



US00D865920S

(12) **United States Design Patent** (10) **Patent No.:** **US D865,920 S**  
**Takahashi et al.** (45) **Date of Patent:** **\*\* Nov. 5, 2019**

(54) **SEAL MEMBER FOR A PRESSURE VESSEL**

FOREIGN PATENT DOCUMENTS

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CN 301169536 S 4/2010  
JP D2093567 U1 7/1990

(Continued)

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(57) **CLAIM**

(\*\*) Term: **15 Years**

The ornamental design for a seal member for a pressure vessel, as shown and described.

(21) Appl. No.: **29/639,432**

(22) Filed: **Mar. 6, 2018**

**DESCRIPTION**

**Related U.S. Application Data**

(62) Division of application No. 29/589,722, filed on Jan. 4, 2017, now Pat. No. Des. 836,186.

FIG. 1 is a top view of a seal member for a pressure vessel showing our new design according to a first embodiment of the invention;

FIG. 2 is a front elevation view thereof;

FIG. 3 is a right side elevation view thereof;

FIG. 4 is a cross-sectional view thereof taken along lines 4-4 shown in FIG. 1;

FIG. 5 is an enlarged cross-sectional view of a portion thereof defined by area 5-5 shown in FIG. 1;

FIG. 6 is an enlarged cross-sectional view of a portion thereof in a condition of use;

FIG. 7 is a perspective view thereof;

FIG. 8 is a top view of a seal member for a pressure vessel showing our new design according to a second embodiment of the invention;

FIG. 9 is a front elevation view thereof;

FIG. 10 is a right side elevation view thereof;

FIG. 11 is a cross-sectional view thereof taken along lines 11-11 shown in FIG. 8;

FIG. 12 is an enlarged cross-sectional view of a portion thereof defined by area 12-12 shown in FIG. 8;

FIG. 13 is an enlarged cross-sectional view of a portion thereof in a condition of use; and,

FIG. 14 is a perspective view thereof.

The bottom, rear elevation, and left side elevation views for each embodiment of the seal member for a pressure vessel

(Continued)

(30) **Foreign Application Priority Data**

Jul. 5, 2016 (JP) ..... 2016-014271

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(51) **LOC (12) Cl.** ..... **23-01**

(52) **U.S. Cl.**  
USPC ..... **D23/269**

(58) **Field of Classification Search**  
USPC ..... D23/259–260, 269, 262; 285/901, 285/42–50; 417/454; 277/314–316,  
(Continued)

