



US00D980734S

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

(10) **Patent No.:** **US D980,734 S**  
(45) **Date of Patent:** **\*\* Mar. 14, 2023**

(54) **GAS MONITORING DEVICE**

(71) Applicant: **Industrial Scientific Corporation,**  
Pittsburgh, PA (US)

(72) Inventors: **Charles Dennis Hughes,** Moon  
Township, PA (US); **Thomas Michael**  
**Mikulin,** New Wilmington, PA (US);  
**Henry J. Suwalski,** Cranberry  
Township, PA (US); **Adrian Sirbu,**  
Coraopolis, PA (US)

(73) Assignee: **INDUSTRIAL SCIENTIFIC**  
**CORPORATION,** Pittsburgh, PA (US)

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

(21) Appl. No.: **29/723,236**

(22) Filed: **Feb. 5, 2020**

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 16/411,465,  
filed on May 14, 2019, now Pat. No. 11,408,876,  
which is a continuation of application No.  
14/996,482, filed on Jan. 15, 2016, now Pat. No.  
10,324,073, said application No. 29/723,236 is a  
continuation-in-part of application No. 29/551,639,  
filed on Jan. 15, 2016, now abandoned.

(51) **LOC (14) Cl.** ..... **10-06**

(52) **U.S. Cl.**  
USPC ..... **D10/106.2**

(58) **Field of Classification Search**  
USPC ..... D10/46, 50, 65, 66, 101, 104.1, 106.2,  
D10/106.1, 113.4  
CPC ..... G08B 21/14; G08B 21/16  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,173,886 A 11/1979 Archbold et al.  
4,992,738 A 2/1991 May et al.

D364,577 S \* 11/1995 Moore ..... D10/78  
D365,528 S \* 12/1995 Shibuya ..... D10/81  
D409,507 S 5/1999 Ishii  
6,182,497 B1 2/2001 Krajci  
D447,974 S \* 9/2001 Koyano ..... D10/106.2  
(Continued)

**FOREIGN PATENT DOCUMENTS**

CN 200989234 Y 12/2007  
CN 101964890 A 2/2011  
(Continued)

**OTHER PUBLICATIONS**

U.S. Appl. No. 29/551,639, filed Jan. 15, 2016, Abandoned, Charles  
Dennis Hughes.

(Continued)

*Primary Examiner* — Michael C Stout  
*Assistant Examiner* — Fritzgerald L Butac  
(74) *Attorney, Agent, or Firm* — GTC Law Group PC &  
Affiliates

