



US0D1033305S

(12)

United States Design Patent

Schuknecht et al.

(10)

Patent No.:

US D1,033,305 S

(45)

Date of Patent:

** Jul. 2, 2024

(54) MOUNTING HARDWARE

- (71) Applicant: ARRAY TECHNOLOGIES, INC.,
Albuquerque, NM (US)
- (72) Inventors: Nathan Schuknecht, Golden, CO (US);
Lucas Creasy, Scottsdale, AZ (US);
Jason Addink, Gilbert, AZ (US);
Andrew Chase, Chandler, AZ (US)
- (73) Assignee: ARRAY TECHNOLOGIES, INC.,
Albuquerque, NM (US)
- (**) Term: 15 Years
- (21) Appl. No.: 29/792,021
- (22) Filed: Feb. 25, 2022

Related U.S. Application Data

- (62) Division of application No. 29/734,141, filed on May 8, 2020, now Pat. No. Des. 956,538.
- (51) LOC (14) Cl. 08-11
- (52) U.S. Cl. D8/373
USPC
- (58) Field of Classification Search
USPC D8/354, 373; D12/114; D13/102
(Continued)

(56) References Cited

U.S. PATENT DOCUMENTS

- 670,916 A * 3/1901 Eneas F24S 23/75
126/696
- 3,735,943 A * 5/1973 Fayet H02S 30/20
244/172.7

(Continued)

FOREIGN PATENT DOCUMENTS

- JP 2012-204471 A 10/2012
- JP 1721201 S 8/2022

(Continued)

OTHER PUBLICATIONS

Adjustable Tilt Radiometer Mounting Kit; Kipp & Zonen; Kippzonen.com (through Web.Archive.org); Mar. 5, 2016; Accessed Feb. 2, 2024; URL:<https://web.archive.org/web/20160305021425/https://www.kippzonen.com/Product/195/Adjustable-Tilt-Radiometer-Mounting-Kit#.VtpBDXbP1qY> (Year: 2016).*

(Continued)

Primary Examiner — Rachel A. Voorhies
Assistant Examiner — Benjamin D. Wannemacher
(74) Attorney, Agent, or Firm — MASCHOFF
BRENNAN; Paul G. Johnson

(57) CLAIM

The ornamental design for a mounting hardware, as shown and described.

DESCRIPTION

FIG. 1 is an upper perspective view of an embodiment of a mounting hardware, illustrating the mounting hardware mounted to exemplary environment;
FIG. 2 is another upper perspective view of the mounting hardware shown in FIG. 1;
FIG. 3 is a lower perspective view of the mounting hardware shown in FIG. 2;
FIG. 4 is a front view of the mounting hardware shown in FIG. 2;
FIG. 5 is a rear view of the mounting hardware shown in FIG. 2;
FIG. 6 is a left-side view of the mounting hardware shown in FIG. 2;
FIG. 7 is a right-side view of the mounting hardware shown in FIG. 2;
FIG. 8 is a top view of the mounting hardware shown in FIG. 2;
FIG. 9 is a bottom view of the mounting hardware shown in FIG. 2;
FIG. 10 is an upper perspective view of another embodiment of a mounting hardware, illustrating the mounting hardware mounted to exemplary environment;

(Continued)

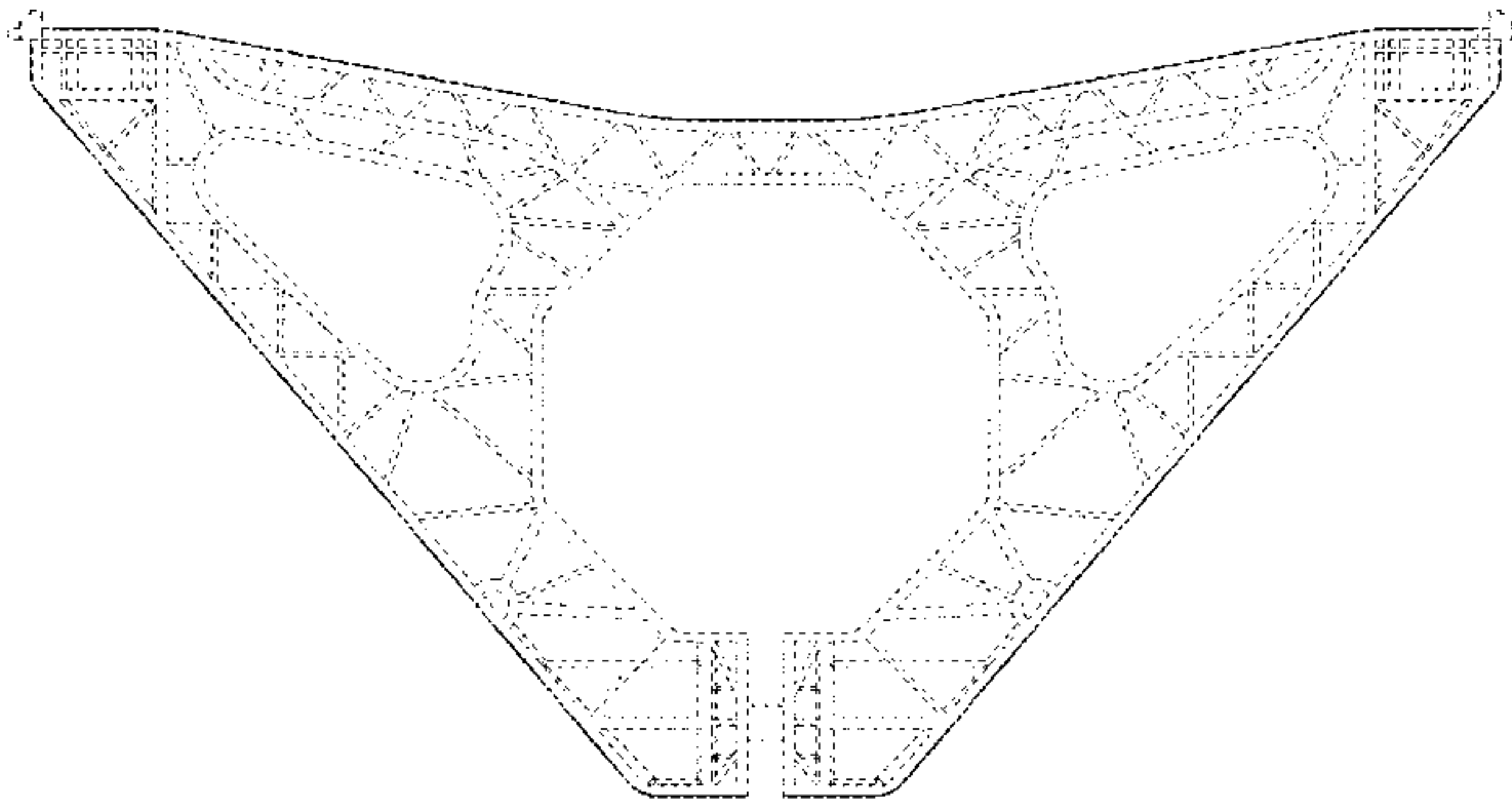
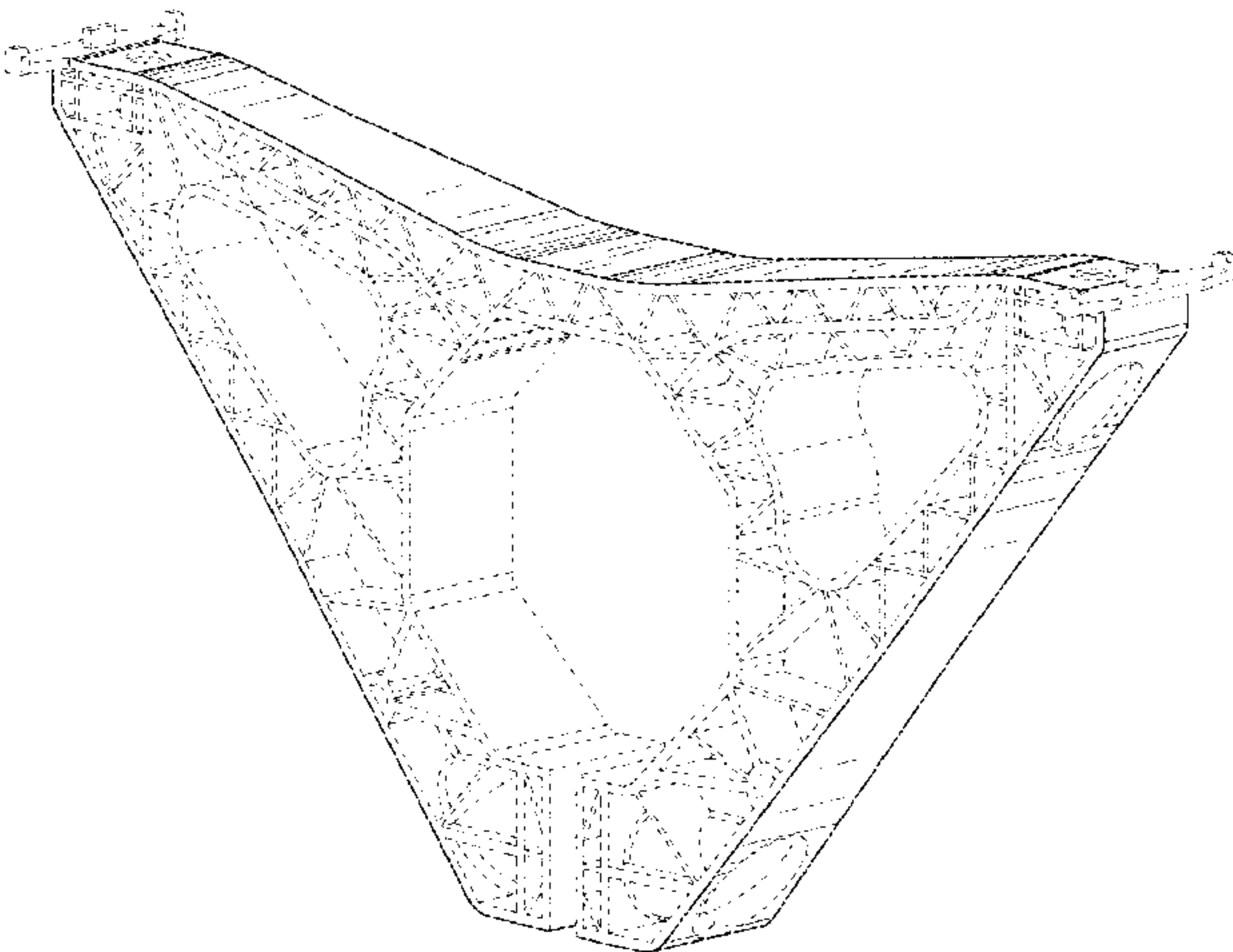


