

US00D748228S

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

(10) **Patent No.:** **US D748,228 S**  
(45) **Date of Patent:** **\*\* Jan. 26, 2016**

- (54) **VALVE SEAT**
- (71) Applicant: **S.P.M. Flow Control, Inc.**, Fort Worth, TX (US)
- (72) Inventors: **Jacob A. Bayyouk**, Richardson, TX (US); **Tugrul Comlekci**, Glasgow (GB)
- (73) Assignee: **S.P.M. FLOW CONTROL, INC.**, Fort Worth, TX (US)

1,908,899 A	5/1933	Kayel
1,914,737 A	6/1933	Elms
1,948,628 A	2/1934	Penick et al.
2,421,276 A	5/1947	Lotz
2,475,040 A	7/1949	Mandl
2,573,567 A	10/1951	Hancock
2,602,434 A	7/1952	Barnaby

(Continued)

- (\*\*) Term: **14 Years**
- (21) Appl. No.: **29/446,059**
- (22) Filed: **Feb. 20, 2013**

**FOREIGN PATENT DOCUMENTS**

AU	9517960 A	11/1995
CA	2116461 A1	11/1994

(Continued)

**OTHER PUBLICATIONS**

“Advisory Action mailed Oct. 10, 2013, by the USPTO, re U.S. Appl. No. 13/445,513”.

(Continued)

**Related U.S. Application Data**

- (63) Continuation of application No. 13/755,217, filed on Jan. 31, 2013, now abandoned.
- (51) **LOC (10) Cl.** ..... **23-01**
- (52) **U.S. Cl.**  
USPC ..... **D23/269**
- (58) **Field of Classification Search**  
USPC ..... D23/249, 259, 260, 262, 266, 269;  
285/15, 95, 133.21, 232, 351; 277/351,  
277/352, 353, 354, 372, 504, 626  
CPC ..... F16L 41/08; F16L 41/12; F16L 45/00;  
F16L 57/00; F16L 57/06; E03F 5/04; E03F  
5/06; B65D 88/26; B65D 88/54  
See application file for complete search history.

*Primary Examiner* — Eric Goodman  
*Assistant Examiner* — Daniel J Domino  
 (74) *Attorney, Agent, or Firm* — Haynes and Boone, LLP

(57) **CLAIM**  
 The ornamental design for a valve seat, as shown and described.

