



US00D956923S

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

(10) **Patent No.:** **US D956,923 S**
(45) **Date of Patent:** **** Jul. 5, 2022**

(54) **FILTER CONNECTOR**

(71) Applicant: **ENTEGRIS, INC.**, Billerica, MA (US)

(72) Inventors: **Kobold Yang**, Hsinchu (TW); **Han Yi Wang**, Hsinchu (TW); **Bob Shie**, Hsinchu (TW); **Hee Jun Yang**, Seoul (KR)

(73) Assignee: **ENTEGRIS, INC.**, Billerica, MA (US)

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

(21) Appl. No.: **29/753,411**

(22) Filed: **Sep. 30, 2020**

(51) **LOC (13) Cl.** **23-01**

(52) **U.S. Cl.**
USPC **D23/209**

(58) **Field of Classification Search**
USPC D23/207, 208, 209, 210, 235, 355, 363,
D23/365; D24/162, 217, 229
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,735,716 A 4/1988 Petrucci
4,904,382 A 2/1990 Thomsen
(Continued)

FOREIGN PATENT DOCUMENTS

TW I671111 B 9/2019

OTHER PUBLICATIONS

Solaris Manifold Installation, Sep. 7, 2021, Youtube, site visited Mar. 7, 2022: <https://www.youtube.com/watch?v=InidXhvCPZo> (Year: 2021).*

(Continued)

Primary Examiner — Jack Reickel
Assistant Examiner — Bobby W Jones, II

(74) *Attorney, Agent, or Firm* — Entegris, Inc.

(57) **CLAIM**

The ornamental design for a filter connector, as shown.

DESCRIPTION

FIG. 1 shows a top left perspective view of a first embodiment of a filter connector showing the entire filter as environment;

FIG. 2 shows a close-up top left perspective view of the filter connector of FIG. 1;

FIG. 3 shows a close-up top right perspective view of the filter connector of FIG. 1;

FIG. 4 shows a close-up bottom left perspective view of the filter connector of FIG. 1;

FIG. 5 shows a close-up bottom right perspective view of the filter connector of FIG. 1;

FIG. 6 shows a close-up front view of the filter connector of FIG. 1;

FIG. 7 shows a close-up rear view of the filter connector of FIG. 1;

FIG. 8 shows a close-up left side view of the filter connector of FIG. 1;

FIG. 9 shows a close-up right side view of the filter connector of FIG. 1;

FIG. 10 shows a close-up top view of the filter connector of FIG. 1;

FIG. 11 shows a close-up bottom view of the filter connector of FIG. 1; and

FIG. 12 shows a top left perspective view of the filter connector of FIG. 1 when used with a bracket or manifold;

FIG. 13 shows a top left perspective view of a second embodiment of a filter connector showing the entire filter as environment;

FIG. 14 shows a close-up top left perspective view of the filter connector of FIG. 13;

FIG. 15 shows a close-up top right perspective view of the filter connector of FIG. 13;

FIG. 16 shows a close-up bottom left perspective view of the filter connector of FIG. 13;

FIG. 17 shows a close-up bottom right perspective view of the filter connector of FIG. 13;

(Continued)

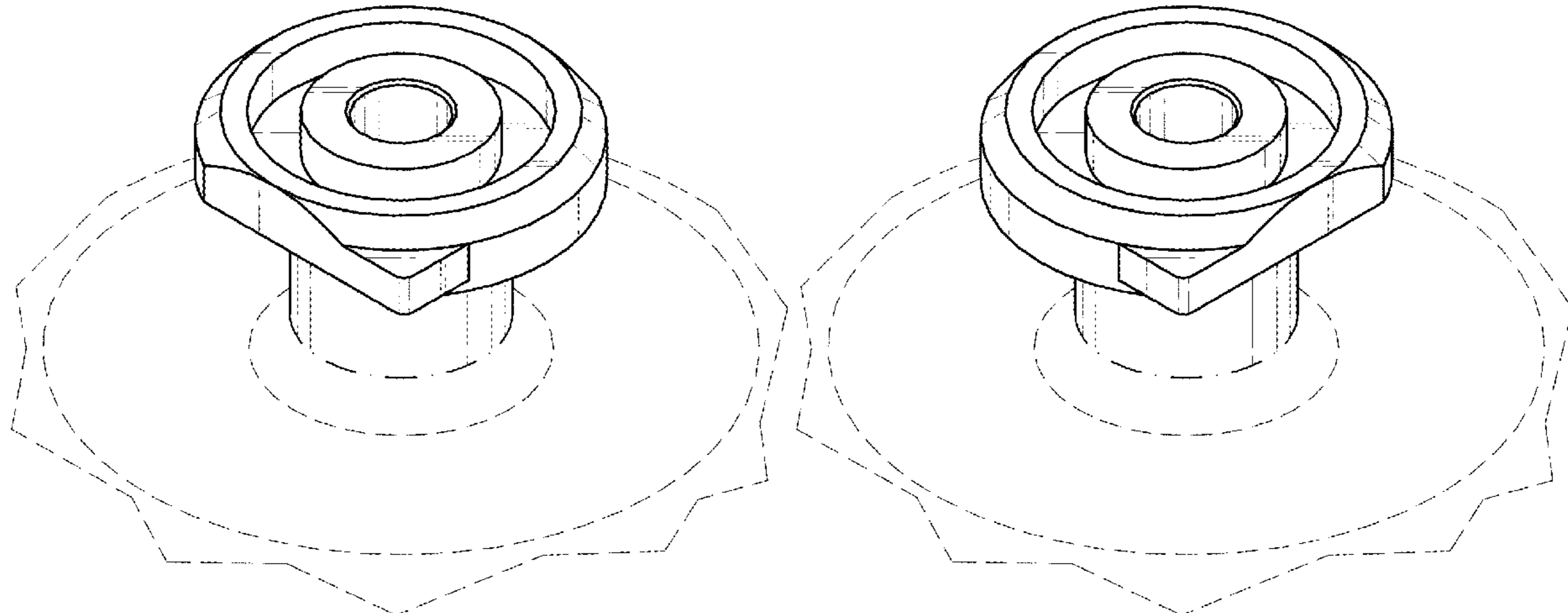


FIG. 18 shows a close-up front view of the filter connector of FIG. 13;
 FIG. 19 shows a close-up rear view of the filter connector of FIG. 13;
 FIG. 20 shows a close-up left side view of the filter connector of FIG. 13;
 FIG. 21 shows a close-up right side view of the filter connector of FIG. 13;
 FIG. 22 shows a close-up top view of the filter connector of FIG. 13;
 FIG. 23 shows a close-up bottom view of the filter connector of FIG. 13; and
 FIG. 24 shows a top left perspective view of the filter connector of FIG. 13 when used with a bracket or manifold;
 FIG. 25 shows a top left perspective view of a third embodiment of a filter connector showing the entire filter as environment;
 FIG. 26 shows a close-up top left perspective view of the filter connector of FIG. 25;
 FIG. 27 shows a close-up top right perspective view of the filter connector of FIG. 25;
 FIG. 28 shows a close-up bottom left perspective view of the filter connector of FIG. 25;
 FIG. 29 shows a close-up bottom right perspective view of the filter connector of FIG. 25;
 FIG. 30 shows a close-up front view of the filter connector of FIG. 25;
 FIG. 31 shows a close-up rear view of the filter connector of FIG. 25;
 FIG. 32 shows a close-up left side view of the filter connector of FIG. 25;
 FIG. 33 shows a close-up right side view of the filter connector of FIG. 1;
 FIG. 34 shows a close-up top view of the filter connector of FIG. 25;
 FIG. 35 shows a close-up bottom view of the filter connector of FIG. 25; and,
 FIG. 36 shows a top left perspective view of the filter connector of FIG. 25 when used with a bracket or manifold. The evenly-dashed broken lines shown in the figures are included for the purpose of illustrating environmental structure and form no part of the claimed design. The dot-dash broken line(s) defines the bounds of the claimed design and form no part thereof.

1 Claim, 21 Drawing Sheets

(58) **Field of Classification Search**
 CPC B01D 27/00; B01D 27/08; B01D 35/02;

B01D 46/001; B01D 2201/309; B01D
 2201/4023; C02F 2201/002; C02F
 2307/10

See application file for complete search history.

(56)

References Cited

U.S. PATENT DOCUMENTS

D351,892	S *	10/1994	Wolf	D24/176
5,397,462	A	3/1995	Higashijima	
5,456,830	A	10/1995	Stanford	
D420,094	S *	2/2000	Woodard, Jr.	D23/209
6,120,685	A	9/2000	Carlson	
6,652,749	B2	11/2003	Stankowski	
7,138,053	B2 *	11/2006	Sato	B01D 35/30 210/232
7,169,302	B2	1/2007	Stockbower	
D561,300	S *	2/2008	Baba	D23/209
D594,927	S *	6/2009	Amtmann	D23/209
D604,805	S *	11/2009	Samborn	D23/233
7,746,315	B2	6/2010	Li	
7,909,997	B2	3/2011	Stoick	
D690,795	S *	10/2013	Reif	D23/209
8,709,246	B2	4/2014	Branscomb	
D762,813	S *	8/2016	Lu	D23/209
9,469,551	B2	10/2016	Sherman	
9,505,603	B2 *	11/2016	Hennen	B67D 7/344
D831,786	S *	10/2018	Zou	D23/209
D831,787	S *	10/2018	Luo	D23/209
D835,752	S *	12/2018	Spiegel	D23/209
10,245,609	B2 *	4/2019	Koland	B67D 7/0288
11,266,933	B2 *	3/2022	Kinjo	B01D 35/306
2005/0103697	A1 *	5/2005	Magnusson	C02F 1/28 210/450
2010/0126928	A1 *	5/2010	South	F02M 37/32 210/440
2013/0228509	A1	9/2013	Kuruc	
2014/0138303	A1 *	5/2014	Takeda	B01D 35/02 210/455
2018/0140974	A1 *	5/2018	Uchida	B01D 35/306
2018/0140980	A1	5/2018	Uchida	
2019/0054403	A1 *	2/2019	Uchida	B01D 46/0012
2020/0282349	A1 *	9/2020	Sutherland	B01D 27/08
2020/0376422	A1 *	12/2020	Kamimoto	B01D 35/30
2022/0024781	A1 *	1/2022	Keel	B01D 35/301

OTHER PUBLICATIONS

Membrane Solutions Inline Water Filter, Feb. 10, 2019, Amazon, site visited Mar. 7, 2022: <https://www.amazon.com/dp/B07NL2Z7MN/> (Year: 219).*

Filtrete Quick-Change Filter System, Aug. 17, 2012, Amazon, site visited Mar. 7, 2022: <https://www.amazon.com/dp/B00910TZV0/> (Year: 2012).*

