

US00D767658S

(12) **United States Design Patent** (10) **Patent No.:** **US D767,658 S**
Creager et al. (45) **Date of Patent:** **** Sep. 27, 2016**

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|---|----------------|---------|---------------------------------------|
| (54) HELICAL GEAR DIFFERENTIAL HOUSING | 6,053,838 A | 4/2000 | Gage |
| (71) Applicant: Eaton Corporation , Cleveland, OH (US) | 6,167,783 B1 * | 1/2001 | Ishikawa F16H 55/0833 74/640 |
| (72) Inventors: Christopher Wayne Creager , Ypsilanti, MI (US); Michael David Green , Clinton Township, MI (US) | 7,022,041 B2 | 4/2006 | Valente |
| (73) Assignee: Eaton Corporation , Cleveland, OH (US) | D549,753 S * | 8/2007 | Kanemitsu D15/148 |
| (**) Term: 14 Years | 8,033,944 B2 | 10/2011 | Weber et al. |
| (21) Appl. No.: 29/504,148 | D655,796 S | 3/2012 | Dewitt et al. |
| (22) Filed: Oct. 2, 2014 | D674,828 S * | 1/2013 | Andersson D15/148 |
| Related U.S. Application Data | 8,353,800 B2 | 1/2013 | Kumar et al. |
| (63) Continuation-in-part of application No. 29/495,495, filed on Jul. 1, 2014, which is a continuation of application No. 29/464,113, filed on Aug. 13, 2013, now Pat. No. Des. 711,445. | D690,336 S | 9/2013 | Gjertsen |
| (51) LOC (10) Cl. 15-01 | D690,339 S | 9/2013 | Sigmund |
| (52) U.S. Cl. | D711,445 S * | 8/2014 | Creager D15/148 |
| (58) Field of Classification Search | D714,348 S * | 9/2014 | Swanson D15/5 |
| USPC D15/148 | D716,356 S * | 10/2014 | Ayton D15/149 |
| CPC F16D 41/105; F16D 41/061-41/064; F16D 41/067; F16D 41/07; F16D 41/066; F16H 1/28; F16H 1/46; F16H 57/029; F16H 57/033; F16H 57/0482; F16H 57/082; F16H 49/001 | 8,950,565 B2 * | 2/2015 | Adams F16D 41/10 192/223.2 |

(Continued)

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(57) **CLAIM**
The ornamental design for a helical gear differential housing, as shown and described.

DESCRIPTION

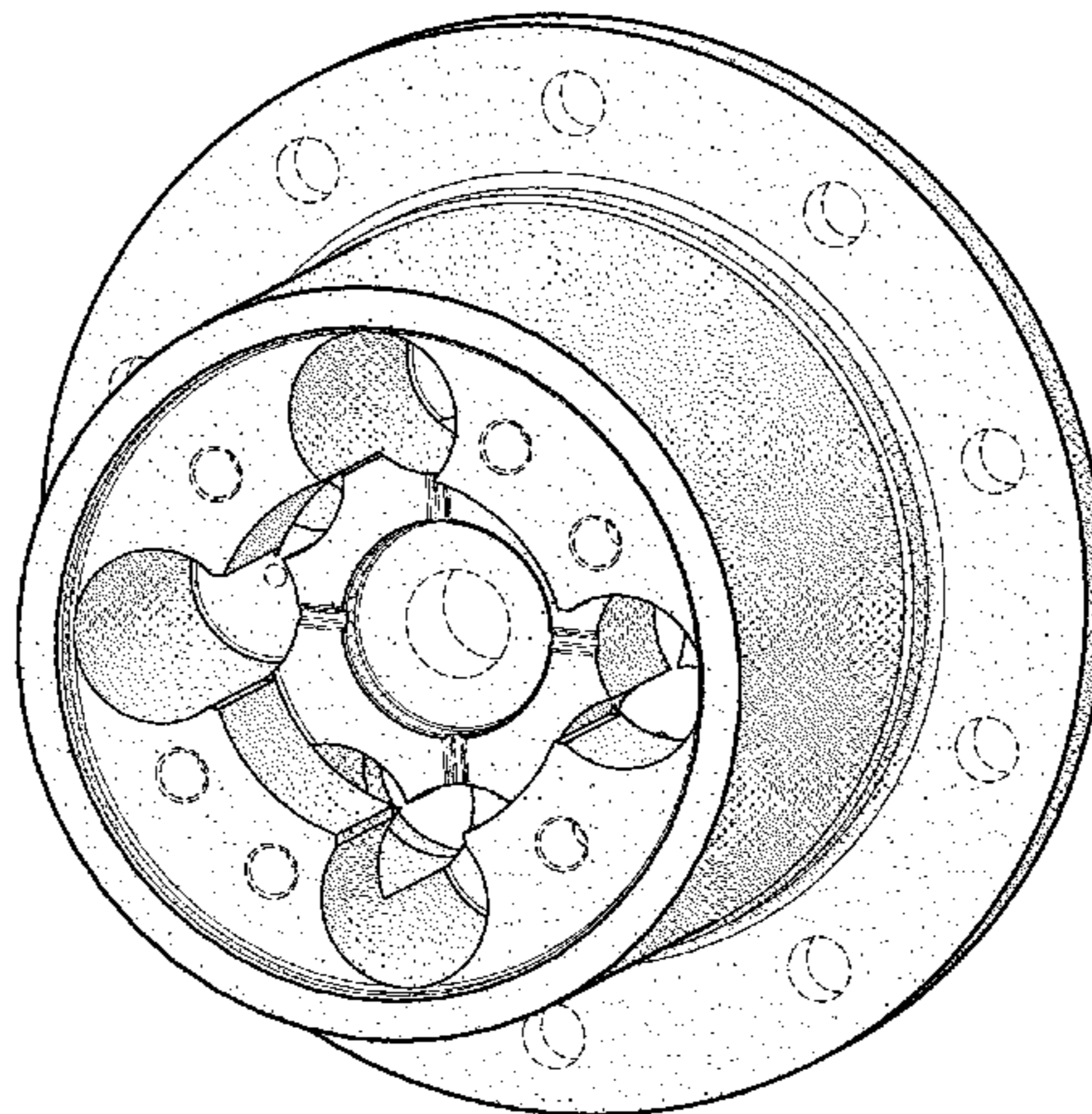
FIG. 1 is a front perspective view of a first embodiment of a helical gear differential housing showing the new design. FIG. 2 is a rear perspective view of the first embodiment of the helical gear differential housing of FIG. 1. FIG. 3 is a front view of the first embodiment of the helical gear differential housing of FIG. 1. FIG. 4 is a rear view of the first embodiment of the helical gear differential housing of FIG. 1. FIG. 5 is a first side view of the first embodiment of the helical gear differential housing of FIG. 1. FIG. 6 is a second side view of the first embodiment of the helical gear differential housing of FIG. 1. FIG. 7 is a third side view of the first embodiment of the helical gear differential housing of FIG. 1; and, FIG. 8 is a fourth side view of the first embodiment of the helical gear differential housing of FIG. 1.

