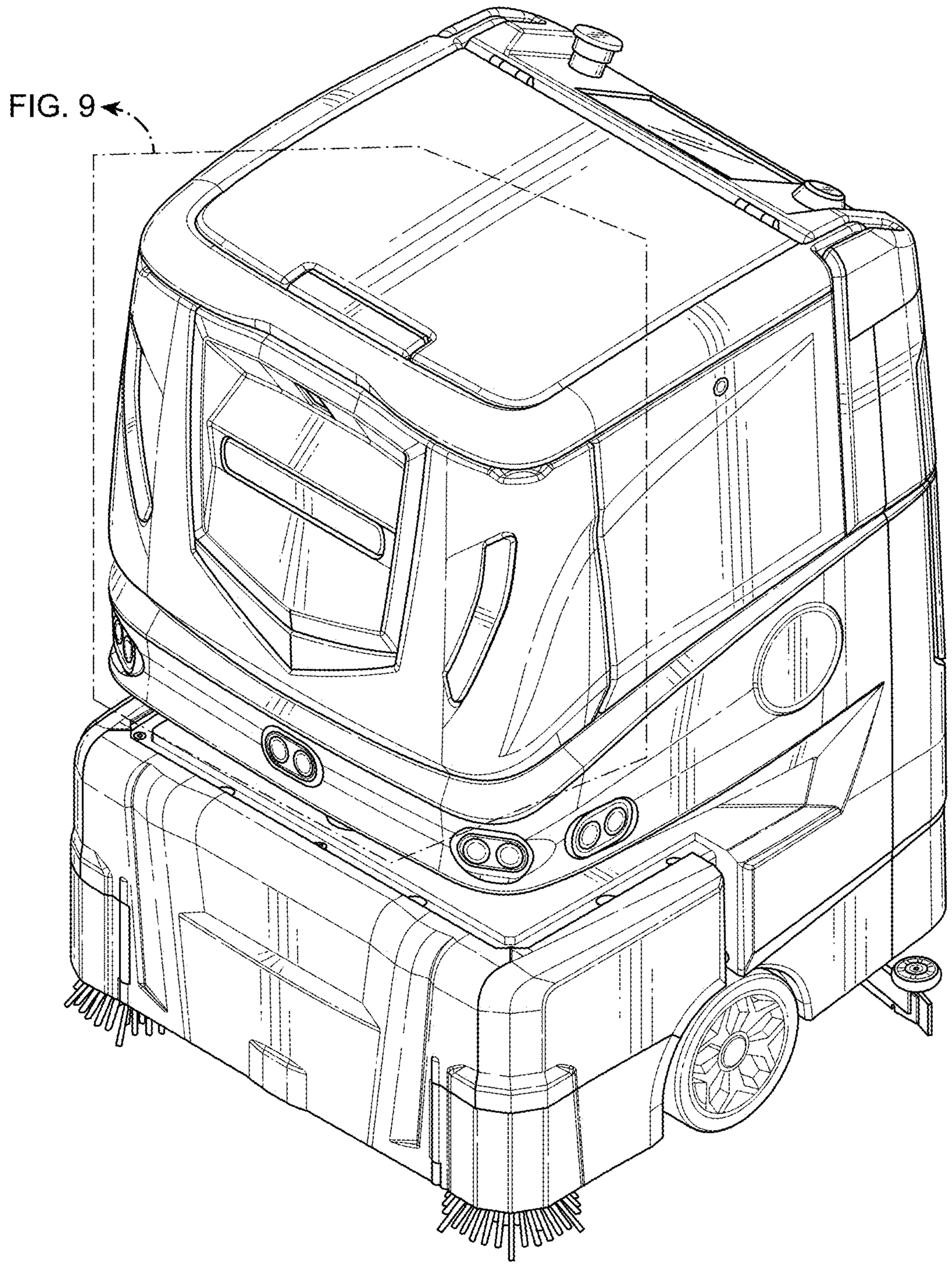


FIG. 1

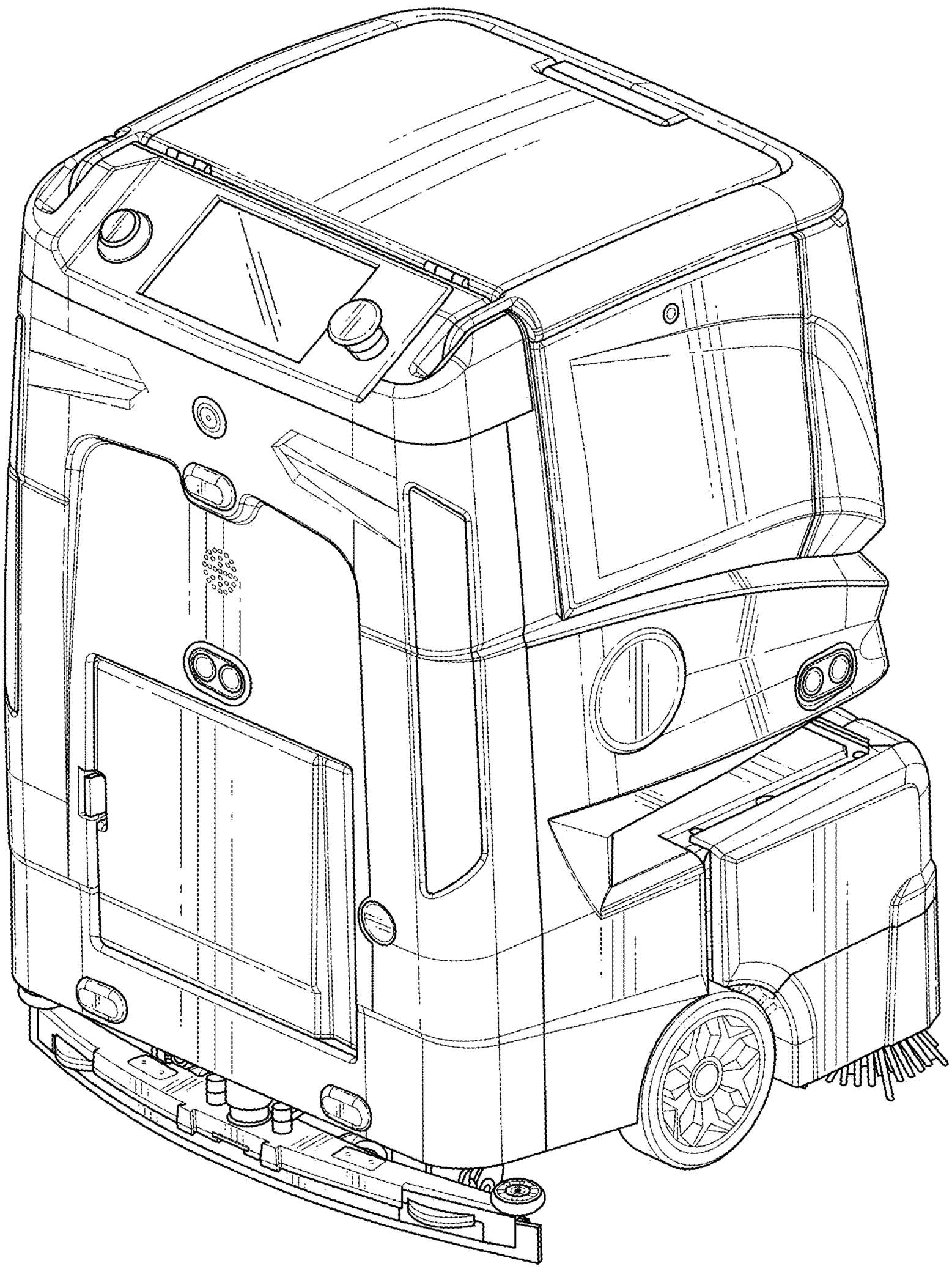


FIG. 2

