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(12) **United States Design Patent** (10) **Patent No.:** **US D975,690 S**
Hu (45) **Date of Patent:** **** Jan. 17, 2023**

(54) **ULTRA-WIDEBAND DUAL POLARIZATION HORN ANTENNA**

2022, available at URL: <https://www.miww.com/e-band-horn-antennas-wr-12-60-90-ghz-3/> (Year: 2022).*

(71) Applicant: **Nan Hu**, Irvine, CA (US)

(Continued)

(72) Inventor: **Nan Hu**, Irvine, CA (US)

Primary Examiner — Daniel J Domino

Assistant Examiner — Samina Vieth

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

(74) *Attorney, Agent, or Firm* — Law Offices of James Zhou; Jianmin Zhou

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(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.

(57) **CLAIM**

The ornamental design for an ultra-wideband dual polarization horn antenna, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of an ultra-wideband dual polarization horn antenna design showing my new design. FIG. 2 is a front view of an ultra-wideband dual polarization horn antenna. FIG. 3 is a rear view of an ultra-wideband dual polarization horn antenna. FIG. 4 is a left side view of an ultra-wideband dual polarization horn antenna. FIG. 5 is a right side view of an ultra-wideband dual polarization horn antenna. FIG. 6 is a top view of an ultra-wideband dual polarization horn antenna; and, FIG. 7 is a bottom view of an ultra-wideband 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 ultra-wideband dual polarization horn antenna design in the drawings. The broken lines depict portions of the ultra-wideband dual polarization horn antenna that form no part of the claimed design.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,012,538 A * 8/1935 Krohn G10K 11/08
181/178
2,825,060 A * 2/1958 Ruze H01Q 13/0258
343/756
2,963,701 A * 12/1960 Hagaman H01Q 3/34
342/368

(Continued)

FOREIGN PATENT DOCUMENTS

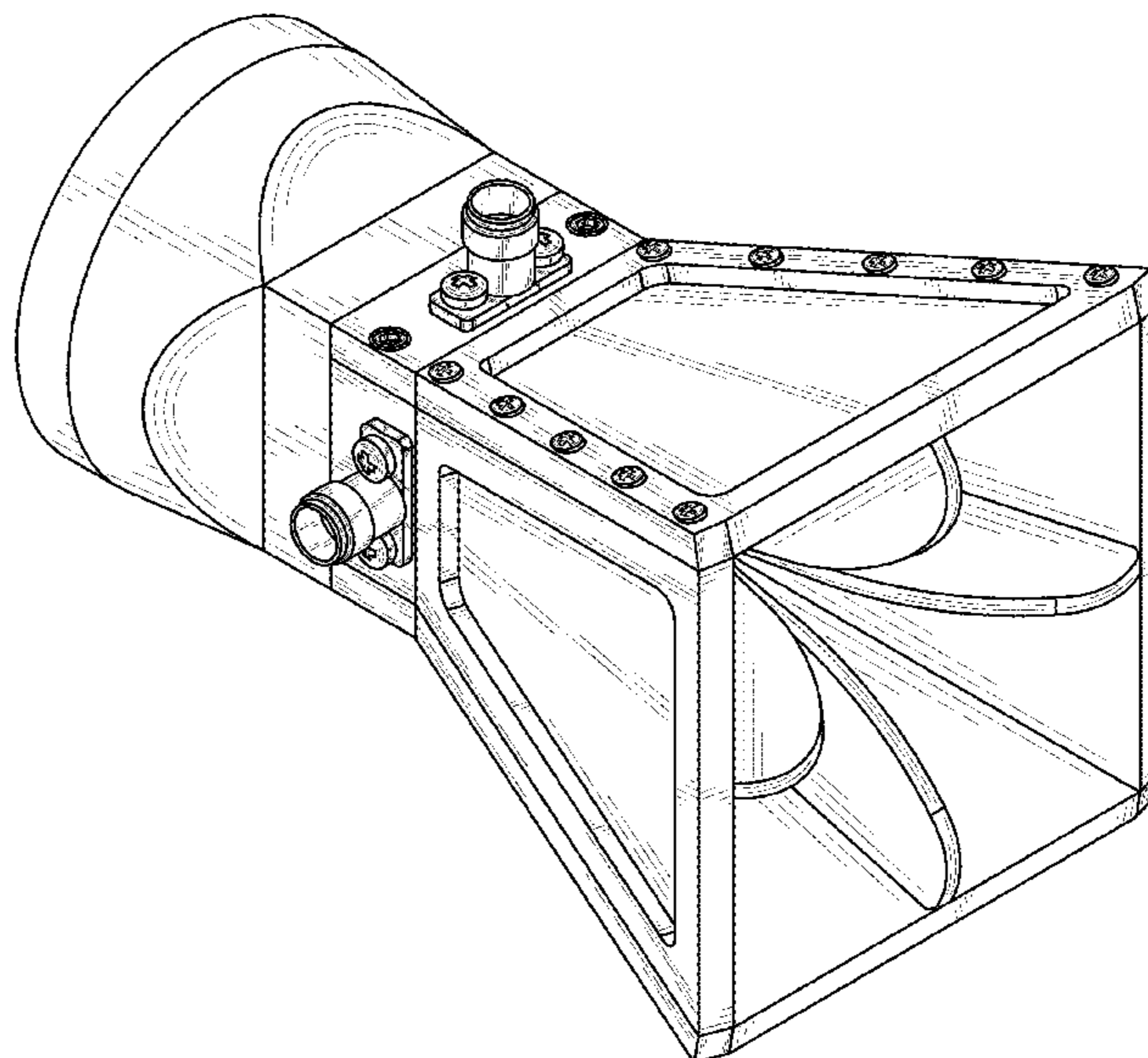
CN 303816245 * 8/2016
CN 304111481 * 4/2017