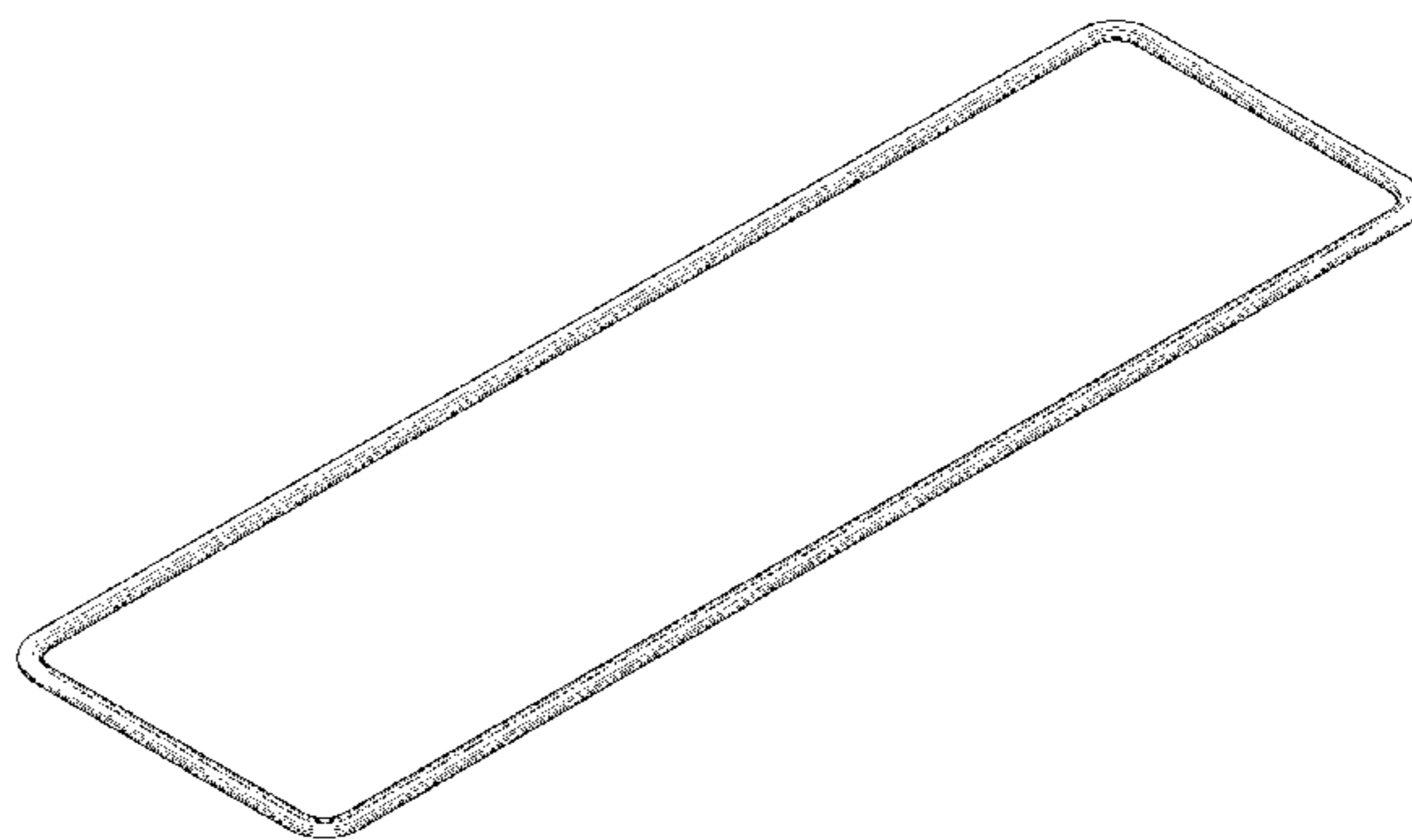
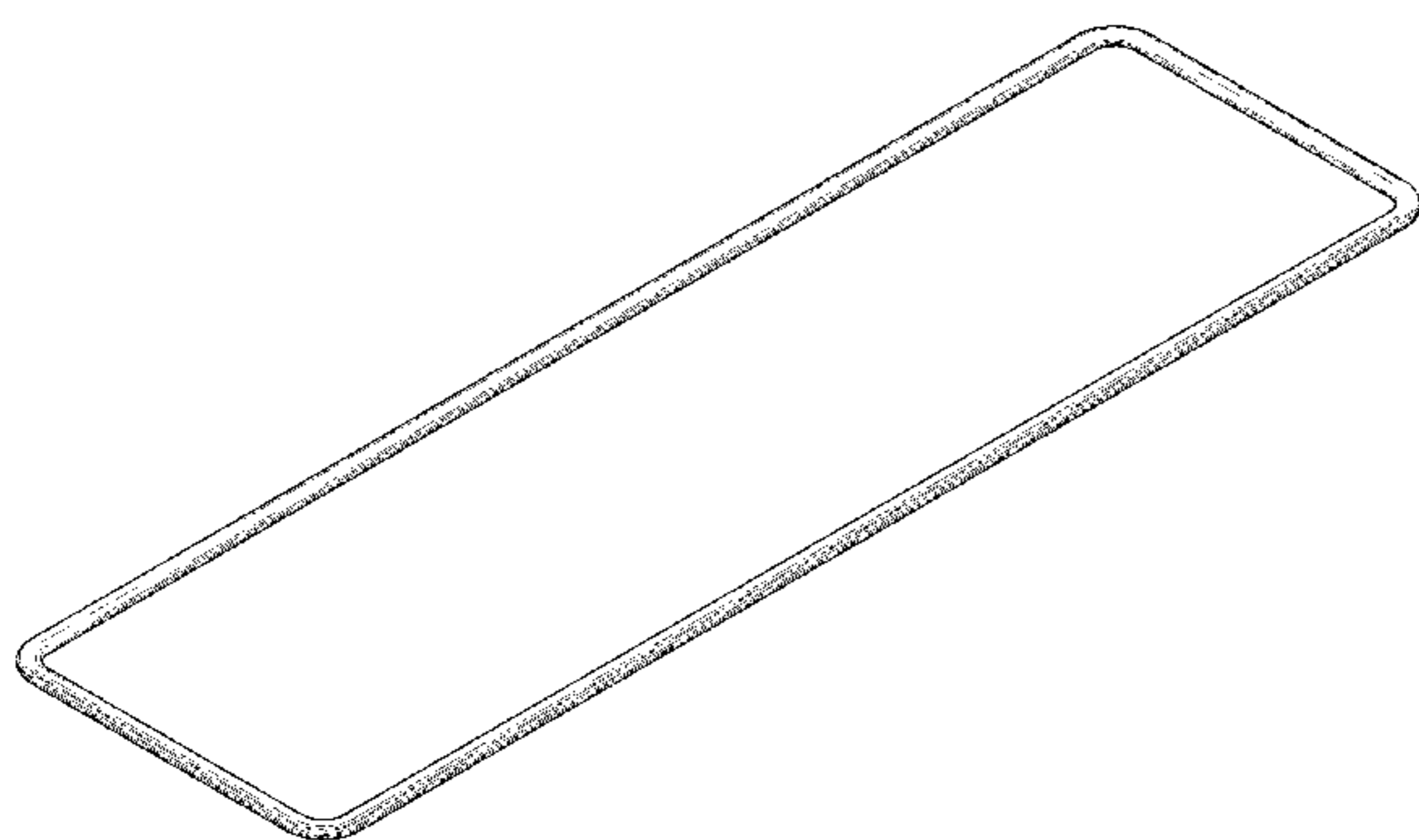
(56) **References Cited**

U.S. PATENT DOCUMENTS

D31,451 S \* 8/1899 Norris ..... D23/269

D32,696 S 5/1900 Merwarth

(Continued)



are omitted as they are identical in appearance to the top, front elevation, and right side elevation views, respectively, for each embodiment.