* cited by examiner

Fig. 1

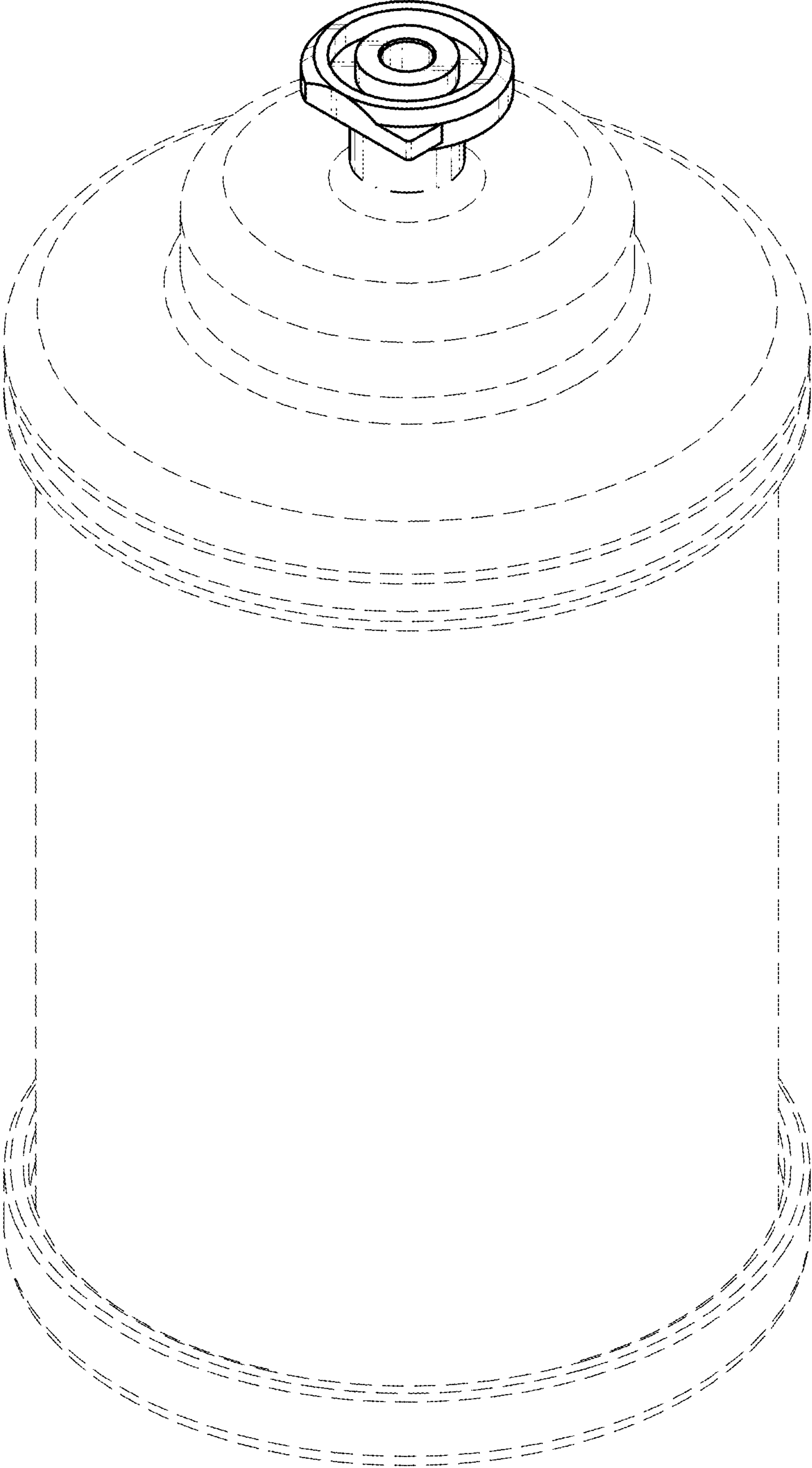


Fig. 2

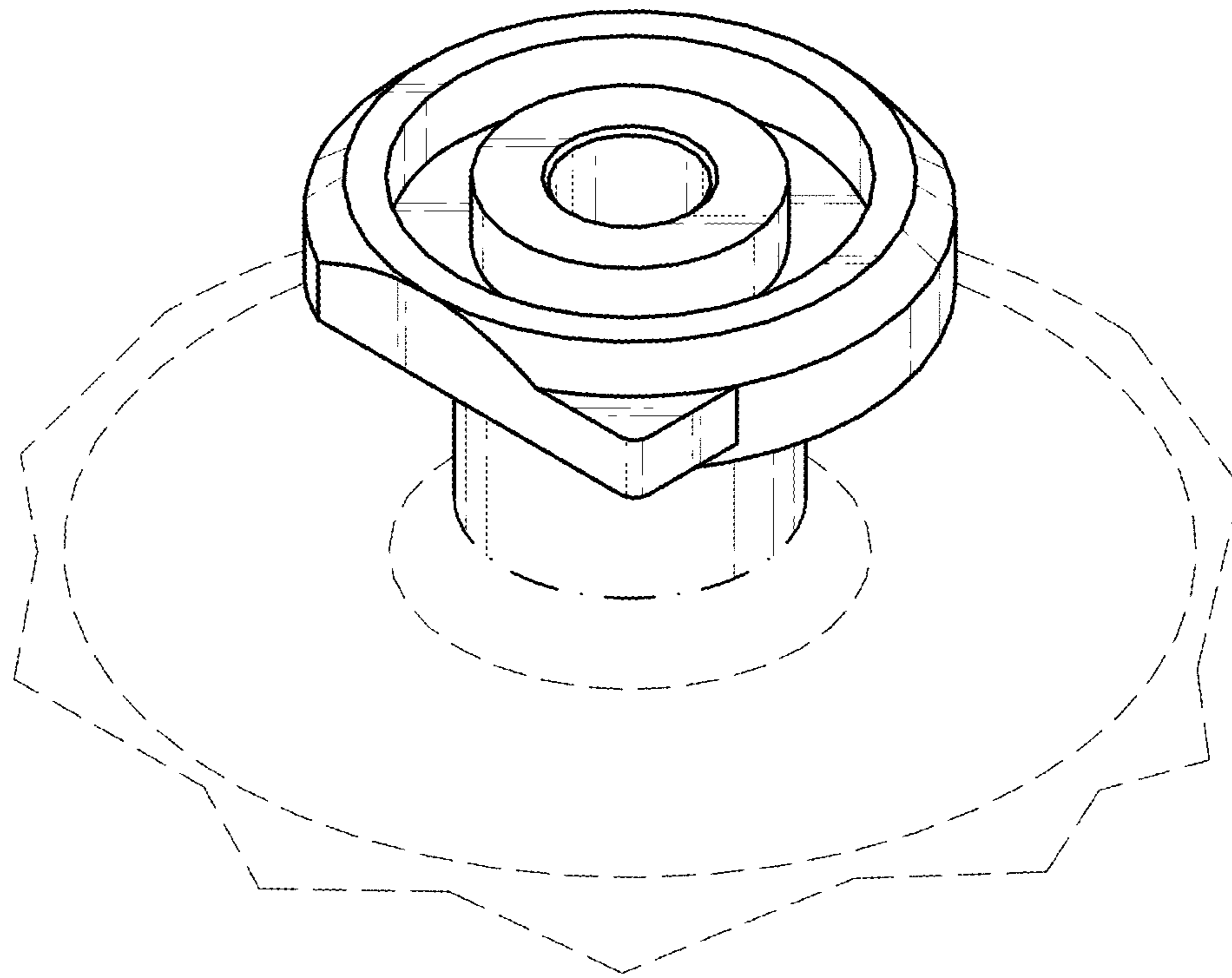


Fig. 3

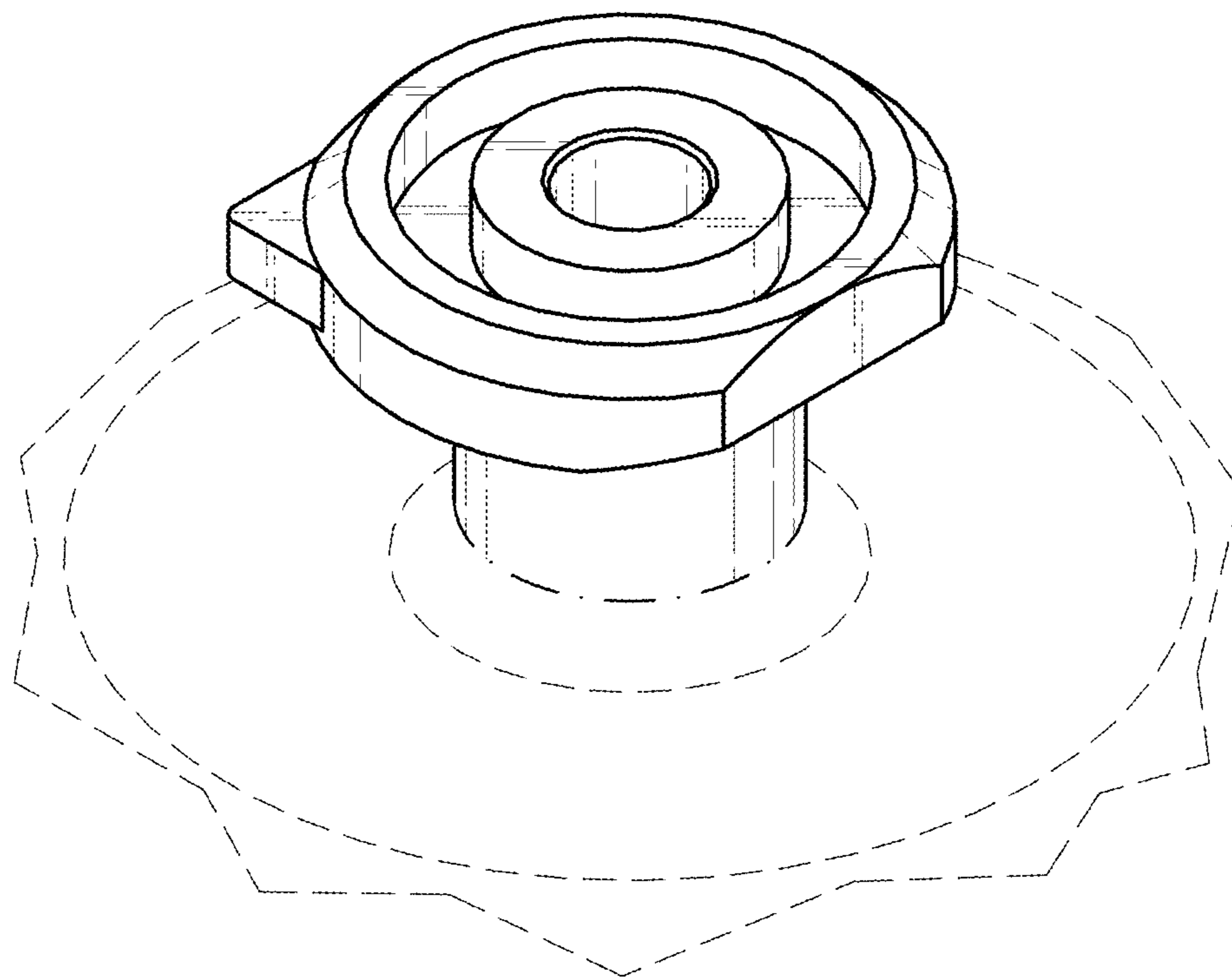


Fig. 4

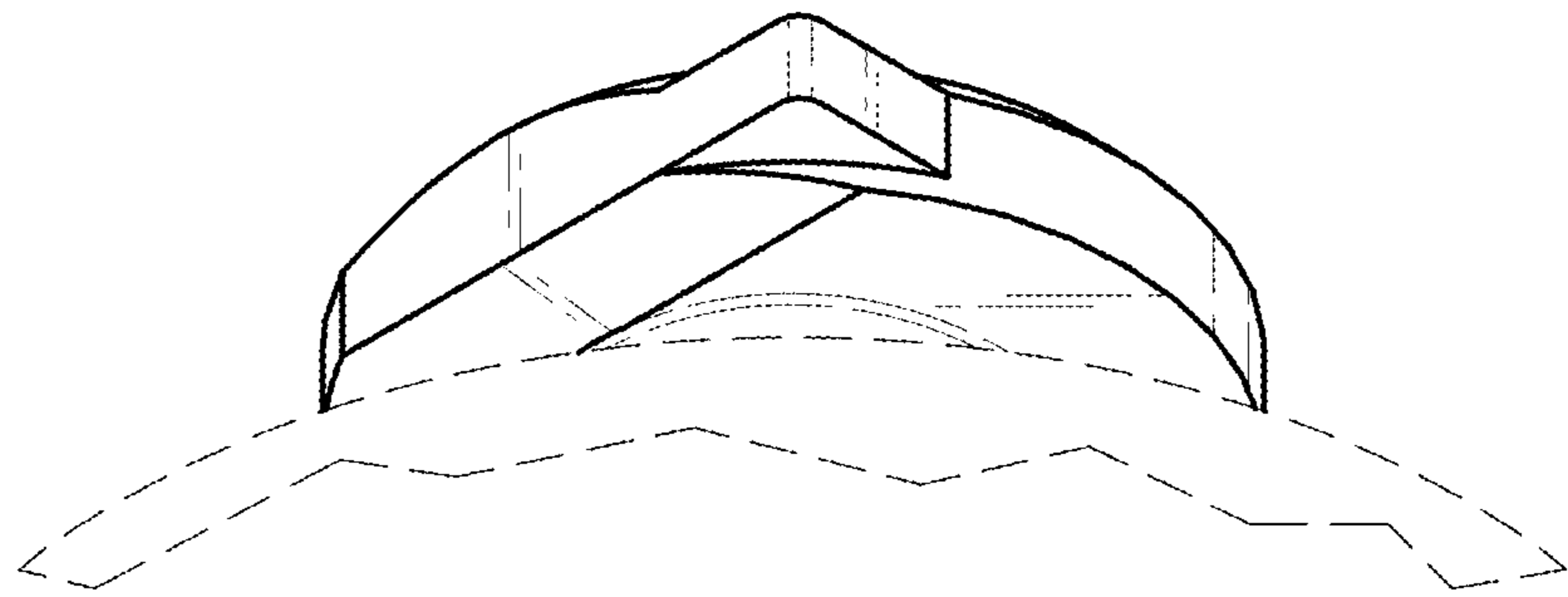


Fig. 5