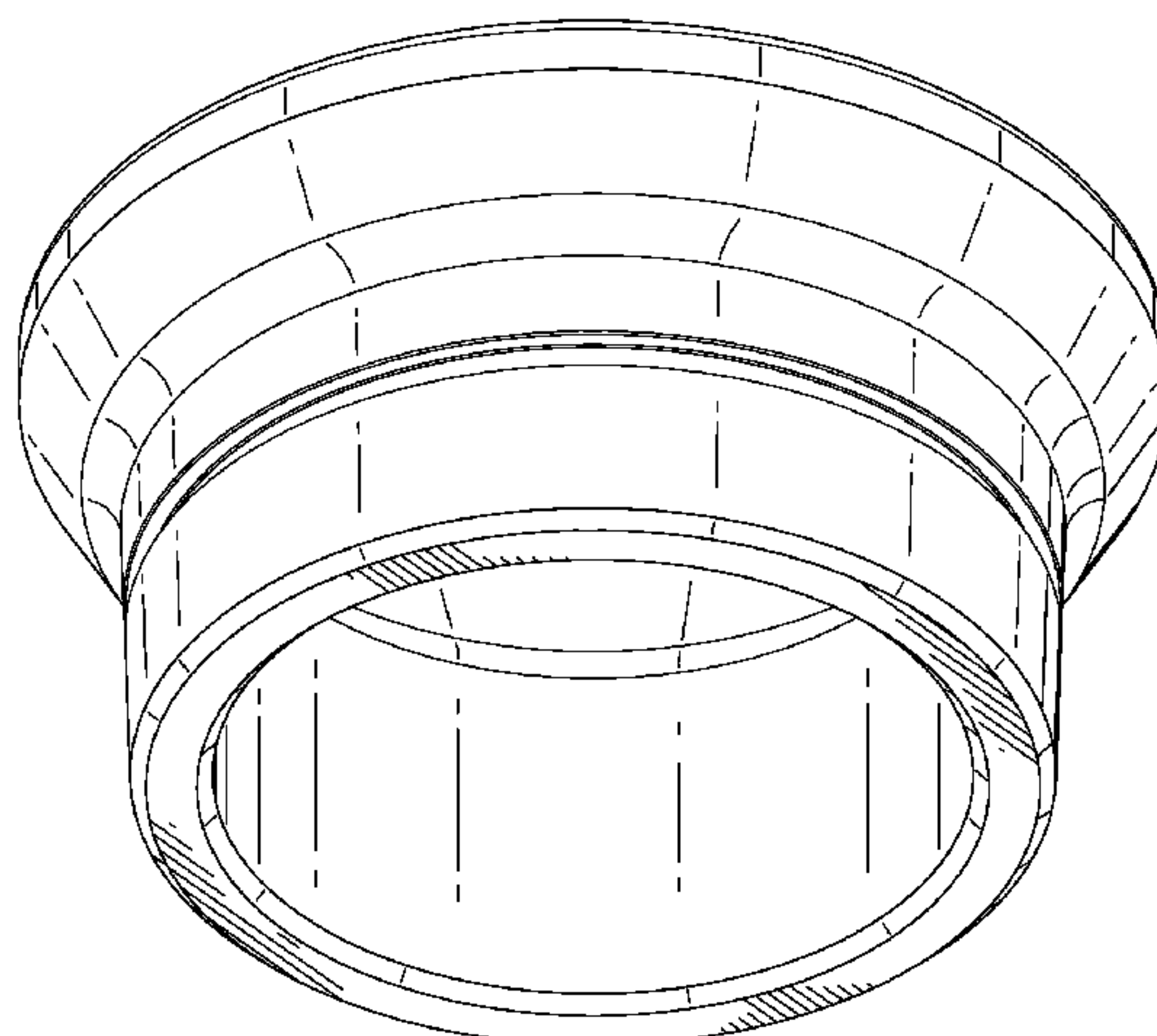
**DESCRIPTION**

FIG. 1 is a perspective view of a valve seat showing our new design;  
 FIG. 2 is a front elevational view thereof, the right side elevational, the left side elevational, and the rear elevational views thereof being the same as the front elevational view thereof;  
 FIG. 3 is a top plan view thereof;  
 FIG. 4 is a bottom plan view thereof; and,  
 FIG. 5 is a sectional view thereof taken along line 5-5 of FIG. 3.

- (56) **References Cited**  
**U.S. PATENT DOCUMENTS**

1,517,883 A	12/1924	Alleman
1,553,171 A	9/1925	Jones
1,652,857 A	12/1927	Greve
1,705,789 A	3/1929	Steirly
1,707,017 A	3/1929	Kibele
1,726,187 A	8/1929	Mahan

**1 Claim, 5 Drawing Sheets**



(56)

References Cited

U.S. PATENT DOCUMENTS

2,623,276 A 12/1952 Anderson  
 2,898,082 A 8/1959 Von Almen et al.  
 2,903,235 A 9/1959 Rodgers et al.  
 2,969,951 A 1/1961 Walton  
 2,982,515 A 5/1961 Rule  
 2,983,281 A 5/1961 Bynum  
 3,029,501 A 4/1962 Leathers  
 3,063,467 A 11/1962 Roberts, Jr. et al.  
 D196,724 S \* 10/1963 Davis et al. .... D24/129  
 3,114,644 A 12/1963 Peterson  
 3,191,905 A 6/1965 Brown  
 3,387,353 A 6/1968 Romero  
 3,474,808 A 10/1969 Robert  
 3,489,170 A 1/1970 Arthur  
 D227,558 S \* 7/1973 Matthews et al. .... D9/434  
 3,801,234 A 4/1974 Love et al.  
 3,808,666 A 5/1974 Bales  
 3,830,255 A 8/1974 Freiheit  
 3,952,393 A 4/1976 van Ravenzwaay et al.  
 3,990,139 A 11/1976 Touchet  
 D244,533 S \* 5/1977 Eidelberg et al. .... D23/269  
 4,076,212 A 2/1978 Leman  
 4,077,102 A 3/1978 Smith  
 4,103,663 A 8/1978 Elsbett et al.  
 4,192,520 A 3/1980 Hasegawa  
 4,257,163 A 3/1981 Bauer  
 4,285,126 A 8/1981 Irwin  
 4,432,386 A 2/1984 Pacht  
 4,518,329 A 5/1985 Weaver  
 4,547,005 A \* 10/1985 Soederhuyzen ..... 285/58  
 D292,308 S \* 10/1987 Beltran ..... D23/269  
 4,770,206 A 9/1988 Sjoberg  
 4,860,995 A 8/1989 Rogers  
 D303,710 S \* 9/1989 Neill ..... D24/232  
 4,878,815 A 11/1989 Stachowiak  
 4,922,957 A 5/1990 Johnson  
 4,928,726 A 5/1990 Johnson et al.  
 4,951,707 A 8/1990 Johnson  
 5,052,435 A 10/1991 Crudup et al.  
 5,088,521 A 2/1992 Johnson  
 5,117,546 A 6/1992 Lawrence et al.  
 5,193,577 A 3/1993 De Koning  
 5,211,198 A 5/1993 Tinholt  
 5,234,322 A 8/1993 Daniels et al.  
 5,249,600 A 10/1993 Blume  
 5,345,965 A 9/1994 Blume  
 D355,708 S \* 2/1995 Caine ..... D23/260  
 5,431,186 A 7/1995 Blume  
 5,505,530 A 4/1996 Kramer et al.  
 5,533,245 A 7/1996 Stanton  
 5,695,224 A \* 12/1997 Grenier ..... 285/104  
 5,816,497 A 10/1998 Leon et al.  
 5,876,189 A 3/1999 Lukas et al.  
 6,073,886 A 6/2000 Jakubowski, Jr. et al.  
 6,195,863 B1 3/2001 Blake  
 6,227,225 B1 5/2001 Domingue  
 6,382,940 B1 5/2002 Blume  
 6,435,475 B1 8/2002 Blume  
 D466,652 S \* 12/2002 Thurman ..... D23/393  
 6,623,259 B1 9/2003 Blume  
 6,641,112 B2 11/2003 Antoff et al.  
 6,641,115 B1 11/2003 Bainter  
 6,679,477 B1 1/2004 Blume  
 6,695,007 B2 2/2004 Vicars  
 6,701,955 B2 3/2004 McIntire et al.  
 D488,859 S \* 4/2004 Stout, Jr. .... D23/393  
 6,910,871 B1 6/2005 Blume  
 6,955,181 B1 10/2005 Blume  
 6,955,339 B1 10/2005 Blume  
 D513,072 S \* 12/2005 Berg ..... D23/386  
 7,000,632 B2 2/2006 McIntire et al.  
 7,011,111 B2 3/2006 Spiegl et al.  
 D524,427 S \* 7/2006 Wilk et al. .... D23/262  
 D534,253 S \* 12/2006 Sandman et al. .... D23/269  
 7,168,440 B1 1/2007 Blume

