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

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(54) **CENTRIFUGAL SEPARATOR**
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(**) Term: **15 Years**

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(30) **Foreign Application Priority Data**

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Dec. 14, 2017 (EP) 004548352

(51) **LOC (12) Cl.** **15-09**

(52) **U.S. Cl.**
USPC **D15/122; D15/147**

(58) **Field of Classification Search**
USPC D15/122, 138, 147, 199
CPC .. B04B 1/08; B04B 5/005; B04B 7/14; B04B 9/02; B04B 9/06; B04B 11/02; F01M 2013/0422
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D90,365 S * 7/1933 Gilmore D7/369
D118,147 S * 12/1939 Jones D15/147

D168,013 S * 10/1952 Aller D7/369
D178,222 S * 7/1956 Cook D7/369
4,504,262 A * 3/1985 Forsberg B04B 1/20
494/53
RE32,381 E * 3/1987 Dudrey B04B 7/18
494/43
D294,363 S * 2/1988 Donhauser D15/147
4,915,682 A * 4/1990 Stroucken B04B 1/08
494/56
4,930,412 A * 6/1990 Stroucken B04B 1/08
494/64
D335,294 S * 5/1993 Vallien D15/147
D633,119 S * 2/2011 Mackel D15/147
2018/0141058 A1 * 5/2018 Ortegren B04B 5/005
2018/0147582 A1 * 5/2018 Casa B04B 1/08
2018/0195615 A1 * 7/2018 Burford B04B 15/06
2018/0207649 A1 * 7/2018 Pitkamaki B04B 7/02
2018/0318847 A1 * 11/2018 Luersmann B04B 1/08
2018/0353973 A1 * 12/2018 Hilding B04B 11/02
2019/0143342 A1 * 5/2019 Sundin G01P 3/26

* cited by examiner

Primary Examiner — Patricia A Palasik

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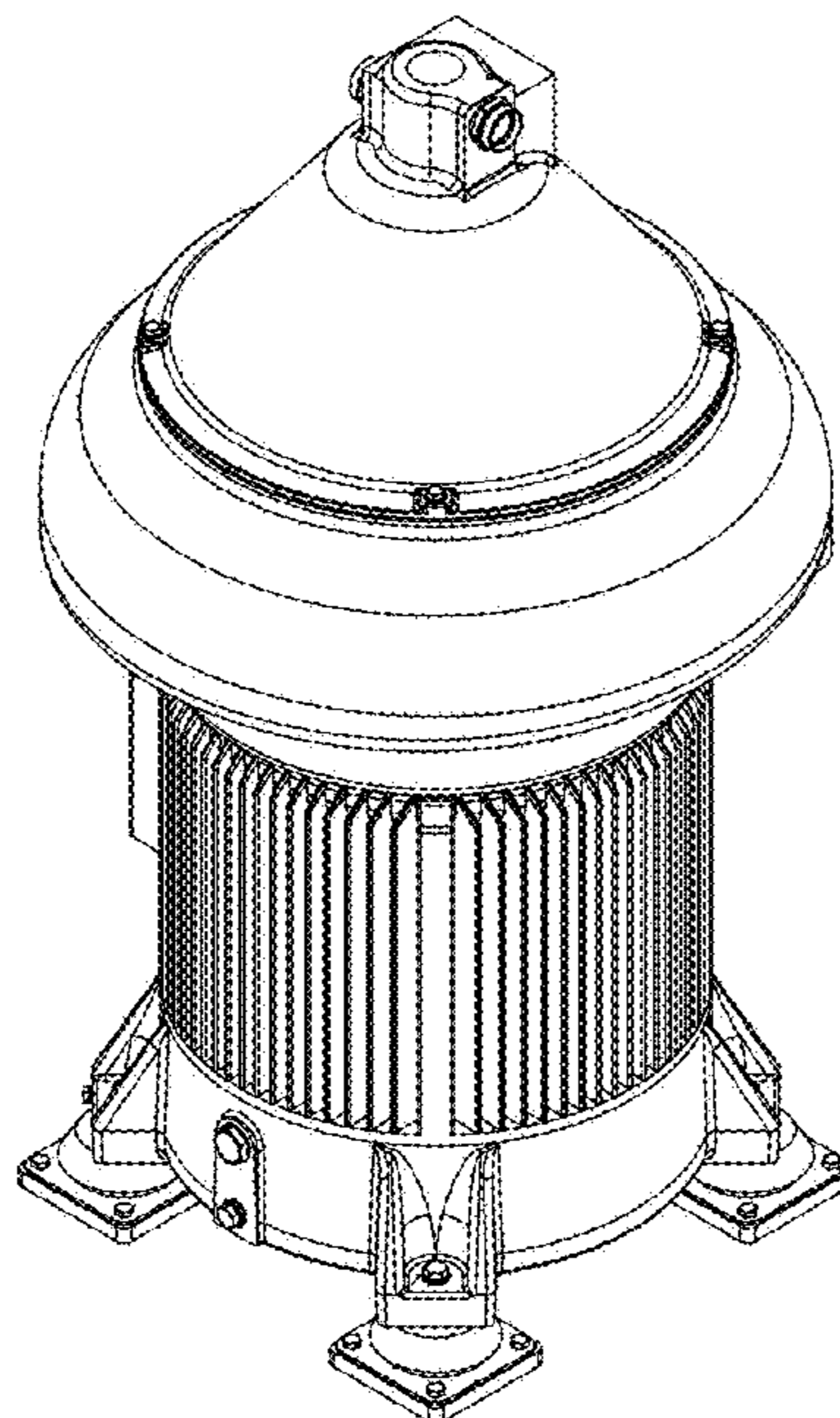
(57) **CLAIM**

