



US00D976880S

(12) **United States Design Patent** (10) **Patent No.:** **US D976,880 S**
Hu (45) **Date of Patent:** **** Jan. 31, 2023**

(54) **CONICAL DUAL-POLARIZATION HORN ANTENNA**
(71) Applicant: **Nan Hu**, Irvine, CA (US)
(72) Inventor: **Nan Hu**, Irvine, CA (US)
(**) Term: **15 Years**
(21) Appl. No.: **29/769,587**
(22) Filed: **Feb. 5, 2021**
(51) **LOC (14) Cl.** **14-03**
(52) **U.S. Cl.**
USPC **D14/230**
(58) **Field of Classification Search**
USPC D14/230, 232–239, 343; D13/173, 182,
D13/184, 199, 101, 117, 18, 154, 155
CPC .. G01S 13/4409; G01S 13/4481; H01P 1/161;
H01Q 13/0208; H01Q 13/10; H01Q
13/00; H01Q 13/02; H01Q 13/0241;
H01Q 19/13; H01Q 3/08
See application file for complete search history.

(56) **References Cited**
U.S. PATENT DOCUMENTS
3,339,275 A * 9/1967 Anderson H01Q 13/0275
156/247
3,624,655 A * 11/1971 Sato H01Q 19/08
343/756
4,231,042 A * 10/1980 Turrin H01P 3/127
343/786

(Continued)
FOREIGN PATENT DOCUMENTS
CN 304111490 * 4/2017
CN 304122835 * 5/2017
(Continued)

OTHER PUBLICATIONS
Fairview Microwave, “Conical Gain Horn Waveguide An-
tenna . . . ,” available at fairviewmicrowave.com, published on

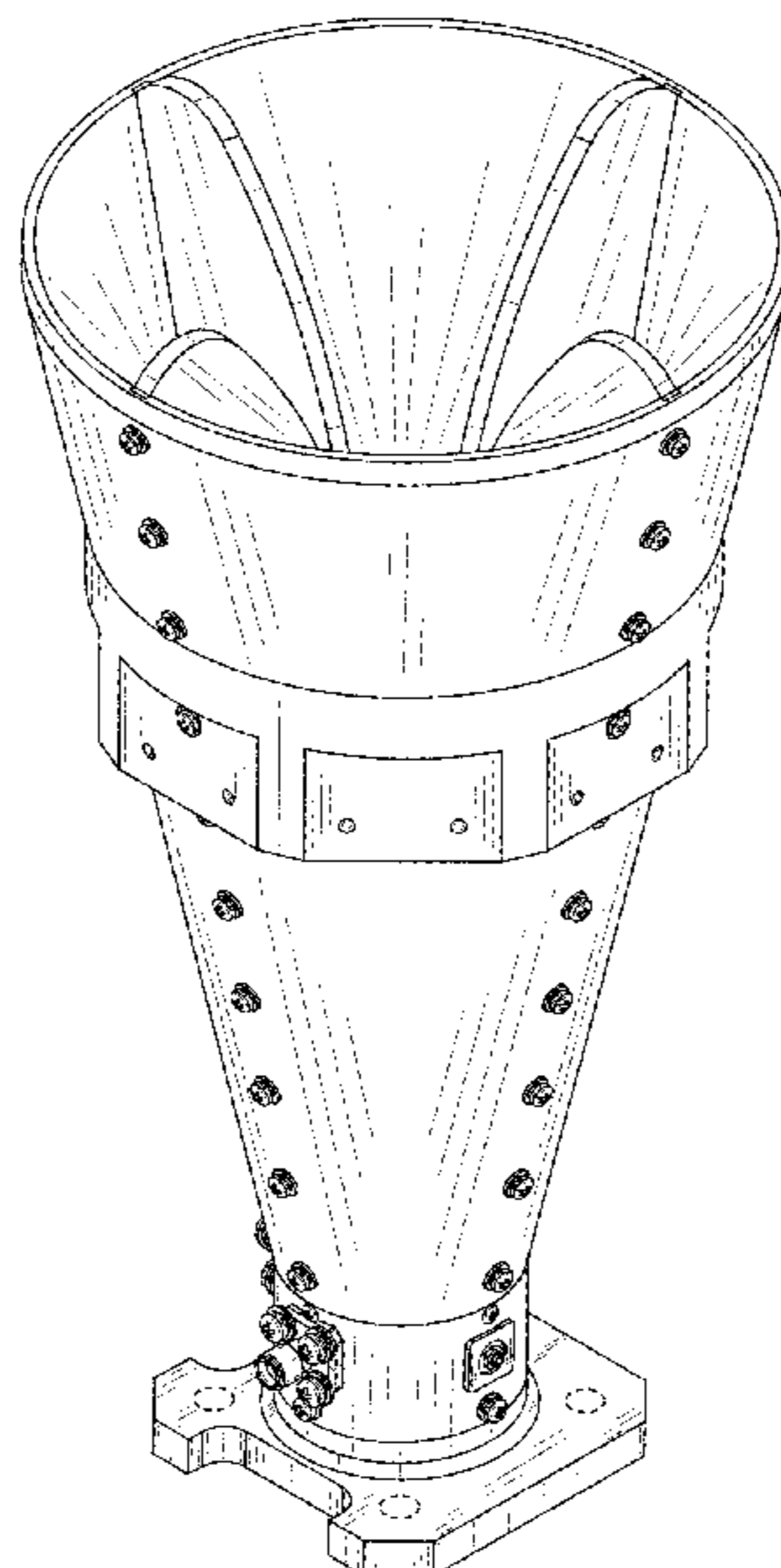
2019, site visited Aug. 23, 2022, Available at URL: <https://www.fairviewmicrowave.com/wr-10-waveguide-standard-gain-horn-25-dbi-ug-387-fmwan1052-p.aspx> (Year: 2019).*
(Continued)