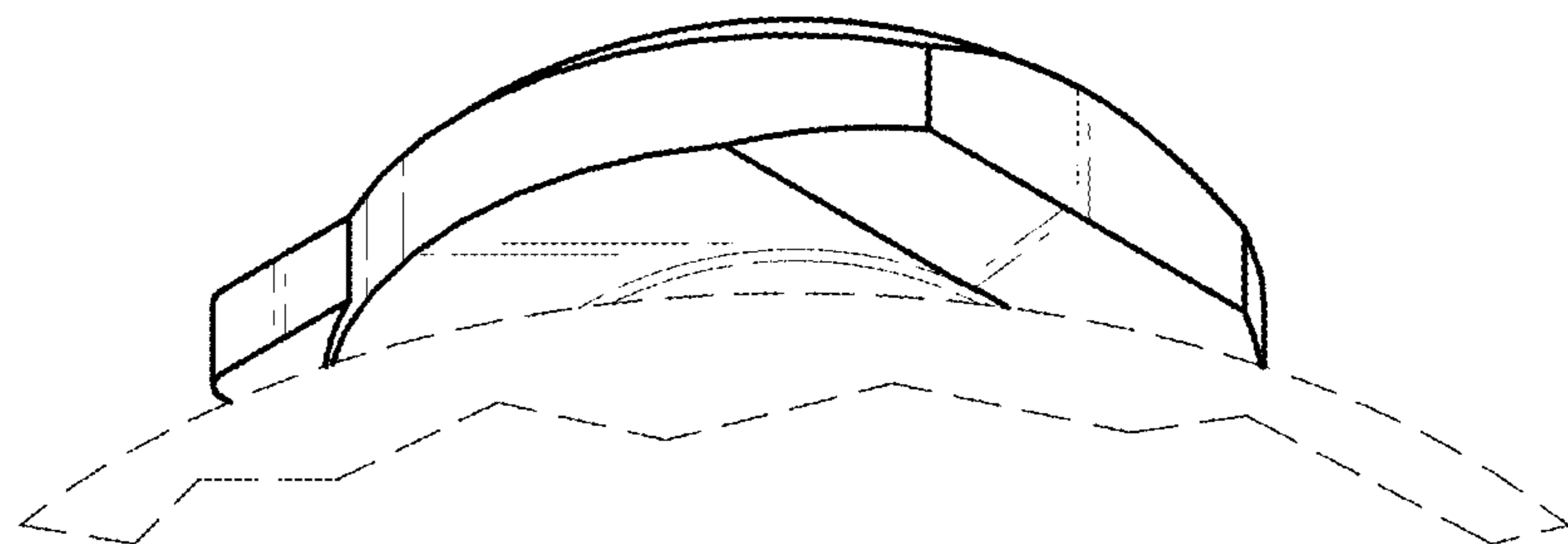


Fig. 6

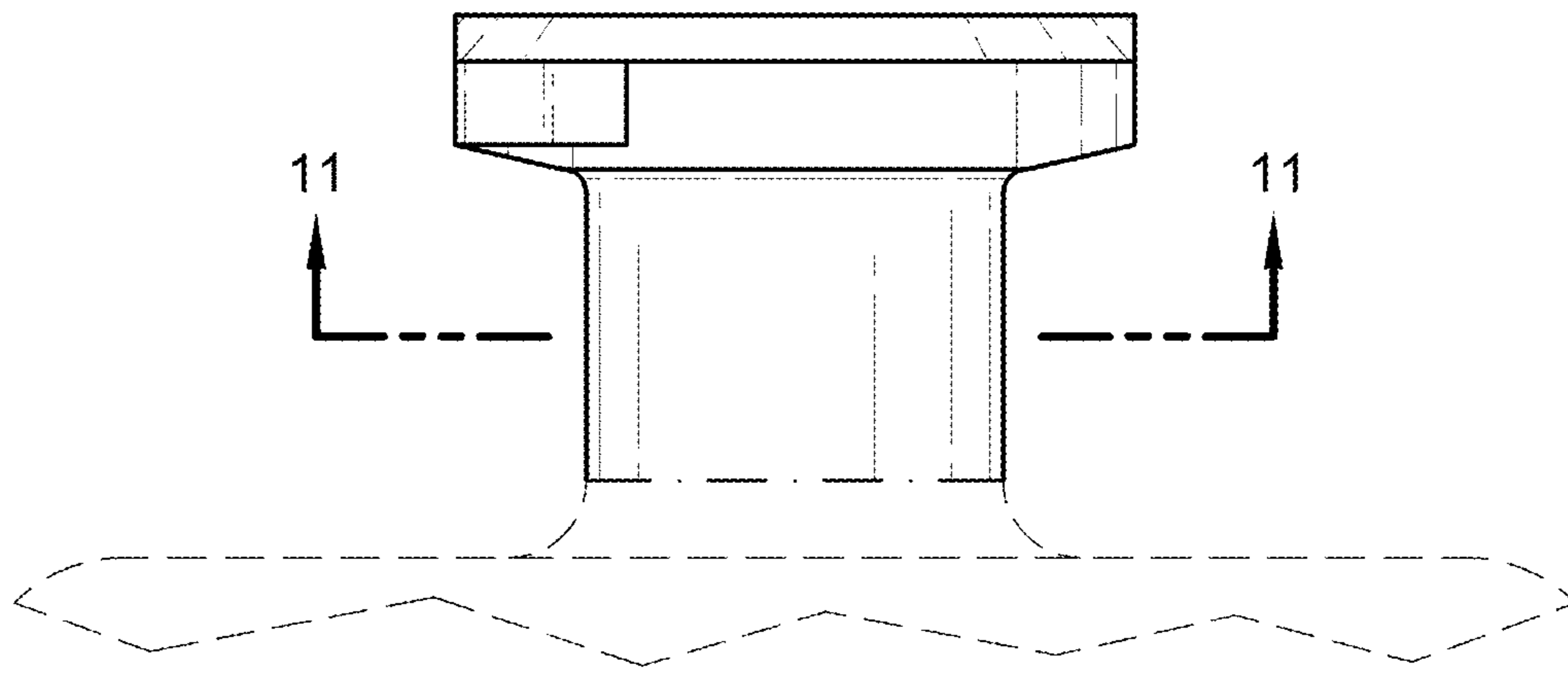


Fig. 7

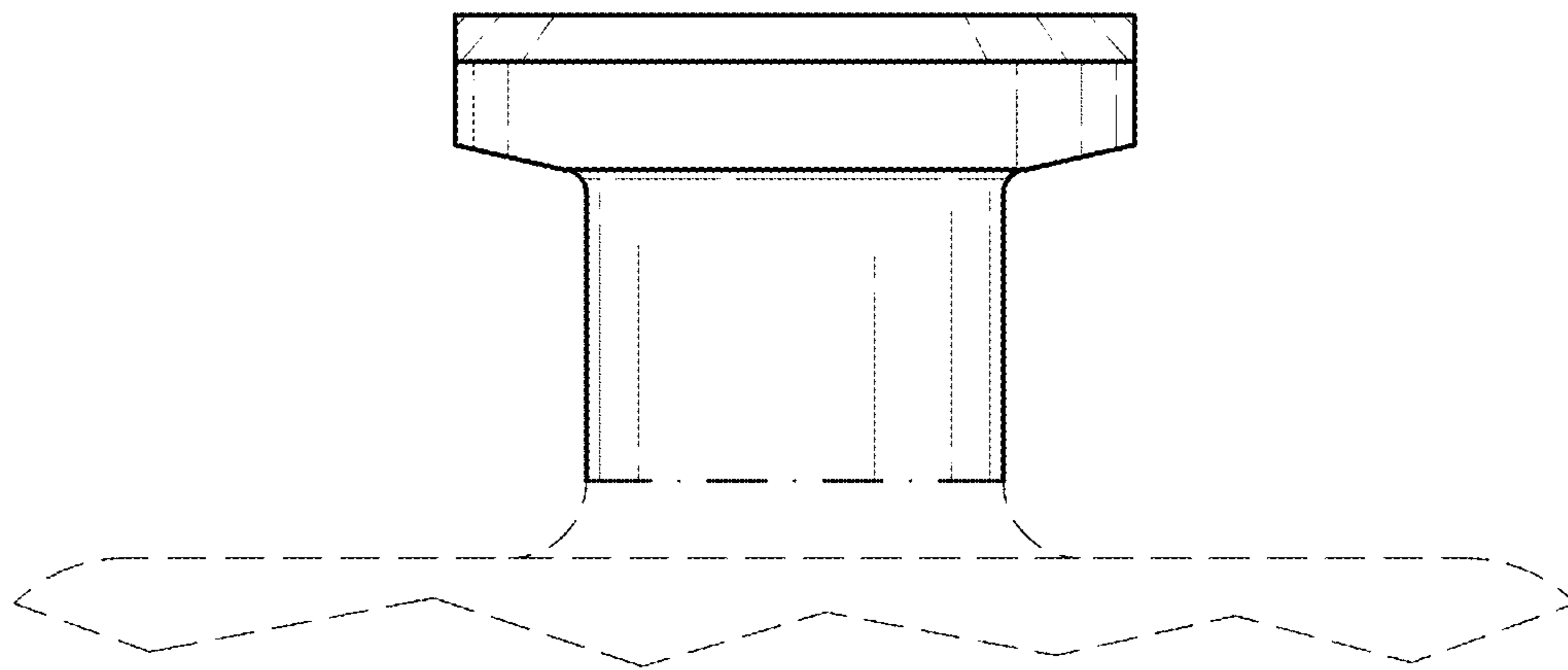


Fig. 8

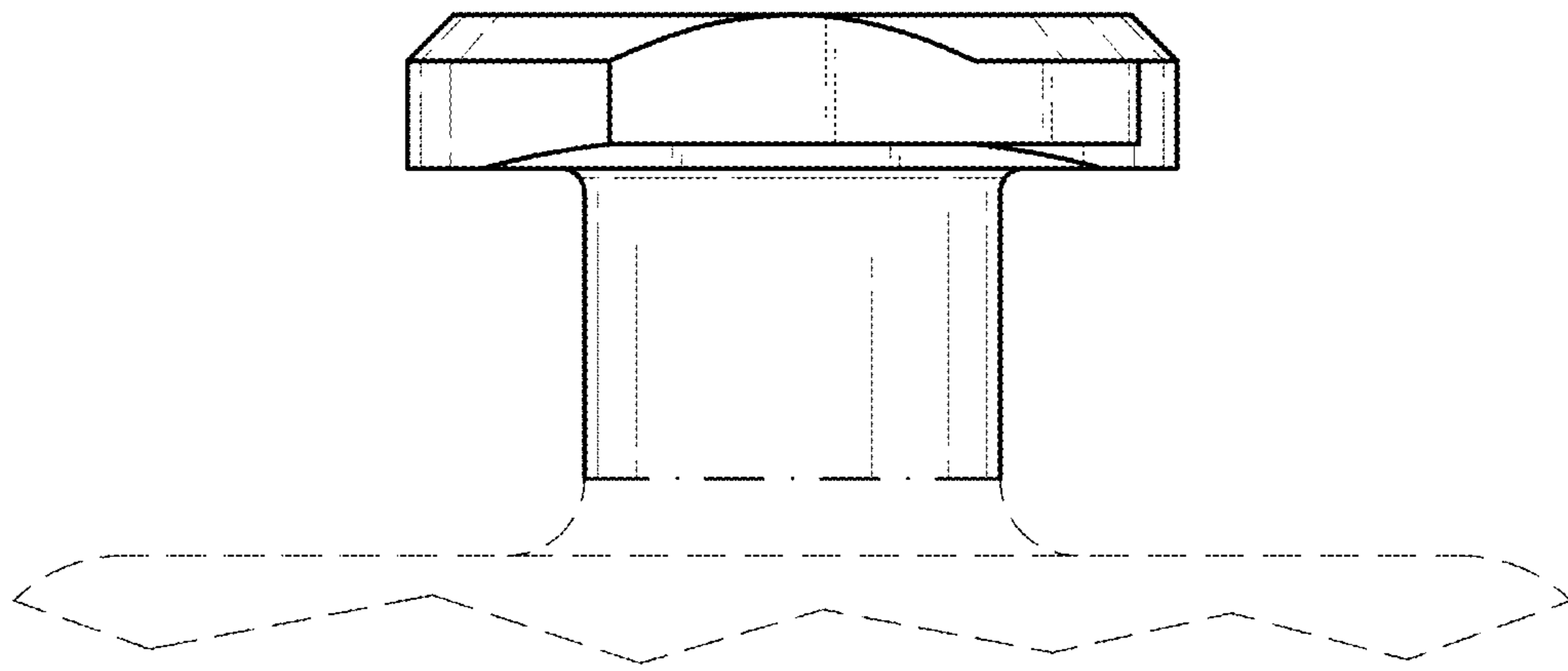


Fig. 9

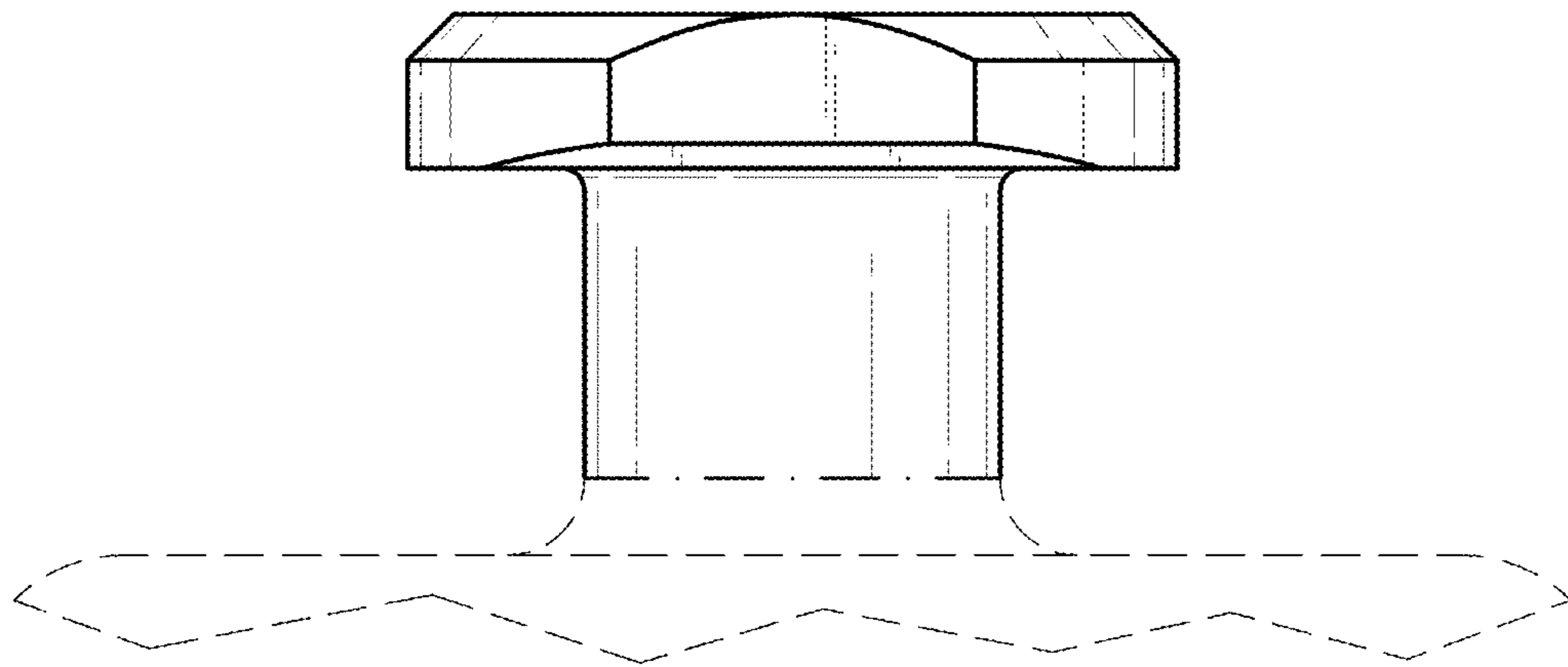


Fig. 10