FIG. 11 is another upper perspective view of the mounting hardware shown in FIG. 10;
FIG. 12 is a lower perspective view of the mounting hardware shown in FIG. 11;
FIG. 13 is a front view of the mounting hardware shown in FIG. 11;
FIG. 14 is a rear view of the mounting hardware shown in FIG. 11;
FIG. 15 is a left-side view of the mounting hardware shown in FIG. 11;
FIG. 16 is a right-side view of the mounting hardware shown in FIG. 11;
FIG. 17 is a top view of the mounting hardware shown in FIG. 11; and,
FIG. 18 is a bottom view of the mounting hardware shown in FIG. 11.

The broken lines are for the purpose of illustrating portions of the mounting hardware that form no part of the claimed design. The broken line showing of the torsion tube and attachment structures in FIGS. 1 and 10 illustrates the environment of the claimed design and forms no part thereof.

1 Claim, 14 Drawing Sheets

(58) **Field of Classification Search**
CPC Y02E 10/47; Y02E 10/50; F24S 30/425;
F24S 50/20
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,178,913 A * 12/1979 Hutchison F24S 50/20
126/684
D454,828 S * 3/2002 Alder D12/223
6,384,314 B1 * 5/2002 Lund-Hansen F24S 50/80
126/621
D604,150 S 11/2009 Lee
D613,591 S * 4/2010 Lee D12/114
D631,004 S 1/2011 Johnson
D658,550 S * 5/2012 Madden D12/114
8,459,249 B2 6/2013 Corio
8,671,930 B2 * 3/2014 Liao F24S 25/12
126/576
D719,084 S 12/2014 Kruse
9,276,521 B2 3/2016 Reed et al.
9,281,778 B2 3/2016 Corio et al.
9,581,678 B2 2/2017 Corio
9,631,840 B2 4/2017 Corio
9,656,702 B2 * 5/2017 Keatley B62D 65/02
D801,895 S 11/2017 Bowyer et al.
10,042,030 B2 8/2018 Corio
10,069,455 B2 9/2018 Corio et al.
10,075,125 B2 * 9/2018 Liu F24S 30/425

D833,349 S 11/2018 Bowyer et al.
D839,003 S 1/2019 Boles
10,536,109 B2 1/2020 Corio
10,771,007 B2 9/2020 Corio
10,797,635 B2 * 10/2020 Watson H02S 30/10
10,801,755 B1 * 10/2020 Nemat F24S 25/634
10,809,345 B2 10/2020 Corio
D906,698 S 1/2021 Gargan
10,931,224 B2 * 2/2021 Praca F16H 1/32
11,050,383 B2 * 6/2021 Watson F24S 30/425
D956,536 S * 7/2022 Schuknecht D8/373
D956,537 S * 7/2022 Schuknecht D8/373
D956,538 S * 7/2022 Schuknecht D8/373
D966,083 S * 10/2022 Schuknecht D8/373
11,527,988 B2 * 12/2022 Schuknecht H02S 20/30
D974,888 S * 1/2023 Schuknecht D8/373
11,711,048 B2 * 7/2023 Cherukupalli H02S 20/32
136/246
11,764,724 B2 * 9/2023 Duan F24S 30/425
136/246
11,831,273 B2 * 11/2023 Mouniandy H02S 30/00
2009/0260316 A1 * 10/2009 Jones F24S 30/425
52/745.2
2009/0260619 A1 * 10/2009 Bailey F24S 30/452
353/3
2010/0043776 A1 * 2/2010 Gee F24S 50/00
126/571
2010/0051016 A1 * 3/2010 Ammar F24S 23/80
126/600
2010/0089389 A1 4/2010 Seery et al.
2011/0042172 A1 * 2/2011 Drewes F16D 55/226
188/234
2013/0061909 A1 * 3/2013 Jacquot H02S 20/30
136/246
2014/0117190 A1 * 5/2014 Werner E04C 3/08
248/346.03
2015/0092383 A1 4/2015 Corio
2015/0200621 A1 7/2015 Reed et al.
2016/0190976 A1 * 6/2016 Corio F24S 25/634
248/214
2018/0317685 A1 11/2018 Boles

FOREIGN PATENT DOCUMENTS

JP 1722269 S 8/2022
KR 30-0676073 1/2013
WO DM/084 108 4/2014

OTHER PUBLICATIONS

製品案内, 10 頁, (特許庁意匠課公知 資料番号 HC27004809).
Apolo, 追尾式太陽発電システム, 3 頁 (特許庁意匠課公知 資料番号 HD 21001125).
Array Technologies, Inc. (Nov. 11, 2019). Array Technologies Overview. YouTube. Accessed (Aug. 17, 2021). URL: <<https://www.youtube.com/watch?v=nhDWaT5MjVA>> (year: 2019).
Array Technologies, Inc. (Nov. 11, 2019). Array Wind Mitigation. YouTube. Accessed (Aug. 17, 2021). URL: <<https://www.youtube.com/watch?v=5JbhRFdBsjs>> (year: 2019).

