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(12) **United States Design Patent**
Dygert

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- (54) **AXIAL FLOW FAN**
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- (73) Assignee: **CARRIER CORPORATION**, Palm Beach Gardens, FL (US)
- (**) Term: **15 Years**

- D570,996 S * 6/2008 Harman D23/413
 - D585,130 S * 1/2009 Harman D23/413
 - 7,794,204 B2 9/2010 Stevens et al.
 - D644,316 S * 8/2011 Spaggiari D23/413
- (Continued)

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- (22) Filed: **Jan. 31, 2018**
- (51) **LOC (13) Cl.** **23-03**
- (52) **U.S. Cl.**
USPC **D23/413**
- (58) **Field of Classification Search**
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D12/214, 339, 344
CPC F04D 29/38; F04D 29/384; F04D 29/386;
F04D 29/388; F04D 29/324
See application file for complete search history.

FOREIGN PATENT DOCUMENTS

- EP 2050365 A1 4/2009
 - FR 1399313 A 5/1965
- (Continued)

OTHER PUBLICATIONS

EM Examination Report; European Community Design Application No. 005517075-0001; dated Aug. 9, 2018; pp. 1-2.
(Continued)

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(57) **CLAIM**

I claim, the ornamental design for an axial flow fan, as shown and described.

(56) **References Cited**

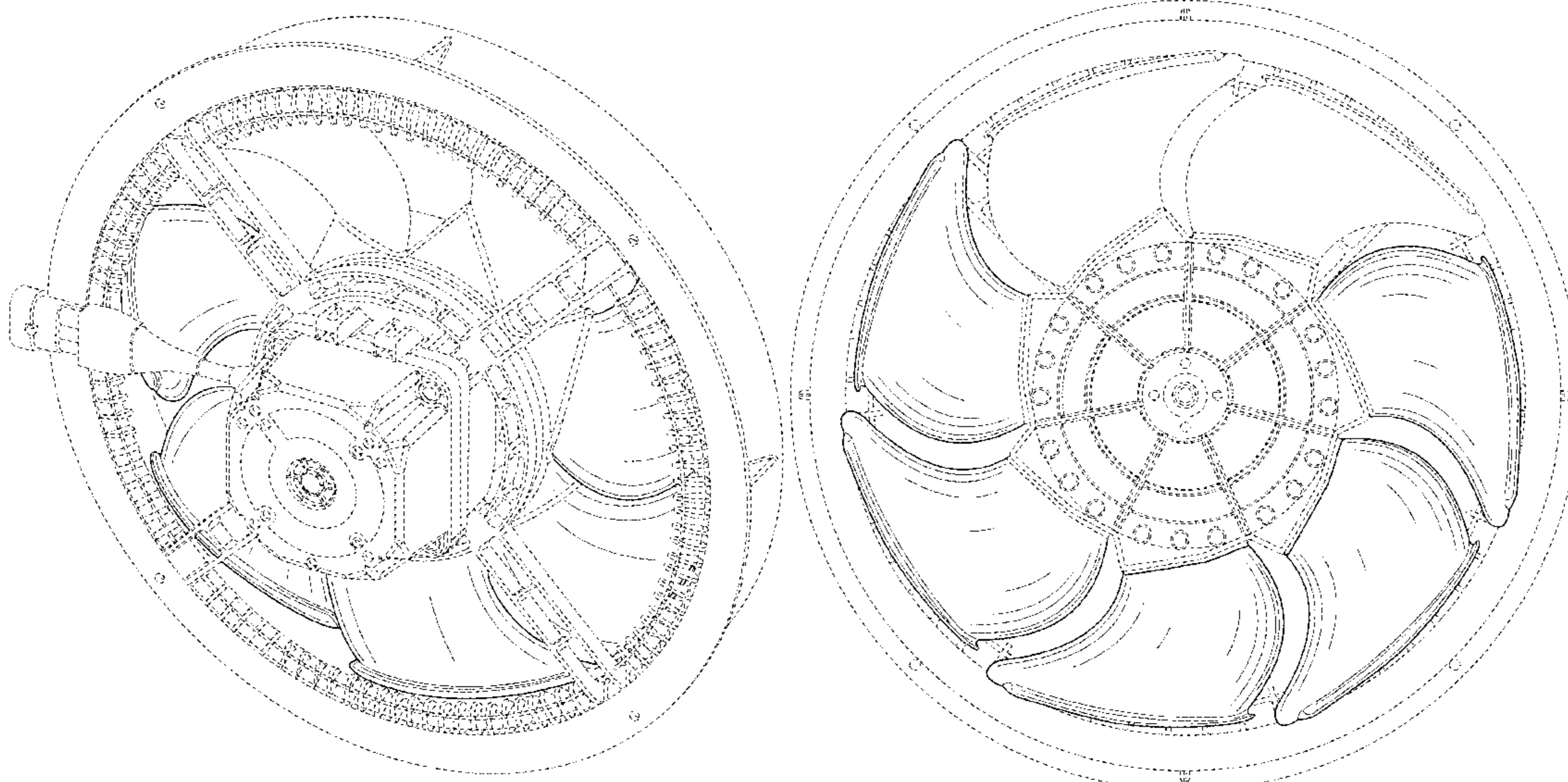
U.S. PATENT DOCUMENTS

- 4,959,571 A 9/1990 Yasumoto et al.
- 5,181,830 A 1/1993 Chou
- 5,236,306 A 8/1993 Hozak
- 5,601,410 A 2/1997 Quinlan
- 5,996,685 A * 12/1999 Alizadeh F04D 29/326
123/41.49
- 6,024,537 A 2/2000 Moreau et al.
- 6,071,077 A 6/2000 Rowlands
- 6,139,265 A 10/2000 Alizadeh
- D446,295 S * 8/2001 Williams D23/370
- 6,338,609 B1 1/2002 Decker et al.
- 6,375,427 B1 4/2002 Williams et al.
- 6,595,744 B2 7/2003 Van Houten
- D509,584 S * 9/2005 Li D23/413
- 6,994,523 B2 2/2006 Eguchi et al.
- 7,083,387 B2 8/2006 Chen et al.
- D570,471 S * 6/2008 Iwase D23/413

DESCRIPTION

FIG. 1 is a perspective view of the fan blade of the axial flow fan;
