



US00D917117S

(12) **United States Design Patent**  
**Cao et al.**

(10) **Patent No.:** **US D917,117 S**  
(45) **Date of Patent:** **\*\* Apr. 20, 2021**

(54) **ROBOT CLEANER**

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- (\*\*) Term: **15 Years**

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(30) **Foreign Application Priority Data**

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 Sep. 26, 2018 (CN) ..... 201830540118.2

(51) **LOC (13) Cl.** ..... **15-05**

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

(58) **Field of Classification Search**  
USPC ..... D32/21, 31; D21/526, 578; D8/70, 310,  
D8/330; D10/37, 38, 50, 106.2, 106.5;  
(Continued)

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

D588,066 S \* 3/2009 Kettula ..... D13/108  
 D593,265 S \* 5/2009 Carr ..... D32/21  
 (Continued)

**FOREIGN PATENT DOCUMENTS**

CN 302560172 \* 9/2013  
 CN 303979123 \* 12/2016  
 (Continued)

**OTHER PUBLICATIONS**

Product Maintenance DEEBOT OZMO 900, announced in YouTube on Dec. 9, 2018 [online], [site visited Nov. 30, 2020, Available from the internet URL: <https://www.youtube.com/watch?v=iMosO9FtcRg&app=desktop> (Year: 2018).\*

(Continued)

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(57) **CLAIM**

We claim the ornamental design for a robot cleaner, as shown and described.

**DESCRIPTION**

FIG. 1 is a perspective view of a robot cleaner, showing our new design;  
 FIG. 2 is a front elevational view thereof;  
 FIG. 3 is a left-side, elevational view thereof;  
 FIG. 4 is a right-side, elevational view thereof;  
 FIG. 5 is a top plan view thereof;  
 FIG. 6 is a bottom plan view thereof;  
 FIG. 7 is a perspective view of the robot cleaner, showing a second embodiment of our new design;  
 FIG. 8 is a front elevational view thereof;  
 FIG. 9 is a left-side, elevational view thereof;  
 FIG. 10 is a right-side, elevational view thereof;  
 FIG. 11 is a top plan view thereof;  
 FIG. 12 is a bottom plan view thereof;  
 FIG. 13 is a perspective view of the robot cleaner, showing a third embodiment of our new design;  
 FIG. 14 is a front elevational view thereof;  
 FIG. 15 is a left-side, elevational view thereof;  
 FIG. 16 is a right-side, elevational view thereof;  
 FIG. 17 is a top plan view thereof;  
 FIG. 18 is a bottom plan view thereof;  
 FIG. 19 is a perspective view of the robot cleaner, showing a fourth embodiment of our new design;  
 FIG. 20 is a front elevational view thereof;  
 FIG. 21 is a left-side, elevational view thereof;  
 FIG. 22 is a right-side, elevational view thereof;

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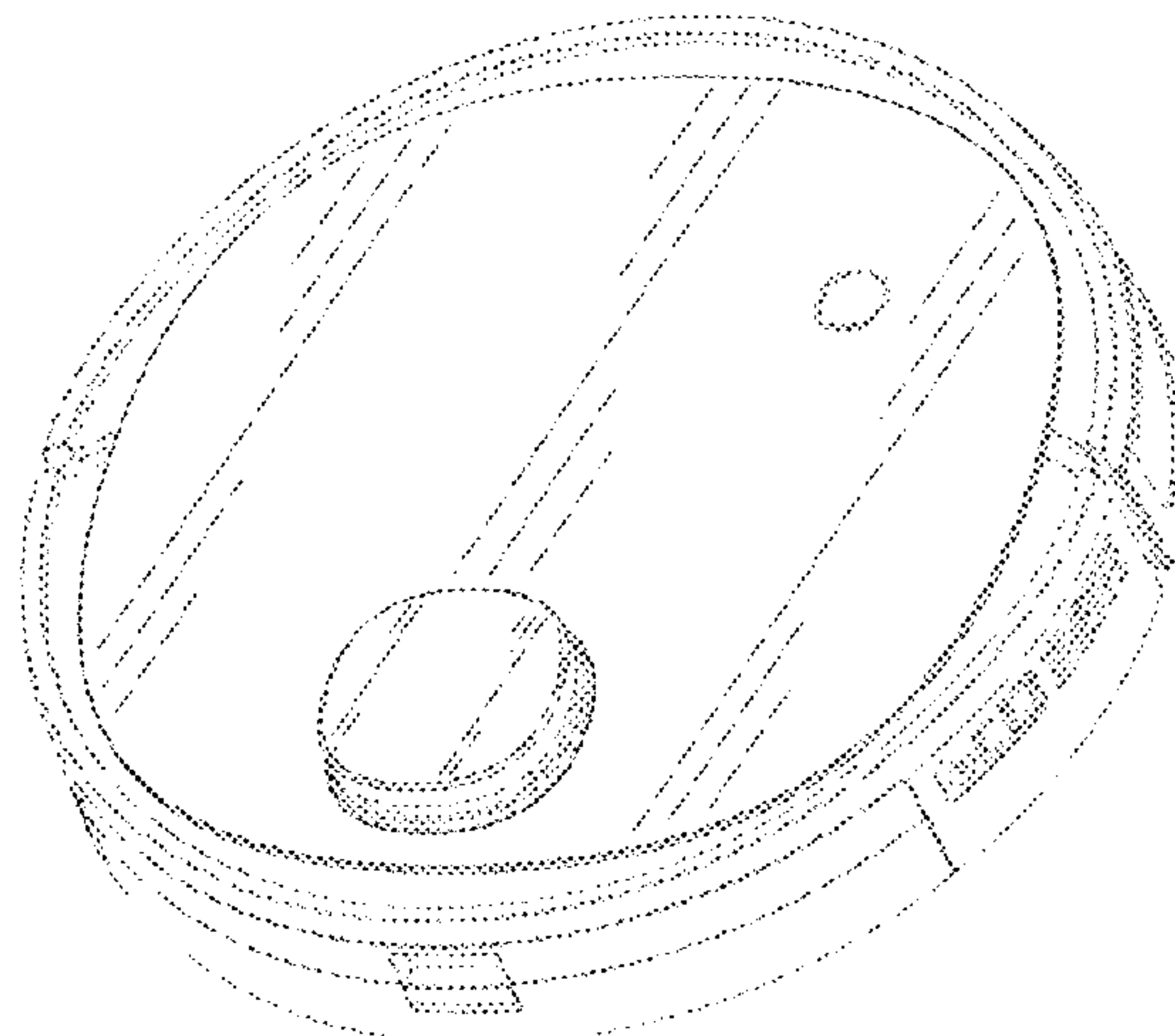
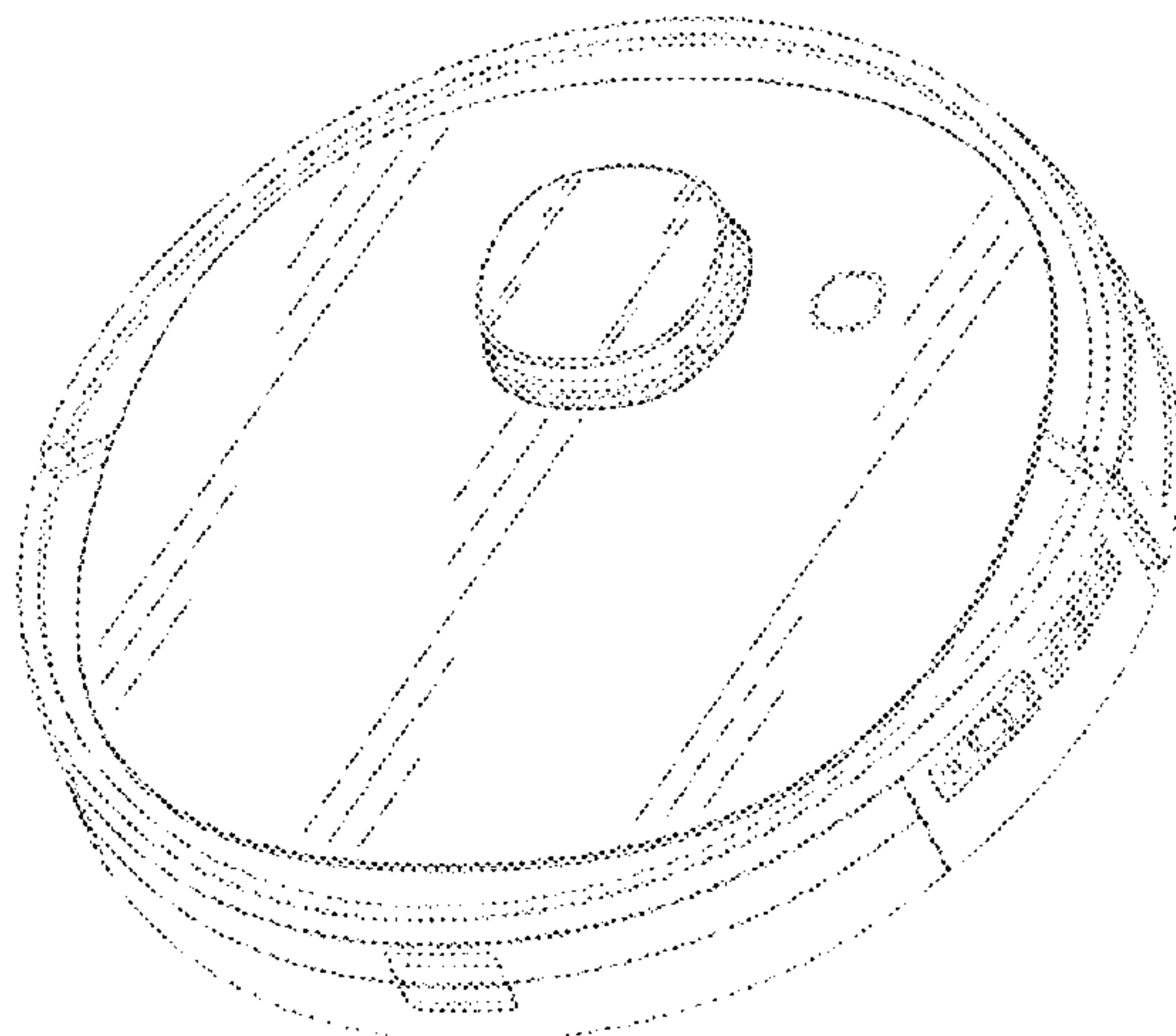


FIG. 23 is a top plan view thereof; and,  
 FIG. 24 is a bottom plan view thereof.  
 The broken lines show portions of the robot cleaner that  
 form no part of the claimed design.

**1 Claim, 10 Drawing Sheets**

(58) **Field of Classification Search**

USPC ..... D13/108, 209; D14/218, 248, 341, 344;  
 D23/254

See application file for complete search history.

