



US00D613768S

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

(10) **Patent No.:** **US D613,768 S**  
(45) **Date of Patent:** **\*\* Apr. 13, 2010**

(54) **PUMP IMPELLER**

(75) Inventors: **Motonobu Tarui**, Hyogo (JP); **Junya Enomoto**, Hyogo (JP); **Kazuki Takeuchi**, Hyogo (JP); **Takashi Kuniyama**, Hyogo (JP)

(73) Assignee: **ShinMaywa Industries, Ltd.**, Hyogo (JP)

(\*\*) Term: **14 Years**

(21) Appl. No.: **29/336,812**

(22) Filed: **May 8, 2009**

(51) **LOC (9) Cl.** ..... **15-02**

(52) **U.S. Cl.** ..... **D15/7**

(58) **Field of Classification Search** ..... D15/7-9;  
D23/225, 231-232; 417/410.1, 234, 321,  
417/359, 265, 405

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

D27,078 S *	5/1897	Cahill et al.	.....	D15/9
D191,687 S *	10/1961	Wessels	.....	D15/7
D205,691 S *	9/1966	Ruliffson	.....	D15/7
D262,538 S *	1/1982	Erikson	.....	D15/7
D514,125 S *	1/2006	Cook	.....	D15/7
D515,590 S *	2/2006	Freitas	.....	D15/7
D583,391 S *	12/2008	Metcalf	.....	D15/7
D586,826 S *	2/2009	Cantrill et al.	.....	D15/7
D603,878 S *	11/2009	Chu	.....	D15/9
2005/0013688 A1	1/2005	Nishi et al.		

**FOREIGN PATENT DOCUMENTS**

JP	10-238495 A	9/1998
JP	2006-291937 A	10/2006
JP	1290072 S	12/2006
JP	1290073 S	12/2006
JP	1290074 S	12/2006
JP	1290390 S	12/2006
JP	1290391 S	12/2006
JP	1295382 S	3/2007

JP	1295624 S	3/2007
JP	1315873 S	11/2007
JP	1316218 S	12/2007
JP	1316510 S	12/2007
JP	1316511 S	12/2007

\* cited by examiner

*Primary Examiner*—Ralf Seifert

(74) *Attorney, Agent, or Firm*—Roberts Mlotkowski Safran & Cole, P.C.; Thomas W. Cole

(57) **CLAIM**

The ornamental design for a pump impeller, as shown and described.

**DESCRIPTION**

FIG. 1 is the impeller viewed obliquely from above.  
 FIG. 2 is the impeller viewed obliquely from below.  
 FIG. 3 is the impeller viewed from front.  
 FIG. 4 is the impeller viewed from back.  
 FIG. 5 is the impeller viewed from left.  
 FIG. 6 is the impeller viewed from right.  
 FIG. 7 is the impeller viewed from above.  
 FIG. 8 is the impeller viewed from below.  
 FIG. 9 is a cross section taken along the line IX—IX of FIG. 7.  
 FIG. 10 is a cross section taken along the line X—X of FIG. 7.  
 FIG. 11 is a cross section taken along the line XI—XI of FIG. 7; and,  
 FIG. 12 is a cross section taken along the line XII—XII of FIG. 7.

The impeller is provided in a pump, and draws in liquid through an inlet in the bottom shown in FIG. 2. The liquid passes through the flow path formed inside the impeller shown in the cross sections of FIGS. 9-12 and is then discharged laterally.