FIG. 2 is a front view thereof;
FIG. 3 is back view thereof;
FIG. 4 is a side view thereof;
FIG. 5 is a side view thereof;
FIG. 6 is a top view thereof;
FIG. 7 is a bottom view thereof; and,
FIG. 8 is a cross-sectional view thereof taken along line 8-8 in FIG. 2.
The broken lines illustrate portions of the axial flow fan and form no part of the claimed design.

1 Claim, 8 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

8,068,339 B2 11/2011 Kayama et al.
 8,186,957 B2 5/2012 Moreau et al.
 8,231,343 B2 7/2012 Kayama et al.
 D680,213 S * 4/2013 Spaggiari D23/371
 8,568,095 B2 10/2013 Bushnell
 8,616,864 B2 12/2013 Nakamura et al.
 8,647,054 B2 2/2014 Aulich et al.
 8,649,171 B2 2/2014 Franz et al.
 8,674,538 B2 3/2014 Lugg
 D726,300 S * 4/2015 DeFilippis D23/414
 9,004,860 B2 4/2015 Van Houten
 D755,947 S * 5/2016 Arai D23/379
 9,404,511 B2 8/2016 Van Houten
 D804,647 S * 12/2017 Chang D23/413
 D806,225 S * 12/2017 Chang D23/379
 D808,003 S * 1/2018 Gebert D23/379
 D814,008 S * 3/2018 Munz D23/370
 D820,966 S * 6/2018 De Filippis D23/370
 D860,427 S * 9/2019 Cayton D23/370
 2003/0103846 A1 * 6/2003 Ohsuka F04D 29/384
 416/223 R
 2003/0123987 A1 7/2003 Longet
 2007/0280829 A1 * 12/2007 Stevens F04D 29/547
 416/189
 2012/0085123 A1 4/2012 Wasnievski Da Silva et al.

2014/0246180 A1 9/2014 Nakashima et al.
 2015/0044058 A1 * 2/2015 Hamada F04D 29/384
 416/242
 2015/0226224 A1 8/2015 De Filippis
 2015/0252812 A1 9/2015 Sauer et al.
 2016/0186774 A1 * 6/2016 Manicke B29C 70/38
 416/230
 2016/0312792 A1 10/2016 Fujimaki et al.
 2017/0159543 A1 6/2017 Hong et al.
 2018/0298912 A1 * 10/2018 Hall F04D 29/164
 2019/0048890 A1 * 2/2019 Honma F04D 29/38
 2019/0234419 A1 8/2019 Dygert

FOREIGN PATENT DOCUMENTS

GB 2050530 A 1/1981
 JP 2003184792 A 7/2003
 WO 0004292 A1 1/2000
 WO 2014162552 A1 10/2014
 WO 2016168528 A1 10/2016

OTHER PUBLICATIONS

Extended European Search Report; European Application No. 19154456.
 8; dated Jun. 12, 2019; 7 Pages.

