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(12) **United States Design Patent** (10) **Patent No.:** **US D933,712 S**  
**Born et al.** (45) **Date of Patent:** **\*\* Oct. 19, 2021**

(54) **CLUTCH HOUSING**

5,323,740 A 6/1994 Daily et al.  
5,335,562 A 8/1994 Mastroianni et al.  
5,375,569 A 12/1994 Santella  
5,390,497 A 2/1995 Cottam

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(Continued)

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**FOREIGN PATENT DOCUMENTS**

CN 304483017 S 1/2018  
CN 304553505 S 3/2018

(Continued)

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**OTHER PUBLICATIONS**

PCT/US2017/066594, "International Application Serial No. PCT/US2017/066594, International Search Report and Written Opinion dated Feb. 14, 2018", Eaton Corporation, 13 Pages.

(Continued)

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

(21) Appl. No.: **29/595,583**

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(51) **LOC (13) Cl.** ..... **15-01**

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(52) **U.S. Cl.**

USPC ..... **D15/5; D12/180**

(58) **Field of Classification Search**

USPC ..... D15/5, 4, 149; D12/180  
CPC ..... F16D 13/757; F16D 13/385; F16D 13/58;  
F16D 13/69

(57)

**CLAIM**

The ornamental design for a clutch housing, as shown and described.

See application file for complete search history.

**DESCRIPTION**

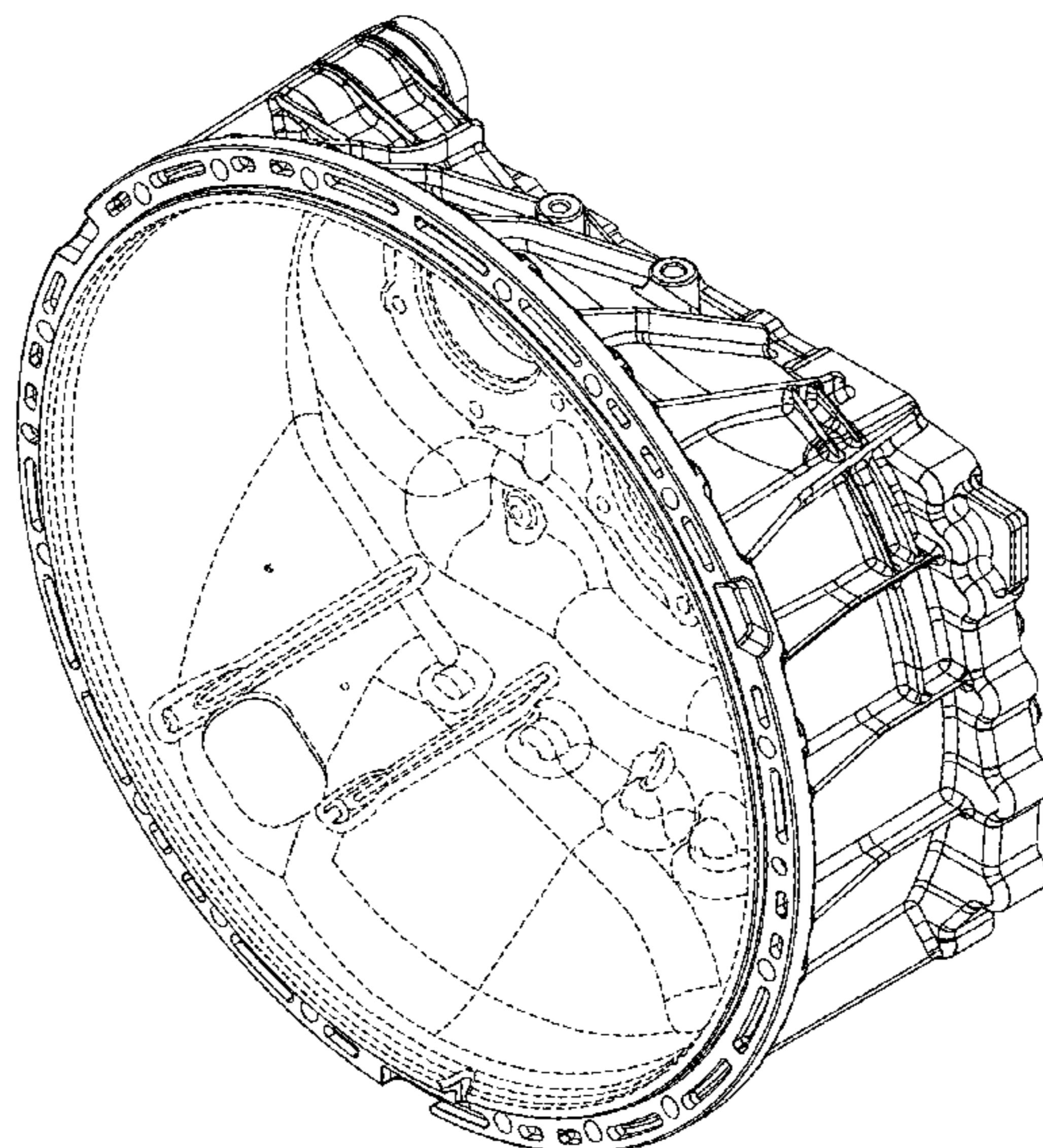
(56) **References Cited**

**U.S. PATENT DOCUMENTS**

2,479,183 A 8/1949 Peterson et al.  
2,857,772 A 10/1958 Garnier et al.  
D195,488 S 6/1963 Sadler  
3,572,167 A 3/1971 Bosko et al.  
3,600,963 A 8/1971 Portmann  
4,081,065 A 3/1978 Smyth et al.  
4,109,960 A 8/1978 Stinchfield  
4,361,060 A 11/1982 Smyth  
4,576,062 A 3/1986 Reppert et al.  
4,788,889 A 12/1988 Davis et al.  
5,085,303 A 2/1992 Frost et al.  
D335,290 S \* 5/1993 Flotow ..... D15/5

FIG. 1 is a front perspective view of a clutch housing; FIG. 2 is a rear perspective view thereof; FIG. 3 is another front perspective view thereof; FIG. 4 is another rear perspective view thereof; FIG. 5 is a first side view thereof; FIG. 6 is a second side view thereof; FIG. 7 is a front view thereof; FIG. 8 is a rear view thereof; FIG. 9 is a third side view thereof; and, FIG. 10 is a fourth side view thereof. The broken lines in FIGS. 1-10 are for environmental purposes only and form no part of the claimed design.