1 Claim, 8 Drawing Sheets

(56) **References Cited**

U.S. PATENT DOCUMENTS

| | | | |
|--------------|---------|---------------|---------------|
| 2,000,223 A | 5/1935 | Du Pras | |
| D237,900 S * | 12/1975 | Stroup | D15/149 |
| D402,354 S | 12/1998 | Strong et al. | |



(56)

References Cited

U.S. PATENT DOCUMENTS

| | | | | | | |
|-----------------|--------|----------------|---------|-----------------|---------|------------------|
| D749,657 S * | 2/2016 | Huang | D15/149 | 2007/0249458 A1 | 10/2007 | Veldman et al. |
| 2002/0025878 A1 | 2/2002 | Kam | | 2008/0103010 A1 | 5/2008 | Pontanari et al. |
| 2006/0037828 A1 | 2/2006 | Monahan et al. | | 2009/0203488 A1 | 8/2009 | Hultgren |
| 2007/0191171 A1 | 8/2007 | Pascoe et al. | | 2009/0211396 A1 | 8/2009 | Gutmann et al. |
| | | | | 2009/0215574 A1 | 8/2009 | Weber et al. |
| | | | | 2010/0151982 A1 | 6/2010 | Waksmundzki |

* cited by examiner

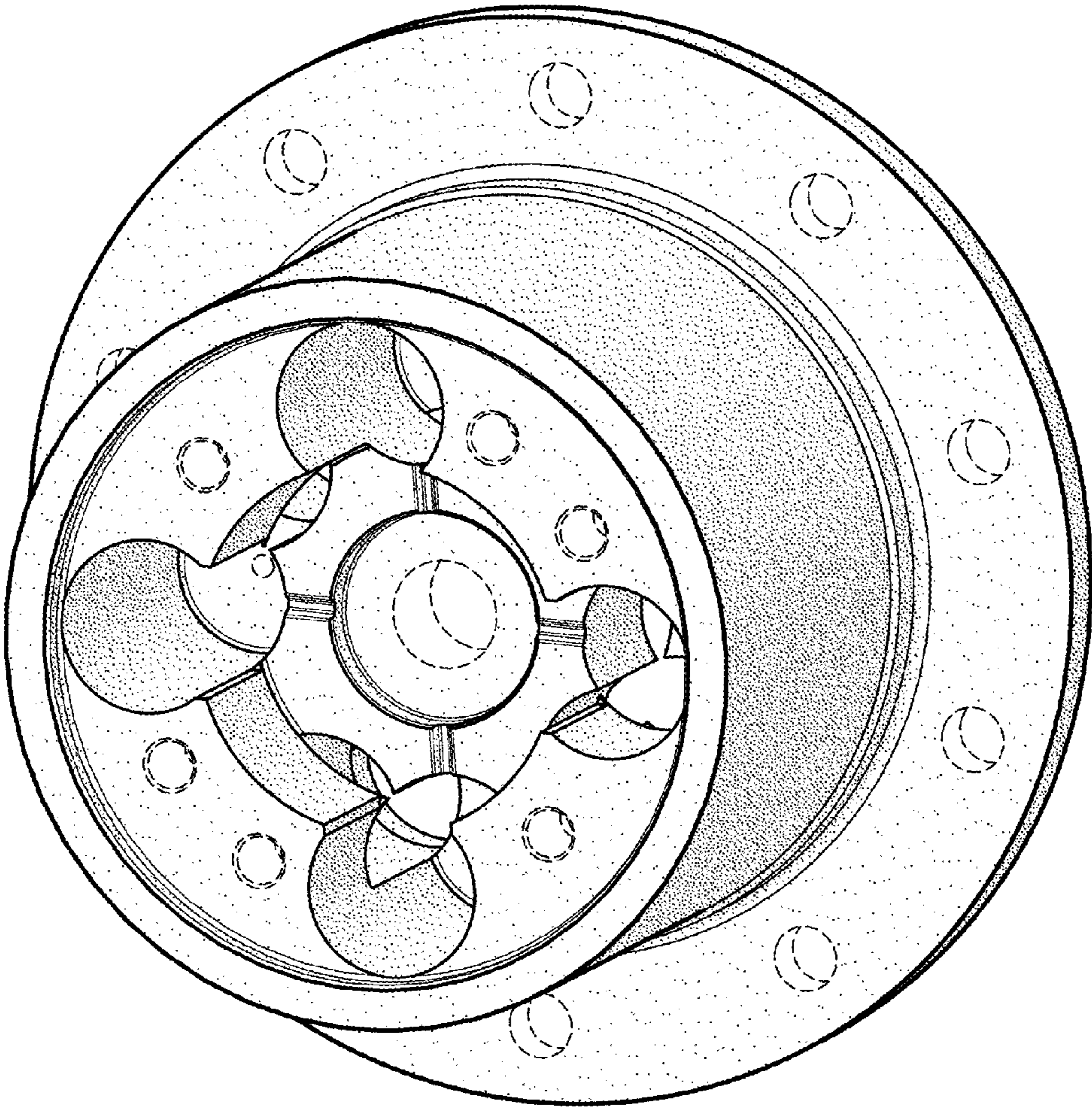