* cited by examiner

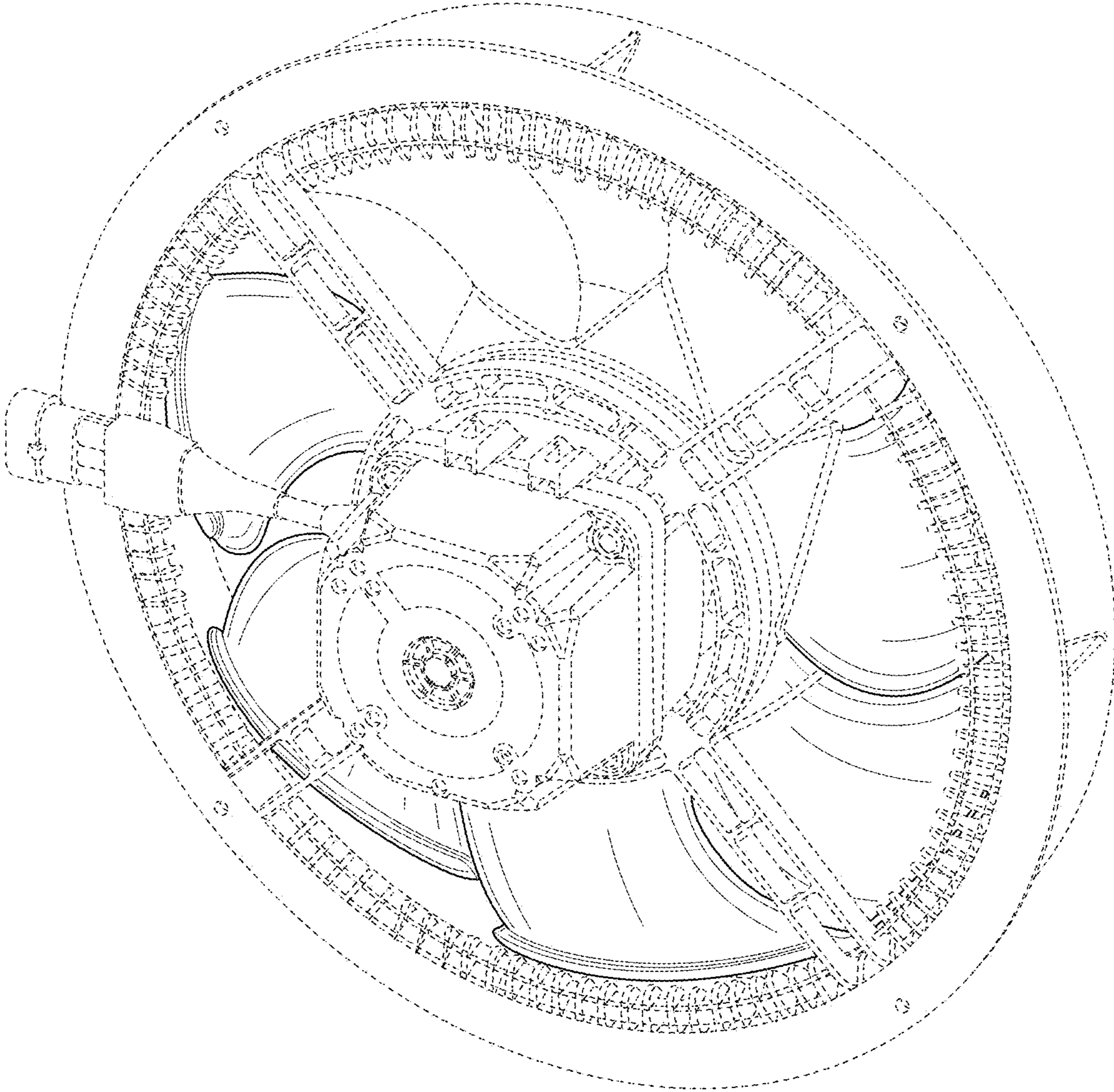


FIG. 1