**1 Claim, 9 Drawing Sheets**



# US D933,712 S

(56)

## References Cited

### U.S. PATENT DOCUMENTS

D358,782	S	5/1995	Louwagie et al.
5,421,216	A	6/1995	Stine
5,492,034	A	2/1996	Bogema
5,513,603	A	5/1996	Ang et al.
5,517,876	A	5/1996	Genise et al.
5,577,588	A	11/1996	Raszkowski
D377,657	S	1/1997	Winters, Sr.
5,638,930	A	6/1997	Parsons
D403,004	S	12/1998	Kaye
5,910,068	A	6/1999	Krauss et al.
6,186,302	B1	2/2001	Drexl et al.
6,393,928	B1	5/2002	Watanabe
6,453,892	B1	9/2002	Plunkett et al.
6,591,705	B1	7/2003	Reik et al.
7,055,384	B2	6/2006	Williams et al.
D533,567	S	12/2006	D'Amico
D544,509	S	6/2007	Tiller et al.
7,441,533	B1	10/2008	Miller et al.
7,509,885	B2	3/2009	Gerlofs et al.
D604,347	S	11/2009	Wittenstein
D632,305	S	2/2011	Sargeant
D650,812	S	12/2011	Hsu et al.
8,413,545	B1	4/2013	Reid
8,833,321	B2	9/2014	Sands et al.
D722,630	S	2/2015	Hatano
9,133,892	B2	9/2015	Barnholt
D787,996	S *	5/2017	Rode ..... D12/180
D795,296	S	8/2017	Luft et al.
D834,475	S *	11/2018	Rode ..... D12/180
D845,197	S *	4/2019	Wang ..... D12/180
D866,625	S	11/2019	Born et al.
D873,318	S	1/2020	Andersson et al.
D877,221	S	3/2020	Monette et al.
D881,248	S	4/2020	Monette et al.
D886,878	S	6/2020	Jumper
D914,073	S	3/2021	Born
2001/0022245	A1	9/2001	Rogg
2002/0125094	A1	9/2002	Zimmermann et al.
2004/0069082	A1	4/2004	Koenig et al.
2004/0159522	A1	8/2004	Conrad et al.
2005/0029068	A1	2/2005	Koenig et al.
2005/0109141	A1	5/2005	DeVore et al.
2005/0217966	A1	10/2005	Hornbrook et al.
2006/0113156	A1	6/2006	McCutcheon et al.
2006/0116232	A1	6/2006	McCutcheon
2006/0185456	A1	8/2006	Gerlofs et al.
2006/0213300	A1	9/2006	Petzold et al.
2006/0219033	A1	10/2006	Gill
2007/0107545	A1	5/2007	Seipold
2007/0155572	A1	7/2007	Sugano
2008/0173273	A1	7/2008	Cunningham
2009/0038579	A1	2/2009	Shieh et al.
2010/0133056	A1 *	6/2010	McCutcheon ..... F16D 13/757 192/70.251
2011/0214522	A1	9/2011	Sporleder et al.
2011/0256976	A1	10/2011	Burgbacher et al.
2011/0314943	A1	12/2011	Brandenburg
2012/0157258	A1	6/2012	Meyer et al.
2013/0139643	A1	6/2013	Reid
2013/0315707	A1	11/2013	Spanel et al.
2013/0333908	A1	12/2013	Lennartz et al.
2014/0090499	A1	4/2014	Fernandez
2014/0163829	A1	6/2014	Yoon et al.
2015/0126321	A1	5/2015	Mittelberger et al.
2015/0226295	A1	8/2015	Forsberg
2015/0267778	A1	9/2015	Peterson et al.
2017/0350494	A1	12/2017	Weule
2018/0178798	A1	6/2018	Peterson et al.
2018/0178803	A1	6/2018	Kawale et al.
2018/0178804	A1	6/2018	Kawale et al.
2018/0180148	A1	6/2018	Peterson et al.
2018/0180149	A1	6/2018	Peterson et al.
2018/0180166	A1	6/2018	Peterson et al.
2018/0180167	A1	6/2018	Peterson et al.
2018/0180168	A1	6/2018	Peterson et al.

2018/0180500	A1	6/2018	Hawarden et al.
2018/0306305	A1	10/2018	Braun et al.
2019/0353210	A1 *	11/2019	Custer ..... F16D 13/757

### FOREIGN PATENT DOCUMENTS

CN	304553981	S	3/2018
CN	304593000	S	4/2018
CN	304593001	S	4/2018
DE	10334628	A1	8/2004
EM	004168748-0001		9/2017
EM	004168748-0002		9/2017
EM	004168748-0003		9/2017
EM	004168748-0004		9/2017
EM	004168748-0005		9/2017
EM	004168748-0006		9/2017
EM	004168748-0007		9/2017
EM	004168748-0008		9/2017
EM	004168748-0009		9/2017
EM	004168748-0010		9/2017
EM	004168748-0011		9/2017
EM	004168748-0012		9/2017
EM	004169035-0001		9/2017
EM	004169035-0002		9/2017
EM	004169035-0003		9/2017
EM	004169035-0004		9/2017
EM	004169035-0005		9/2017
EM	004169035-0006		9/2017
EM	004169035-0007		9/2017
EM	004169035-0008		9/2017
EM	004169035-0009		9/2017
EM	004169035-0010		9/2017
EM	004169035-0011		9/2017
EM	004169035-0012		9/2017
EM	004169035-0013		9/2017
EM	004169167-0001		9/2017
EM	004169167-0002		9/2017
EM	004169167-0003		9/2017
EM	004169167-0004		9/2017
EM	004169167-0005		9/2017
EM	004169167-0006		9/2017
EM	004169167-0007		9/2017
EM	004169167-0008		9/2017
EM	004169167-0009		9/2017
EM	004169167-0010		9/2017
EM	004169167-0011		9/2017
EM	004169167-0012		9/2017
EM	004169167-0013		9/2017
EM	004169167-0014		9/2017
EM	004169167-0015		9/2017
EM	004169167-0016		9/2017
EM	004162212-0001		10/2017
EM	004162212-0002		10/2017
EM	004162212-0003		10/2017
EM	004162212-0004		10/2017
EM	004162212-0005		10/2017
EM	004162212-0006		10/2017
EP	1837560	A2	9/2007
JP	2012219972	A	11/2012
WO	2013068175	A1	5/2013
WO	2018112304	A1	6/2018
WO	2018118124	A1	6/2018
WO	2018118125	A1	6/2018
WO	2018118126	A1	6/2018
WO	2018118127	A1	6/2018
WO	2018118128	A1	6/2018
WO	2018118129	A1	6/2018
WO	2018118130	A1	6/2018
WO	2018118131	A1	6/2018
WO	2018118132	A1	6/2018
WO	2018119396	A1	6/2018

### OTHER PUBLICATIONS

PCT/US2017/068188, "International Application Serial No. PCT/US2017/068188, International Search Report and Written Opinion dated Feb. 22, 2018", Eaton Corporation, 13 pages.