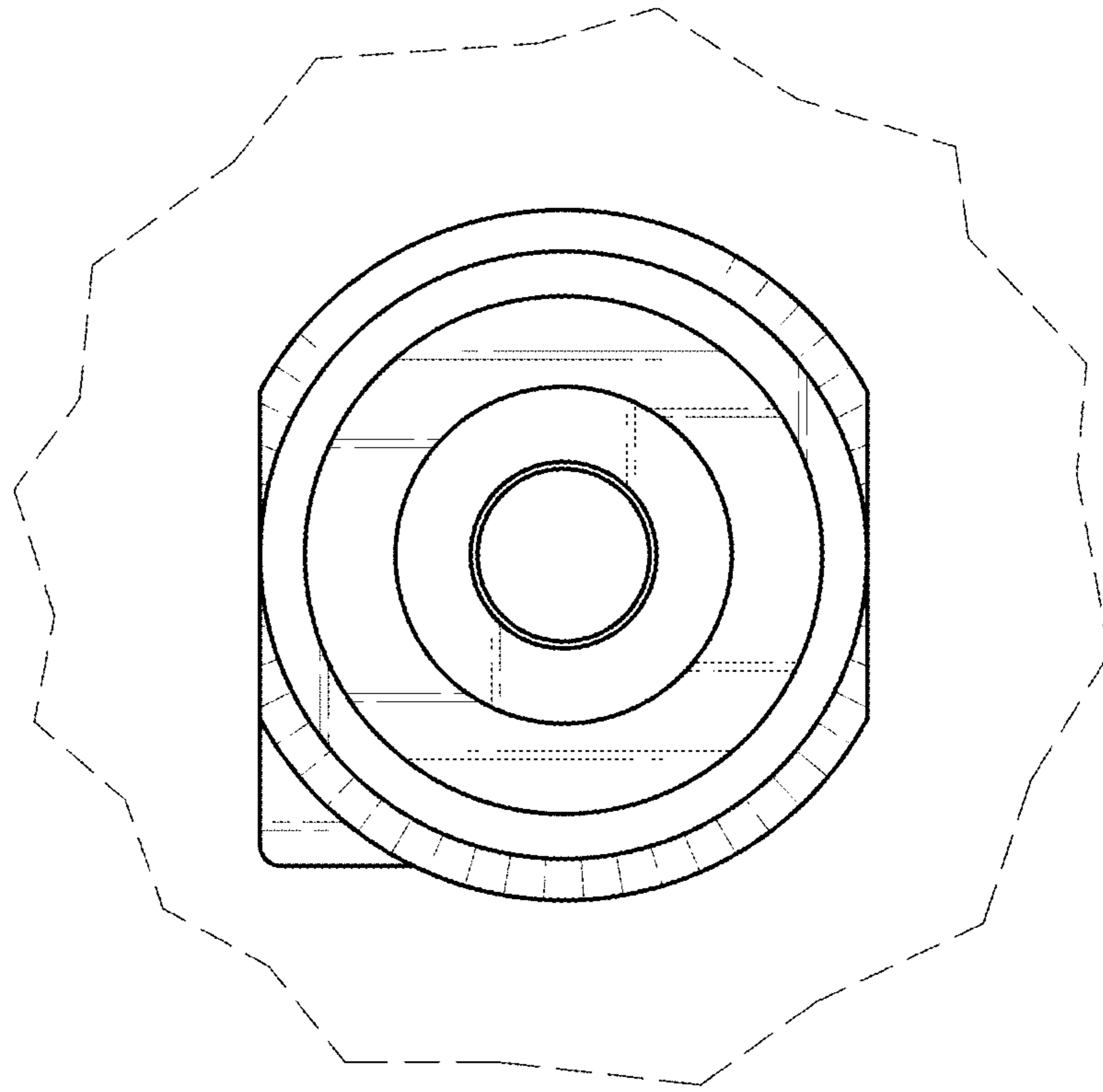


Fig. 11

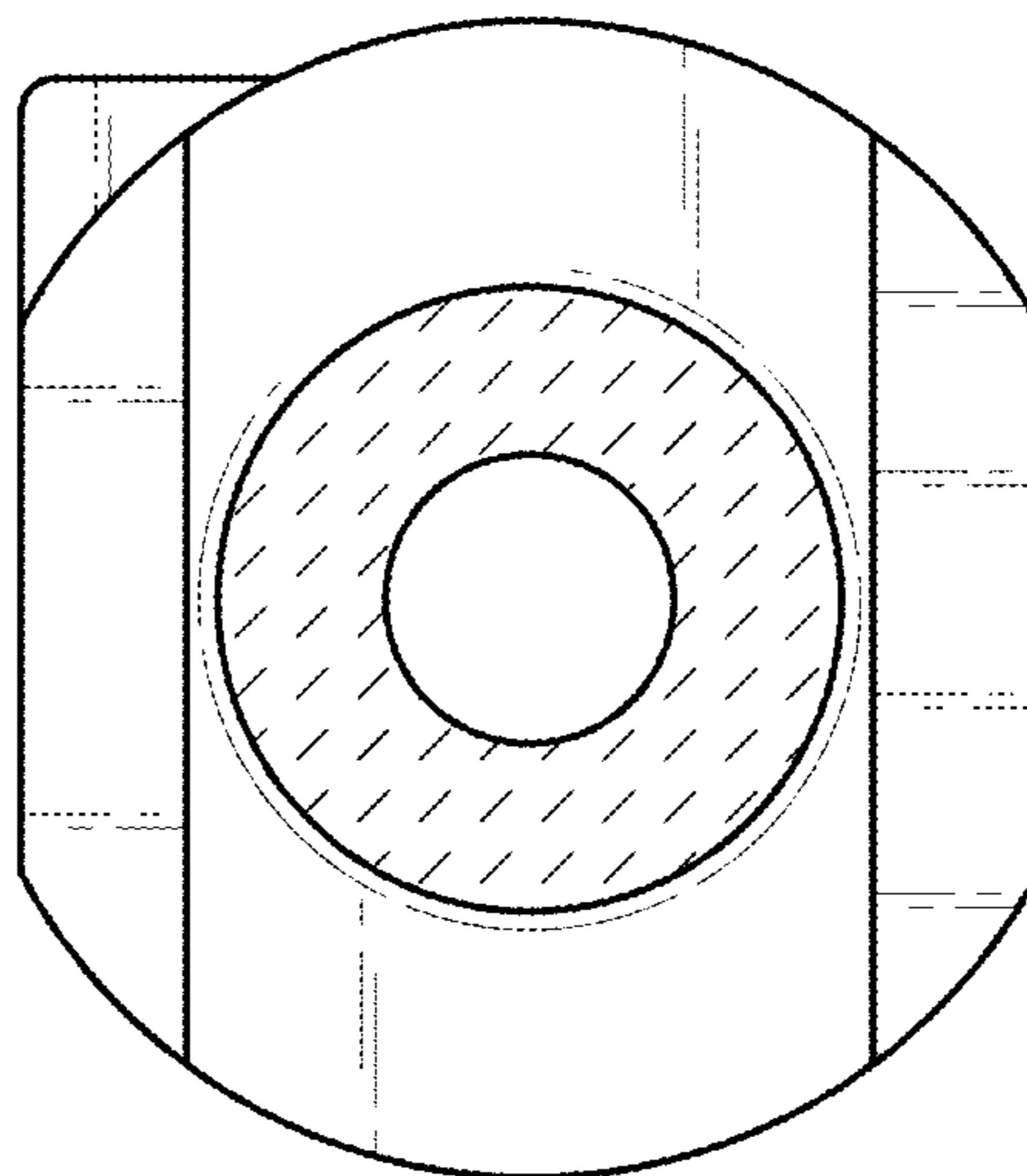


Fig. 12

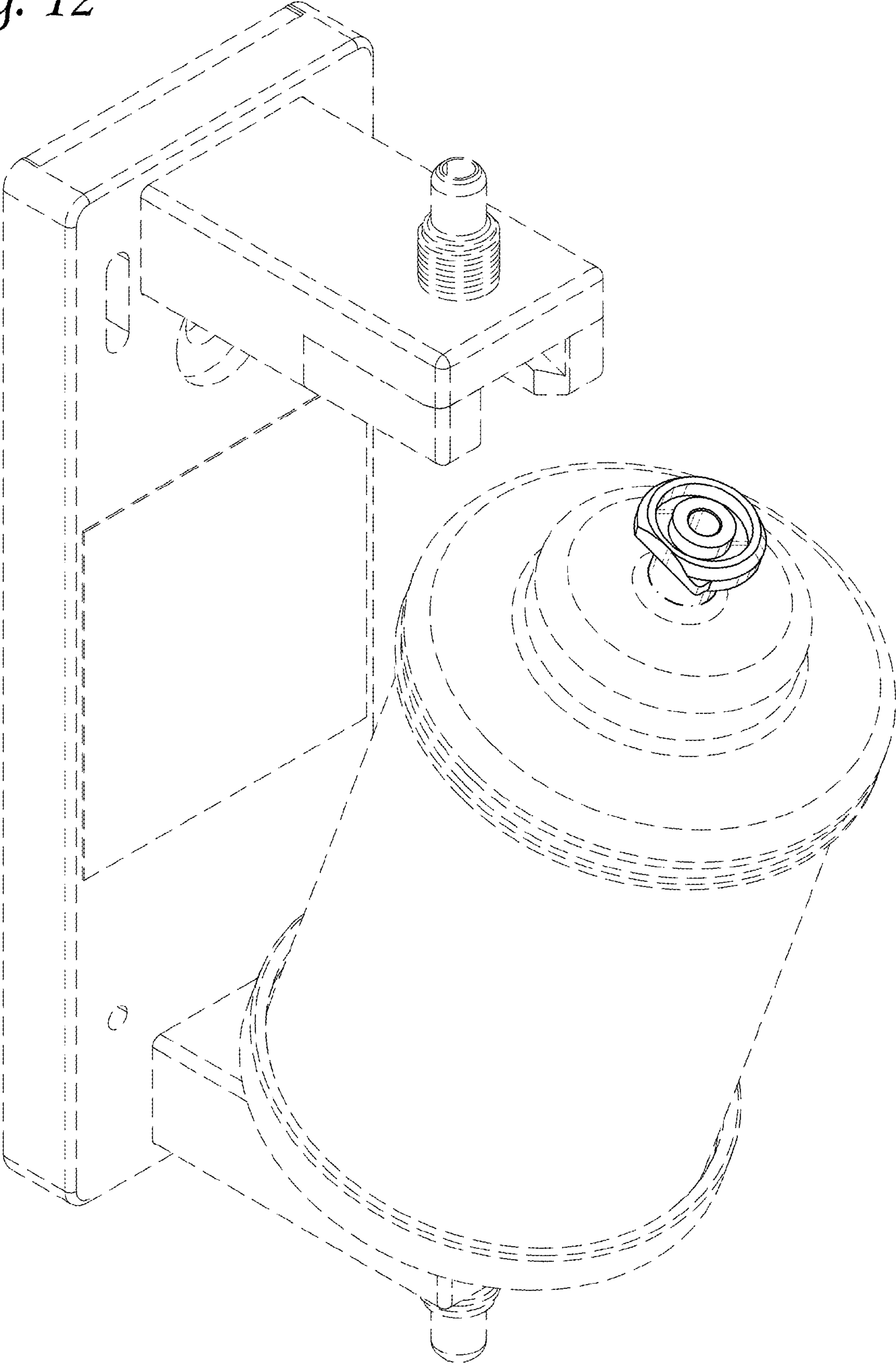


Fig. 13

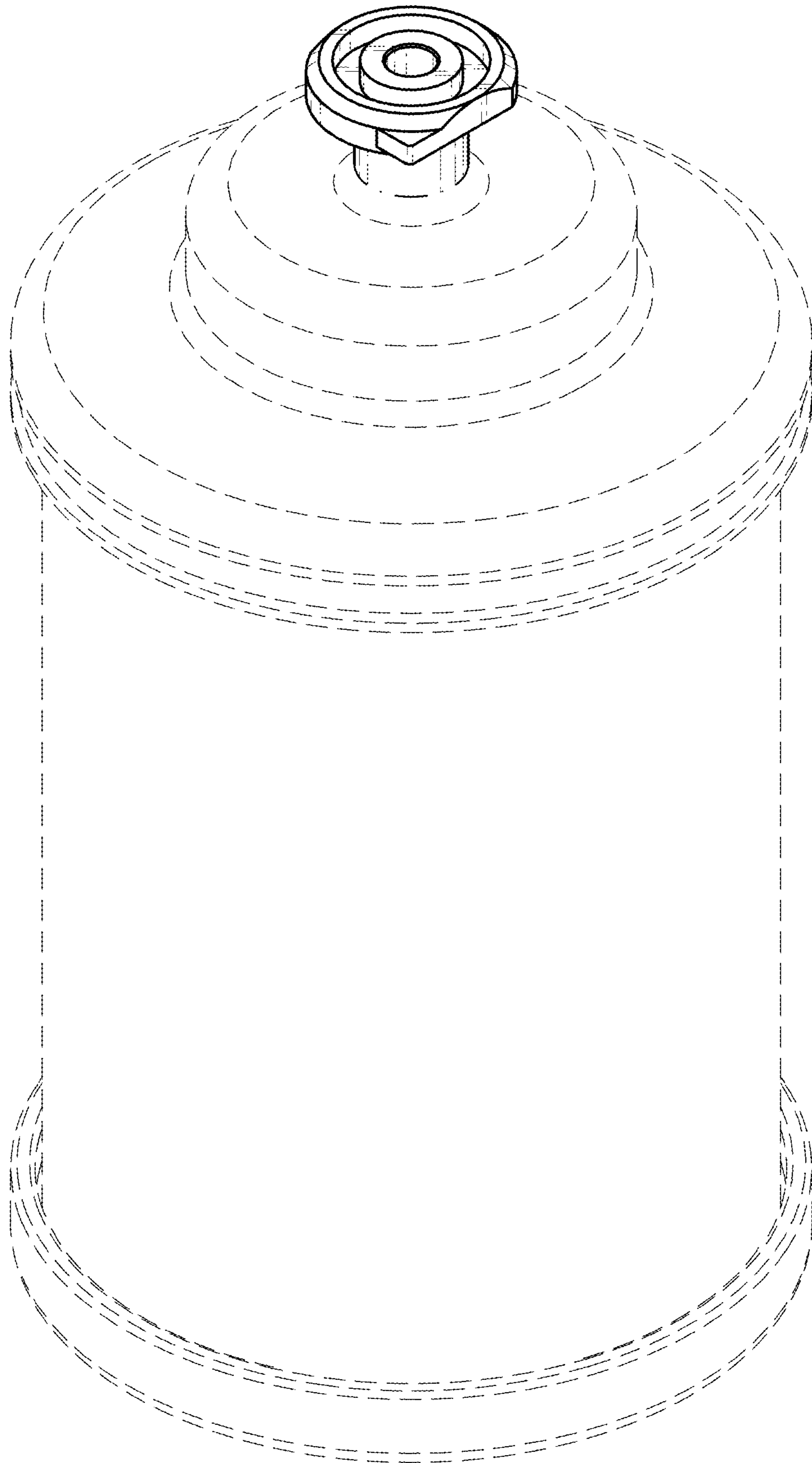


Fig. 14

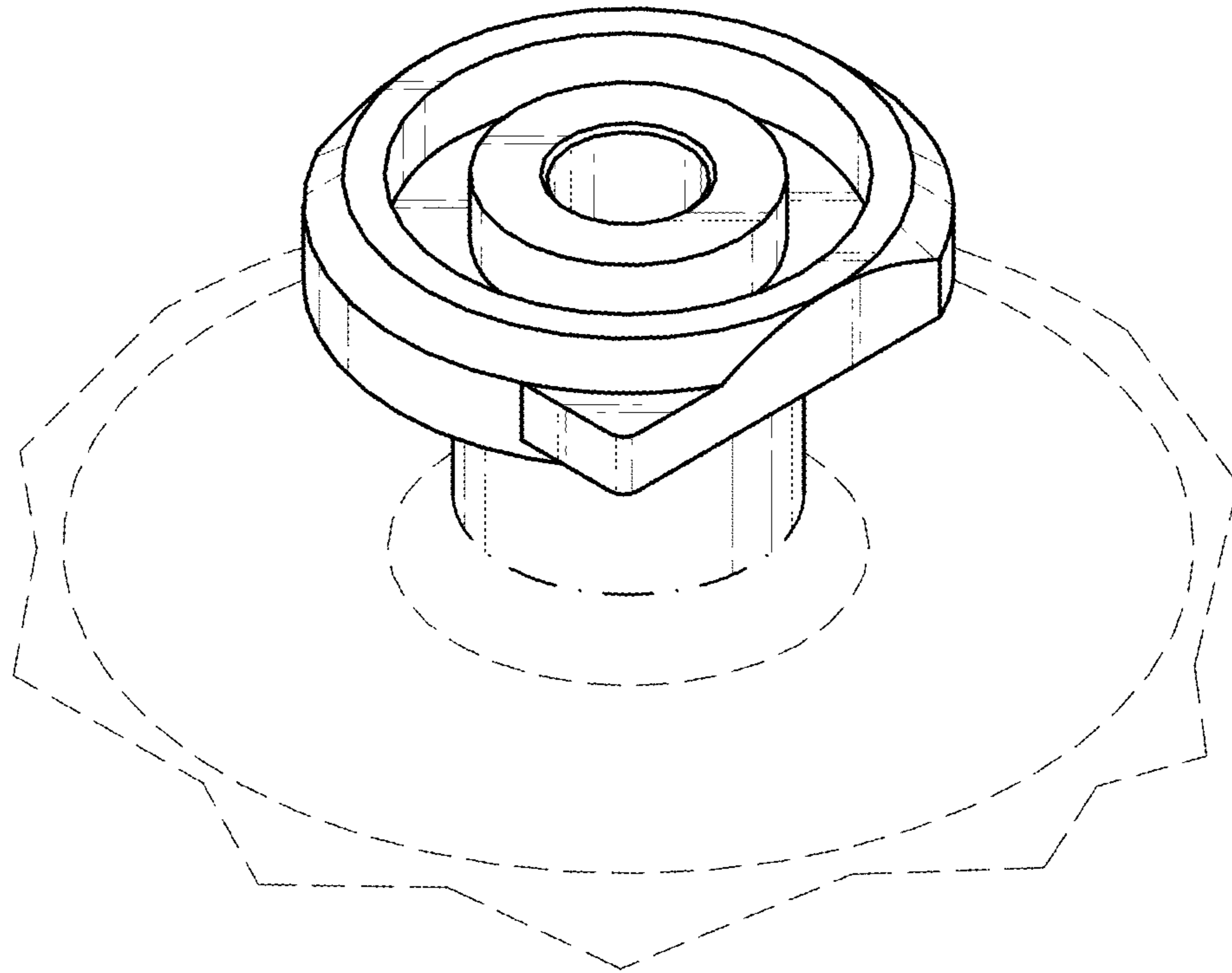


