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(12) **United States Design Patent**  
**Hillman et al.**

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- (54) **DIFFERENTIAL CASE**
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- (73) Assignee: **Eaton Intelligent Power Limited**, Dublin (IE)
- (\*\*) Term: **15 Years**

6,254,505 B1 *	7/2001	Forrest	.....	F16H 48/08 475/150
6,715,536 B1 *	4/2004	Jensen	.....	B22C 7/023 164/235
6,889,742 B1 *	5/2005	Jensen	.....	B22C 9/046 164/34
7,022,041 B2 *	4/2006	Valente	.....	F16H 48/10 475/252
7,361,116 B2	4/2008	Kyle et al.		
7,438,661 B2	10/2008	Kyle et al.		
8,167,763 B2	5/2012	Curtis		
8,591,373 B2	11/2013	Shibagaki		
D711,445 S *	8/2014	Creager	.....	D15/148
9,127,760 B1 *	9/2015	Potter	.....	F16H 48/40
D816,121 S *	4/2018	Fox	.....	D15/5
10,337,598 B2	7/2019	Bongard et al.		
2005/0070394 A1	3/2005	Sugeta et al.		
2005/0215378 A1	9/2005	Peter et al.		

(Continued)

- (21) Appl. No.: **29/584,760**
- (22) Filed: **Nov. 17, 2016**
- (51) **LOC (12) Cl.** ..... **15-01**
- (52) **U.S. Cl.**  
USPC ..... **D15/5**
- (58) **Field of Classification Search**  
USPC ..... D15/1-6  
CPC ..... F16H 48/40; F16H 2048/405; F16H  
2048/382; F16H 48/38; F16H 48/00;  
F16H 2048/387; F16H 48/22; F16H  
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See application file for complete search history.

**FOREIGN PATENT DOCUMENTS**

- WO WO-2015/060890 A1 4/2015
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- (74) *Attorney, Agent, or Firm* — Mei & Mark LLP

(57) **CLAIM**

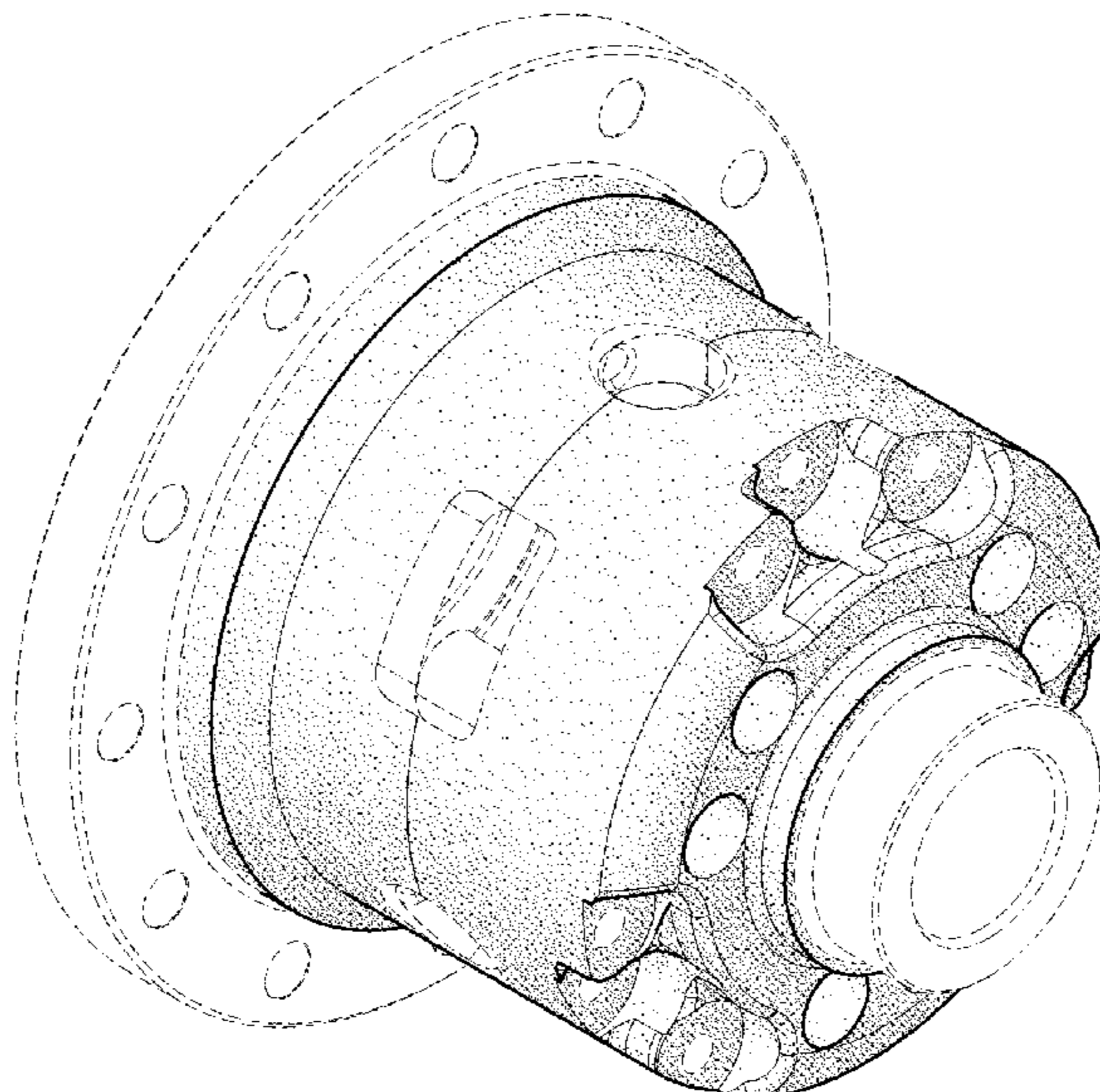
The ornamental design for a differential case, as shown and described.