(56)

**References Cited**

OTHER PUBLICATIONS

PCT/US2017/044491, "International Application Serial No. PCT/US2017/044491, International Search Report and Written Opinion Received dated Dec. 26, 2017", Eaton Corporation, 25 Pages.  
PCT/US2017/044495, "Application Serial No. PCT/US2017/044495, International Search Report and the Written Opinion dated Oct. 13, 2017", 9 pages.  
PCT/US2017/044502, "Application Serial No. PCT/US2017/044502, International Search Report and the Written Opinion dated Sep. 27, 2017", 7 pages.  
PCT/US2017/044505, "Application Serial No. PCT/US2017/044505, International Search Report and the Written Opinion dated Nov. 13, 2017", 13 pages.  
PCT/US2017/044512, "Application Serial No. PCT/US2017/044512, International Search Report and the Written Opinion dated Nov. 13, 2017", 14 pages.  
PCT/US2017/044514, "Application Serial No. PCT/US2017/044514, International Search Report and the Written Opinion dated Sep. 27, 2017", 7 pages.

PCT/US2017/044518, "Application Serial No. PCT/US2017/044518, International Search Report and the Written Opinion dated Oct. 10, 2017", 12 pages.  
PCT/US2017/044524, "Application Serial No. PCT/US2017/044524, International Search Report and the Written Opinion dated Oct. 5, 2017", 9 pages.  
PCT/US2017/044531, "International Application Serial No. PCT/US2017/044531, International Preliminary Report on Patentability and Written Opinion dated Oct. 18, 2017", Eaton Corporation, 8 Pages.  
Notice of Allowance dated Mar. 12, 2021 (corresponding to U.S. Appl. No. 29/768,782).  
U.S. Office Action (Election/Restriction Requirement) dated Oct. 6, 2020 (corresponding to U.S. Appl. No. 29/705,725).  
U.S. Office Action (Election-Restriction Requirement) dated Oct. 6, 2020 (corresponding to U.S. Appl. No. 29/705,723).  
U.S. Notice of Allowance dated Sep. 30, 2020 (corresponding to U.S. Appl. No. 29/705,621).  
U.S. Office Action (Election-Restriction Requirement) dated Oct. 6, 2020 (corresponding to U.S. Appl. No. 29/705,720).  
U.S. Office Action (Election-Restriction Requirement) dated Feb. 21, 2020 (corresponding to U.S. Appl. No. 29/595,580).