* cited by examiner

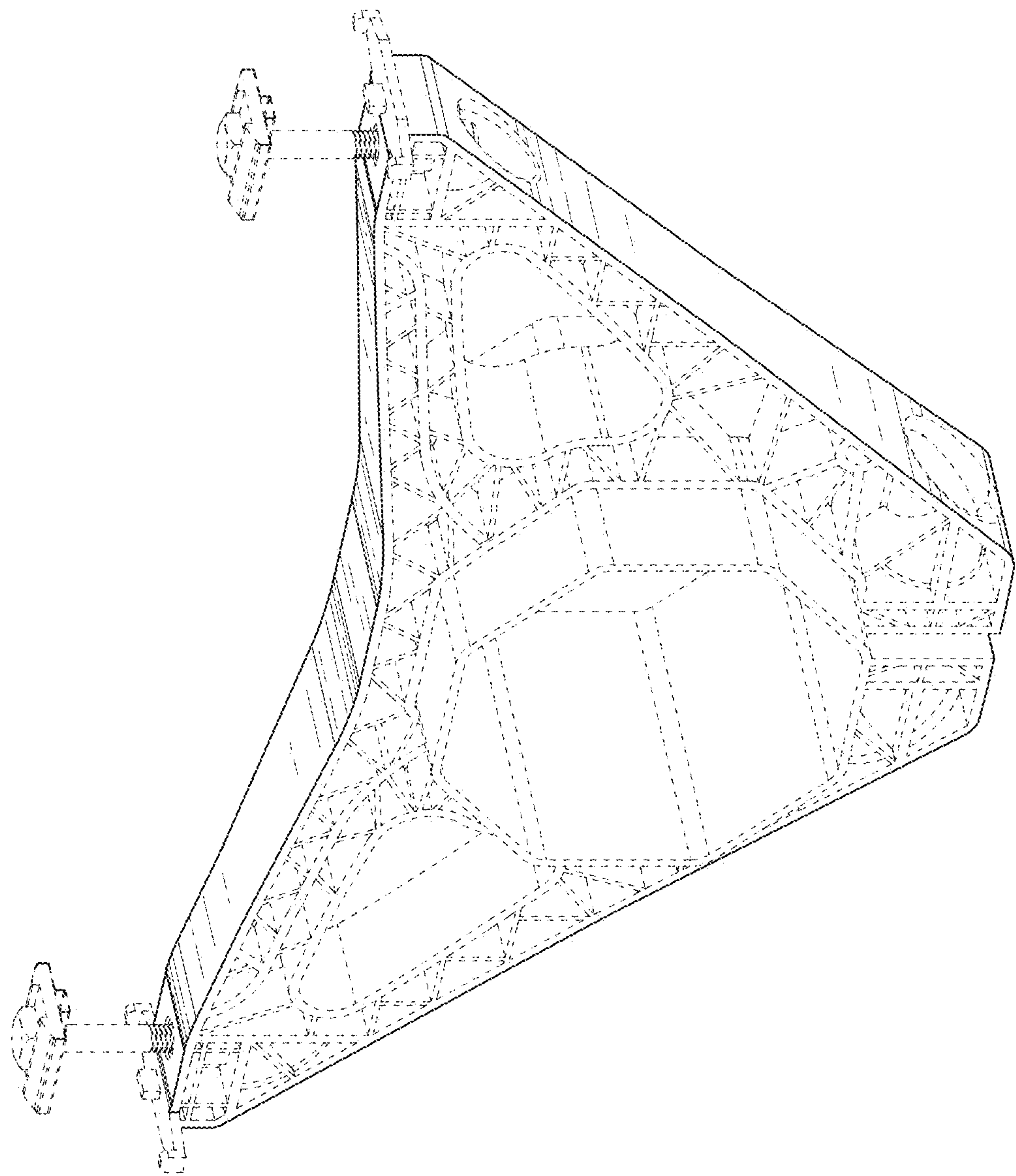


FIG. 1

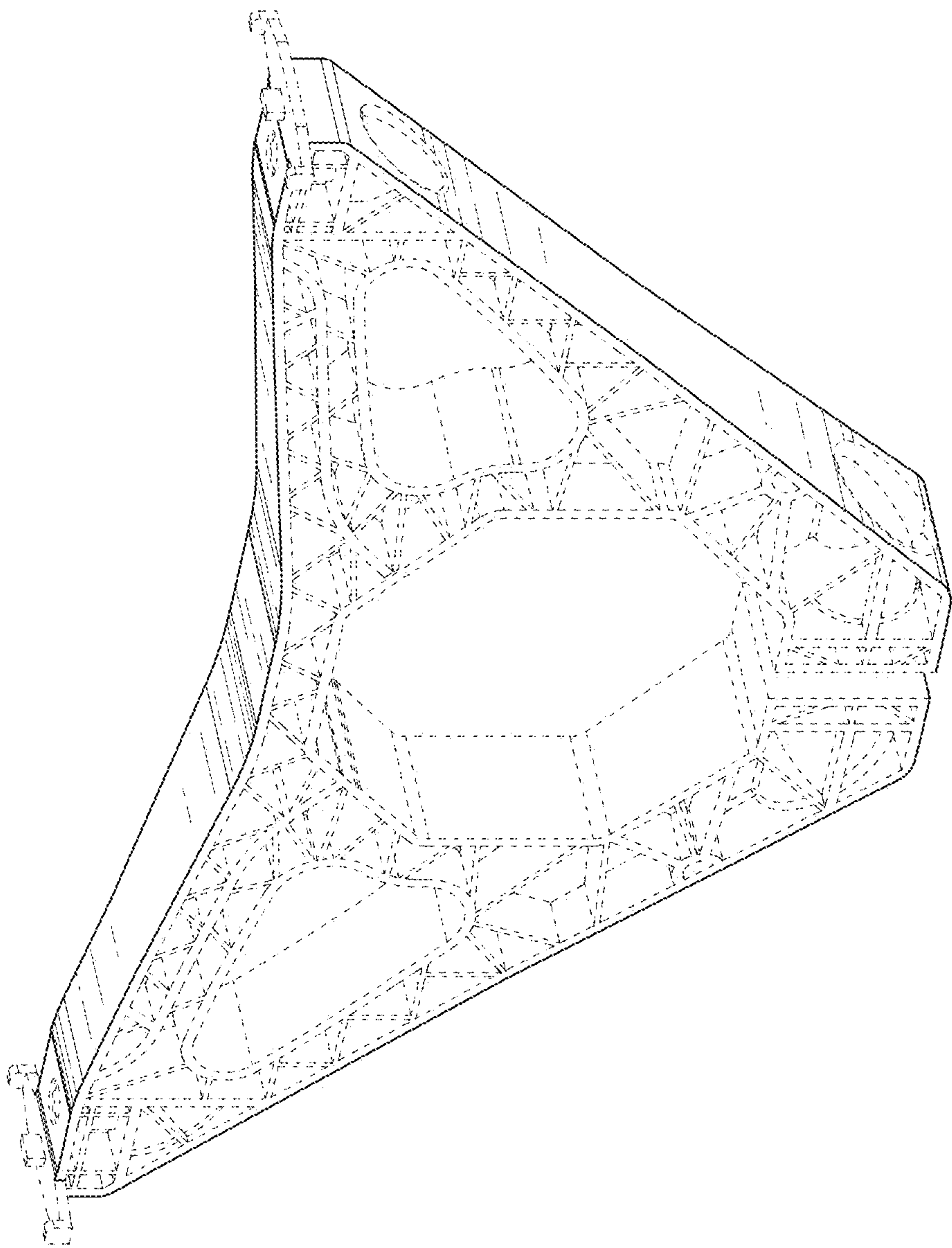


FIG. 2

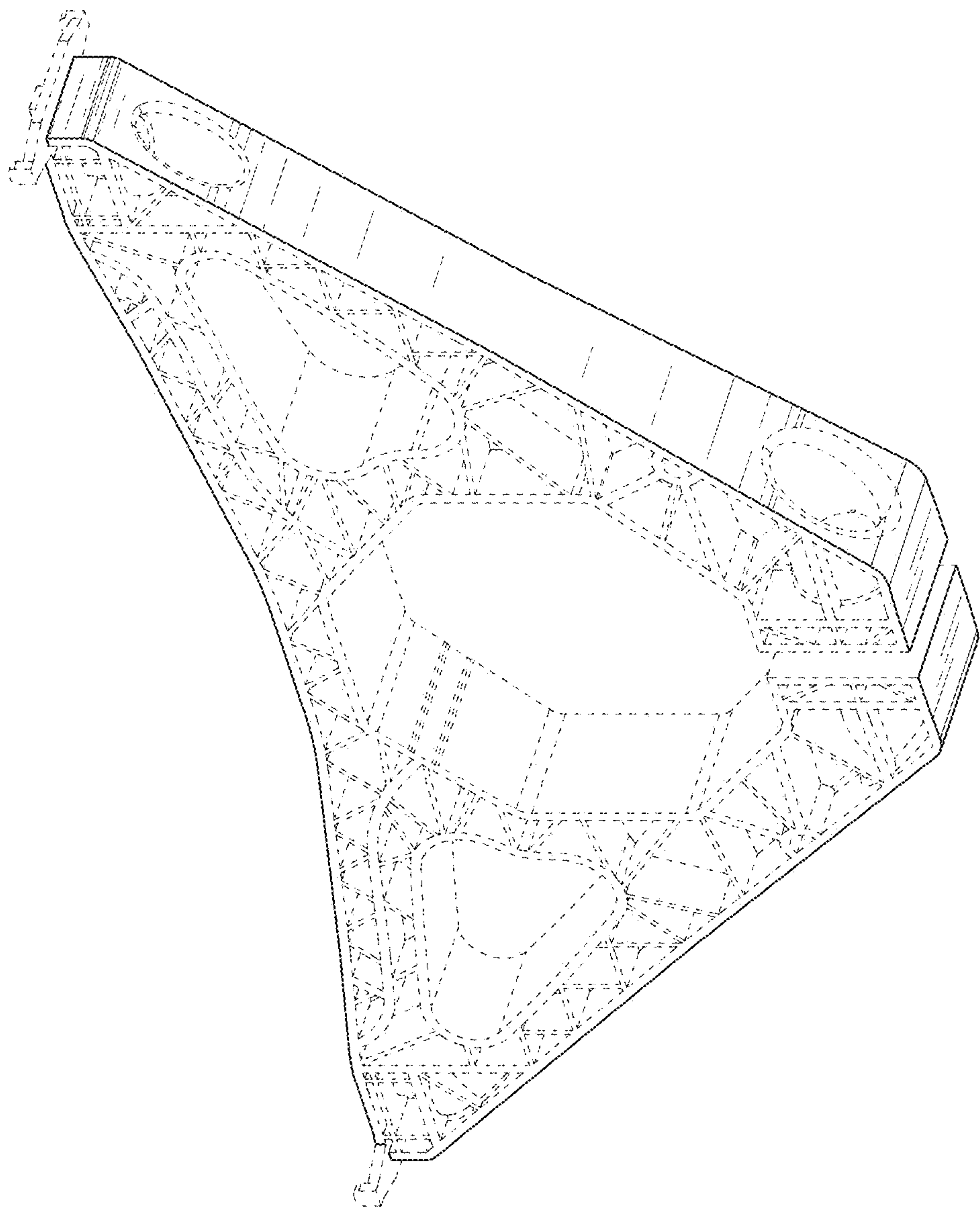


