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

(10) **Patent No.:** **US D674,817 S**  
(45) **Date of Patent:** **\*\* Jan. 22, 2013**

- (54) **CASING CENTRALIZER**
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- (73) Assignee: **Top-Co Cementing Products Inc.**,  
Weatherford, TX (US)
- (\*\*) Term: **14 Years**
- (21) Appl. No.: **29/405,122**
- (22) Filed: **Oct. 28, 2011**
- (51) **LOC (9) Cl.** ..... **15-03**
- (52) **U.S. Cl.** ..... **D15/21**
- (58) **Field of Classification Search** ..... D15/10,  
D15/21; 166/384, 241.1-241.7, 213, 173,  
166/208, 382; 175/325.5, 325.1, 325.2, 325.3;  
138/108, 112; 228/155; 72/393  
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,460,632 A 7/1923 Wigle et al.  
(Continued)

FOREIGN PATENT DOCUMENTS

CA 1032867 6/1978  
(Continued)

OTHER PUBLICATIONS

U.S. Appl. No. 29/405,113, filed Oct. 28, 2011, Andrigo et al.  
(Continued)

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(57) **CLAIM**

The ornamental design for a casing centralizer, as shown and described.

**DESCRIPTION**

This application is related to (1) U.S. Design application Ser. No. 29/405,113, filed Oct. 28, 2011; (2) U.S. Design application Ser. No. 29/405,117, filed Oct. 28, 2011; (3) U.S.

Design application Ser. No. 29/405,121, filed Oct. 28, 2011; (4) U.S. Design application Ser. No. 29/405,124, filed Oct. 28, 2011; (5) U.S. Design application Ser. No. 29/405,130, filed Oct. 28, 2011; (6) U.S. Design application Ser. No. 29/405,133, filed Oct. 28, 2011, the entire disclosures of which are incorporated herein by reference.

FIG. 1 is a perspective view of a casing centralizer showing our new design according to a first embodiment;

FIG. 2 is an elevational view of the first embodiment;

FIG. 3 is a top plan view of the first embodiment, the bottom plan view of the first embodiment being identical to the top plan view of the first embodiment;

FIG. 4 is a sectional view of the first embodiment taken along line 4-4 of FIG. 3;

FIG. 5 is an elevational view of the casing centralizer according to a second embodiment, the second embodiment being identical to the first embodiment except that the second embodiment has one indeterminate length as indicated in FIG. 5;

FIG. 6 is a top plan view of the casing centralizer according to a third embodiment, the third embodiment being identical to the first embodiment except that the third embodiment has six indeterminate lengths as indicated in FIG. 6;

FIG. 7 is a perspective view of a casing centralizer showing our new design according to a fourth embodiment;

FIG. 8 is an elevational view of the fourth embodiment;

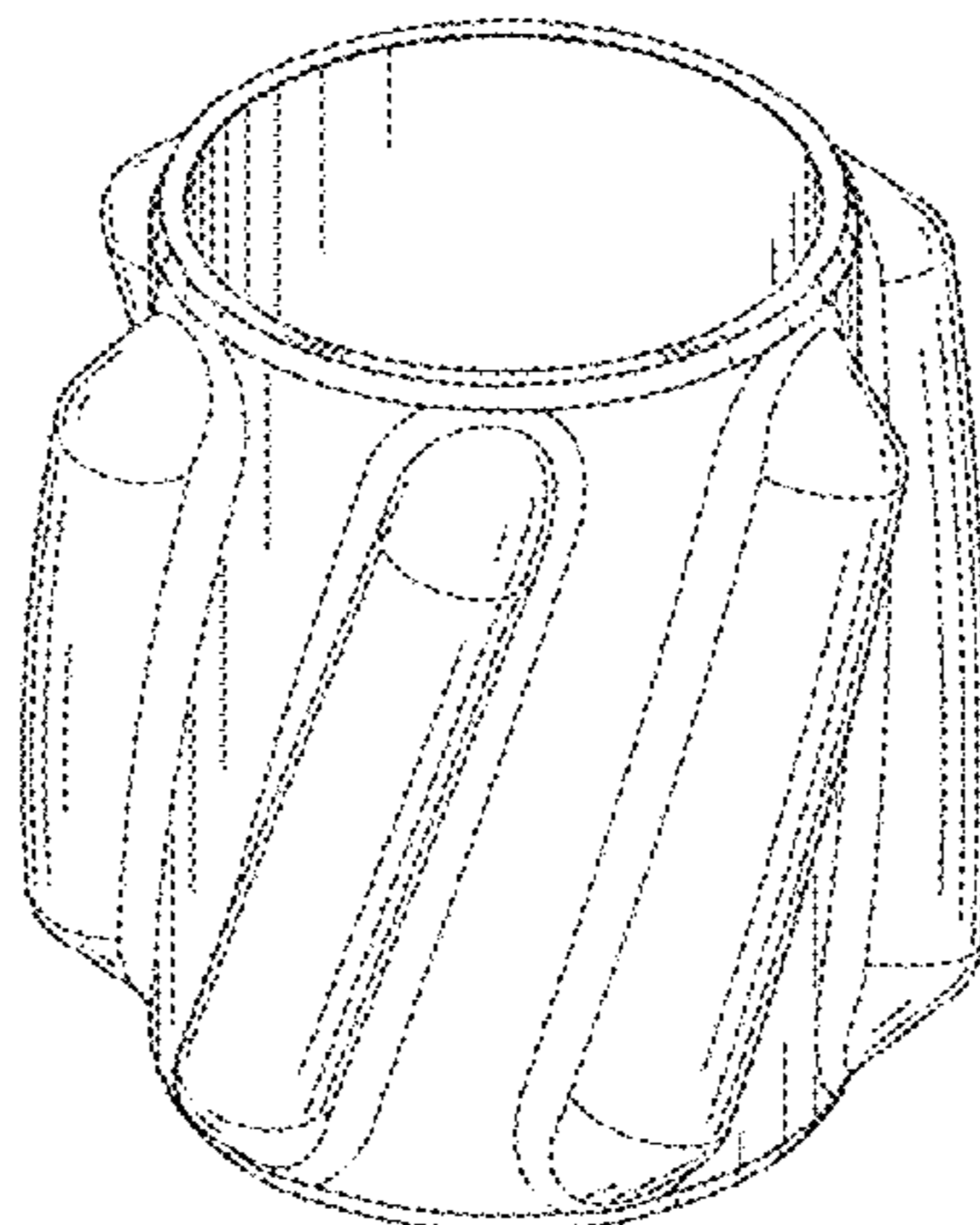
FIG. 9 is a top plan view of the fourth embodiment, the bottom plan view of the fourth embodiment being identical to the top plan view of the fourth embodiment;

FIG. 10 is a sectional view of the fourth embodiment taken along line 10-10 of FIG. 9;

FIG. 11 is an elevational view of the casing centralizer according to a fifth embodiment, the fifth embodiment being identical to the fourth embodiment except that the fifth embodiment has one indeterminate length as indicated in FIG. 11; and,

FIG. 12 is a perspective view of the casing centralizer showing our new design according to a sixth embodiment, the sixth embodiment being identical to the fourth embodiment except that the sixth embodiment has six indeterminate lengths as indicated in FIG. 12.