(Continued)

OTHER PUBLICATIONS

MI Wave, “WR-12 Standard Gain Horn Antennas . . .” available at miww.com, date first available Aug. 5, 2022, site visited Aug. 16,

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2,979,679 A * 4/1961 Beresford H01P 1/161
333/253
3,162,828 A * 12/1964 Schmidt H01P 1/161
343/756
3,267,475 A * 8/1966 Howard G01S 13/4454
343/858
4,731,616 A * 3/1988 Fulton H01Q 13/025
343/781 R
D337,591 S * 7/1993 Buhyoff D14/239
D345,145 S * 3/1994 Fogg D13/184
5,329,285 A * 7/1994 McCandless G01S 13/4409
342/153
D363,464 S * 10/1995 Fukasawa D13/182
D503,155 S * 3/2005 Noji D13/153
7,969,376 B2 * 6/2011 Steghafner H01Q 13/0275
343/773
8,248,321 B2 * 8/2012 Anderson H01Q 13/025
343/786
D869,447 S * 12/2019 Hu D14/230
2003/0210197 A1 * 11/2003 Cencich H01Q 13/0241
343/786
2005/0017915 A1 * 1/2005 Brown H01Q 1/364
343/786
2005/0078044 A1 * 4/2005 Rodriguez H01Q 13/0275
343/786
2009/0079649 A1 * 3/2009 Steghafner H01Q 13/0275
343/786

2016/0020519 A1 * 1/2016 Park H01Q 21/0037
343/756
2016/0164189 A1 * 6/2016 Jafarlou H01Q 13/02
29/601
2021/0255227 A1 * 8/2021 Hu G01R 29/0878
2021/0305708 A1 * 9/2021 Hu H01Q 13/025

FOREIGN PATENT DOCUMENTS

CN 304111482 * 4/2017
CN 307169760 * 3/2022
CN 307256057 * 4/2022

OTHER PUBLICATIONS

Pasternack, "WR-137 Waveguide Standard Gain Horn Antenna" available at paternack.com, date first available 2017, site visited Aug. 16, 2022, available at URL: <https://bit.ly/3QYwmsX> (Year: 2017).*

RFecho, "Broadband Dual Ridged Horn Antenna", available at rfecho.com, date first available 2017, site visited Aug. 16, 2022, available at URL: <https://www.rfecho.com/product/13-dbi-gain-0-8-ghz-to-2-ghz-broadband-horn-antenna/> (Year: 2017).*

Nubicom2033, "Schwarzbeck Bbhx9120E Dual Polarised Broadband Horn Antenna," date first available Apr. 1, 2022, site visited Aug. 16, 2022, available at URL: <https://ebay.to/3CpW2uq> (Year: 2022).*