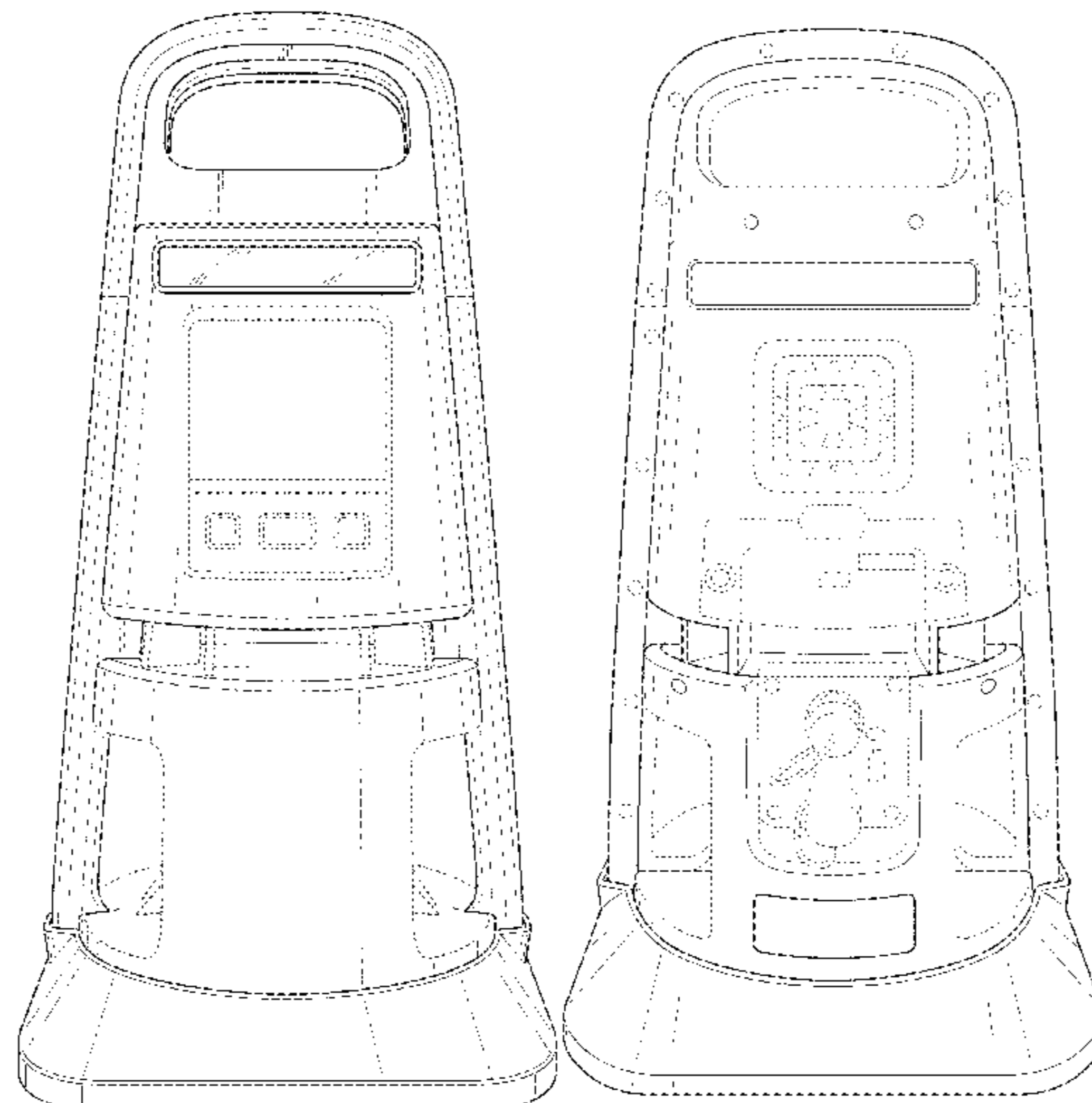
(57) **CLAIM**

The ornamental design for a gas monitoring device, as  
shown.

**DESCRIPTION**

FIG. 1 is a front perspective view of the gas monitoring  
device.  
FIG. 2 is a front view thereof.  
FIG. 3 is a back perspective view thereof.  
FIG. 4 is a left side view thereof.  
FIG. 5 is a right side view thereof; and,  
FIG. 6 is a top view thereof.  
The broken lines shown in the Figures show portions of the  
gas monitoring device that form no part of the claimed  
design.

**1 Claim, 6 Drawing Sheets**



(56)

References Cited

U.S. PATENT DOCUMENTS

D450,254 S 11/2001 Ishii  
 D457,456 S \* 5/2002 Holland ..... D10/106.2  
 6,442,639 B1 8/2002 McElhattan et al.  
 D469,738 S \* 2/2003 Ishii ..... D13/101  
 6,679,094 B2 1/2004 Wang et al.  
 D494,074 S 8/2004 Ishii  
 D526,223 S 8/2006 Ishii et al.  
 D527,293 S 8/2006 Ishii  
 D531,921 S 11/2006 Banba  
 D532,325 S 11/2006 Tokuda et al.  
 7,336,191 B2 2/2008 Drews et al.  
 D563,247 S 3/2008 Ishii  
 D576,062 S \* 9/2008 Hayamizu ..... D10/66  
 D581,819 S \* 12/2008 Banba ..... D10/69  
 D590,286 S \* 4/2009 Hollstien ..... D10/106.1  
 D605,959 S \* 12/2009 Apotheloz ..... D10/69  