The dot dash broken lines shown in FIGS. 5 and 12 indicate cutoff boundaries for the enlarged detailed portion views and form no part of the claim.

The evenly dashed lines shown in FIGS. 6 and 13 depict environmental subject matter that forms no part of the claim.

**1 Claim, 14 Drawing Sheets**

(58) **Field of Classification Search**

USPC ..... 277/351-359, 361-364, 382, 392,  
277/394-395, 504, 553, 549, 562-563,  
277/572, 602-603, 605-607, 609,  
277/616-617, 623, 641-644, 650-652  
CPC .. E03C 1/30; E03C 1/222; E03C 1/286; F16L  
55/07; F16L 55/1007; F16L 55/1015;  
F16L 55/1108; F16L 55/1152; F16L 5/02;  
F16L 5/10; F04B 53/16; F04B 53/143;  
F16J 15/3268; F16J 15/106; E04D  
13/1406; E04D 13/1407; F16K 3/0227;  
F16K 35/00; F16K 49/00; F16K 51/02;  
E03B 7/12

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

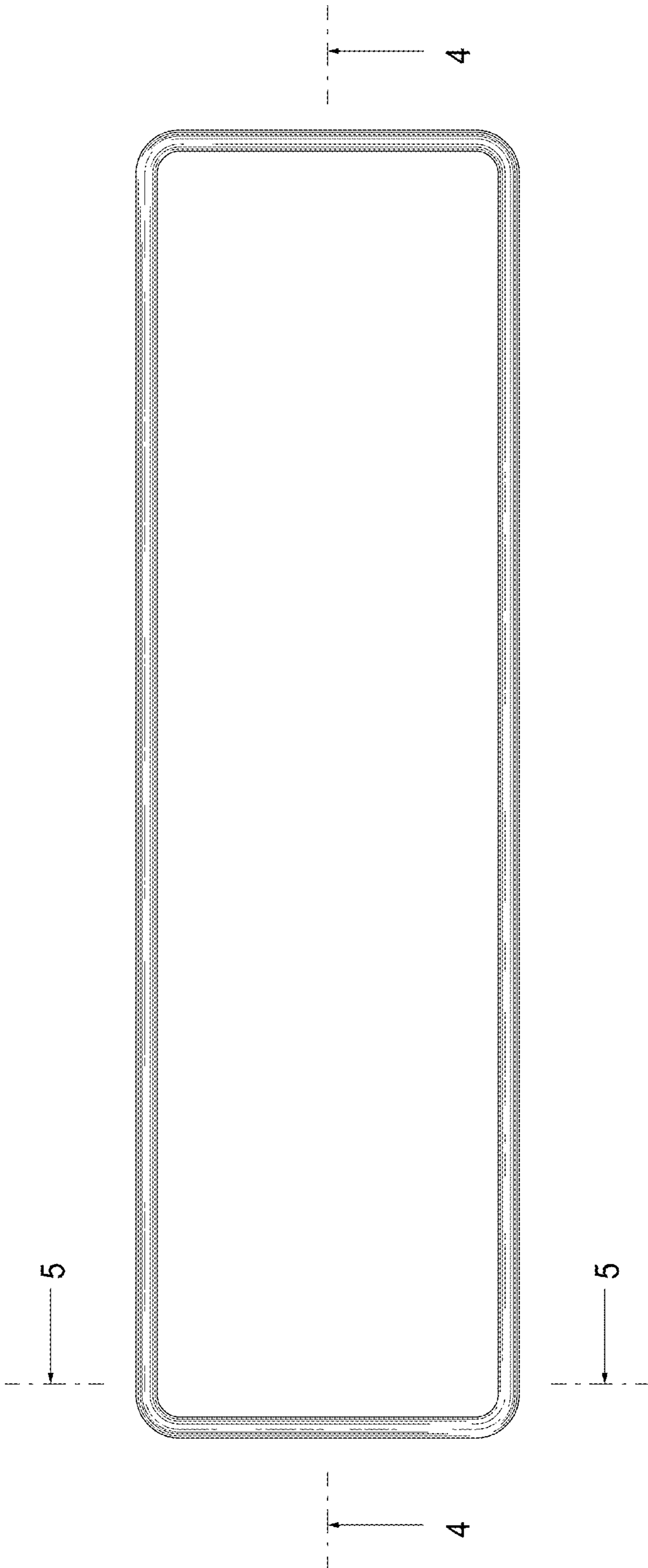
2,155,457 A \* 4/1939 West ..... F16J 15/106  
106/164.11  
6,523,833 B1 2/2003 Ishigaki et al.