7,172,175 B2 2/2007 Vicars  
 7,222,837 B1 5/2007 Blume  
 7,296,591 B2 11/2007 Moe et al.  
 7,335,002 B2 2/2008 Vicars  
 7,341,435 B2 3/2008 Vicars  
 7,513,483 B1 4/2009 Blume  
 D614,271 S \* 4/2010 Weston ..... D23/269  
 D616,966 S \* 6/2010 Angell ..... D23/262  
 7,748,095 B1 7/2010 Phane  
 7,832,071 B2 11/2010 Klann  
 D631,142 S \* 1/2011 Angell ..... D23/262  
 8,191,575 B2 6/2012 Krug, Jr. et al.  
 D682,989 S 5/2013 Eagle  
 D687,145 S \* 7/2013 Gronberg ..... D24/129  
 8,496,224 B1 7/2013 Gilstad et al.  
 D695,066 S \* 12/2013 Nakajima ..... D7/400  
 D700,682 S \* 3/2014 Bayyouk et al. .... D23/233  
 D715,145 S \* 10/2014 Yamagishi et al. .... D9/447  
 D717,405 S \* 11/2014 Coronado ..... D23/259  
 2003/0084556 A1 5/2003 Dunlop  
 2004/0170507 A1 9/2004 Vicars  
 2004/0234404 A1 11/2004 Vicars  
 2004/0239115 A1 \* 12/2004 Wilk et al. .... 285/340  
 2005/0081830 A1 4/2005 Yu et al.  
 2005/0247353 A1 \* 11/2005 Kao ..... 137/625.41  
 2006/0049627 A1 \* 3/2006 Happel ..... 285/230  
 2006/0124176 A1 6/2006 McIntire et al.  
 2006/0131533 A1 6/2006 Oh  
 2006/0273277 A1 12/2006 Heller et al.  
 2008/0048446 A1 \* 2/2008 Houghton ..... 285/374  
 2008/0279706 A1 11/2008 Gambier et al.  
 2009/0012543 A1 \* 1/2009 Kansoul ..... 606/153  
 2009/0314979 A1 12/2009 McIntire  
 2010/0275445 A1 11/2010 Weide  
 2010/0325888 A1 12/2010 Hawes  
 2011/0030213 A1 2/2011 Hawes et al.  
 2011/0079302 A1 4/2011 Hawes  
 2011/0126804 A1 6/2011 Lucas et al.  
 2011/0173814 A1 7/2011 Patel  
 2011/0181040 A1 \* 7/2011 Thompson et al. .... 285/148.23  
 2012/0141308 A1 6/2012 Saini et al.  
 2012/0292550 A1 \* 11/2012 Meek ..... 251/359  
 2013/0020521 A1 1/2013 Byrne  
 2013/0168586 A1 \* 7/2013 Cordova et al. .... 251/193  
 2013/0168591 A1 \* 7/2013 Webster ..... 251/328  
 2013/0202457 A1 \* 8/2013 Bayyouk et al. .... 417/279  
 2013/0202458 A1 \* 8/2013 Byrne et al. .... 417/279