**1 Claim, 8 Drawing Sheets**



# US D674,817 S

## U.S. PATENT DOCUMENTS

1,767,198	A	6/1930	Baker	
1,807,050	A	5/1931	Stolz	
2,166,116	A	7/1939	Bettis	
2,602,512	A	7/1952	Baker	
2,659,439	A	11/1953	Baker	
2,715,552	A	8/1955	Lane	
2,943,009	A	6/1960	Mirsky et al.	
3,052,310	A *	9/1962	Kinzbach .....	175/406
3,080,926	A	3/1963	Remp, Jr.	
3,125,382	A	3/1964	Herndon et al.	
3,128,827	A	4/1964	Kluck	
3,145,785	A *	8/1964	Kellner .....	175/73
3,289,767	A	12/1966	Seward et al.	
3,292,708	A	12/1966	Mundt	
3,320,004	A	5/1967	Garrett	
3,410,613	A	11/1968	Kuus	
3,528,499	A	9/1970	Collett	
3,613,783	A	10/1971	Seabourn	
3,762,472	A	10/1973	Alexander, Jr.	
3,933,203	A	1/1976	Evans	
3,955,625	A	5/1976	Hughes et al.	
3,963,075	A	6/1976	Evans	
4,050,514	A	9/1977	Prenn	
4,088,185	A	5/1978	Carson	
4,146,060	A	3/1979	Garrett	
4,275,935	A	6/1981	Thompson et al.	
4,372,562	A	2/1983	Carter, Jr.	
4,396,234	A	8/1983	Garrett	
4,436,118	A	3/1984	Garrett	
4,595,058	A	6/1986	Nations	
4,658,896	A	4/1987	Milam	
4,757,861	A	7/1988	Klyne	
4,796,670	A	1/1989	Russell et al.	
4,825,947	A	5/1989	Mikolajczyk	
4,858,688	A	8/1989	Edwards et al.	
4,919,202	A	4/1990	Clintberg	
4,938,299	A	7/1990	Jelsma	
4,984,633	A	1/1991	Langer et al.	
5,095,981	A	3/1992	Mikolajczyk	
5,115,863	A	5/1992	Olinger	
5,179,140	A	1/1993	Ariannejad	
5,191,938	A	3/1993	Sable et al.	
5,247,990	A	9/1993	Sudol et al.	
5,277,254	A	1/1994	Rullman et al.	
5,332,049	A	7/1994	Tew	
5,339,896	A	8/1994	Hart et al.	
5,492,174	A	2/1996	O'Hair	
5,692,562	A	12/1997	Squires	
5,697,442	A	12/1997	Baldrige	
5,740,862	A *	4/1998	Sable .....	166/241.2
5,797,455	A	8/1998	Barron et al.	
5,860,760	A	1/1999	Kirk	
5,908,072	A	6/1999	Hawkins	
5,937,948	A	8/1999	Robbins, III	
6,006,830	A	12/1999	Barron et al.	
6,102,118	A	8/2000	Moore	
6,435,275	B1	8/2002	Kirk et al.	
6,439,304	B2	8/2002	Eaton	
6,585,052	B2	7/2003	Angman et al.	
6,659,173	B2	12/2003	Kirk et al.	
6,666,267	B1	12/2003	Charlton	
6,830,102	B2	12/2004	Kirk et al.	
6,845,816	B2	1/2005	Kirk et al.	
7,082,997	B2	8/2006	Slack	

7,096,939	B2	8/2006	Kirk et al.	
7,159,668	B2	1/2007	Herrera	
7,357,178	B2	4/2008	Thornton	
7,409,758	B2	8/2008	Le et al.	
7,604,059	B2	10/2009	Thornton	
7,694,733	B2	4/2010	Clark et al.	
7,814,633	B2	10/2010	Slack	
8,167,034	B2 *	5/2012	Castro .....	166/241.6
2001/0032722	A1	10/2001	Eaton	
2002/0023749	A1	2/2002	Kirk et al.	
2003/0164236	A1	9/2003	Thornton	
2006/0070731	A1	4/2006	Fouillou et al.	
2008/0164019	A1	7/2008	Angman	
2010/0059218	A1	3/2010	Whitelaw	