* cited by examiner

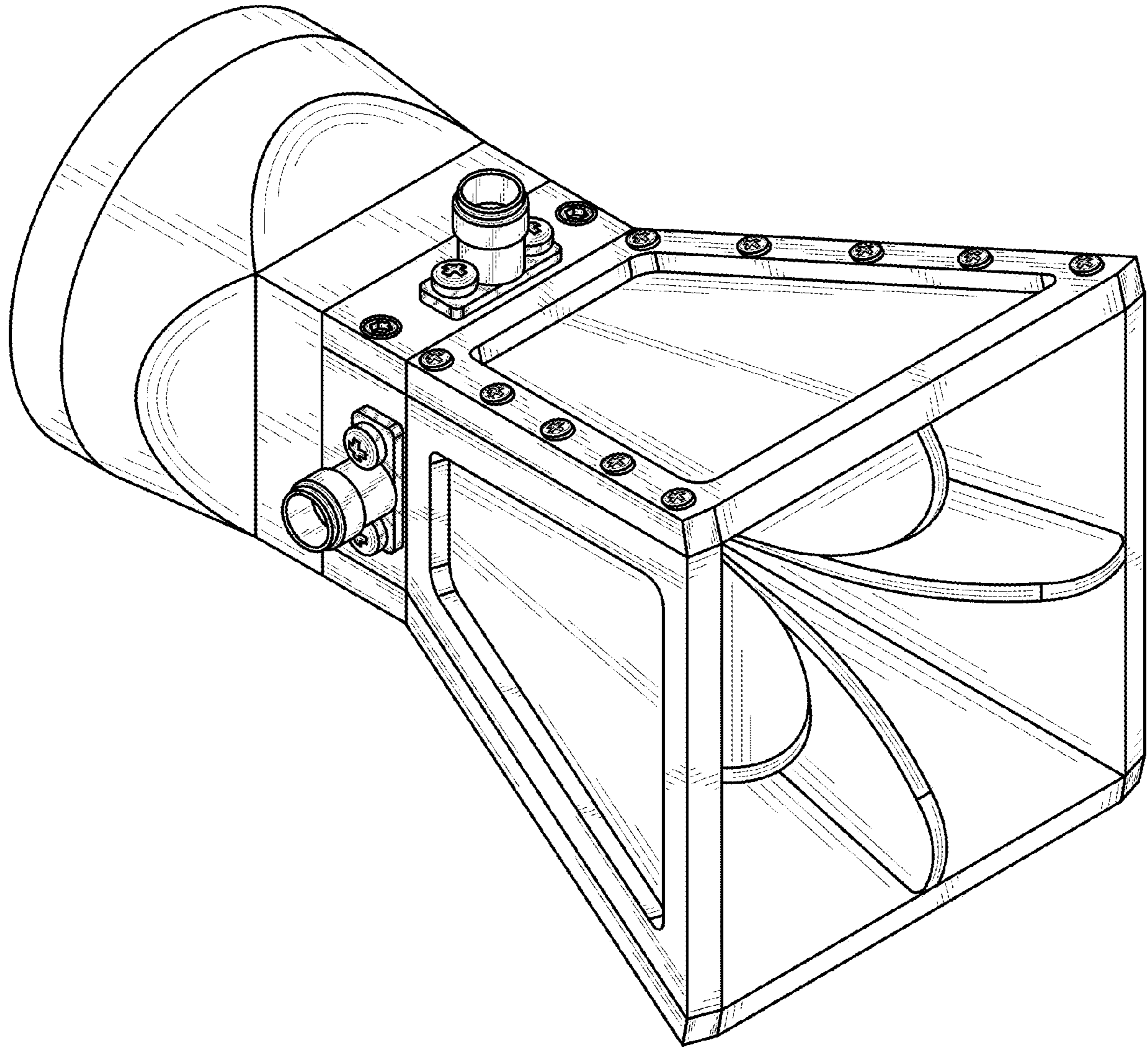