FOREIGN PATENT DOCUMENTS

CA 152227 6/2014  
 CA 152313 6/2014  
 CN 2690624 Y 4/2005  
 CN 2861553 Y 1/2007  
 CN 2898364 Y 5/2007  
 CN 200984728 Y 12/2007  
 CN 201225272 Y 4/2009  
 CN 201284735 Y 8/2009  
 CN 201747329 2/2011  
 CN 201769174 3/2011  
 CN 201786639 U 4/2011  
 CN 202001288 U 10/2011  
 CN 202220728 U 5/2012  
 CN 202326186 U 7/2012  
 CN 103597262 A 2/2014  
 CN ZL201330349899 2/2014  
 CN ZL2013303742673 3/2014  
 DE 69603178 T2 3/2000  
 EP 0237112 A1 9/1987  
 EP 0512594 A1 11/1992  
 GB 855956 A 12/1960  
 JP 9217677 A 8/1997  
 JP 2008546951 A 12/2008  
 JP 2011017332 A 1/2011  
 KR 181711 B1 5/1999  
 KR 100383826 B1 5/2003  
 KR 100402825 B1 10/2003  
 NL 1020775 C2 12/2003  
 RU 2073808 C1 2/1997



(56)

**References Cited**

FOREIGN PATENT DOCUMENTS

SU	1576717	A1	7/1990
SU	1751570	A1	7/1992
WO	WO-2011017689	A2	2/2011
WO	WO-2011044332	A2	4/2011
WO	WO-2011060422	A2	5/2011
WO	WO-2012142276	A1	10/2012
WO	WO-2013116488		8/2013
WO	WO-2013116634		8/2013

OTHER PUBLICATIONS

“Final Office Action mailed Jul. 5, 2013, by the USPTO, re U.S. Appl. No. 13/445,513”.

“International Preliminary Report on Patentability Ch II, mailed Apr. 15, 2013, by the IPEA/US, re PCT/US2012/033307”.

“International Search Report and Written Opinion by the ISA/US, mailed Apr. 9, 2013, re PCT/US2013/024096”.

“International Search Report and Written Opinion by the ISA/US, mailed Apr. 9, 2013, re PCT/US2013/024325”.

International Search Report and Written Opinion for Application No. PCT/US2010/044828 mailed on Mar. 29, 2011, 6 pages.

International Search Report and Written Opinion for Application No. PCT/US2010/051777 mailed on Jun. 21, 2011, 11 pages.

International Search Report and Written Opinion for Application No. PCT/US2010/056846 mailed on Jun. 23, 2011, 6 pages.

International Search Report and Written Opinion for Application No. PCT/US2012/033307 mailed on Jul. 5, 2012, 10 pages.

“Notice of Allowance mailed Dec. 5, 2013, by the USPTO, re U.S. Appl. No. 29/444,103”.

“Office Action mailed Apr. 29, 2013, by the USPTO, re U.S. Appl. No. 12/852,376”.

“Office Action mailed Mar. 25, 2013, by the USPTO, re U.S. Appl. No. 13/445,513”.

“Office Action mailed Mar. 26, 2013, by the USPTO, re U.S. Appl. No. 12/947,498”.

“Office Action mailed May 8, 2012, by the USPTO, re U.S. Appl. No. 12/900,146”.

“Restriction Requirement mailed Jan. 8, 2013, by the USPTO, re U.S. Appl. No. 12/947,498”.

SPM Drawing #3L108223, Seat Puller Assy Listing TWS400-QWS, mailed on Aug. 2, 2002.

SPM Drawing #P108217, Seat Puller Head Assembly 1.25, mailed on Sep. 22, 2008.

SPM Drawing #P23579, Seat Puller/Head Assy. 4.50"-5.00" TWS900, QWS mailed on Aug. 4, 2008.

SPM Engineering Bulletin 1010, Valve Seat Puller Jaws All Sizes of Valve Seats 2S-7S—Original Style—New Style Featuring Initial Standoff—mailed on Jan. 1997.

“Office Action mailed Jul. 14, 2014, by the Uspto, re App No. 13/756,715”.

“Office Action mailed Jul. 16, 2014, by the USPTO, re U.S. Appl. No. 13/755,217”.