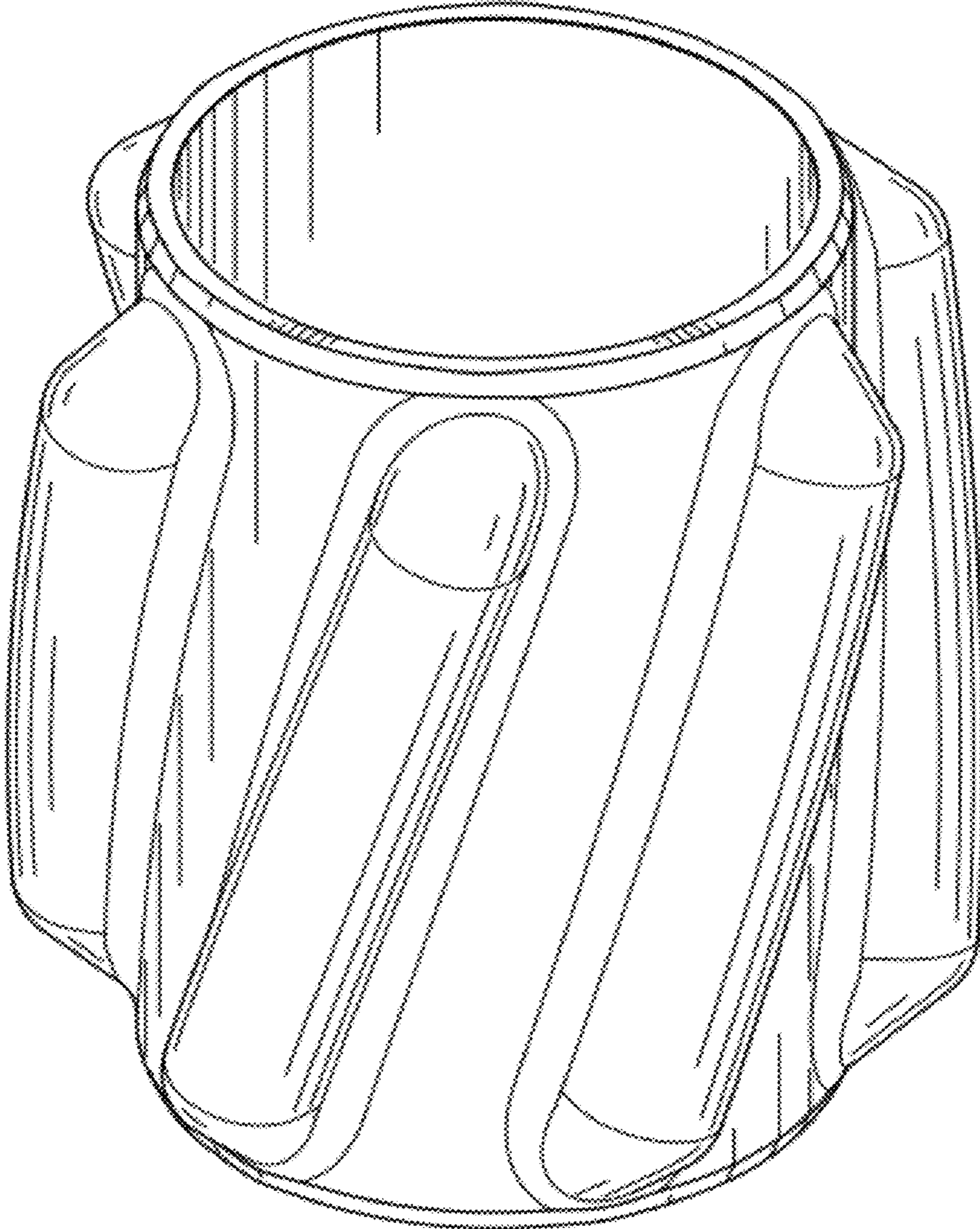
## FOREIGN PATENT DOCUMENTS

CA	1154380	9/1983
EP	0138603	4/1985
EP	0297716	1/1989
EP	333450	9/1989
EP	0671546	9/1995
GB	682362	11/1952
GB	2016063	9/1979
GB	2171436	8/1986
GB	2226520	7/1990
GB	2233690	1/1991
GB	2249333	5/1992
GB	2275284	8/1994
GB	2282615	4/1995
GB	2285649	7/1995
GB	2288198	10/1995
GB	2304753	3/1997
GB	2329209	2/1998
WO	WO 91/05936	5/1991
WO	WO 95/10685	4/1995
WO	WO 95/21986	8/1995
WO	WO 96/34173	10/1996
WO	WO 98/37302	8/1998
WO	WO 99/25949	5/1999

## OTHER PUBLICATIONS

U.S. Appl. No. 29/405,117, filed Oct. 28, 2011, Andrigo et al.  
 U.S. Appl. No. 29/405,121, filed Oct. 28, 2011, Andrigo et al.  
 U.S. Appl. No. 29/405,124, filed Oct. 28, 2011, Andrigo et al.  
 U.S. Appl. No. 29/405,130, filed Oct. 28, 2011, Andrigo et al.  
 U.S. Appl. No. 29/405,133, filed Oct. 28, 2011, Andrigo et al.  
 Top-Co Tech News, "Primary Cementing Process and Application of Casing Accessories," vol. 1, Issue 2, Dec. 2009, 2 pages.  
 Top-Co Type 346 Stand Off Band—Phenolizer, May 1, 2009.  
 Nicholson et al., Geothermal-Well Completions: A Survey and Technical Evaluation of Existing Equipment and Needs, Jul. 1982, pp. 3-1 through 3-41.  
 Notice of Allowance mailed Feb. 27, 2012 by the USPTO regarding U.S. Appl. No. 29/405,113.  
 Office Action mailed Feb. 29, 2012 by the USPTO regarding U.S. Appl. No. 29/405,117.  
 Notice of Allowance mailed Feb. 27, 2012 by the USPTO regarding U.S. Appl. No. 29/405,121.  
 Office Action mailed Feb. 29, 2012 by the USPTO regarding U.S. Appl. No. 29/405,124.  
 Notice of Allowance mailed Feb. 27, 2012 by the USPTO regarding U.S. Appl. No. 29/405,133.