**DESCRIPTION**

FIG. 1 is a front perspective view of a differential case.  
 FIG. 2 is a rear perspective view of the differential case.  
 FIG. 3 is a front view of the differential case.  
 FIG. 4 is a rear view of the differential case.  
 FIG. 5 is a left side view of the differential case.  
 FIG. 6 is a right side view of the differential case.  
 FIG. 7 is a top view of the differential case; and,  
 FIG. 8 is a bottom view of the differential case.  
 The broken lines showing portions of the differential case form no part of the claimed design.

**1 Claim, 8 Drawing Sheets**

- (56) **References Cited**  
U.S. PATENT DOCUMENTS
- 3,331,262 A \* 7/1967 Mazziotti ..... F16H 48/08  
475/235
- 3,362,258 A \* 1/1968 Thornton ..... F16H 48/08  
475/231
- 3,628,399 A 12/1971 Seitz et al.
- 3,837,236 A 9/1974 Kagata
- 3,893,351 A 7/1975 Baremor
- 4,290,321 A 9/1981 Wilson
- 5,273,498 A 12/1993 Dhillon et al.
- 6,053,838 A \* 4/2000 Gage ..... F16H 48/285  
475/248



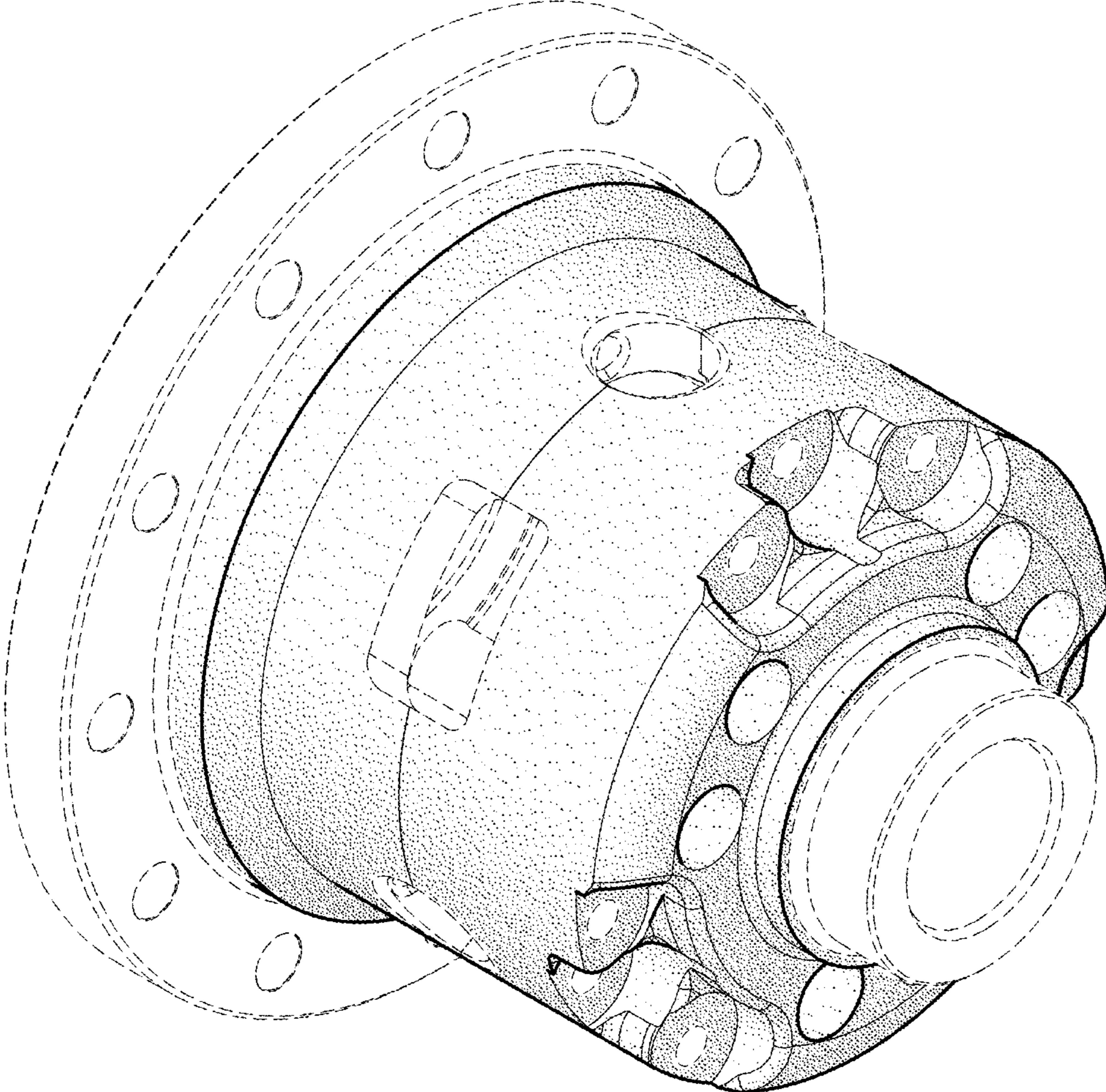
(56)