The ornamental design for a centrifugal separator, substantially as shown and described.

DESCRIPTION

FIG. 1 is a front view;
FIG. 2 is a left side view;
FIG. 3 is a rear view;
FIG. 4 is a right side view;
FIG. 5 is a bottom view;
FIG. 6 is a top view; and,
FIG. 7 is a perspective view.

1 Claim, 7 Drawing Sheets



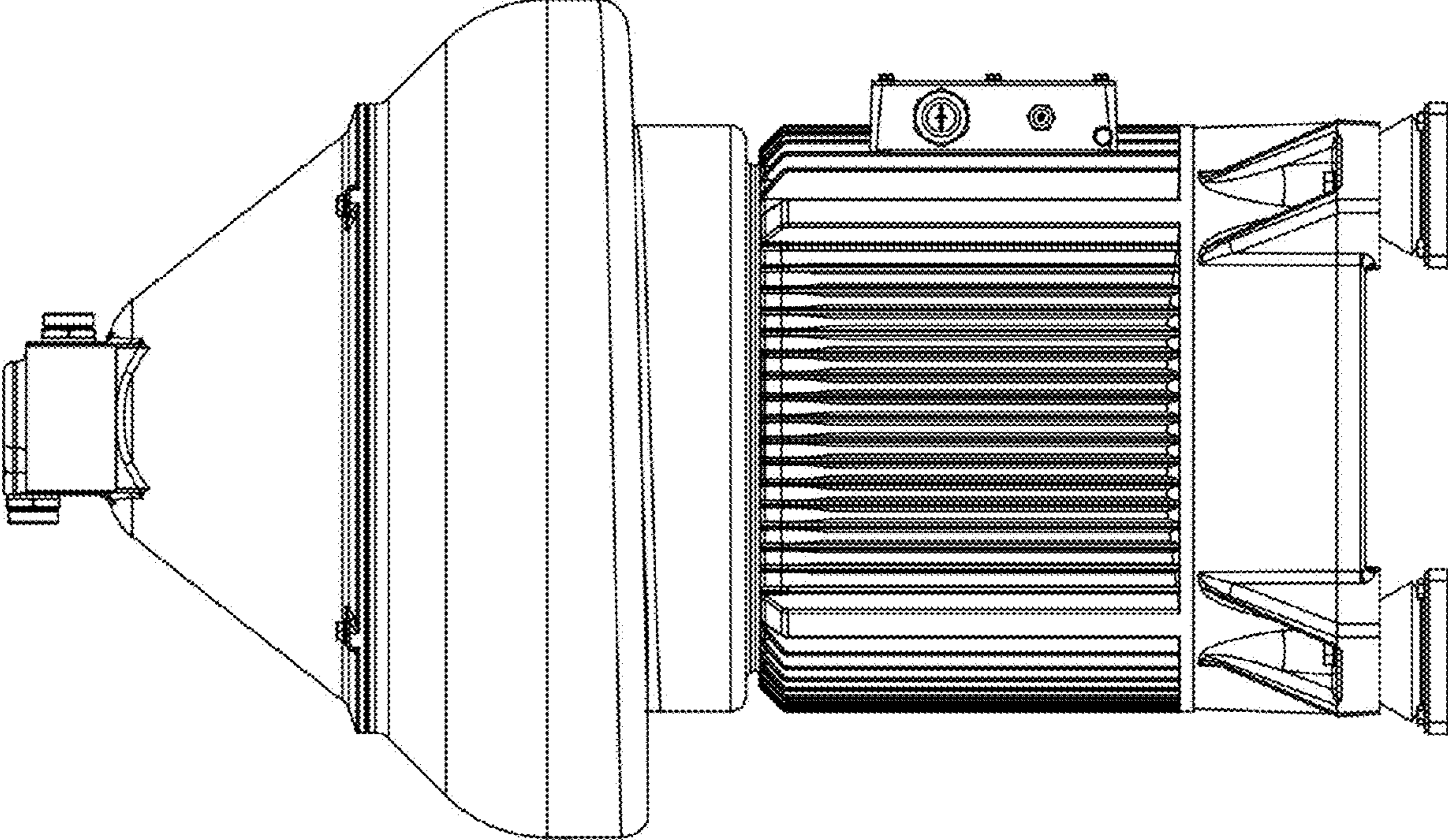


Figure 1

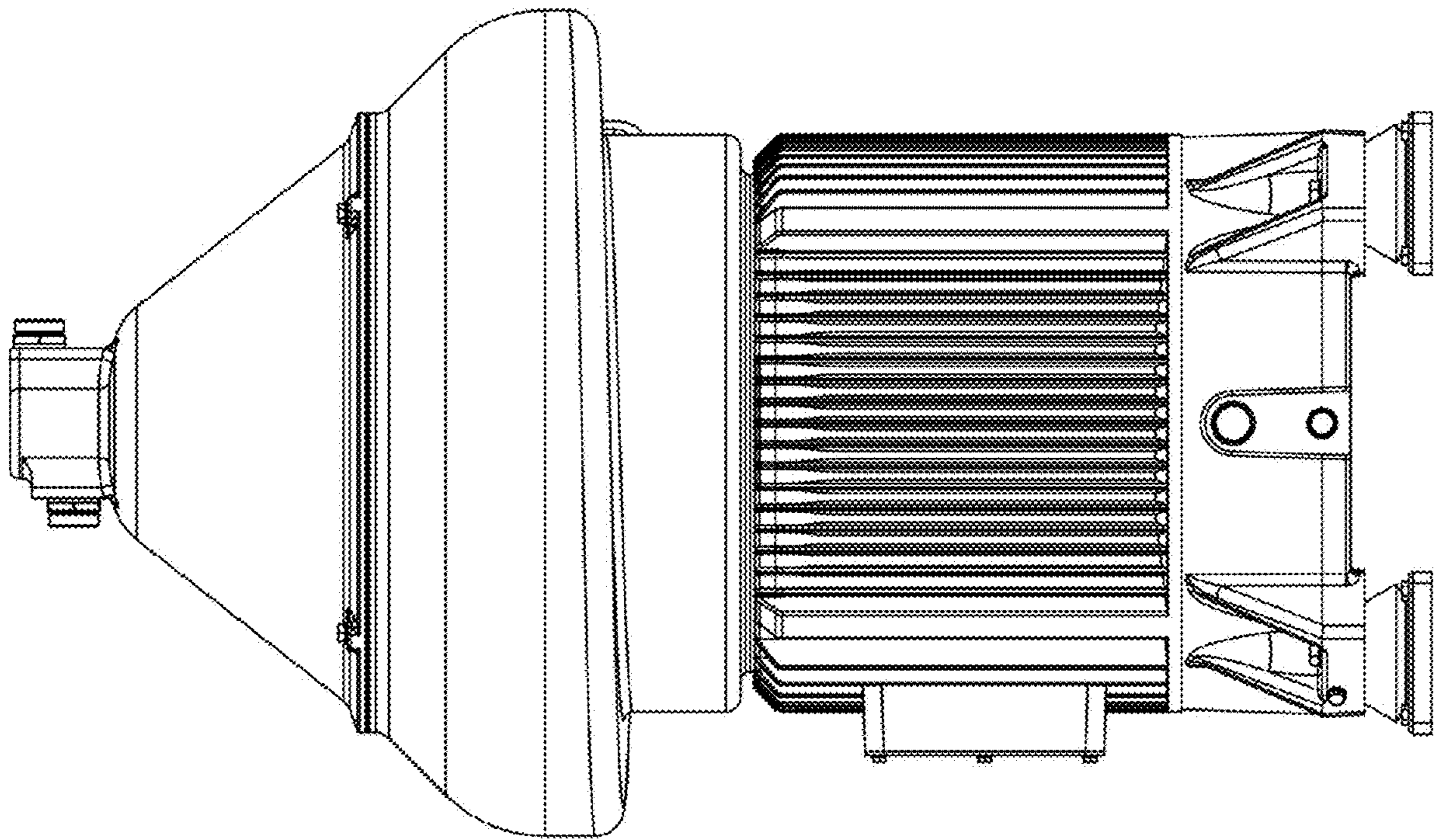