FIG. 1

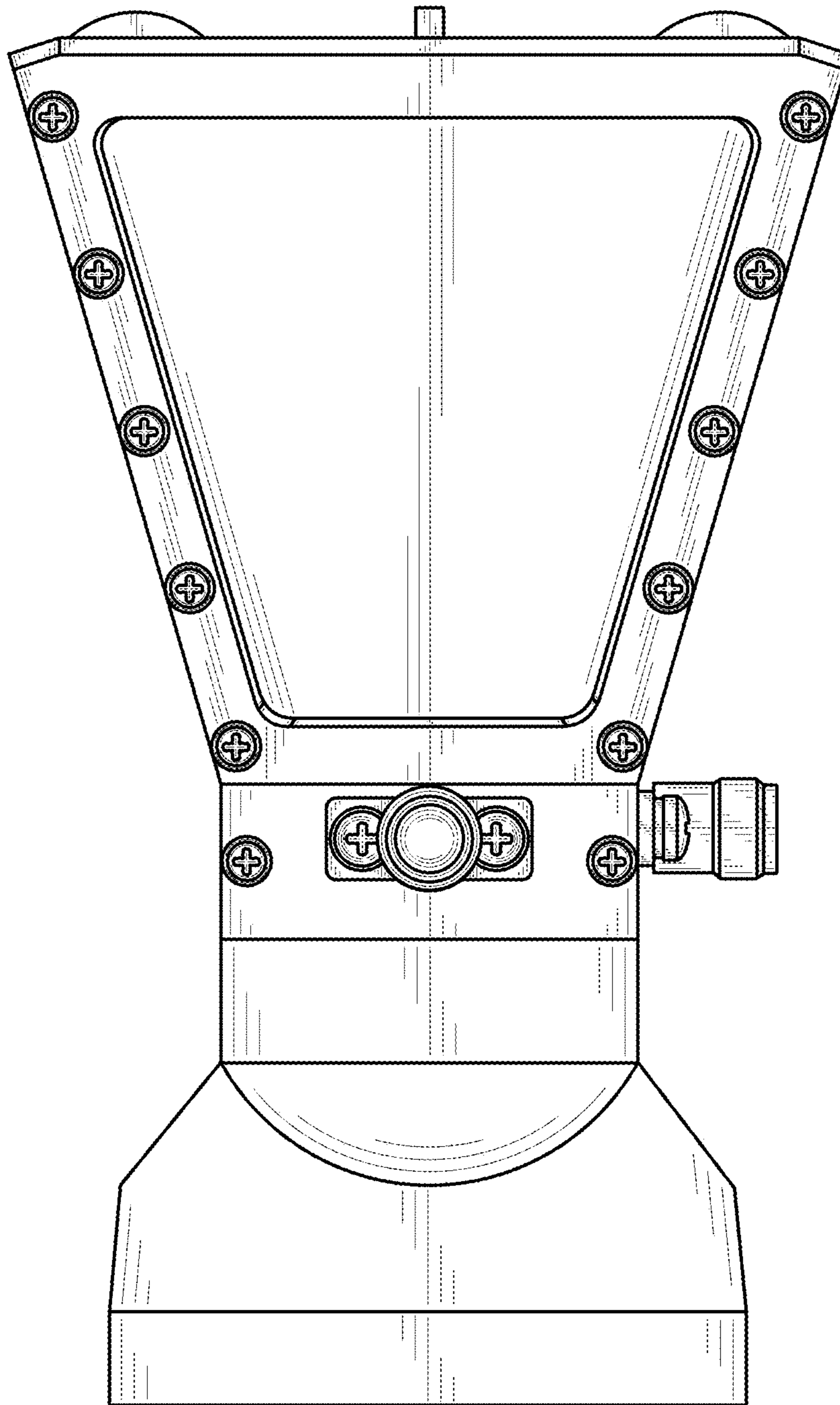


FIG. 2

