

US00D730416S

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

(10) **Patent No.:** **US D730,416 S**

(45) **Date of Patent:** **\*\* May 26, 2015**

(54) **LOCK RING FOR USE IN A MOLD STACK**

(56) **References Cited**

(71) Applicant: **Husky Injection Molding Systems Ltd.**, Bolton (CA)

U.S. PATENT DOCUMENTS

4,521,179 A \* 6/1985 Gellert ..... 425/548  
4,530,654 A \* 7/1985 Rose ..... 425/566

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Scarborough (CA); **Derek Robertson**  
**McCready**, Mississauga (CA)

(Continued)

FOREIGN PATENT DOCUMENTS

(73) Assignee: **Husky Injection Molding Systems Ltd.**, Bolton, Ontario (CA)

WO 2010051620 A1 5/2010

*Primary Examiner* — Patricia Palasik

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

(57) **CLAIM**

The ornamental design for a lock ring for use in a mold stack, as shown and described.

(21) Appl. No.: **29/441,904**

**DESCRIPTION**

(22) Filed: **Jan. 10, 2013**

FIG. 1 depicts a perspective view of a lock ring;  
FIG. 2 depicts a top view of the lock ring of FIG. 1;  
FIG. 3 depicts a cross-sectional view of the lock ring taken along line 3-3 in FIG. 2;  
FIG. 4 depicts a front view of the lock ring of FIG. 1;  
FIG. 5 depicts a right side view of the lock ring of FIG. 1;  
FIG. 6 depicts a back view of the lock ring of FIG. 1;  
FIG. 7 depicts a left side view of the lock ring of FIG. 1;  
FIG. 8 depicts a bottom view of the lock ring of FIG. 1;  
FIG. 9 depicts a perspective view of a lock ring in accordance with a second embodiment;  
FIG. 10 depicts a top view of the lock ring of FIG. 9;  
FIG. 11 depicts a cross-sectional view of the lock ring taken along line 11-11 in FIG. 10;  
FIG. 12 depicts a front view of the lock ring of FIG. 9;  
FIG. 13 depicts a right side view of the lock ring of FIG. 9;  
FIG. 14 depicts a back view of the lock ring of FIG. 9;  
FIG. 15 depicts a left side view of the lock ring of FIG. 9; and,  
FIG. 16 depicts a bottom view of the lock ring of FIG. 9.  
It will be understood that the dashed lines presented in the drawings do not form a part of the claimed design.

**Related U.S. Application Data**

(63) Continuation-in-part of application No. 29/378,972, filed on Nov. 12, 2010, now abandoned.

(51) **LOC (10) Cl.** ..... **15-09**

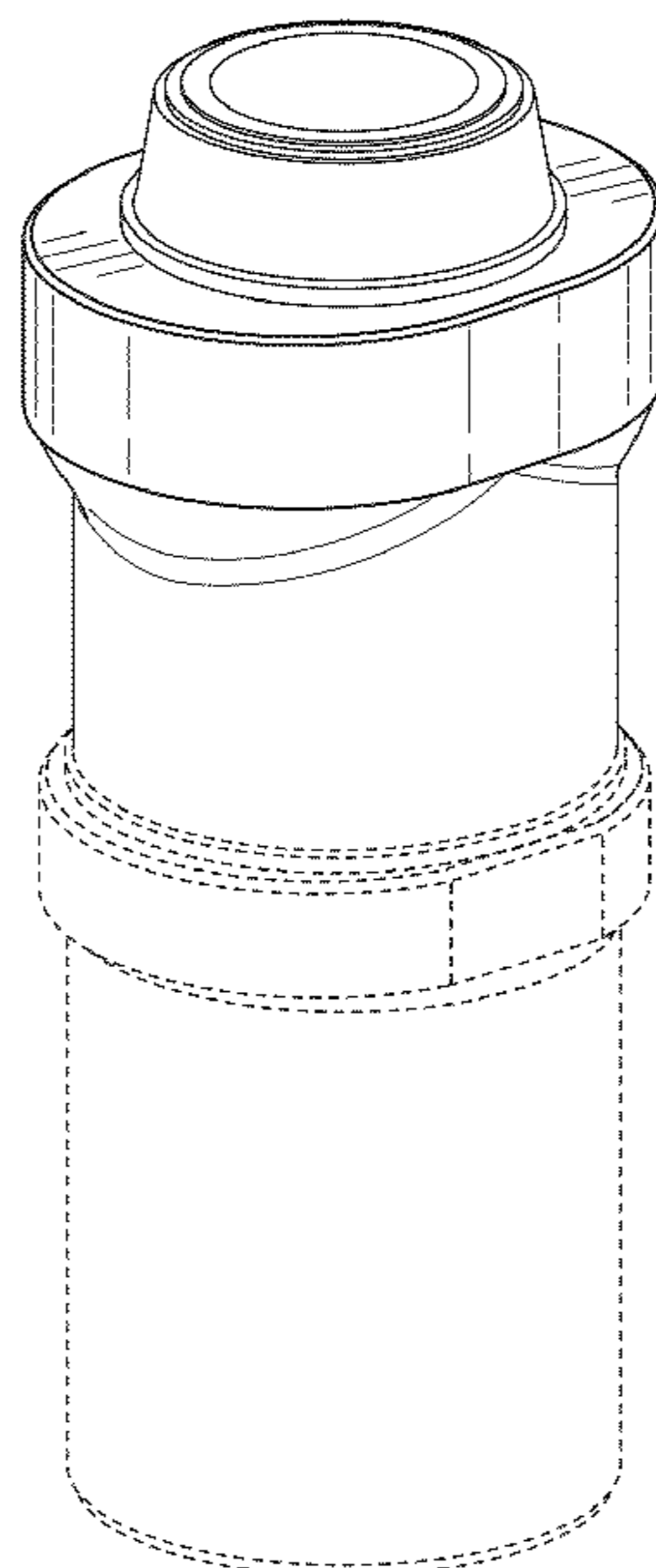
(52) **U.S. Cl.**  
USPC ..... **D15/135**

(58) **Field of Classification Search**

USPC ..... D15/135, 136, 137, 138, 139; 65/260, 65/356, 357; 83/845; 205/70, 164, 165, 205/167, 169; 249/78, 79; 264/51, 220, 264/221; 407/42, 110, 115, 116, 117; 425/135, 146, 171, 181, 218, 253-261, 425/363, 451.9, 471, 542, 543, 547, 548, 425/552, 556, 577, 589-595; 428/71

See application file for complete search history.