(56)

**References Cited**

U.S. PATENT DOCUMENTS

|              |    |   |         |            |       |             |
|--------------|----|---|---------|------------|-------|-------------|
| D598,375     | S  | * | 8/2009  | Nomi       | ..... | D13/108     |
| D625,059     | S  | * | 10/2010 | Morenstein | ..... | D32/21      |
| D627,728     | S  | * | 11/2010 | Smith      | ..... | D13/138.1   |
| D628,153     | S  | * | 11/2010 | Fujii      | ..... | D13/108     |
| D703,397     | S  | * | 4/2014  | Sungkyung  | ..... | D32/21      |
| D704,400     | S  | * | 5/2014  | Shin       | ..... | D32/21      |
| D709,255     | S  | * | 7/2014  | Wang       | ..... | D32/21      |
| D709,873     | S  | * | 7/2014  | Aumiller   | ..... | D14/344     |
| D714,288     | S  | * | 9/2014  | Aumiller   | ..... | D14/344     |
| D718,234     | S  | * | 11/2014 | Rautiainen | ..... | D13/108     |
| D720,510     | S  | * | 12/2014 | Shin       | ..... | D32/21      |
| D722,259     | S  | * | 2/2015  | Conner     | ..... | D8/300      |
| D722,962     | S  | * | 2/2015  | Kim        | ..... | D13/108     |
| D736,468     | S  | * | 8/2015  | Goswell    | ..... | D28/83      |
| D743,645     | S  | * | 11/2015 | Lee        | ..... | D32/21      |
| D770,930     | S  | * | 11/2016 | Li         | ..... | D10/106.2   |
| D778,515     | S  | * | 2/2017  | Choi       | ..... | D32/21      |
| D782,455     | S  | * | 3/2017  | Kim        | ..... | D14/248     |
| D789,352     | S  | * | 6/2017  | Kong       | ..... | D14/314     |
| D819,189     | S  | * | 5/2018  | Chen       | ..... | D23/332     |
| D835,070     | S  | * | 12/2018 | DePasquale | ..... | D14/216     |
| D840,617     | S  | * | 2/2019  | Dou        | ..... | D32/21      |
| D845,551     | S  | * | 4/2019  | Weinrich   | ..... | D28/83      |
| D847,805     | S  | * | 5/2019  | Lederer    | ..... | D14/250     |
| D853,036     | S  | * | 7/2019  | Lee        | ..... | D28/82      |
| D858,758     | S  | * | 9/2019  | Mulumudi   | ..... | D24/134     |
| D867,701     | S  | * | 11/2019 | Mi         | ..... | D32/31      |
| D867,905     | S  | * | 11/2019 | McKinnon   | ..... | D10/50      |
| D869,109     | S  | * | 12/2019 | Yu         | ..... | D32/21      |
| D875,041     | S  | * | 2/2020  | Chen       | ..... | D13/108     |
| D877,068     | S  | * | 3/2020  | Wang       | ..... | D13/108     |
| D883,511     | S  | * | 5/2020  | Li         | ..... | D24/217     |
| D884,298     | S  | * | 5/2020  | Li         | ..... | D32/21      |
| D884,489     | S  | * | 5/2020  | Yu         | ..... | D10/15      |
| D884,615     | S  | * | 5/2020  | Ito        | ..... | D13/108     |
| 2018/0344118 | A1 | * | 12/2018 | Kim        | ..... | B62D 55/125 |
| 2020/0205627 | A1 | * | 7/2020  | Choi       | ..... | A47L 9/106  |

FOREIGN PATENT DOCUMENTS

|    |           |   |        |
|----|-----------|---|--------|
| CN | 304184718 | * | 6/2017 |
| CN | 304245842 | * | 8/2017 |
| CN | 304437192 | * | 1/2018 |
| CN | 304438189 | * | 1/2018 |
| CN | 304566598 | * | 4/2018 |

|    |                 |   |         |
|----|-----------------|---|---------|
| CN | 304651528       | * | 5/2018  |
| CN | 304651529       | * | 5/2018  |
| CN | 304651536       | * | 5/2018  |
| CN | 304705643       | * | 6/2018  |
| CN | 304705644       | * | 6/2018  |
| CN | 304717345       | * | 7/2018  |
| CN | 304732111       | * | 7/2018  |
| CN | 305109773       | * | 4/2019  |
| CN | 302560172       | * | 6/2019  |
| CN | 305427545       | * | 11/2019 |
| IN | 317525-001-0001 | * | 6/2020  |
| RU | 110054          | * | 1/2018  |
| WO | D207962-006     | * | 10/2020 |

OTHER PUBLICATIONS

DEEBOT OZMO 950, announced in YouTube on Aug. 13, 2019 [online], [site visited Nov. 30, 2020], Available from the internet URL: <https://www.youtube.com/watch?v=IZuHgVoJnok> (Year: 2019).\*

ECOVACS DEEBOT OZMO 605, announced in YouTube on Sep. 21, 2019 [online], [site visited Nov. 30, 2020], Available from the internet URL: <https://www.youtube.com/watch?v=SV4ictbQqZA> (Year: 2019).\*

Cuchen Rice Cooker, available in behance.net, announced Year 2020 [online], [site visited Nov. 30, 2020], Internet URL: [https://www.behance.net/gallery/92339069/Cuchen-Rice-Cooker?tracking\\_source=search\\_projects\\_recommended%7CCuchen%20Rice%20Cooker](https://www.behance.net/gallery/92339069/Cuchen-Rice-Cooker?tracking_source=search_projects_recommended%7CCuchen%20Rice%20Cooker) (Year: 2020).\*

Midea Induction Cooker, available in behance.net, announced Year 2020 [online], [site visited Nov. 30, 2020], Internet URL: [https://www.behance.net/gallery/103879799/Midea-Induction-Cooker?tracking\\_source=search\\_projects\\_recommended%7CCuchen%20Rice%20Cooker](https://www.behance.net/gallery/103879799/Midea-Induction-Cooker?tracking_source=search_projects_recommended%7CCuchen%20Rice%20Cooker) (Year: 2020).\*

ECOBEE Smart Wi-Fi, available in amazon.com, date first available Aug. 31, 2017 [online], [site visited Nov. 30, 2020], Internet URL: [https://www.amazon.com/dp/B0759JDTT6/ref=cm\\_sw\\_r\\_em\\_apa\\_fabt1\\_R-WWFbJGR5ANH?\\_encoding=UTF8&psc=1](https://www.amazon.com/dp/B0759JDTT6/ref=cm_sw_r_em_apa_fabt1_R-WWFbJGR5ANH?_encoding=UTF8&psc=1) (Year: 2017).\*

Samsung Wi-Fi Mesh Router, available in amazon.com, date first available Aug. 12, 2018 [online], [site visited Nov. 30, 2020], Internet URL: <https://www.amazon.com/Samsung-SmartThings-Extender-Functionality-Whole-Home/dp/B07FCRCD93> (Year: 2018).\*

Fan Design, available in pinterest.com, announced Year 2020 [online], [site visited Nov. 30, 2020], Internet URL: [https://www.pinterest.com/pin/586171707742780109/sent/?invite\\_code=666c93dfc5914b6db1806b35c8cf220f&sender=796504021505466042&sfo=1](https://www.pinterest.com/pin/586171707742780109/sent/?invite_code=666c93dfc5914b6db1806b35c8cf220f&sender=796504021505466042&sfo=1) (Year: 2020).\*

Philips Compact Automotive Clean Air System, available in pinterest.com, announced Year 2020 [online], [site visited Nov. 30, 2020], Internet URL: <https://www.pinterest.com/pin/427912402071818895/?d=t&mt=login> (Year: 2020).\*

Smart Garage Door Opener available in amazon.com, date first available Aug. 20, 2020 [online], [site visited Nov. 30, 2020], Internet URL: [https://www.amazon.com/dp/B08GD3D9YJ/ref=cm\\_sw\\_r\\_em\\_apa\\_fabt1\\_d1C\\_3bXWFb8DXY9N0?\\_encoding=UTF8&th=1](https://www.amazon.com/dp/B08GD3D9YJ/ref=cm_sw_r_em_apa_fabt1_d1C_3bXWFb8DXY9N0?_encoding=UTF8&th=1) (Year: 2020).\*