Primary Examiner — Daniel J Domino
Assistant Examiner — Samina Vieth
(74) *Attorney, Agent, or Firm* — Jianmin Zhou; Law
Offices of James Zhou

(57) **CLAIM**
The ornamental design for a conical dual-polarization horn antenna, as shown and described.

DESCRIPTION
FIG. 1 is a perspective view of a conical dual-polarization horn antenna design showing my new design.
FIG. 2 is a front view of a conical dual-polarization horn antenna.
FIG. 3 is a rear view of a conical dual-polarization horn antenna.
FIG. 4 is a right side view of a conical dual-polarization horn antenna.
FIG. 5 is a left side view of a conical dual-polarization horn antenna.
FIG. 6 is a top view of a conical dual-polarization horn antenna; and,
FIG. 7 is a bottom view of a conical dual-polarization horn antenna.
Any shading and cross-hatching are not features of the design but are utilized to illustrate the surface contours of the conical dual-polarization horn antenna design in the drawings.
The broken lines depict portions of the conical dual-polarization horn antenna that form no part of the claimed design.

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

4,380,014 A * 4/1983 Howard H01Q 13/0266
343/786
4,731,616 A * 3/1988 Fulton H01Q 13/025
343/781 R
4,797,681 A * 1/1989 Kaplan H01Q 13/0258
333/137
D390,798 S * 2/1998 Kobayashi D14/187
D403,323 S * 12/1998 Davies D14/208
5,995,057 A * 11/1999 Faith H01Q 13/025
343/781 R
6,271,799 B1 * 8/2001 Rief H01Q 13/0258
343/786
6,323,819 B1 * 11/2001 Ergene H01Q 13/0241
343/786
6,522,306 B1 * 2/2003 Parrikar H01Q 13/0216
343/786
6,995,728 B2 * 2/2006 Rodriguez H01Q 13/0275
343/786
7,161,550 B2 * 1/2007 McLean H01Q 13/0275
343/786
7,463,207 B1 * 12/2008 Rao H01Q 19/17
343/786
11,031,692 B1 * 6/2021 Hu H01Q 13/0275
2003/0210197 A1 * 11/2003 Cencich H01Q 13/0241
343/786
2008/0185424 A1 * 8/2008 Richie B65D 3/06
181/177
2021/0184359 A1 * 6/2021 Leung H01Q 13/0241

FOREIGN PATENT DOCUMENTS

CN 304241019 * 8/2017
CN 307169759 * 3/2022

OTHER PUBLICATIONS

Pasternack, "WR-19 Waveguide Conical Gain Horn Antenna . . .", available at pasternack.com, published on 2019, site visited Aug. 23, 2022, Available at URL: <https://www.pasternack.com/wr-19-waveguide-gain-horn-antenna-20dbi-ug-383-mod-round-flange-pewan1035-p.aspx> (Year: 2019).*

RFEcho, "23 dBi Gain 33GHz to 38.5 GHz . . .", available at rfecho.com, published on Jun. 2017, site visited Aug. 23, 2022, Available at URL: <https://www.rfecho.com/product/23-dbi-gain-33-ghz-to-38-5-ghz-0-25-diameter-circular-waveguide-wr-25-waveguide-k-band-conical-horn-antennas/> (Year: 2017).*

Susan_cn320_0, "1pc Antenna 2082SuEF-AA . . ." available at ebay.com, date first available Mar. 1, 2020, site visited Aug. 23, 2022, Available at URL: <https://www.ebay.com/itm/274030327904> (Year: 2020).*