FIG. 3

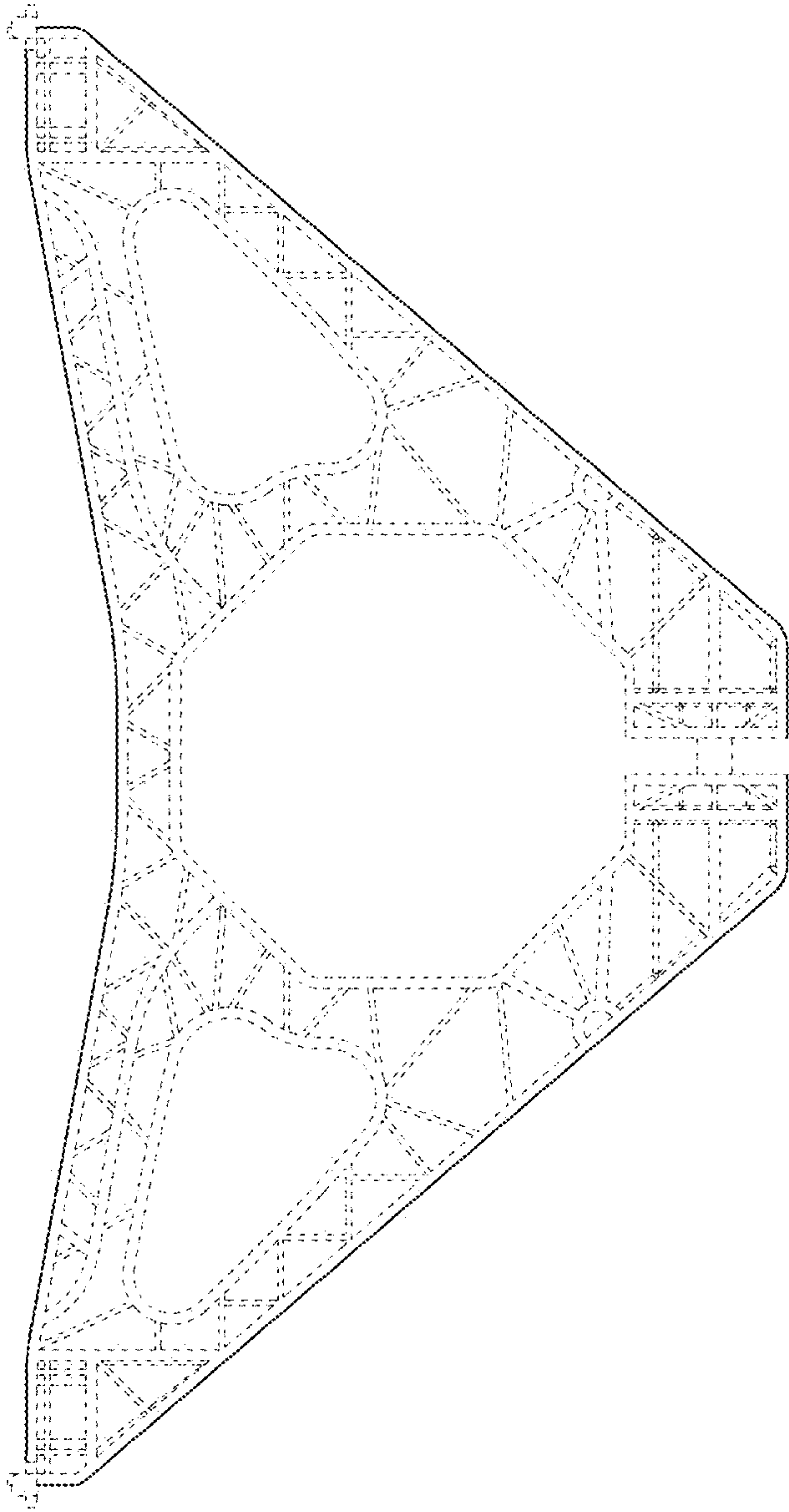


FIG. 4

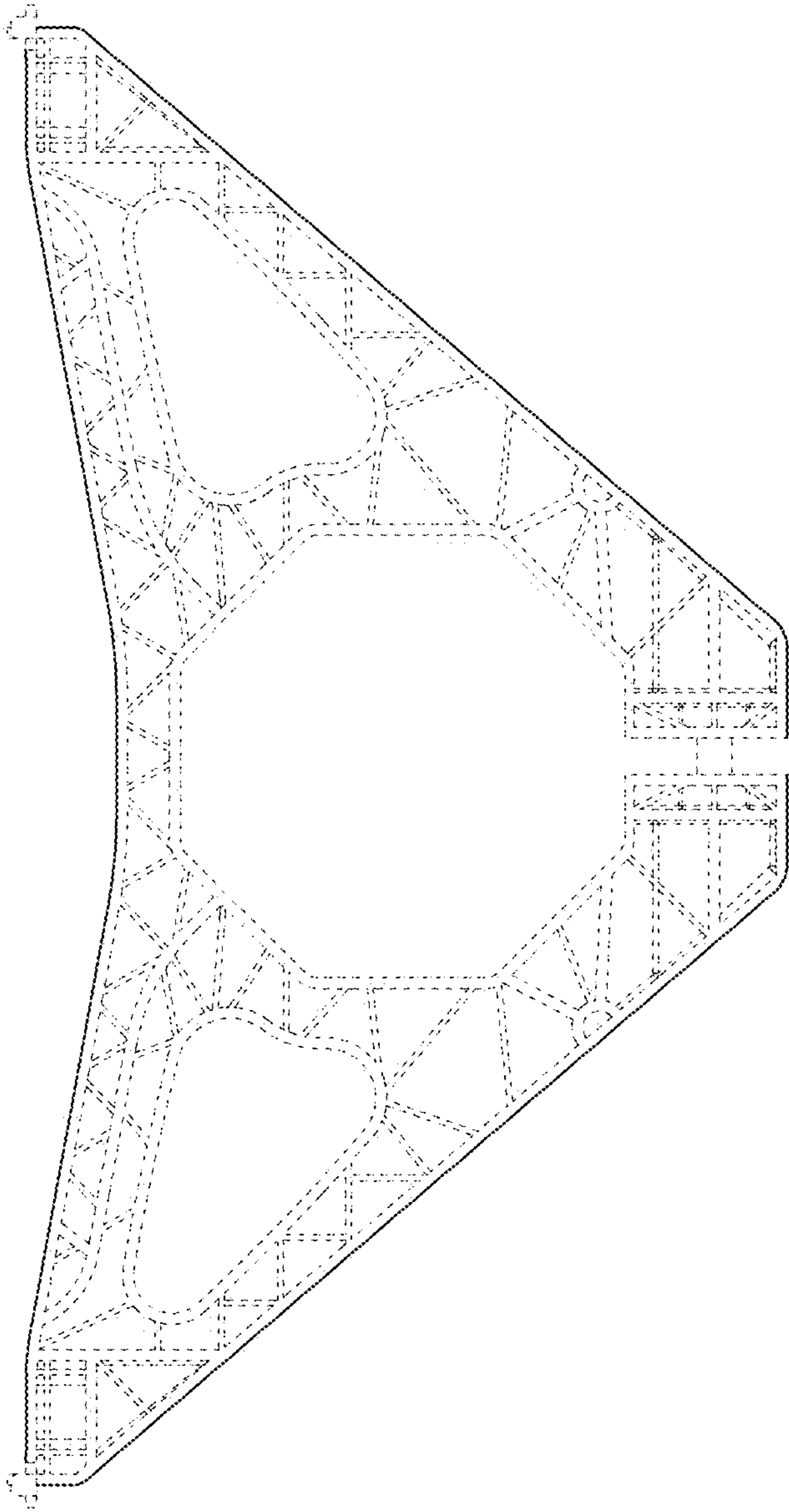


FIG. 5

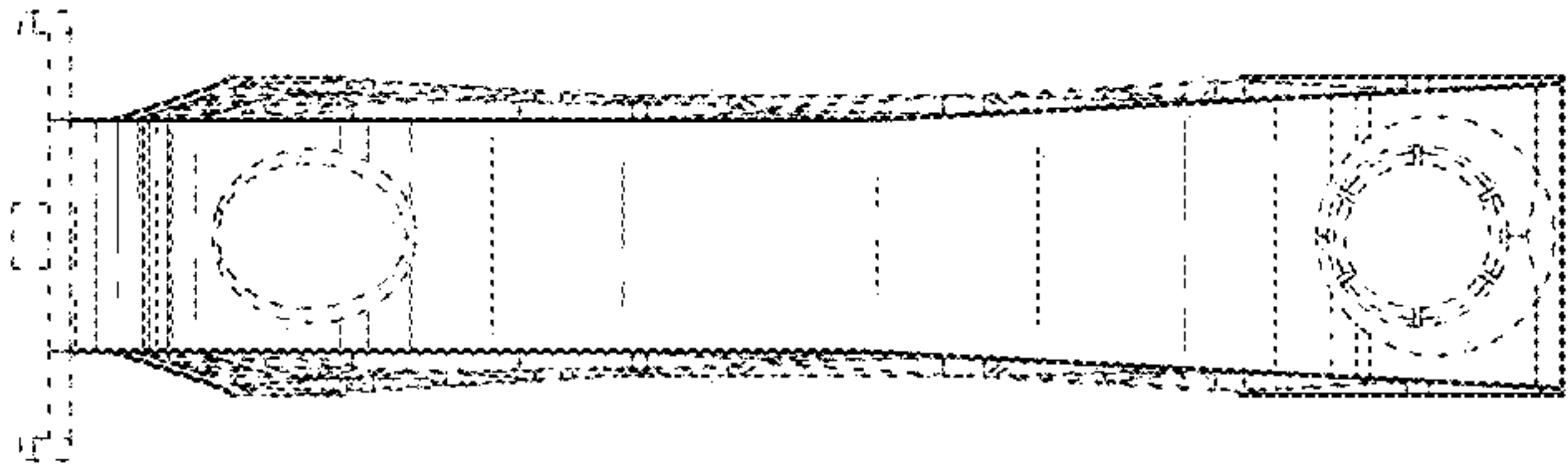