Fig. 15

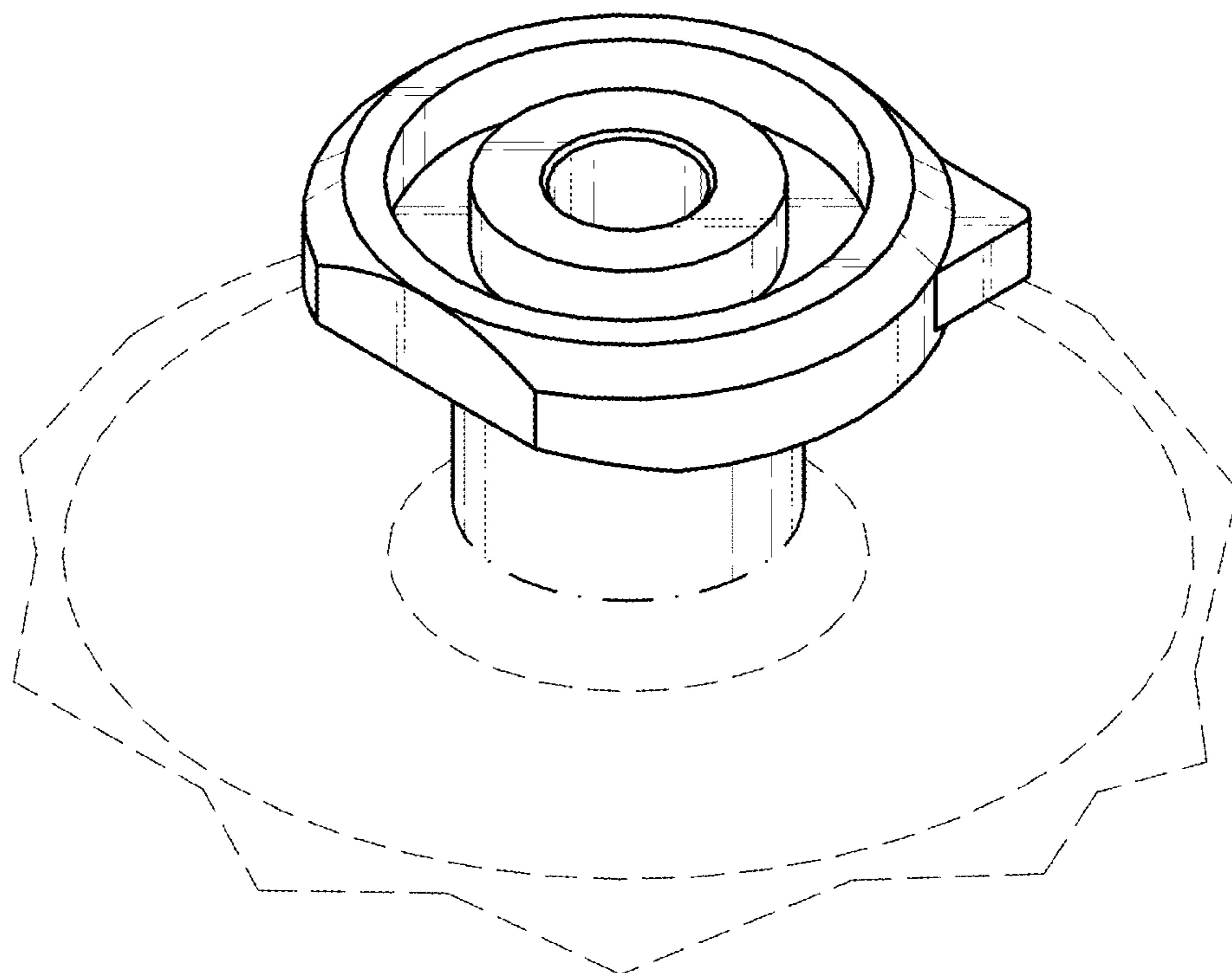


Fig. 16

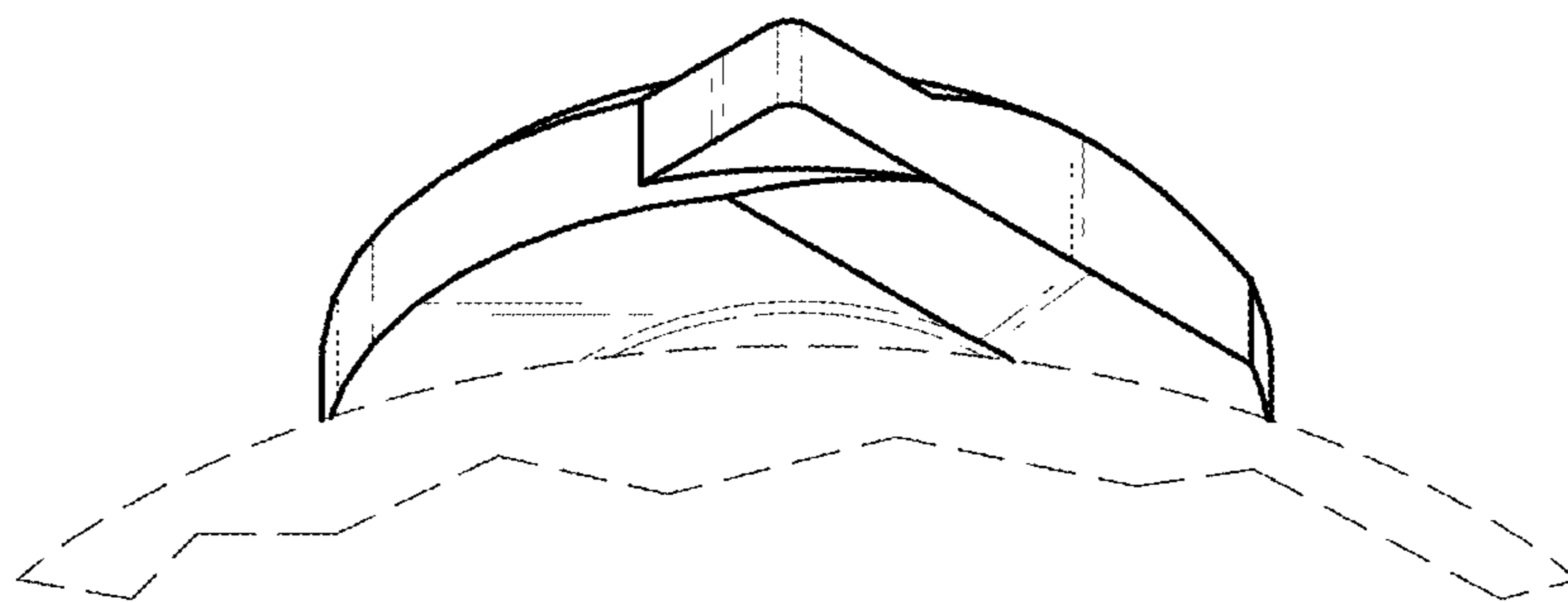


Fig. 17

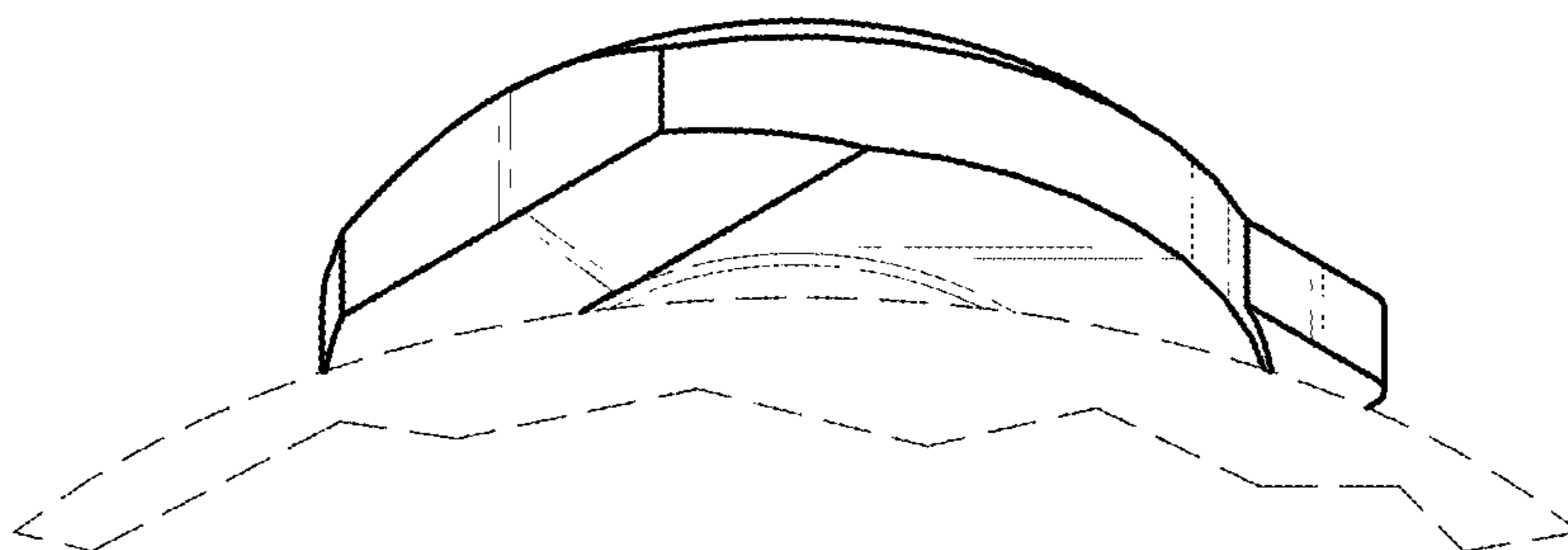


Fig. 18

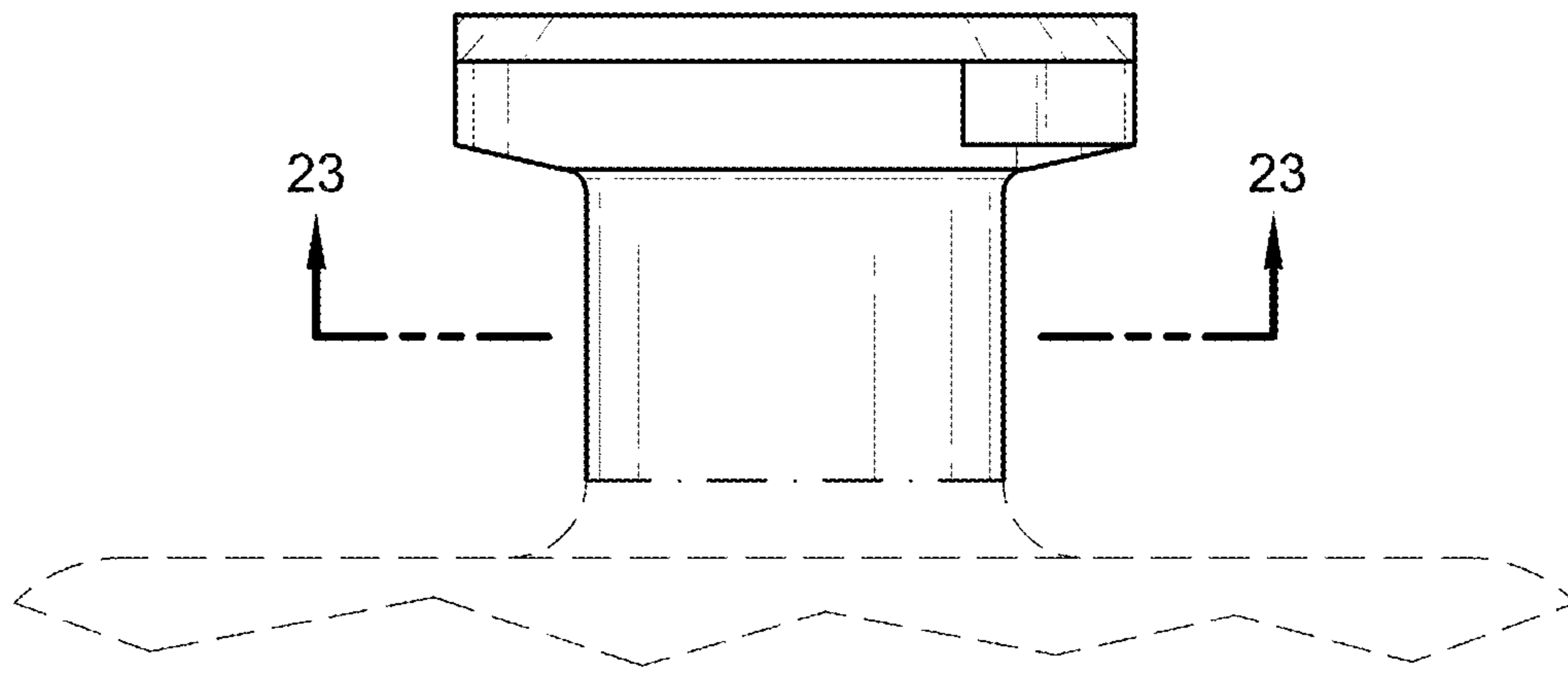


Fig. 19

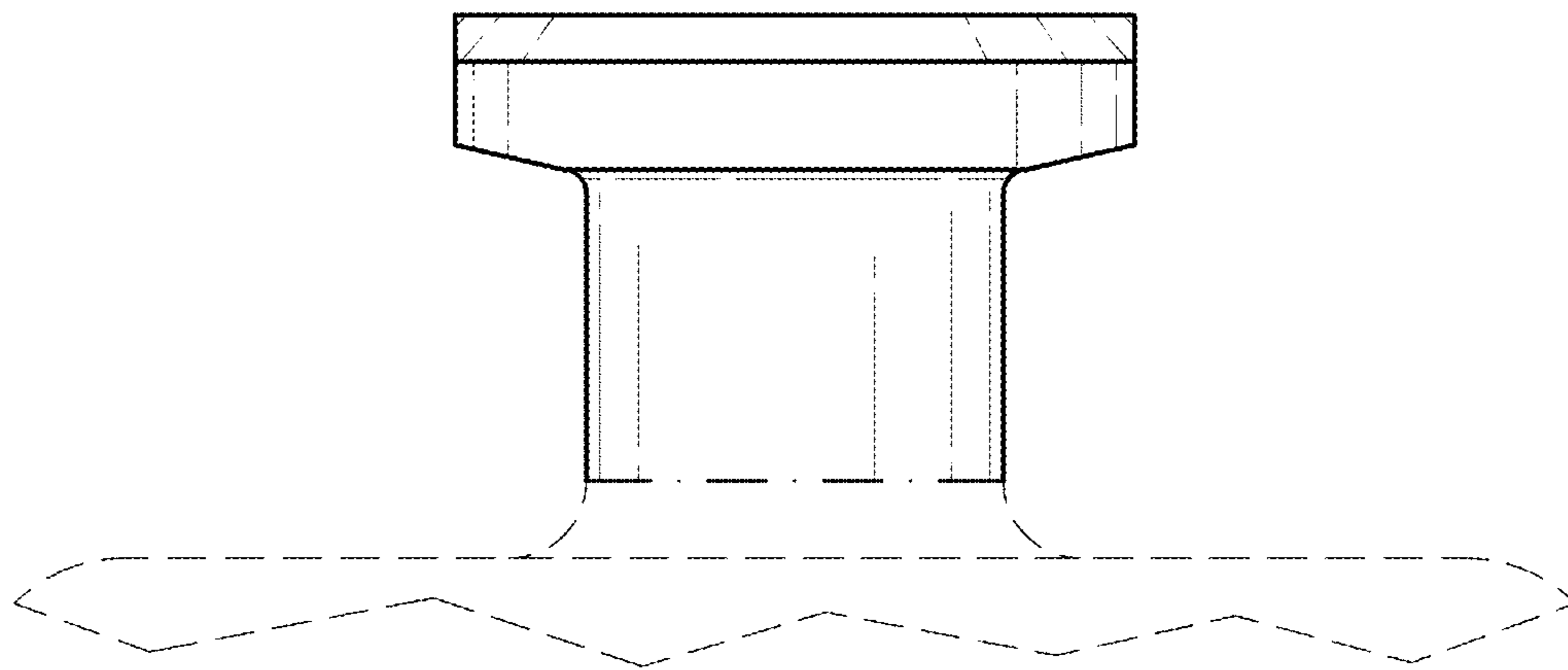