* cited by examiner

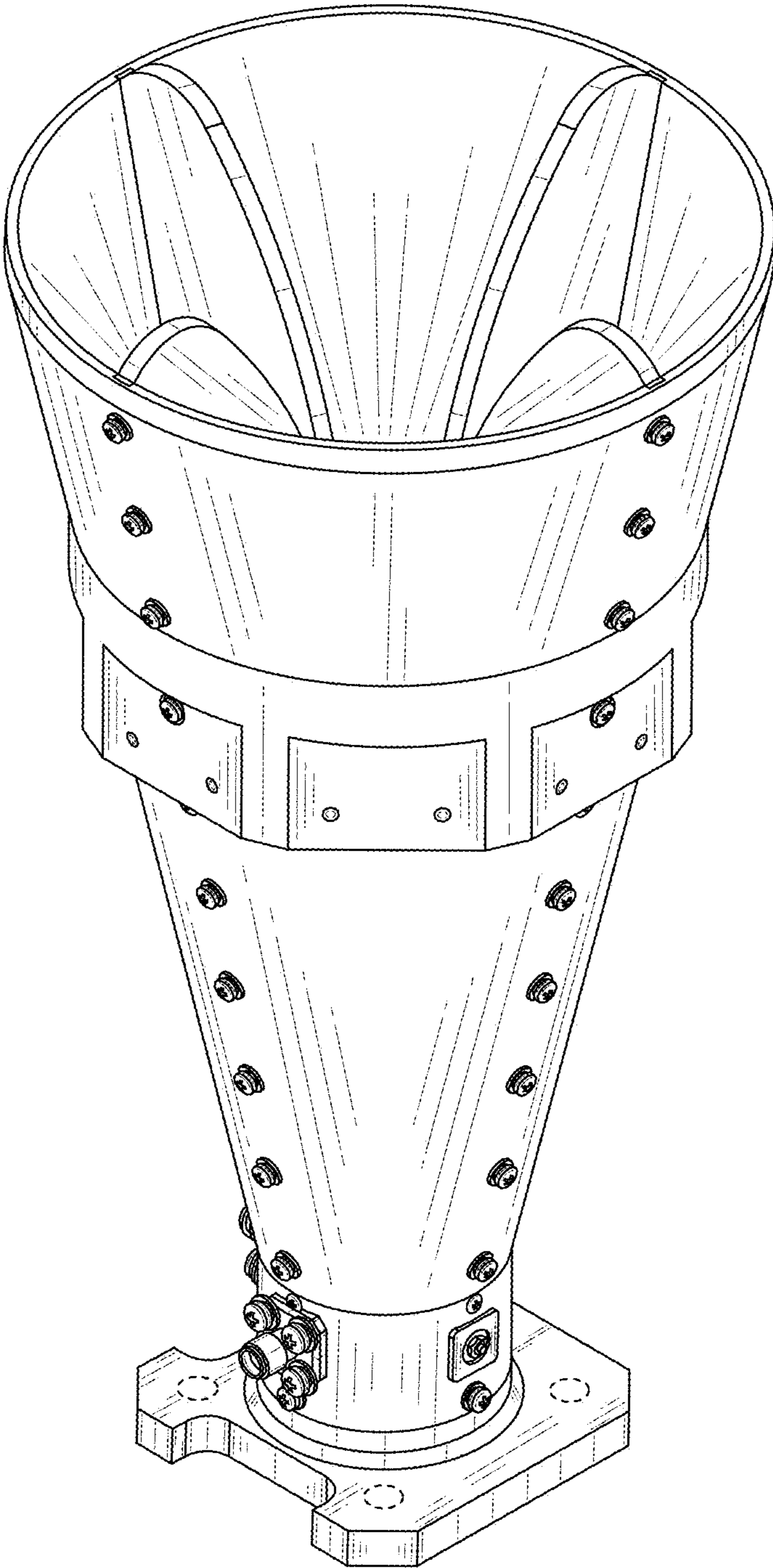