**1 Claim, 6 Drawing Sheets**

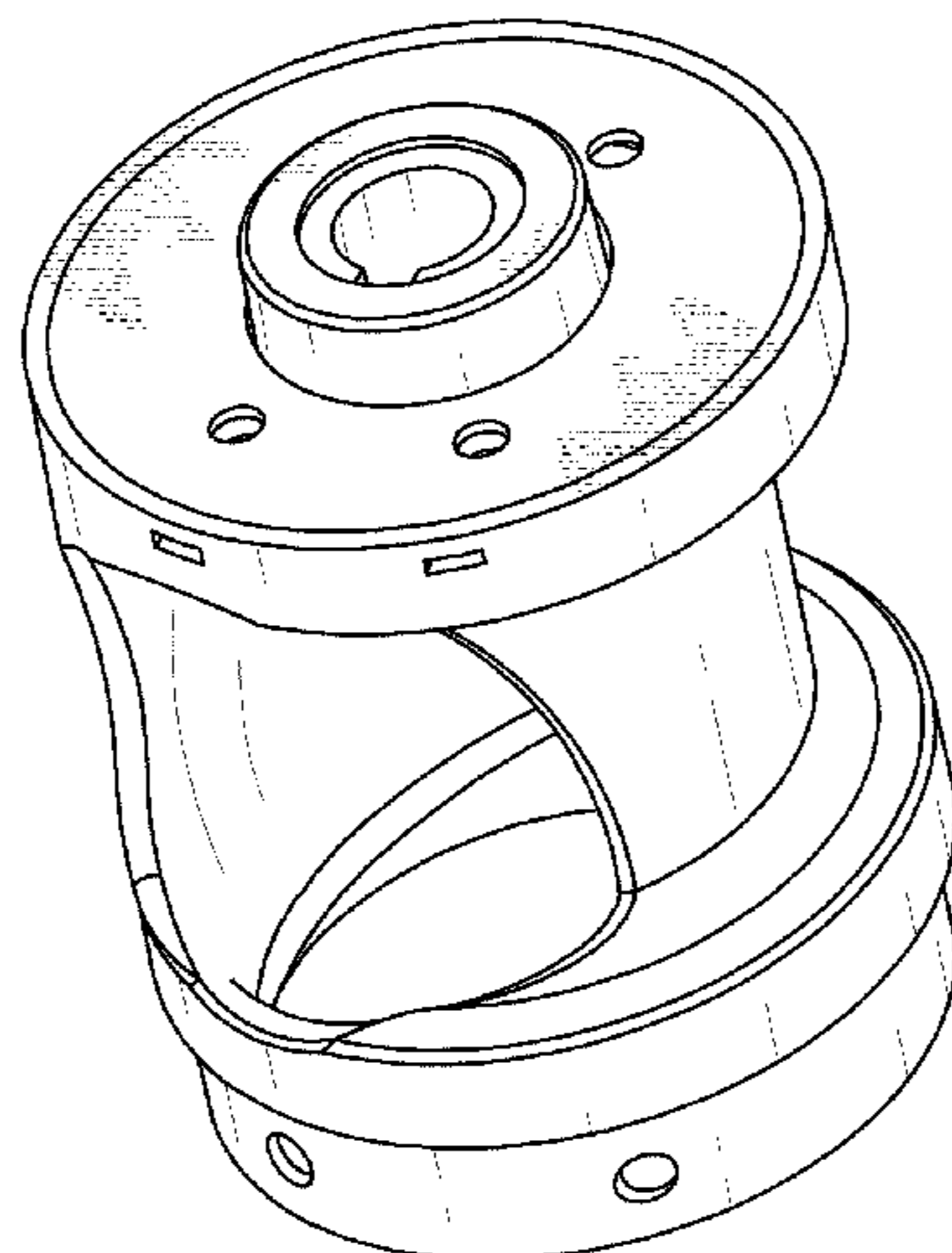


FIG. 1