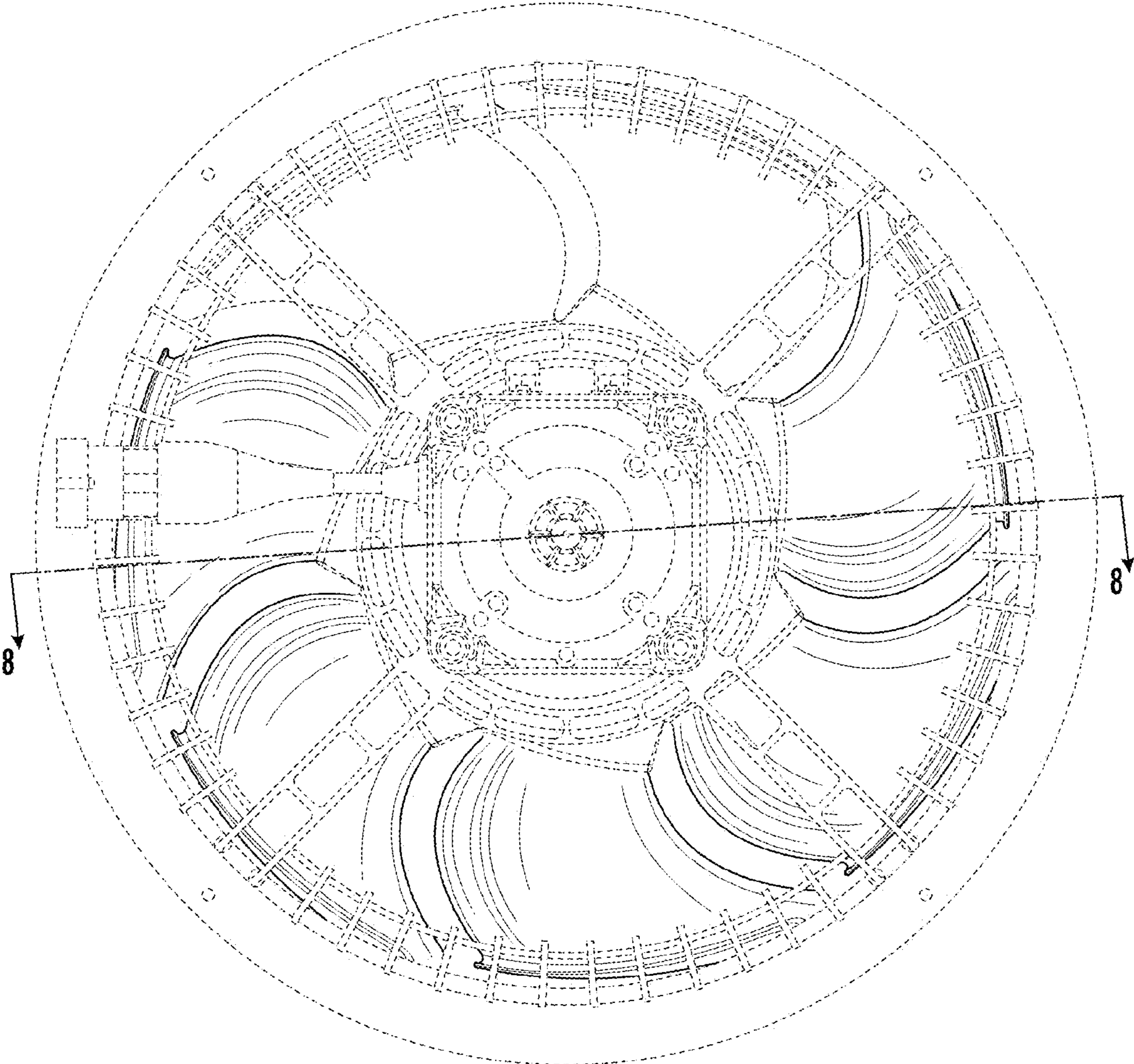


FIG. 2