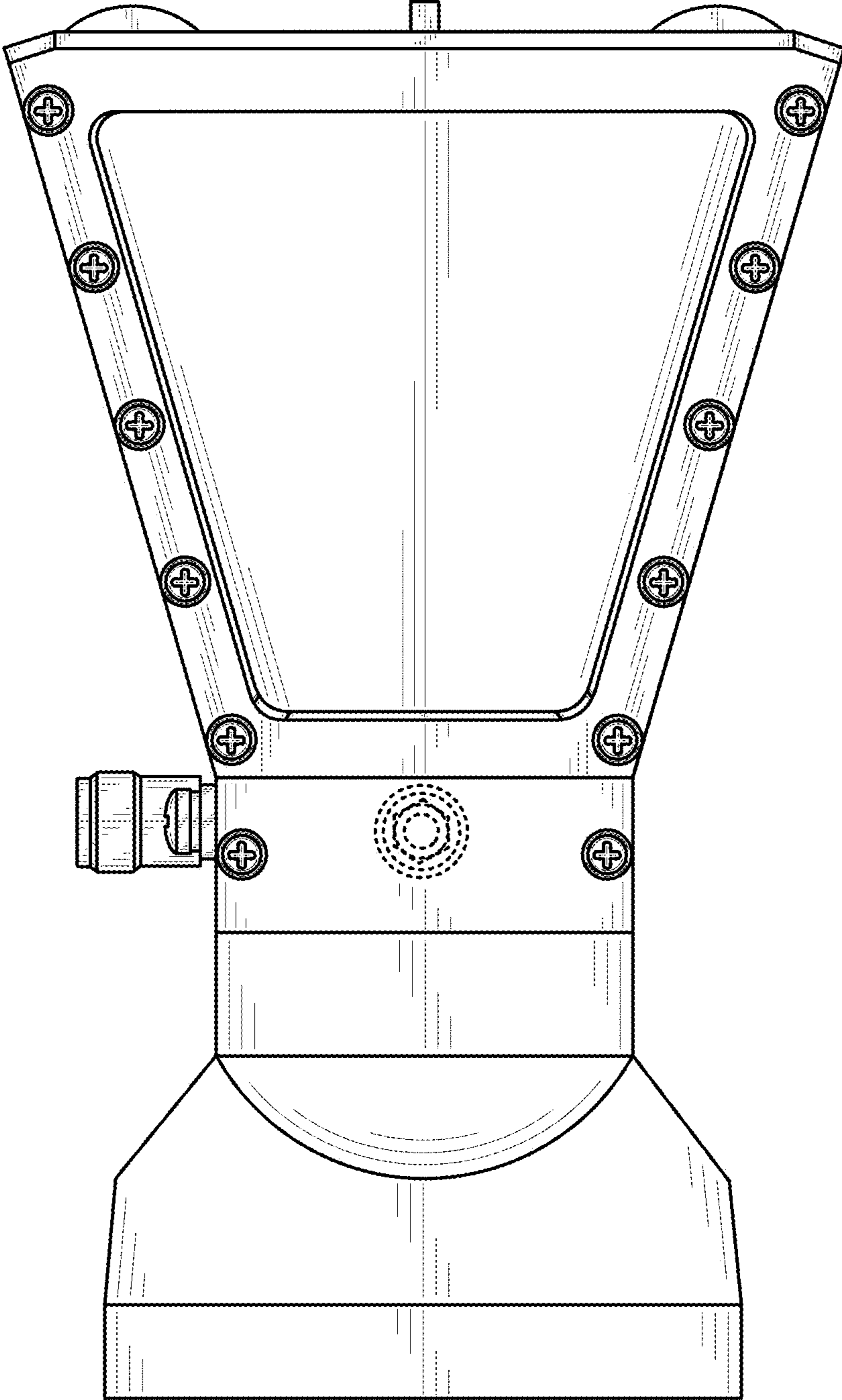


FIG. 3