\* cited by examiner



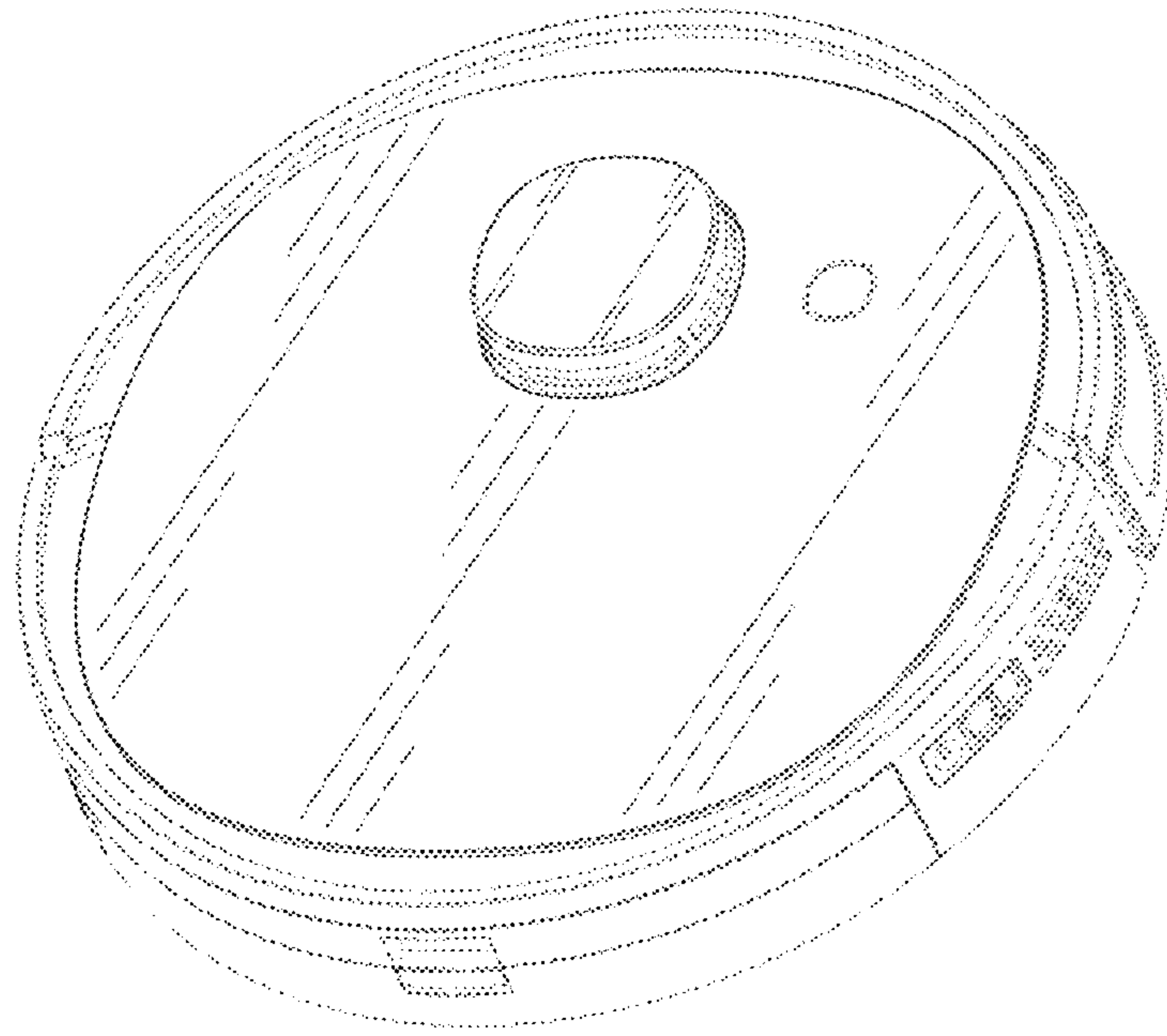


FIG.1

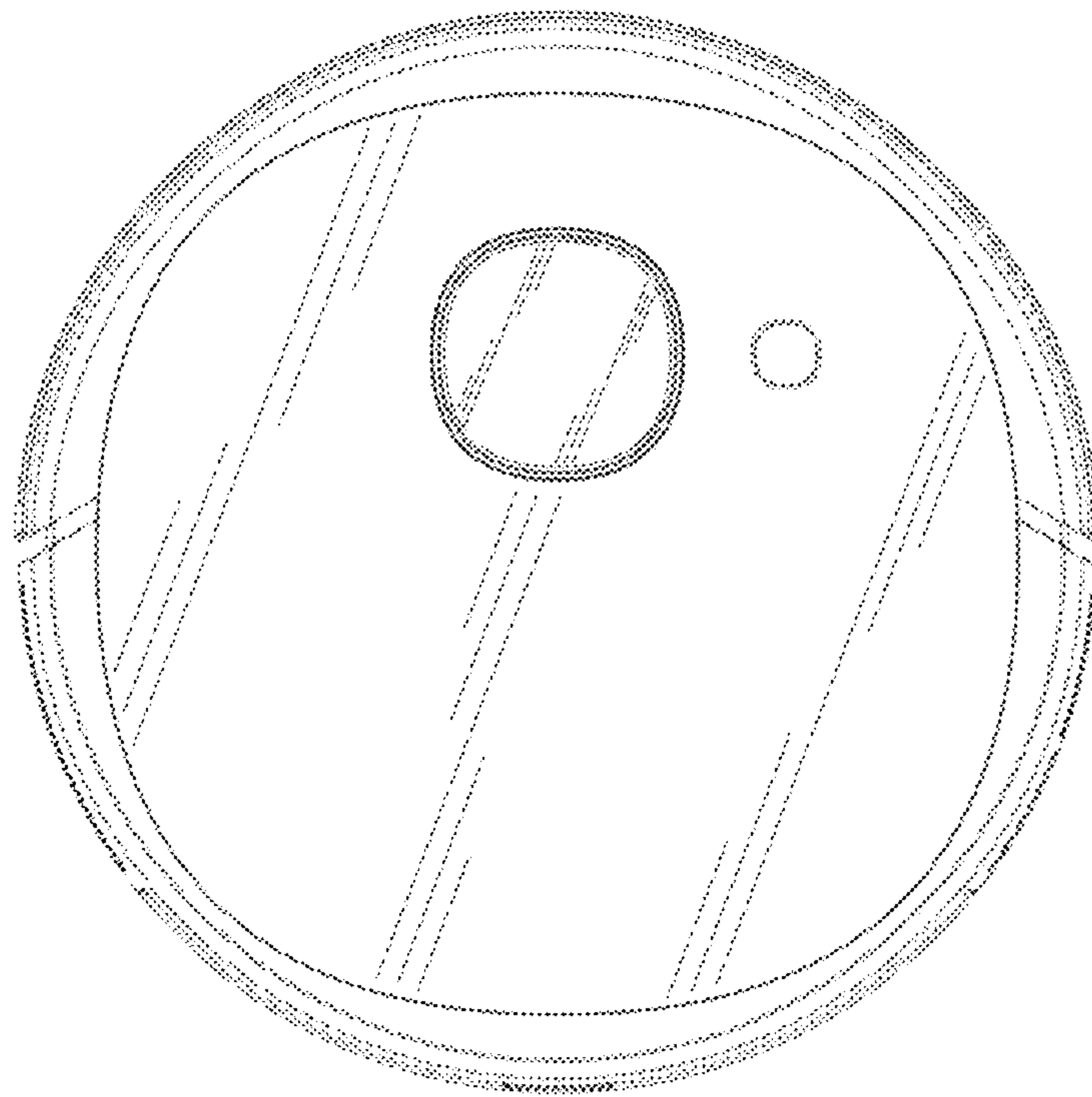


FIG.2

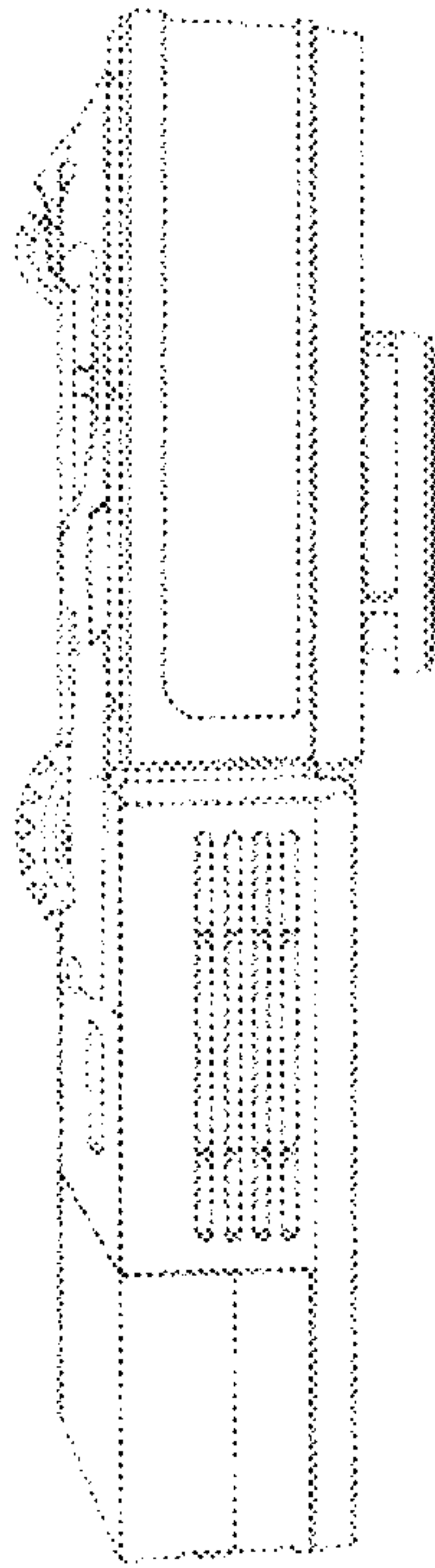


FIG.3

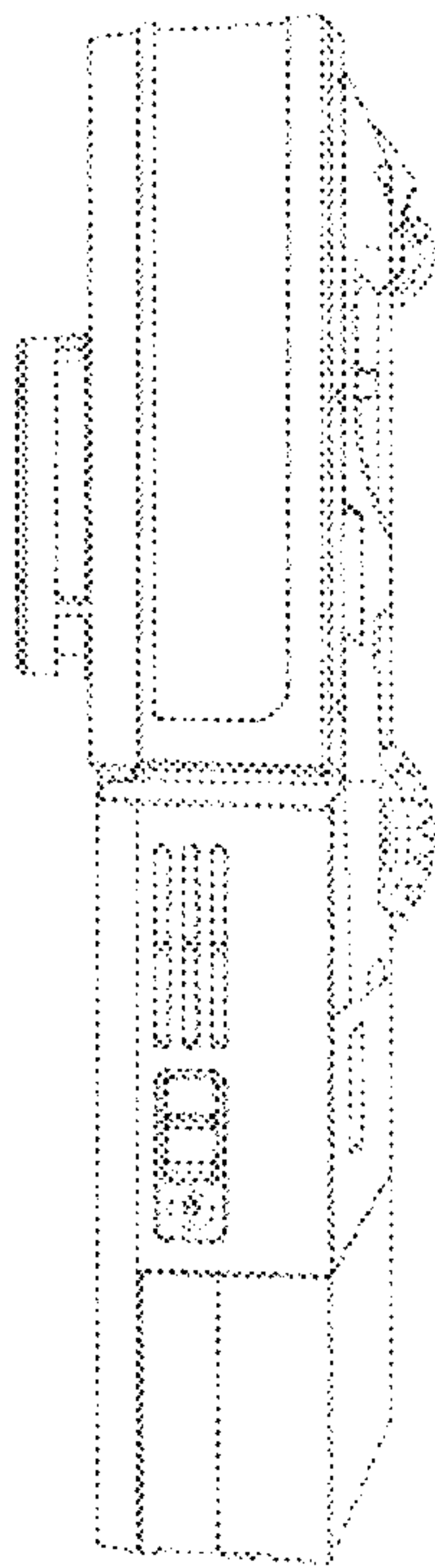