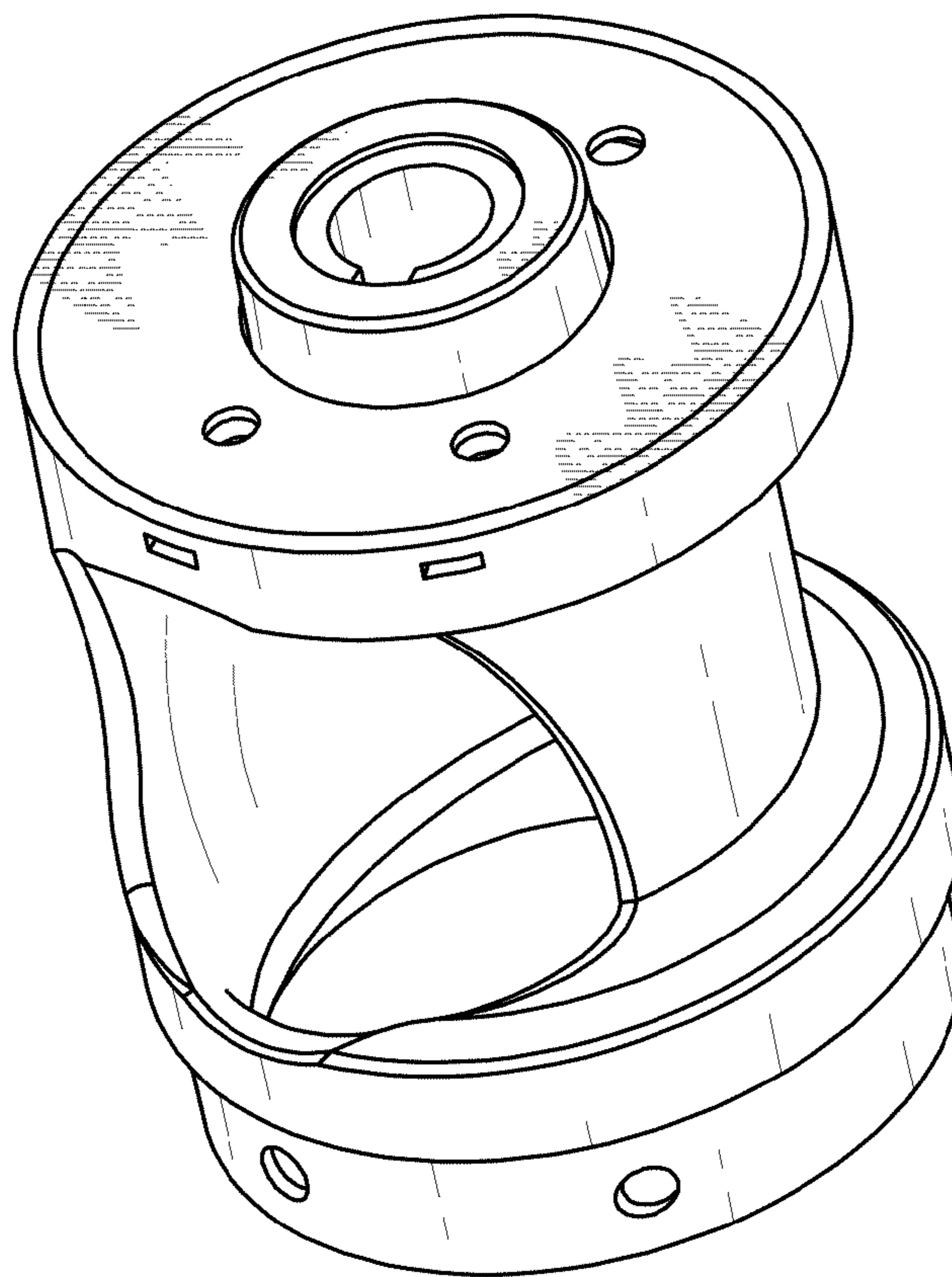


FIG. 2

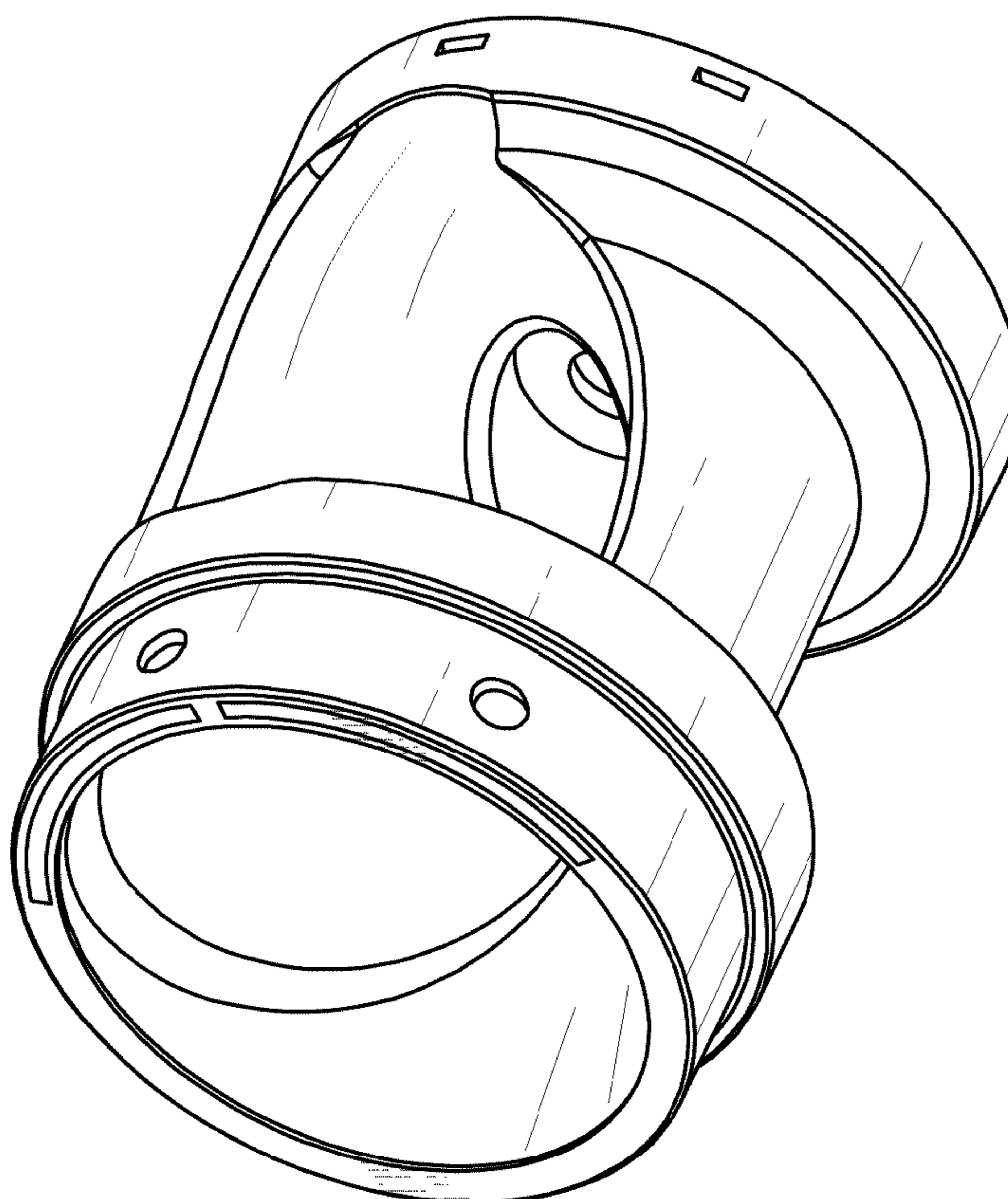


FIG. 3