 D609,124 S \* 2/2010 Ishii ..... D10/69  
 7,861,424 B2 1/2011 Munroe et al.  
 D684,068 S 6/2013 Ishii  
 D684,069 S \* 6/2013 Ishii ..... D10/70  
 D688,577 S \* 8/2013 Steffey ..... D10/70  
 D708,970 S \* 7/2014 Ishii ..... D10/70  
 D716,170 S \* 10/2014 Hojmose ..... D10/106.2  
 D723,398 S 3/2015 Ishii  
 D723,953 S \* 3/2015 Ishii ..... D10/70  
 D766,753 S 9/2016 Ishii et al.  
 D766,754 S 9/2016 Aoki et al.  
 9,514,632 B2 12/2016 Hunter et al.  
 D777,588 S 1/2017 Aoki et al.  
 D781,730 S 3/2017 Ishii et al.  
 D781,731 S 3/2017 Ishii  
 D784,835 S \* 4/2017 Kim ..... D10/106.1  
 9,613,521 B2 4/2017 Hunter et al.  
 D792,250 S \* 7/2017 Hill ..... D10/66  
 D834,970 S \* 12/2018 Aoki ..... D10/66  
 D835,532 S \* 12/2018 Ishii ..... D10/66  
 D844,468 S \* 4/2019 Wieser ..... D10/66  
 10,324,073 B2 6/2019 Belski et al.  
 D890,008 S \* 7/2020 Xiong ..... D10/106.2  
 D901,315 S \* 11/2020 Mitsuo ..... D10/66  
 D906,846 S \* 1/2021 Dimitriadis ..... D10/66  
 D915,234 S \* 4/2021 Xiong ..... D10/106.2  
 D922,888 S \* 6/2021 Aoki ..... D10/66  
 D935,911 S \* 11/2021 Ishii ..... D10/66  
 2005/0000271 A1 1/2005 Rabenecker et al.  
 2007/0063828 A1 3/2007 Drews et al.  
 2007/0279002 A1 12/2007 Partovi