FIG. 1

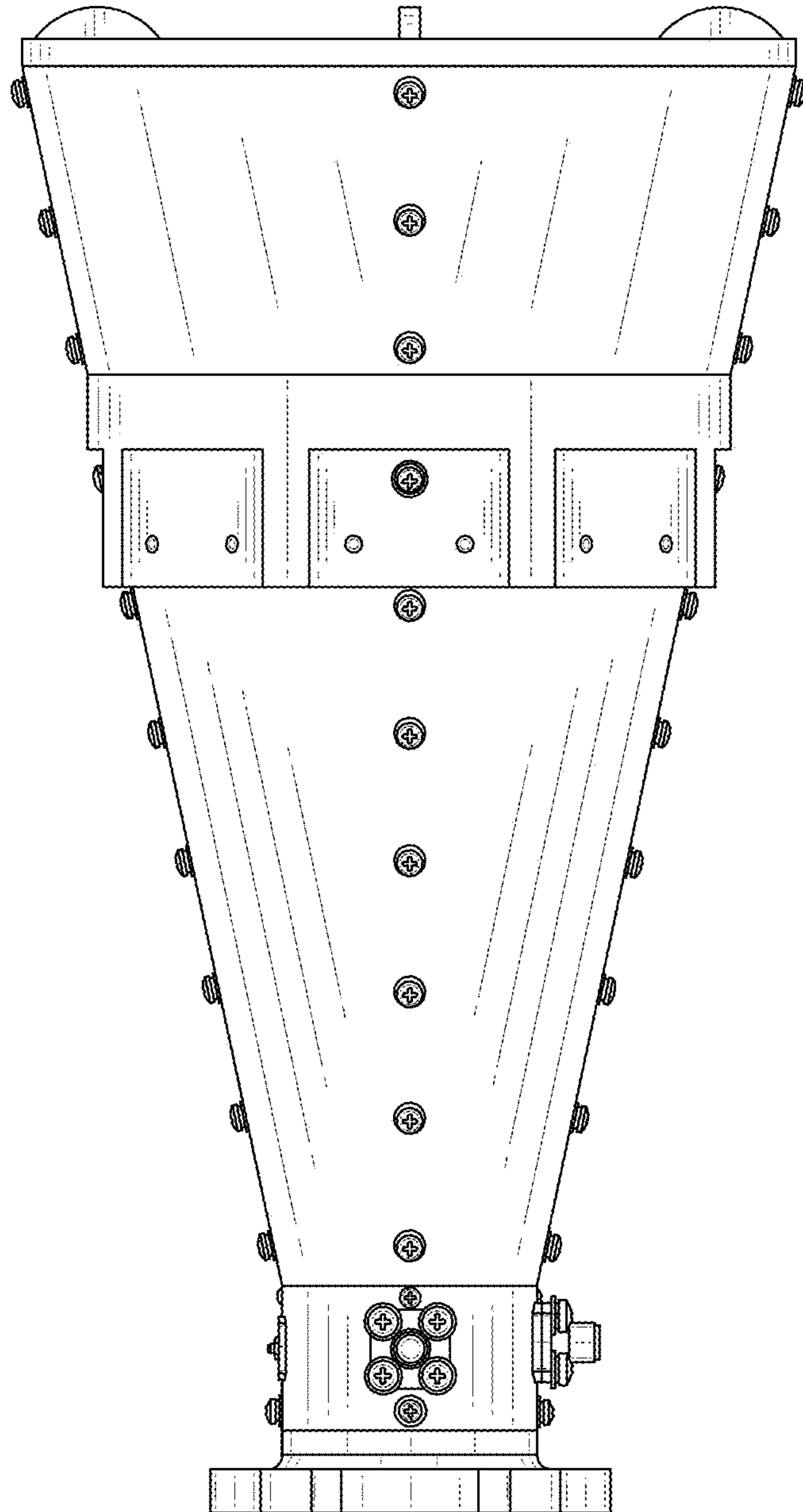


FIG. 2