**1 Claim, 10 Drawing Sheets**



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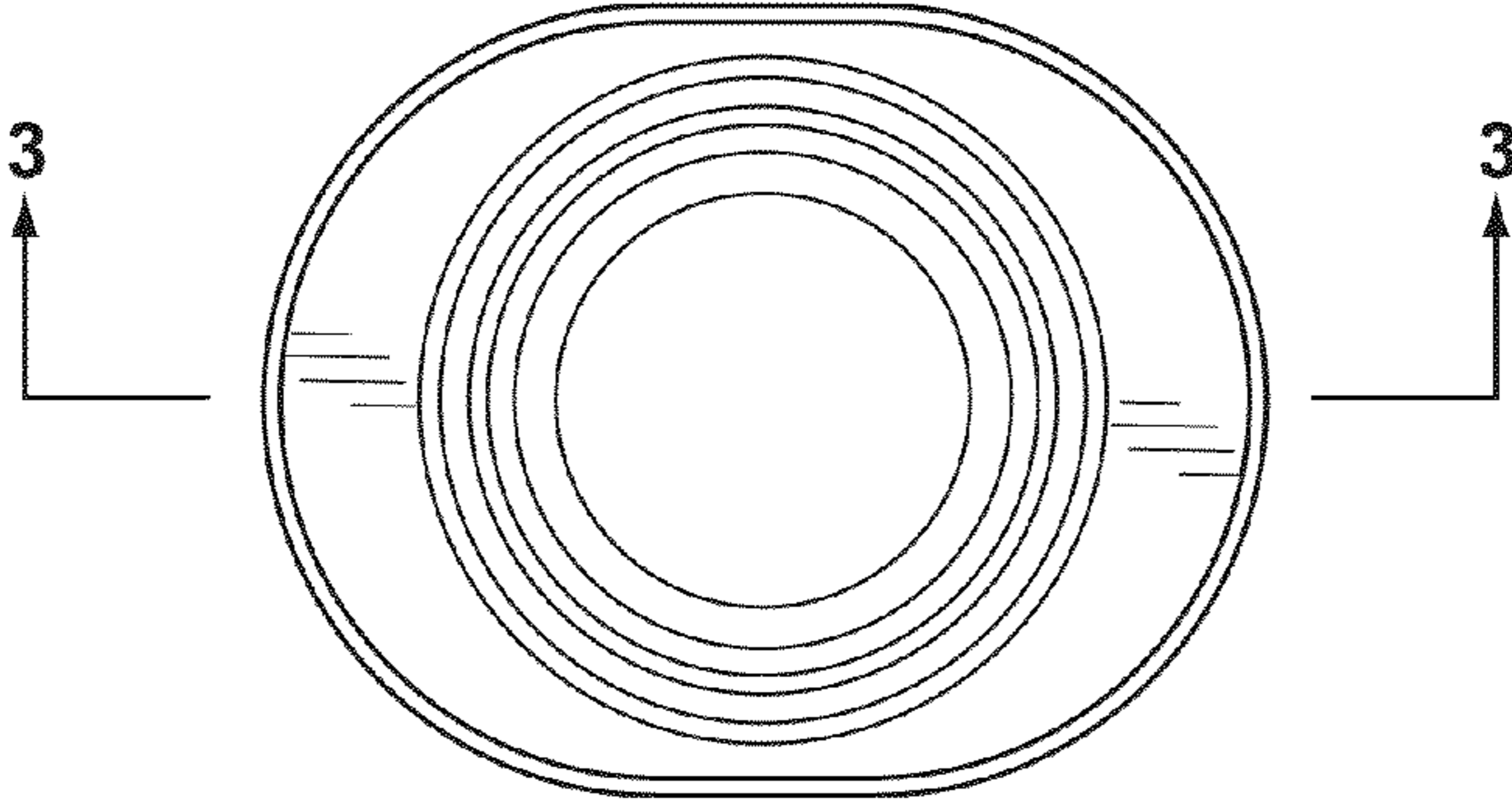
**References Cited**

U.S. PATENT DOCUMENTS

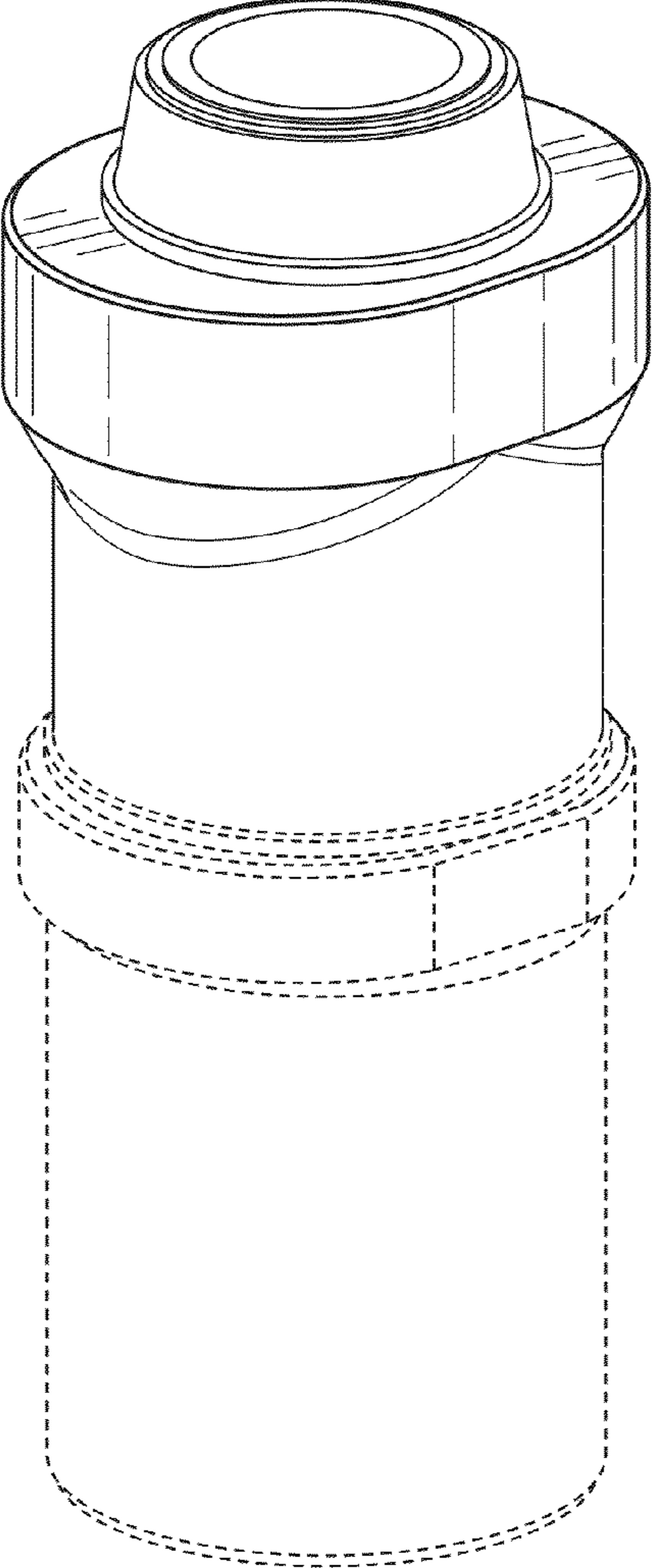
D324,392 S \* 3/1992 Wilhelm ..... D15/136  
5,562,519 A \* 10/1996 Loewenton ..... 446/126  
6,099,785 A \* 8/2000 Schweigert et al. .... 264/328.1  
D519,530 S \* 4/2006 Thysell et al. .... D15/126  
7,128,865 B2 10/2006 Martin  
7,361,009 B2 \* 4/2008 Li ..... 425/547  
7,381,049 B2 6/2008 Li et al.

D595,319 S \* 6/2009 Park ..... D15/126  
7,645,132 B2 \* 1/2010 McCready ..... 425/192 R  
7,762,802 B2 \* 7/2010 Mai ..... 425/190  
D631,073 S \* 1/2011 Papa et al. .... D15/135  
D682,651 S \* 5/2013 McRoberts et al. .... D8/70  
2009/0214694 A1 \* 8/2009 Mai ..... 425/577  
2013/0029004 A1 \* 1/2013 Looije ..... 425/556  
2013/0142902 A1 \* 6/2013 Papa et al. .... 425/577  
2013/0236590 A1 \* 9/2013 Jacovich et al. .... 425/541