\* cited by examiner

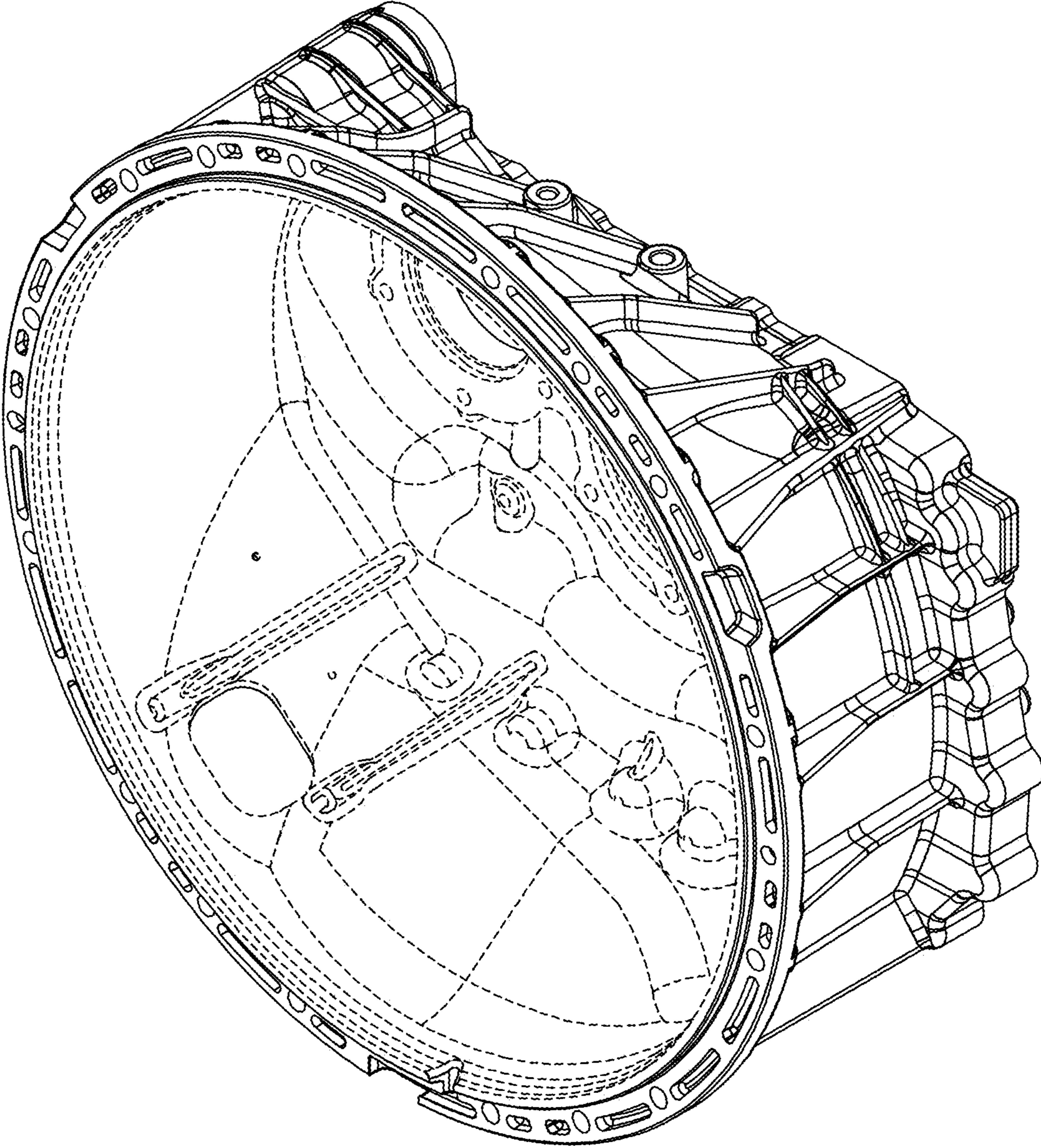


FIG. 1

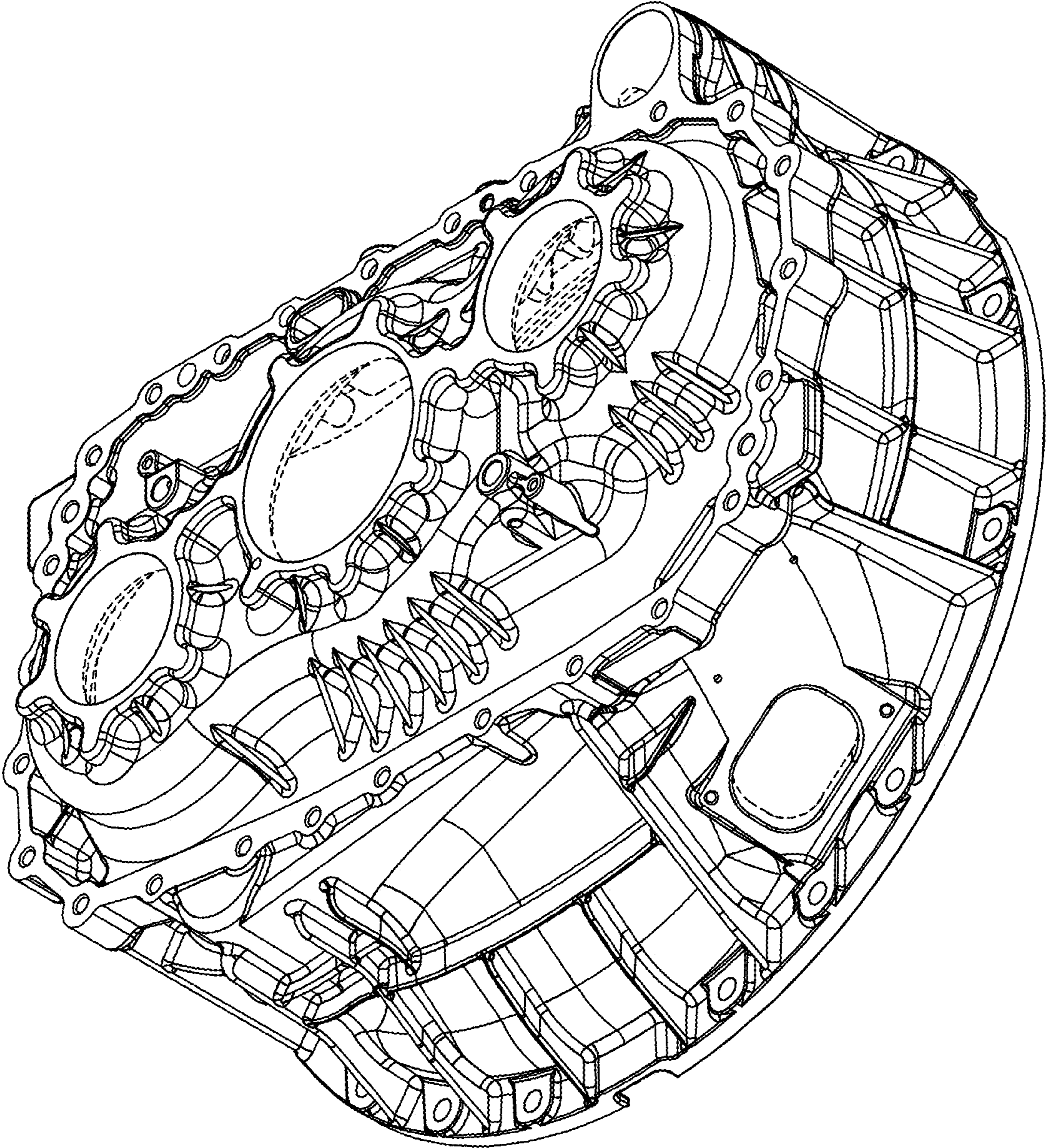