Fig. 20

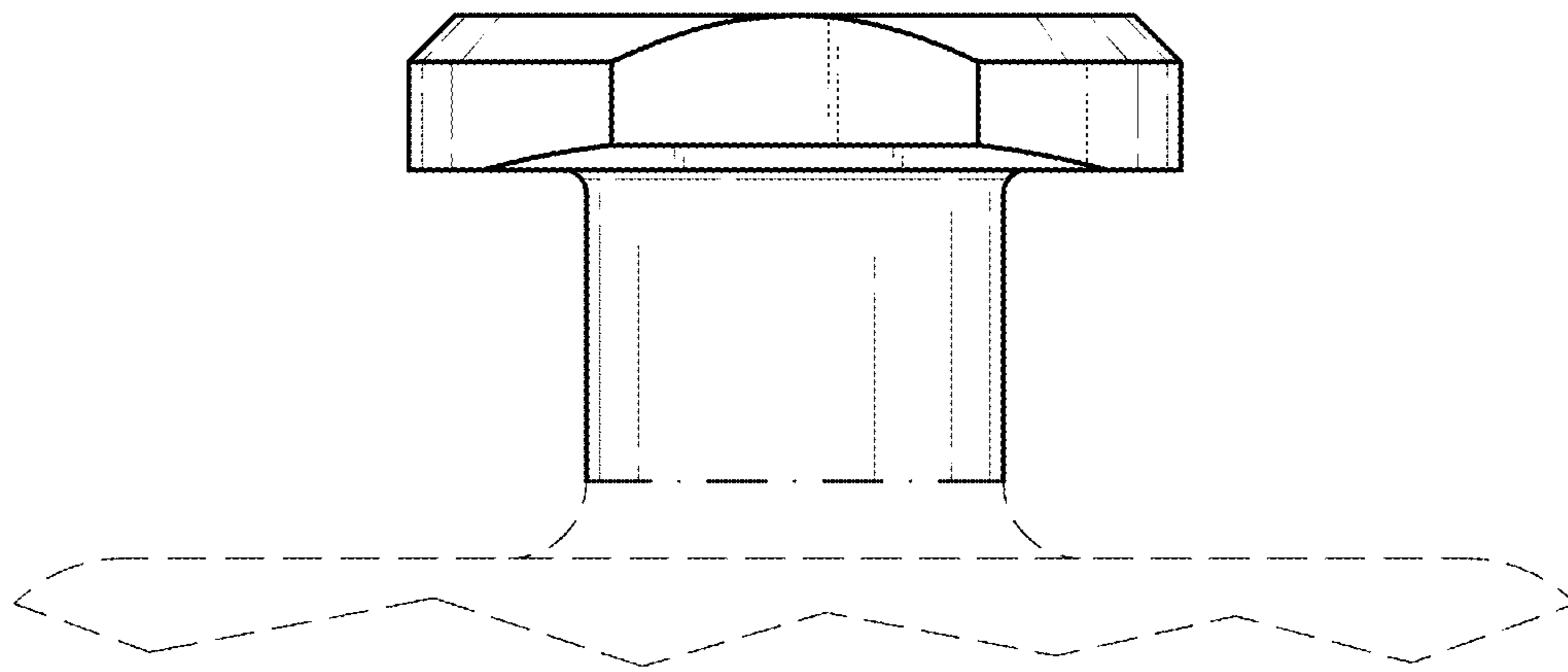


Fig. 21

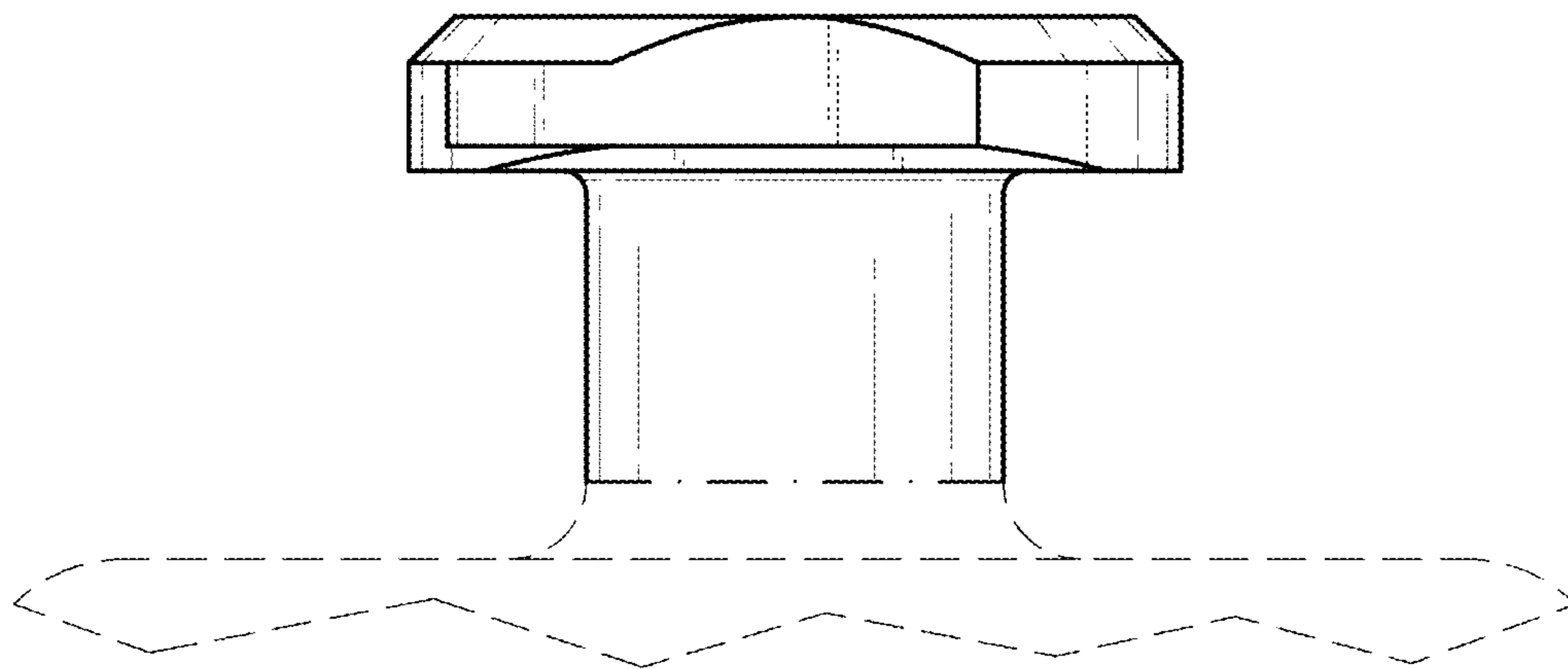


Fig. 22

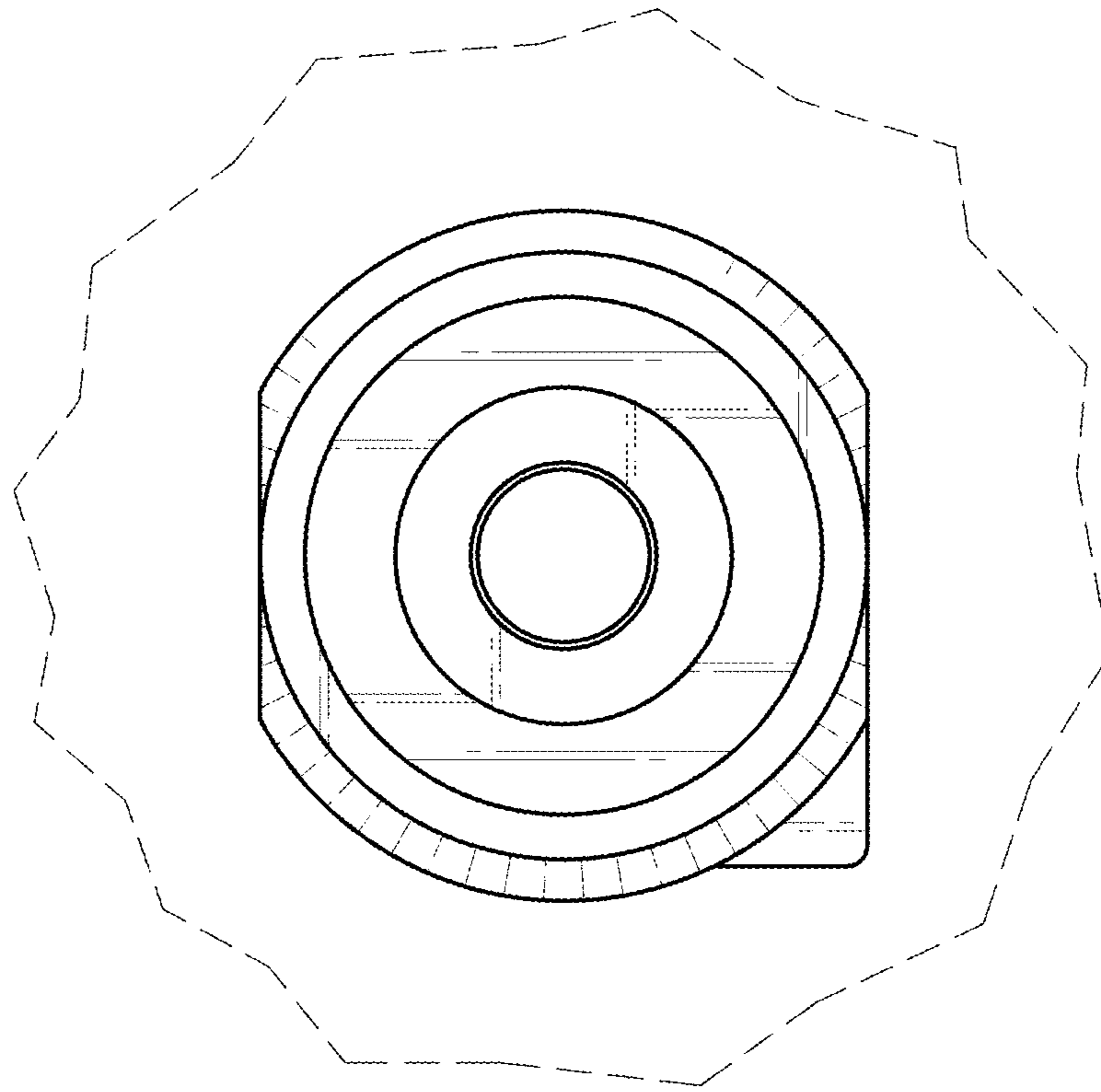


Fig. 23

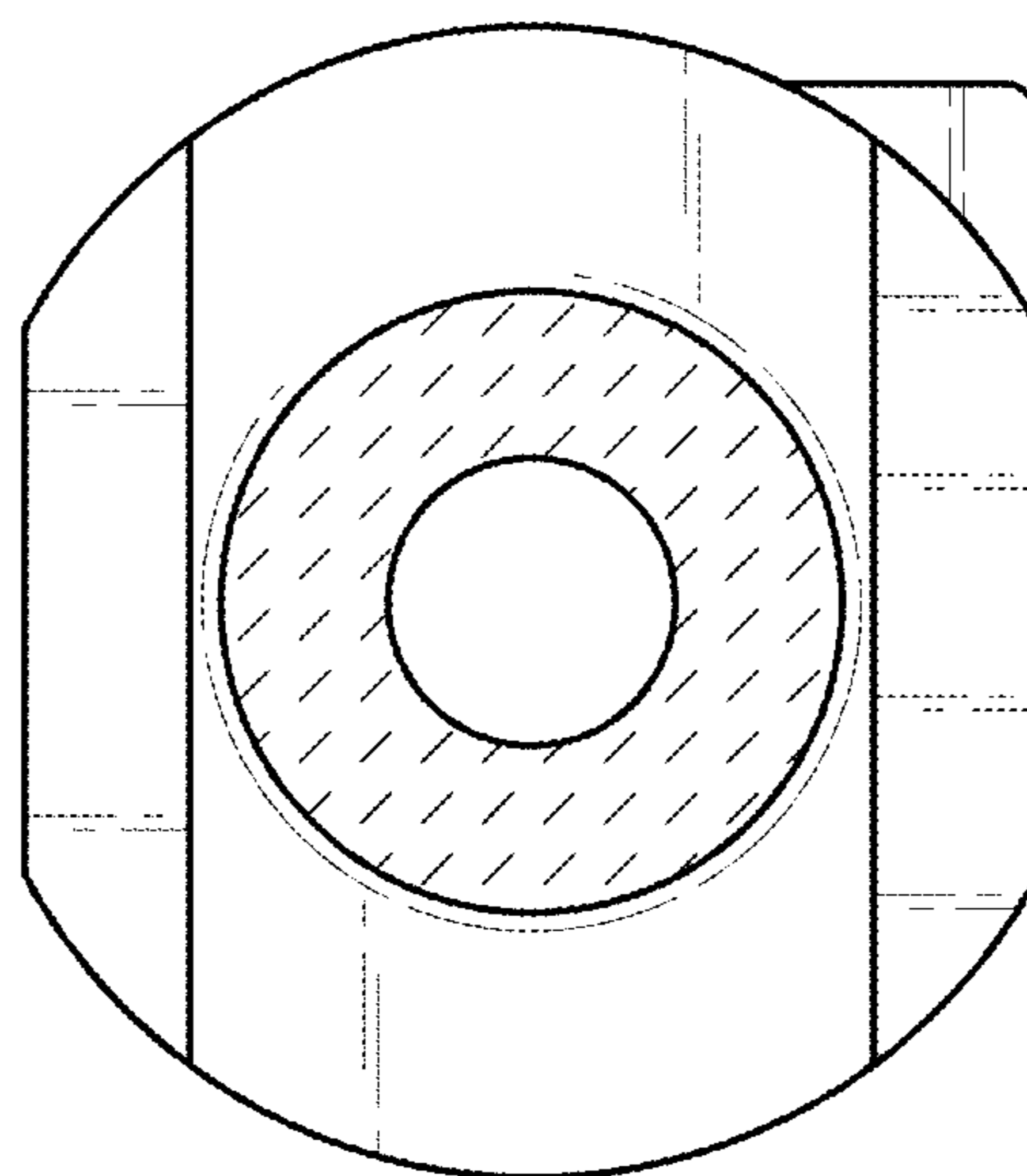


Fig. 24

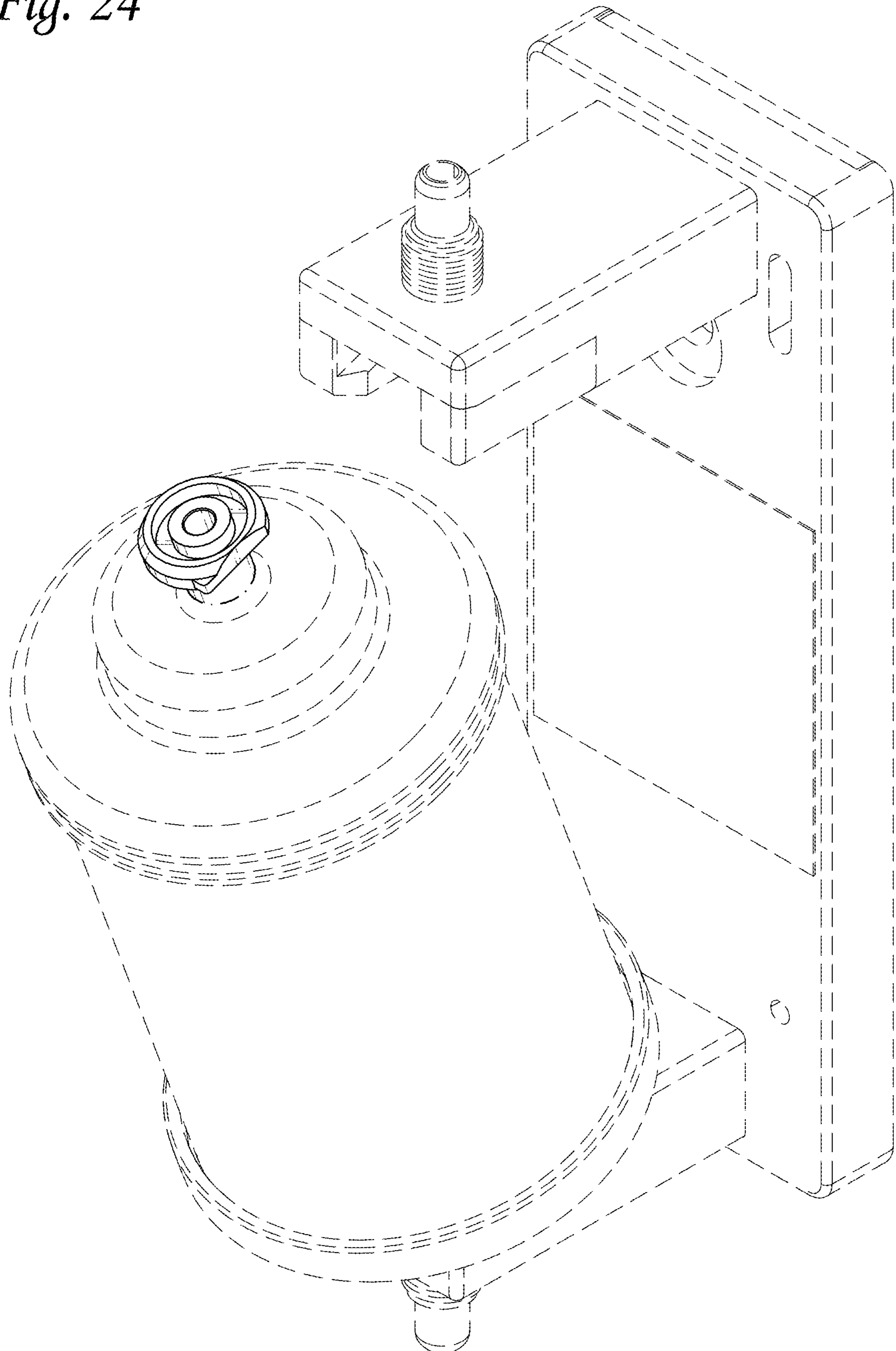