2009/0056408 A1 3/2009 Tryfonos et al.  
 2011/0313555 A1 12/2011 Shoham et al.  
 2014/0216129 A1 8/2014 Schmidlin et al.  
 2014/0232555 A1 8/2014 Aakvaag et al.  
 2014/0253024 A1 9/2014 Rautiainen et al.  
 2014/0257127 A1 9/2014 Smith et al.  
 2015/0206421 A1 7/2015 Moffa  
 2016/0209386 A1 7/2016 Belski et al.  
 2019/0265217 A1 8/2019 Belski et al.

FOREIGN PATENT DOCUMENTS

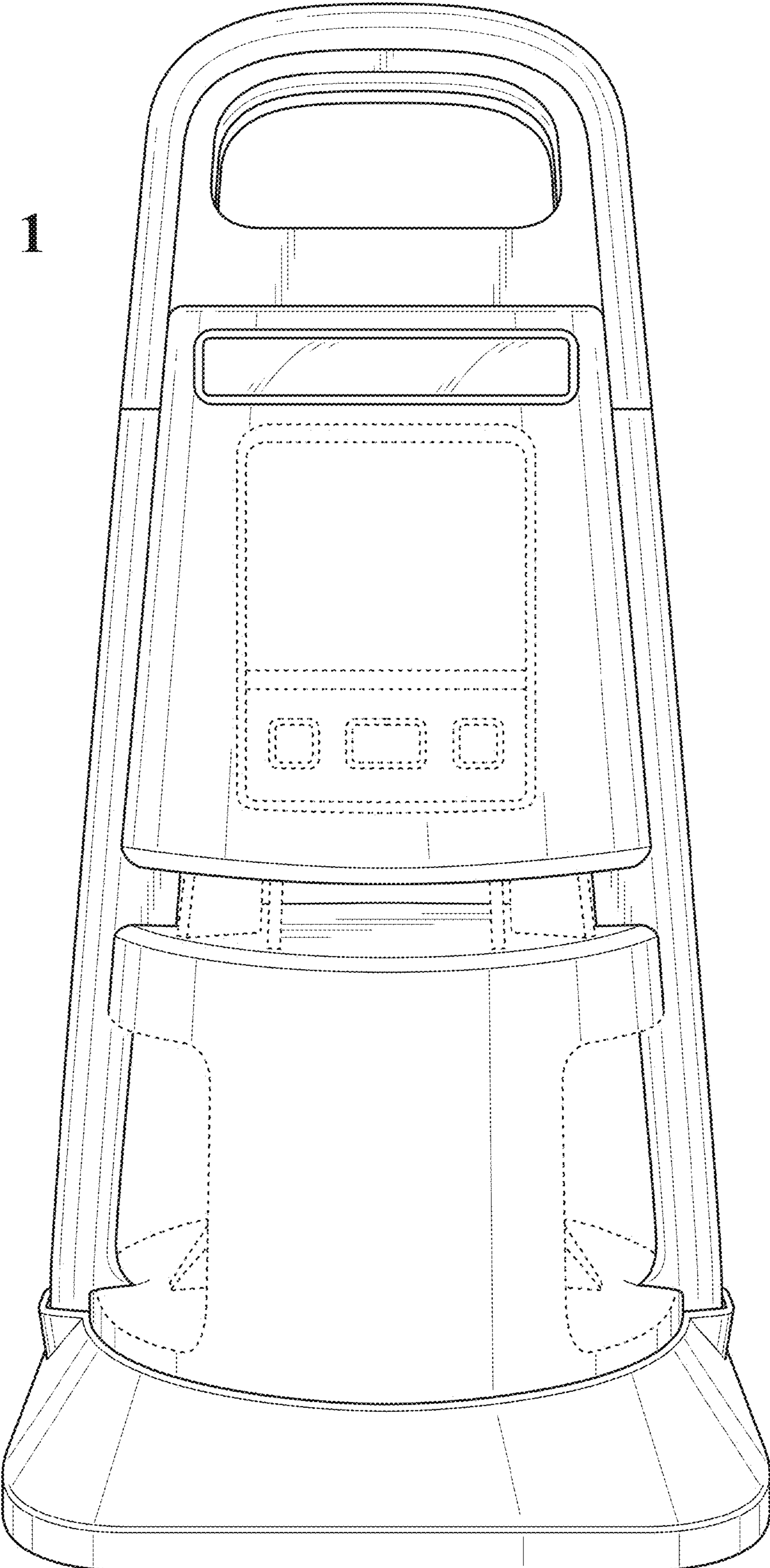
CN 102426764 B 11/2013  
 CN 203596089 U 5/2014  
 CN 203721201 U 7/2014  
 JP 2006085430 A 3/2006  
 JP 2014524180 A 9/2014  
 JP 1575214 S 6/2016  
 WO 0114873 A1 3/2001  
 WO 0182063 A1 11/2001  
 WO 2016115438 A1 7/2016