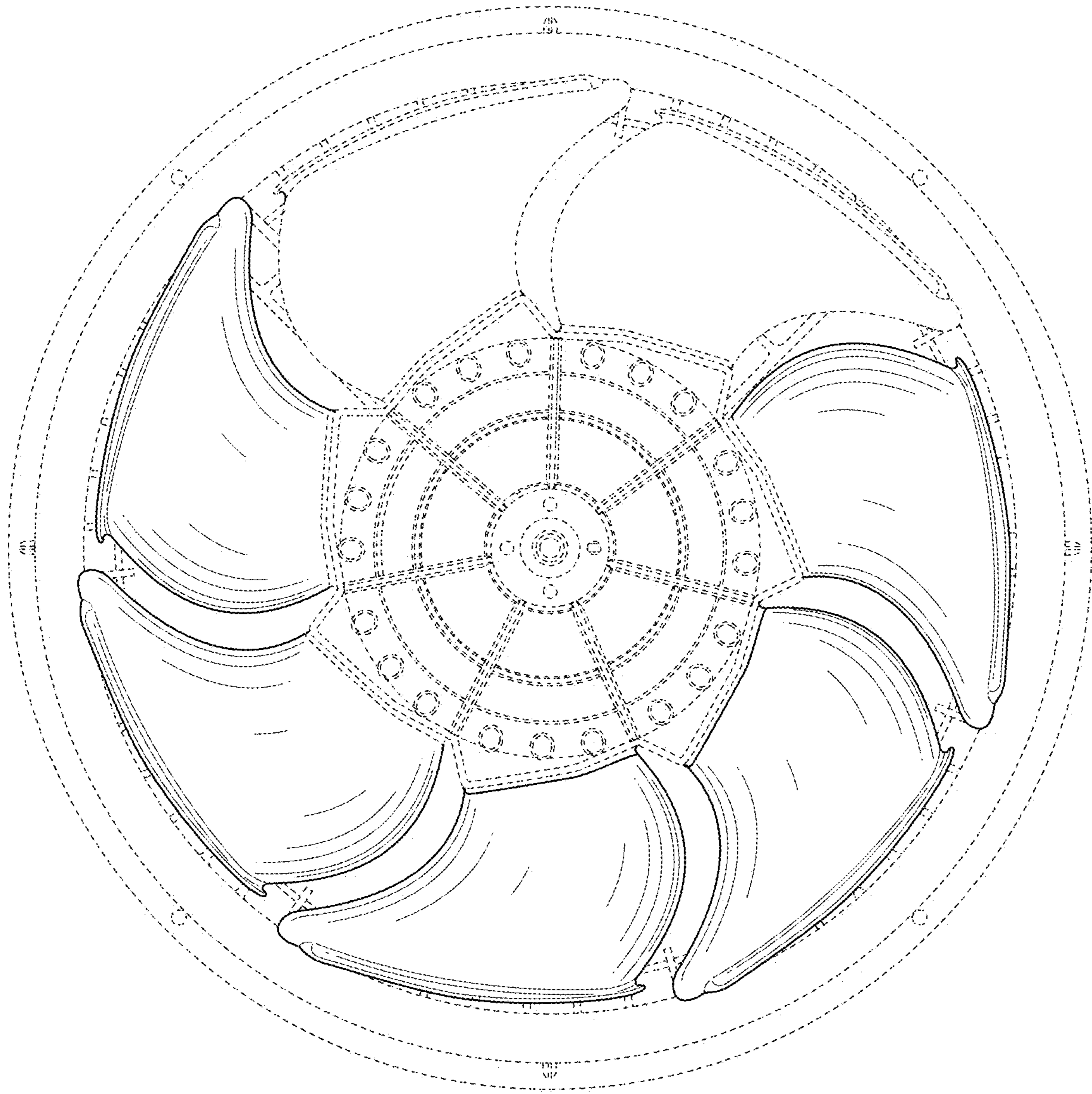


FIG. 3

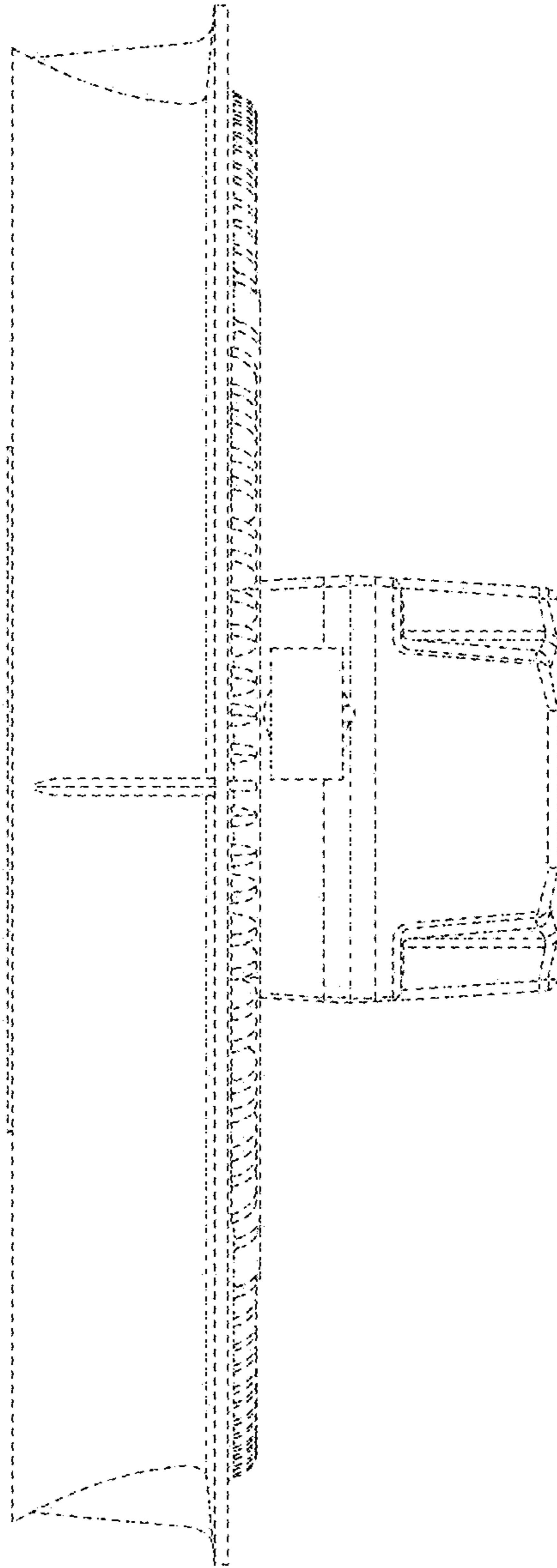