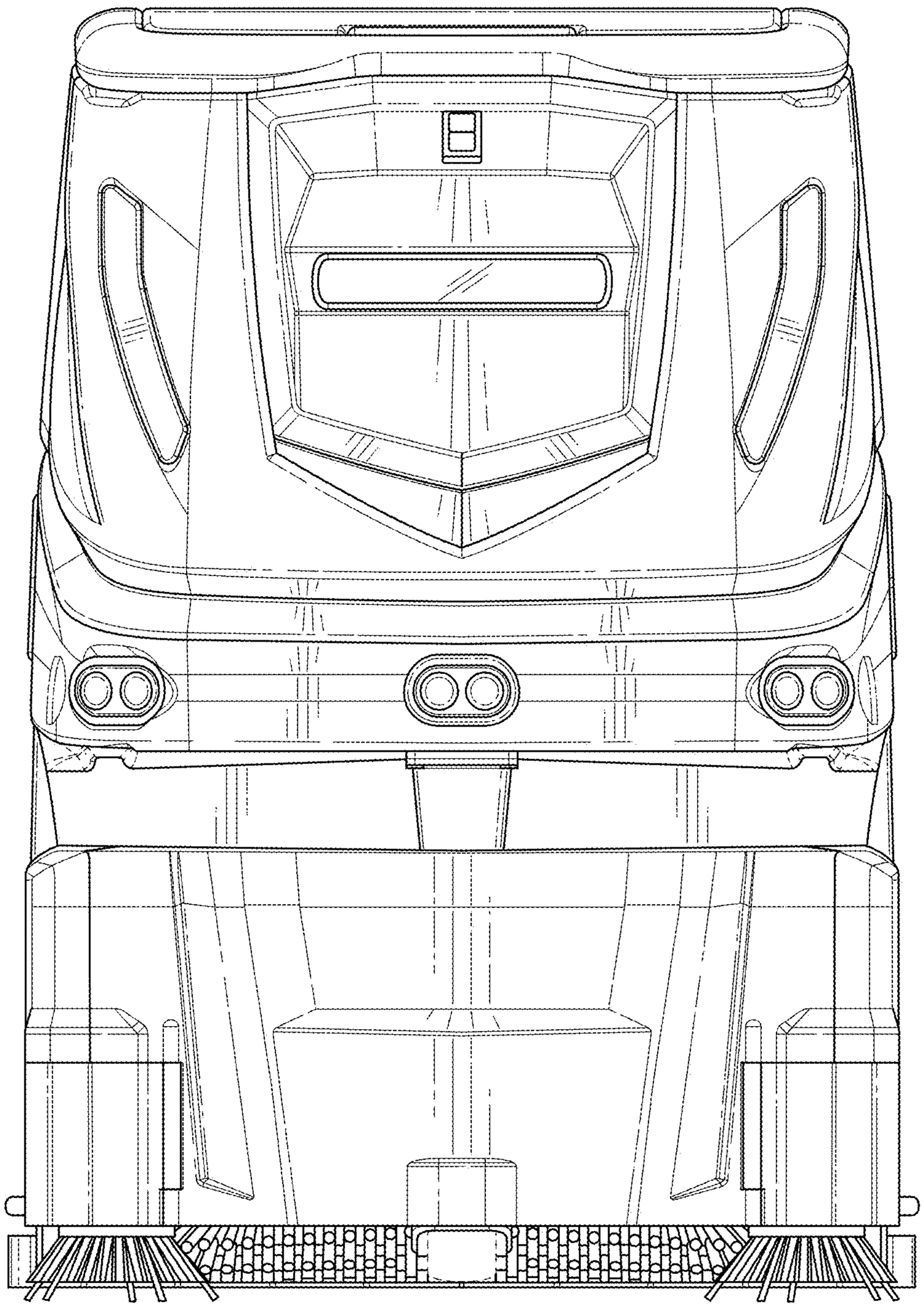


FIG. 3

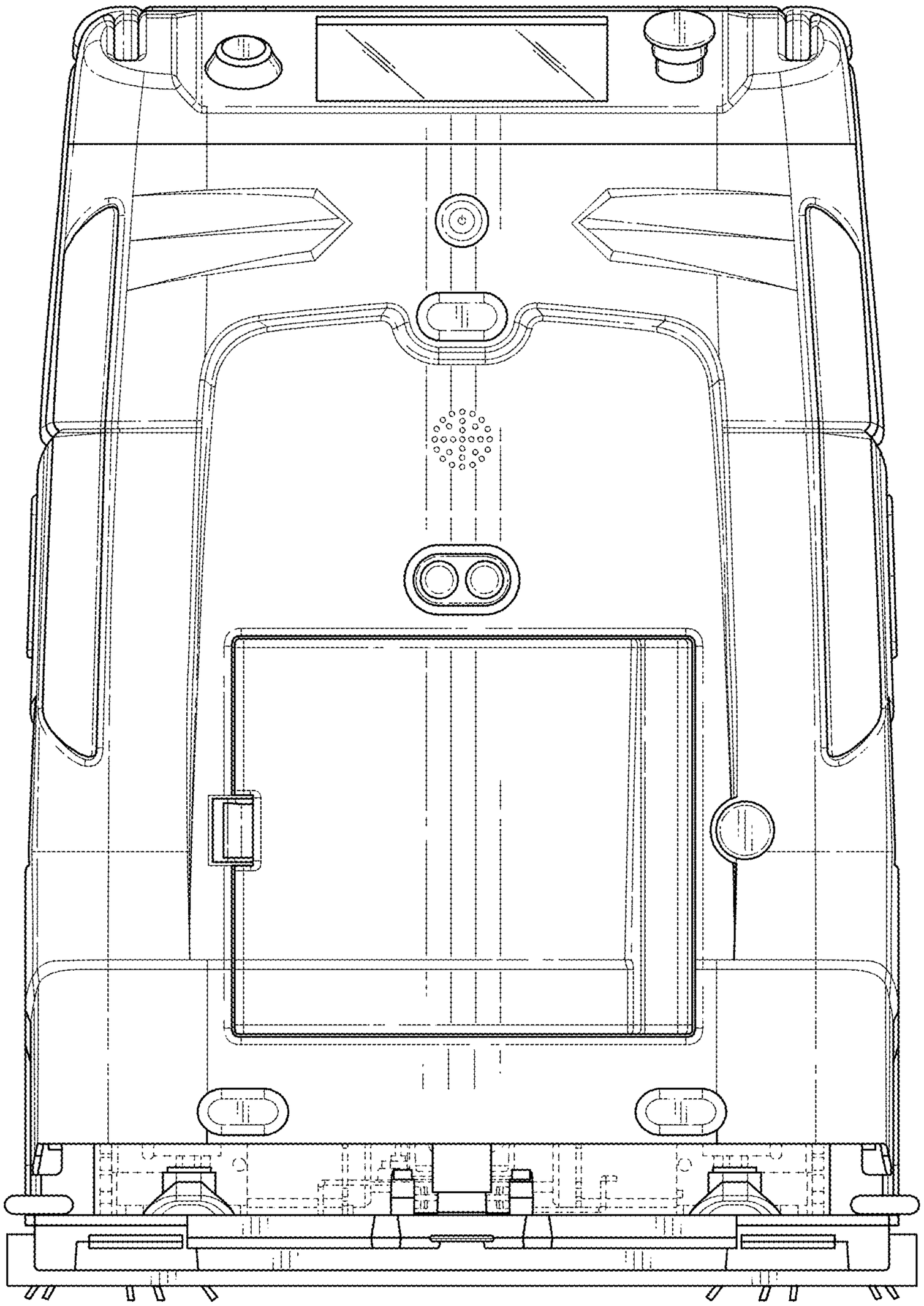


FIG. 4

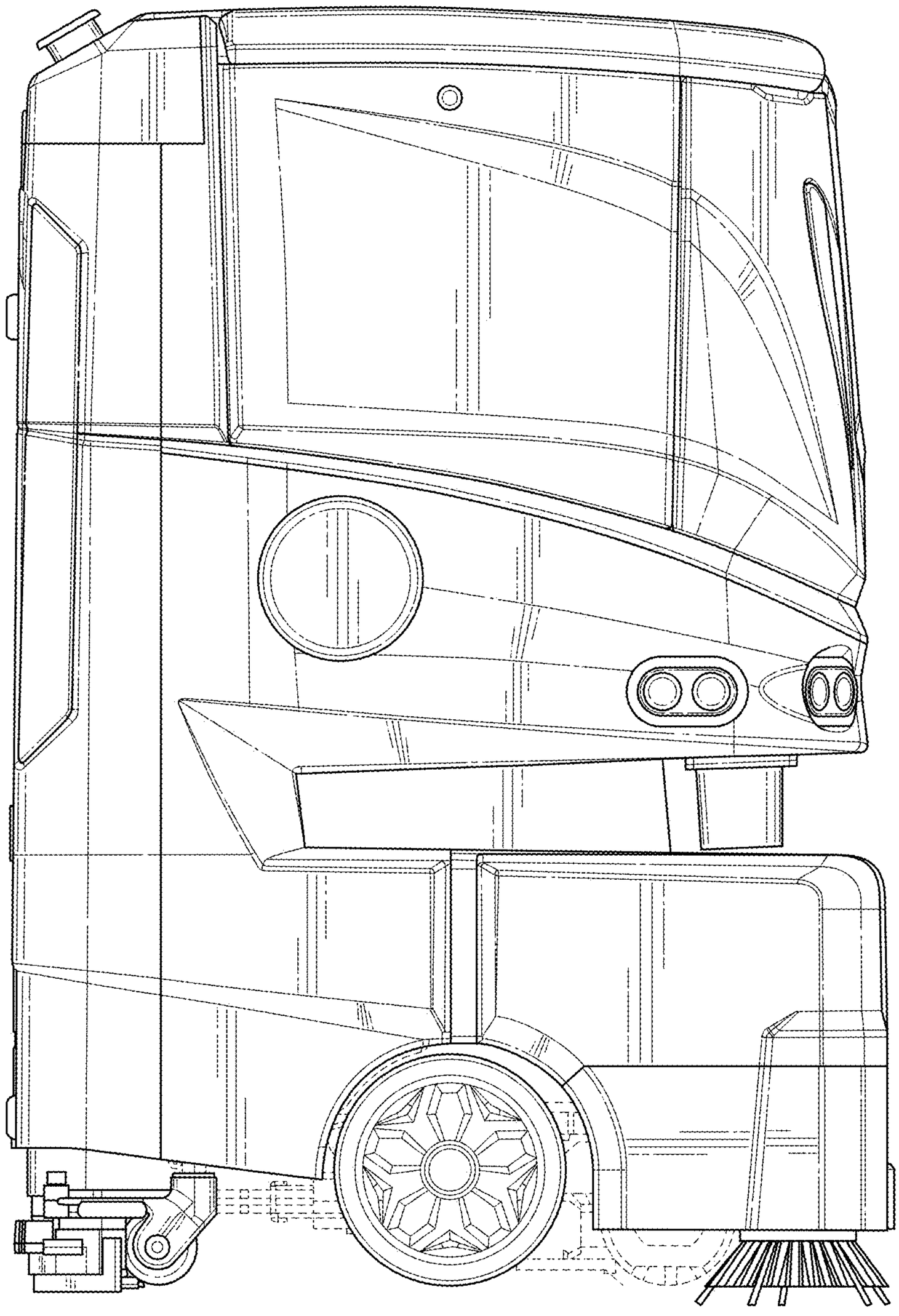