Fig. 25

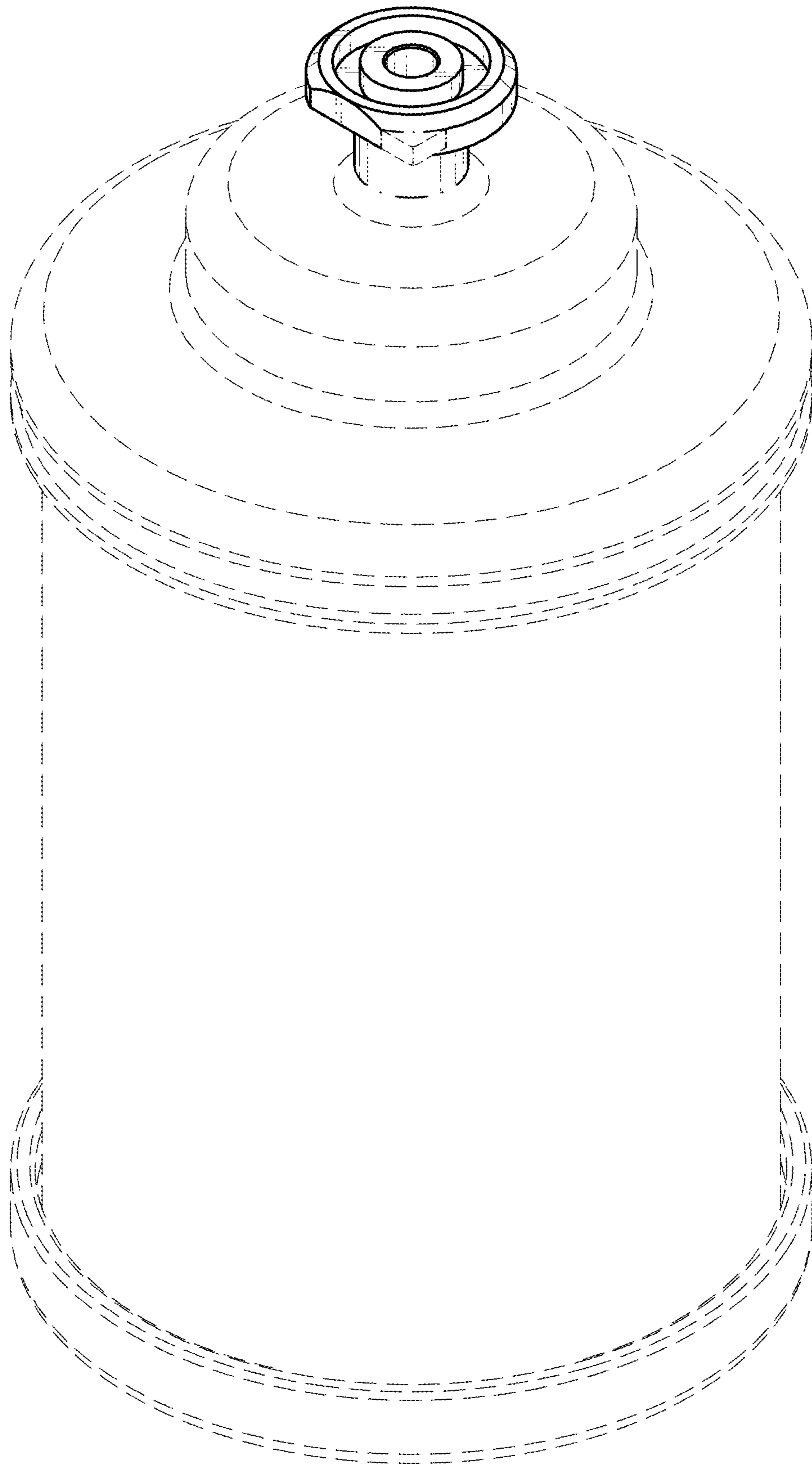


Fig. 26

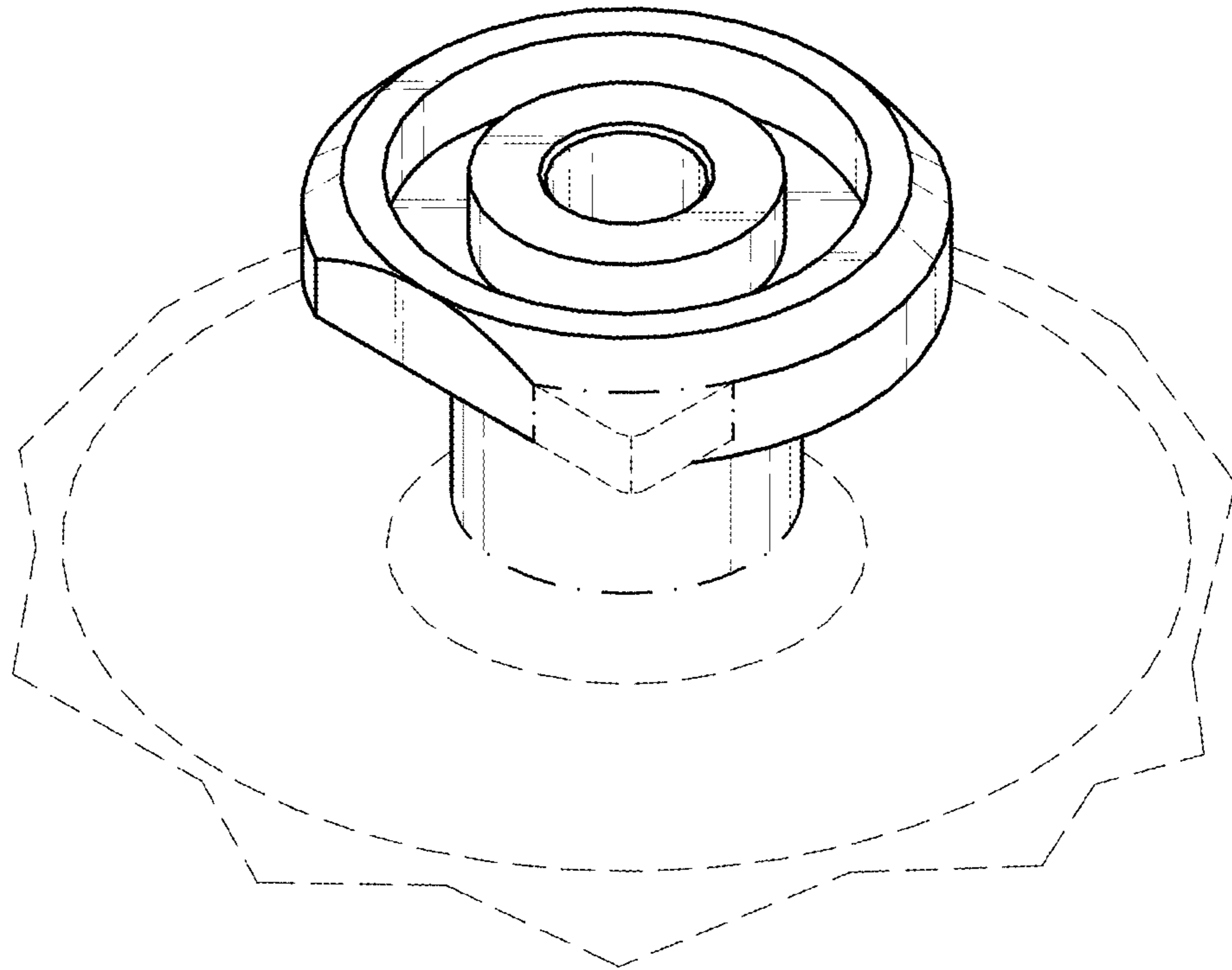


Fig. 27

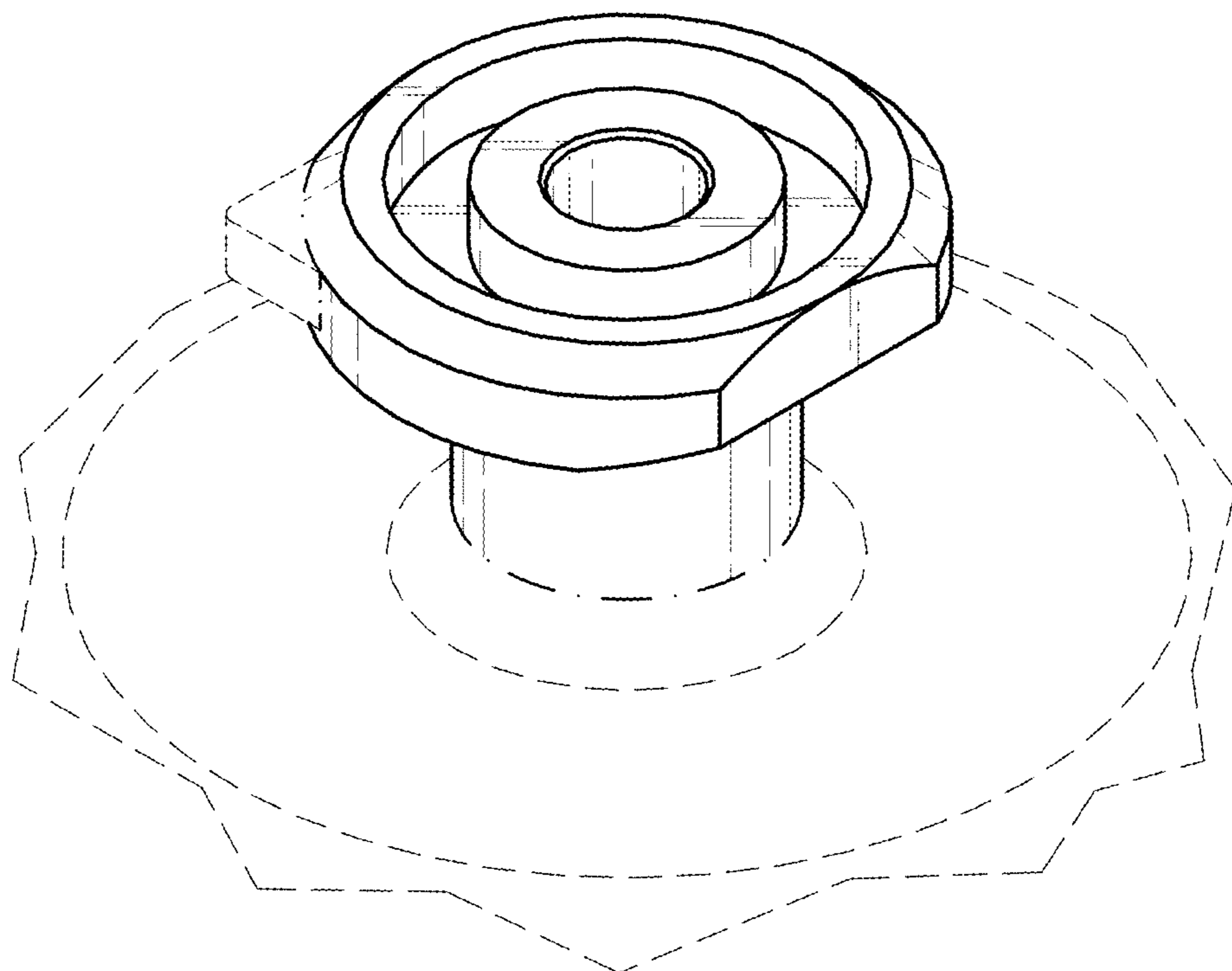


Fig. 28

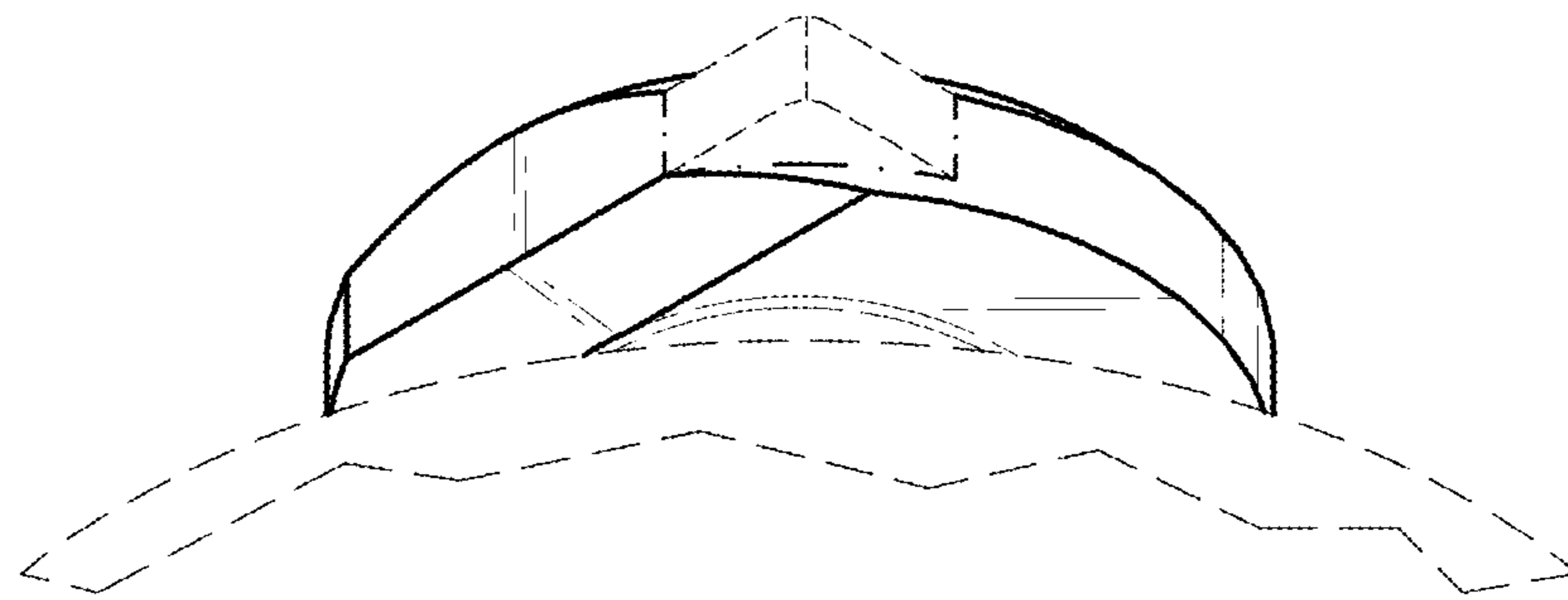


Fig. 29