FIG. 6

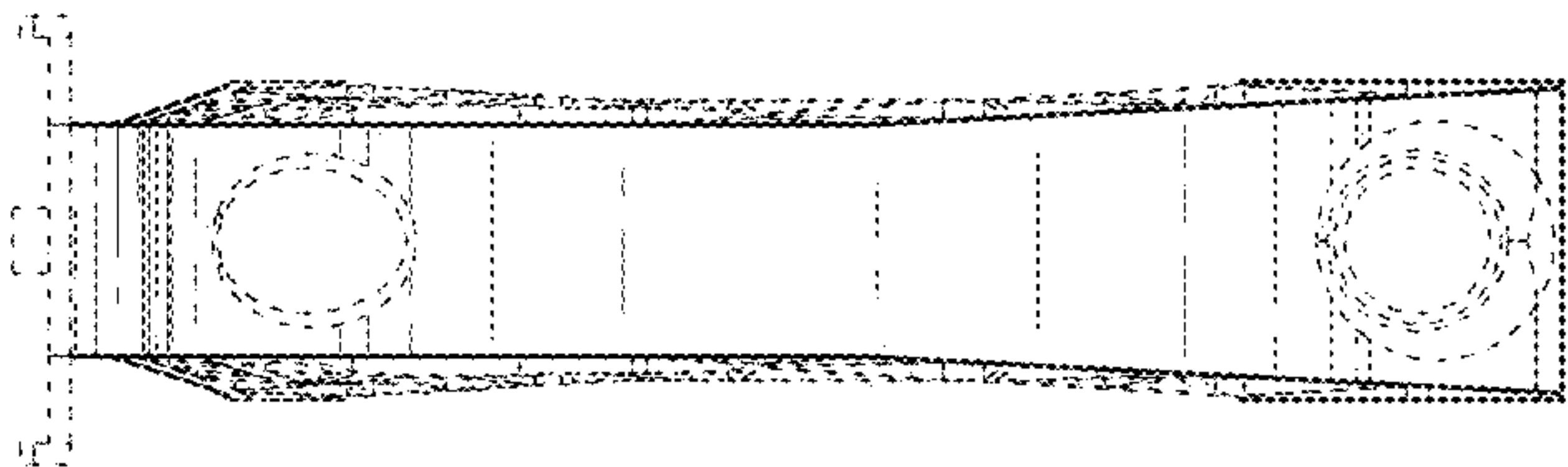


FIG. 7

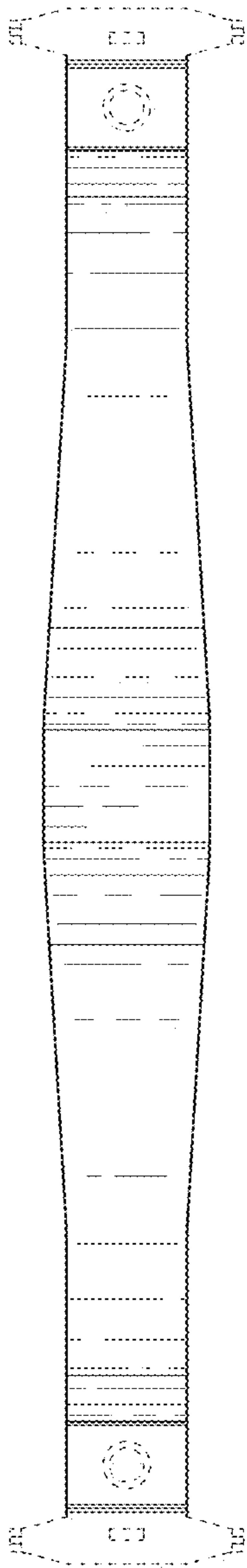


FIG. 8

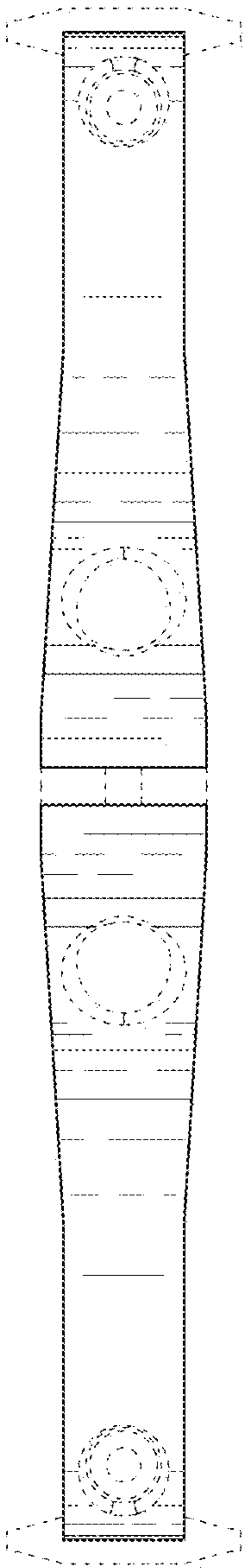