Figure 2

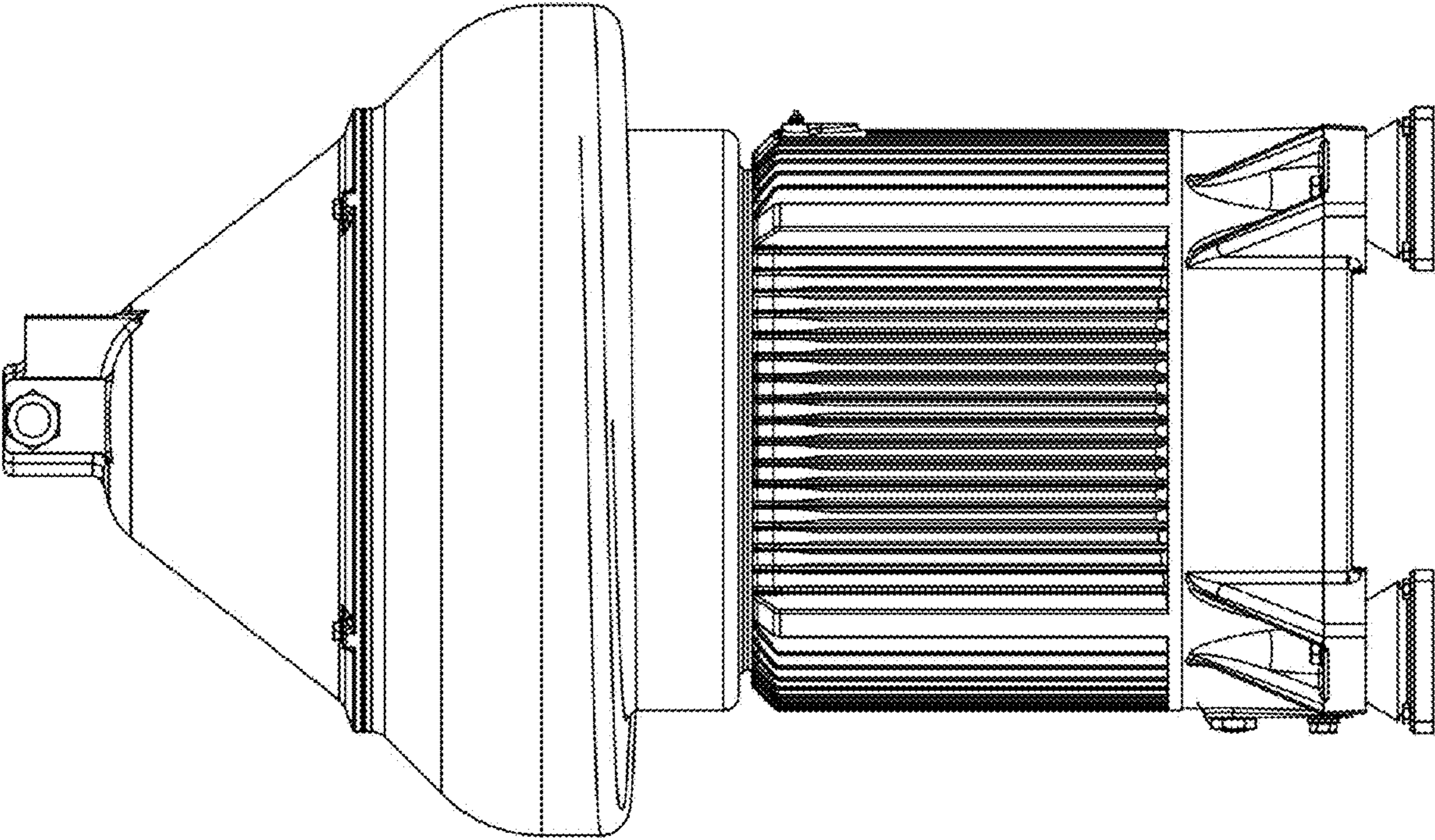


Figure 3