FIG.4

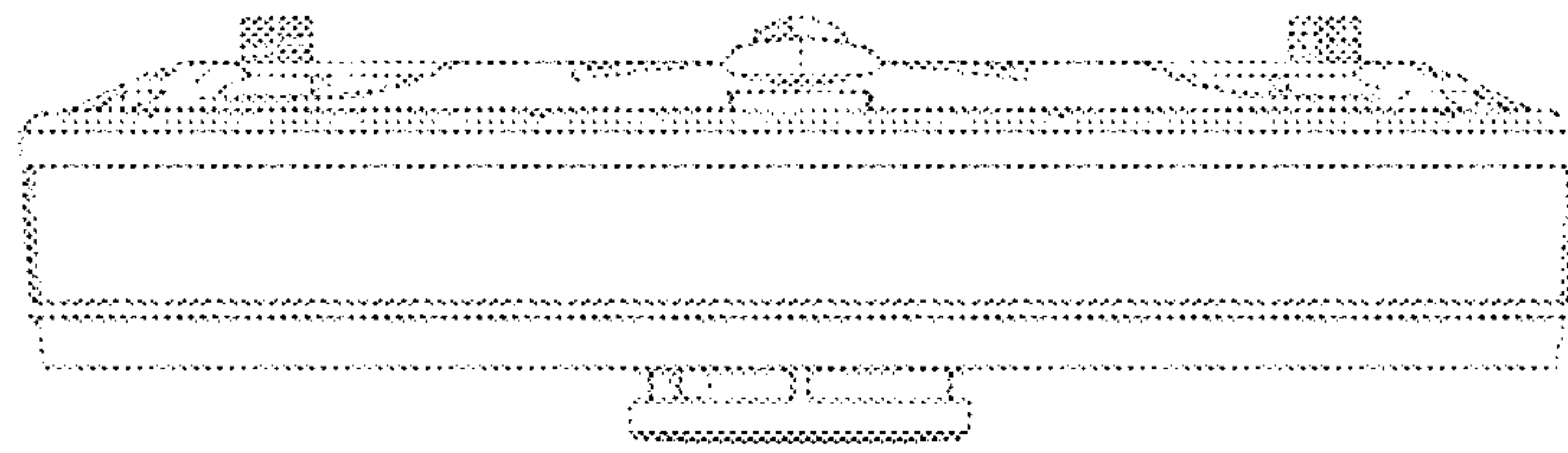


FIG.5

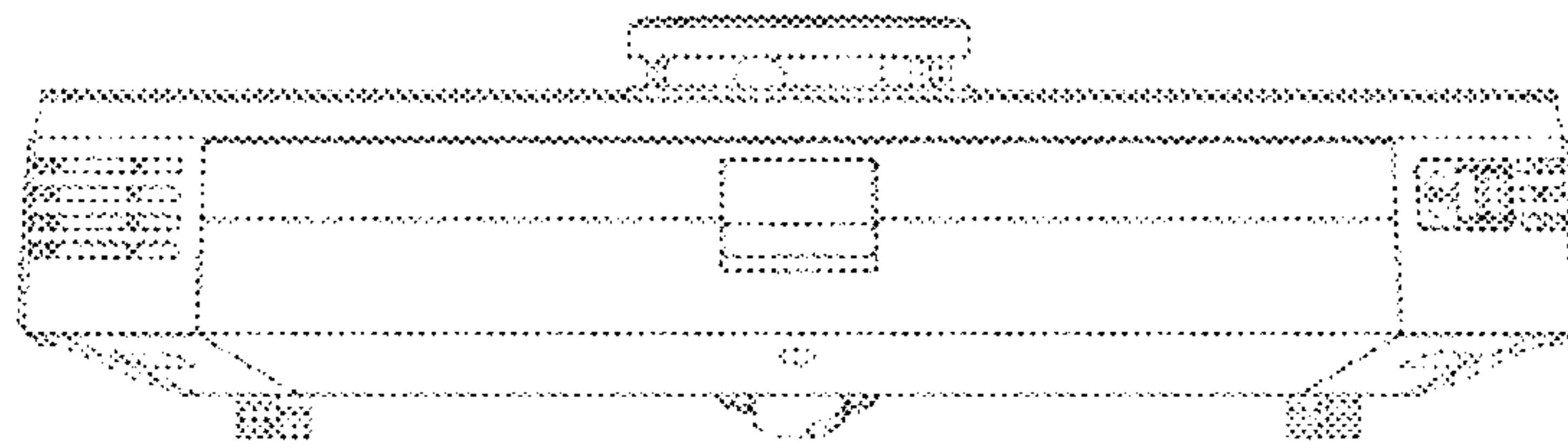


FIG.6

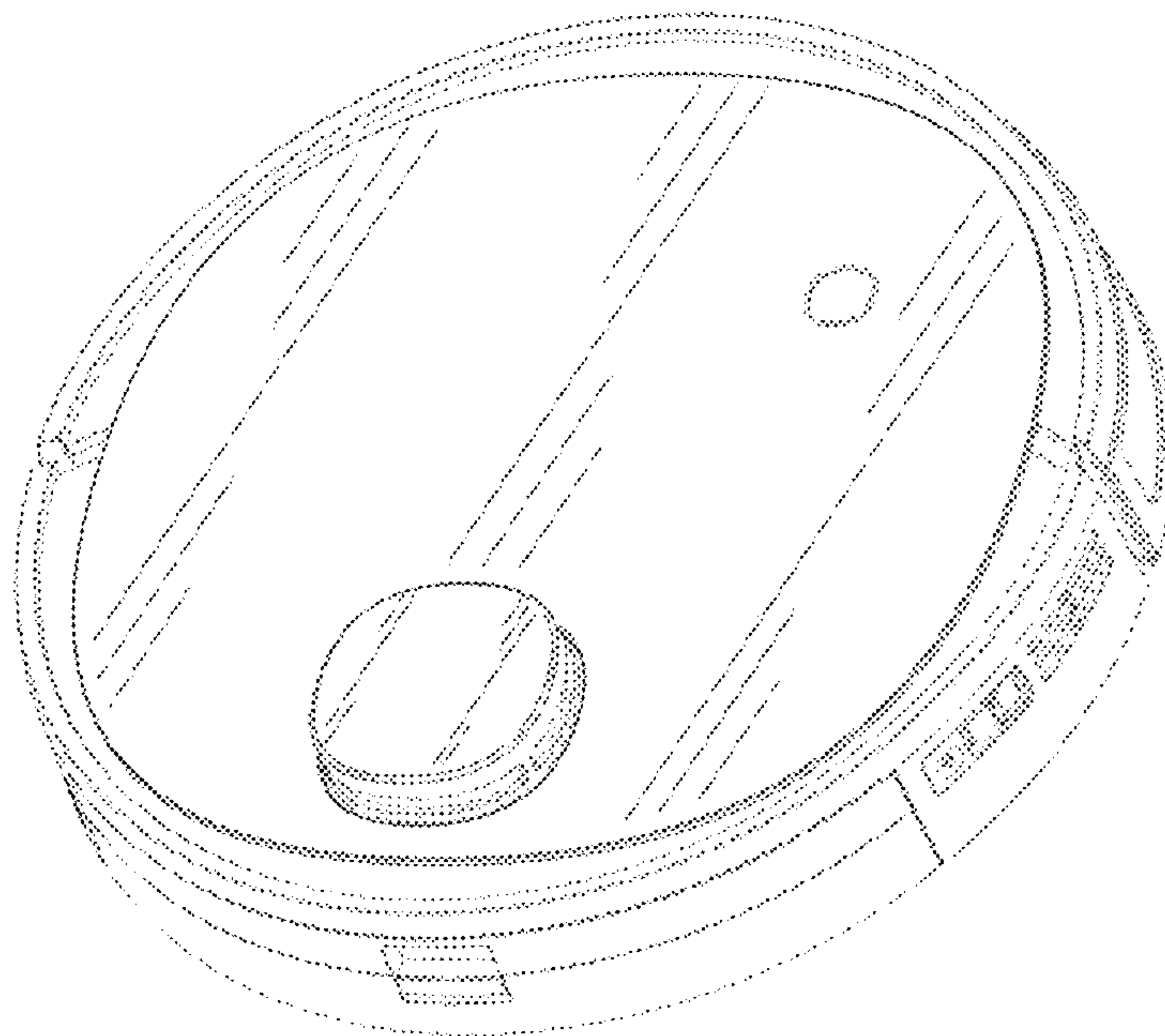


FIG.7

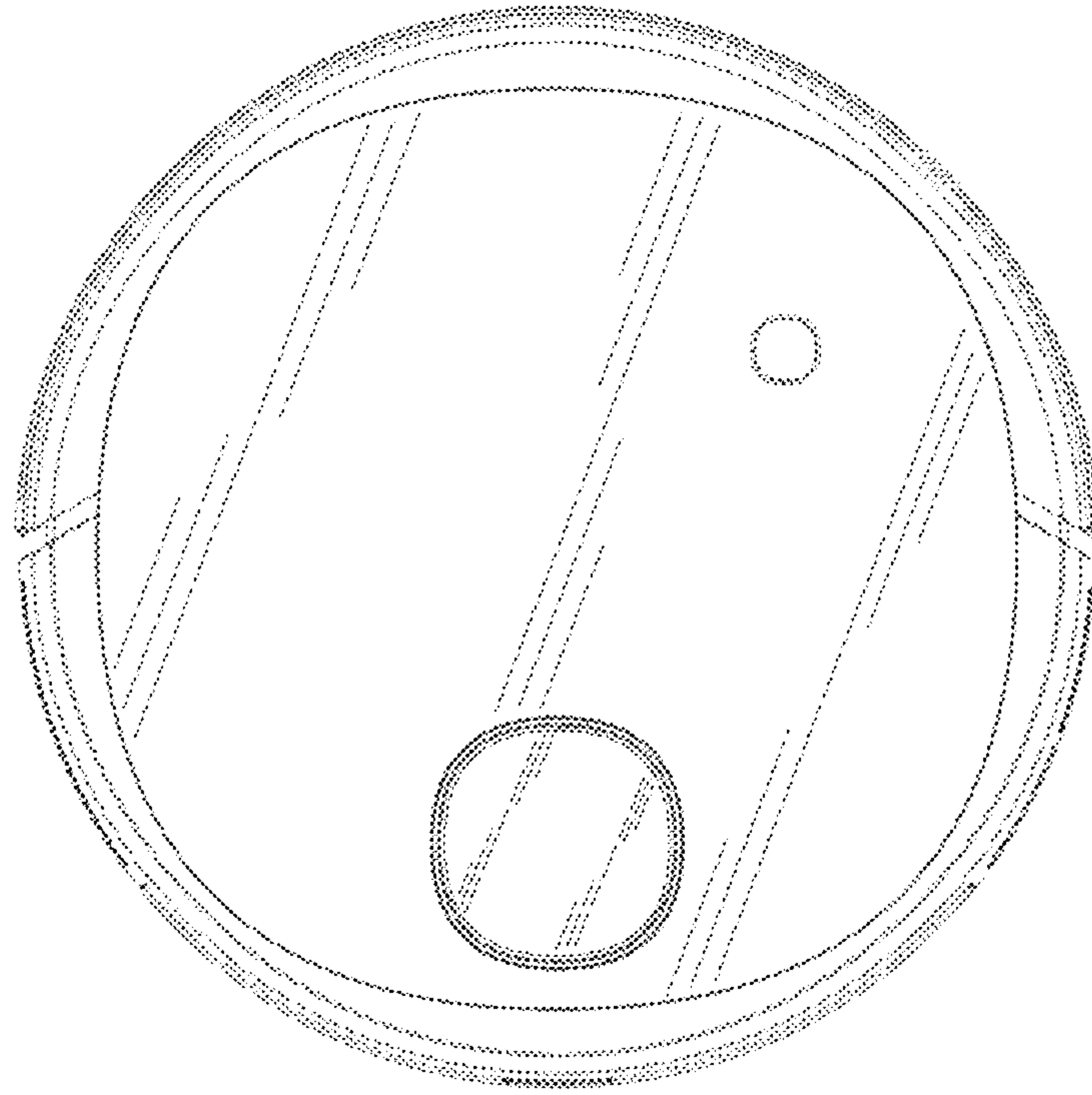