FIG. 4

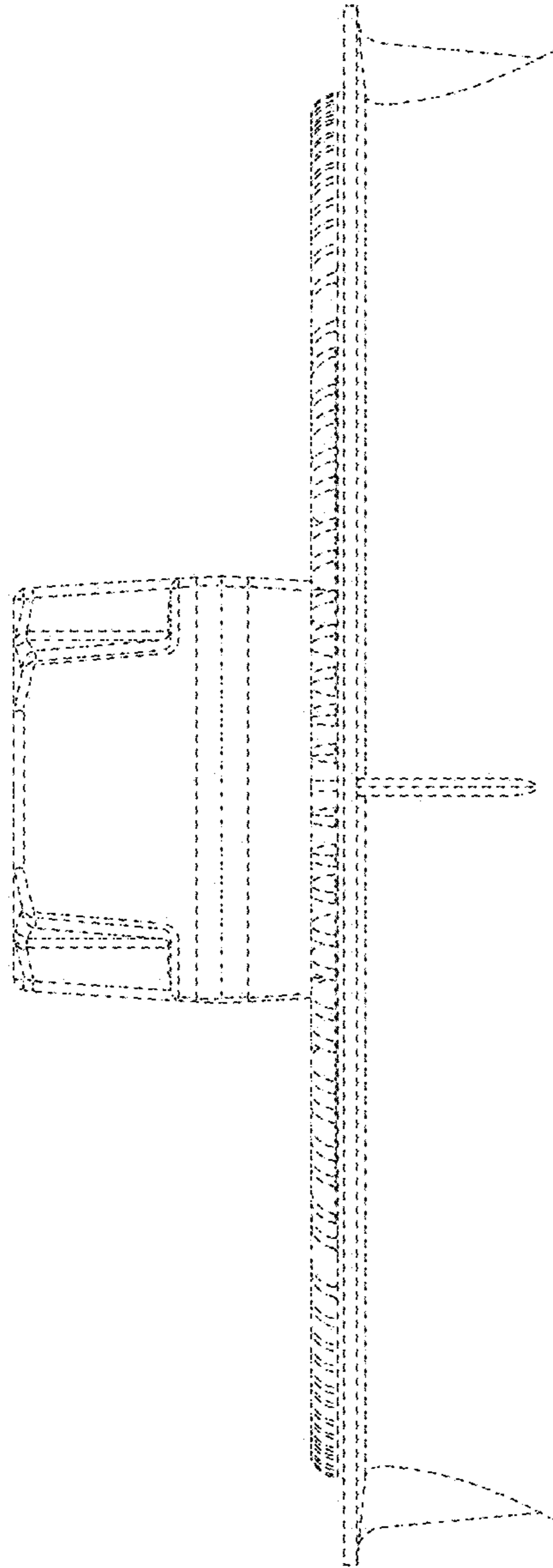


FIG. 5