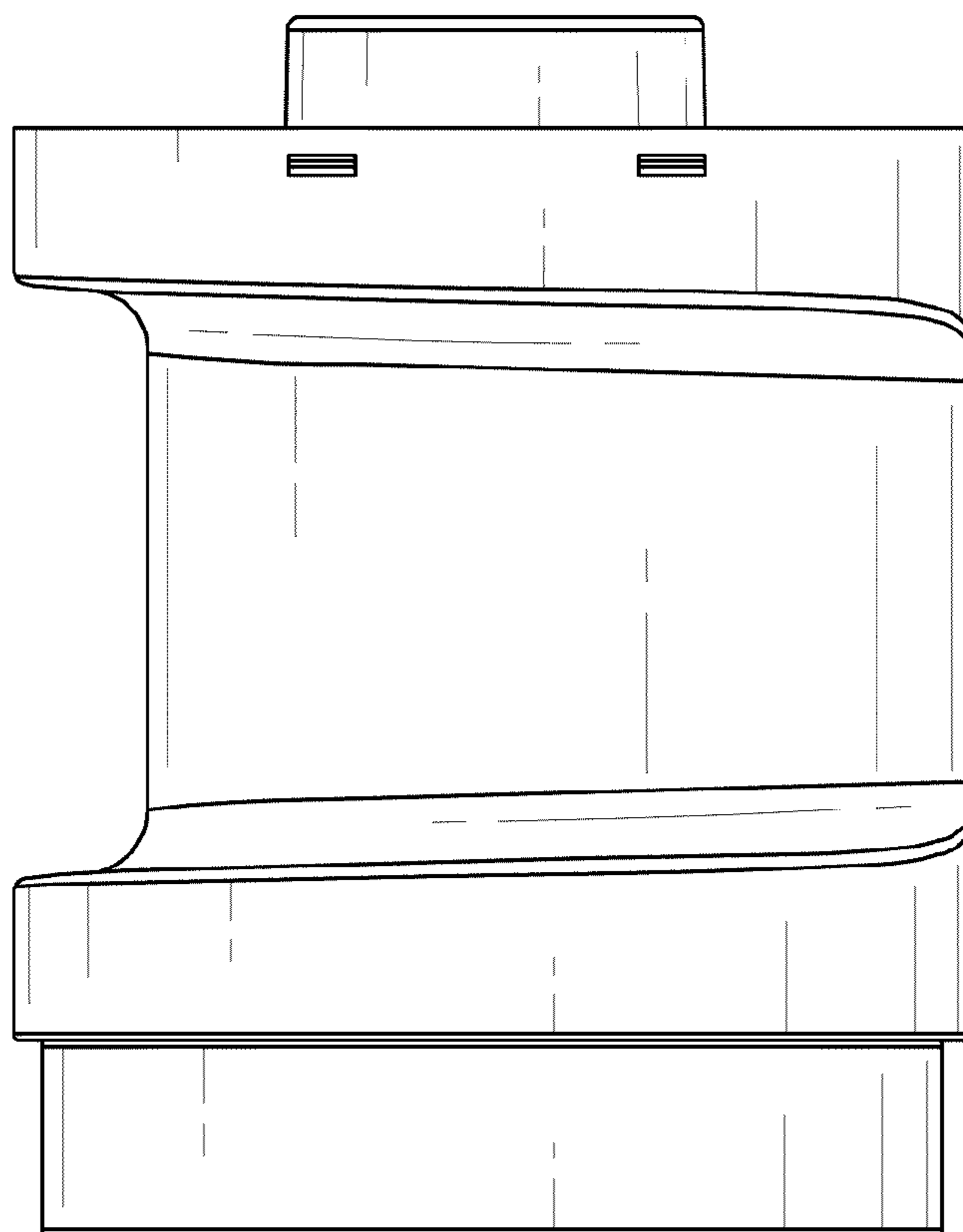


FIG. 4

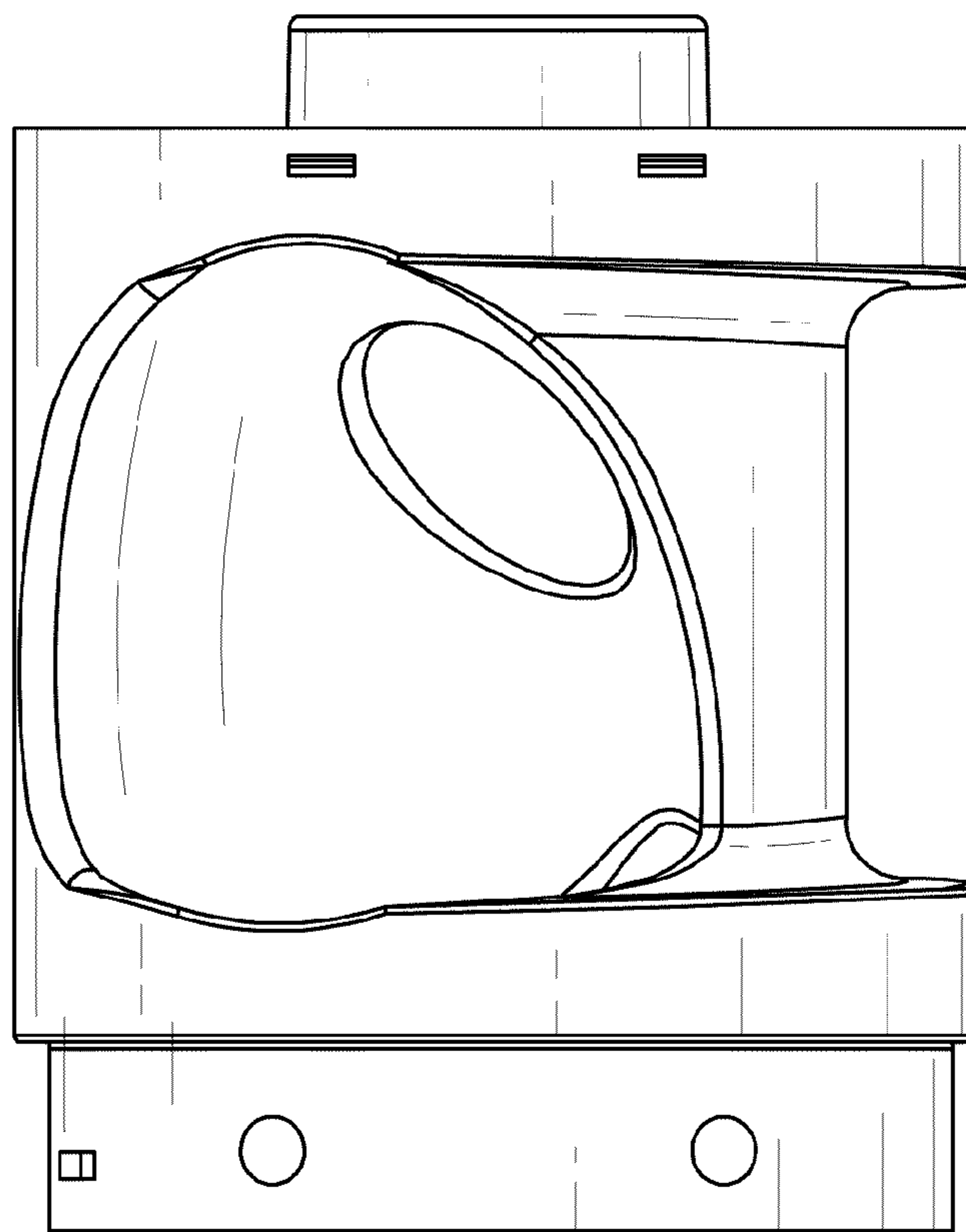