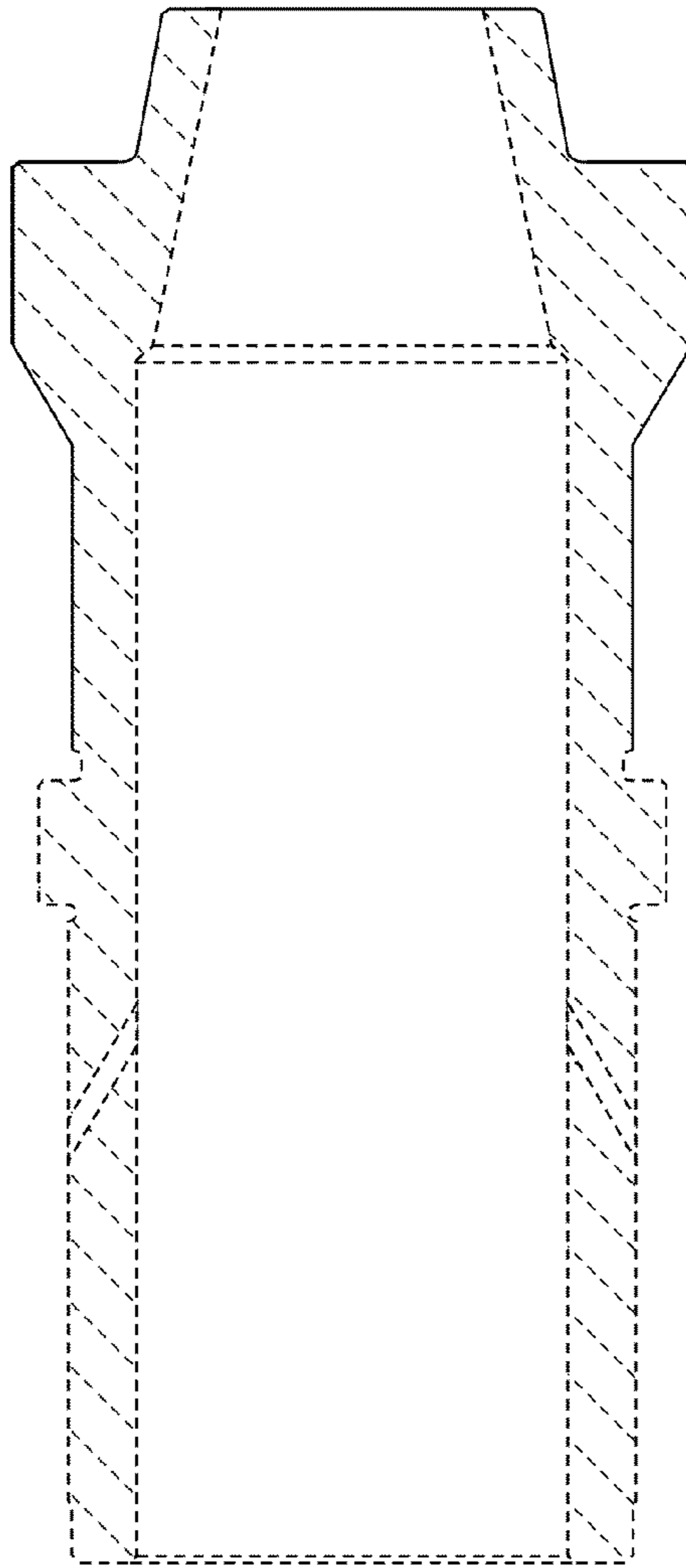
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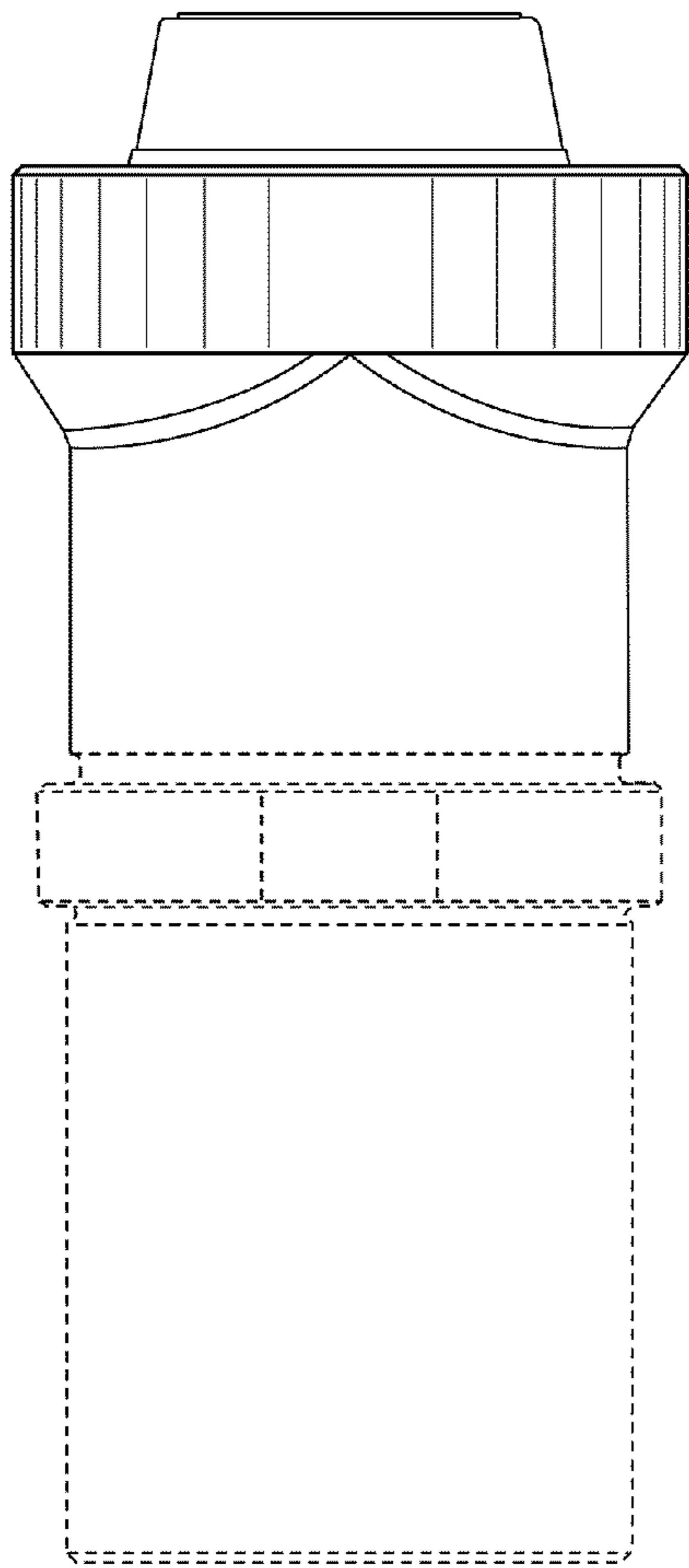
**FIG. 2**