\* cited by examiner

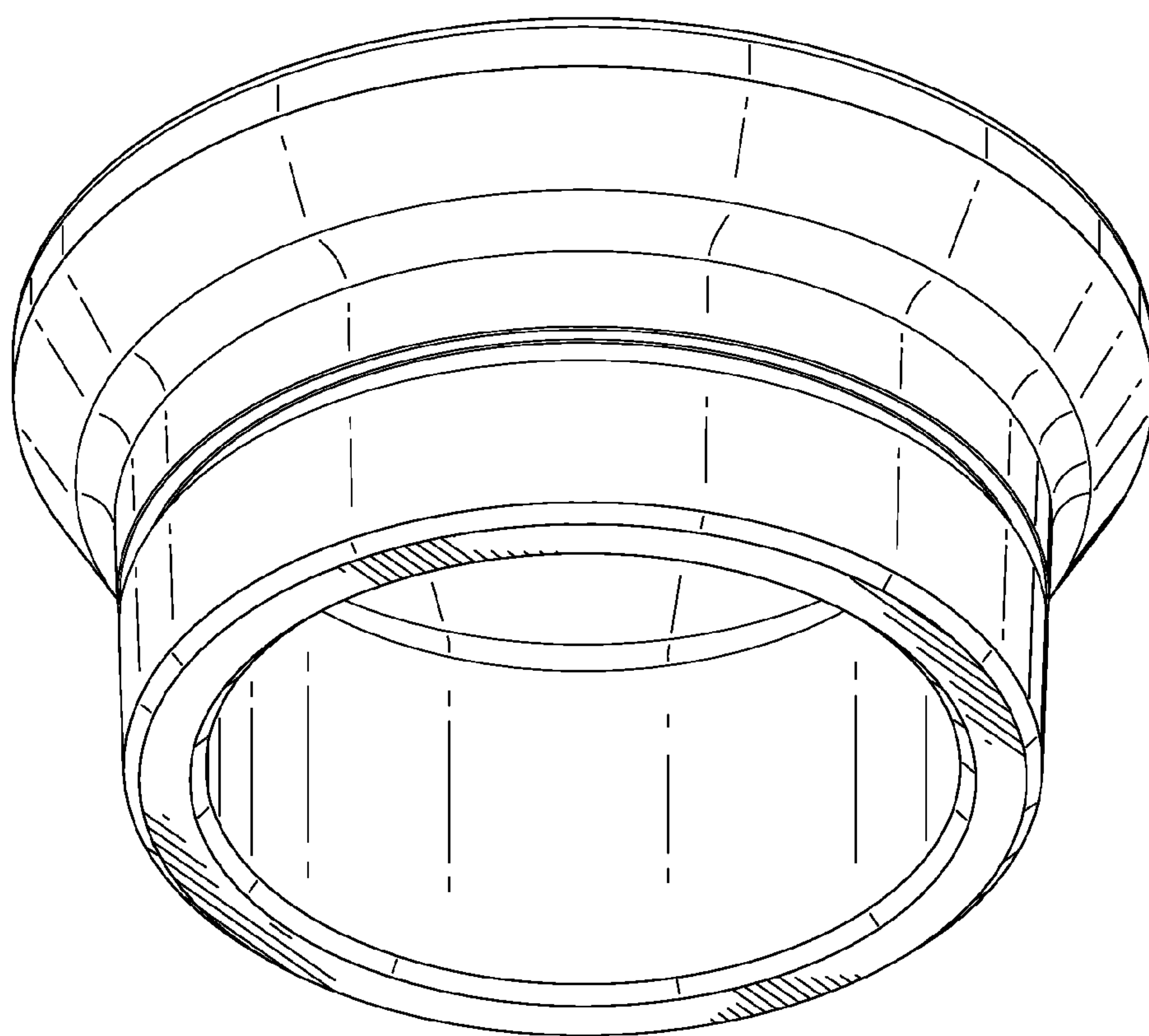