**References Cited**

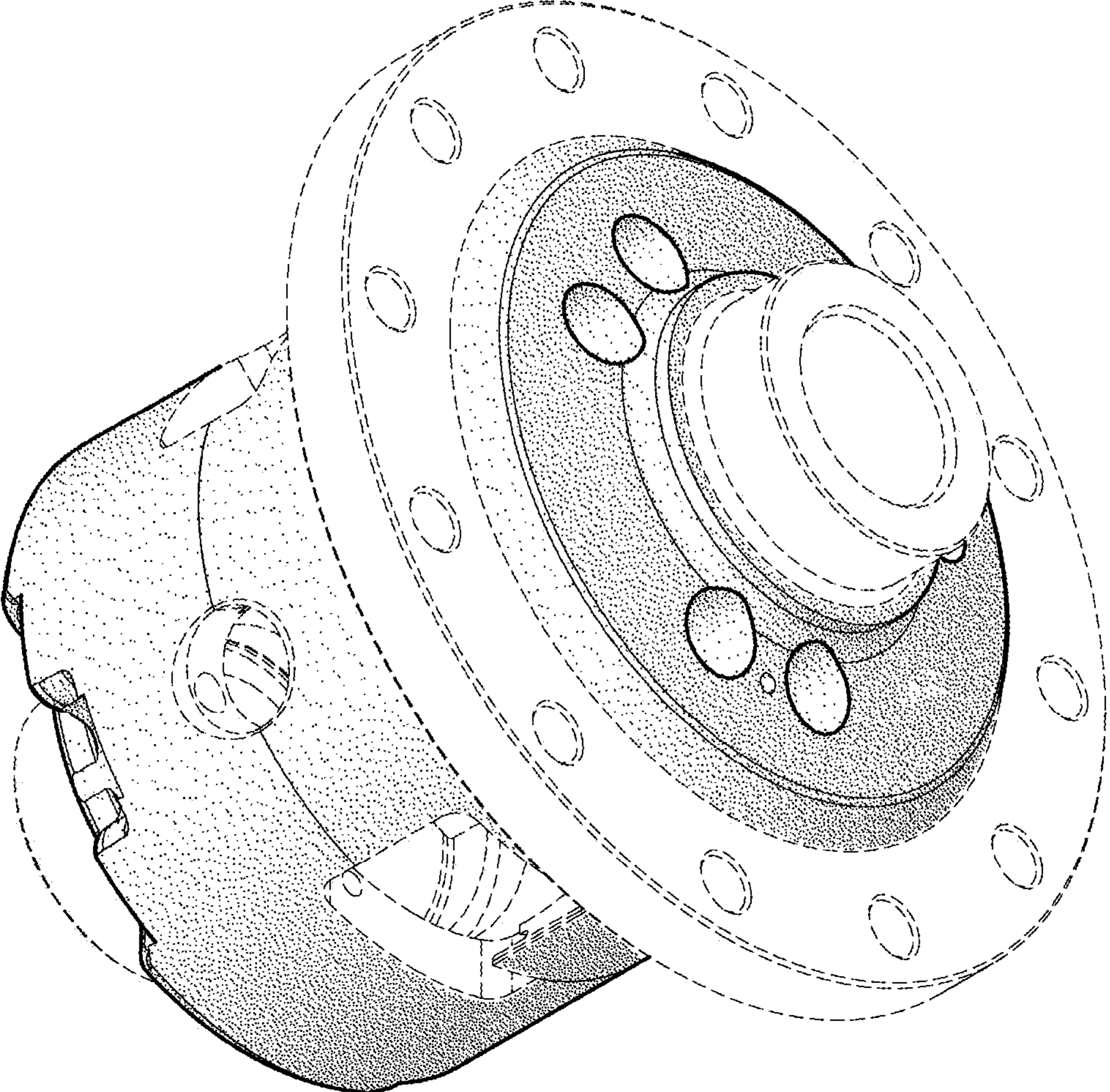
U.S. PATENT DOCUMENTS

2006/0052202	A1*	3/2006	Morgensai .....	F16H 48/08 475/84	2014/0262668	A1*	9/2014	Creager .....	F16H 48/22 192/48.8
2007/0095167	A1*	5/2007	Nakajima .....	F16H 48/05 74/607	2015/0111684	A1*	4/2015	Fox .....	F16H 48/32 475/231
2007/0259750	A1	11/2007	Kramer et al.		2015/0204431	A1*	7/2015	Cochren .....	F16H 48/34 475/150
2008/0042791	A1*	2/2008	York .....	F16H 48/08 335/296	2015/0292611	A1*	10/2015	Miyamoto .....	F16H 48/24 475/84
2008/0242469	A1*	10/2008	Jenski .....	F16H 48/08 475/231	2015/0330494	A1	11/2015	Kluck	
2008/0254930	A1*	10/2008	Fujii .....	B60K 17/346 475/221	2016/0025201	A1	1/2016	Wrona et al.	
2010/0184552	A1*	7/2010	Soybel .....	F16H 48/08 475/230	2016/0025202	A1	1/2016	Okazaki	
2010/0317480	A1	12/2010	Cochren et al.		2016/0153536	A1*	6/2016	Fisher .....	F16H 48/22 475/86
2014/0141921	A1*	5/2014	Fox .....	F16H 48/08 475/231	2016/0160983	A1	6/2016	Yanase et al.	
2014/0179481	A1*	6/2014	Fox .....	F16H 48/08 475/220	2017/0122423	A1*	5/2017	Bongard .....	F16D 13/52
					2017/0350490	A1*	12/2017	Sudou .....	F16H 48/40
					2018/0038475	A1*	2/2018	Nadayoshi .....	F16H 48/08
					2018/0149252	A1*	5/2018	Roberts .....	F16H 48/40
					2019/0226566	A1*	7/2019	Hillman .....	F16H 48/34