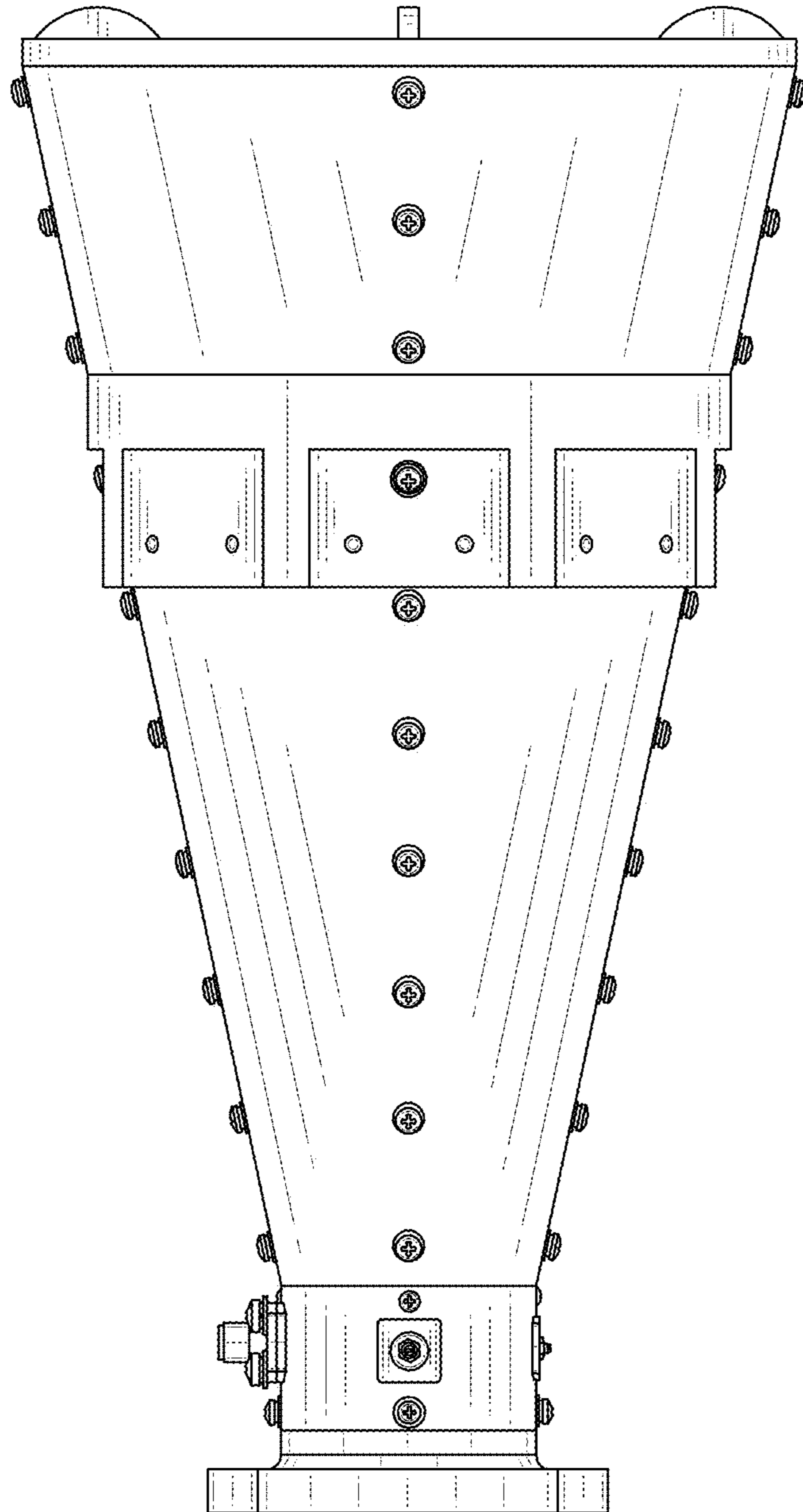


FIG. 3