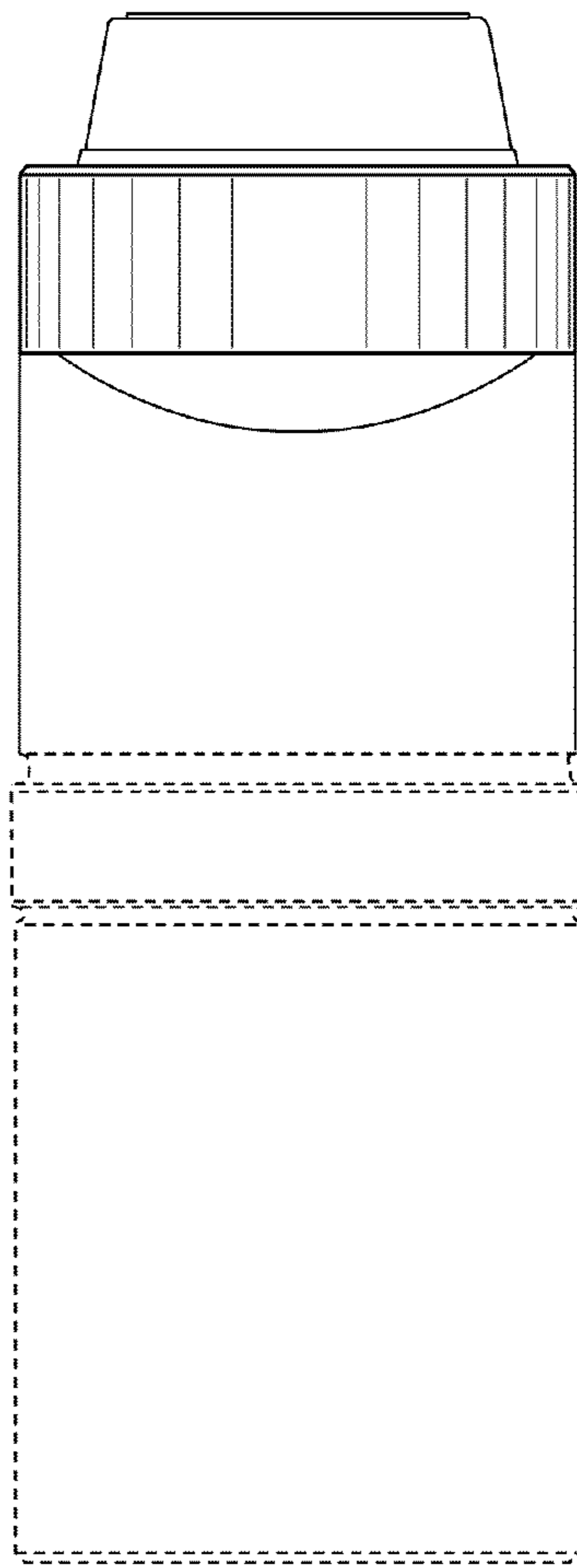
**FIG. 1**



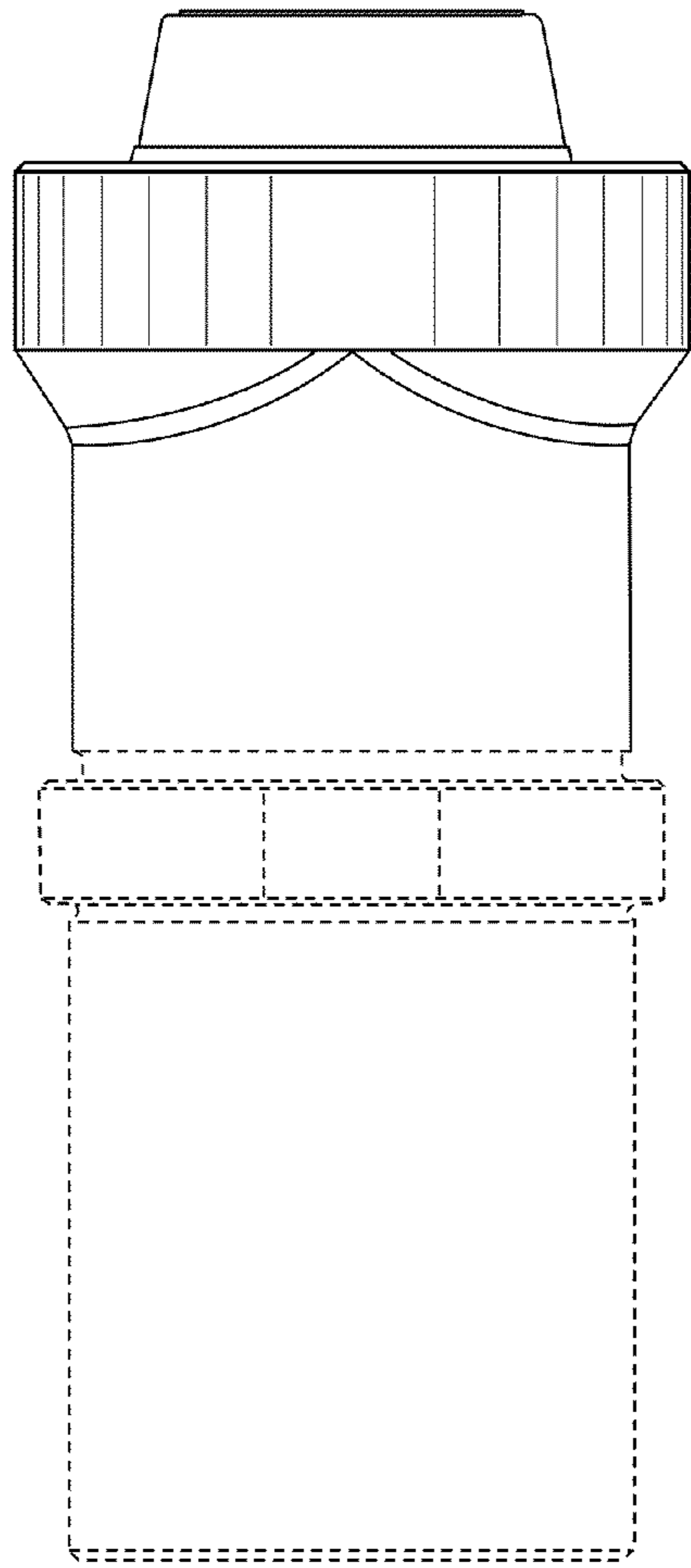
**FIG. 3**



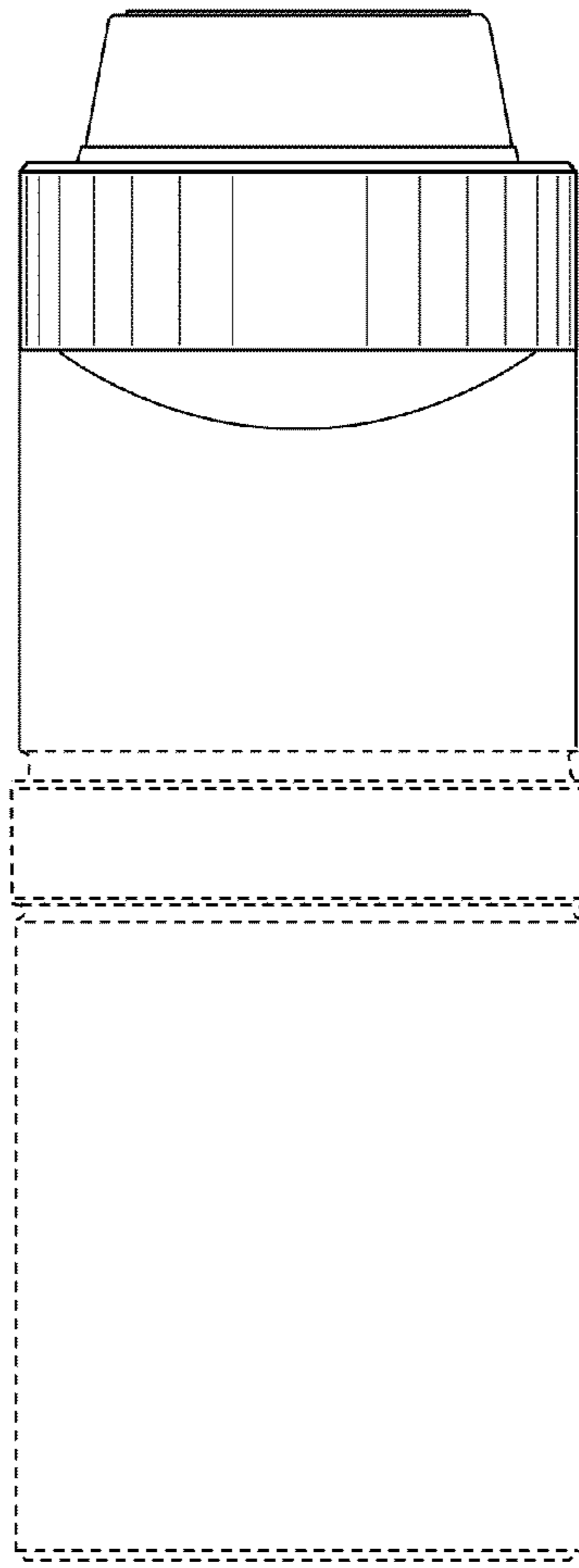