FIG. 2

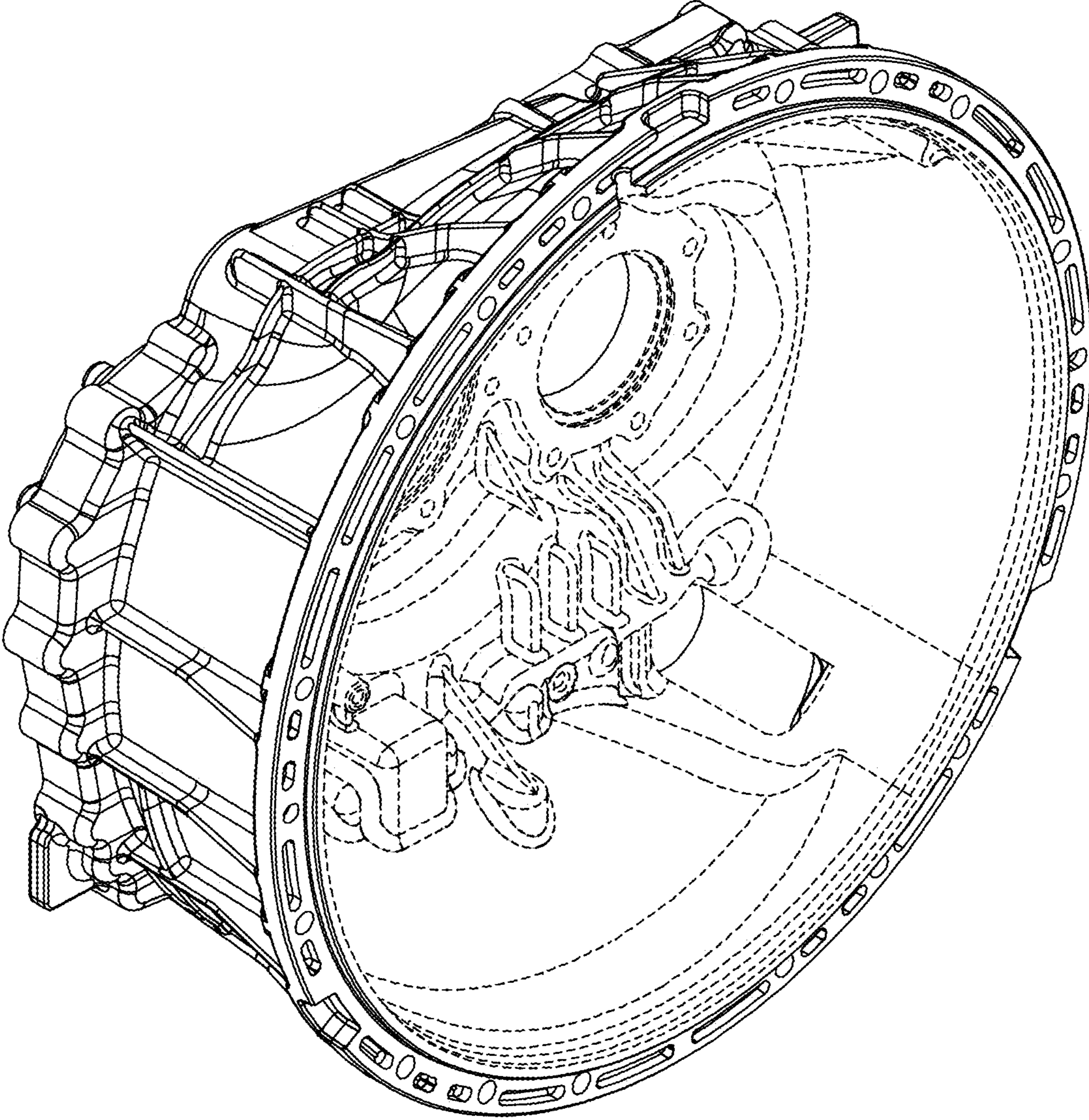


FIG. 3

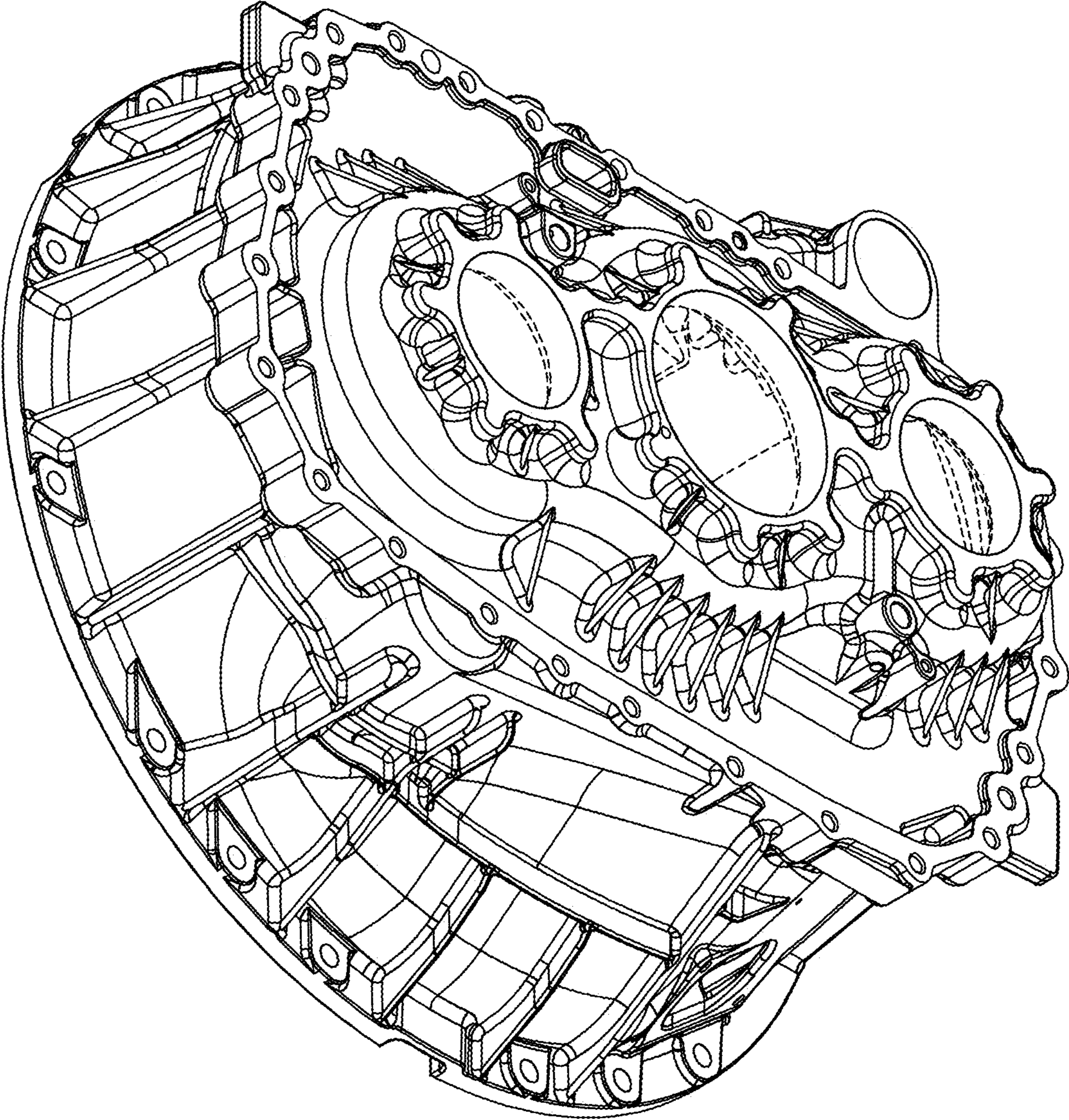