6,557,857 B1 5/2003 Goodman  
D517,679 S 3/2006 Stout, Jr. et al.  
D518,885 S \* 4/2006 Stout, Jr. .... D23/393  
7,347,224 B2 3/2008 Nohara et al.  
7,584,934 B1 \* 9/2009 Eichinger ..... B63H 20/02  
114/112  
D614,271 S 4/2010 Weston  
7,828,302 B2 \* 11/2010 Hurlbert ..... F16J 15/125  
277/637  
D646,764 S \* 10/2011 Rusconi ..... D23/269  
9,291,266 B2 \* 3/2016 Yu ..... F16J 15/061  
D755,356 S 5/2016 Vaseleniuck et al.  
D785,144 S 4/2017 Kitagawa  
9,611,940 B2 4/2017 Khan et al.  
D802,723 S 11/2017 Miyamoto  
2003/0160452 A1 8/2003 Mattsson et al.  
2008/0012238 A1 1/2008 Kapcoe et al.  
2009/0045371 A1 2/2009 Kamibayashiyama  
2009/0289450 A1 11/2009 Bluhm  
2010/0264606 A1 10/2010 Hayashi  
2012/0223488 A1 \* 9/2012 Kim ..... F16J 15/106  
277/625  
2014/0070494 A1 3/2014 Winkelmann et al.  
2014/0175310 A1 6/2014 Coppola et al.  
2015/0176713 A1 \* 6/2015 Khan ..... F16K 51/02  
251/326  
2015/0184761 A1 7/2015 Kusakabe  
2017/0211706 A1 7/2017 Amir et al.  
2018/0163868 A1 \* 6/2018 Ishigami ..... F16J 15/0893