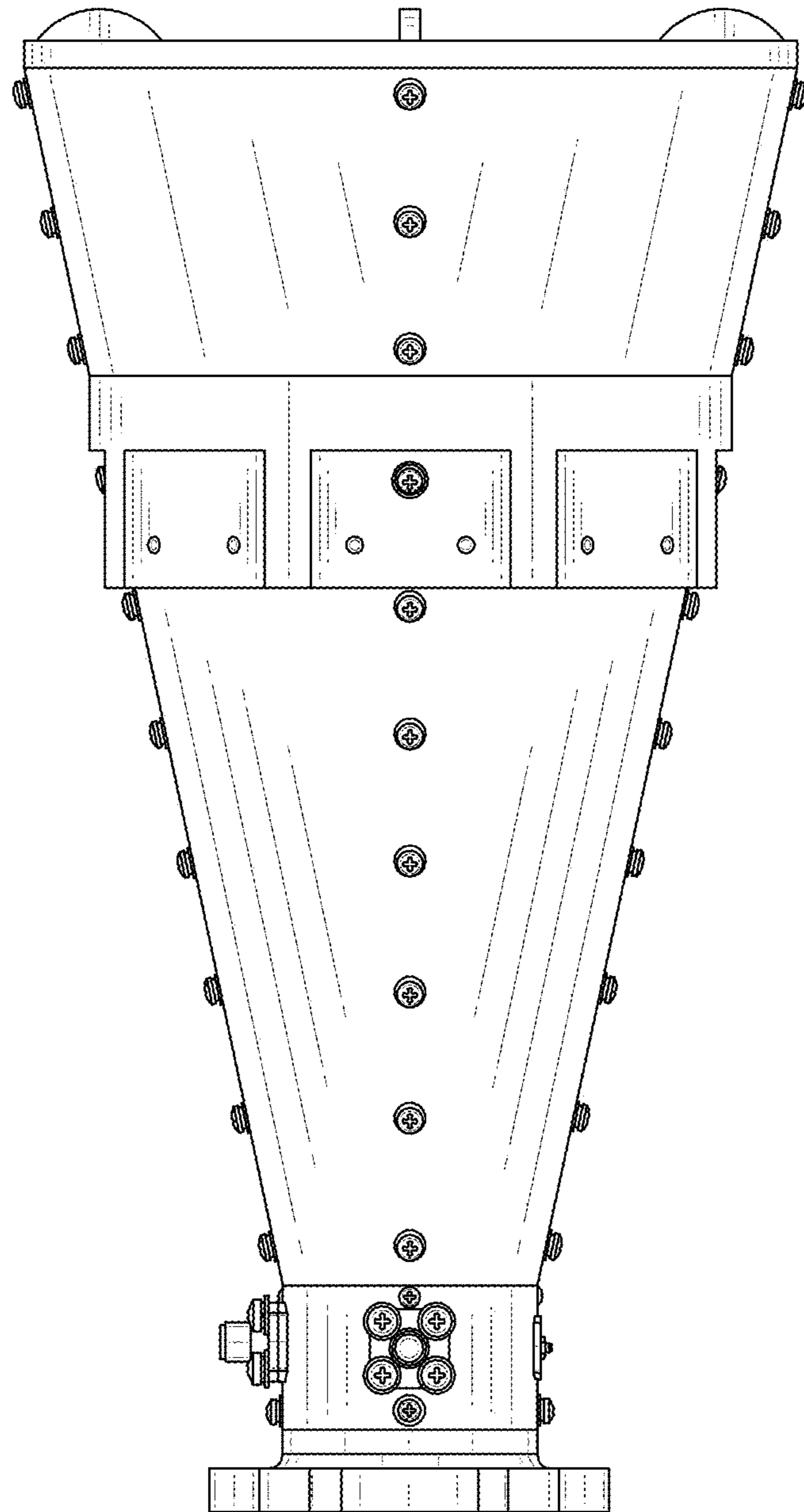


FIG. 4

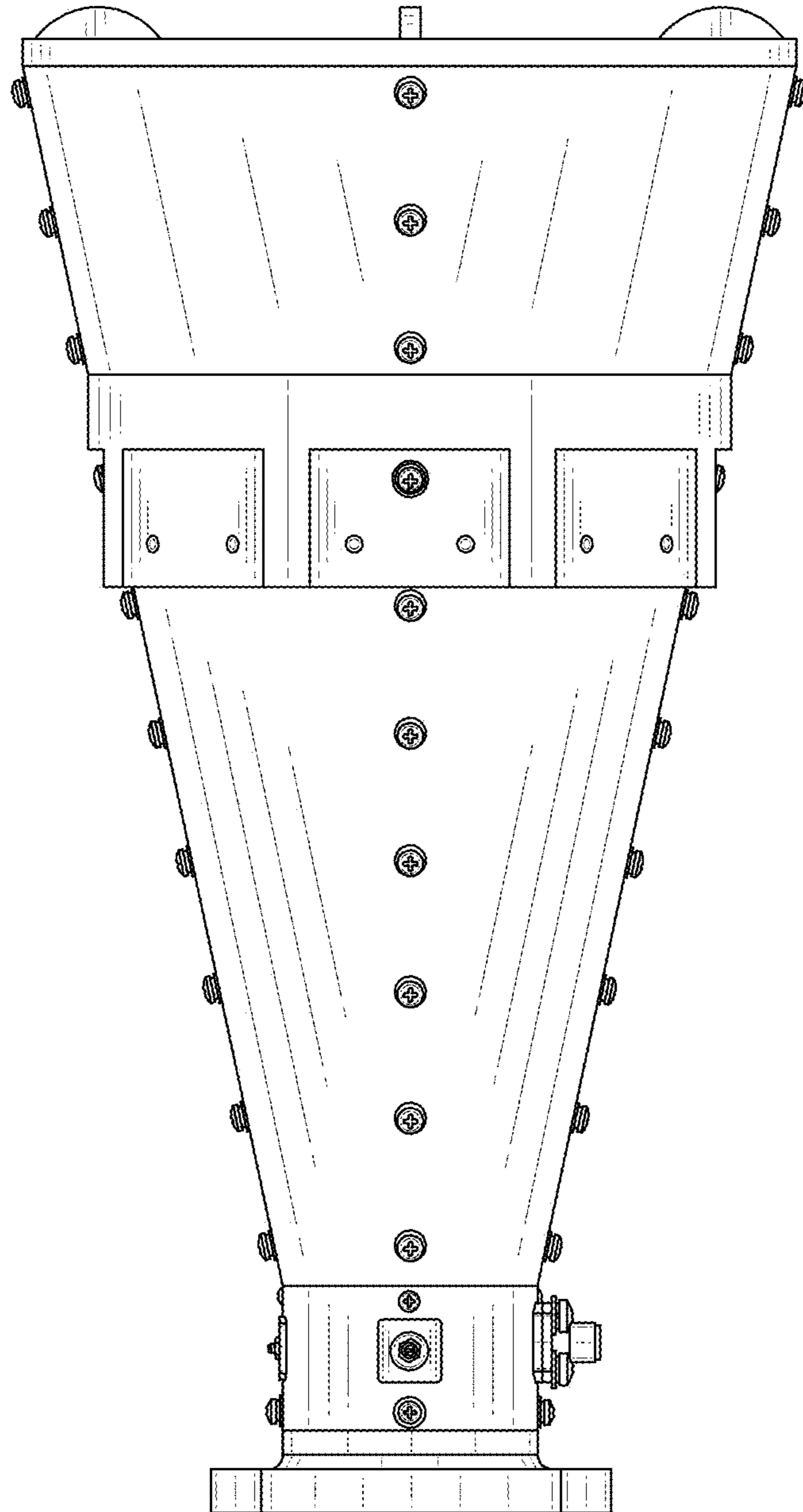