FIG. 4

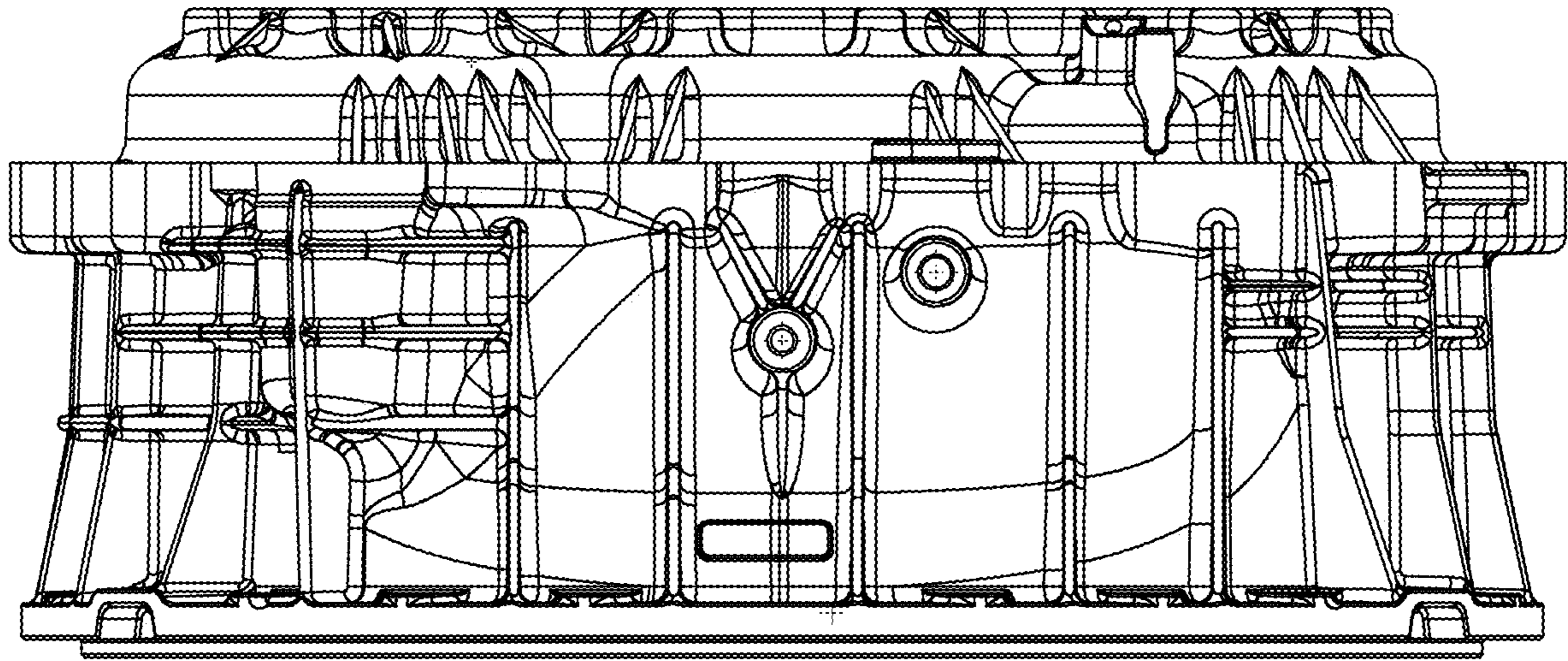


FIG. 5

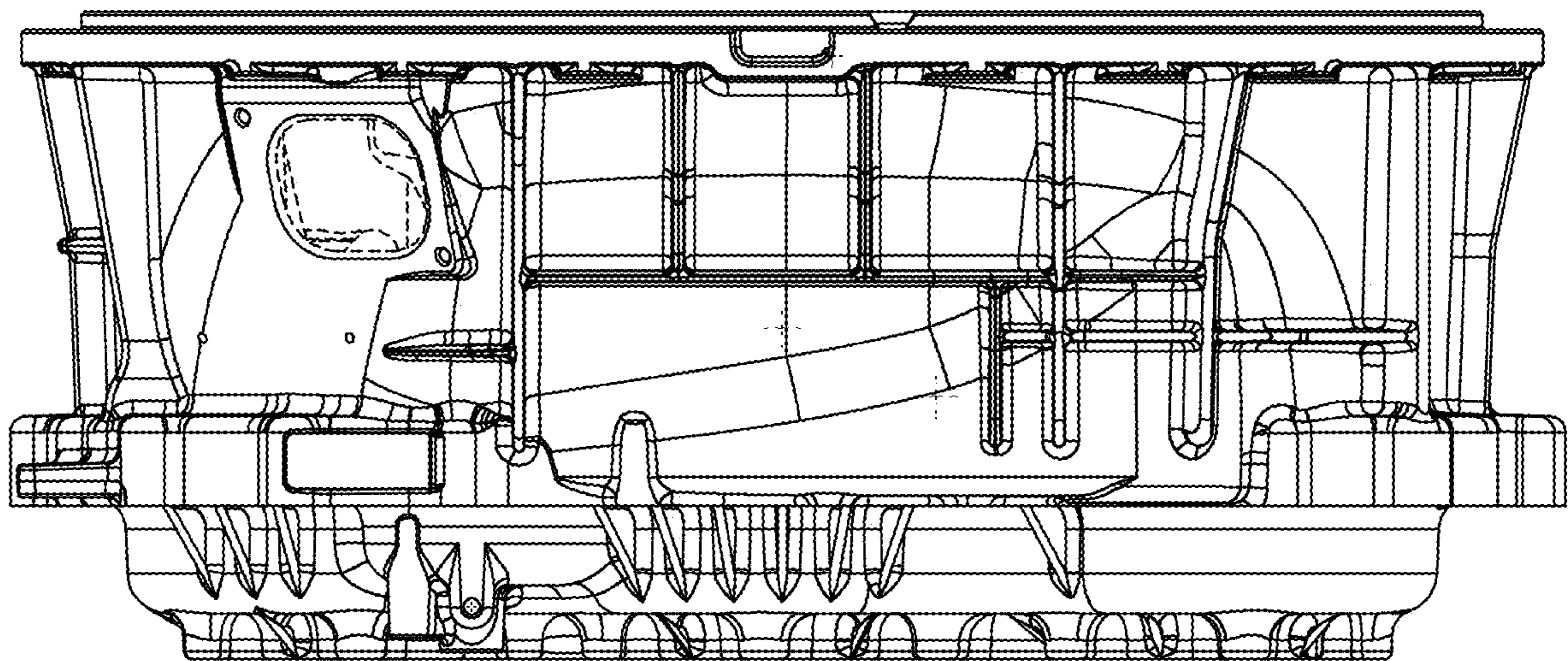