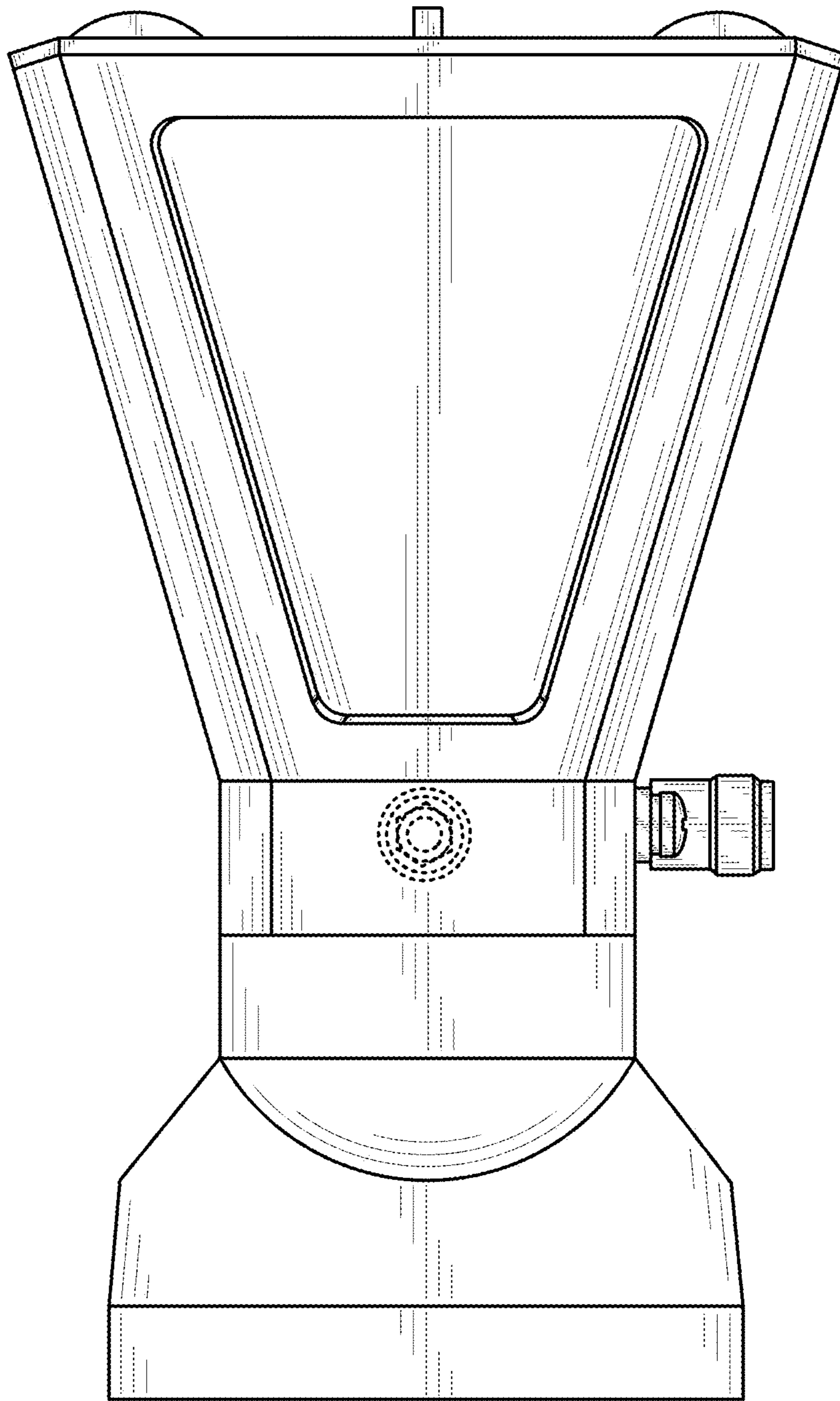


FIG. 4

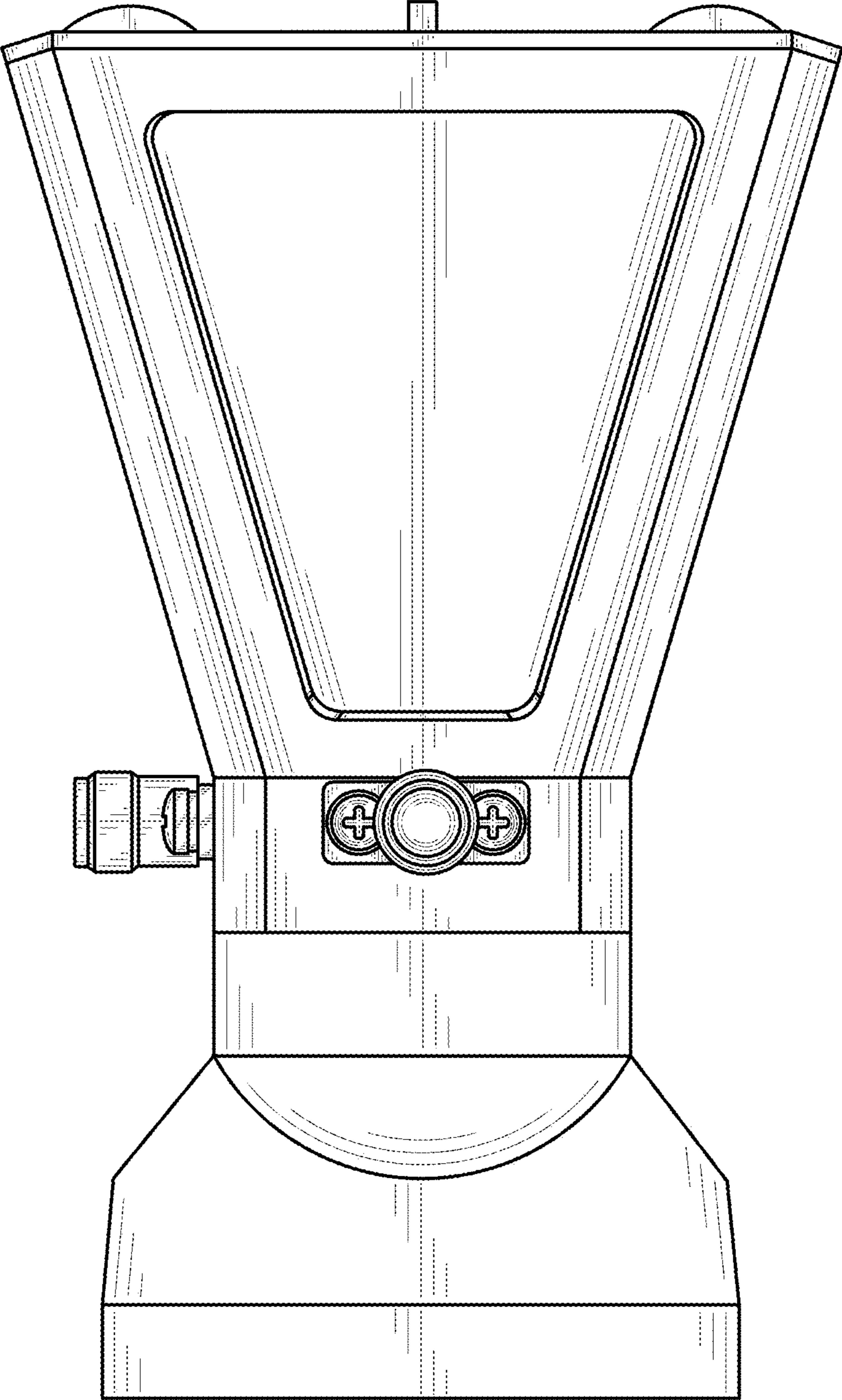