FIG. 5

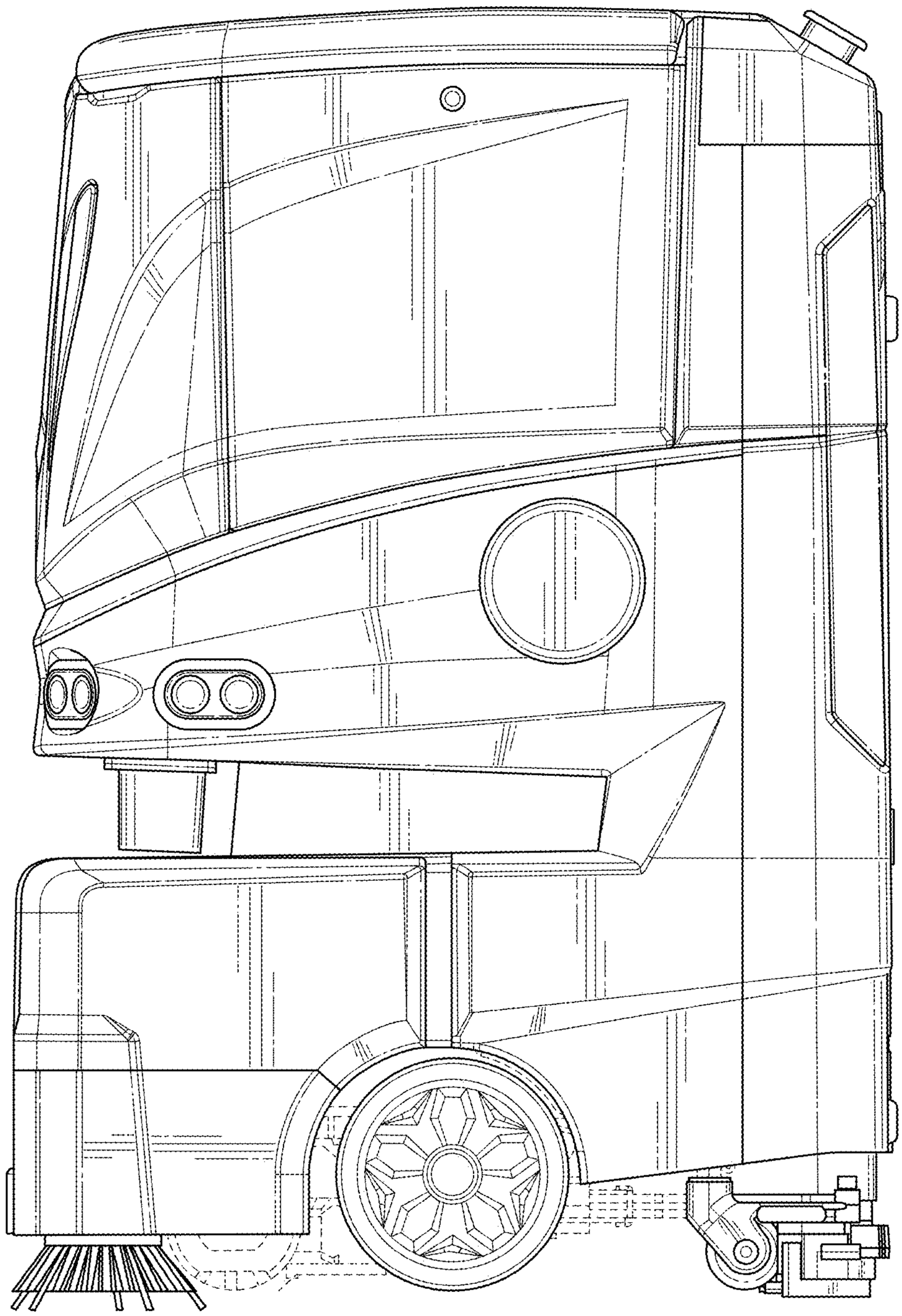


FIG. 6

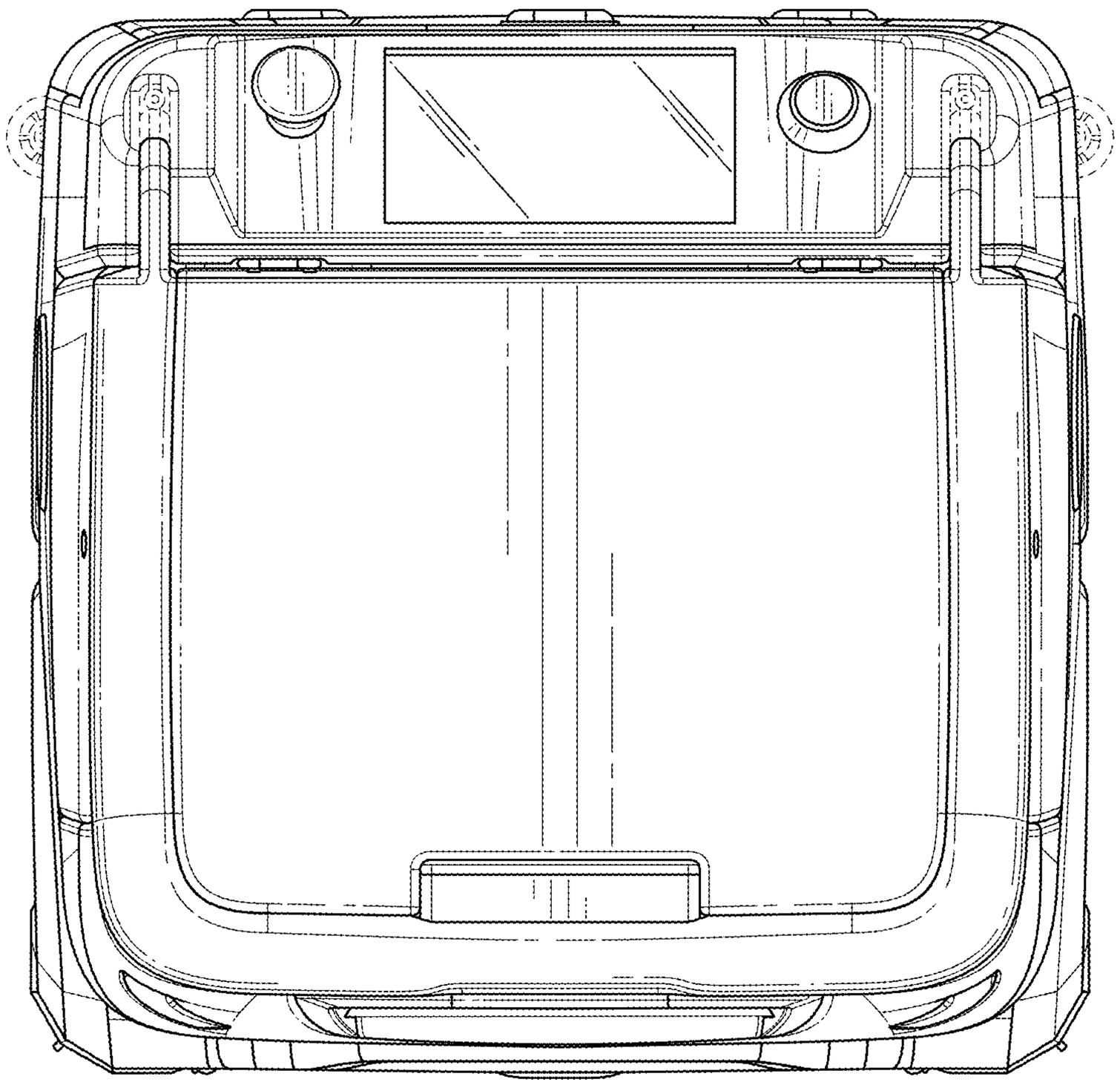