FOREIGN PATENT DOCUMENTS

TW D127507 S 2/2009  
TW D127508 S 2/2009

\* cited by examiner



**FIG. 1**



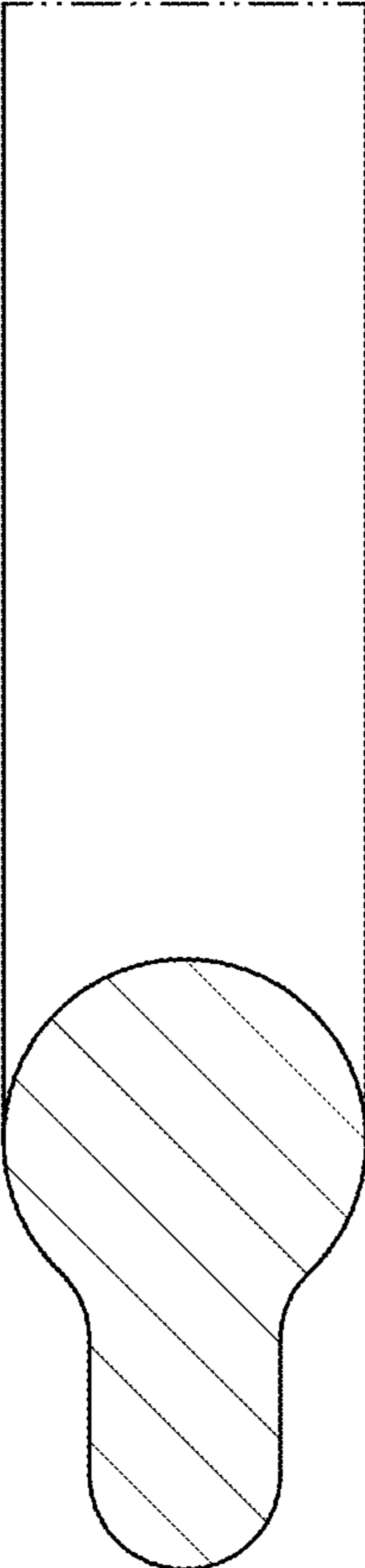