OTHER PUBLICATIONS

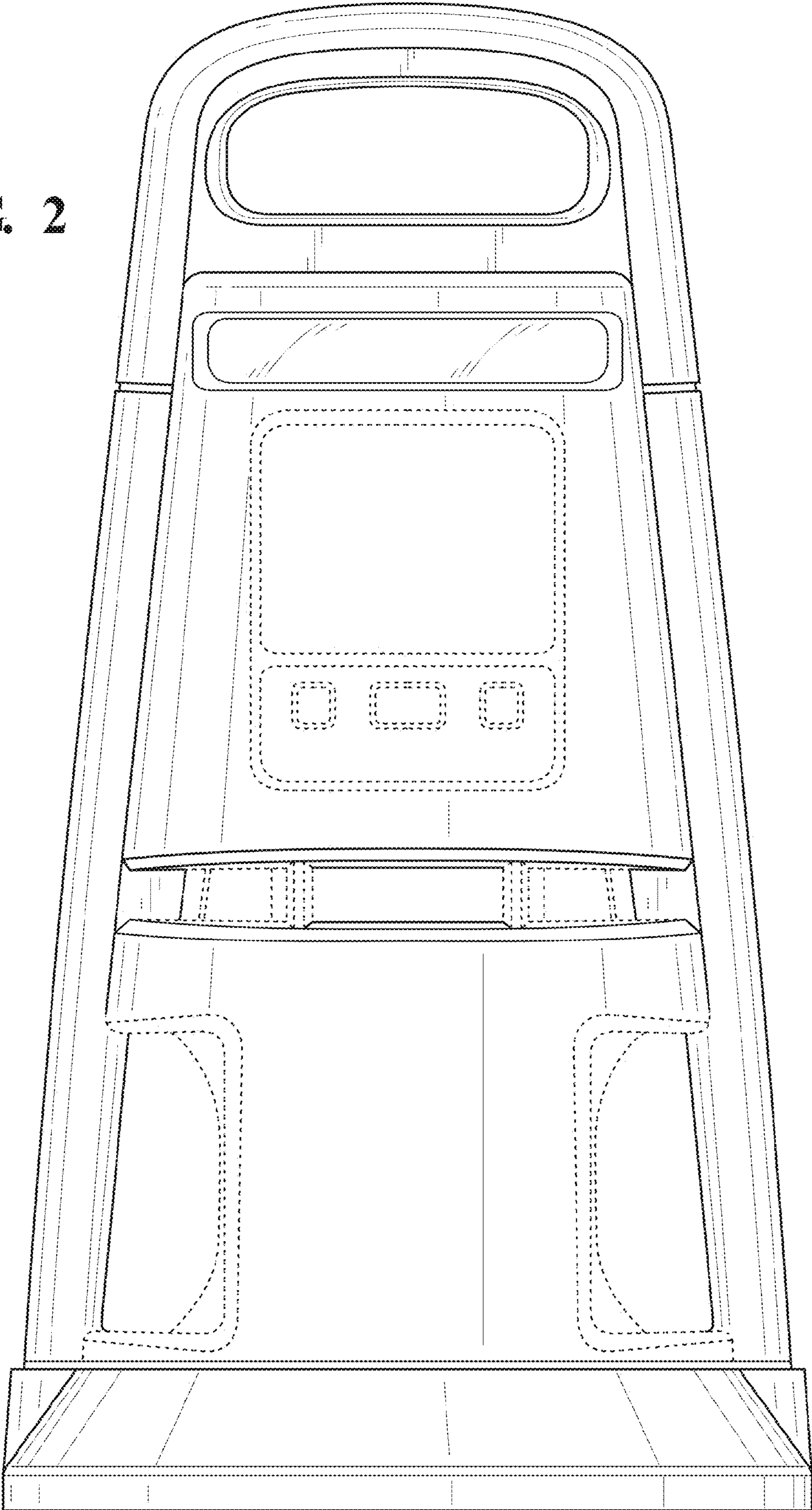
U.S. Appl. No. 29/723,232, filed Feb. 5, 2020, Pending, Charles Dennis Hughes.  
 “Drager”, [http://www.draeger.com/sites/en\\_uk/Pages/Chemical-Industry/Draeger-X-zone-5000.aspx](http://www.draeger.com/sites/en_uk/Pages/Chemical-Industry/Draeger-X-zone-5000.aspx), p. 1.  
 “Radius BZ1”, available from internet, <URL: [http://www.indsci.com/products/area\\_monitors/radius/](http://www.indsci.com/products/area_monitors/radius/)>, 4 pages.  
 “Radius BZ1 Overview”, available from internet, <URL: <https://www.youtube.com/watch?v=t34Ja8aCimU>>, 1 page.  
 16737947.8, “European Application Serial No. 16737947.8, Extended European Search Report dated Sep. 11, 2018”, Industrial Scientific Corporation, 9 pages.  
 Peaksoft Technologies, Inc., “Big Idea Seeing Crime Before It Happens”, <http://www.pstpl.com/news184.html>, Dec. 3, 2011, 1-2.  
 PCT/US2016/013558, “International Application Serial No. PCT/US2016/013558, International Search Report and Written Opinion dated May 3, 2016”, Industrial Scientific Corporation, 14 pages.  
 Giang, “Companies Are Putting Sensors On Employees To Track Their Every Move”, <http://www.businessinsider.com/tracking-employees-with-productivity-sensors-2013-3>, Mar. 14, 2013, 1-4.  
 PCT/US2016/013558, “International Application Serial No. PCT/US2016/013558, International Preliminary Report on Patentability and Written Opinion dated Jul. 27, 2017”, Industrial Scientific Corporation, 8 Pages.