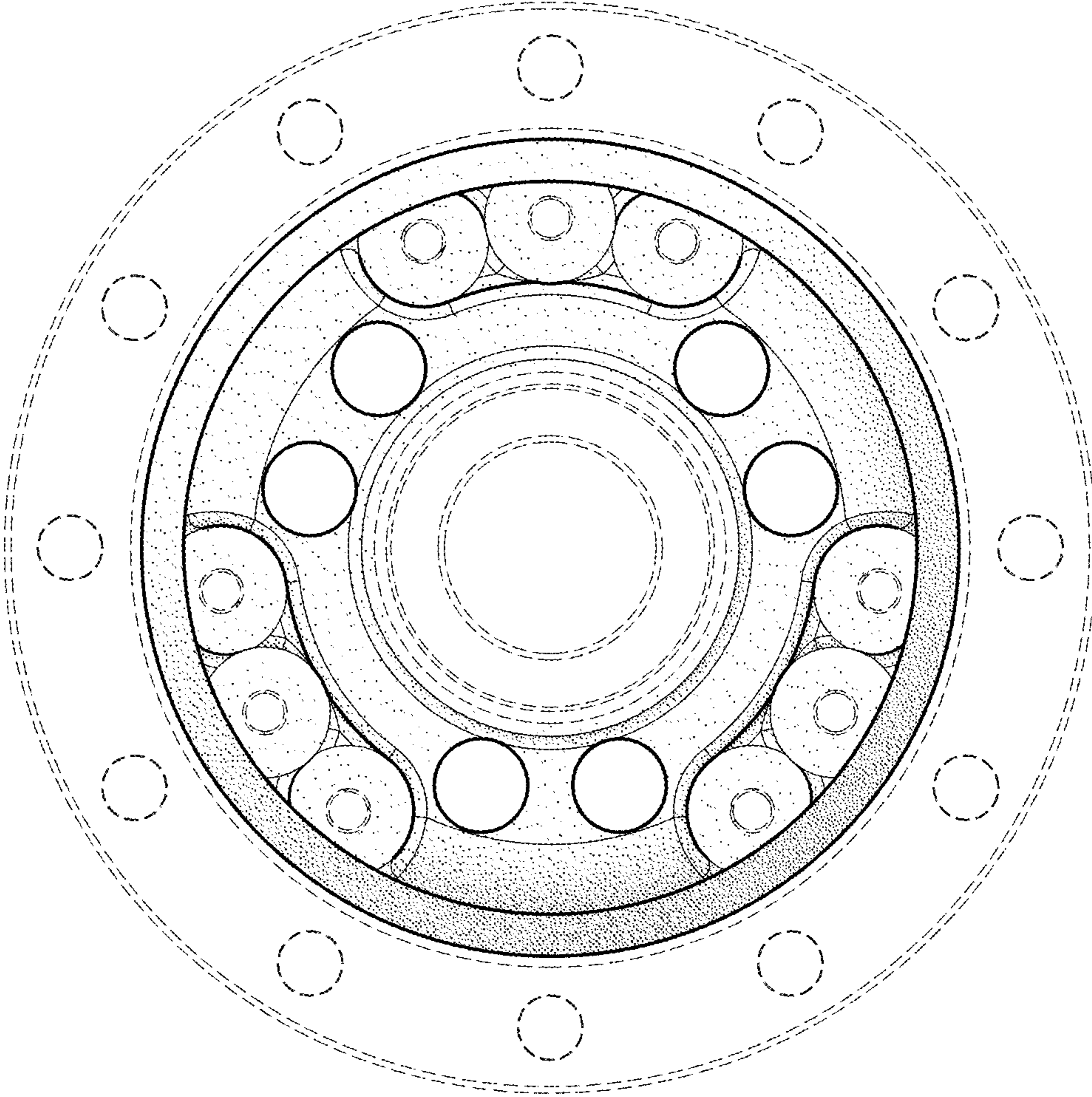
\* cited by examiner