\* cited by examiner



*Fig. 1*

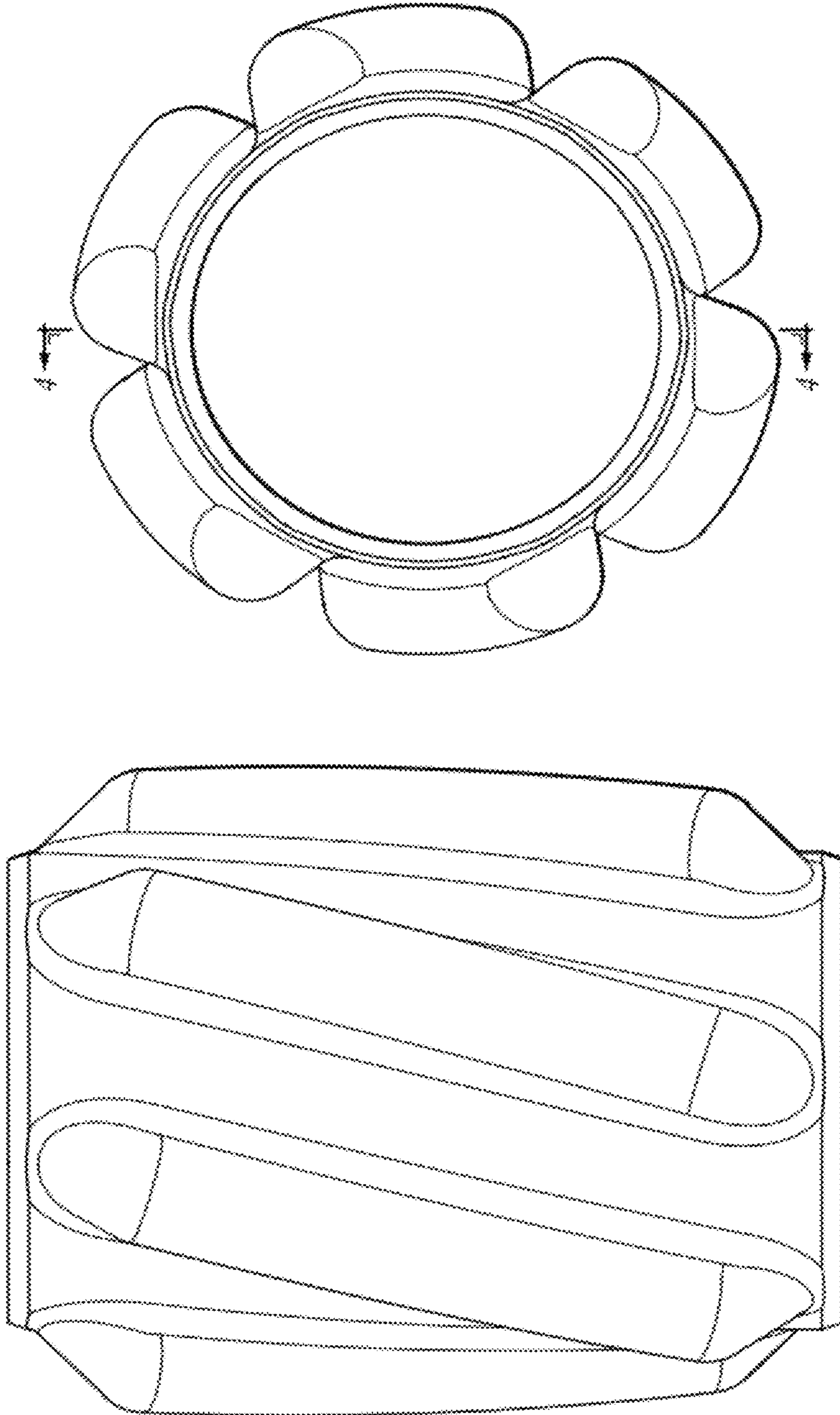


Fig. 3

Fig. 2

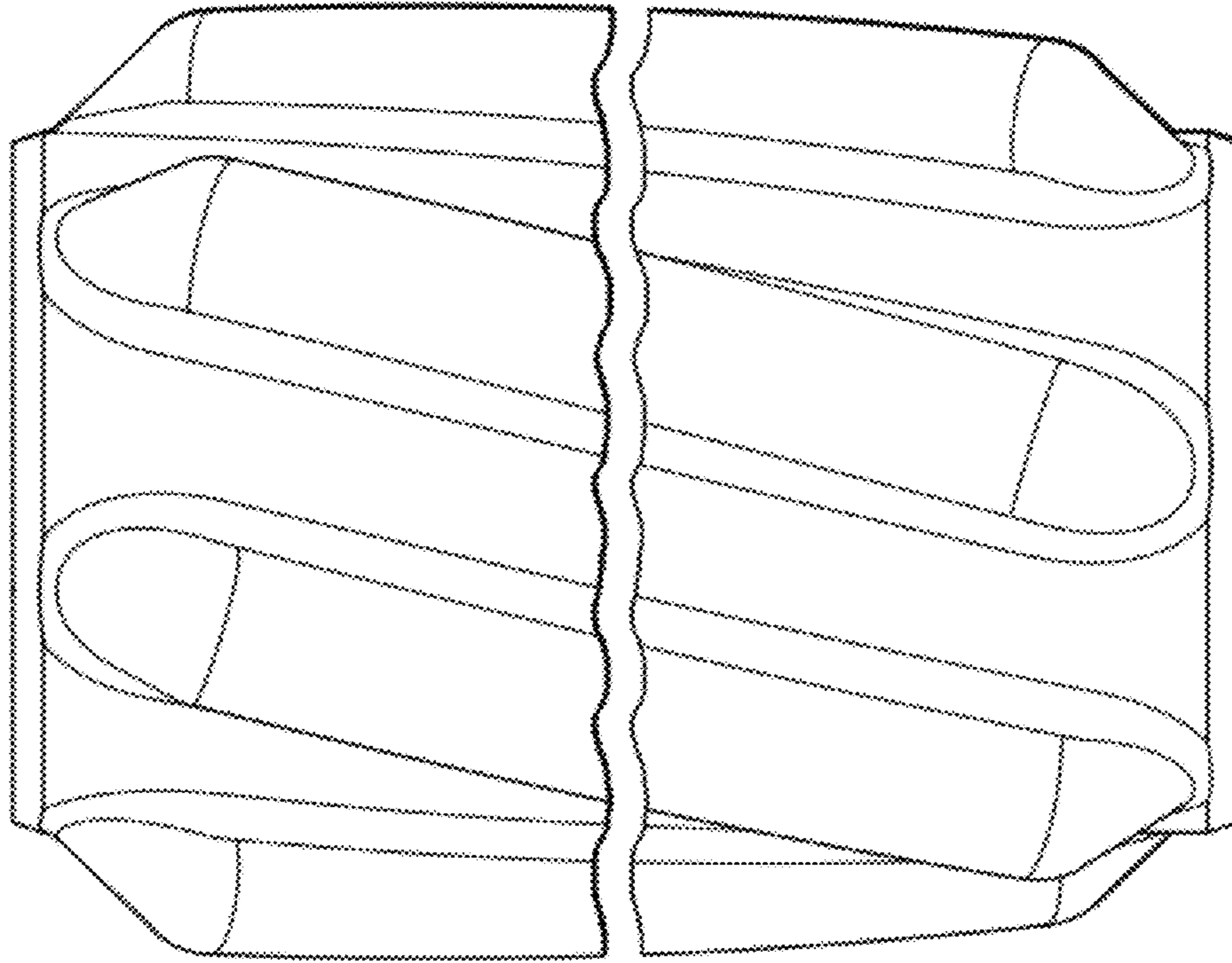