\* cited by examiner

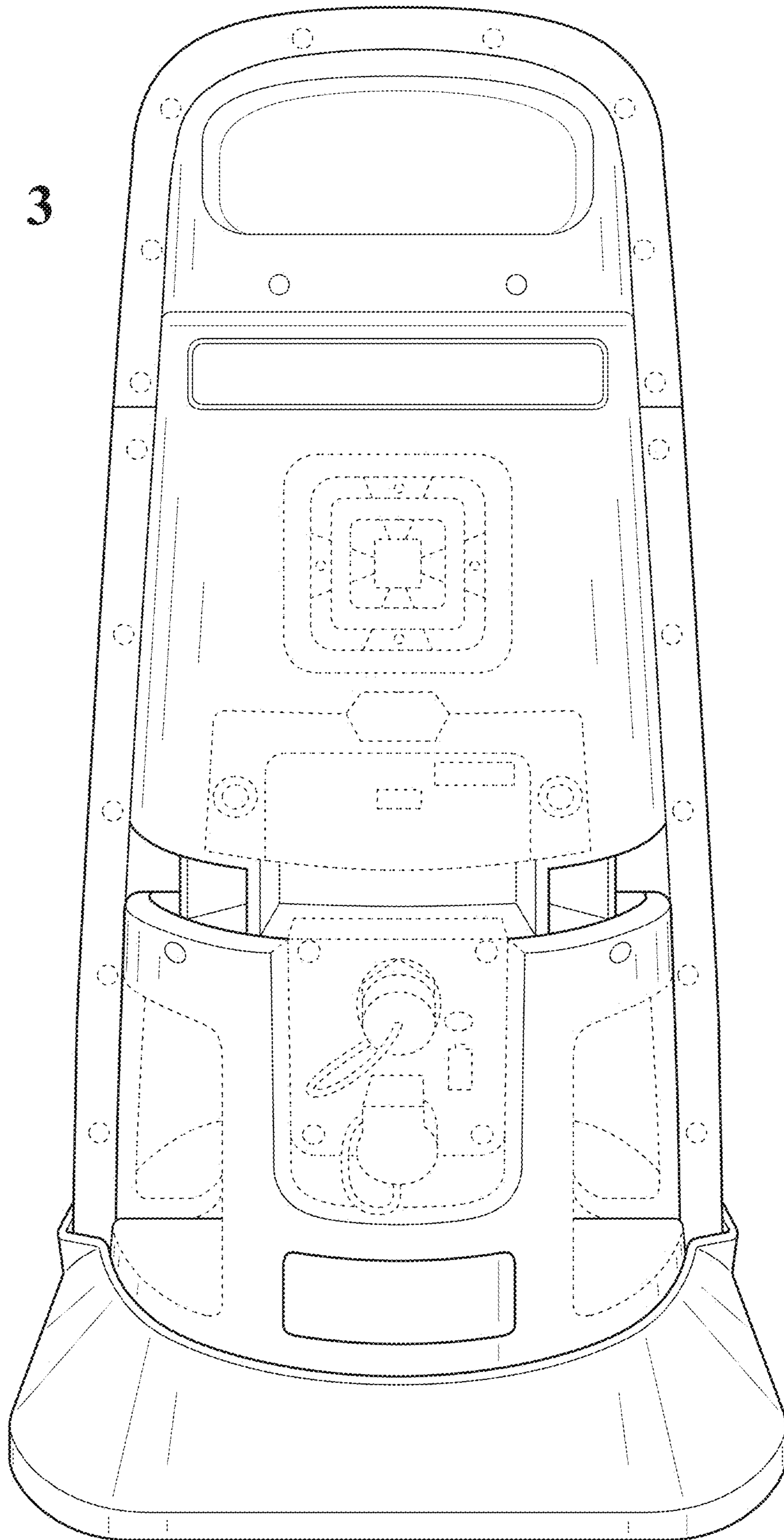
FIG. 1



**FIG. 2**



**FIG. 3**