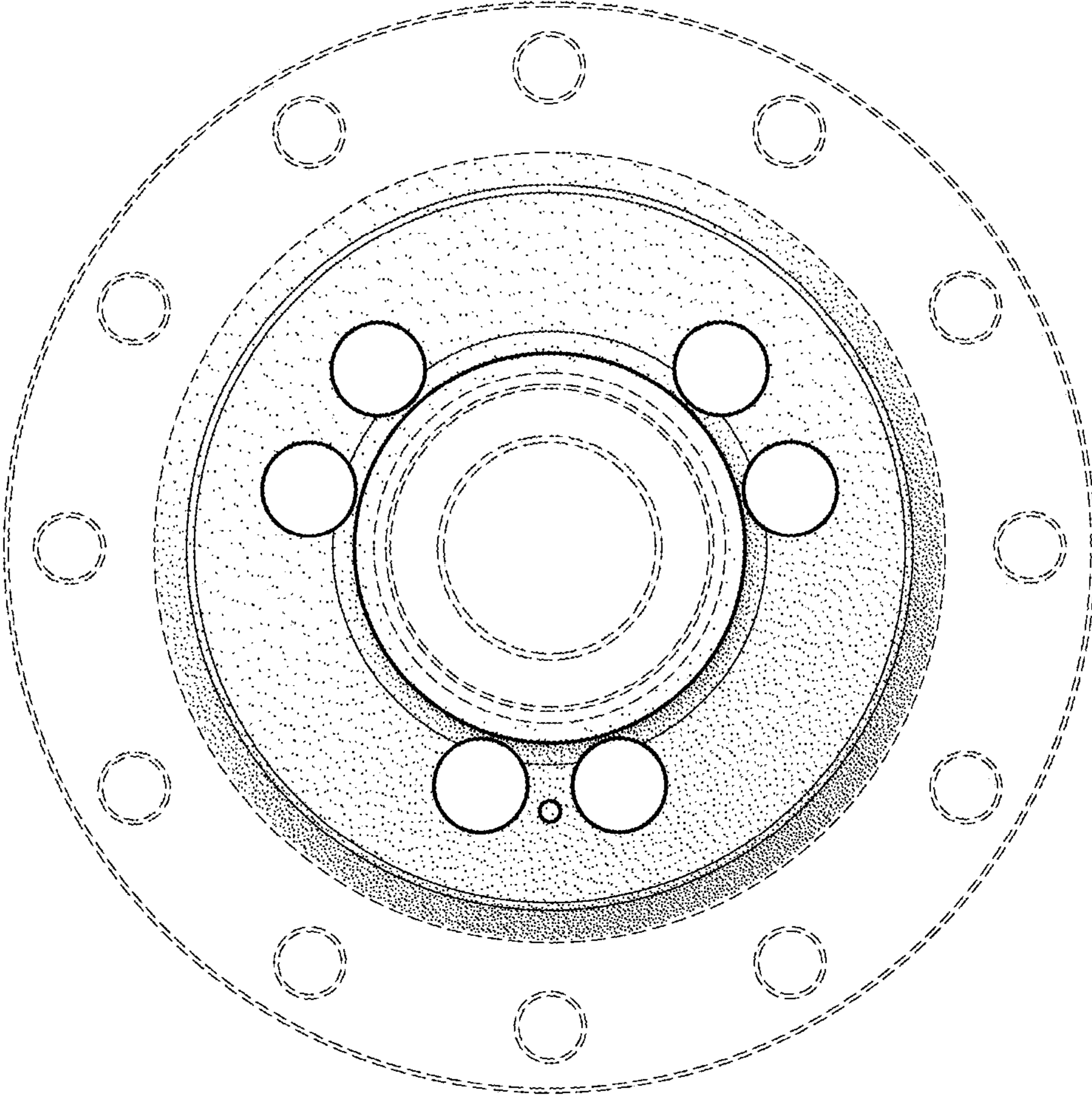
**FIG. 1**



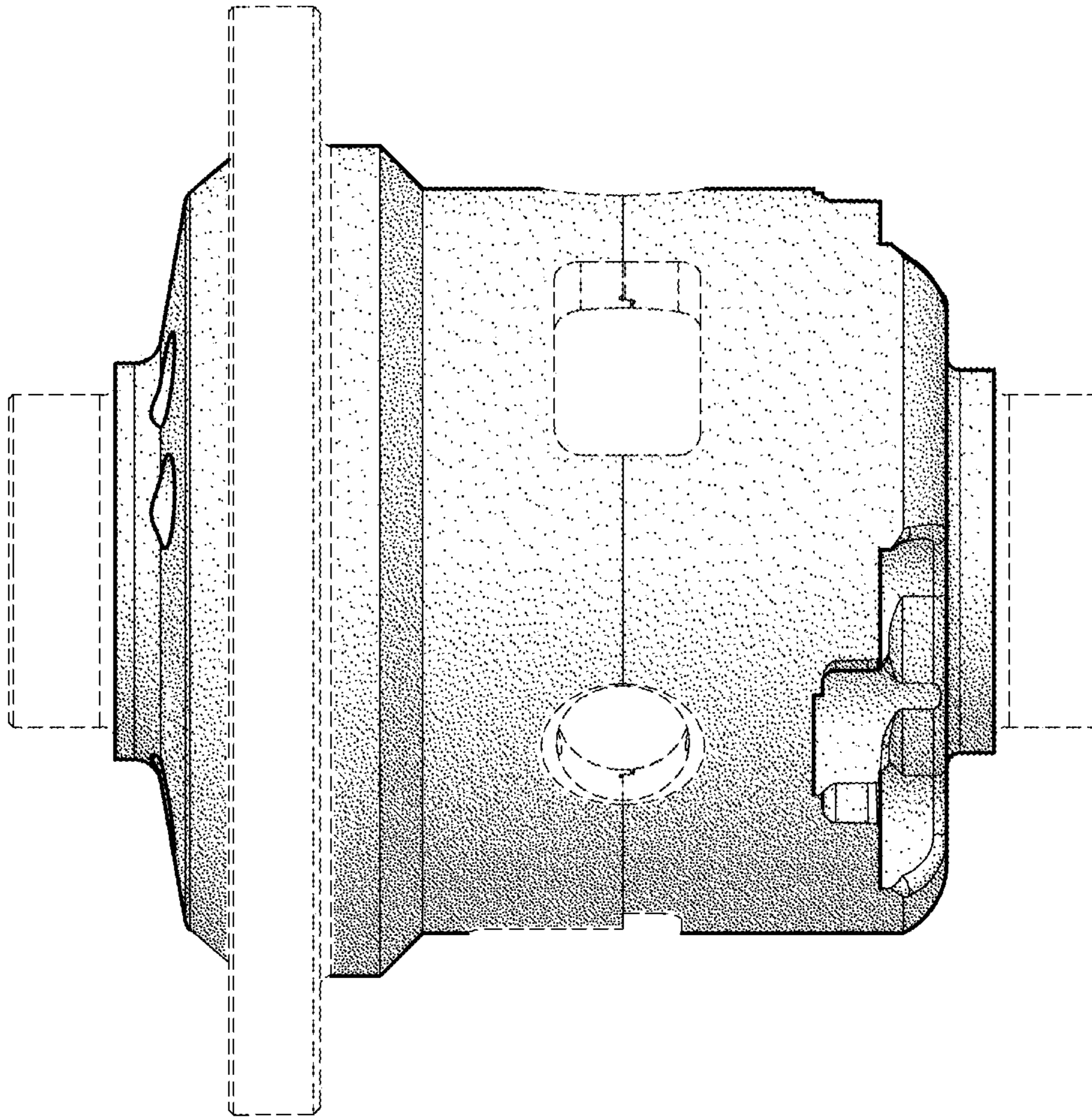