FIG. 7

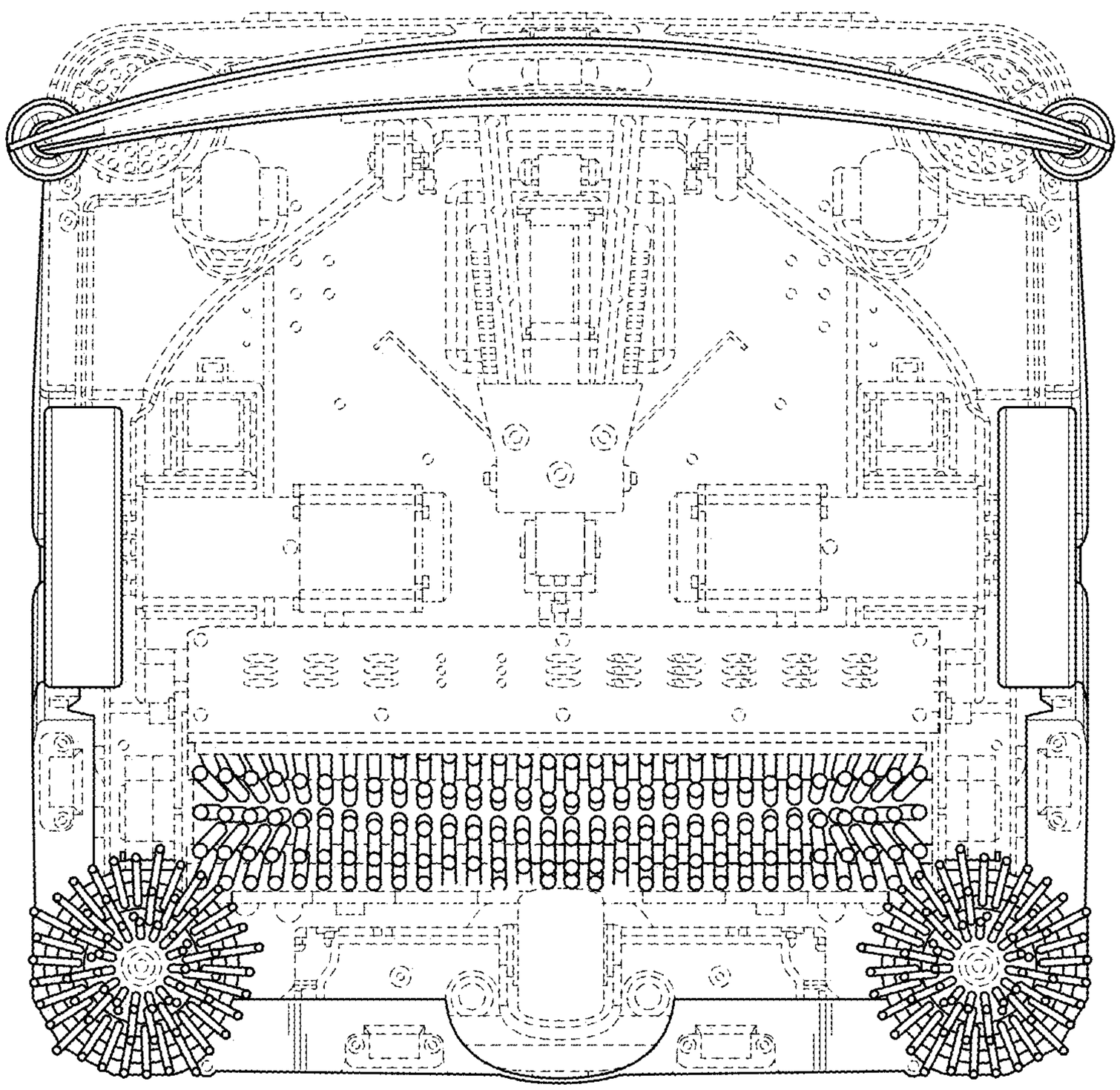


FIG. 8

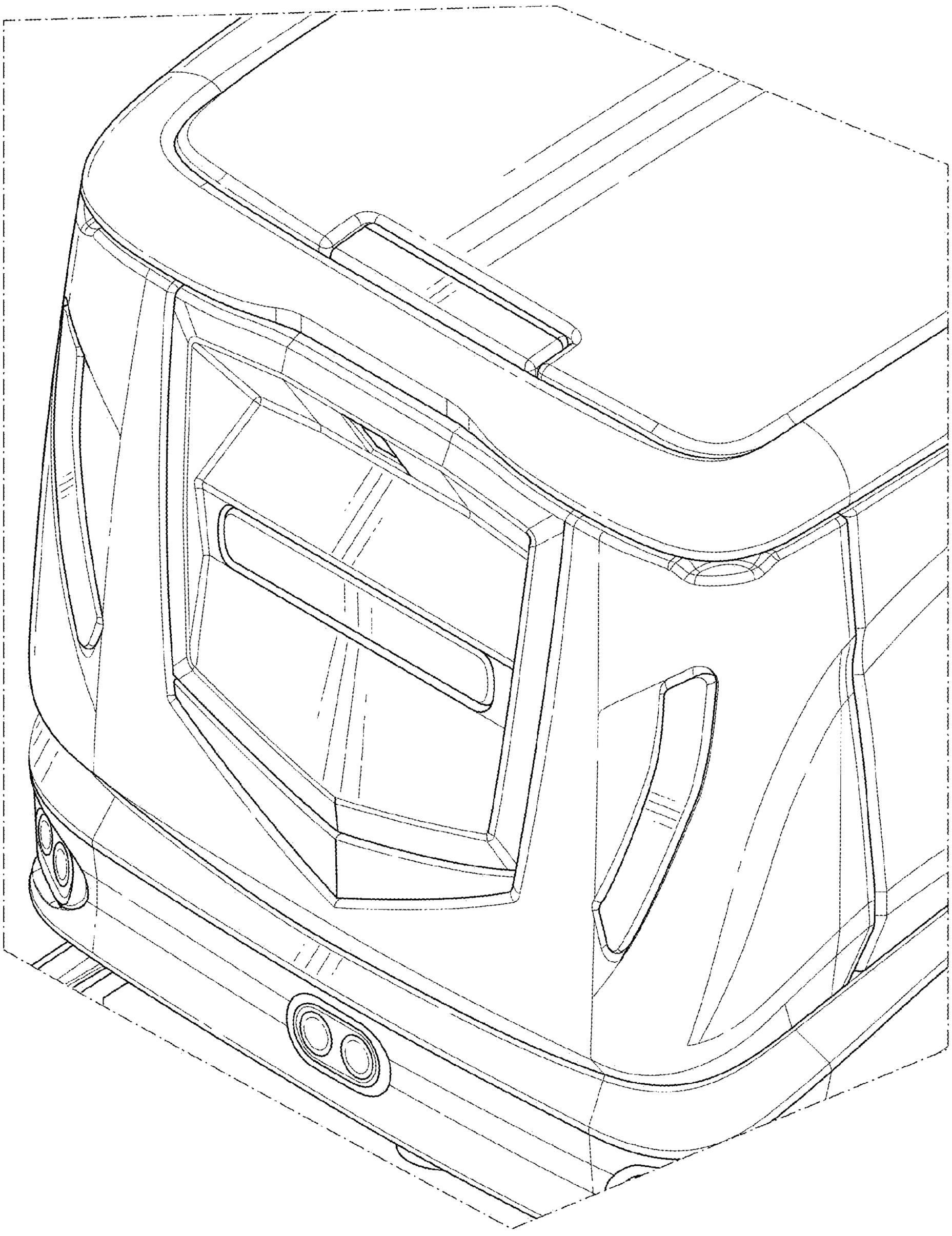


FIG. 9