**FIG. 4**

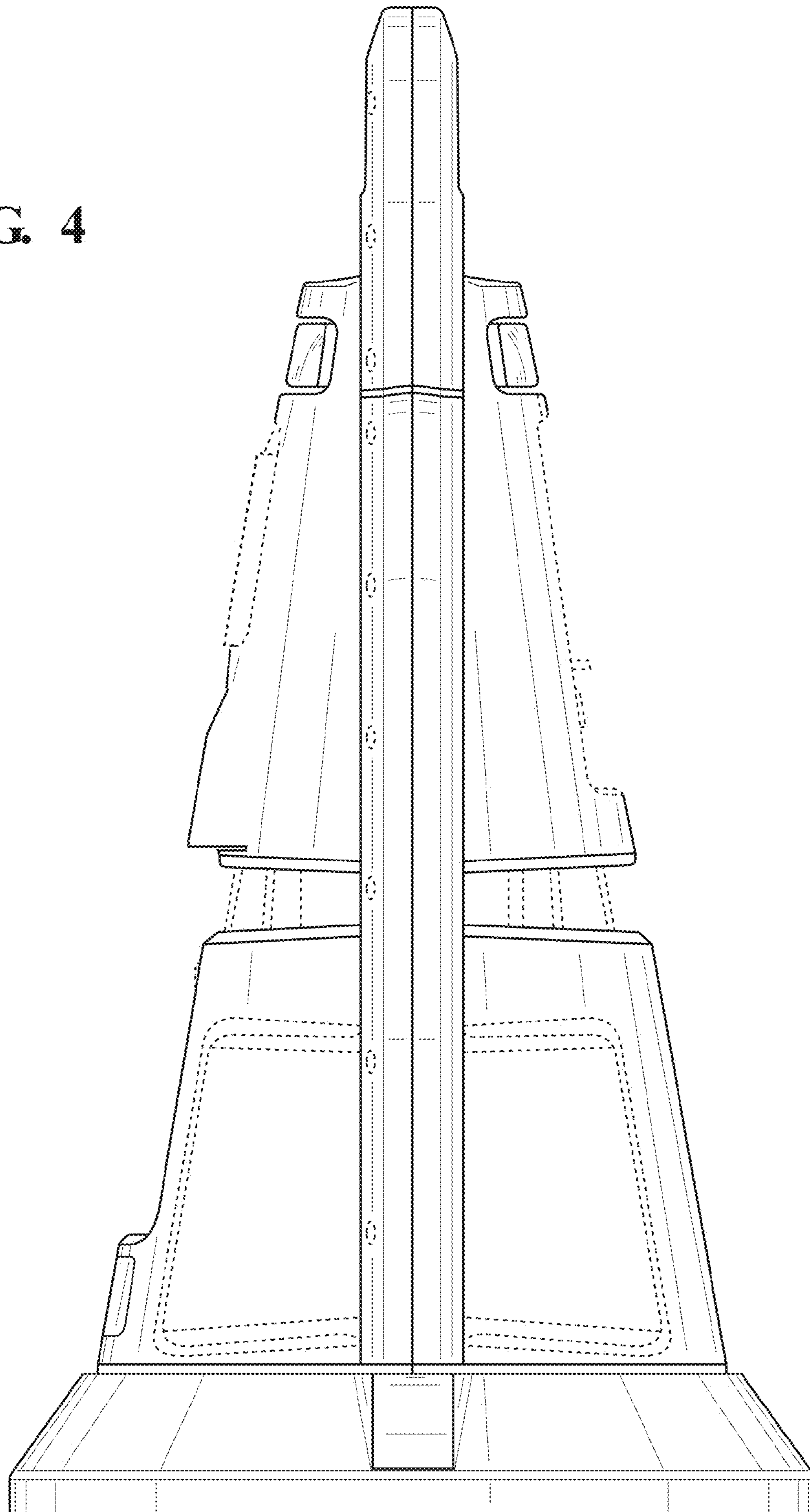
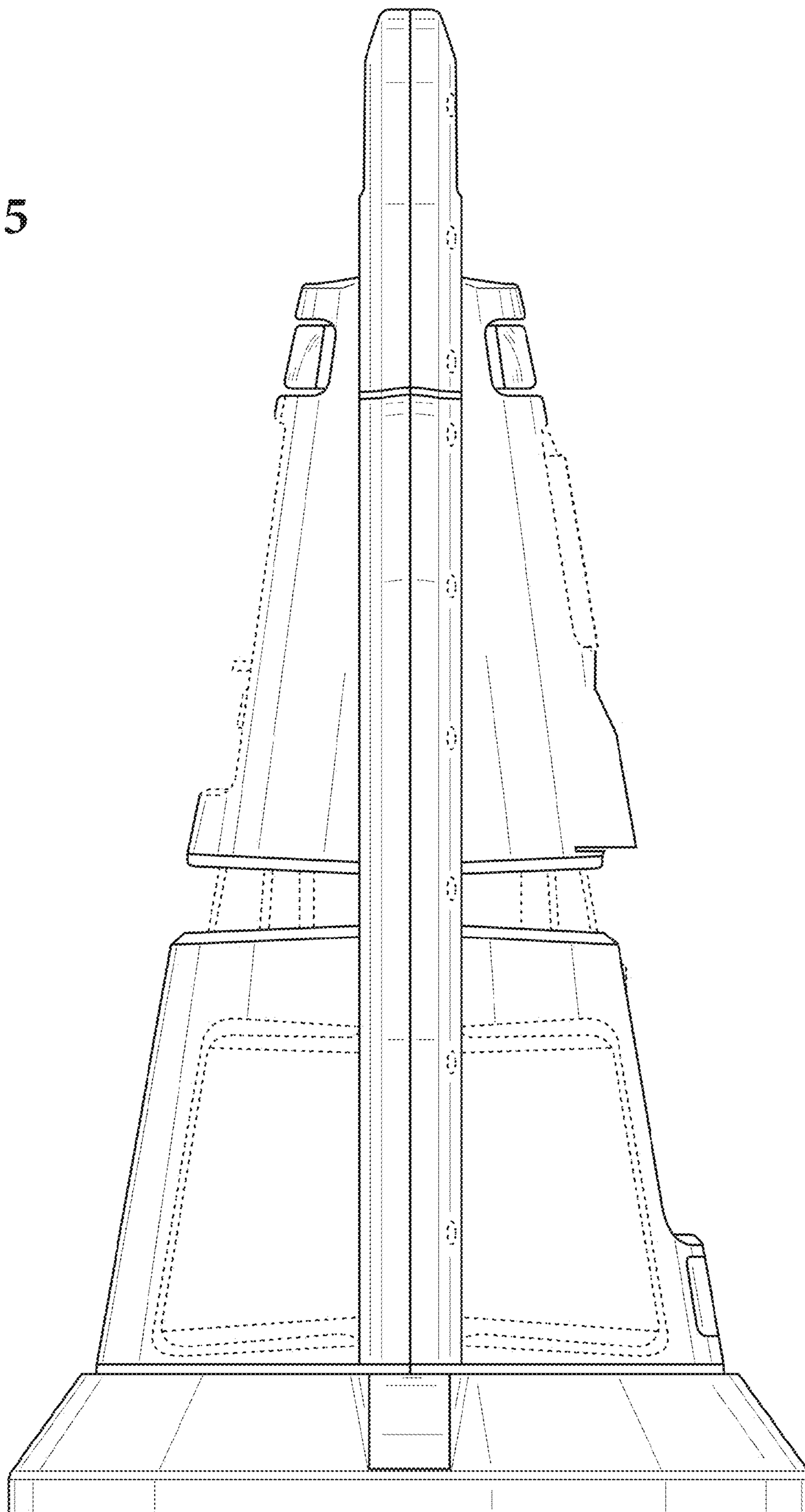