FIG. 8

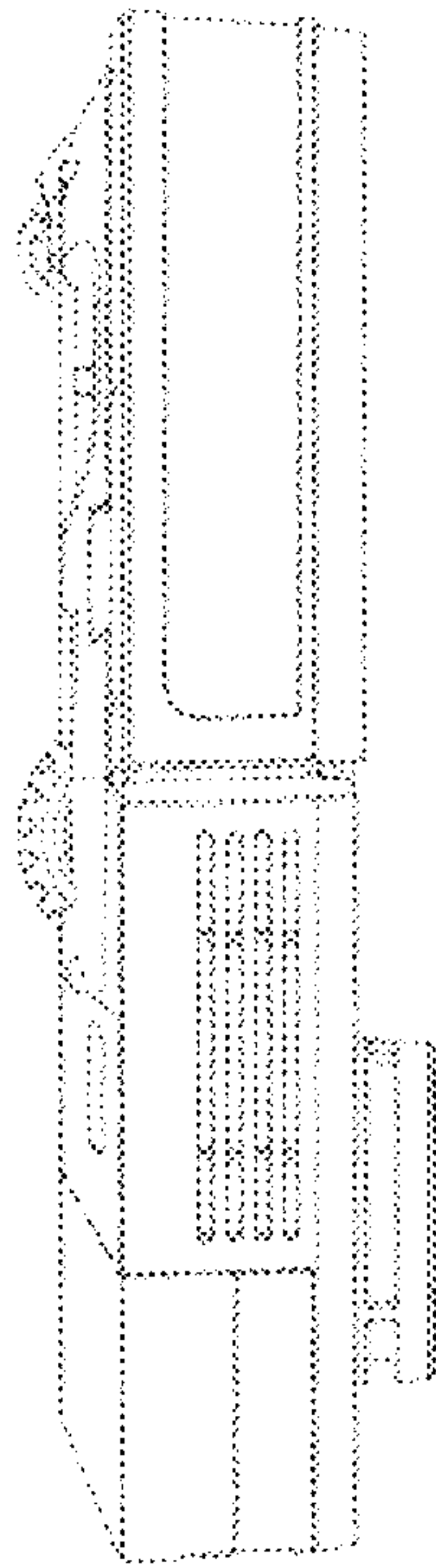


FIG. 9

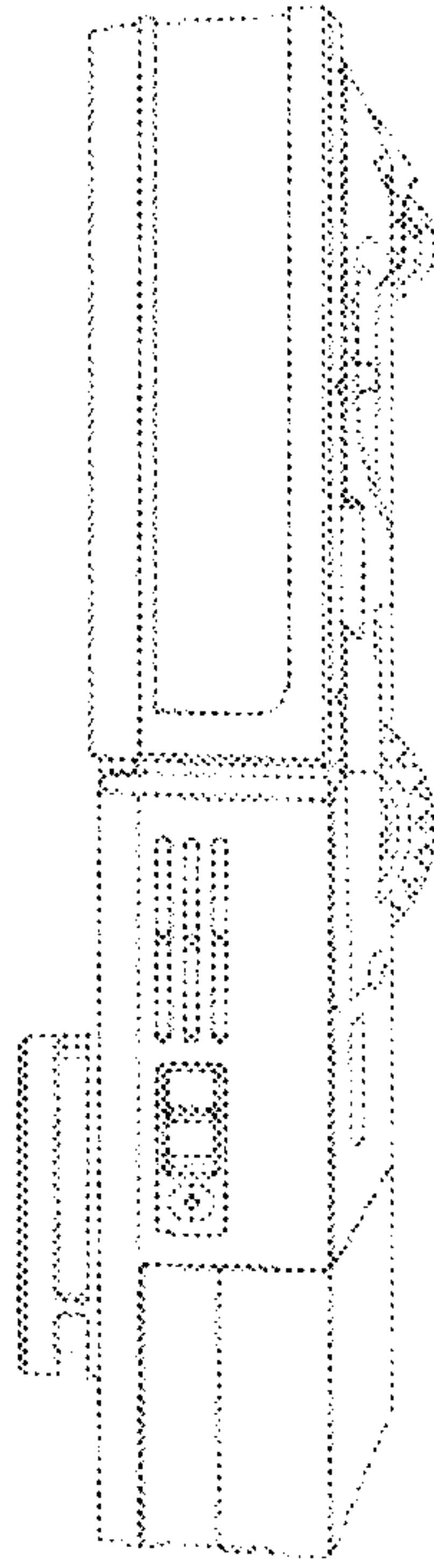


FIG.10

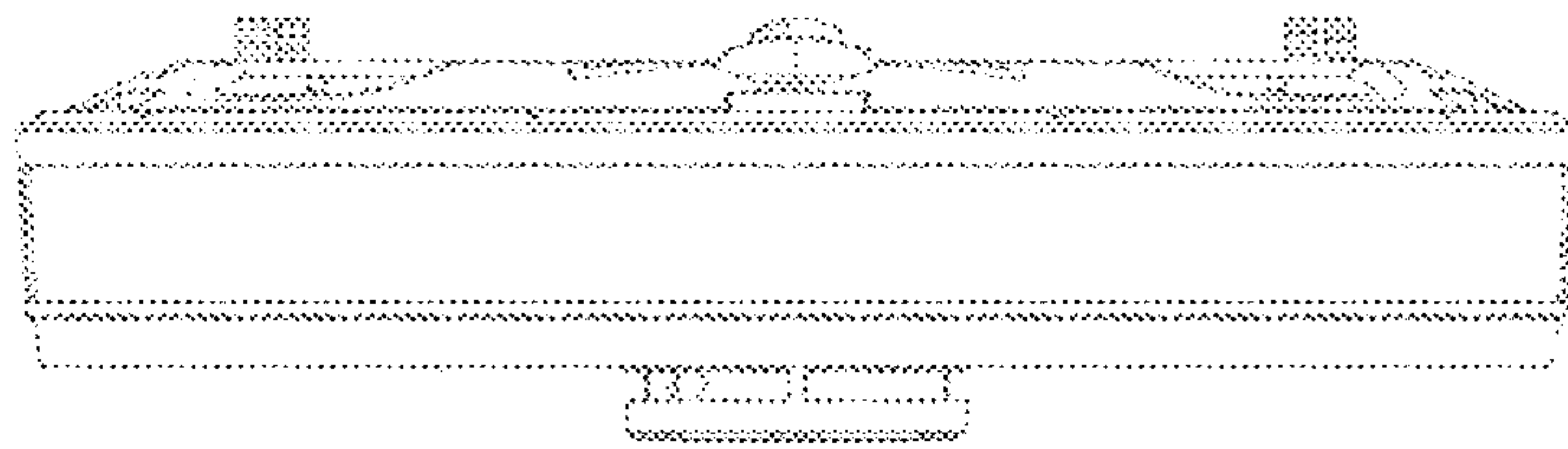


FIG.11

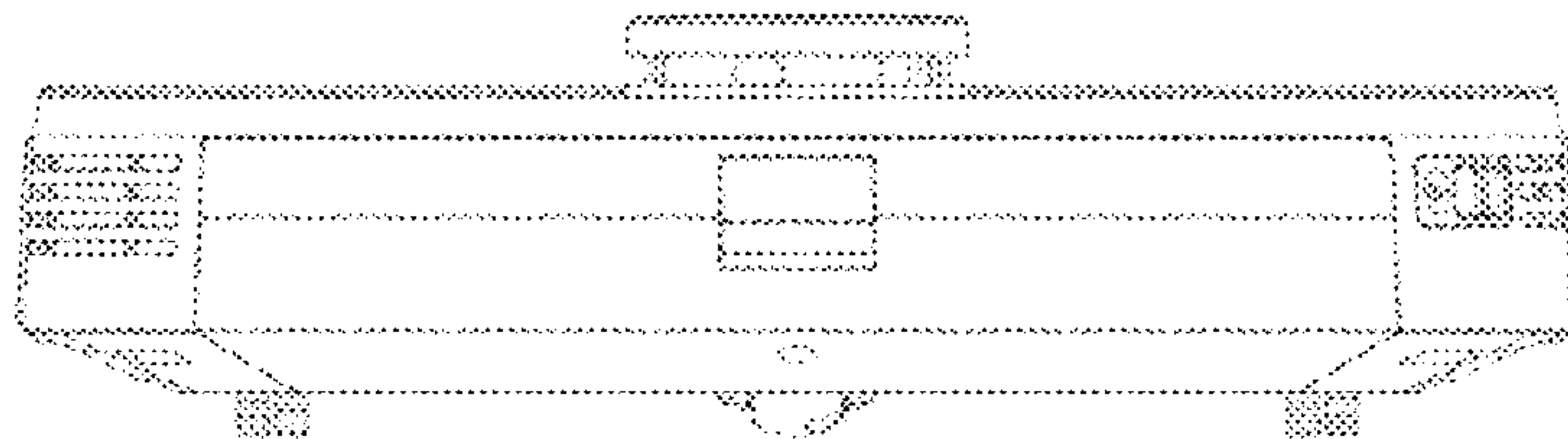