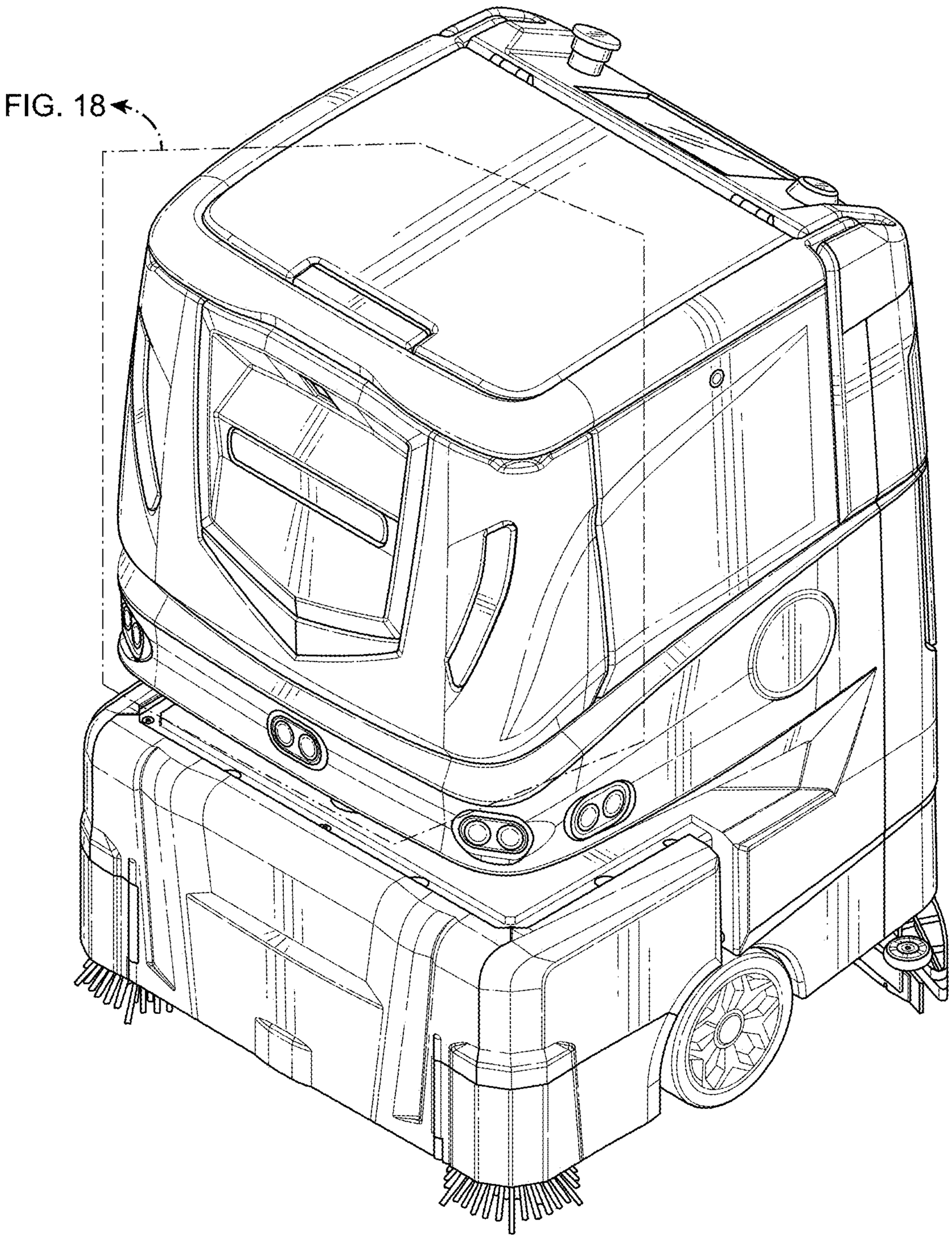


FIG. 10

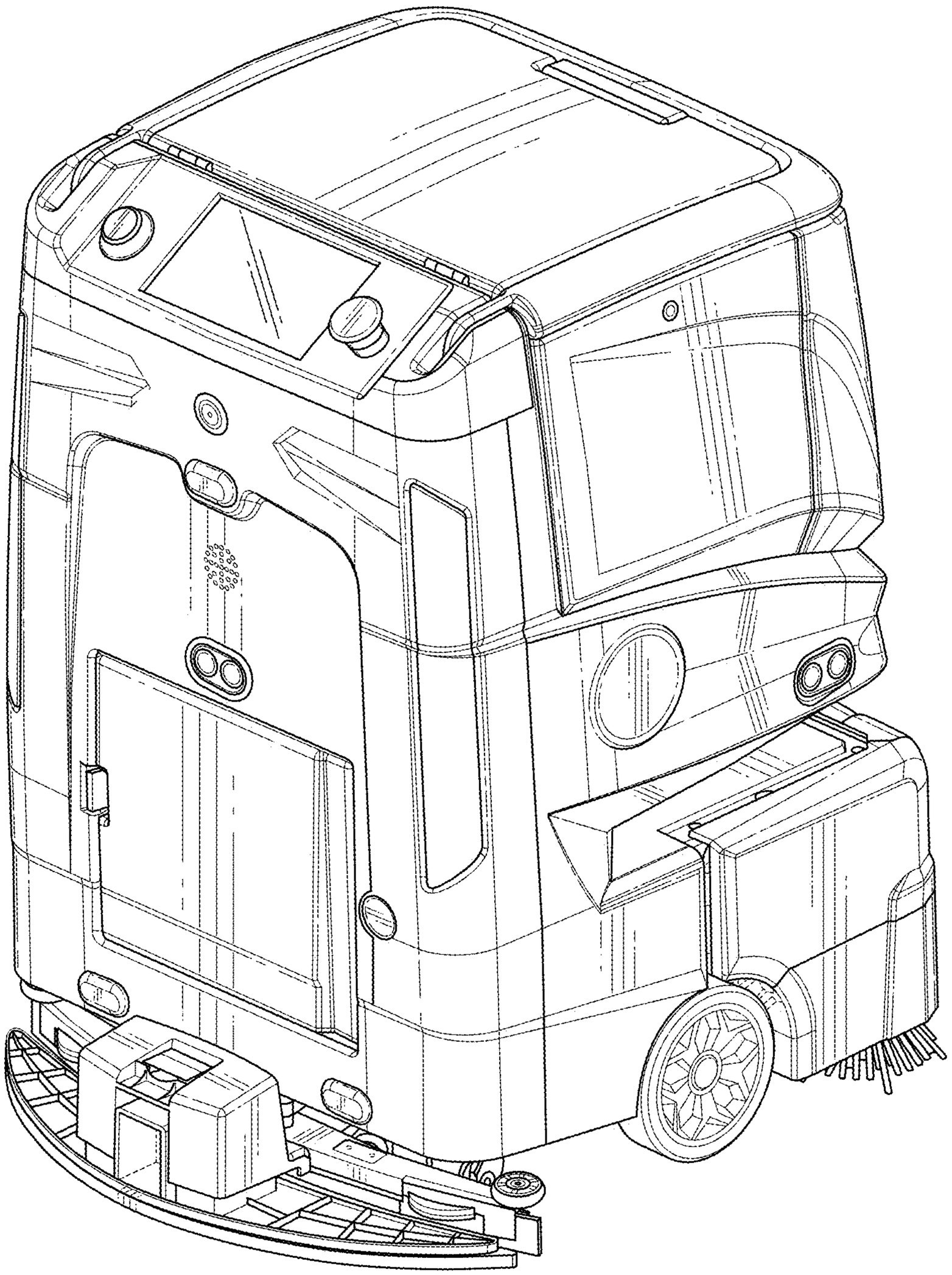


FIG. 11