FIG. 5

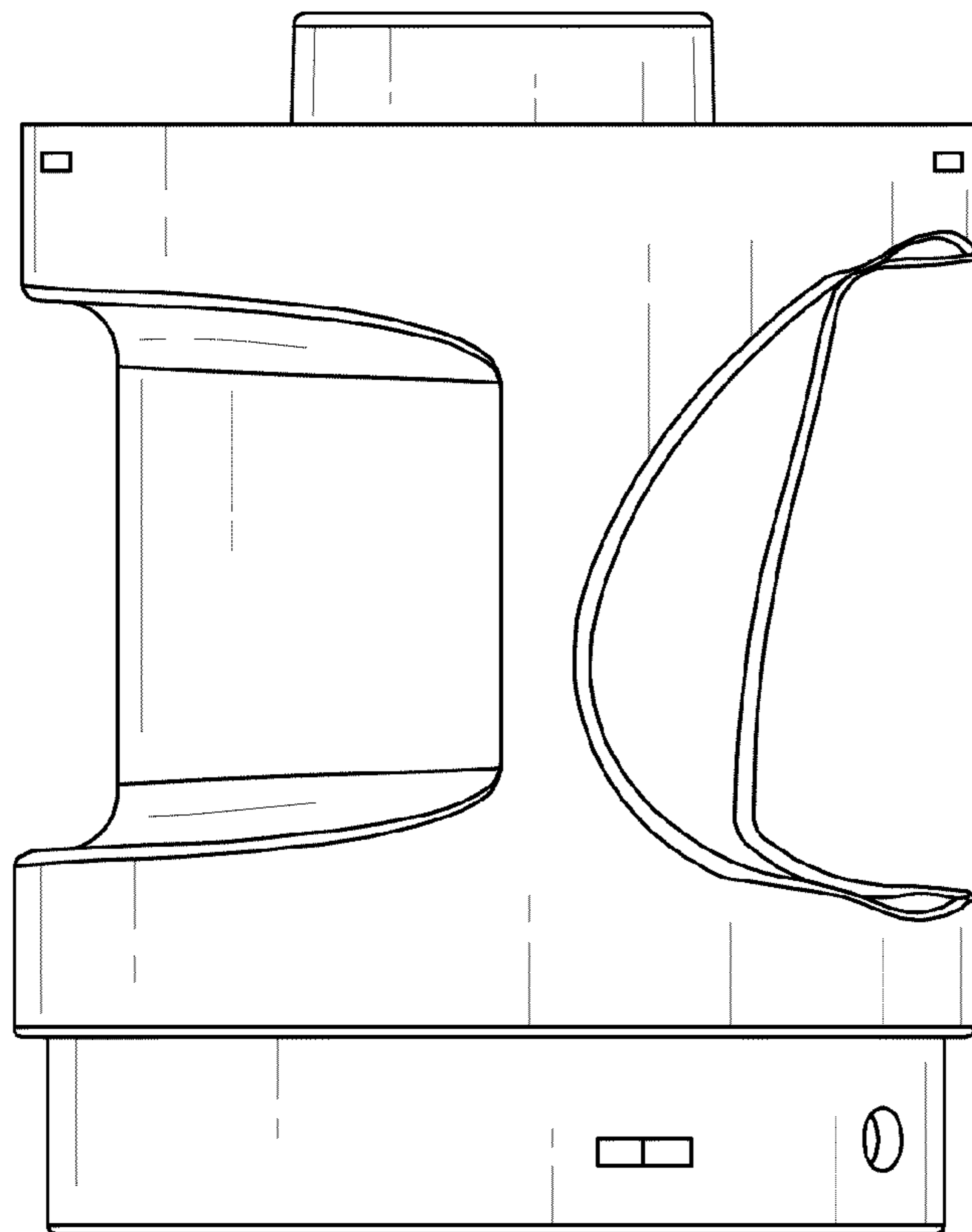


FIG. 6

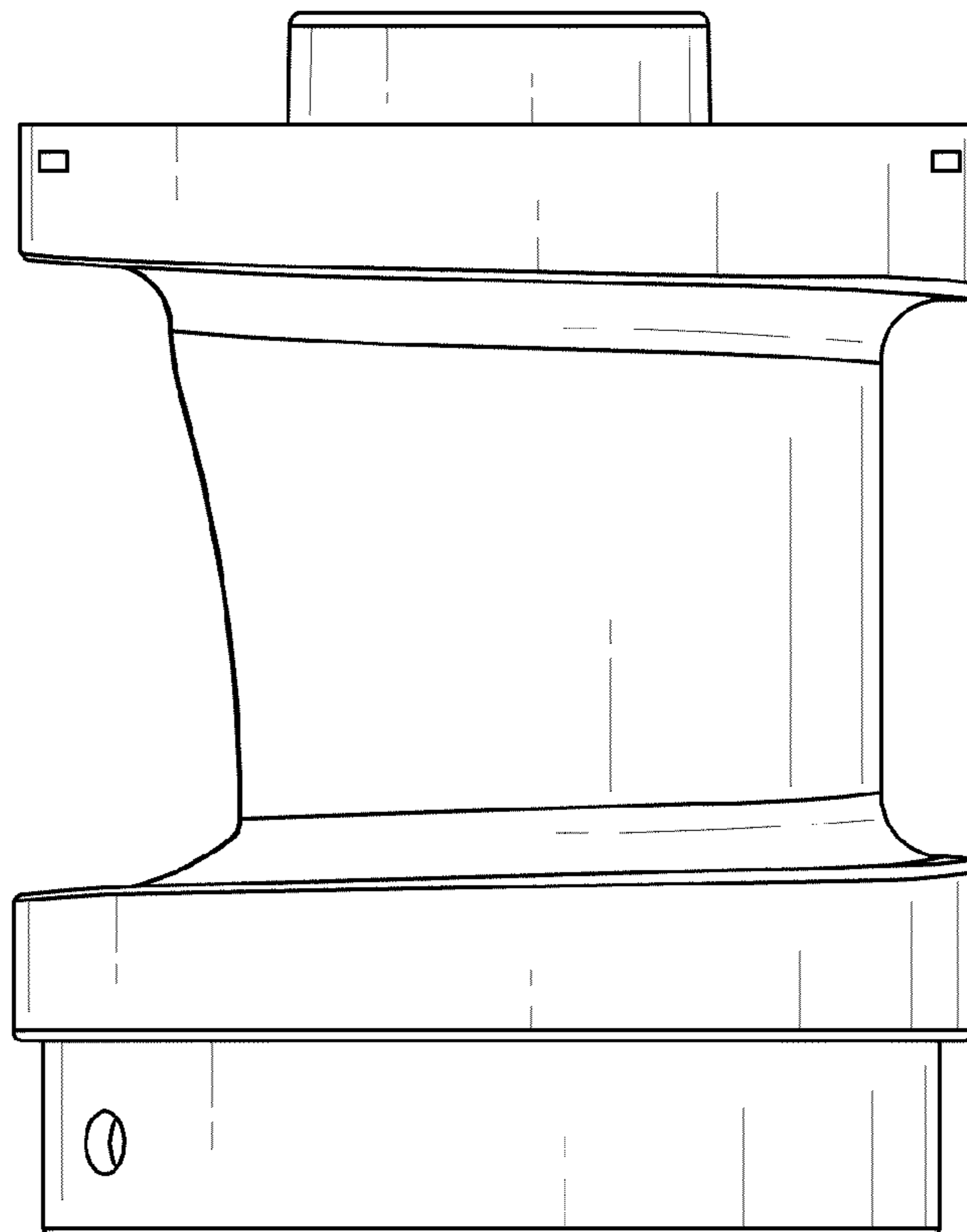