FIG. 1

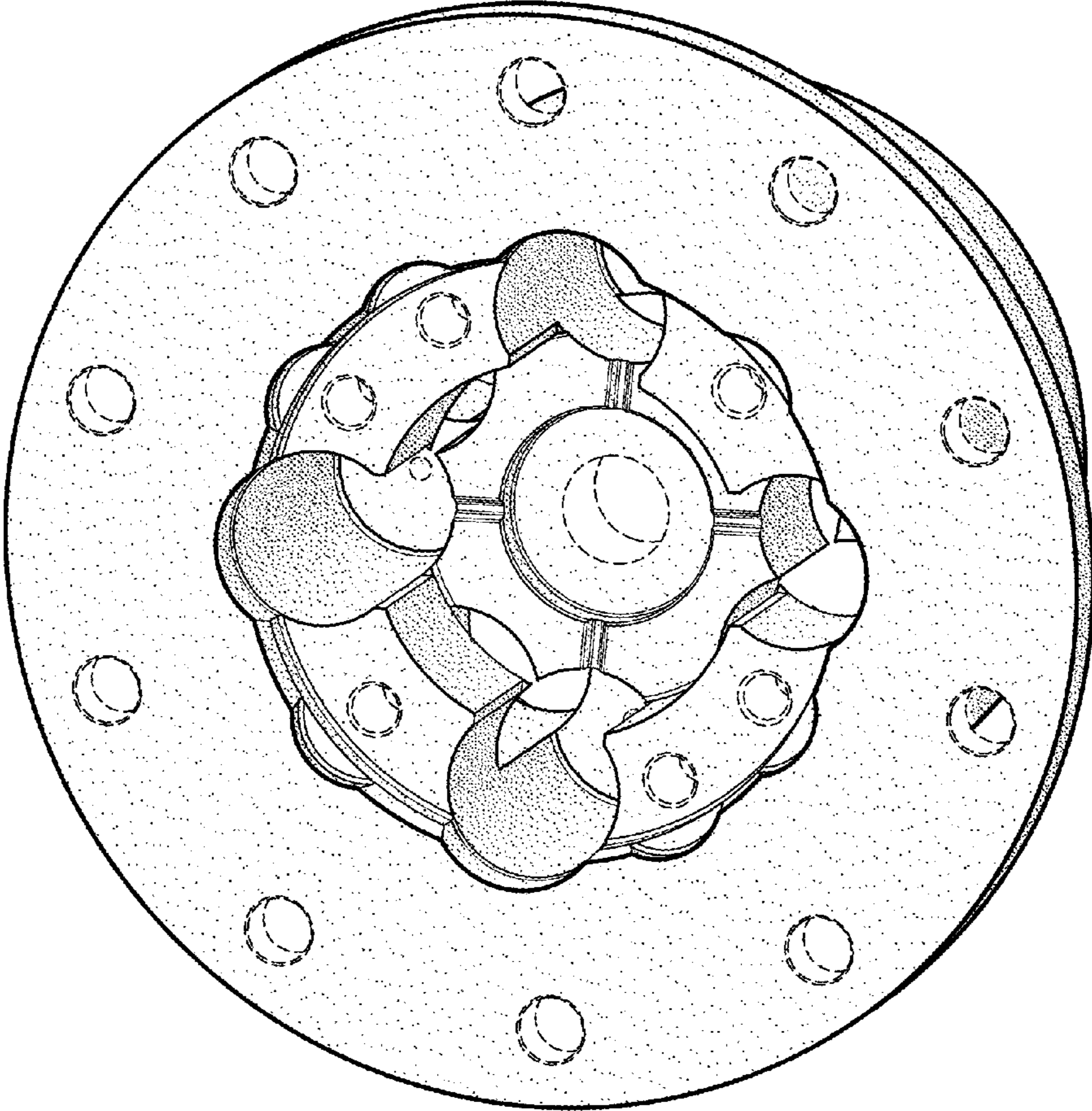


FIG. 2

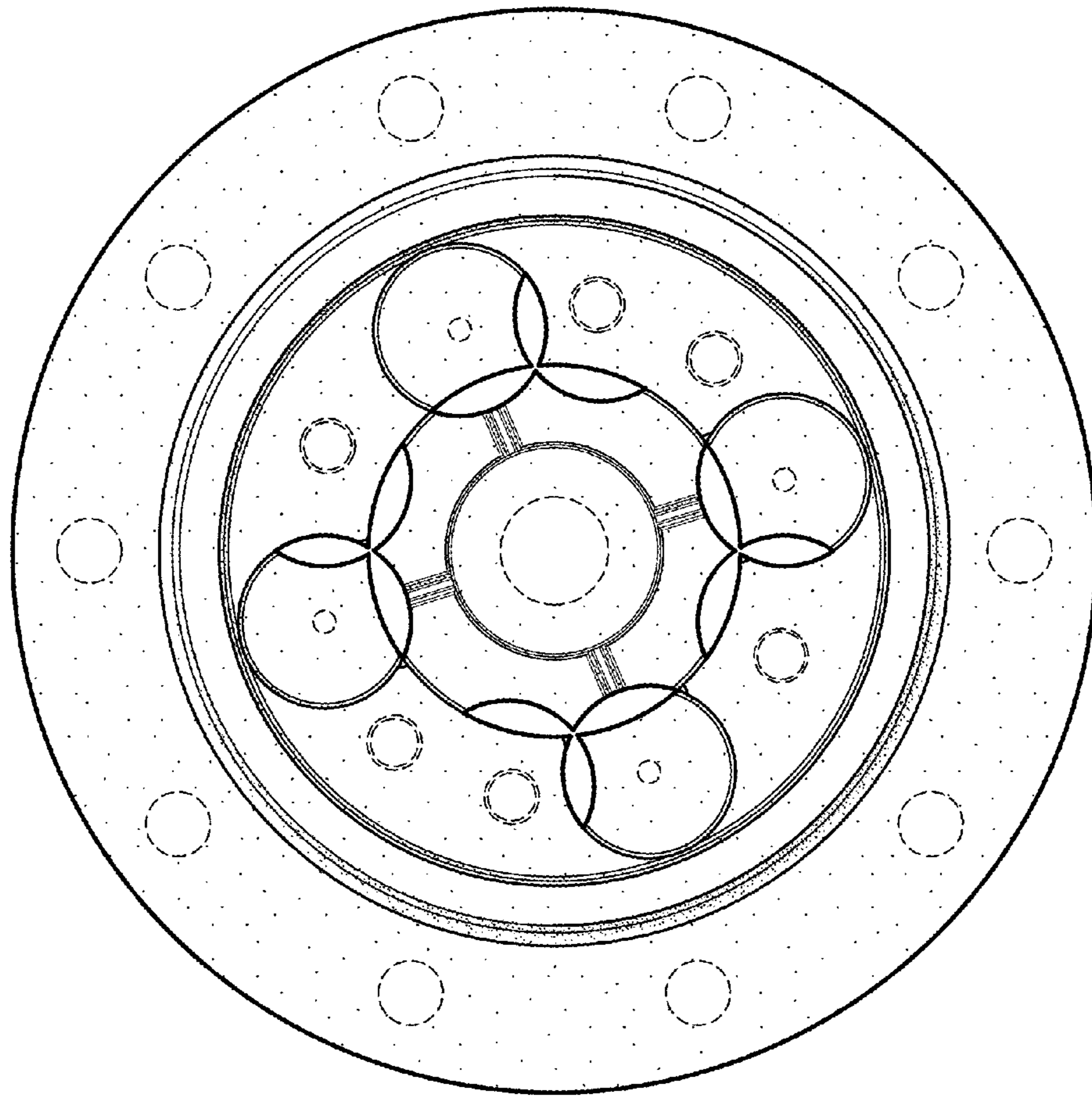


FIG. 3

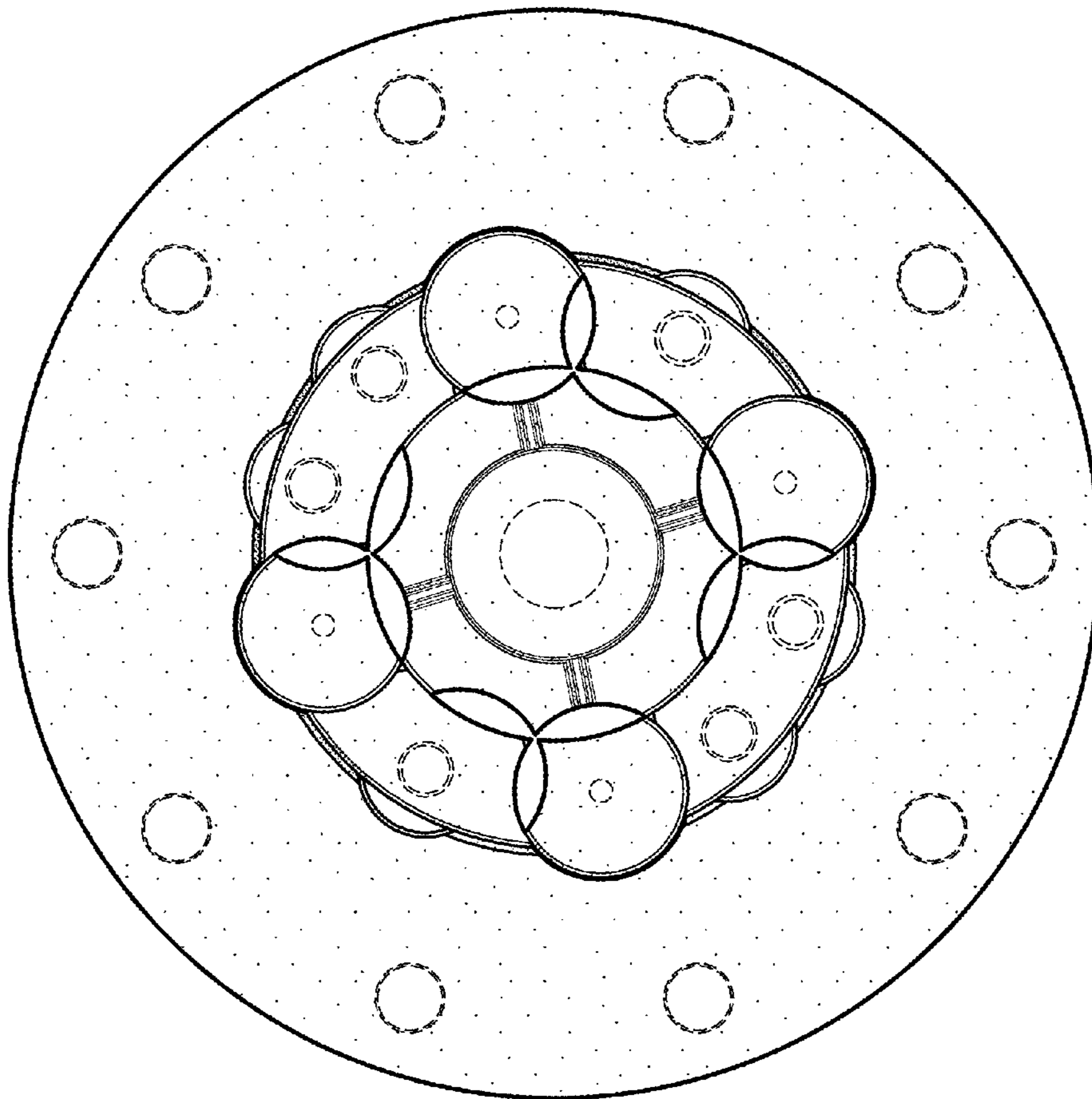


FIG.4