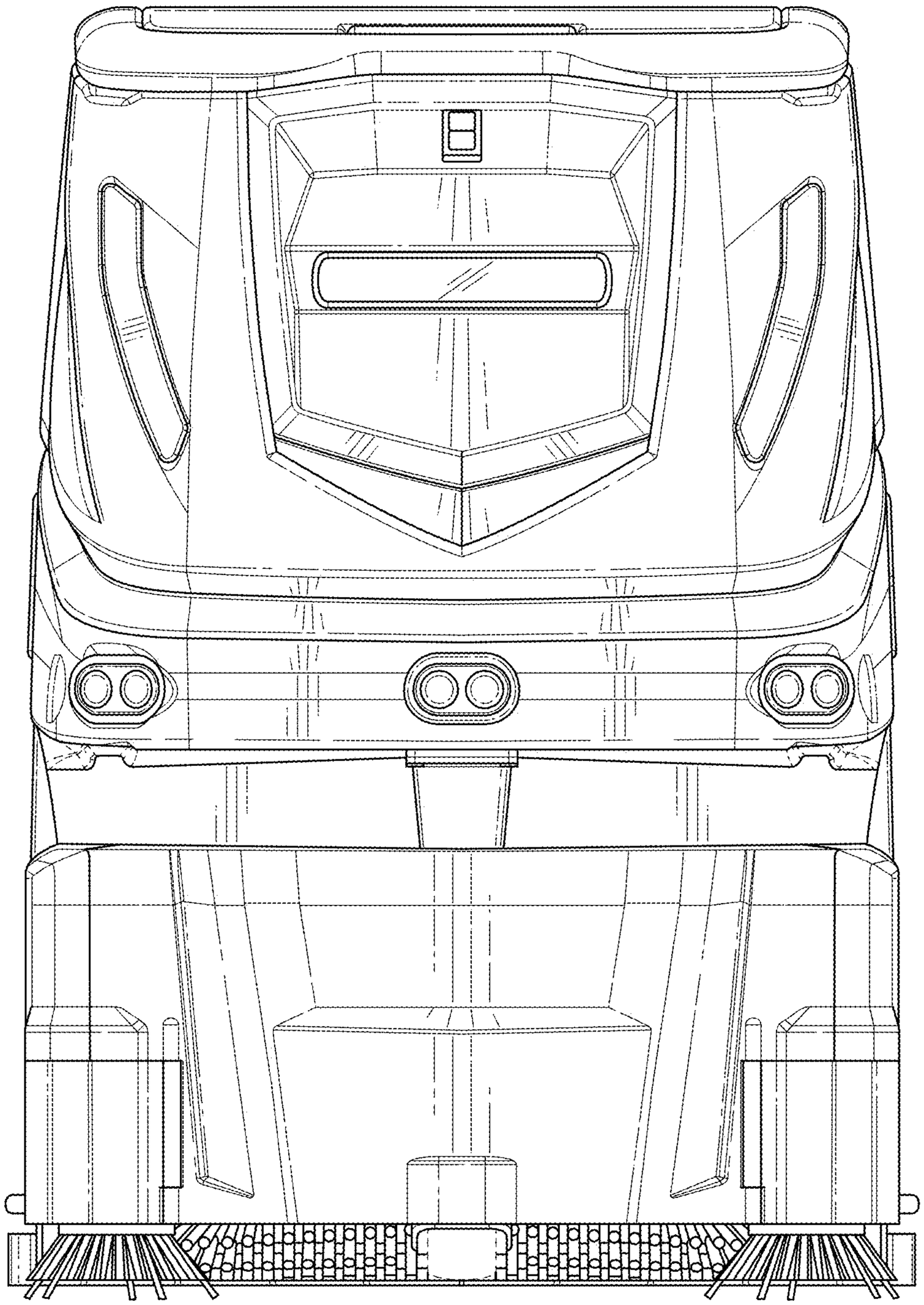


FIG. 12

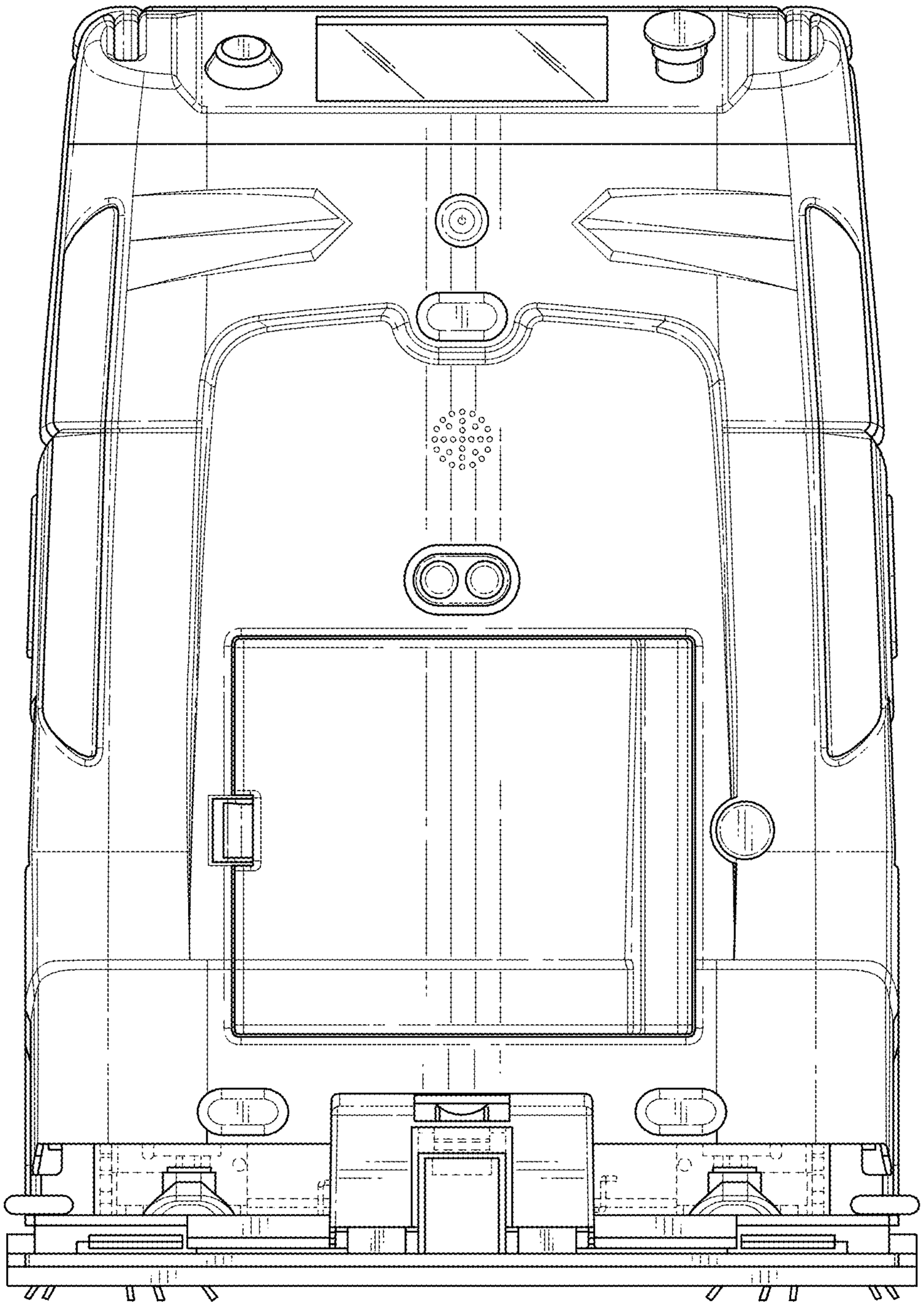


FIG. 13

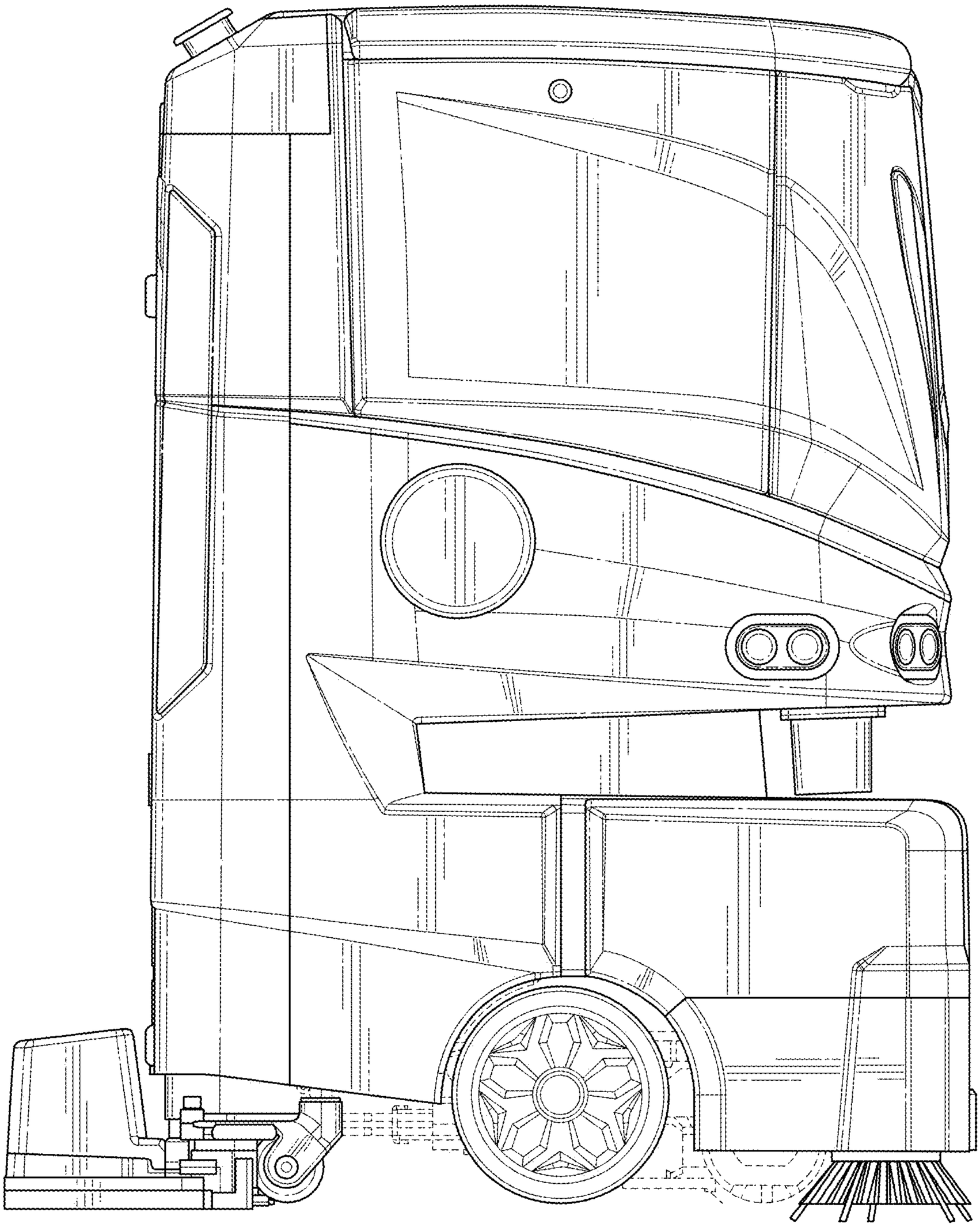