FIG. 9

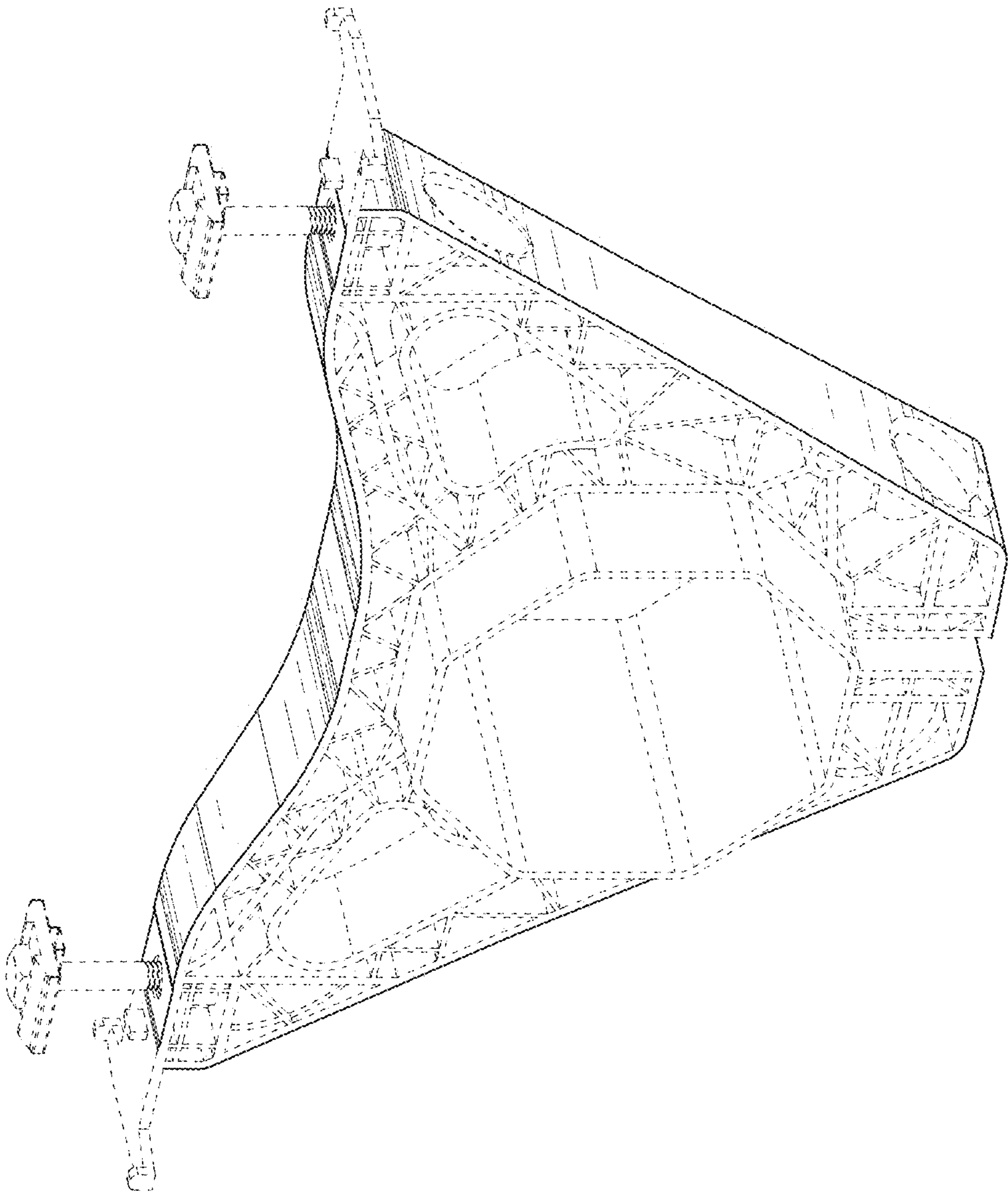


FIG. 10

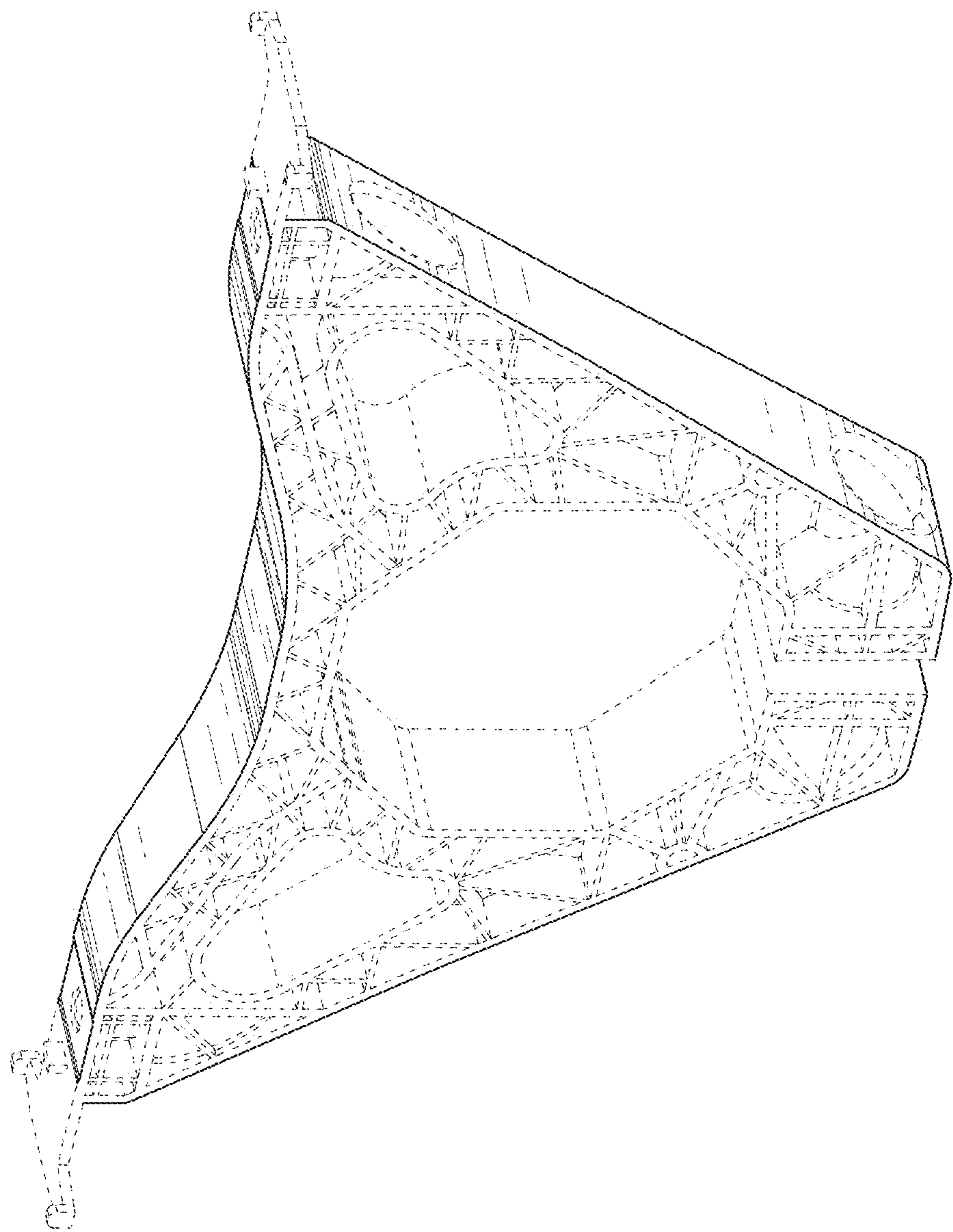


FIG. 11

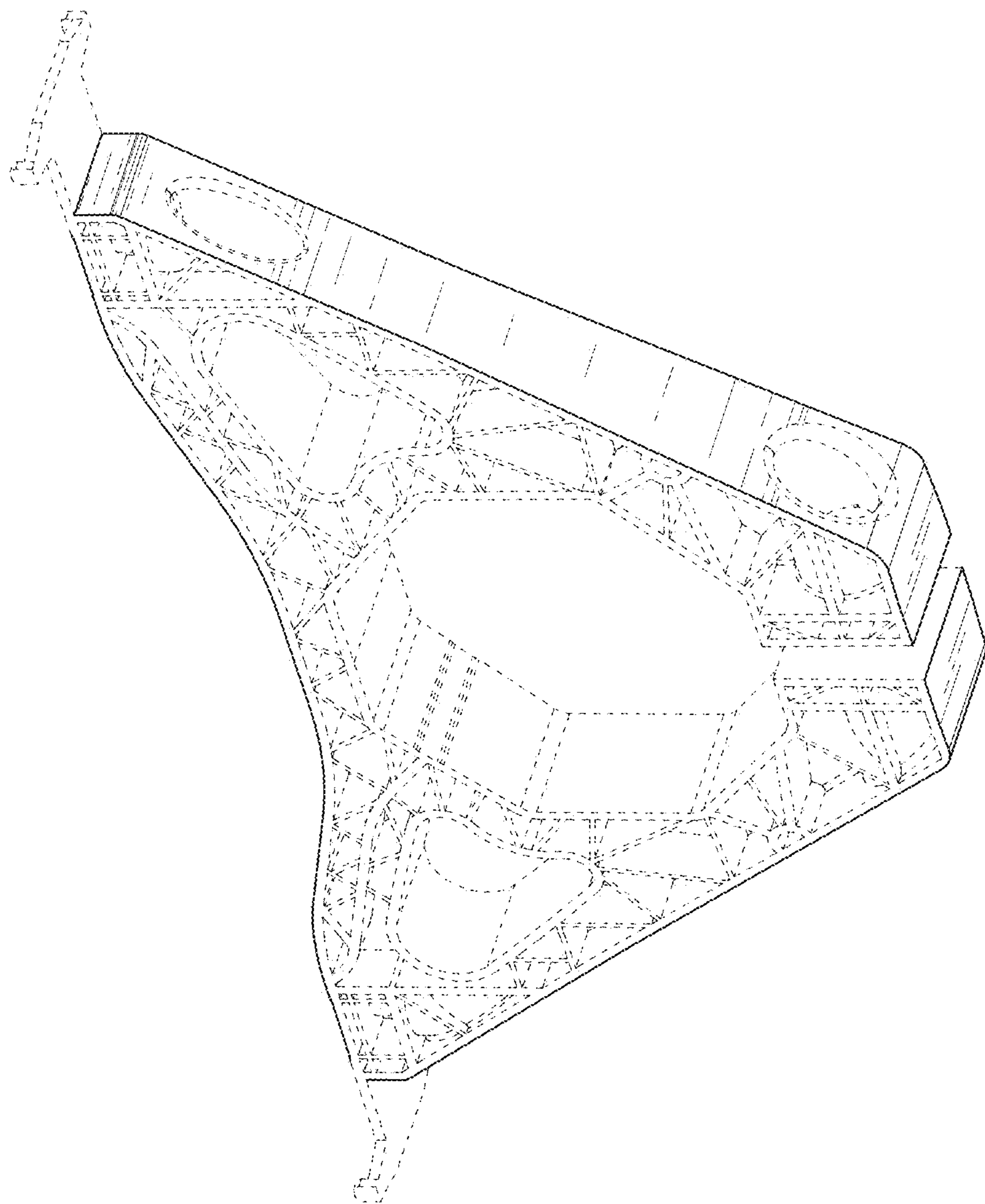