FIG.12



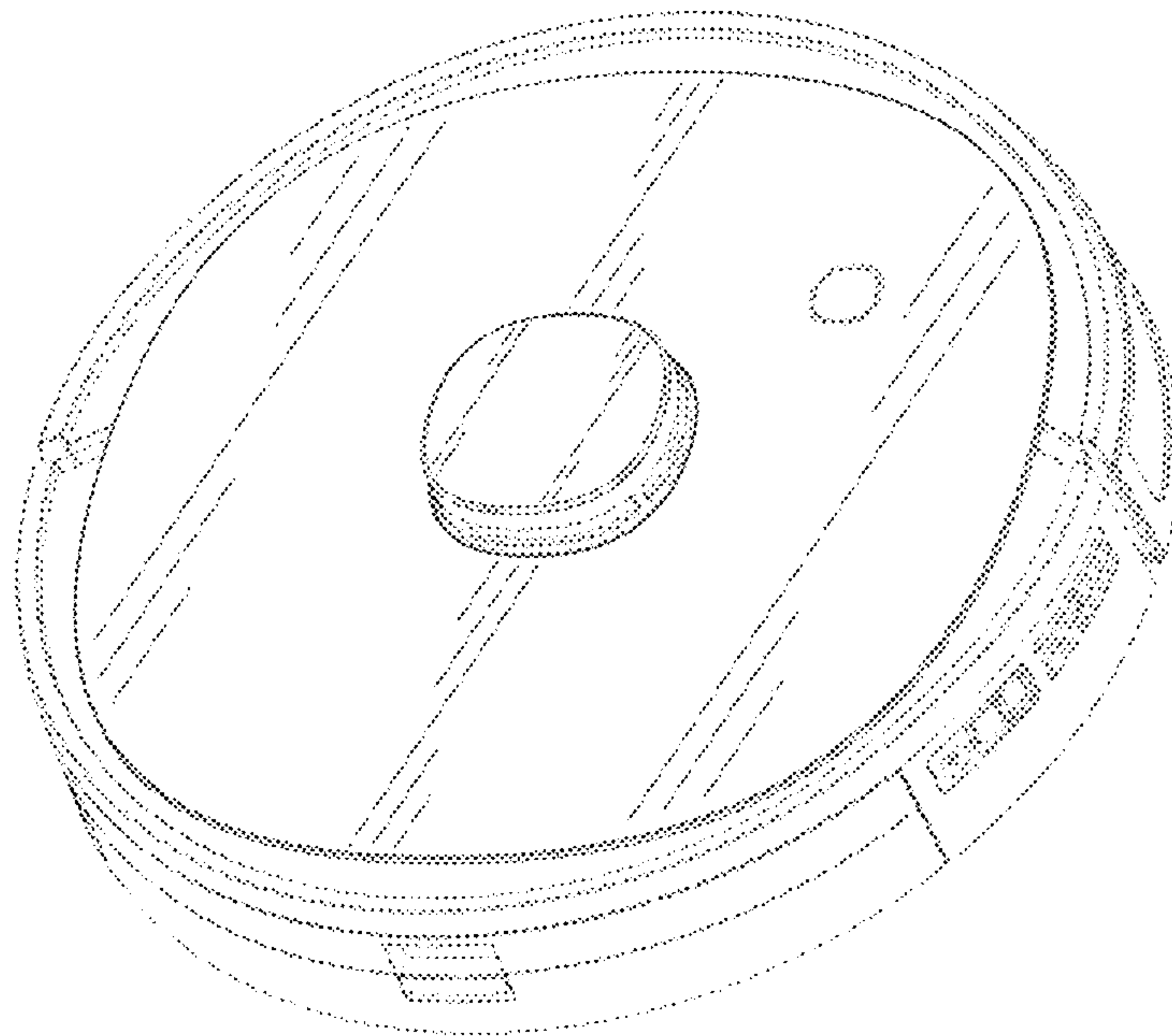


FIG.13

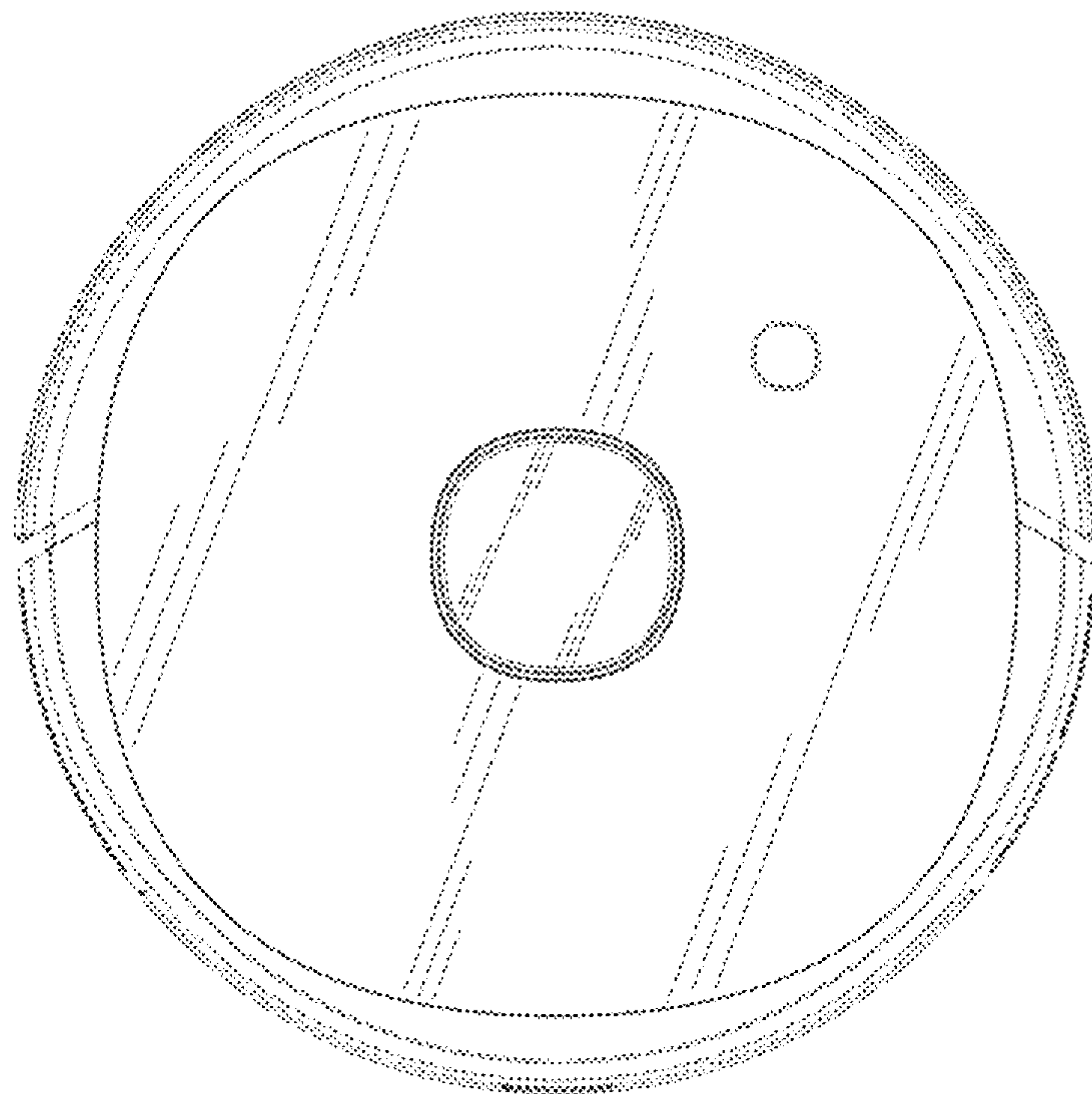


FIG.14



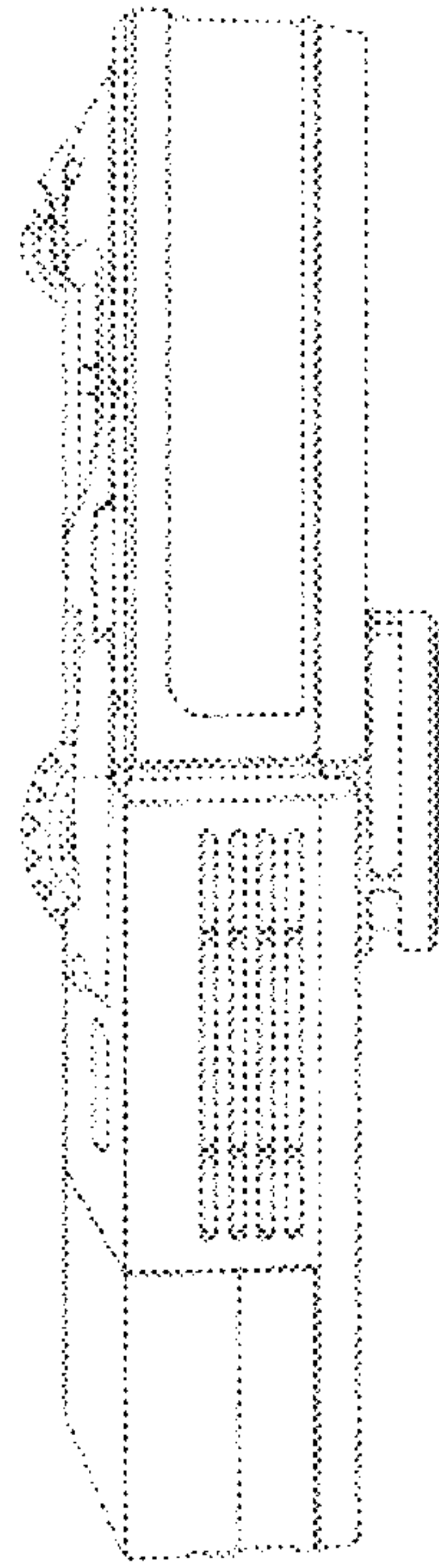


FIG.15

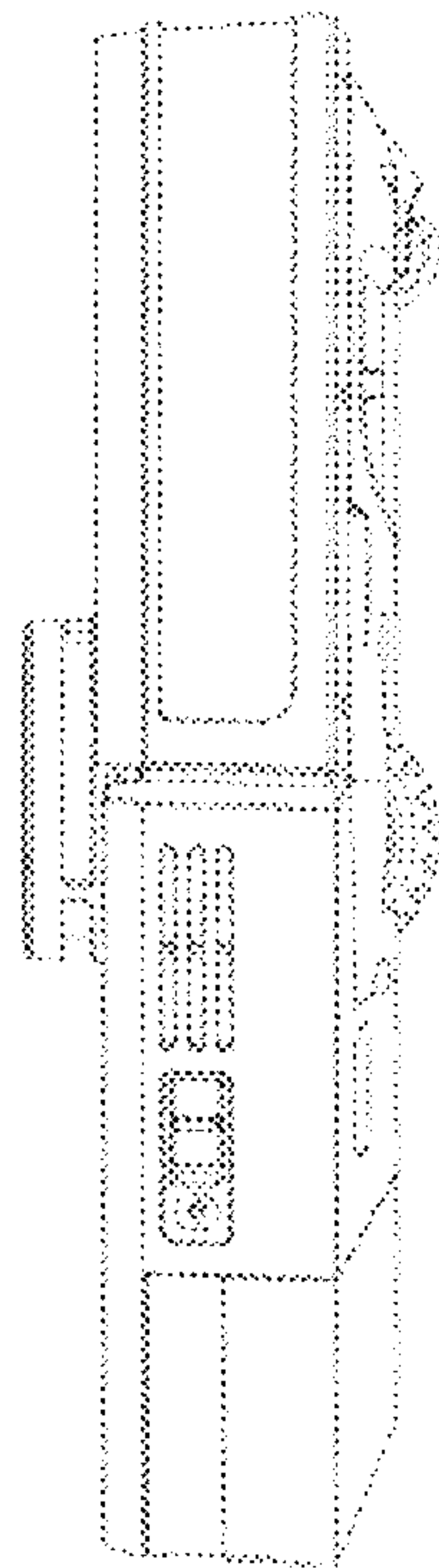