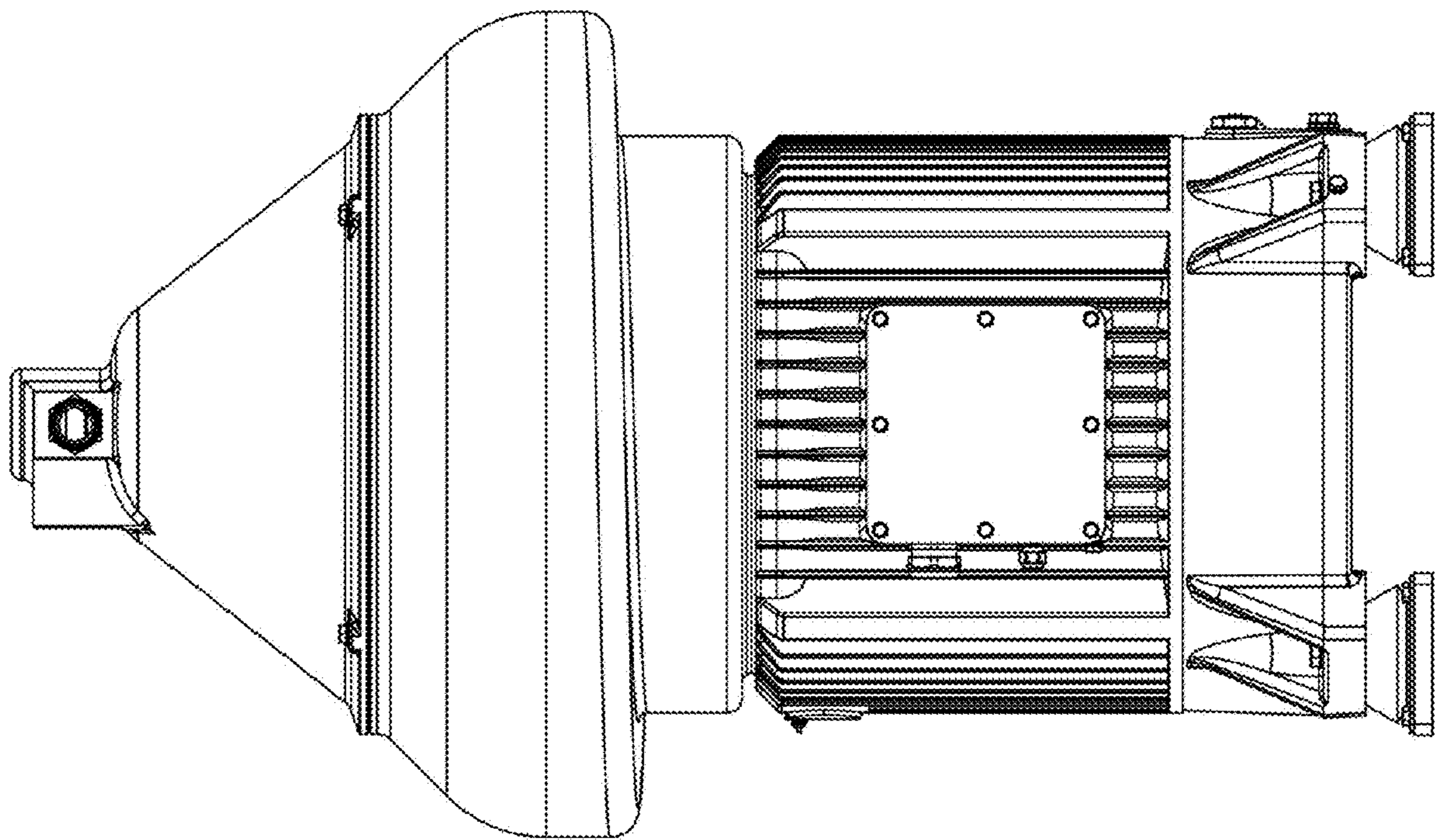


Figure 4

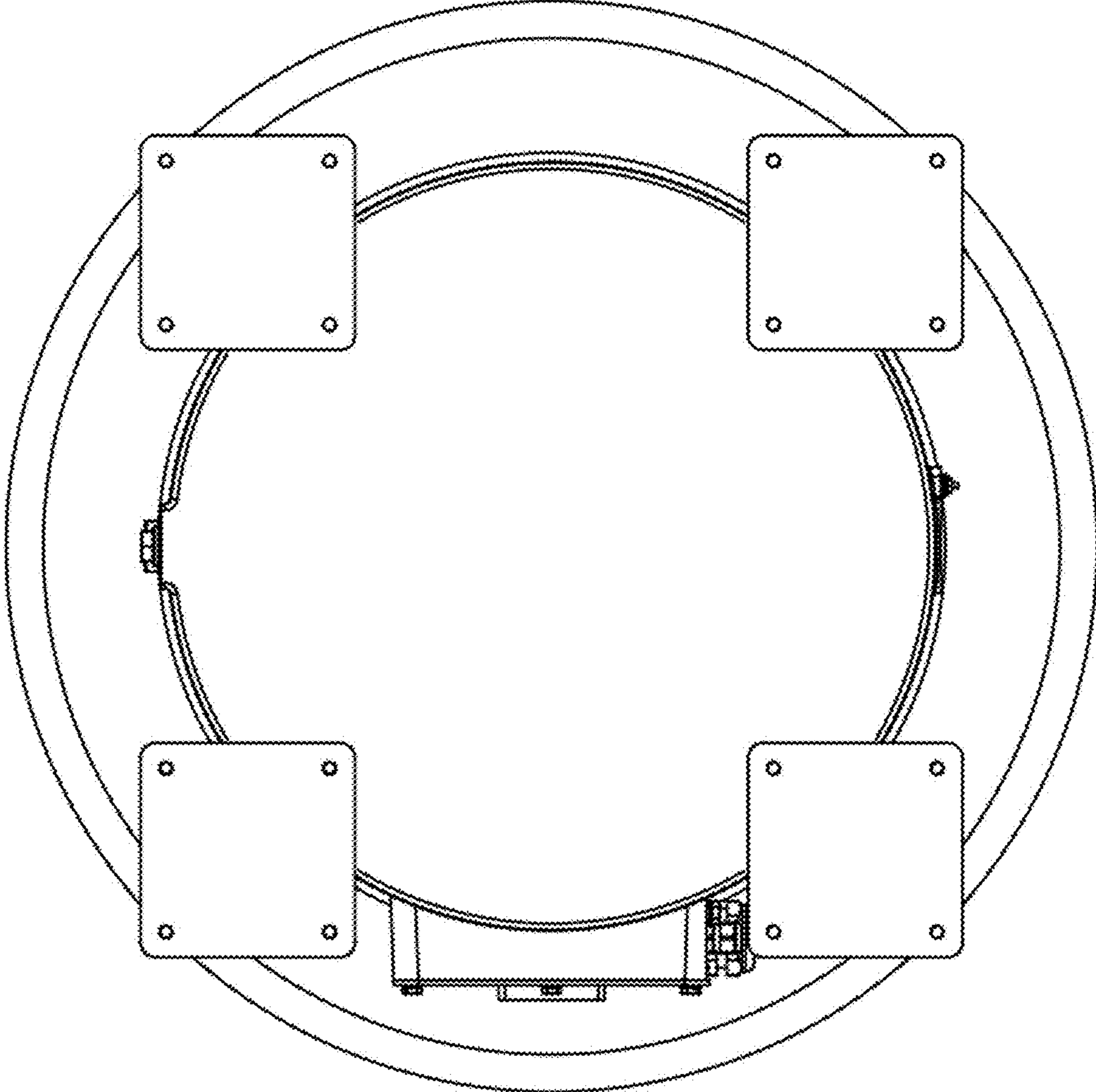


Figure 5