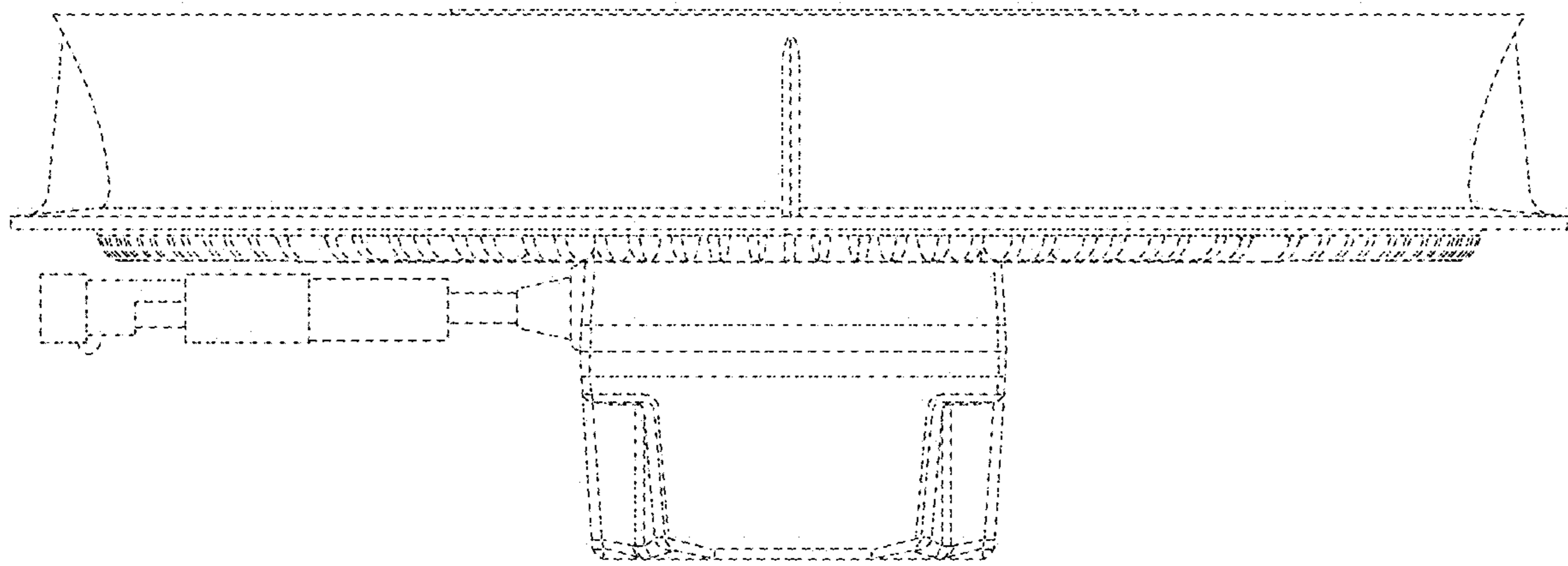


FIG. 6

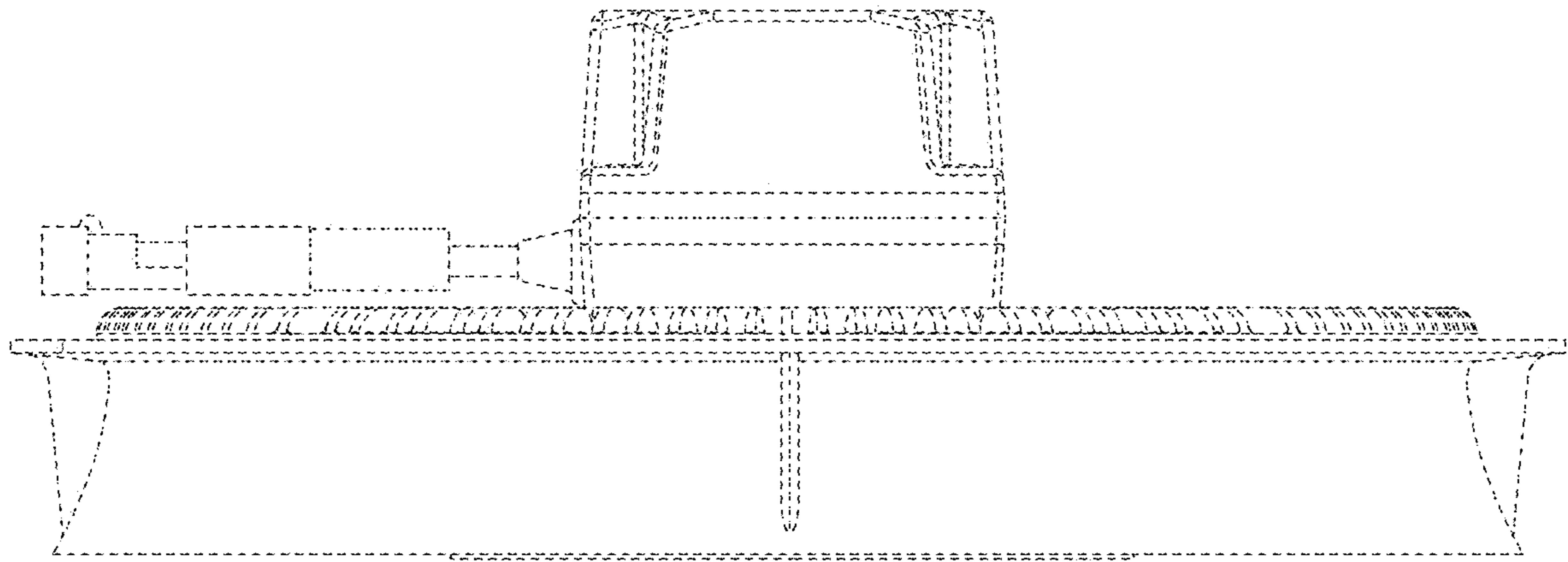