FIG. 5

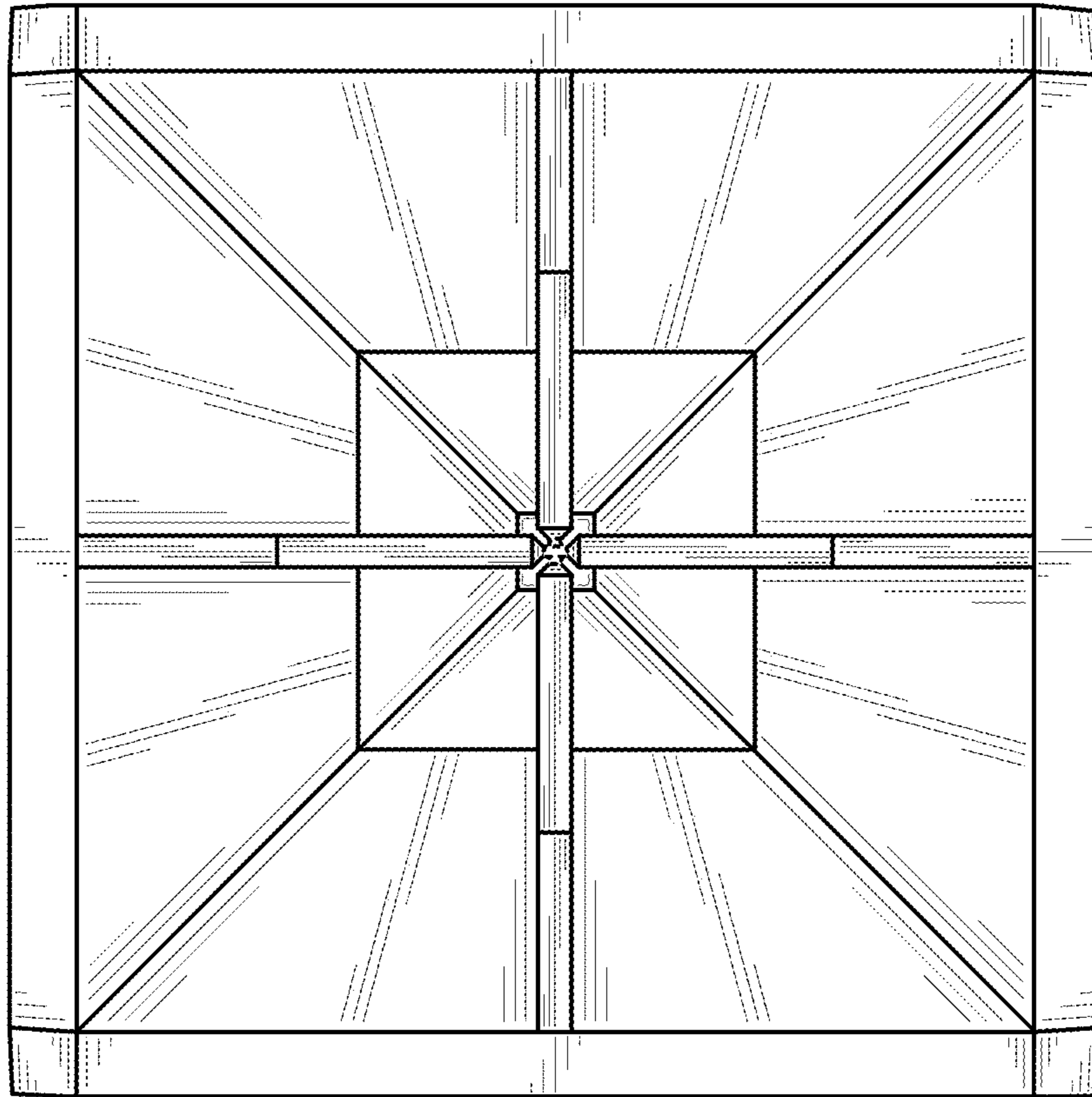