Fig. 5

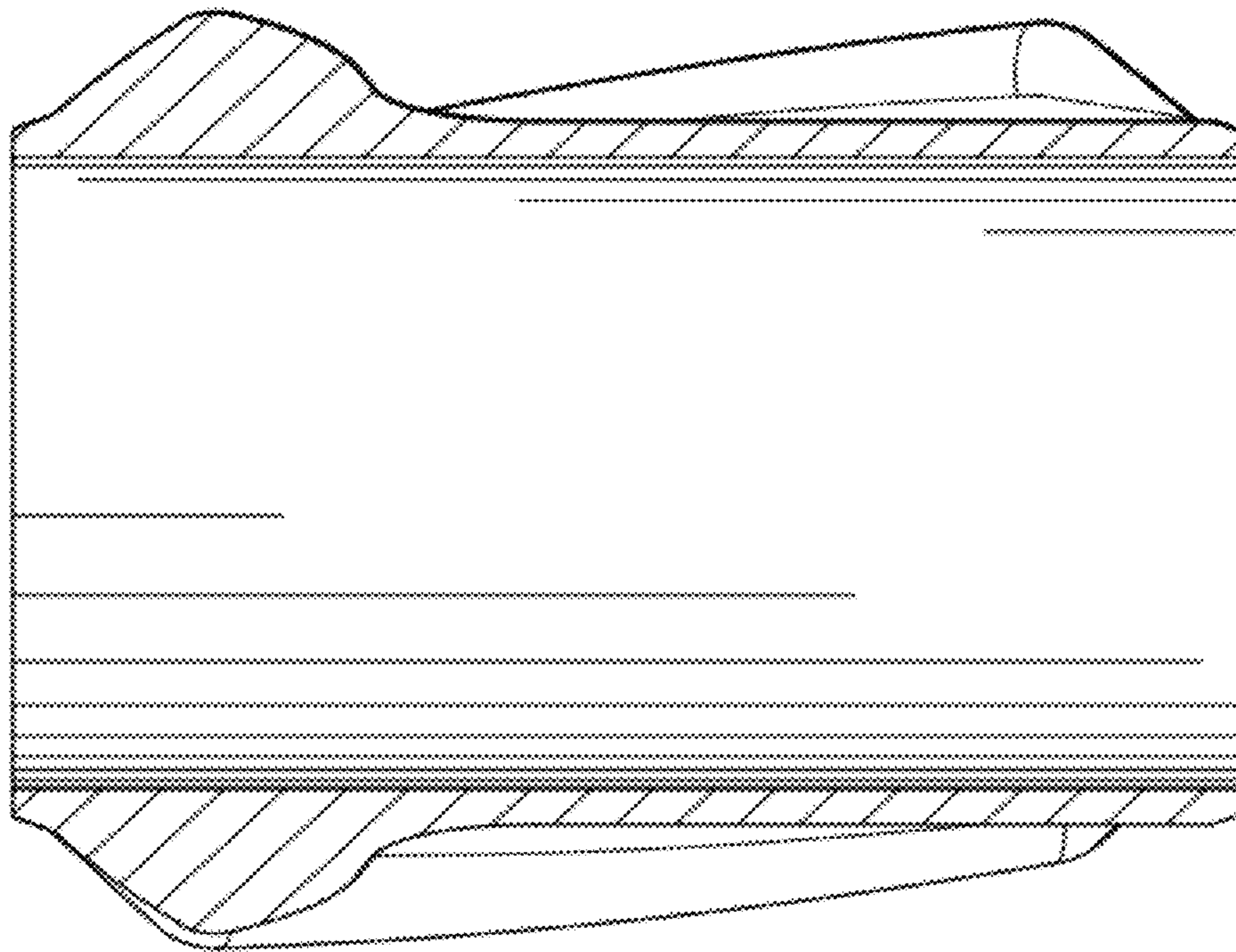
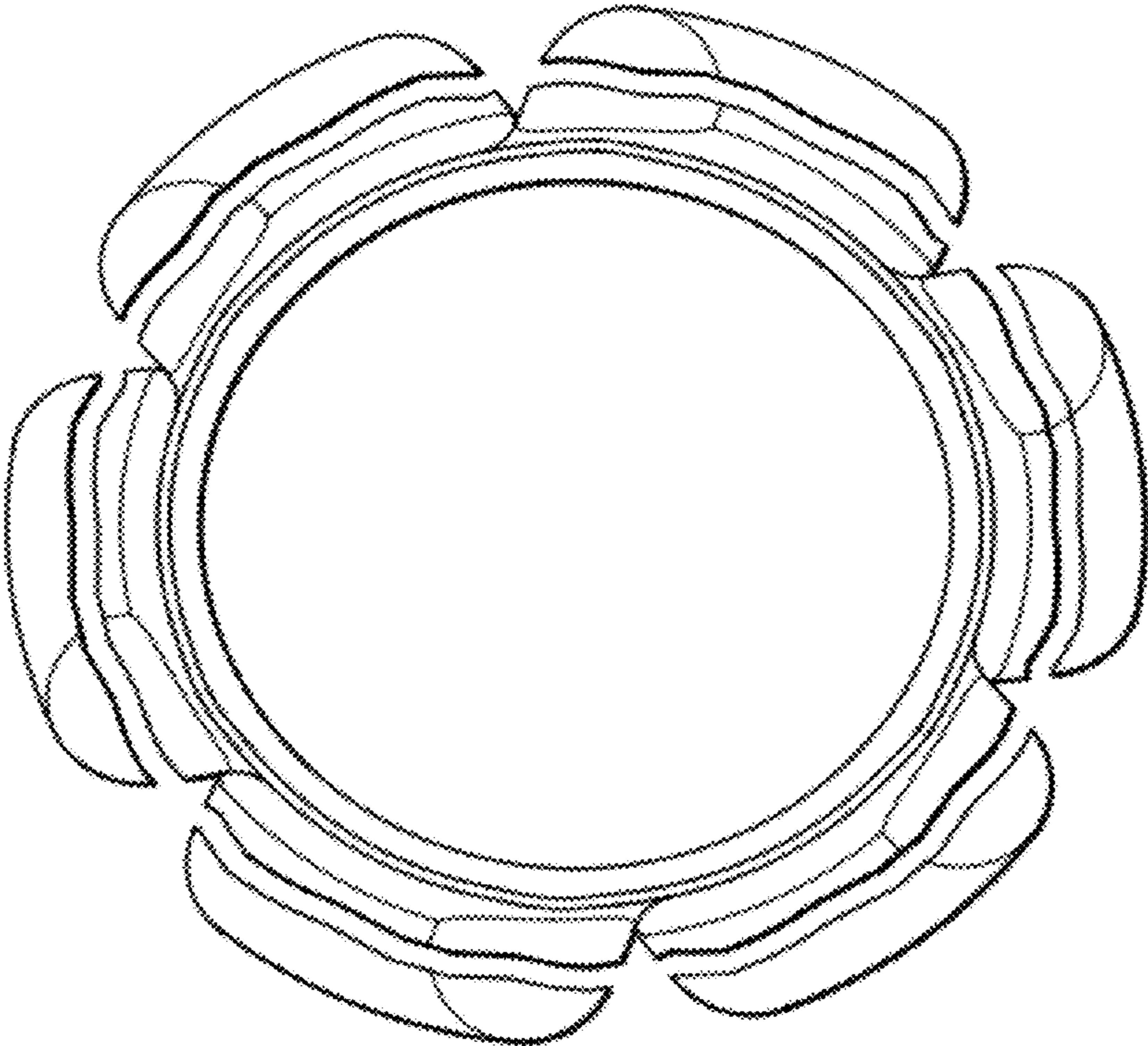
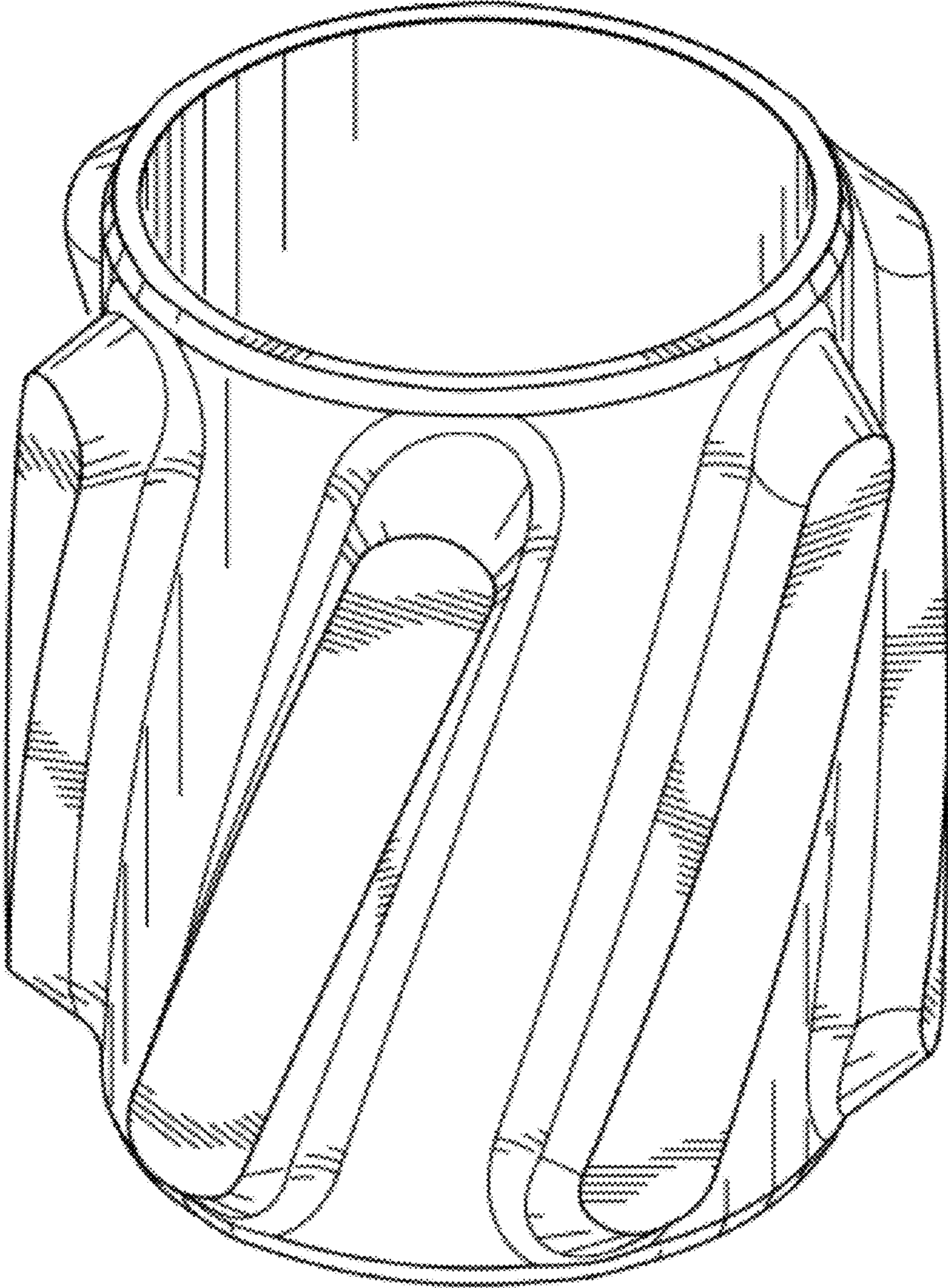