FIG. 7

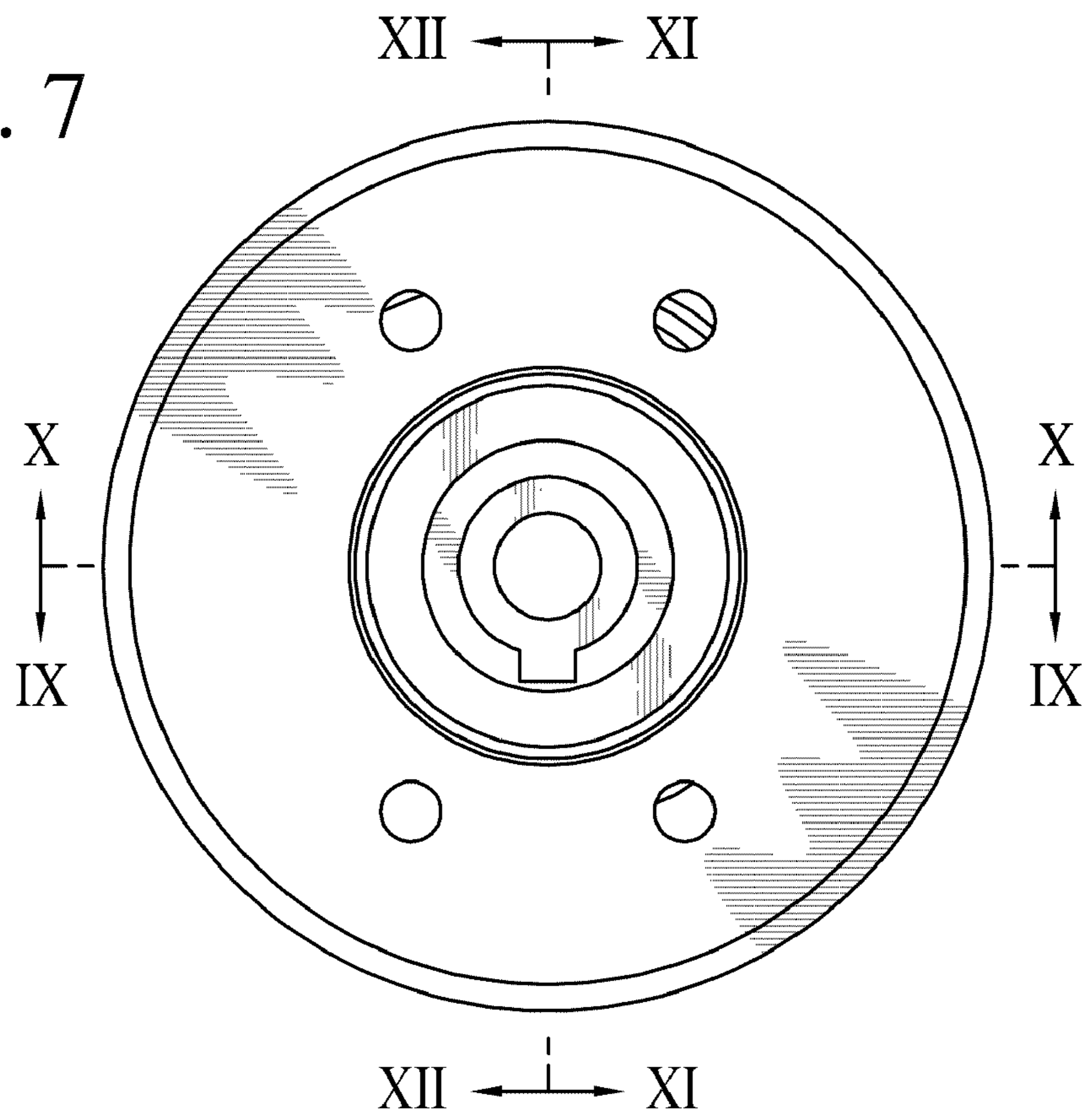


FIG. 8

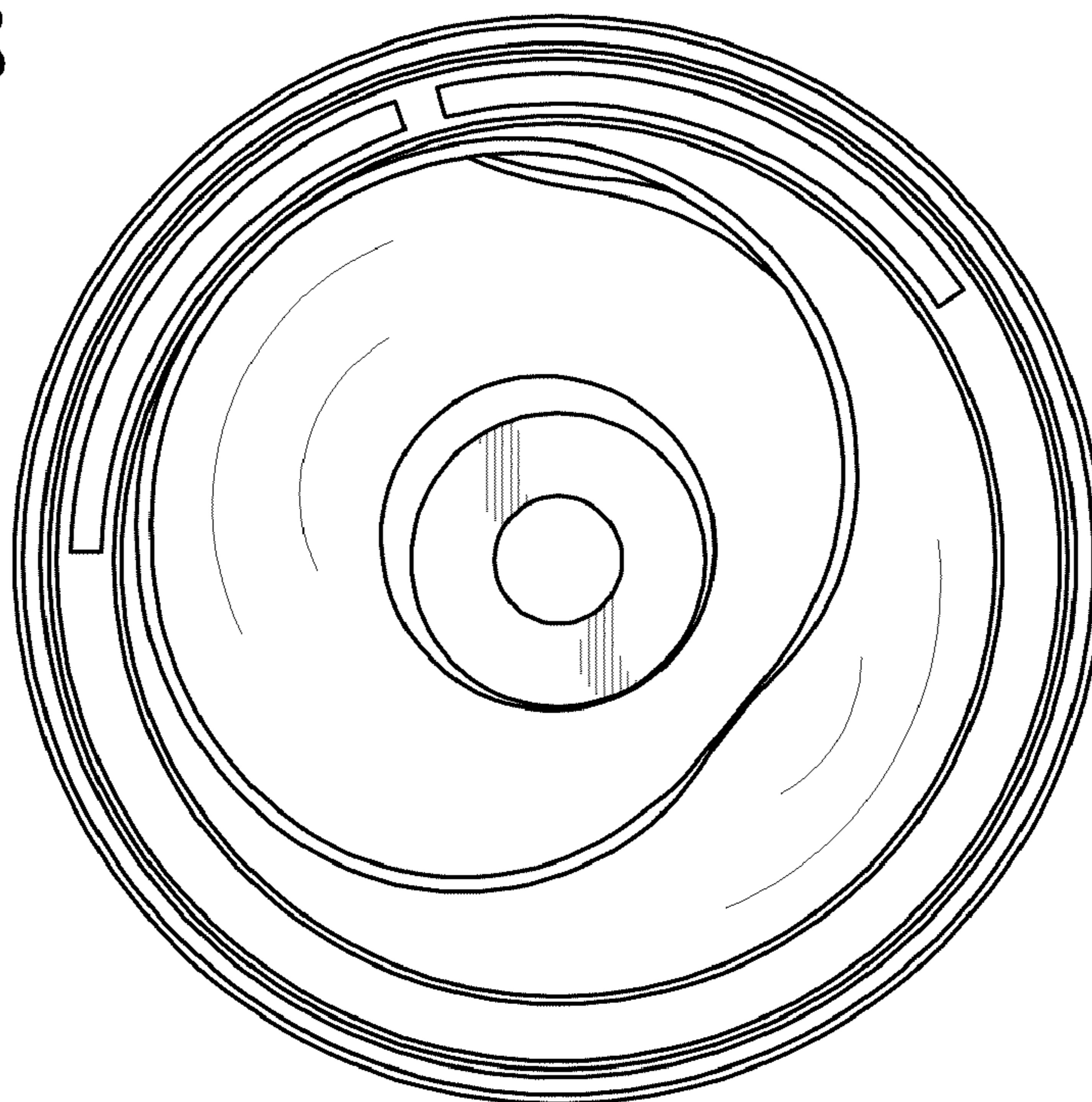