**FIG. 2**



**FIG. 3**



**FIG. 4**



**FIG. 5**

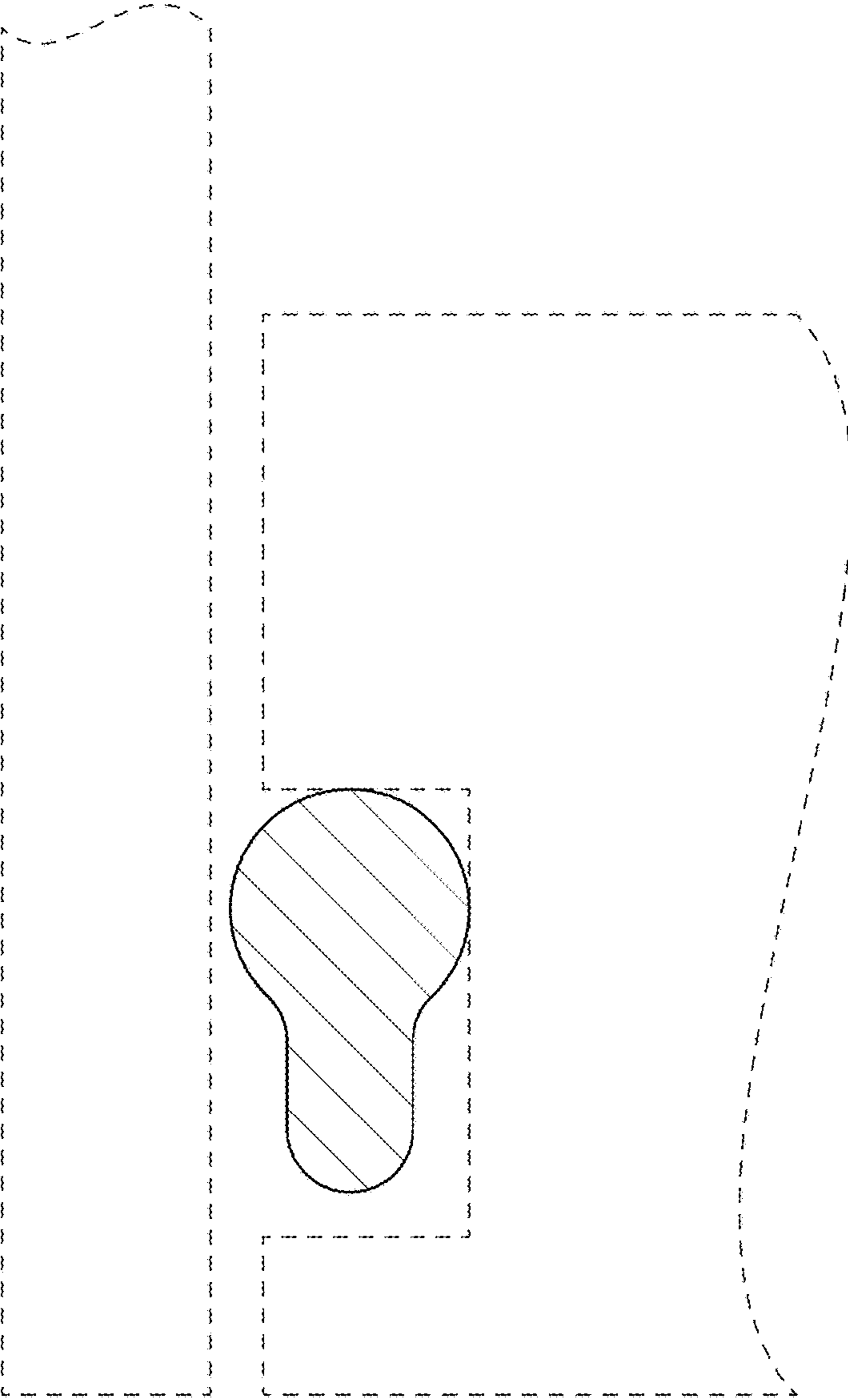
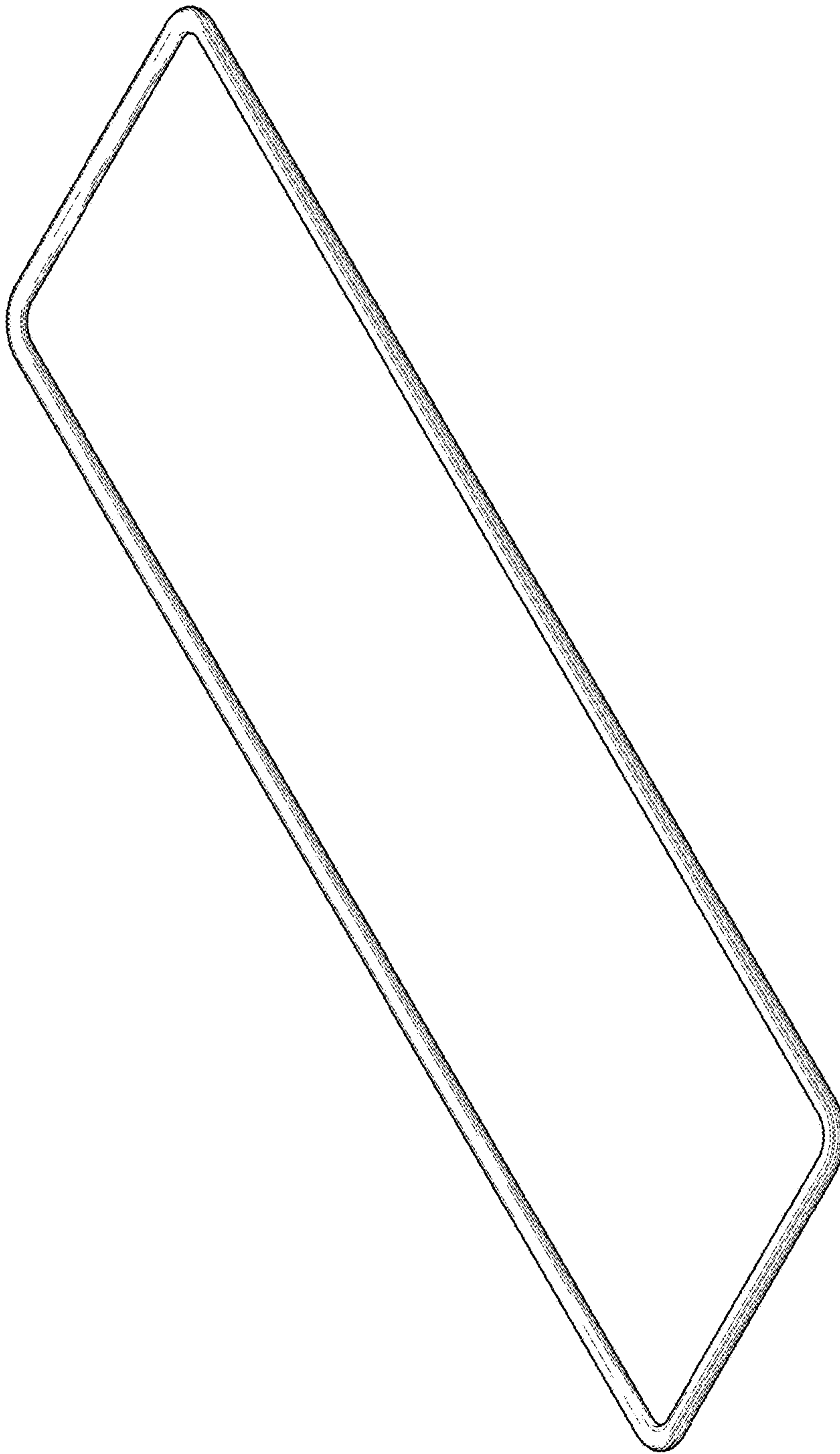