**FIG. 2**



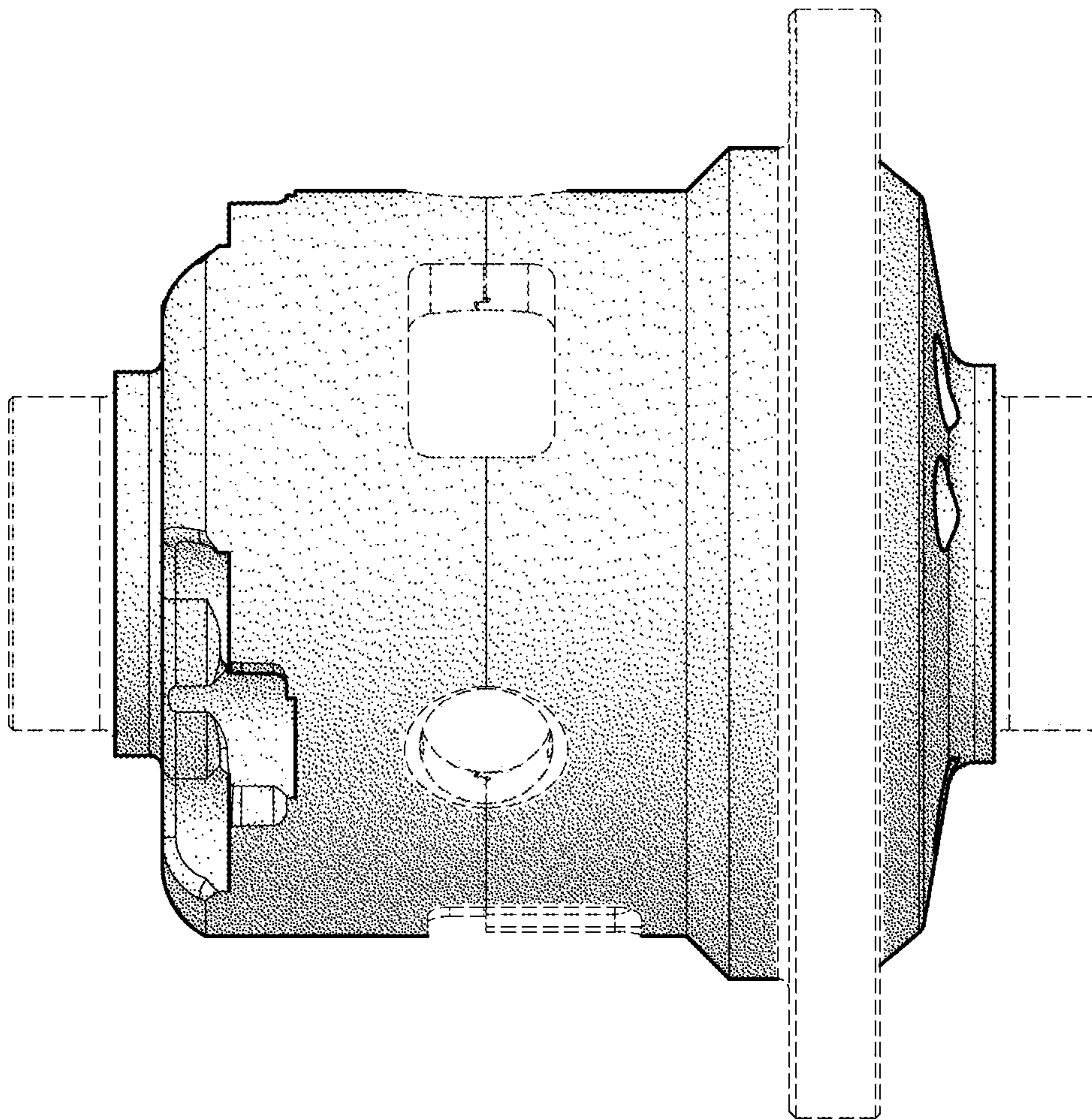
**FIG.3**