Fig. 4



*Fig. 6*



*Fig. 7*

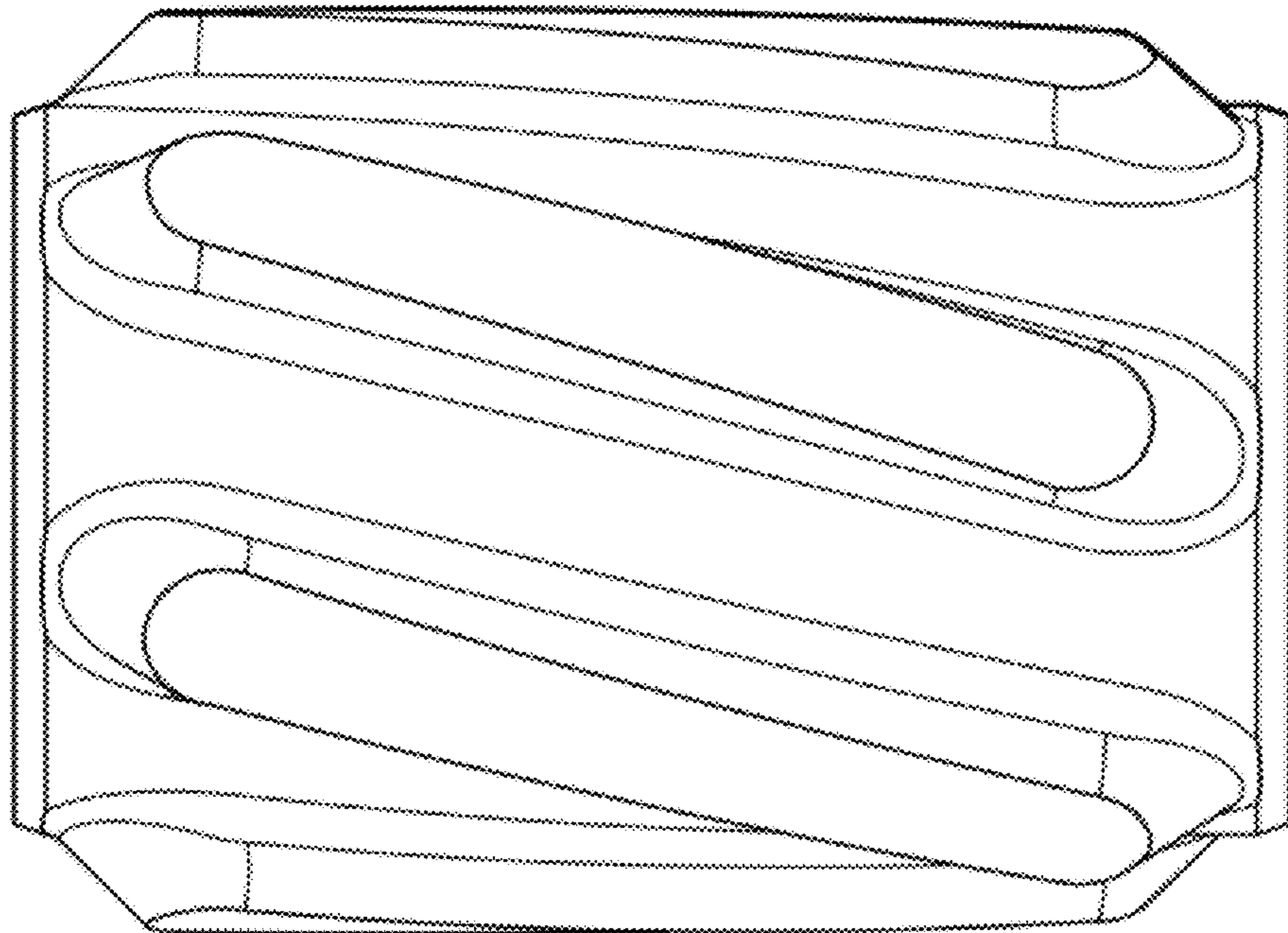


Fig. 8

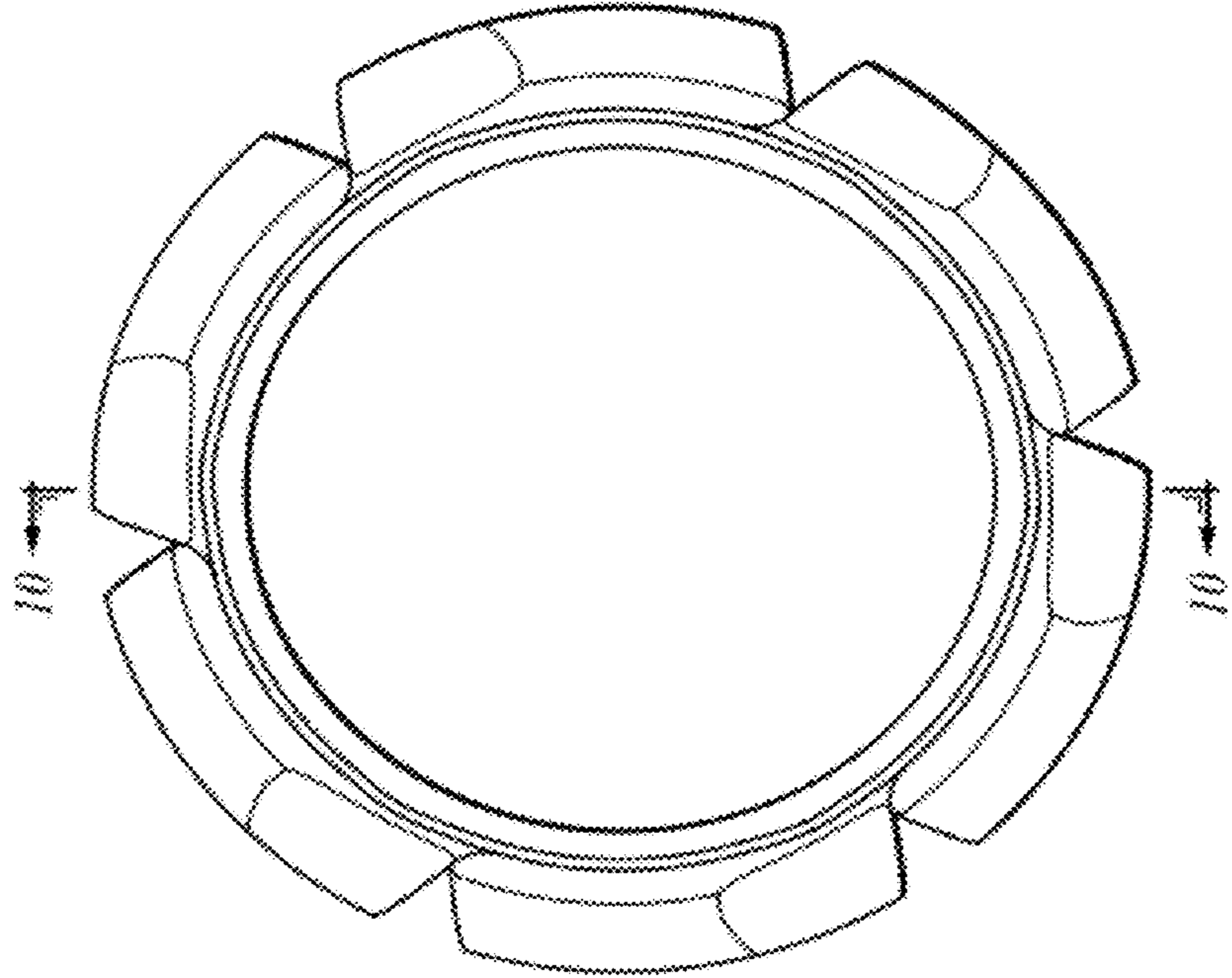