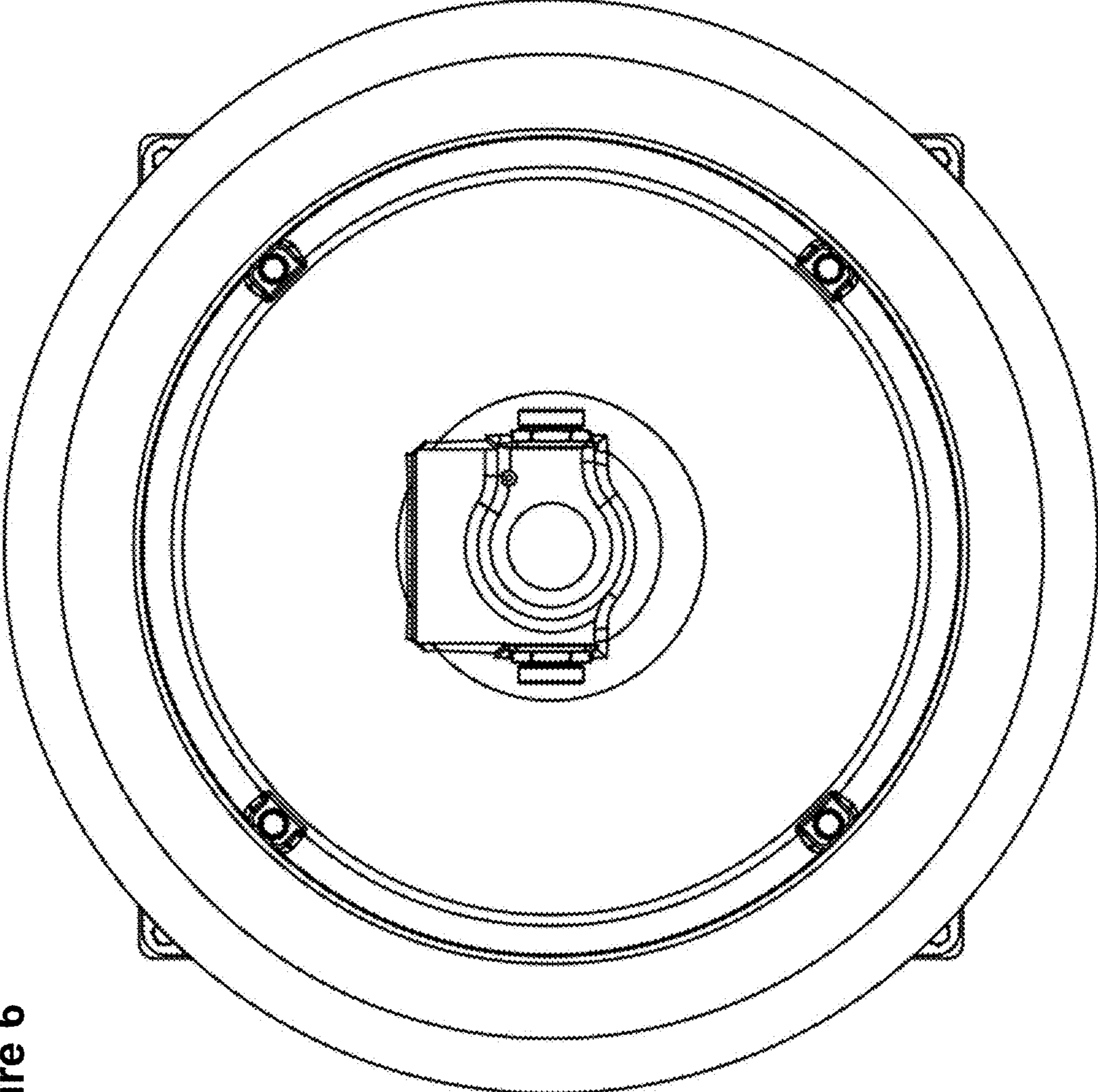


Figure 6

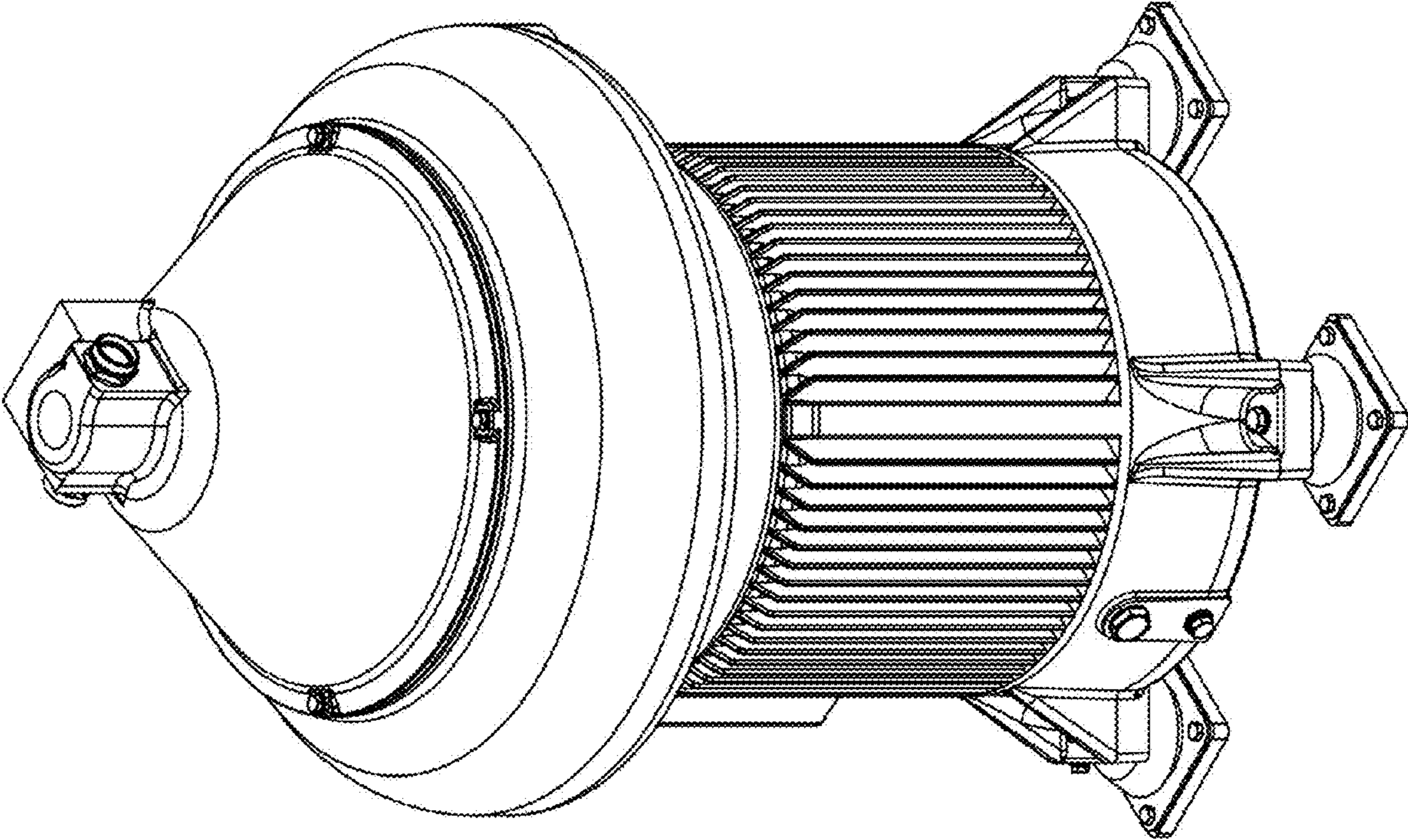


Figure 7