**FIG. 4**

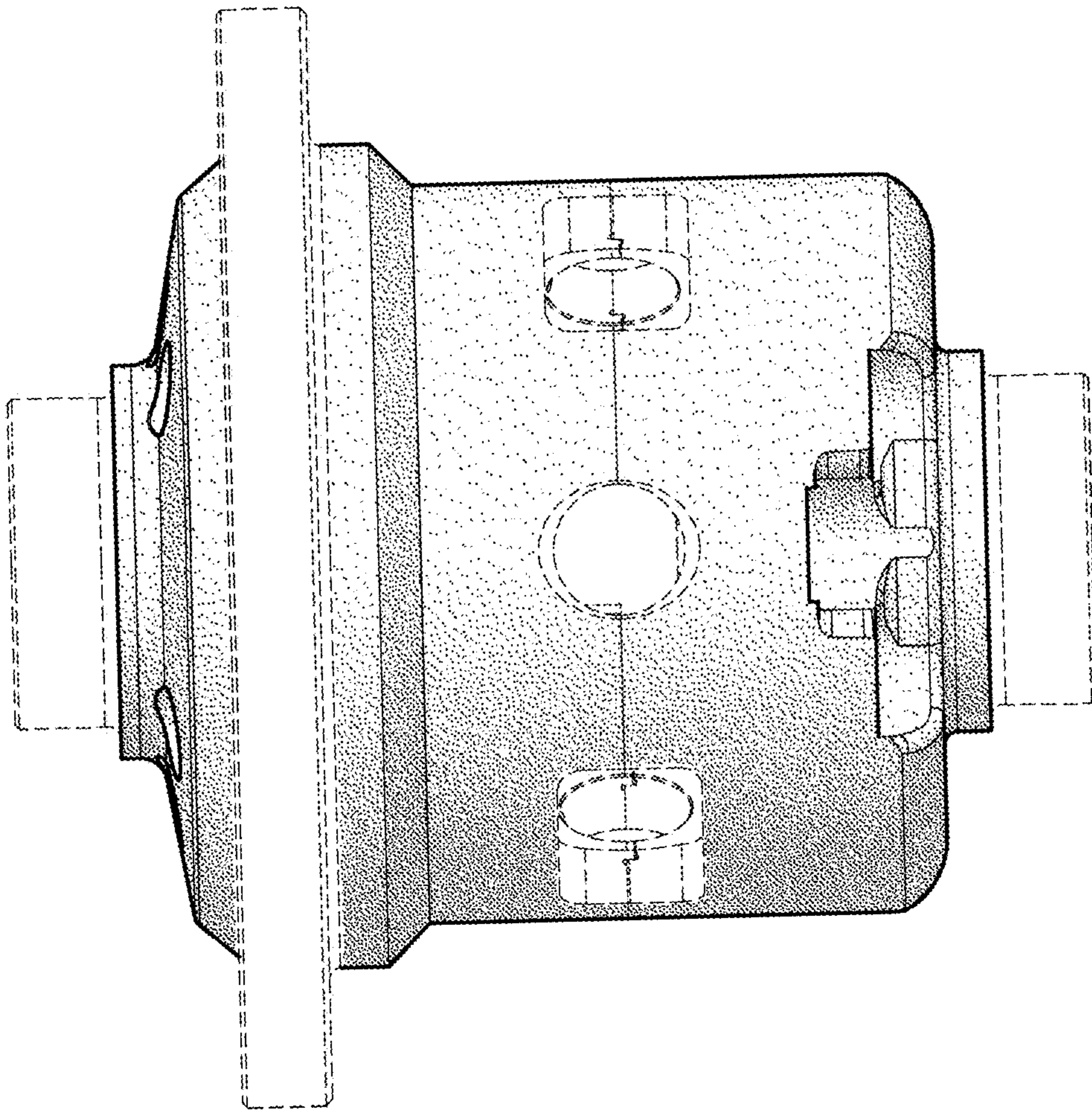


***FIG. 5***