FIG. 14

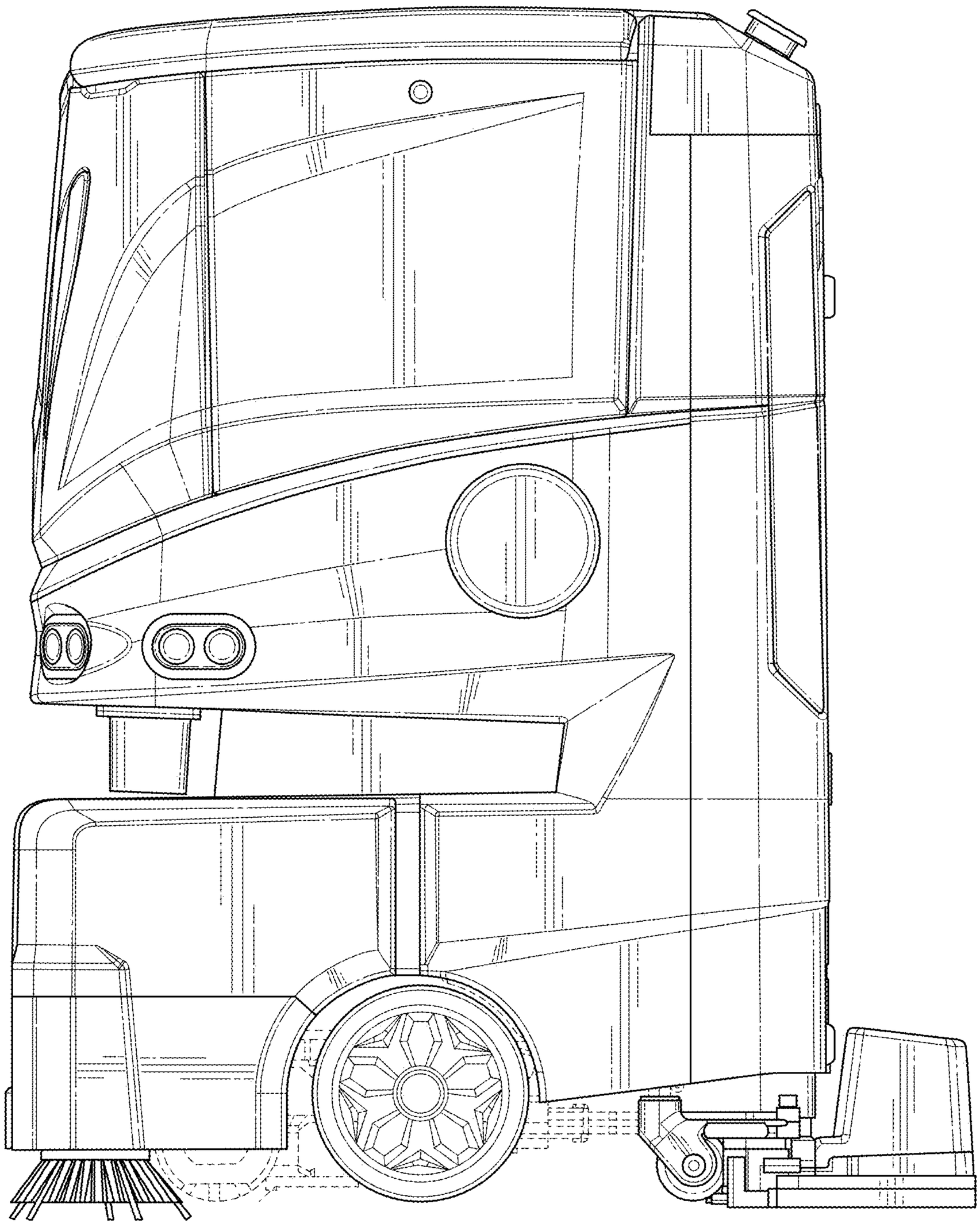


FIG. 15

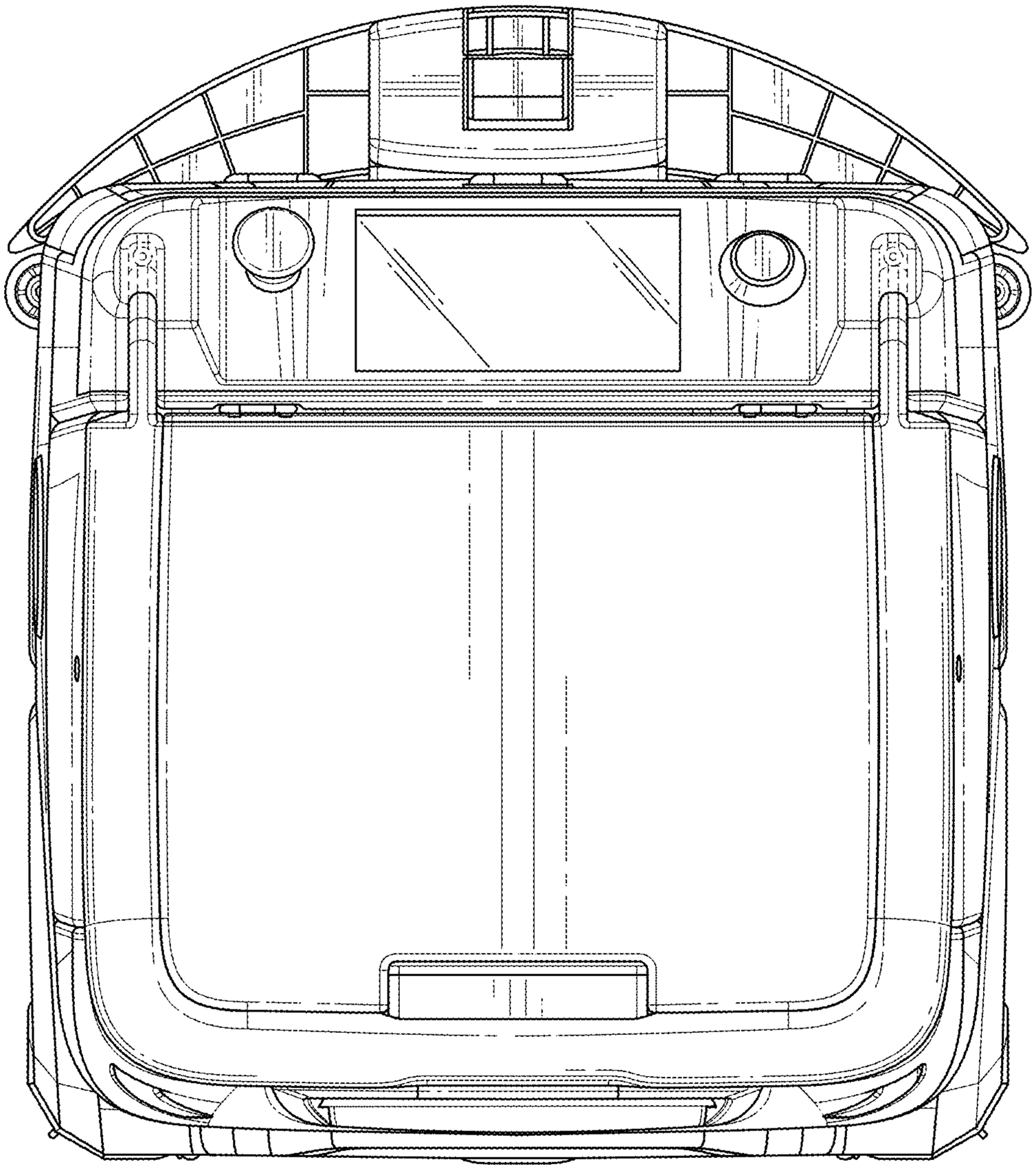