FIG. 6





**FIG. 7**

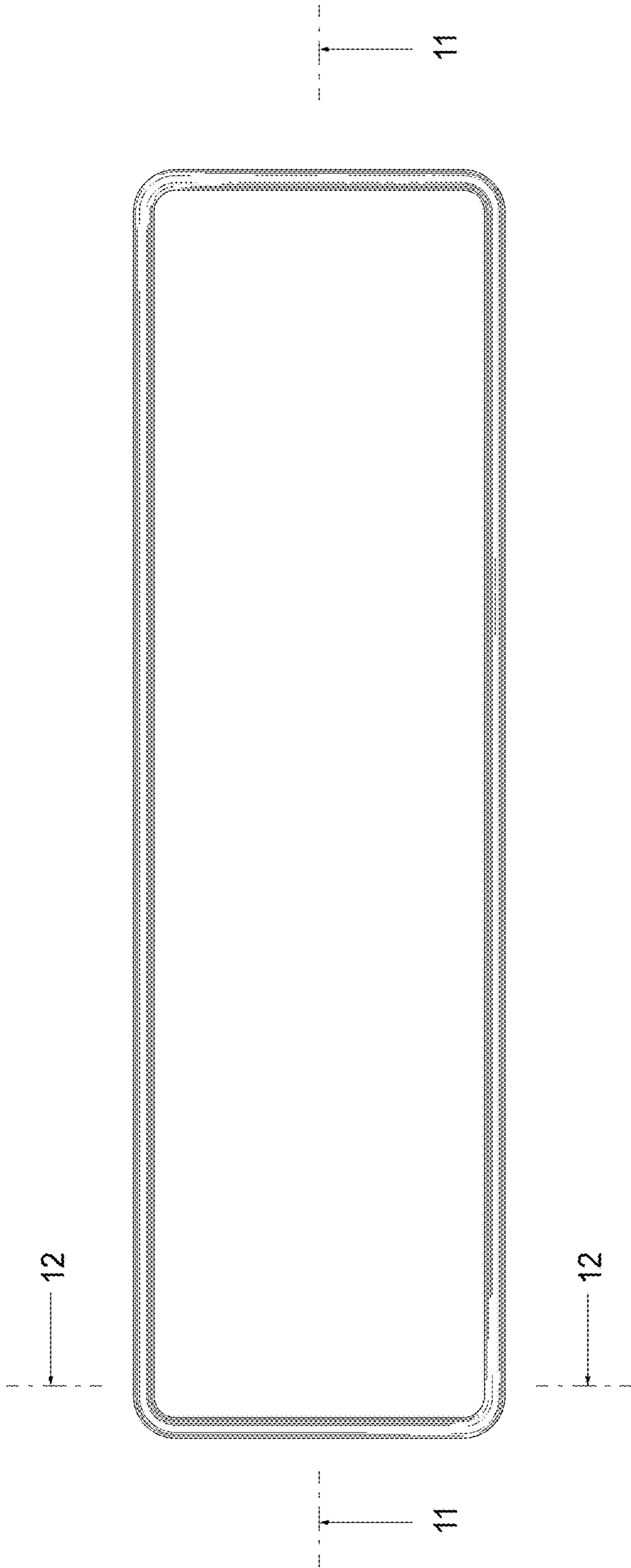
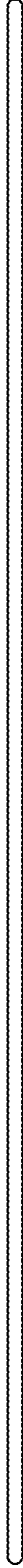
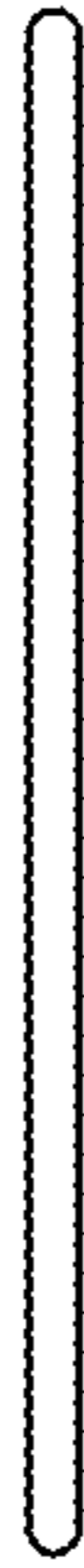