FIG. 5

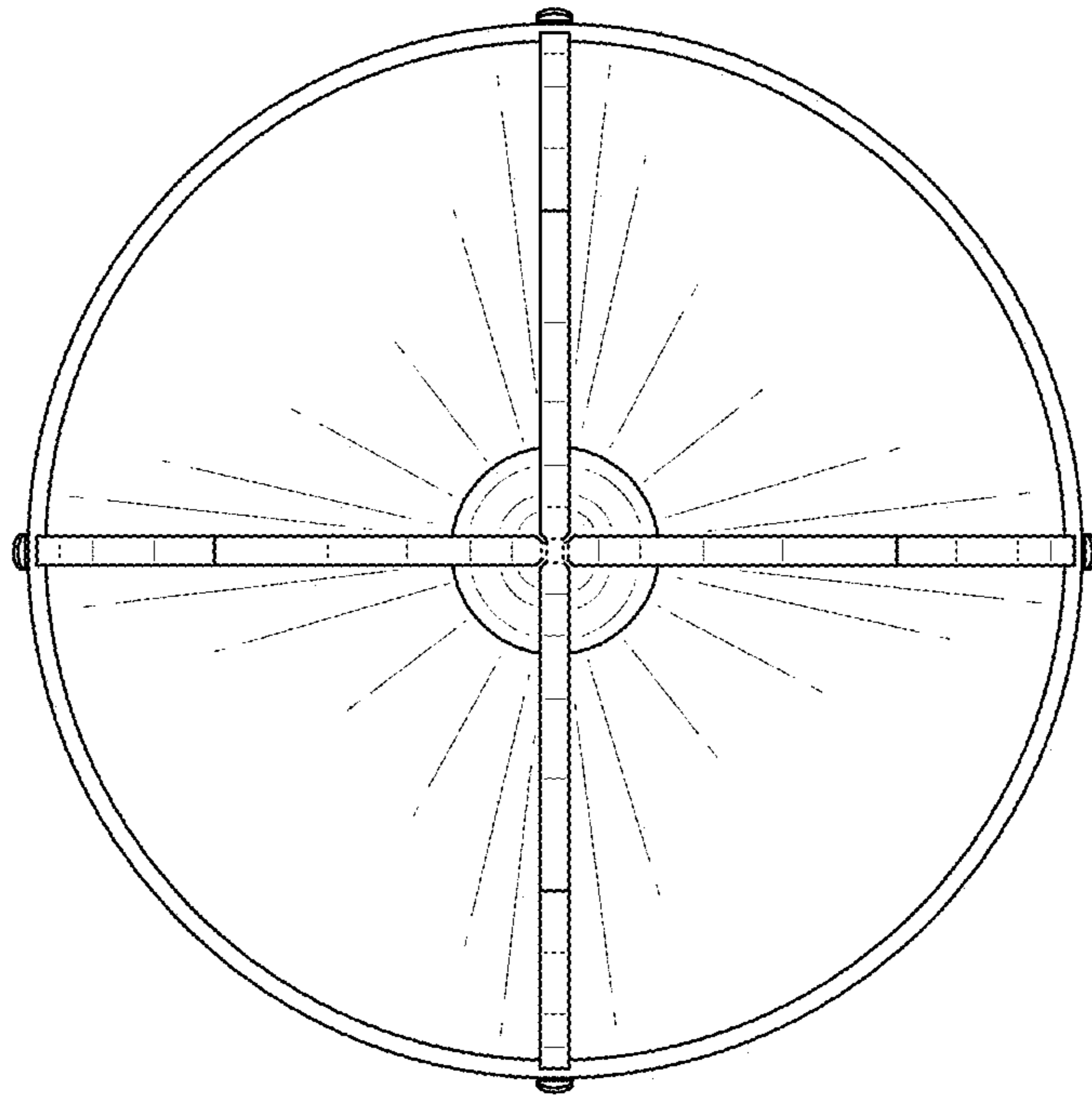