FIG. 6

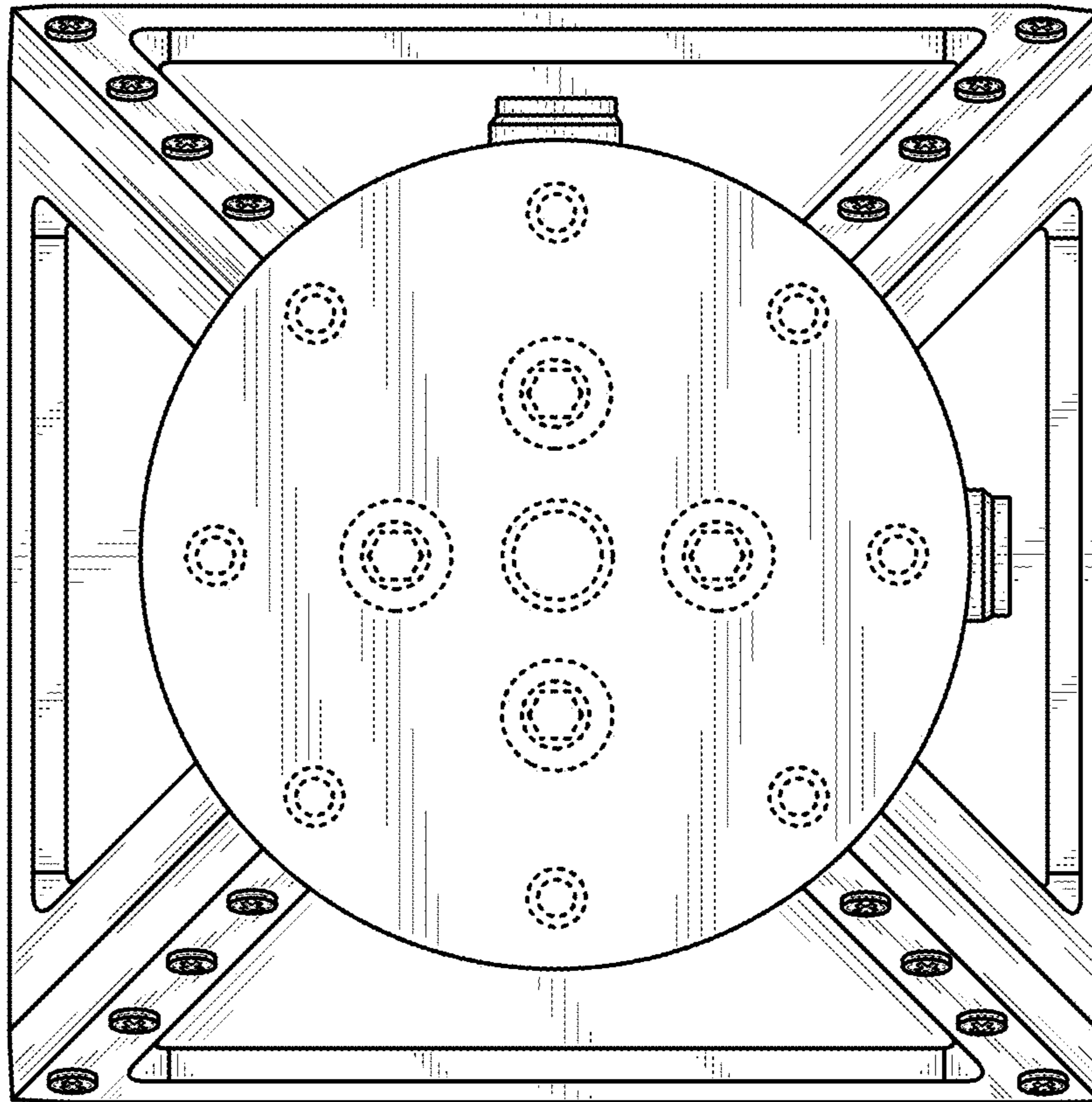


FIG. 7