FIG. 12

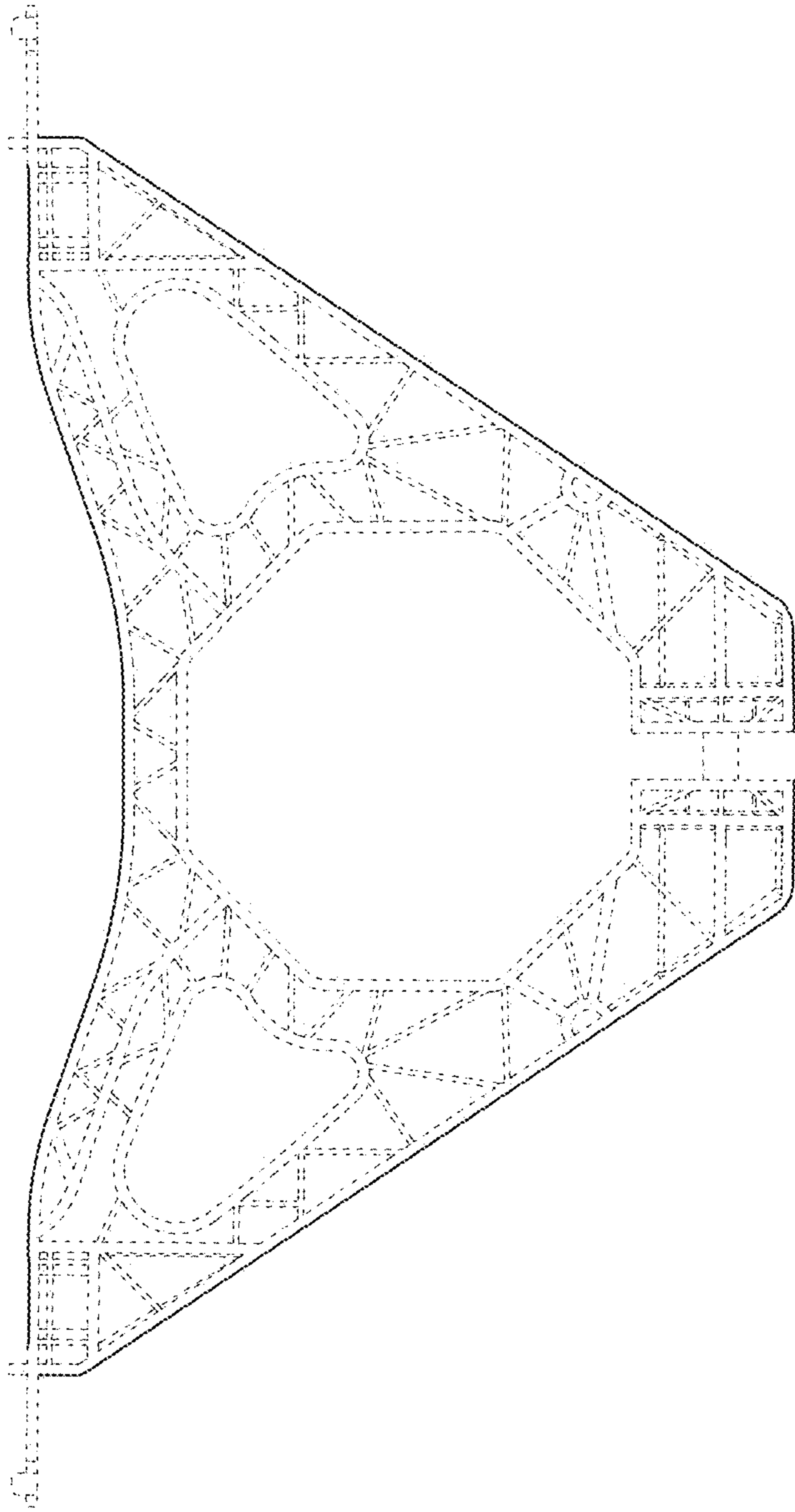


FIG. 13

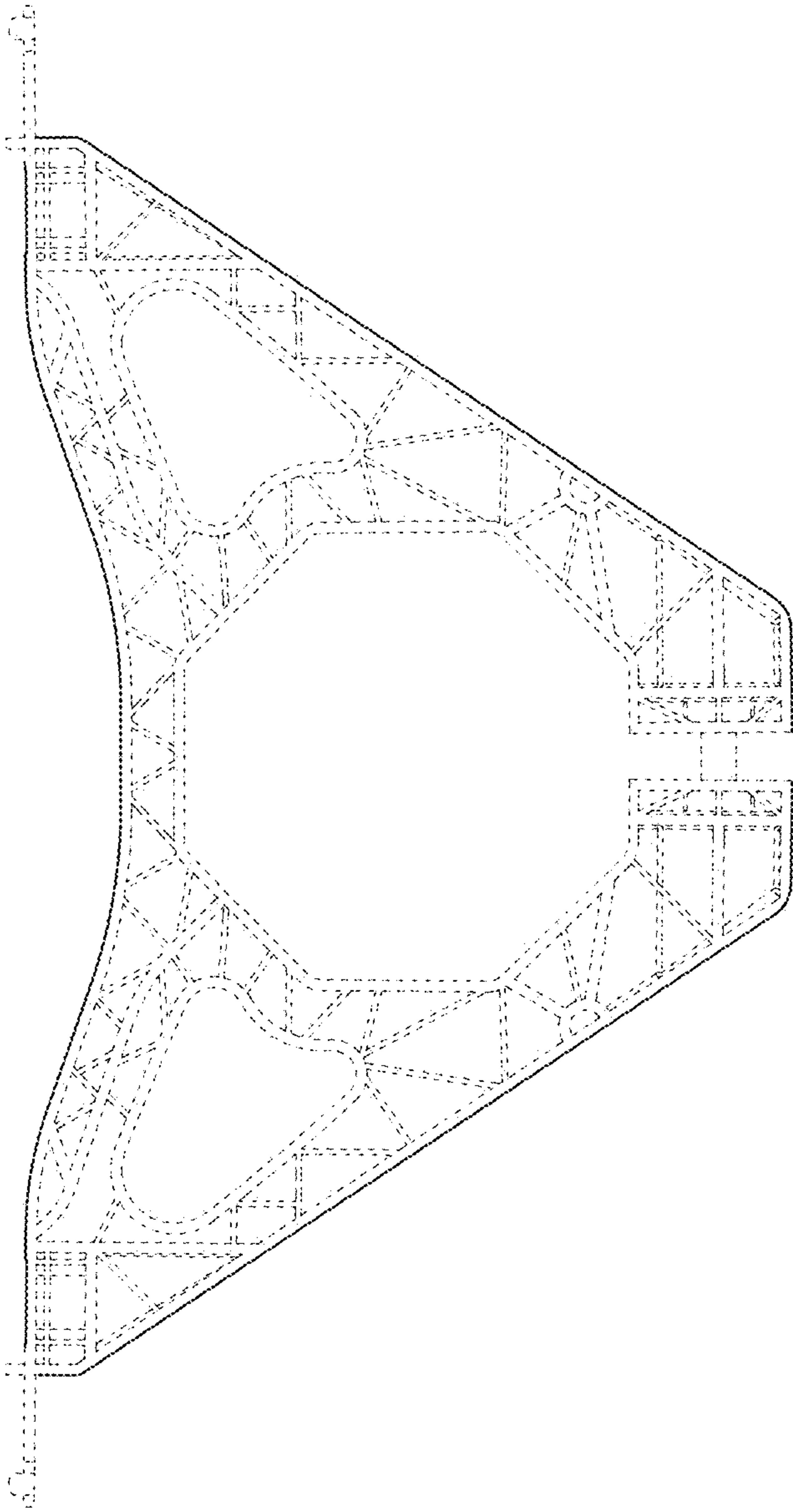


FIG. 14

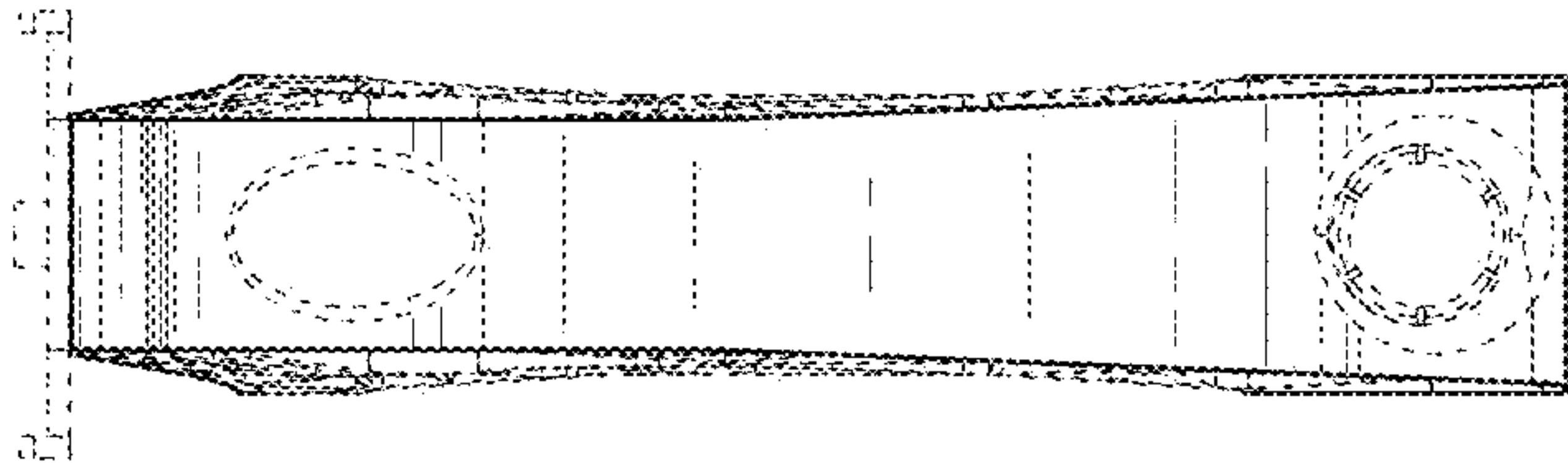


FIG. 16