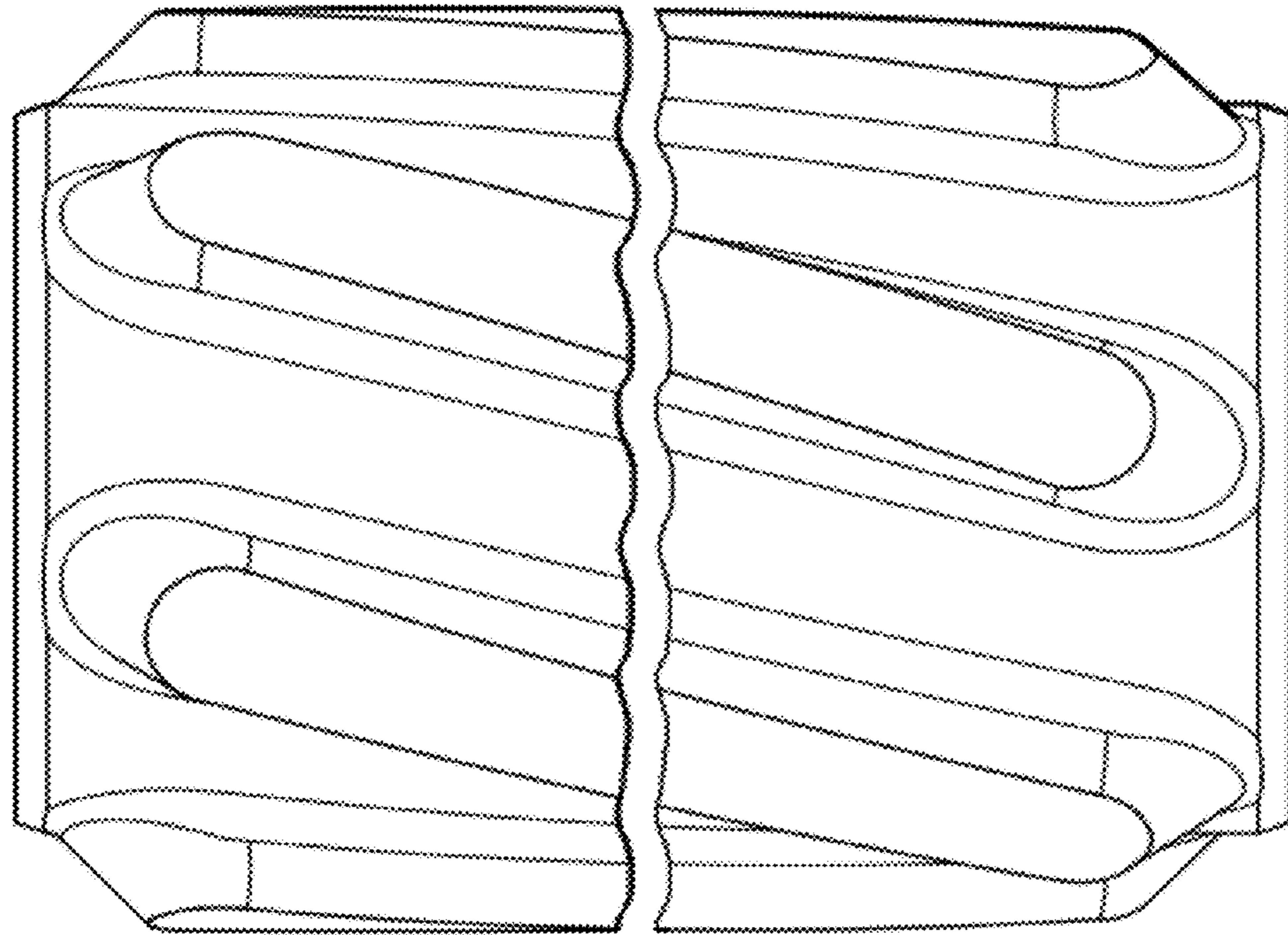
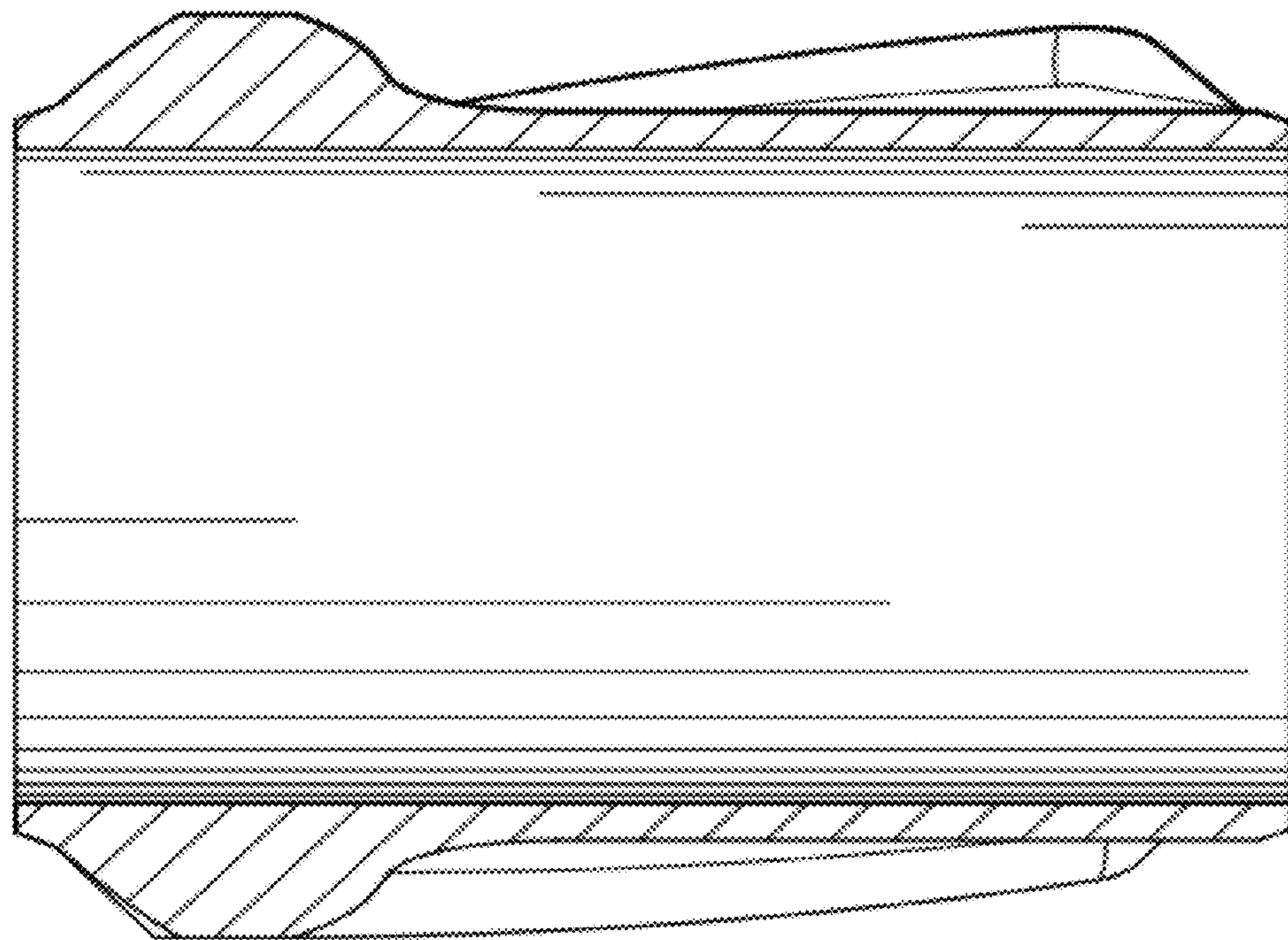