FIG. 7

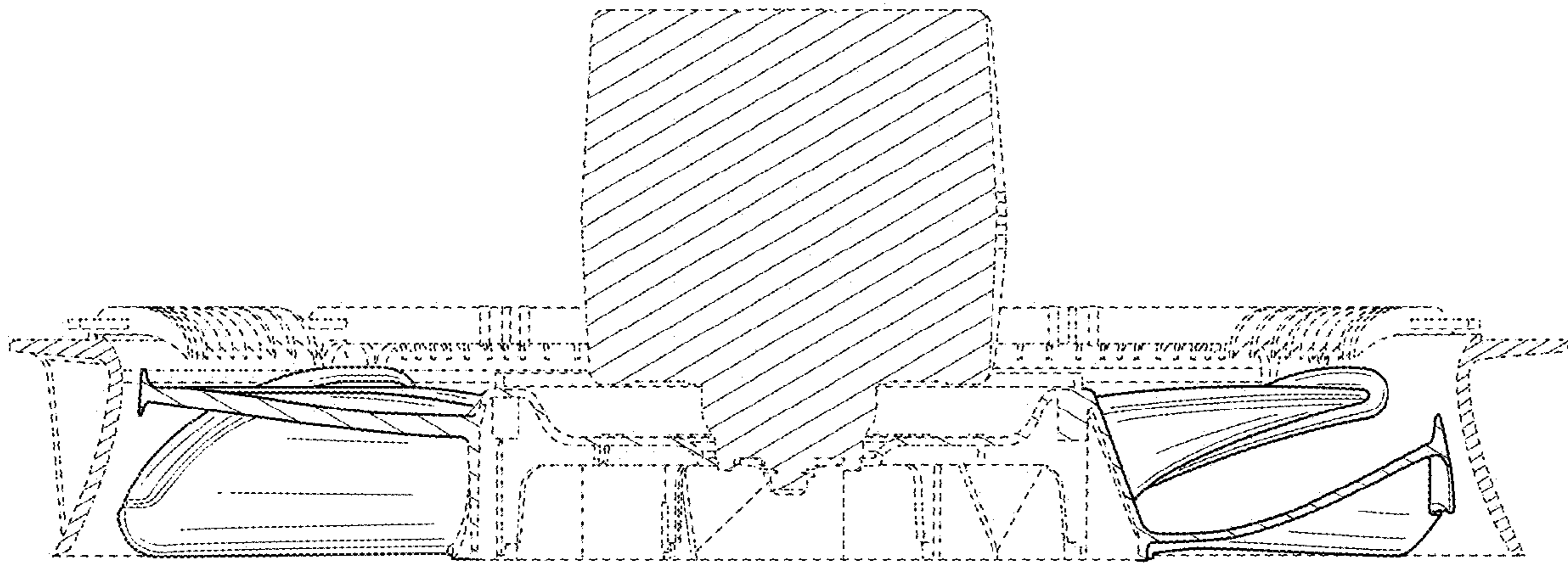


FIG. 8