**FIG. 4**



**FIG. 5**

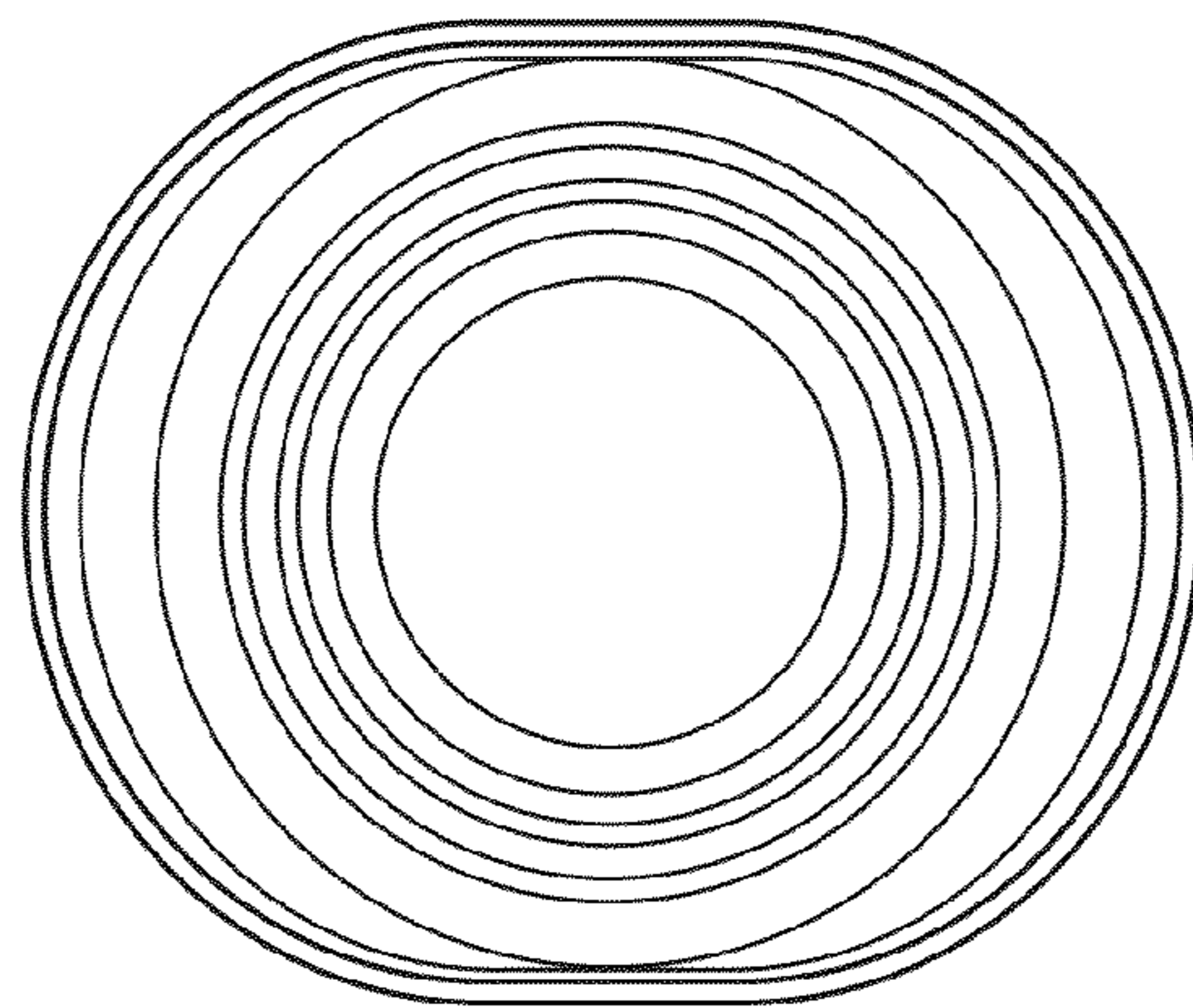


**FIG. 6**

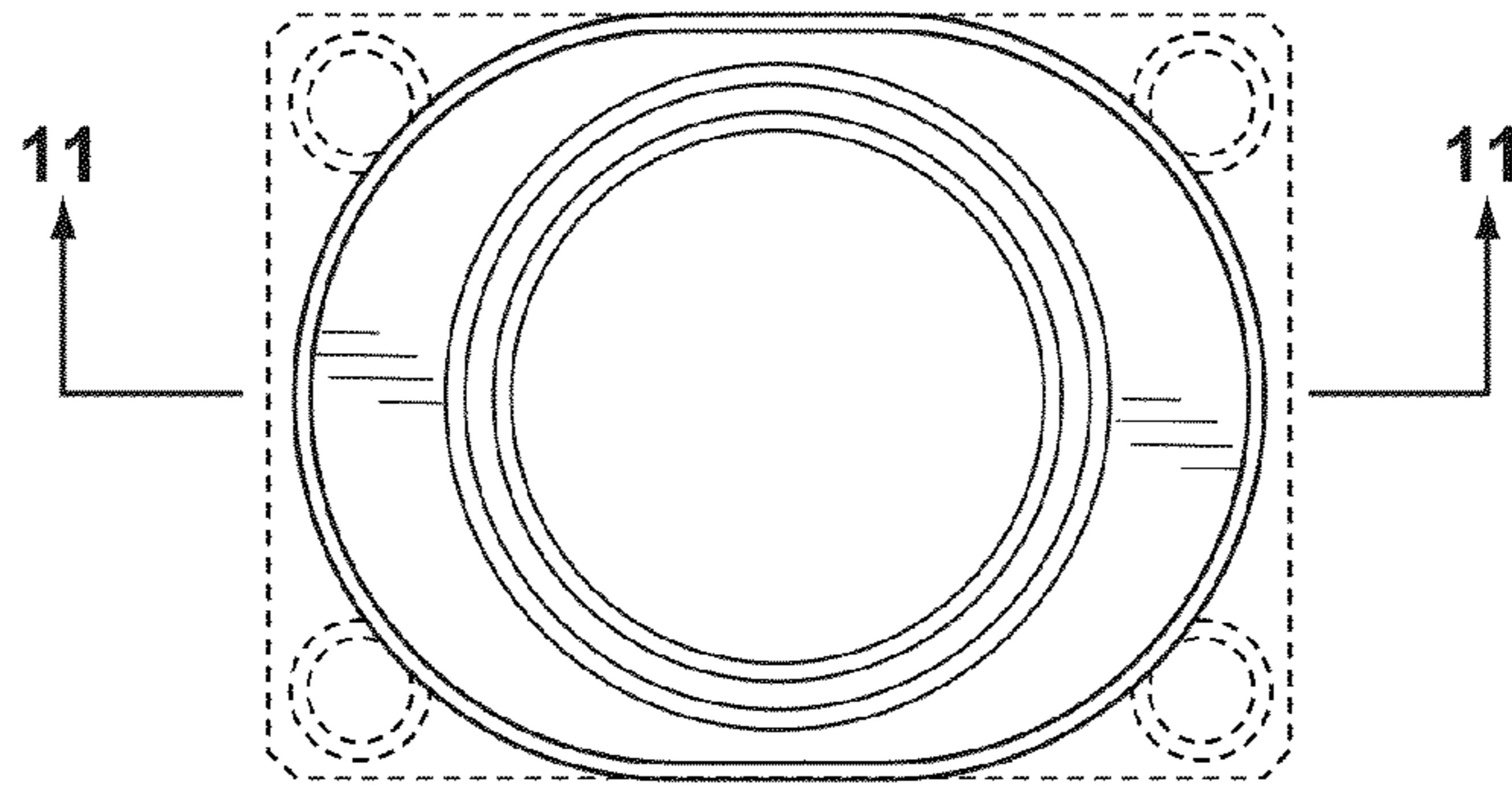