Fig. 9

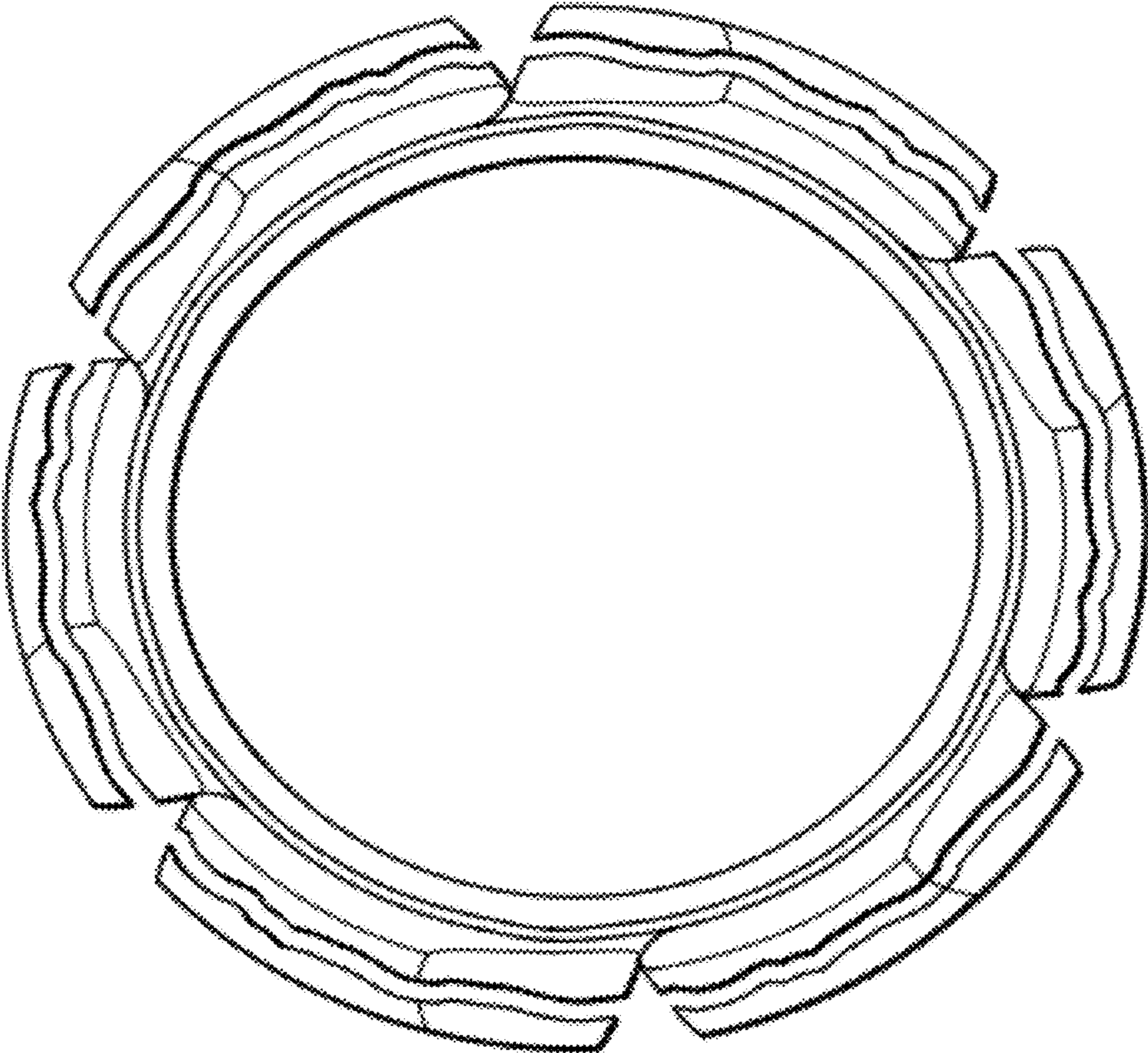




*Fig. 11*



*Fig. 10*



*Fig. 12*