FIG. 9

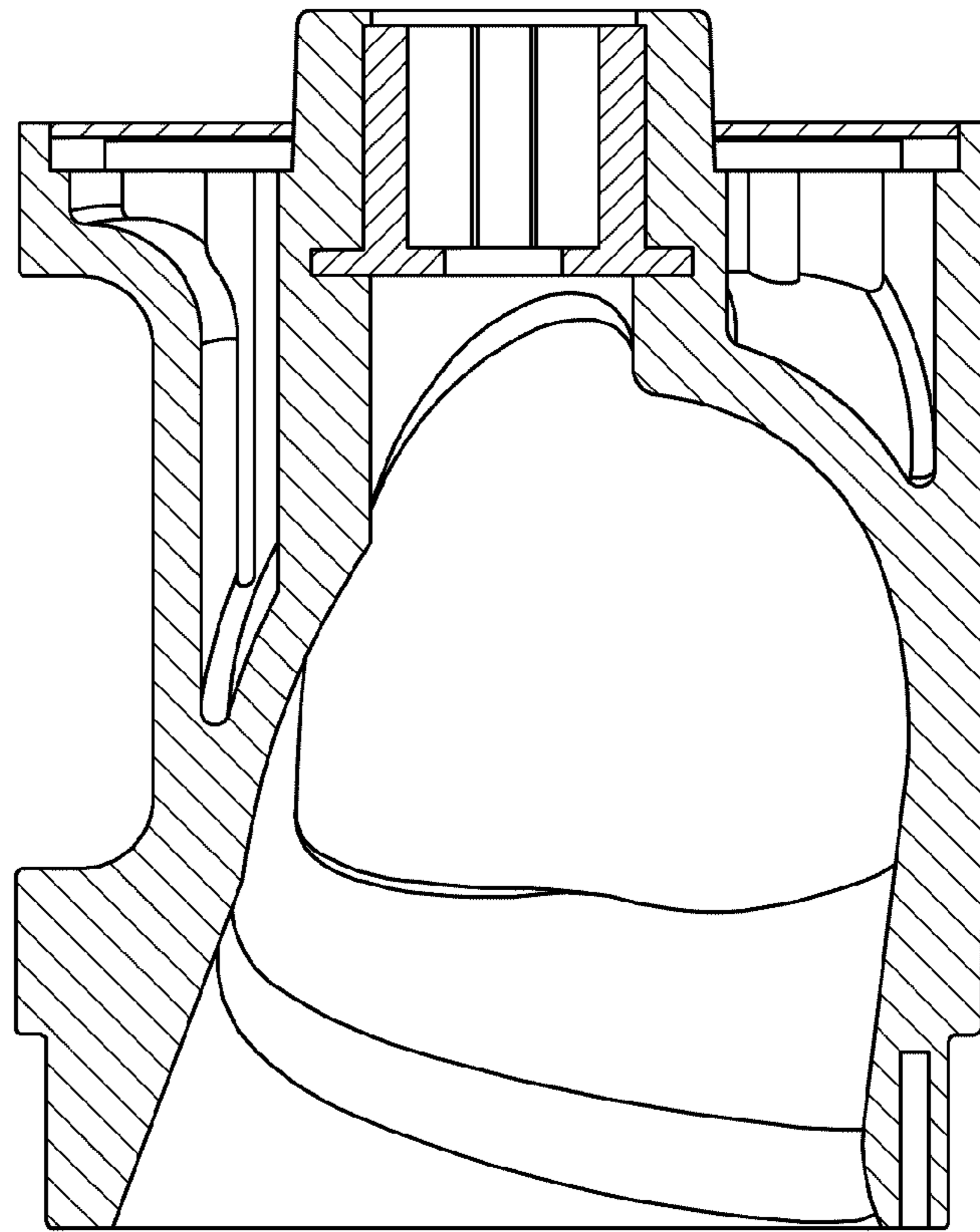


FIG. 10