FIG.16

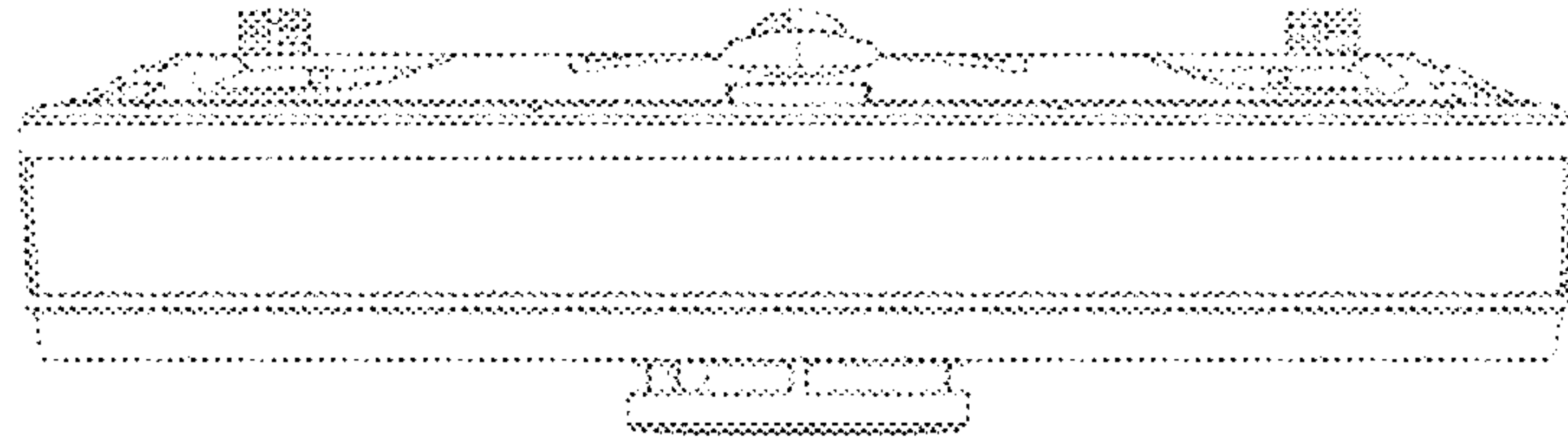


FIG.17

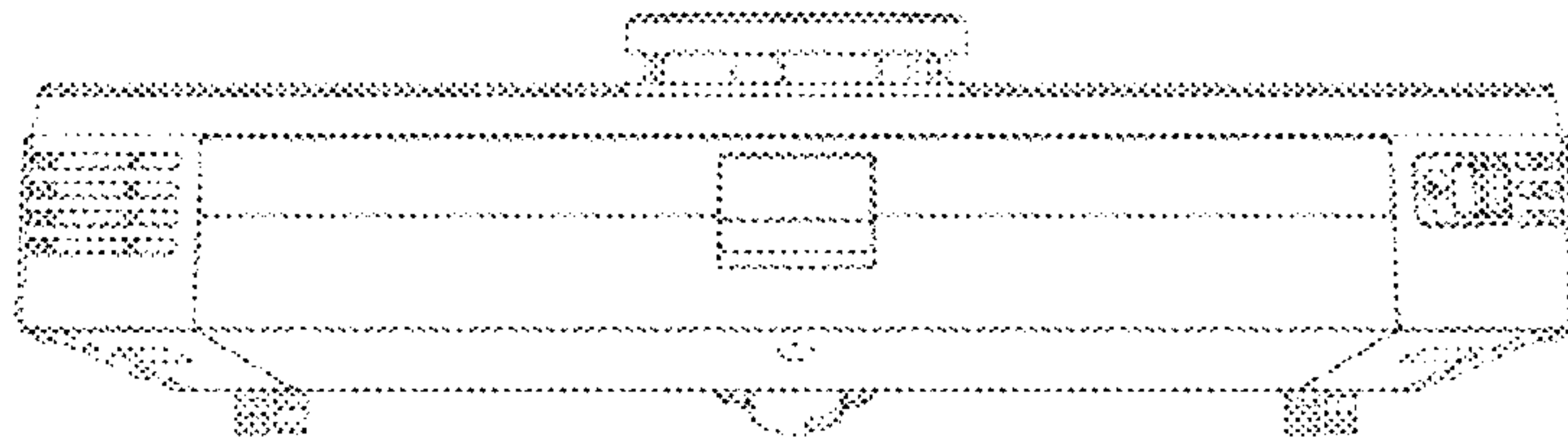


FIG.18

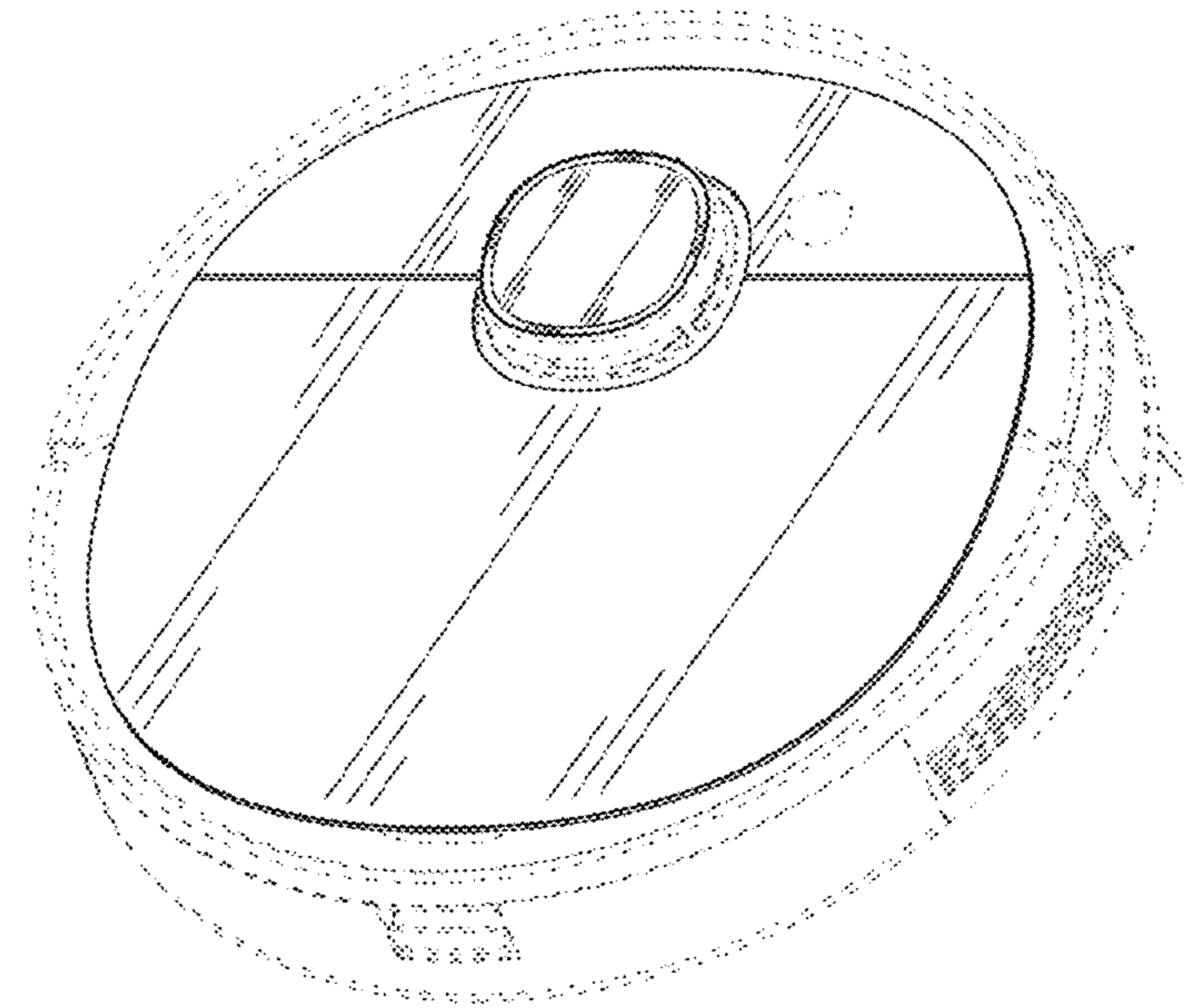


FIG.19

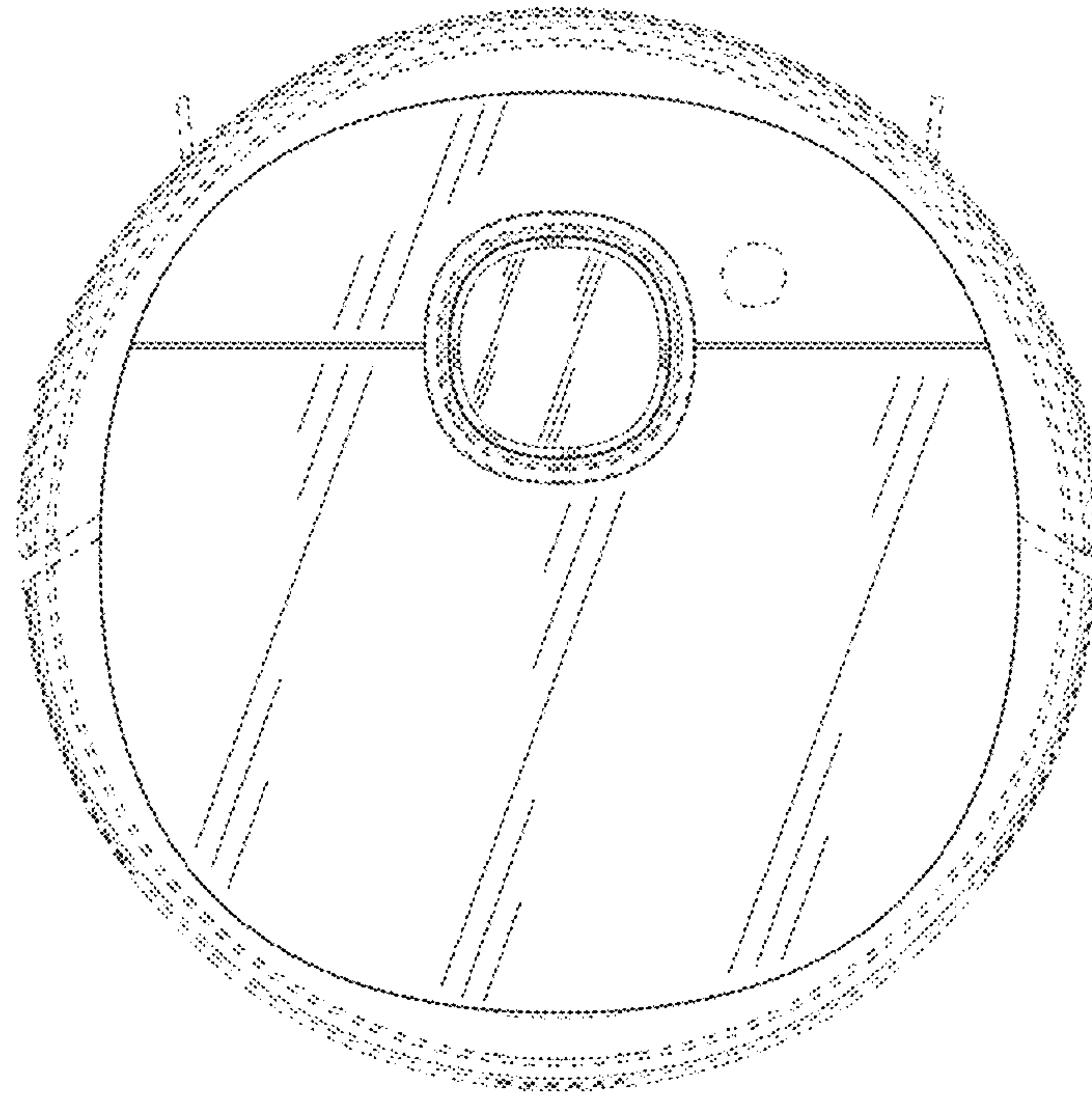


FIG.20