FIG. 16

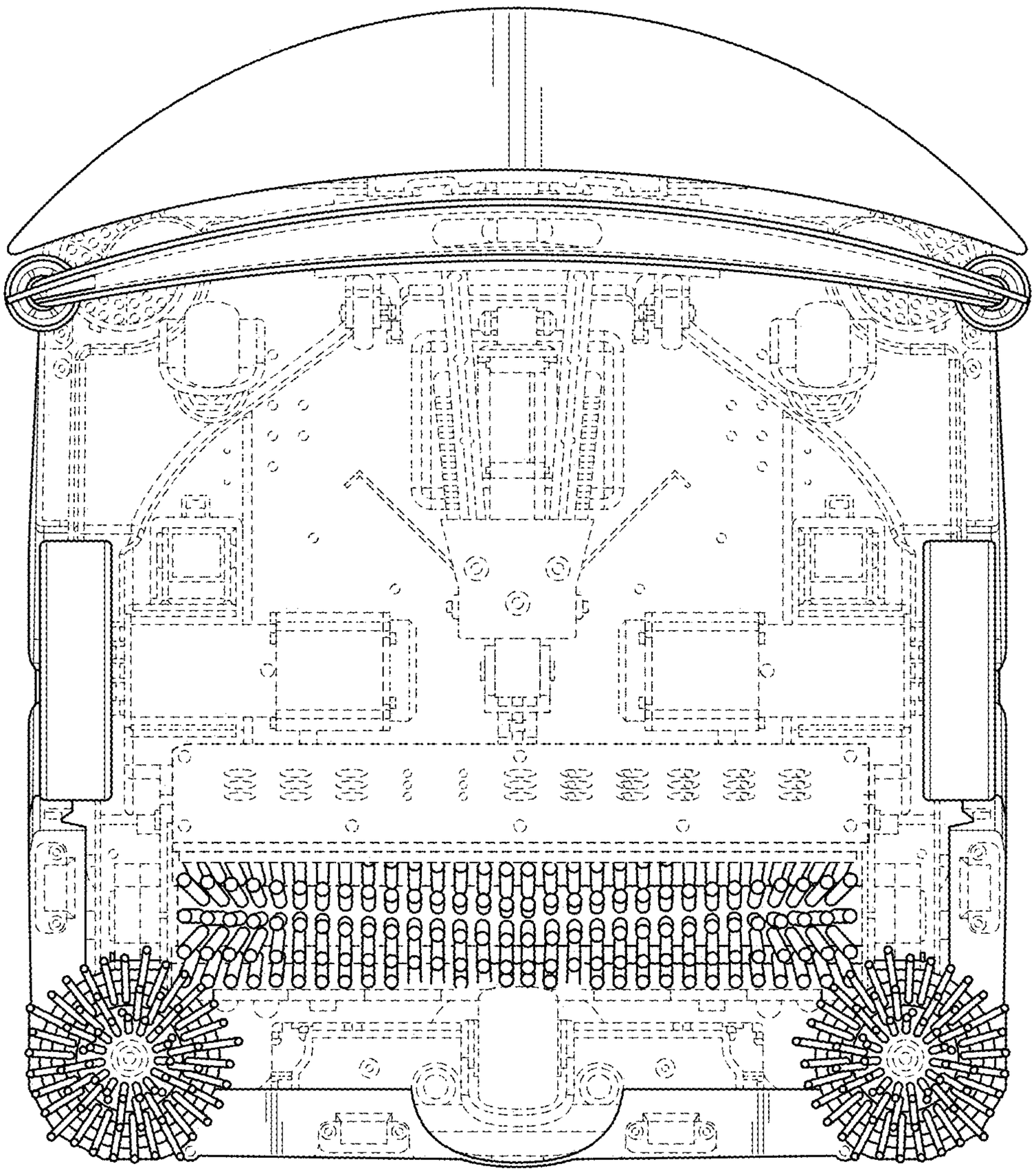


FIG. 17

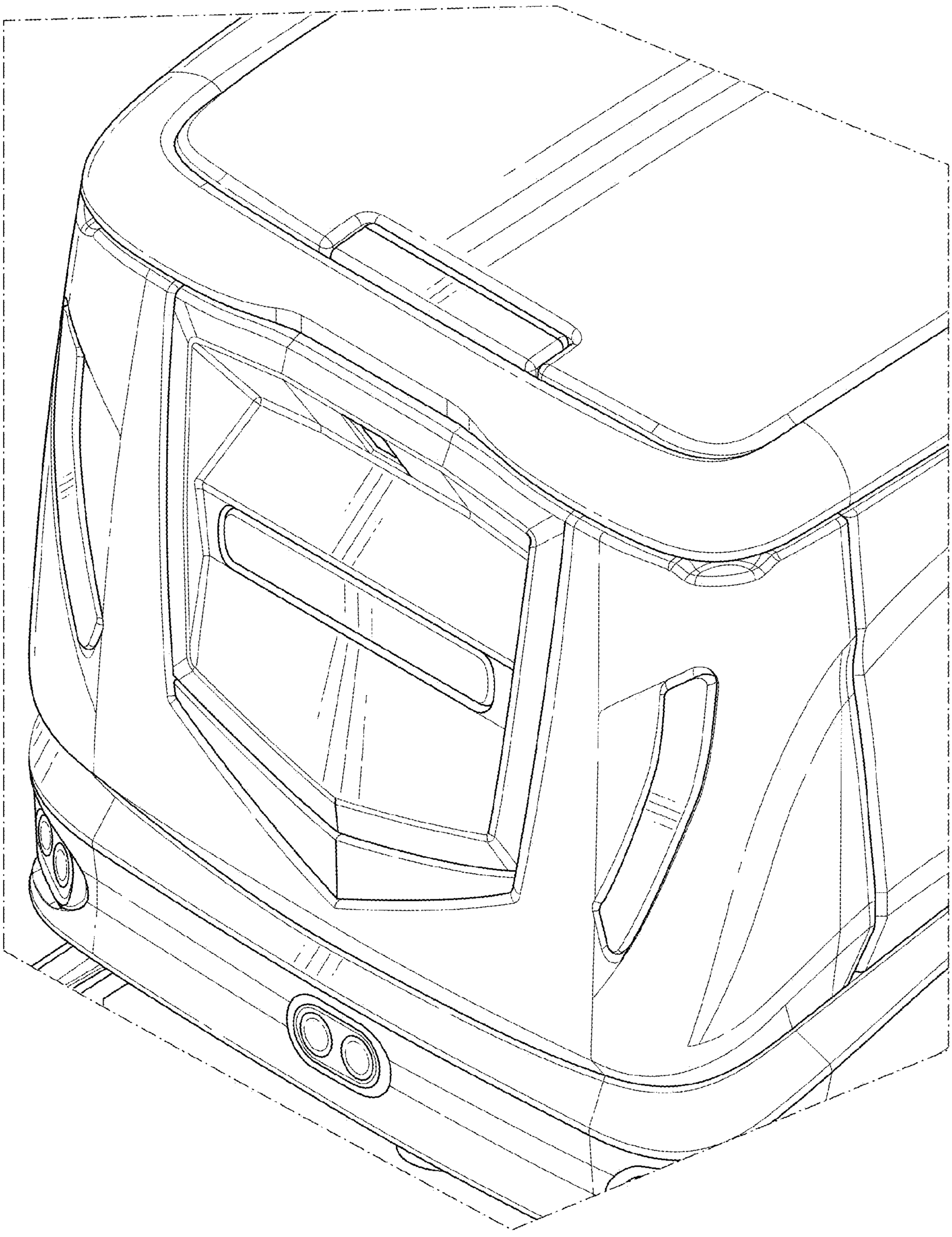


FIG. 18