**FIG. 7**

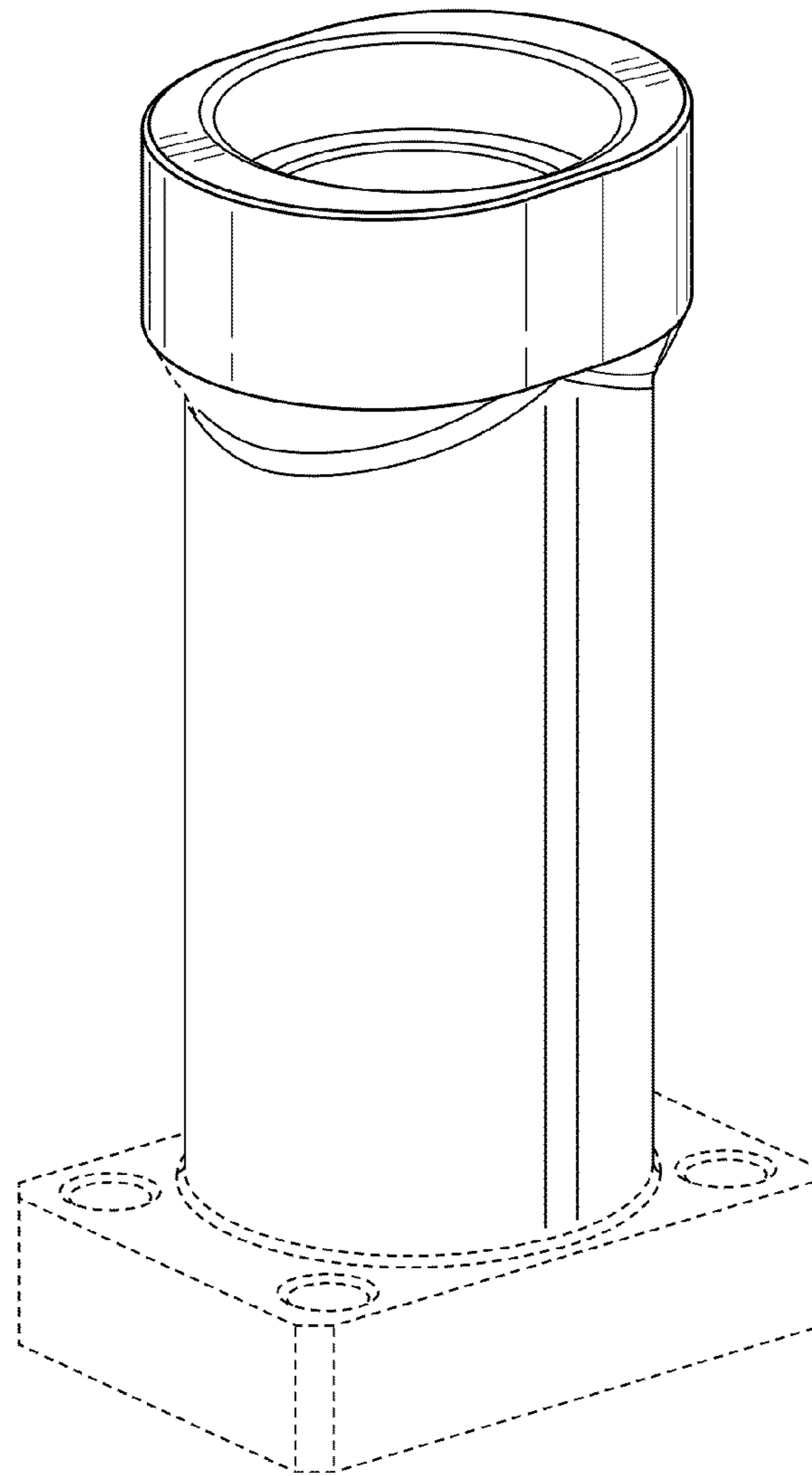




**FIG. 8**

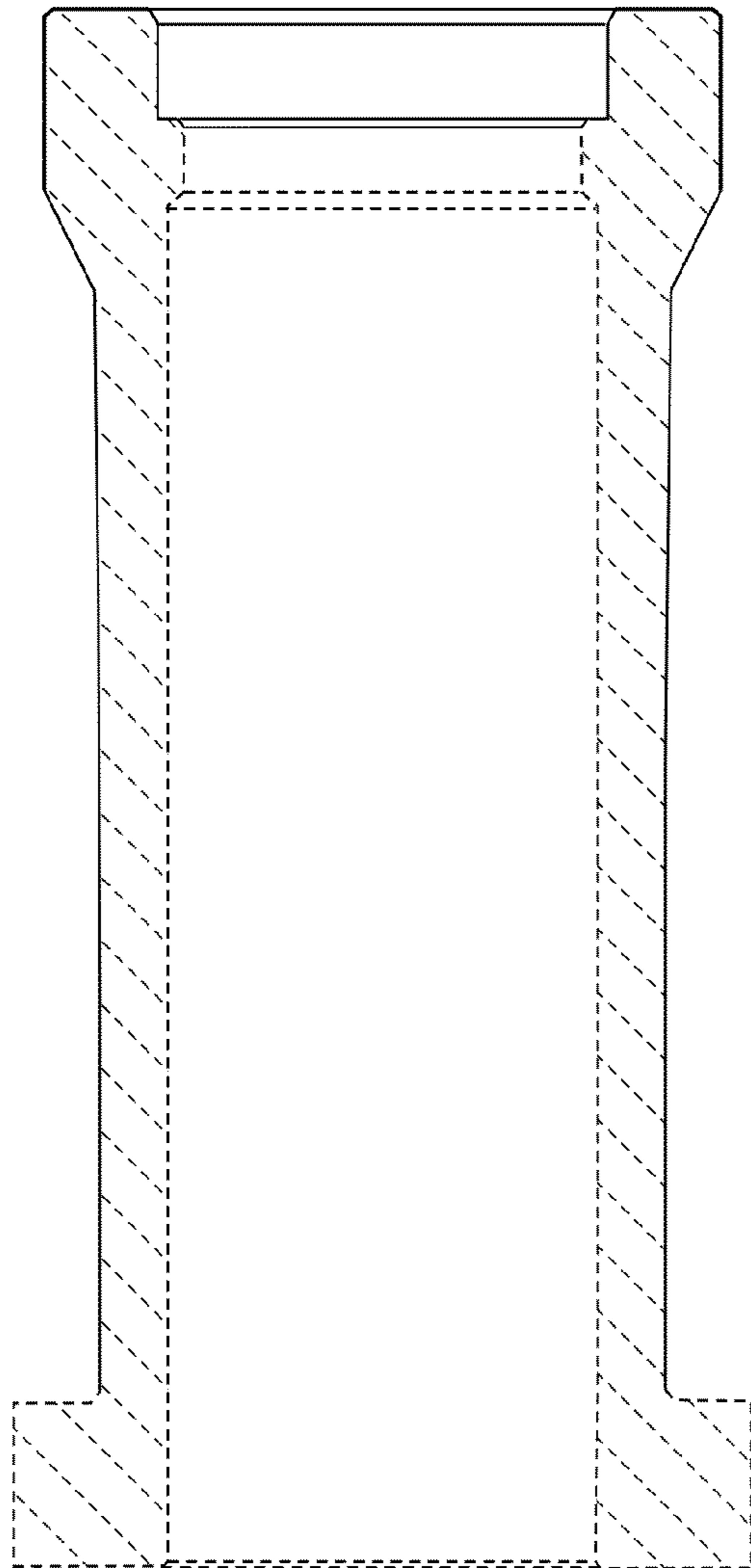


**FIG. 10**

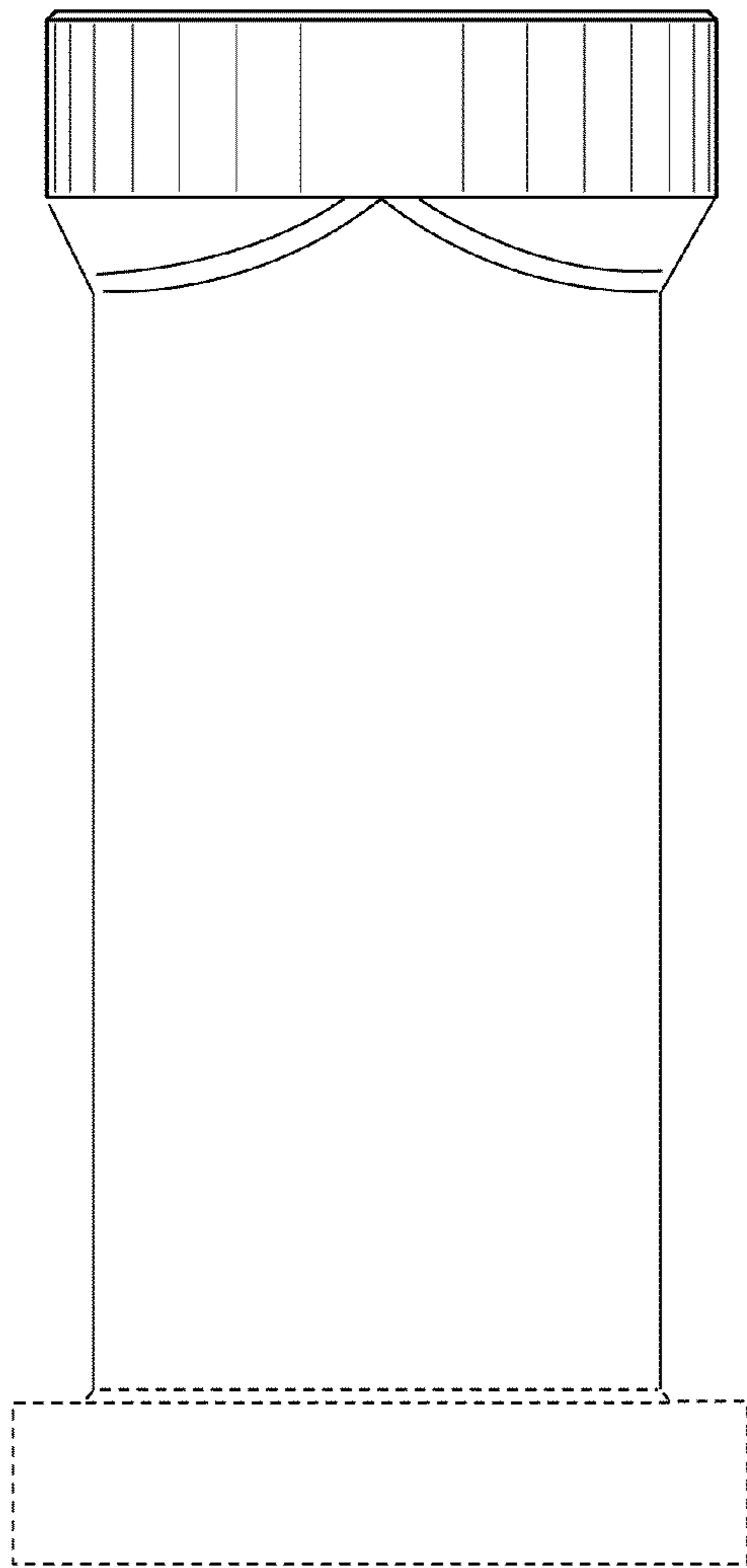