FIG. 5



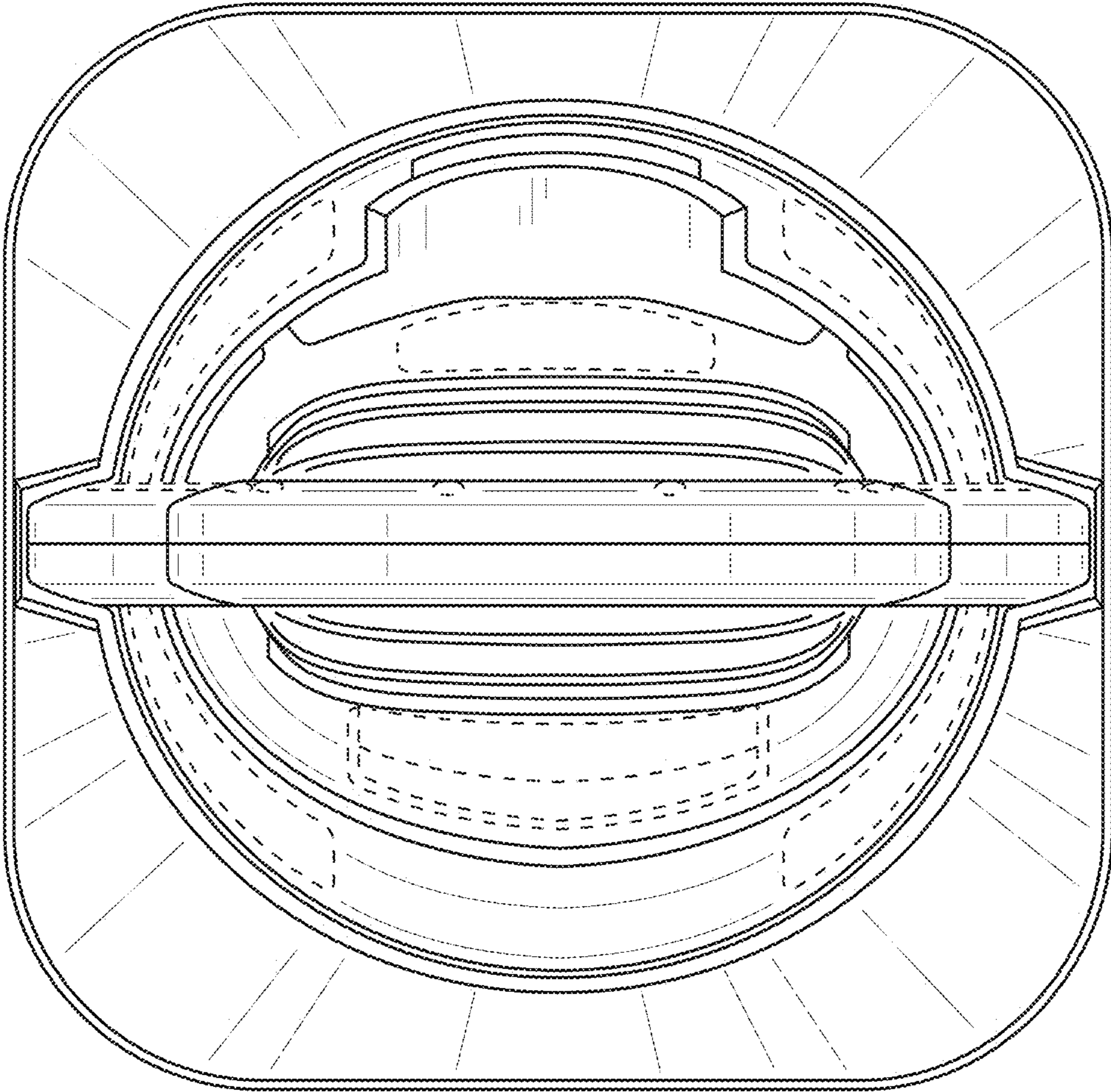


FIG. 6