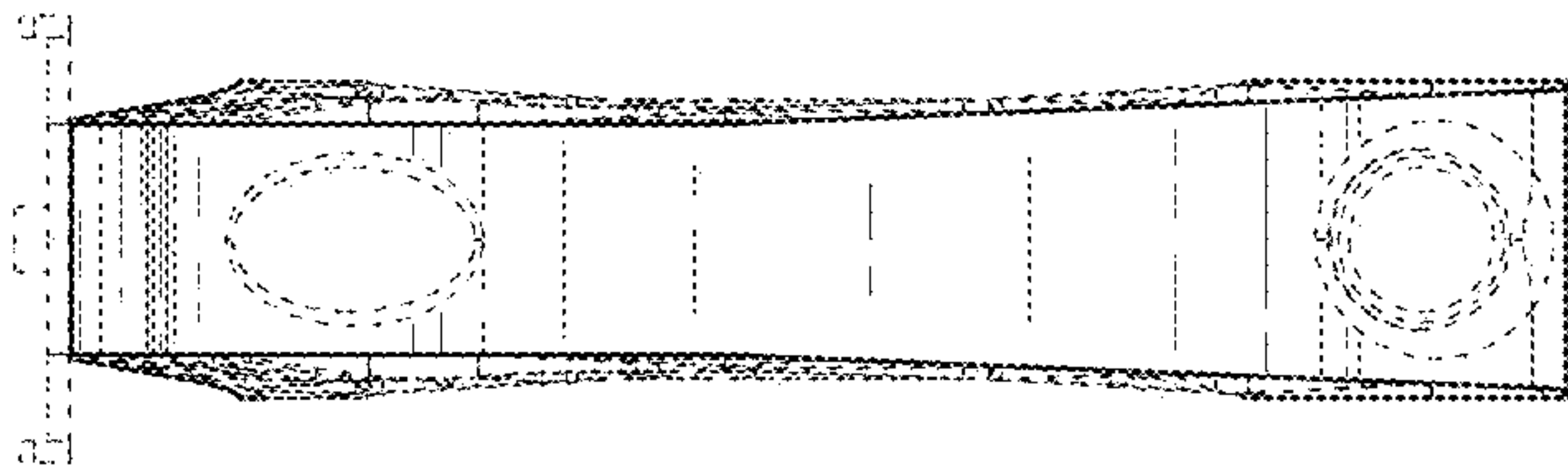


FIG. 15

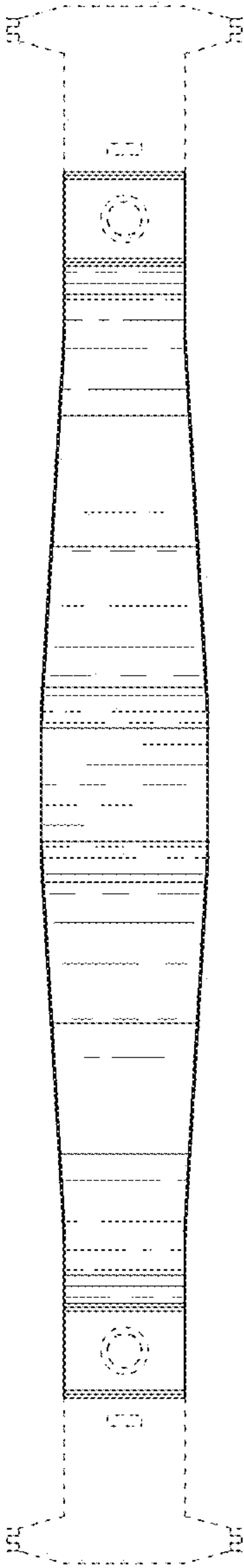


FIG. 17

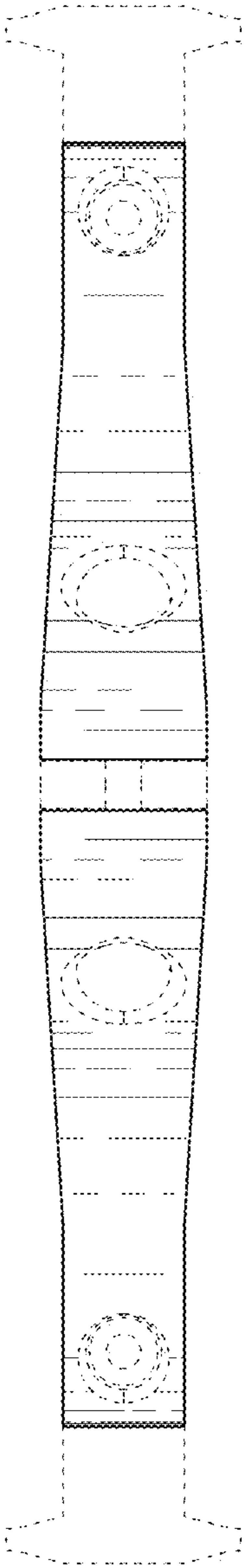


FIG. 18