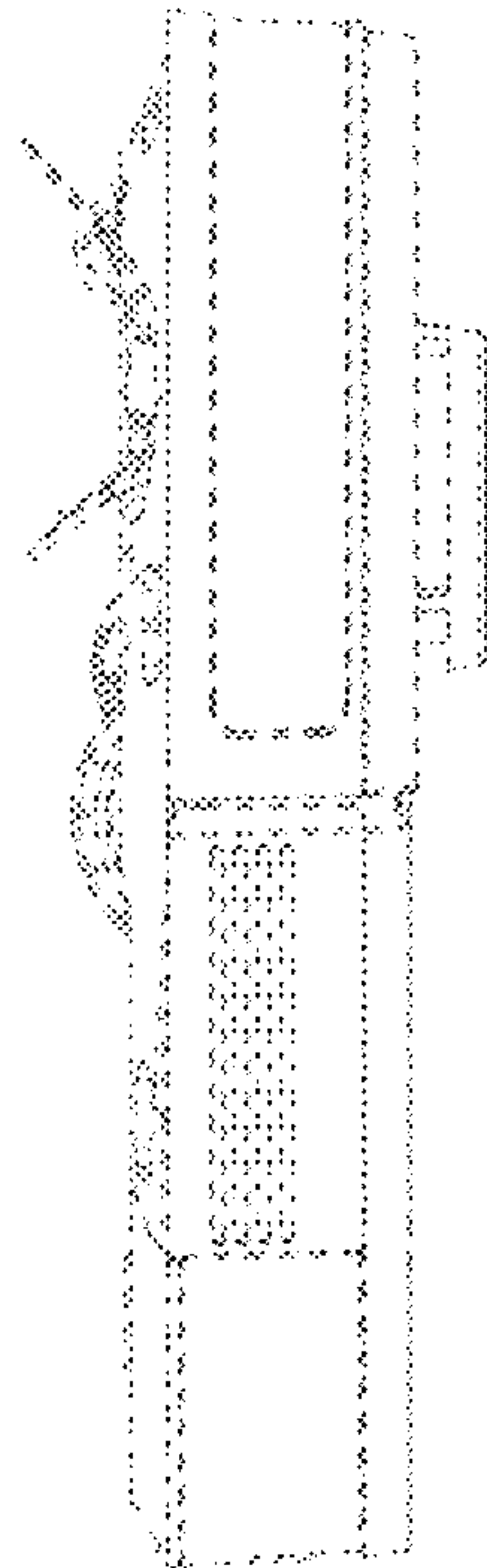


FIG.21



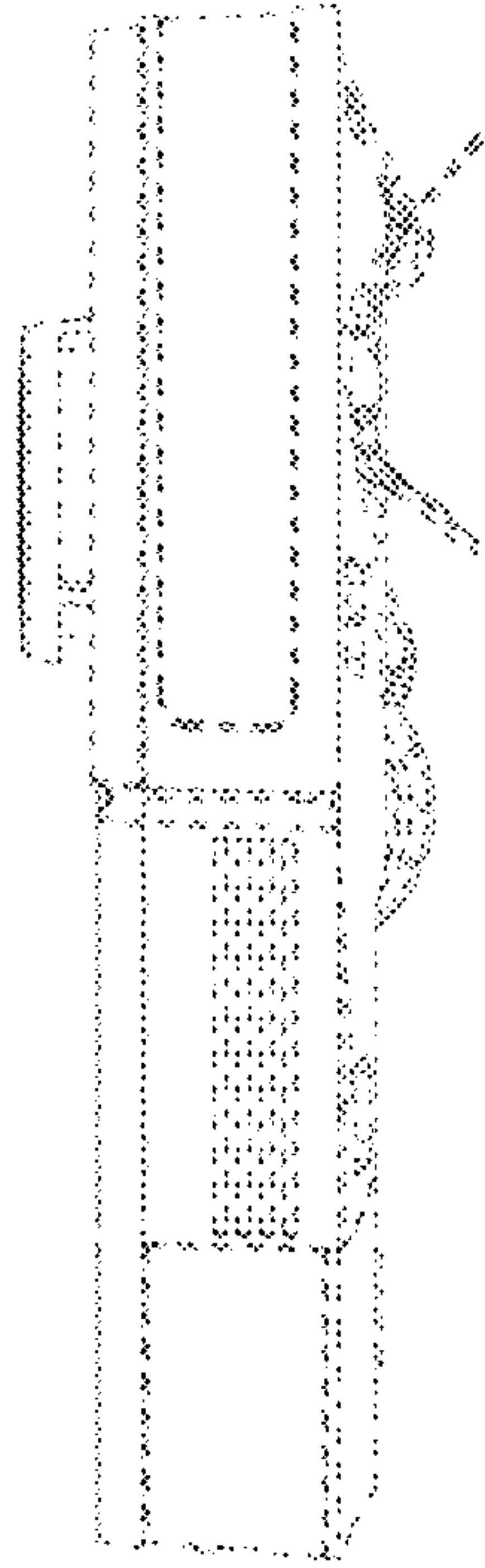


FIG.22

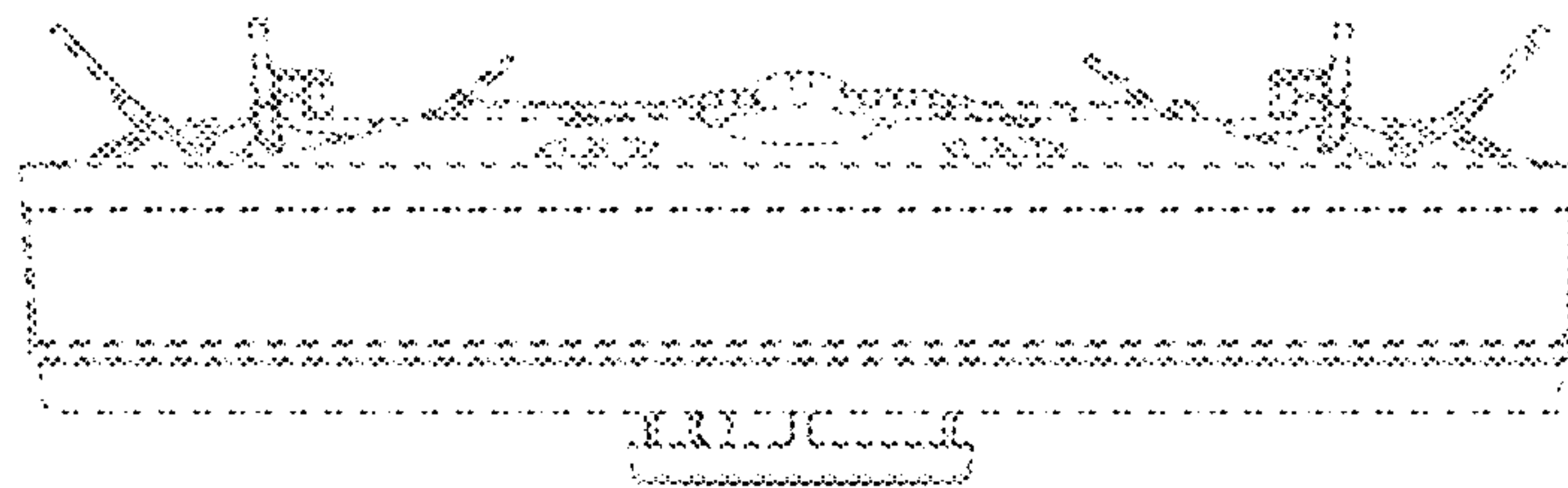


FIG.23

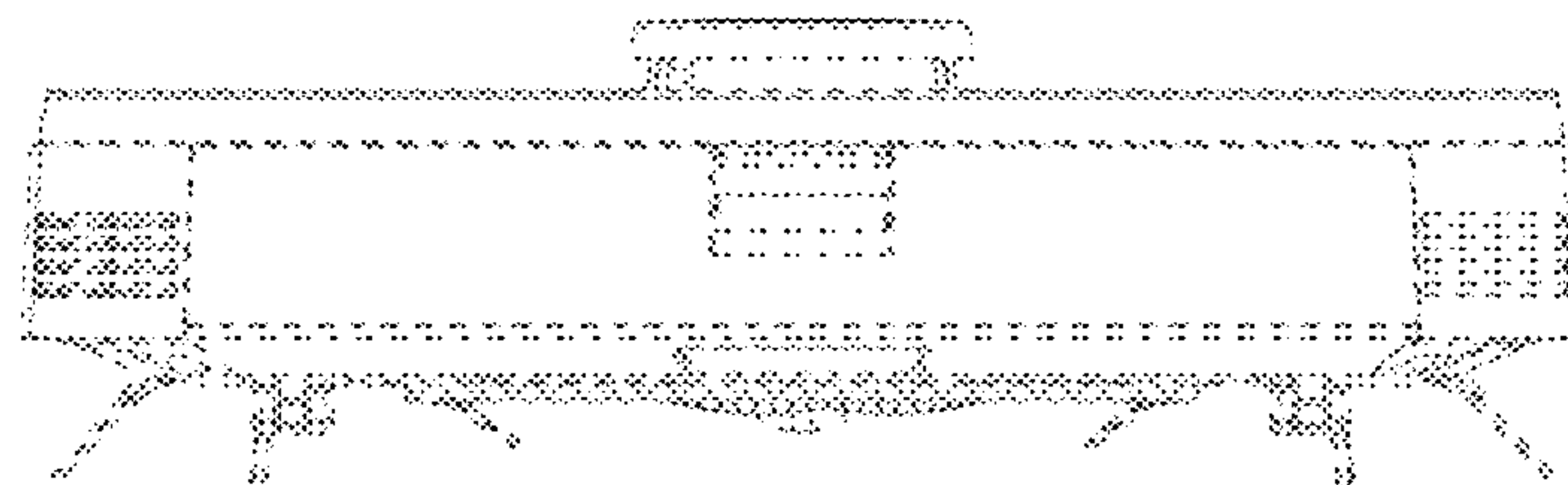


FIG.24