Fig. 1

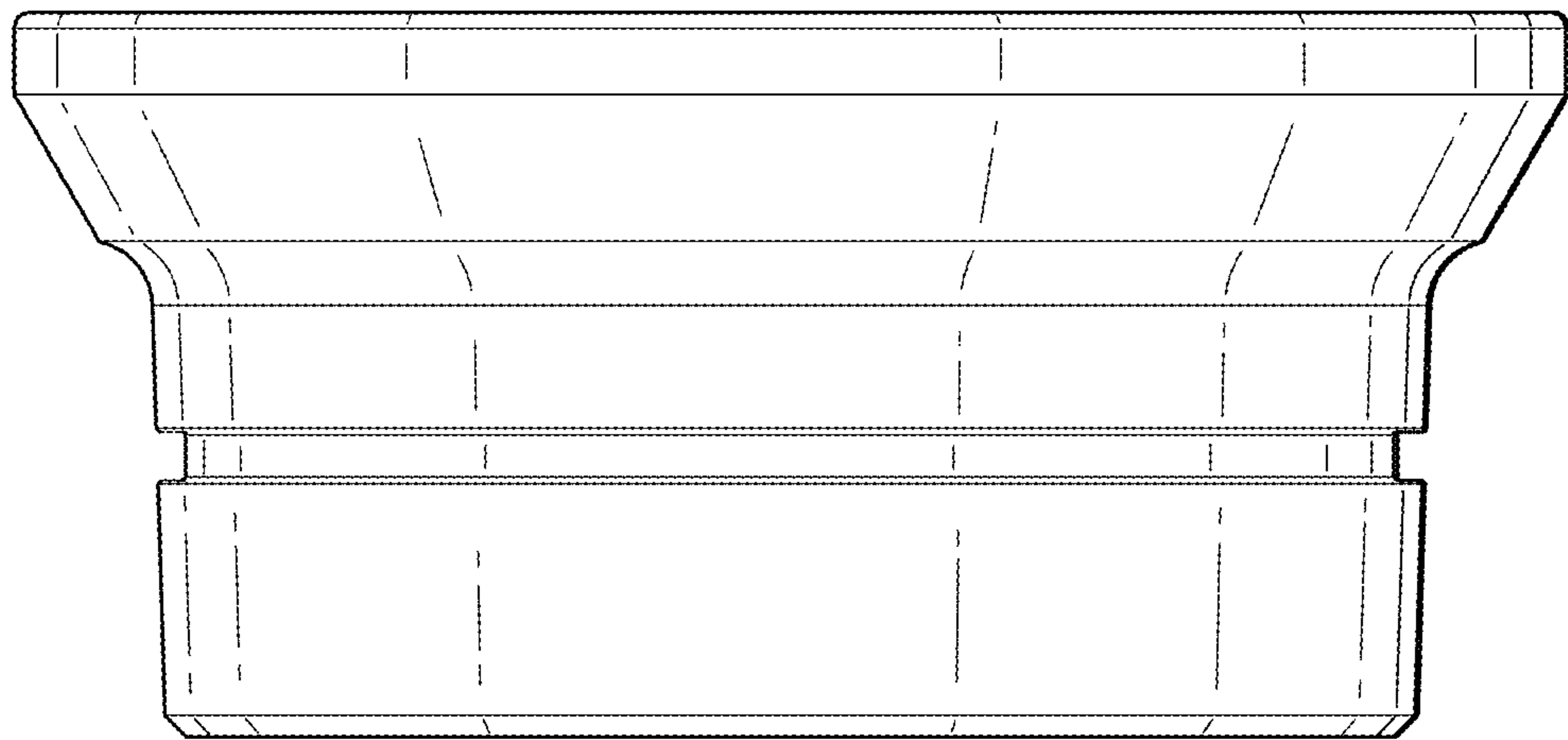


Fig. 2