FIG. 6



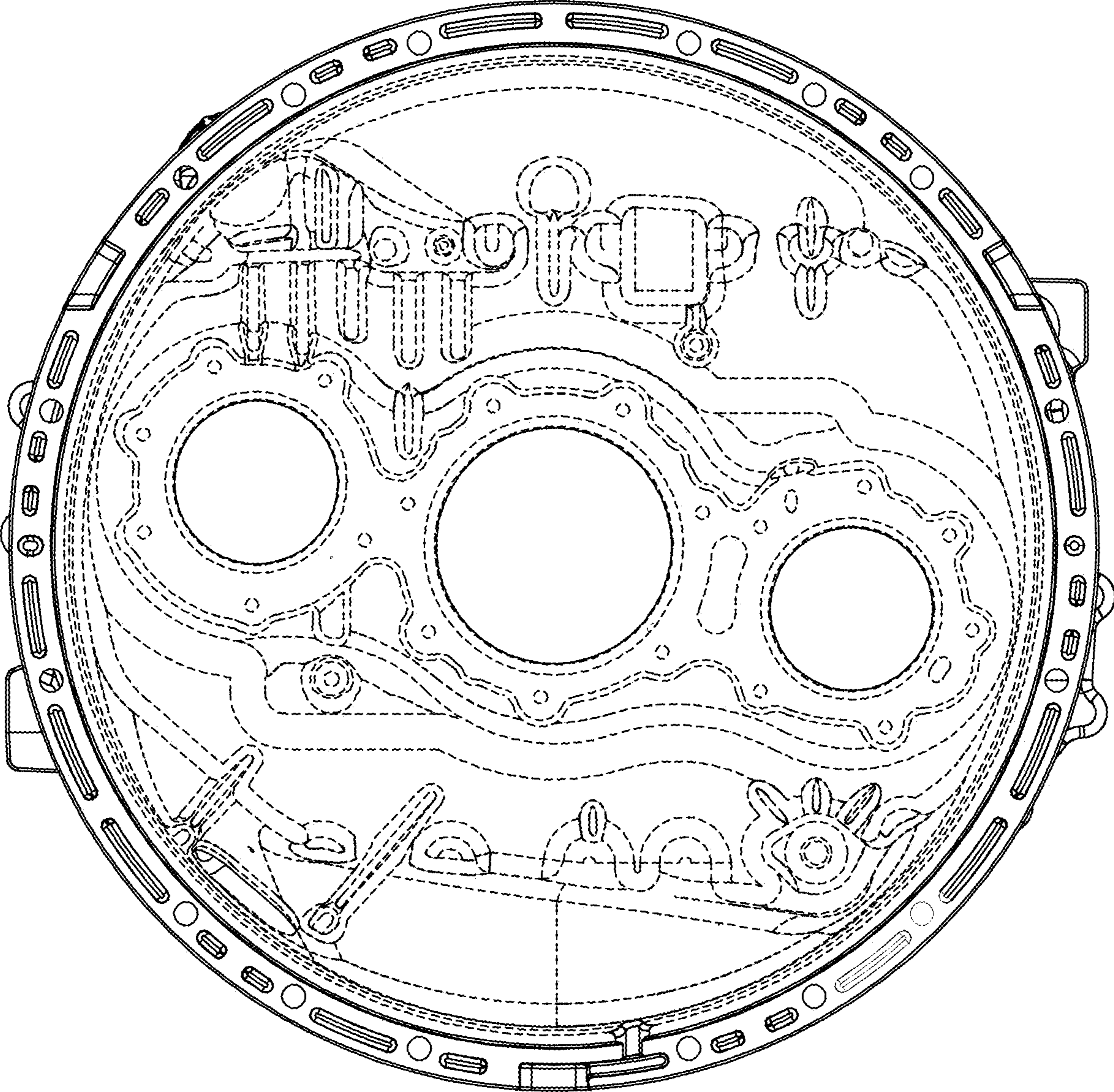


FIG. 7

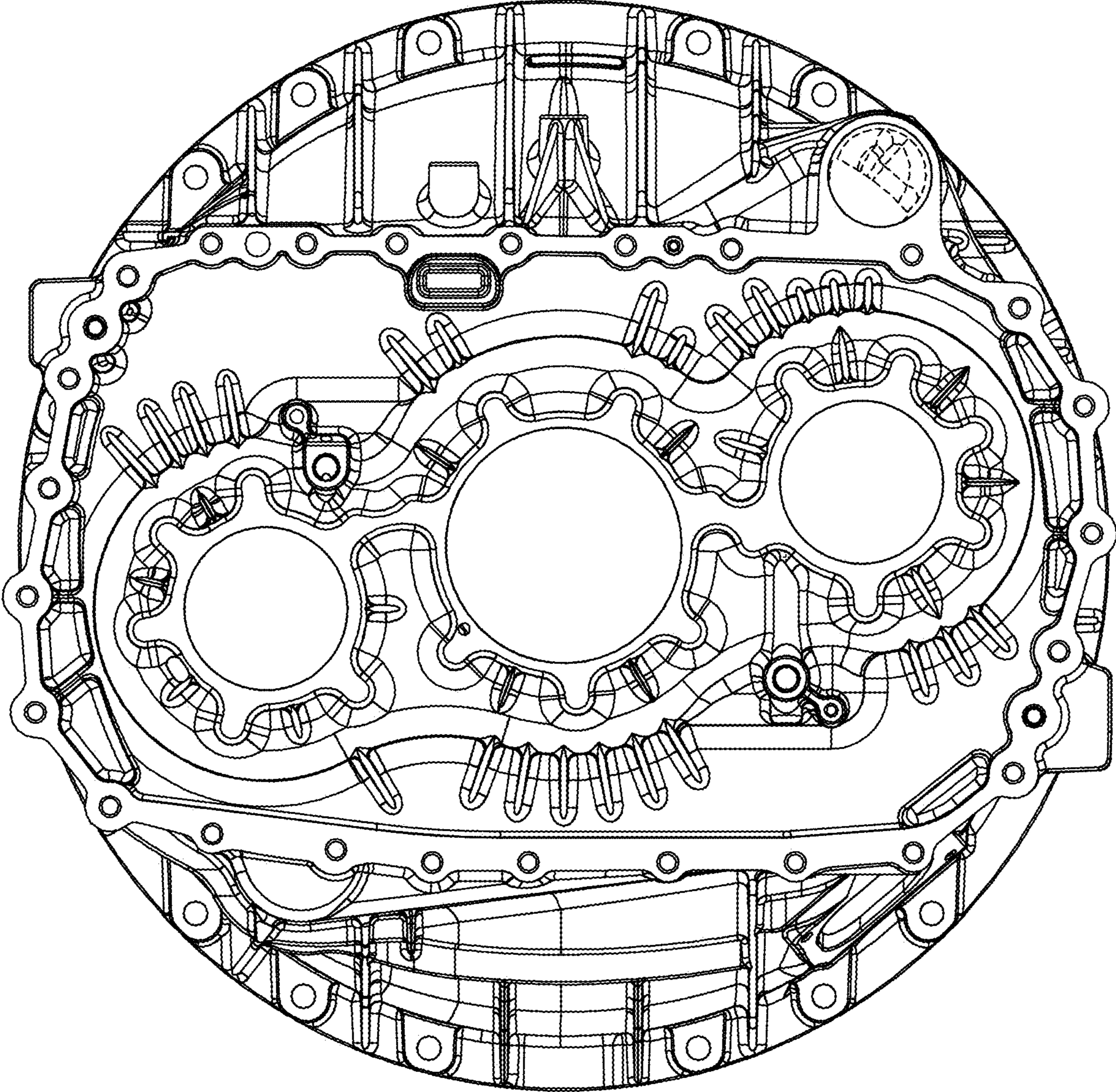