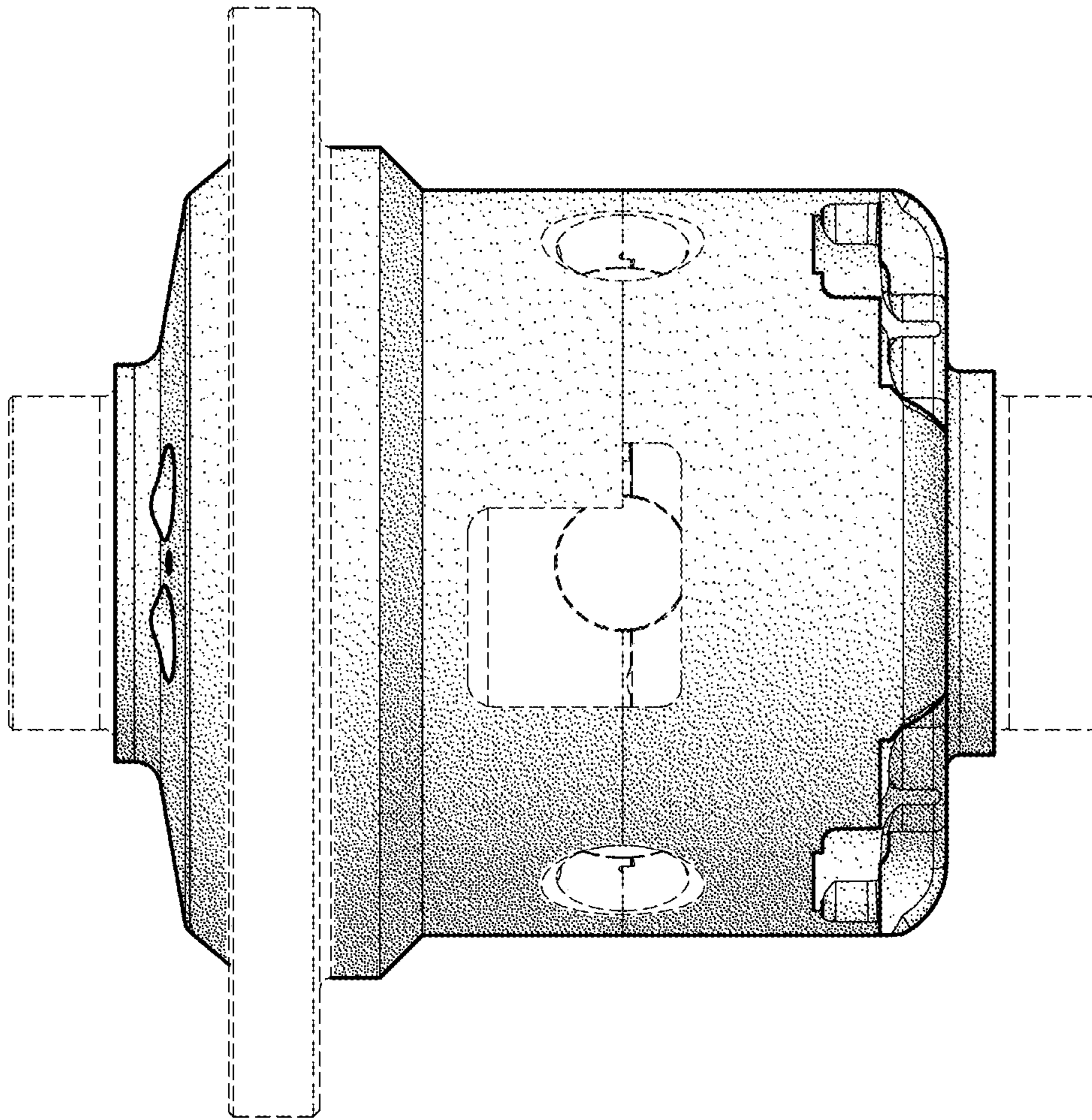


**FIG. 6**





**FIG. 7**



**FIG. 8**