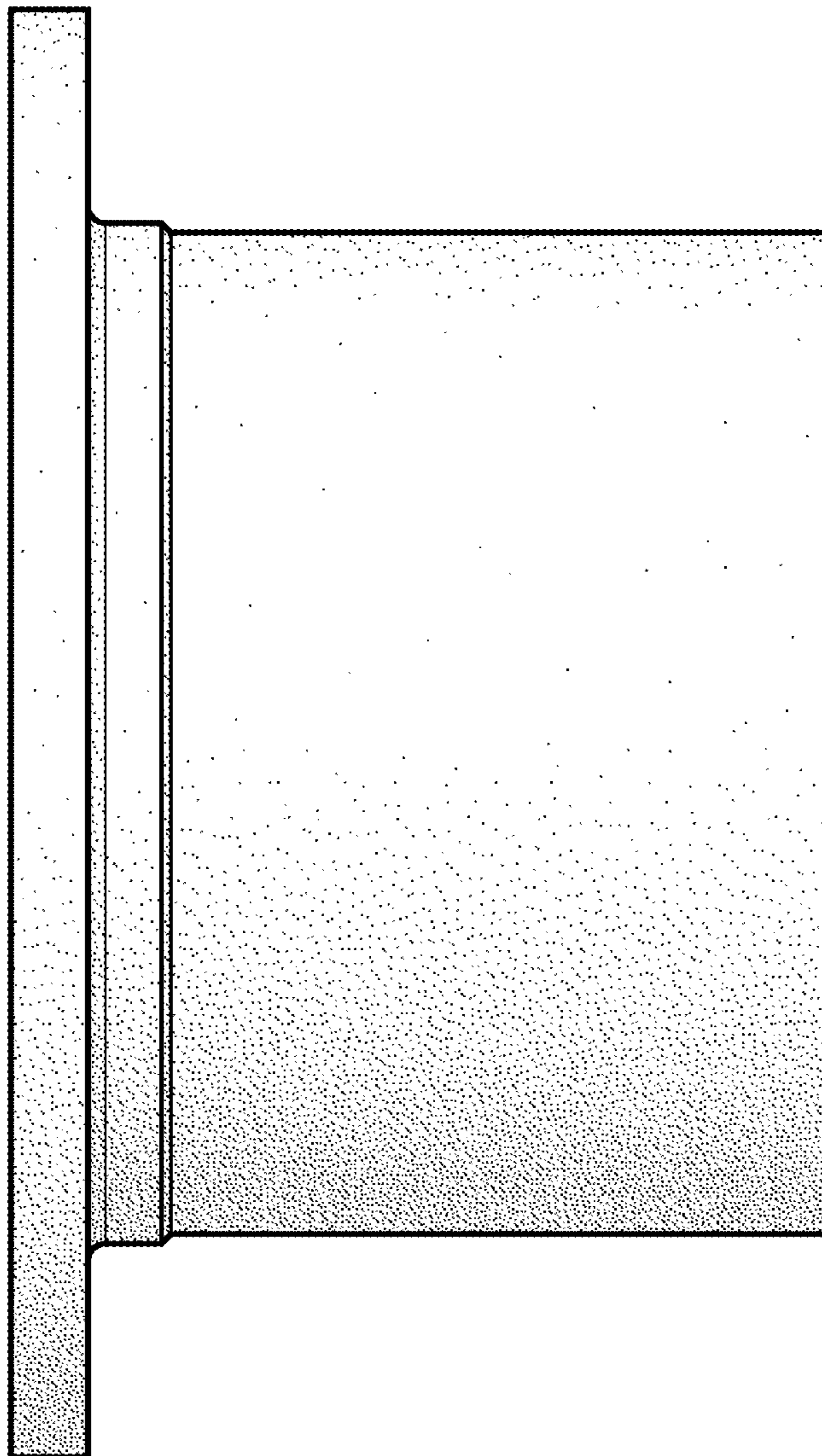


FIG. 5

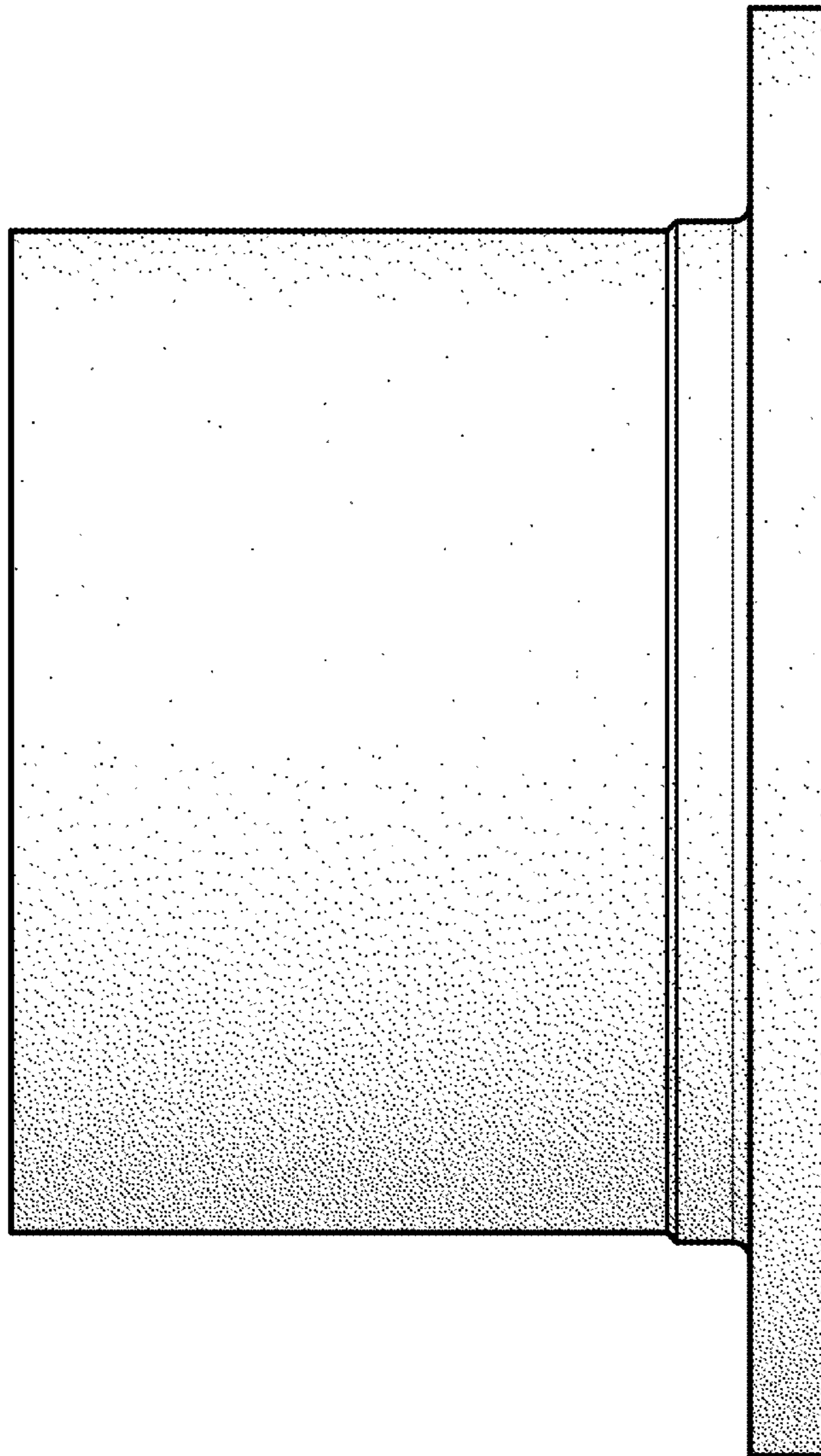


FIG. 6

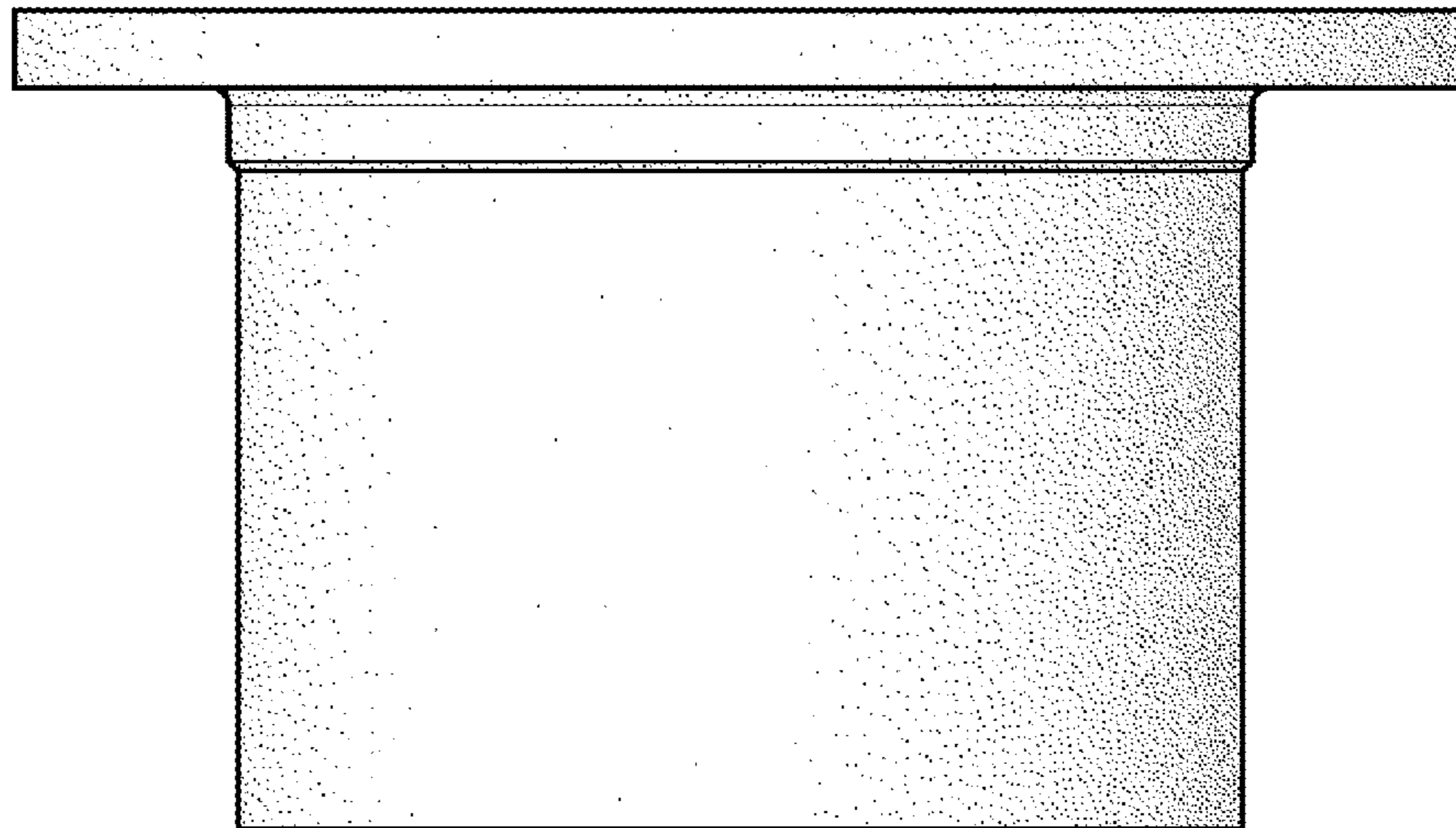


FIG. 7

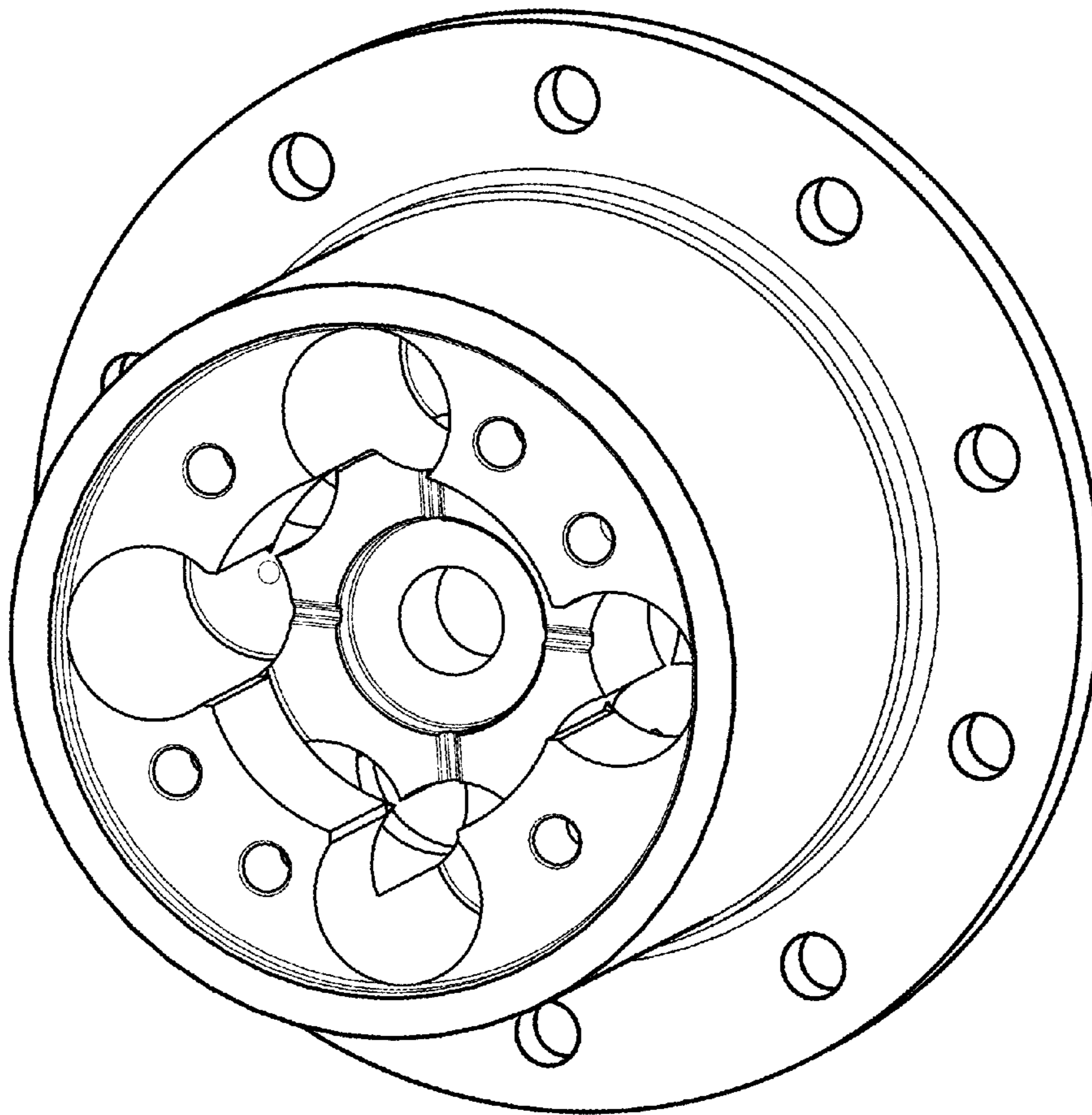


FIG. 8