**FIG. 9**

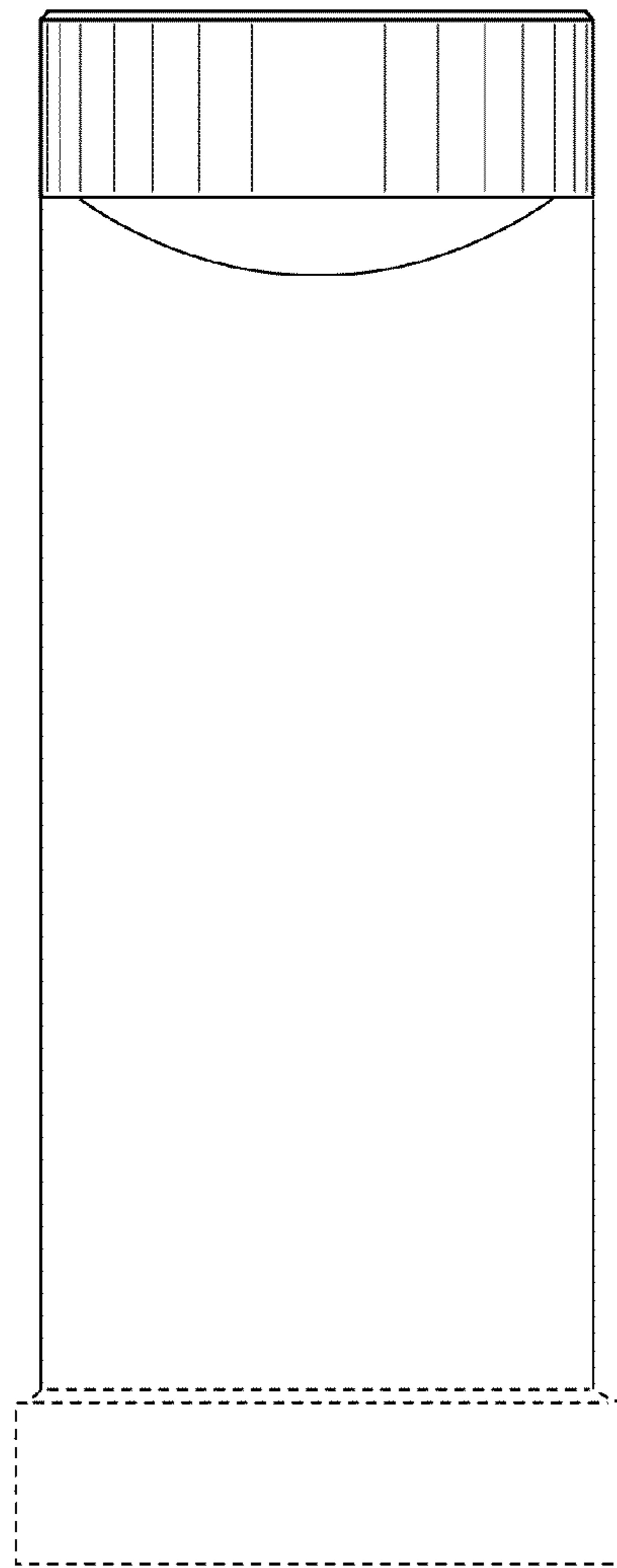




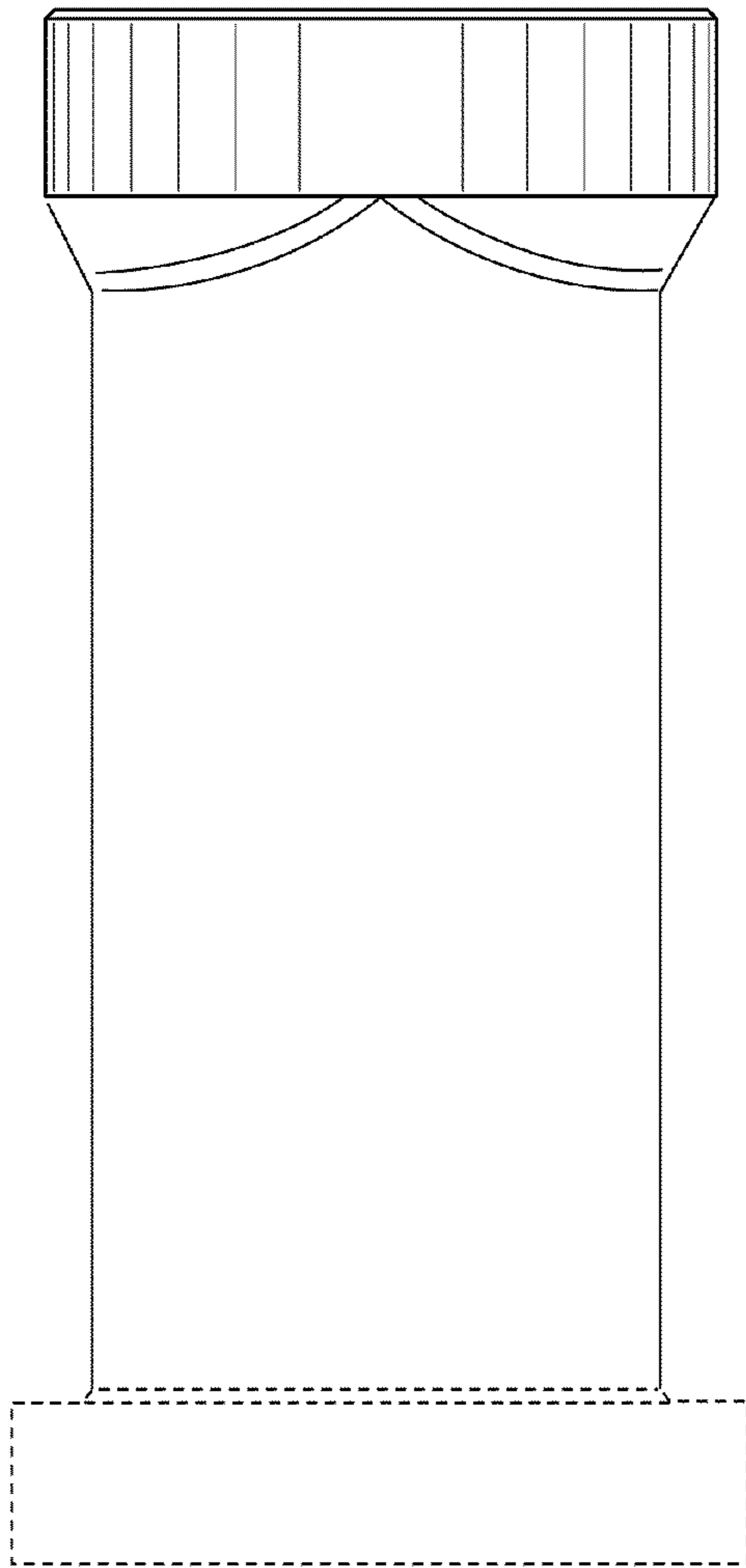
**FIG. 11**