FIG. 6

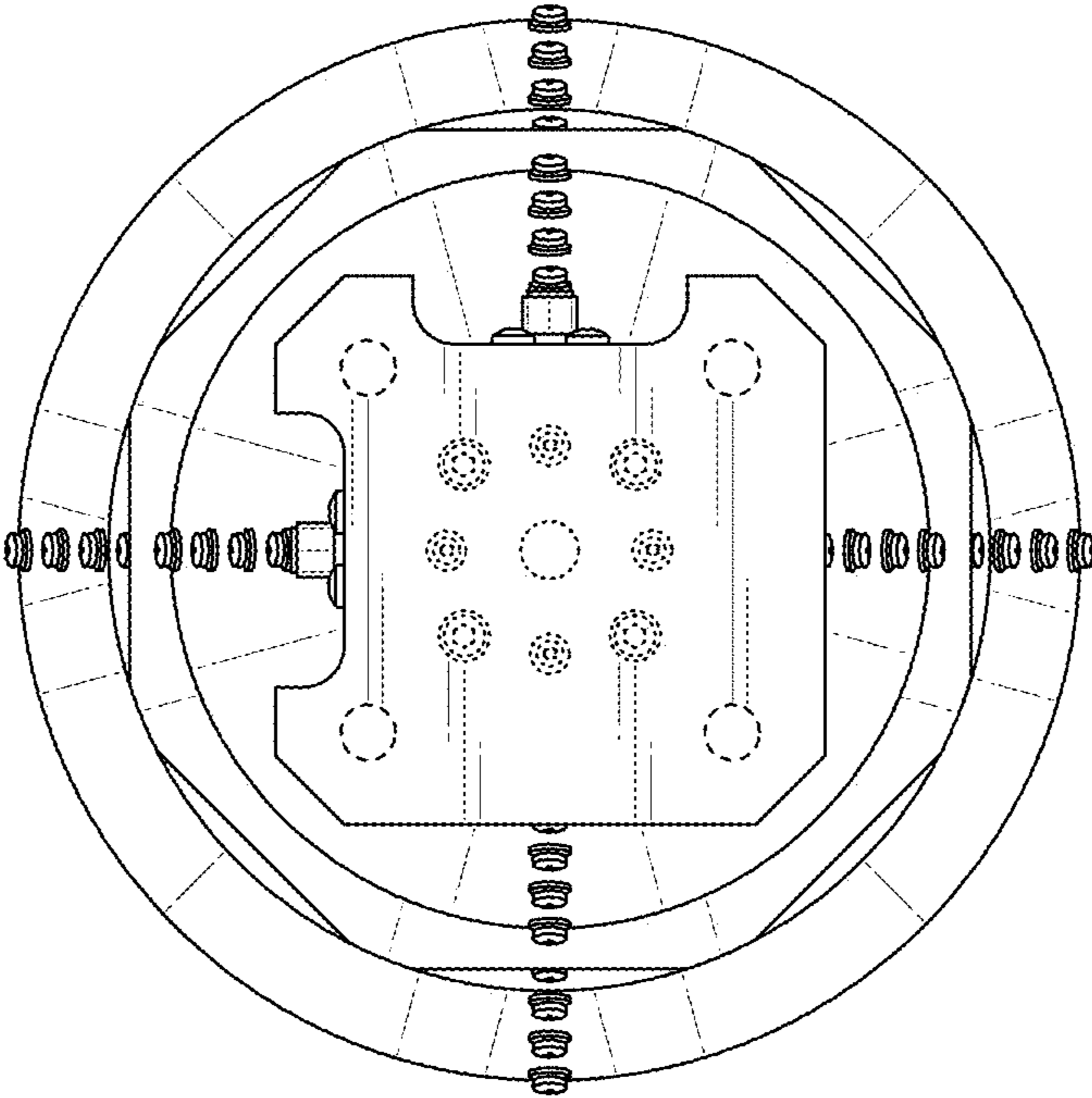


FIG. 7