FIG. 8

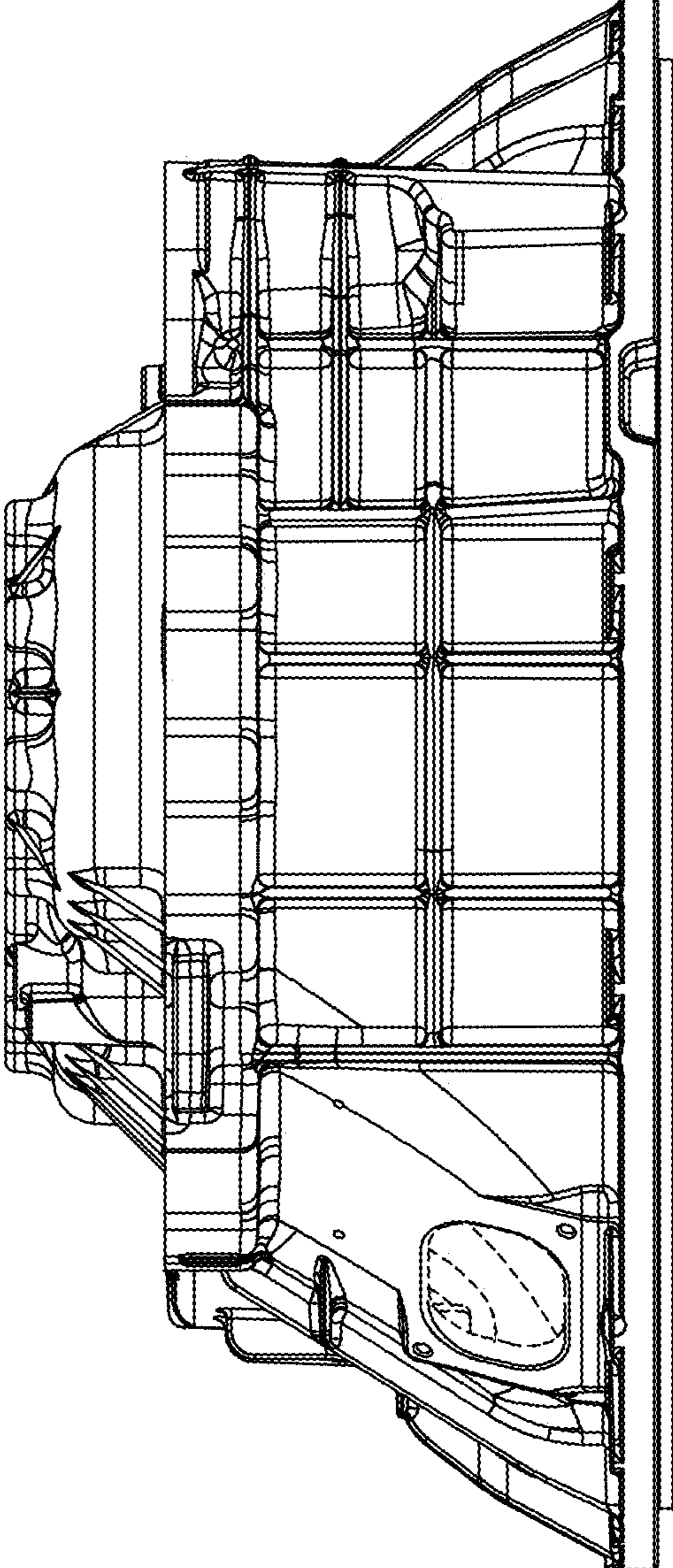


FIG. 9

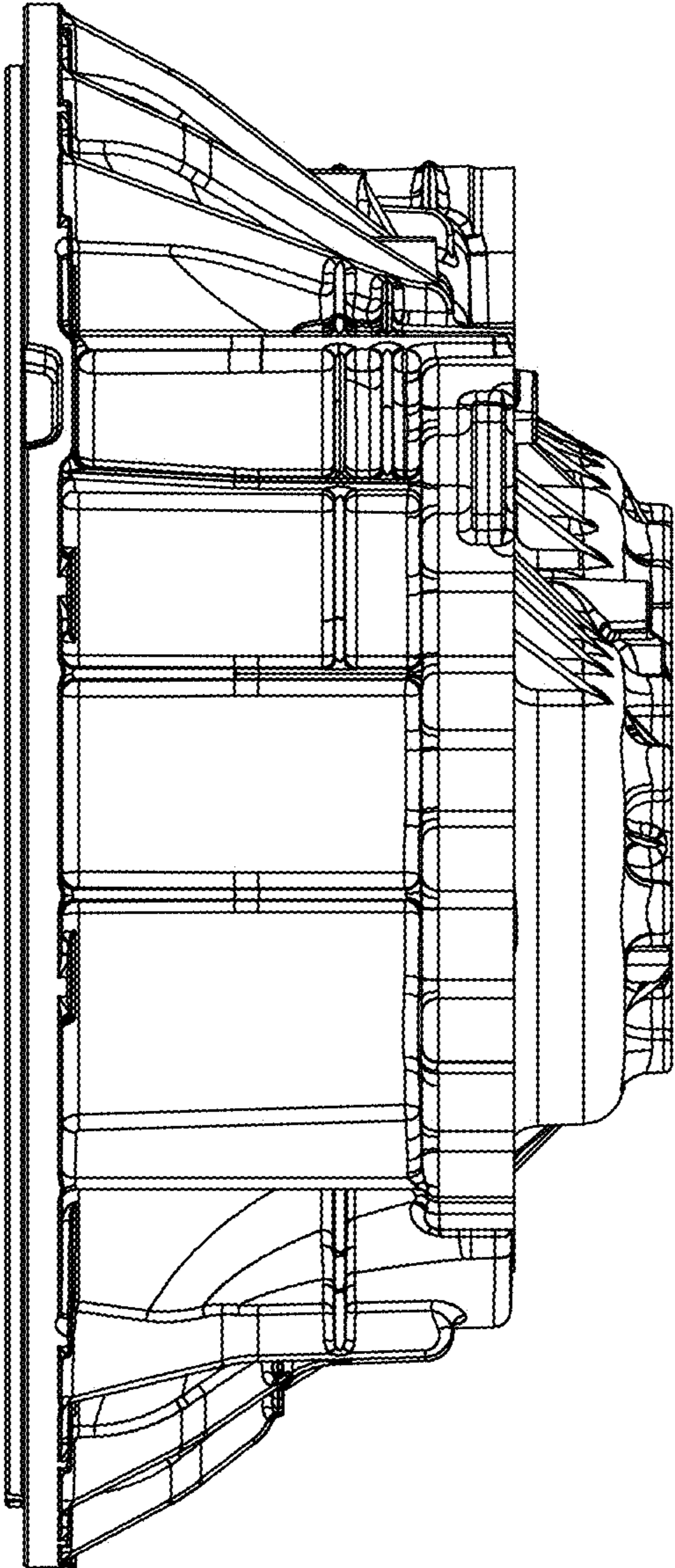


FIG. 10