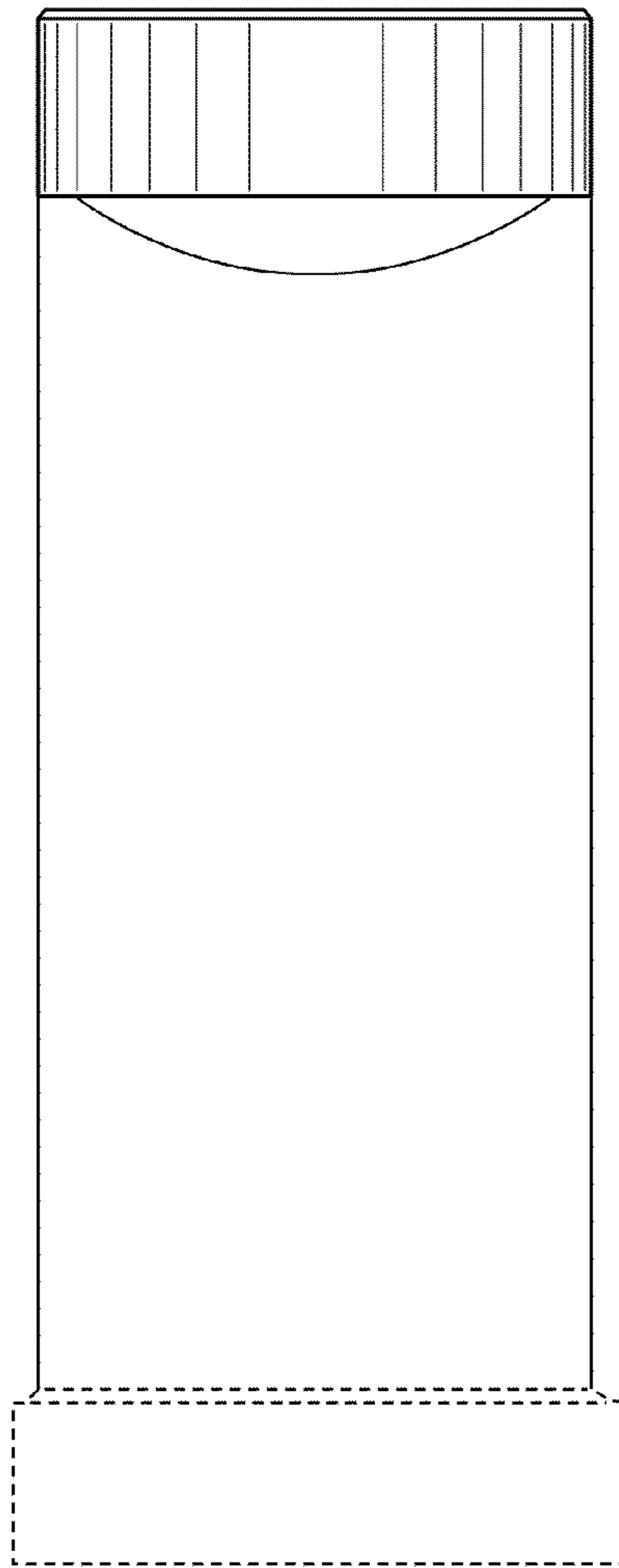
**FIG. 12**



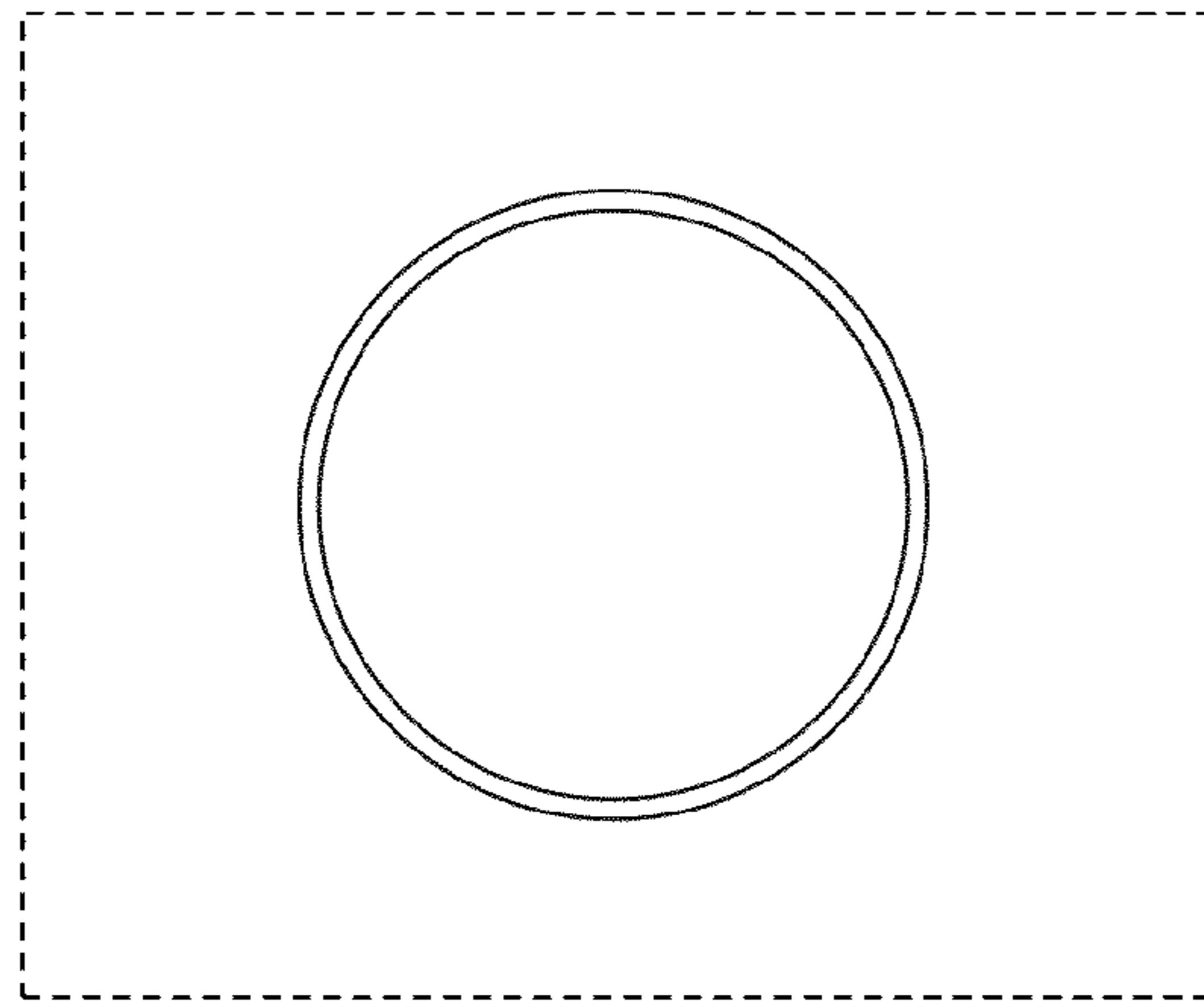
**FIG. 13**



**FIG. 14**



**FIG. 15**



**FIG. 16**