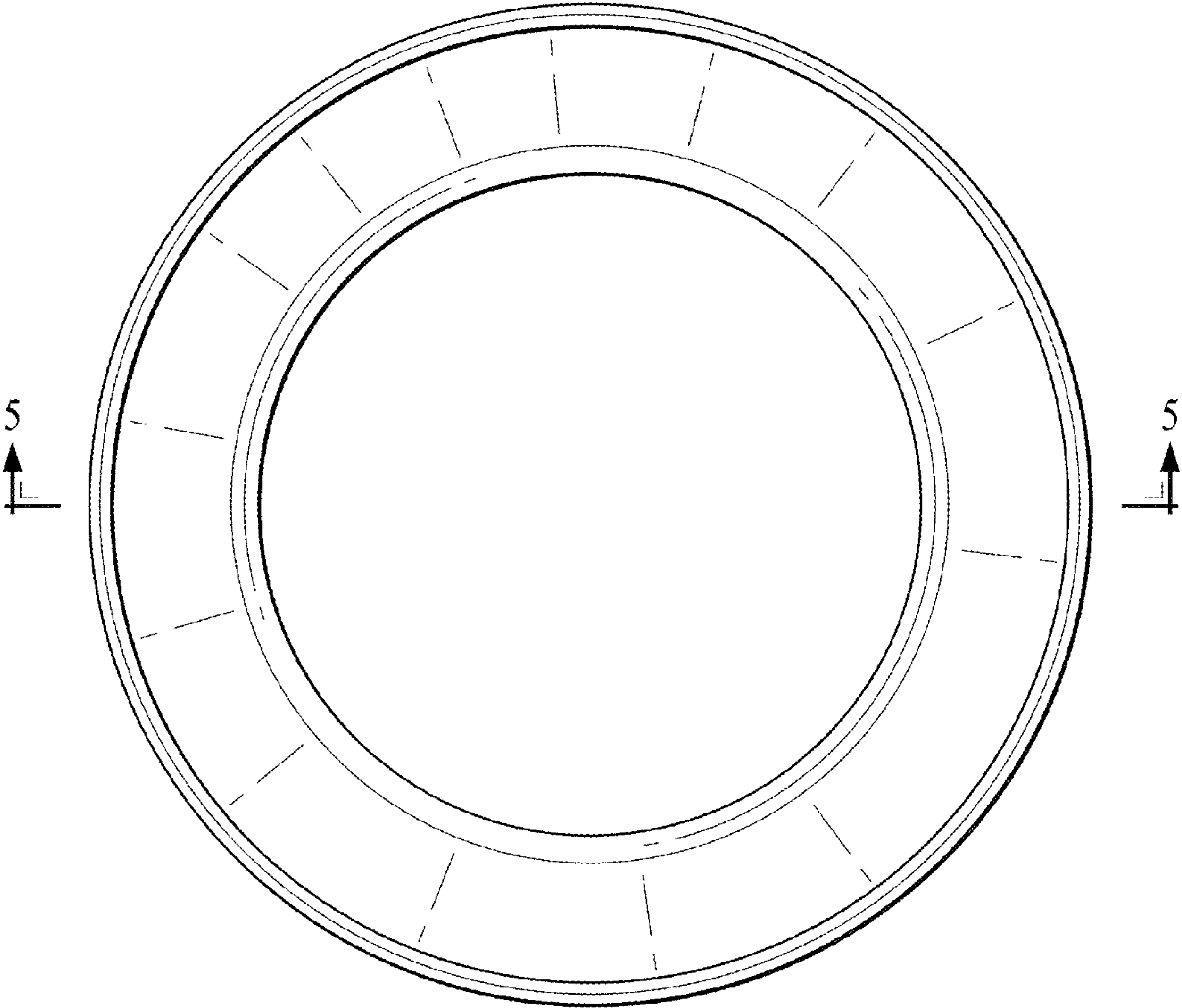


Fig. 3

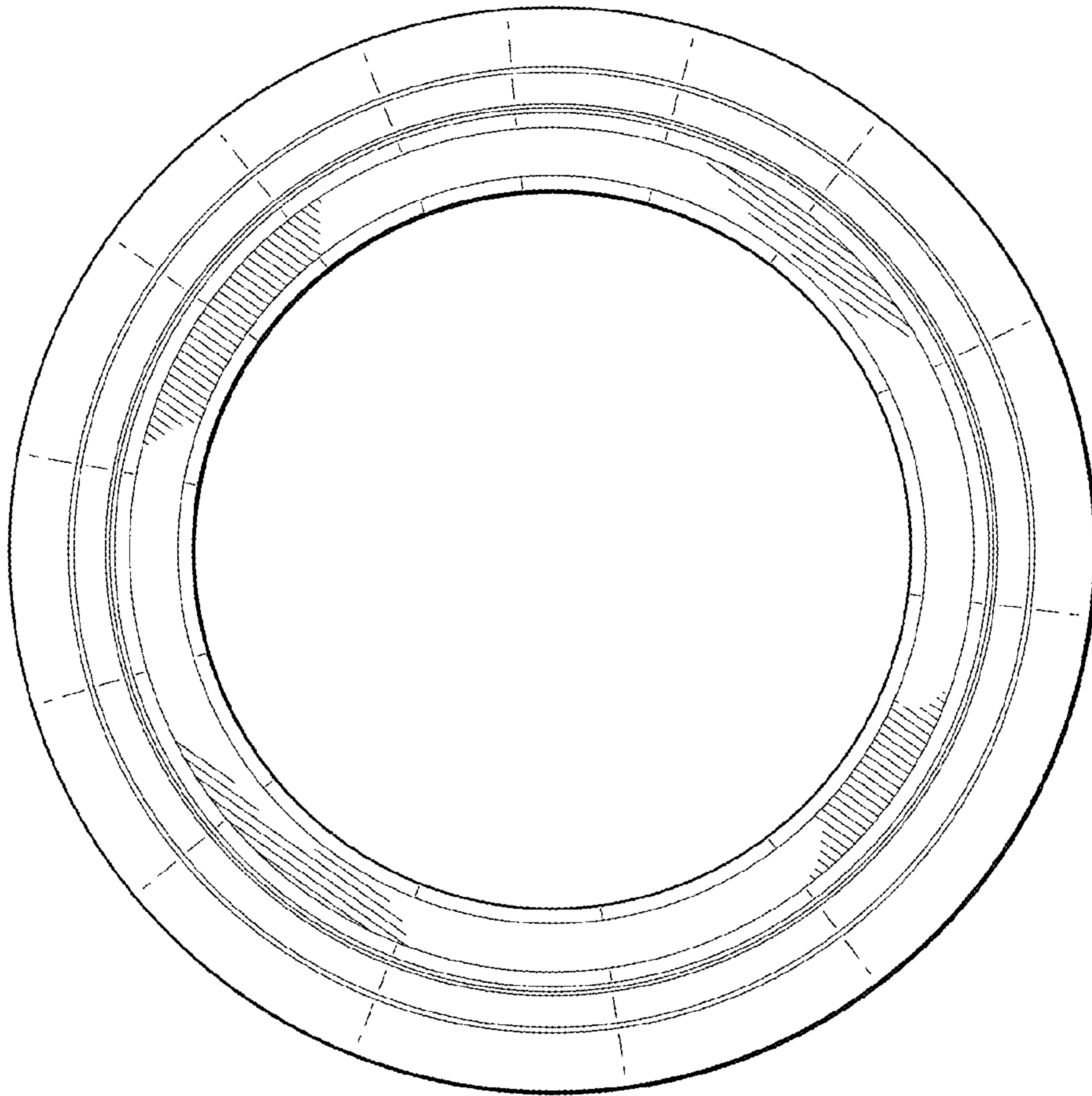