FIG. 8



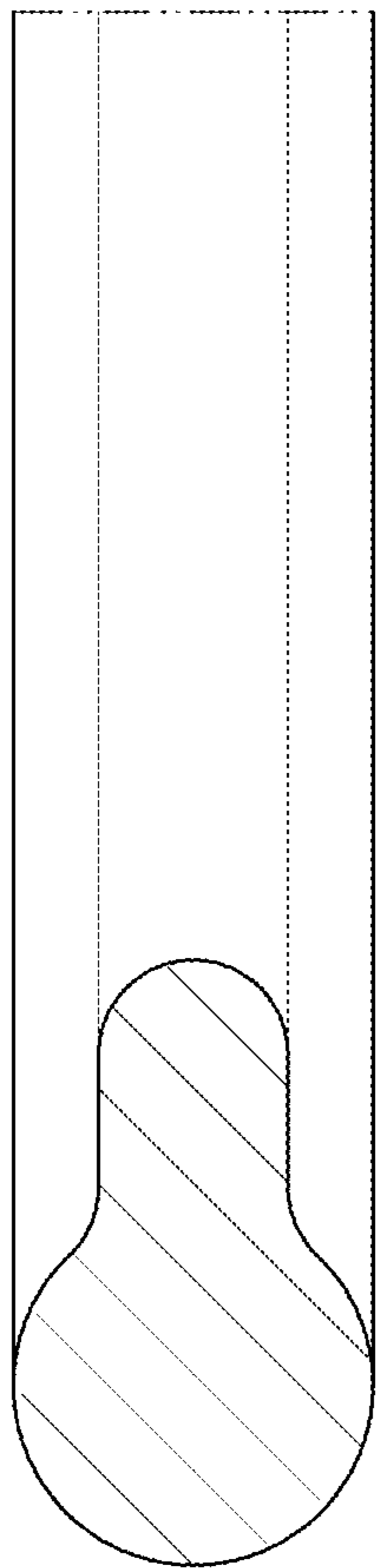
**FIG. 9**



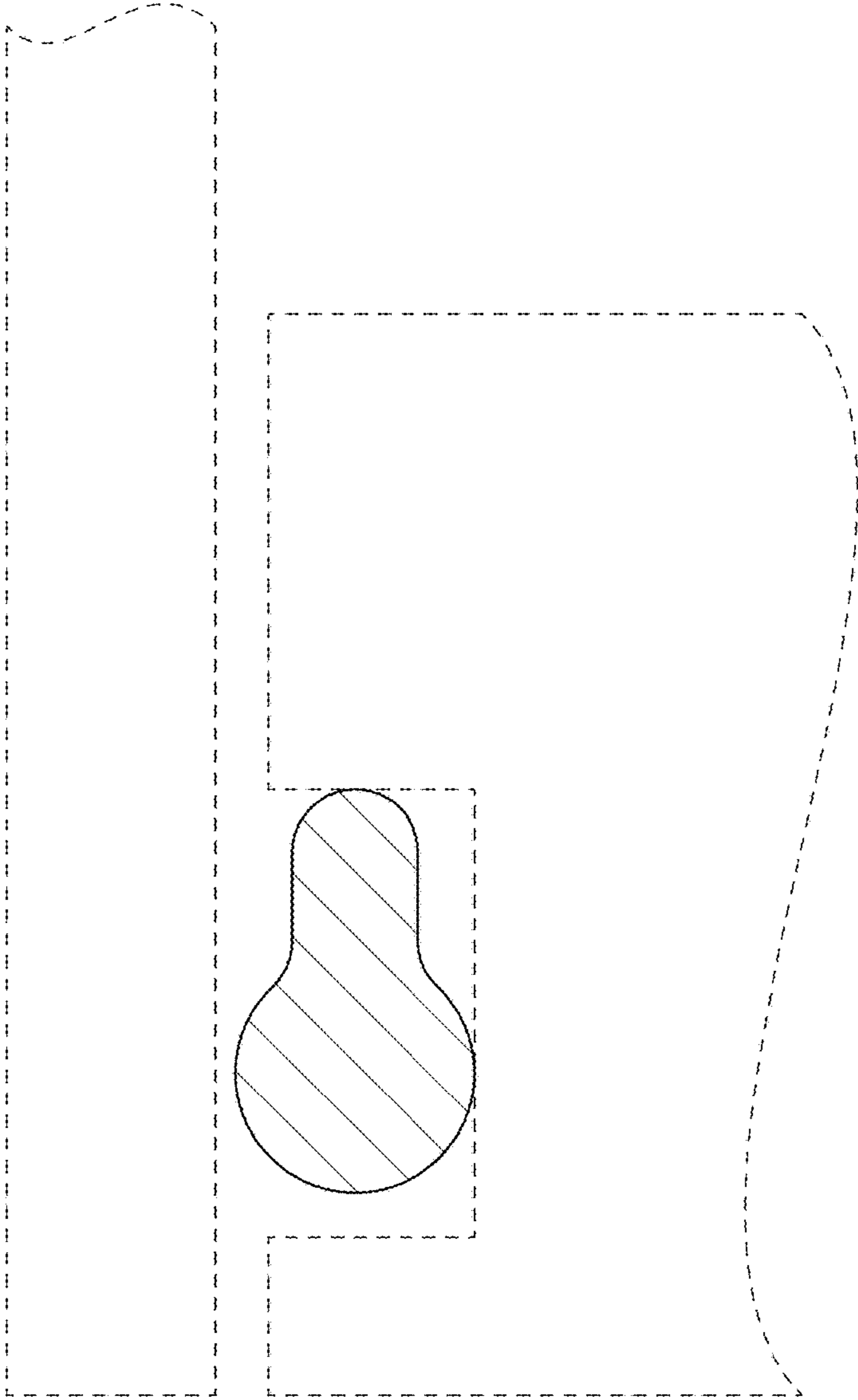
**FIG. 10**



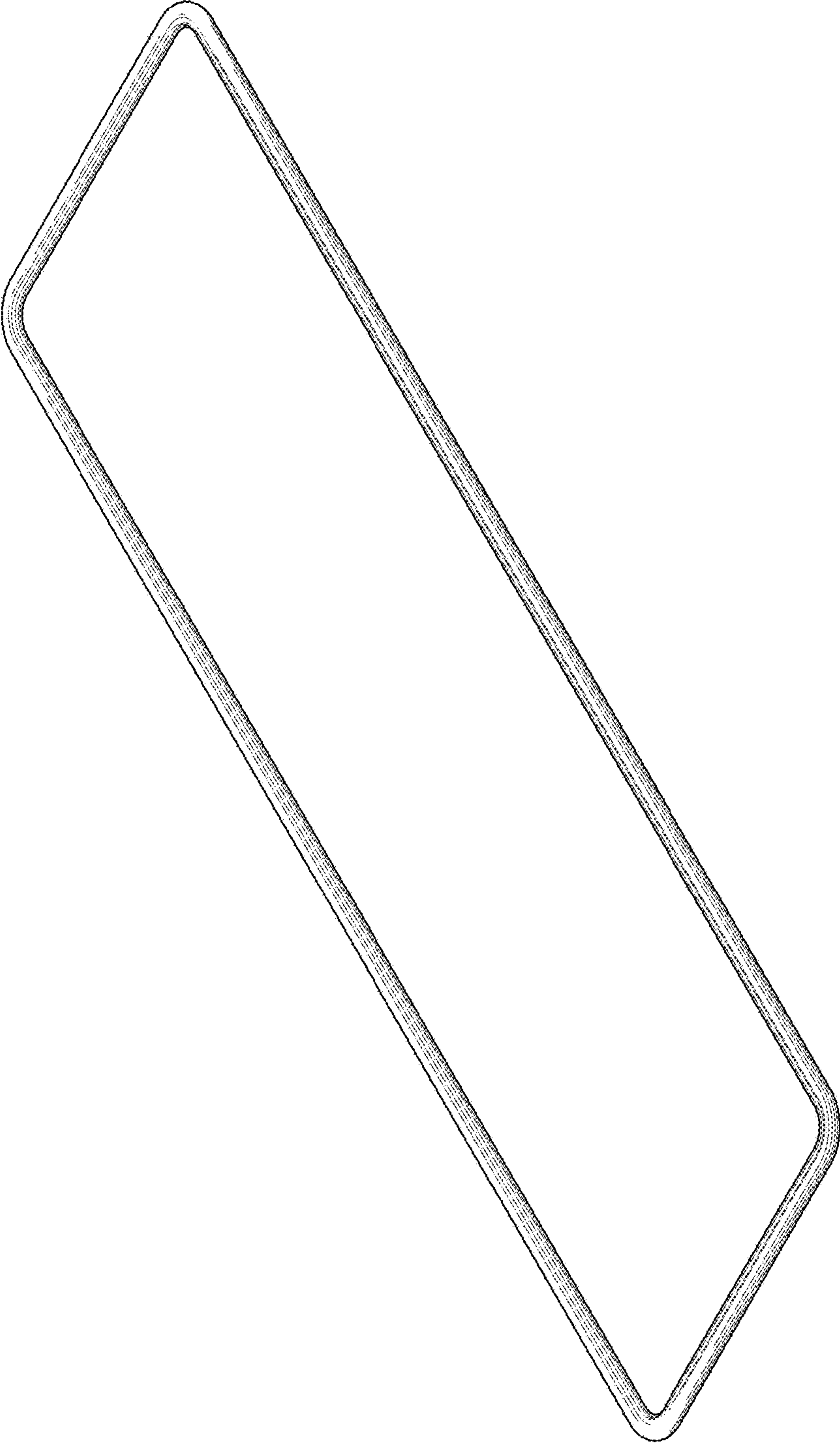
**FIG. 11**



**FIG. 12**



**FIG. 13**



**FIG. 14**