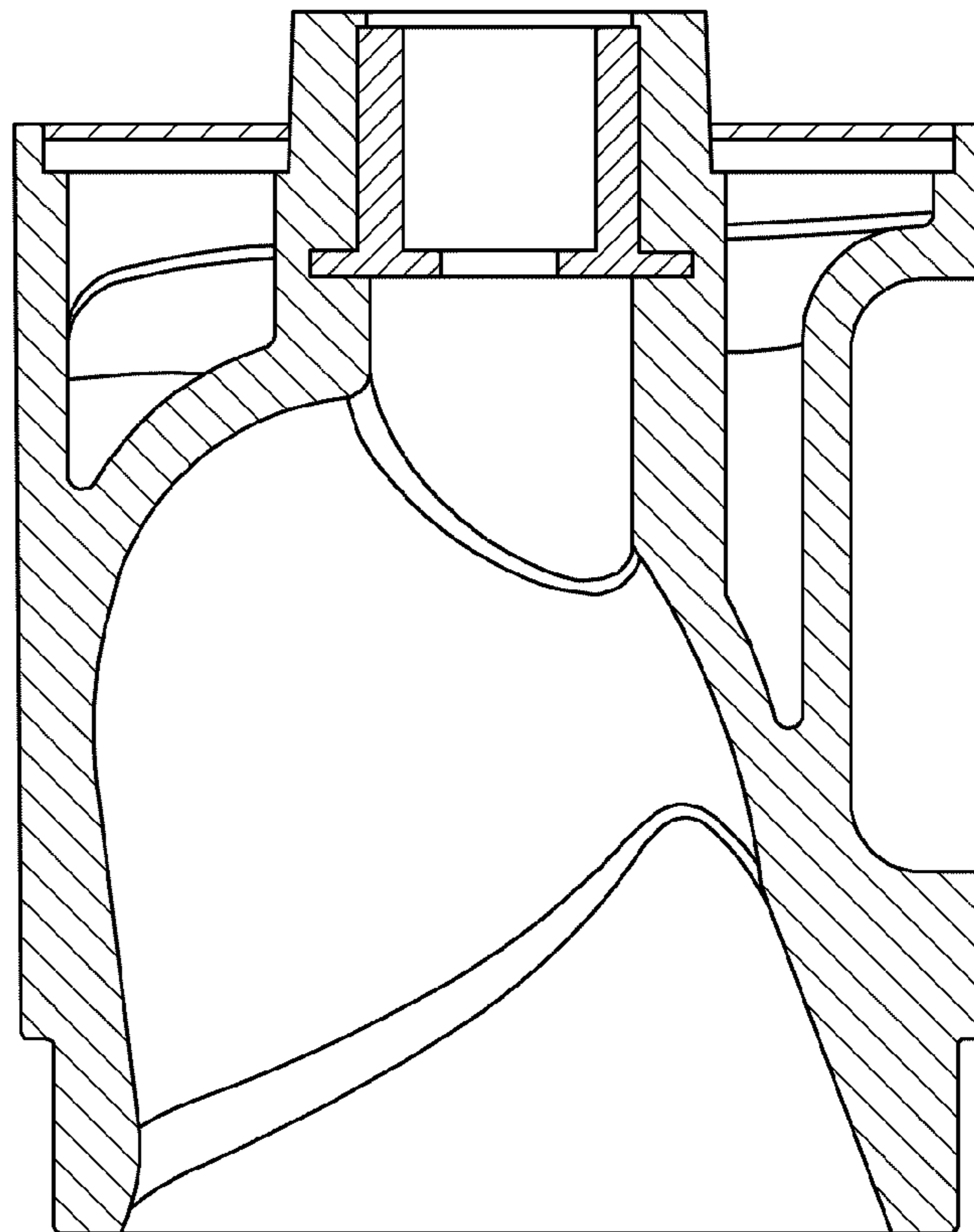


FIG. 11

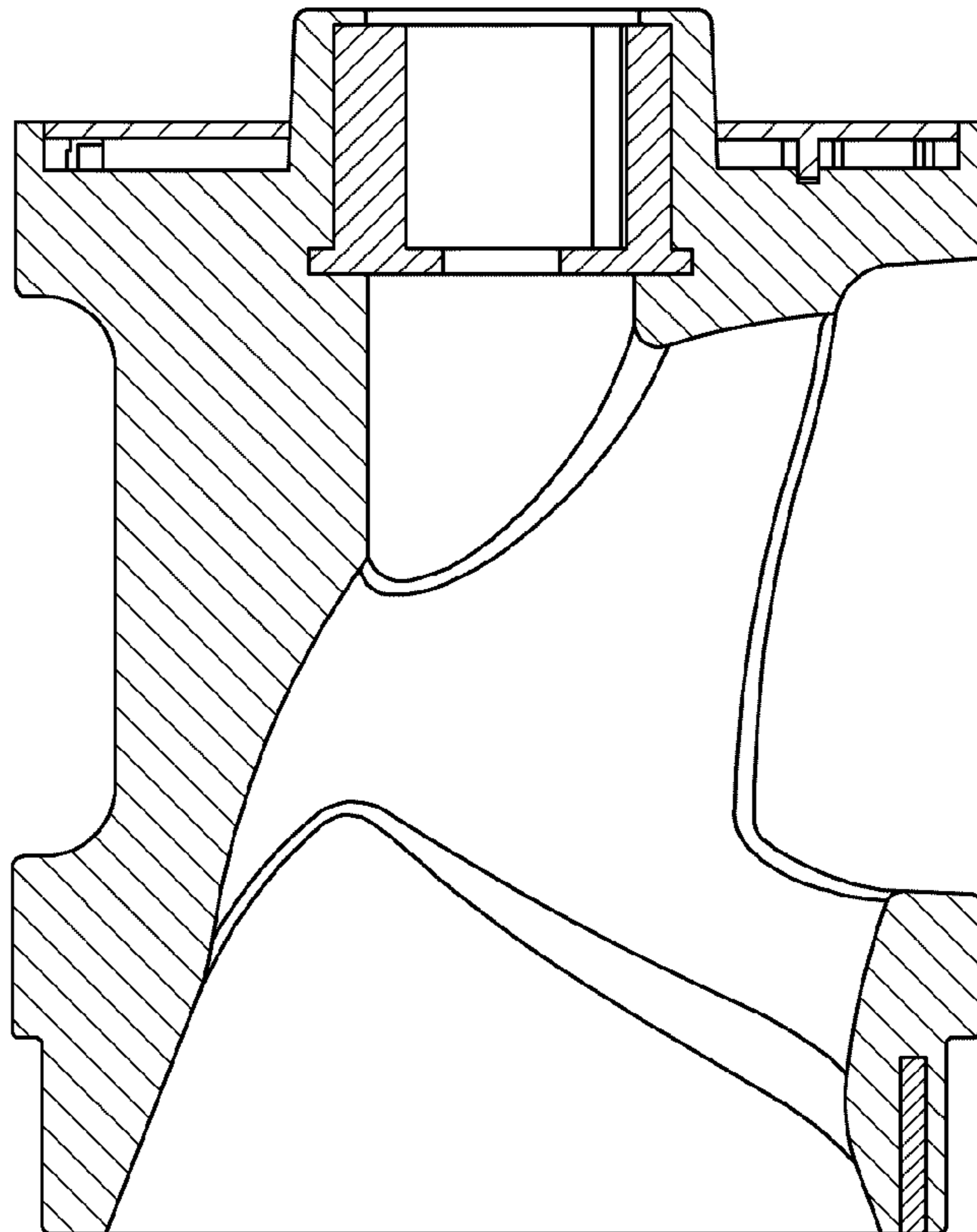


FIG. 12