Fig. 4

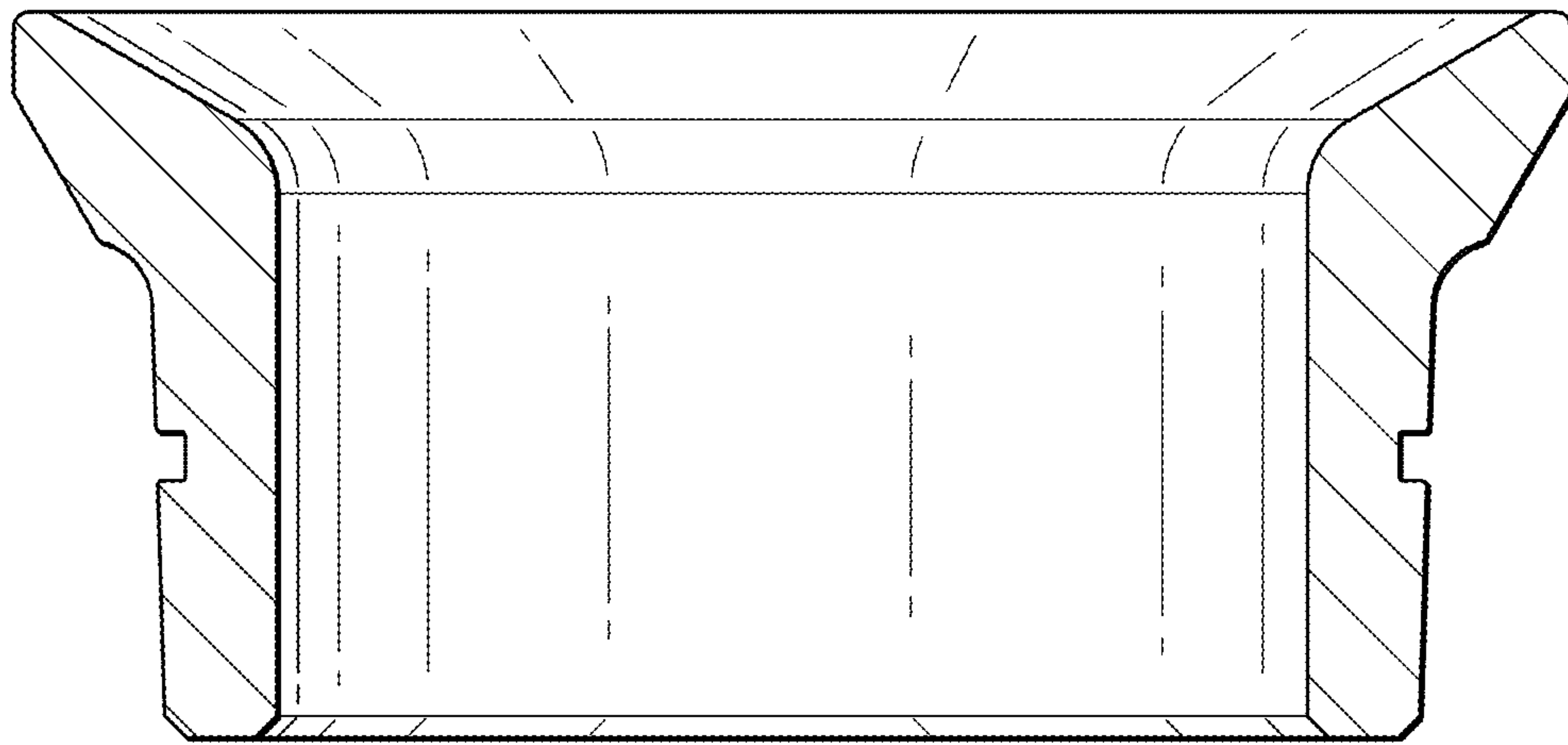


Fig. 5