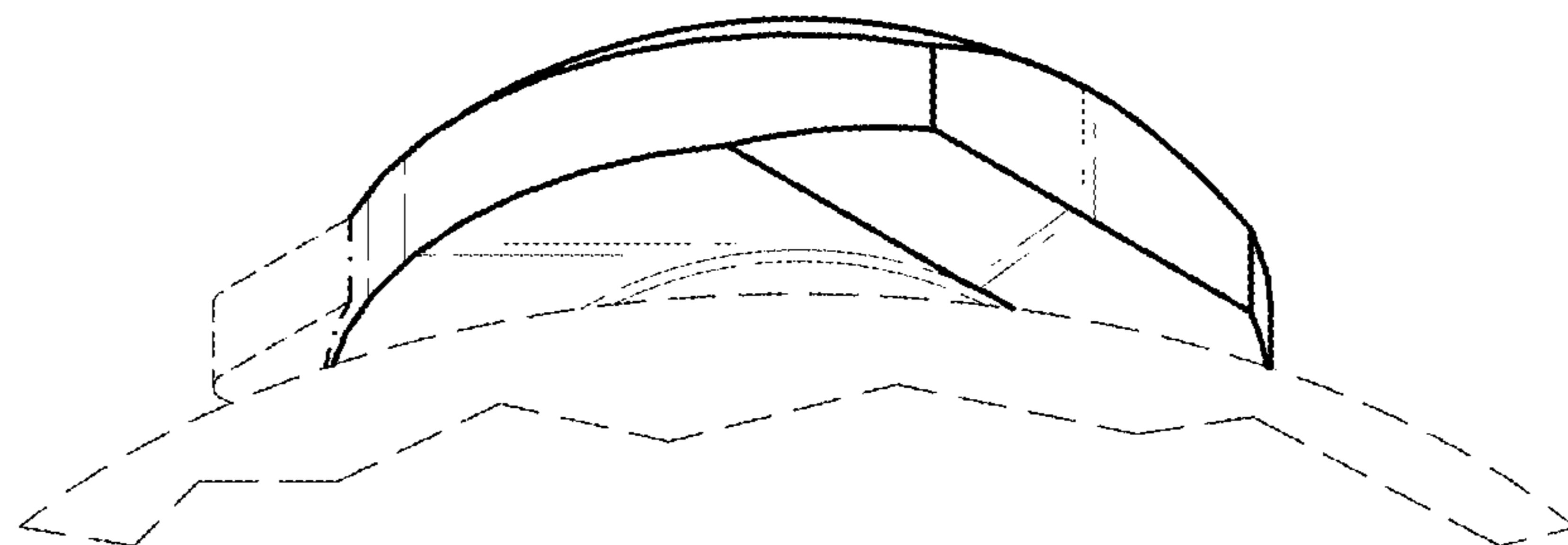


Fig. 30

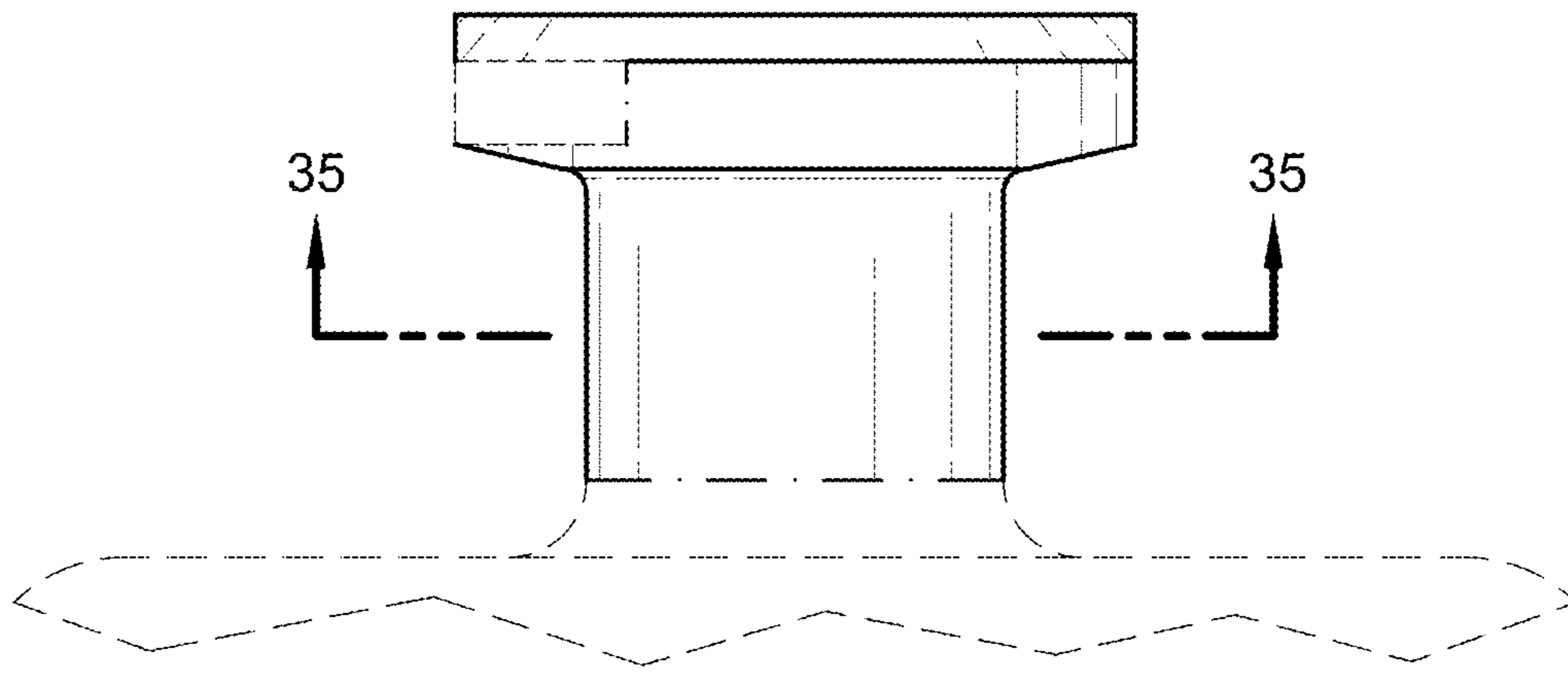


Fig. 31

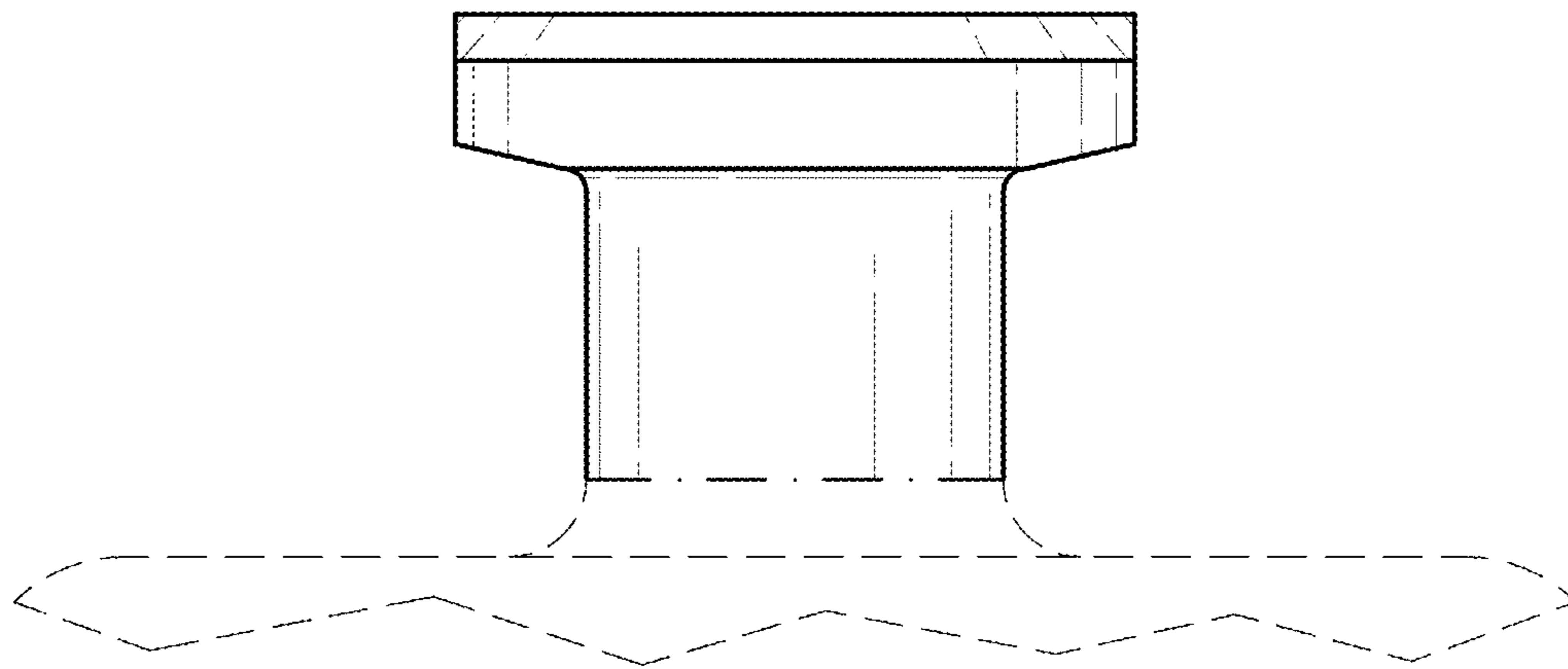


Fig. 32

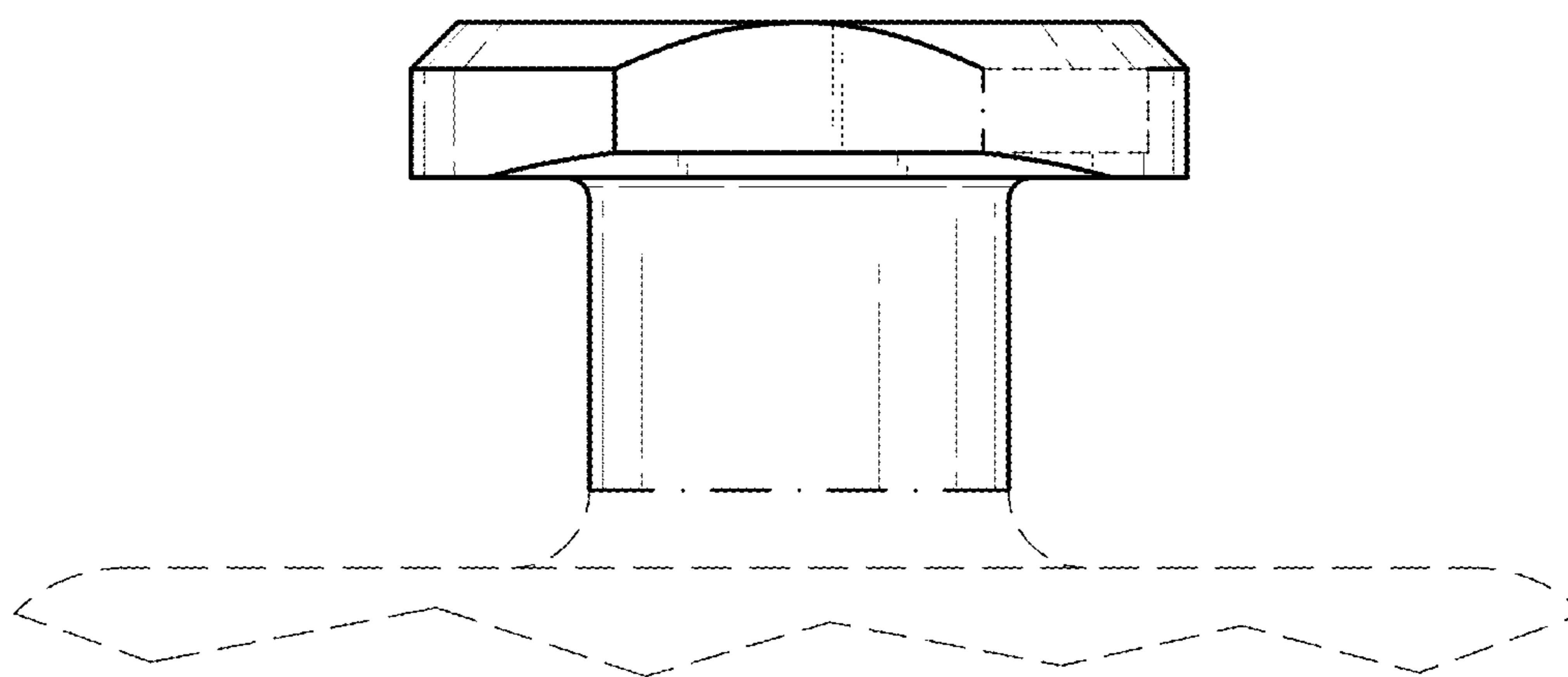


Fig. 33

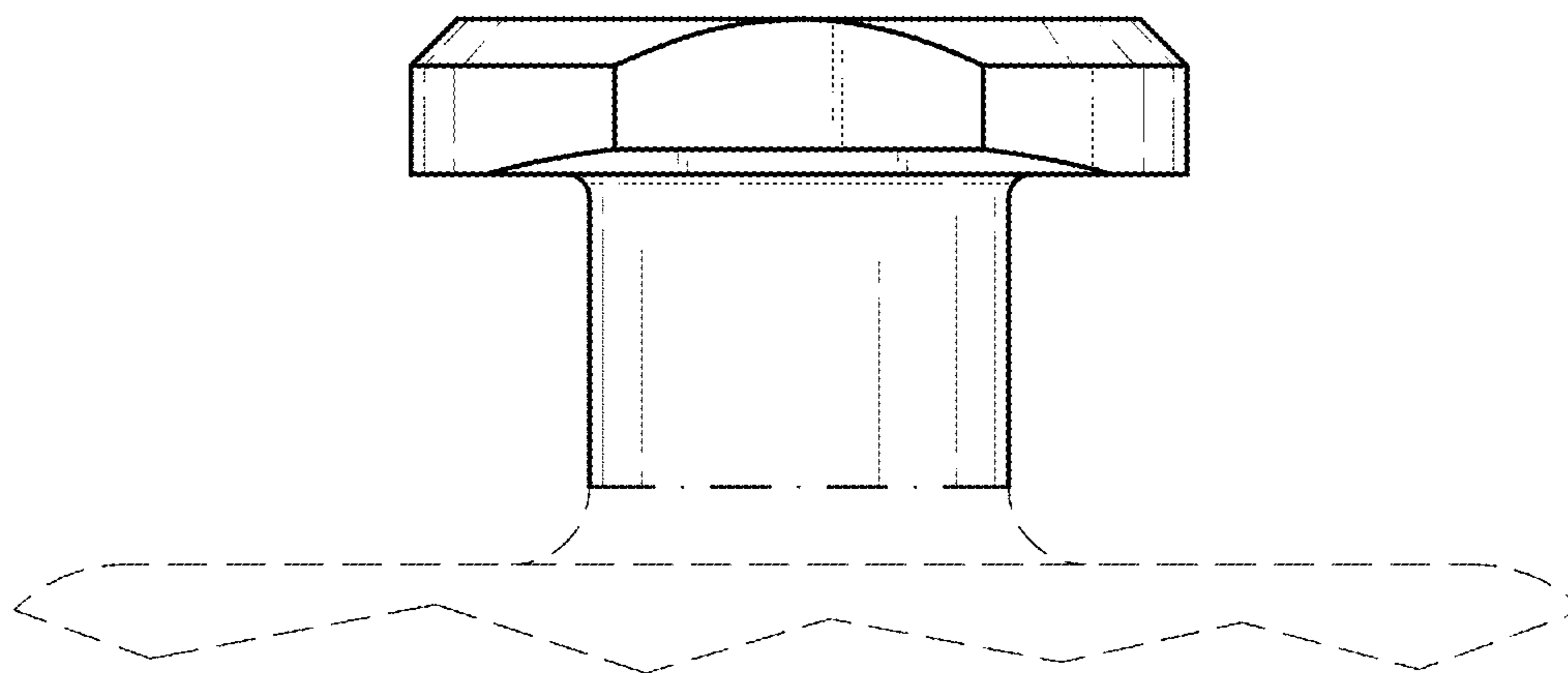


Fig. 34

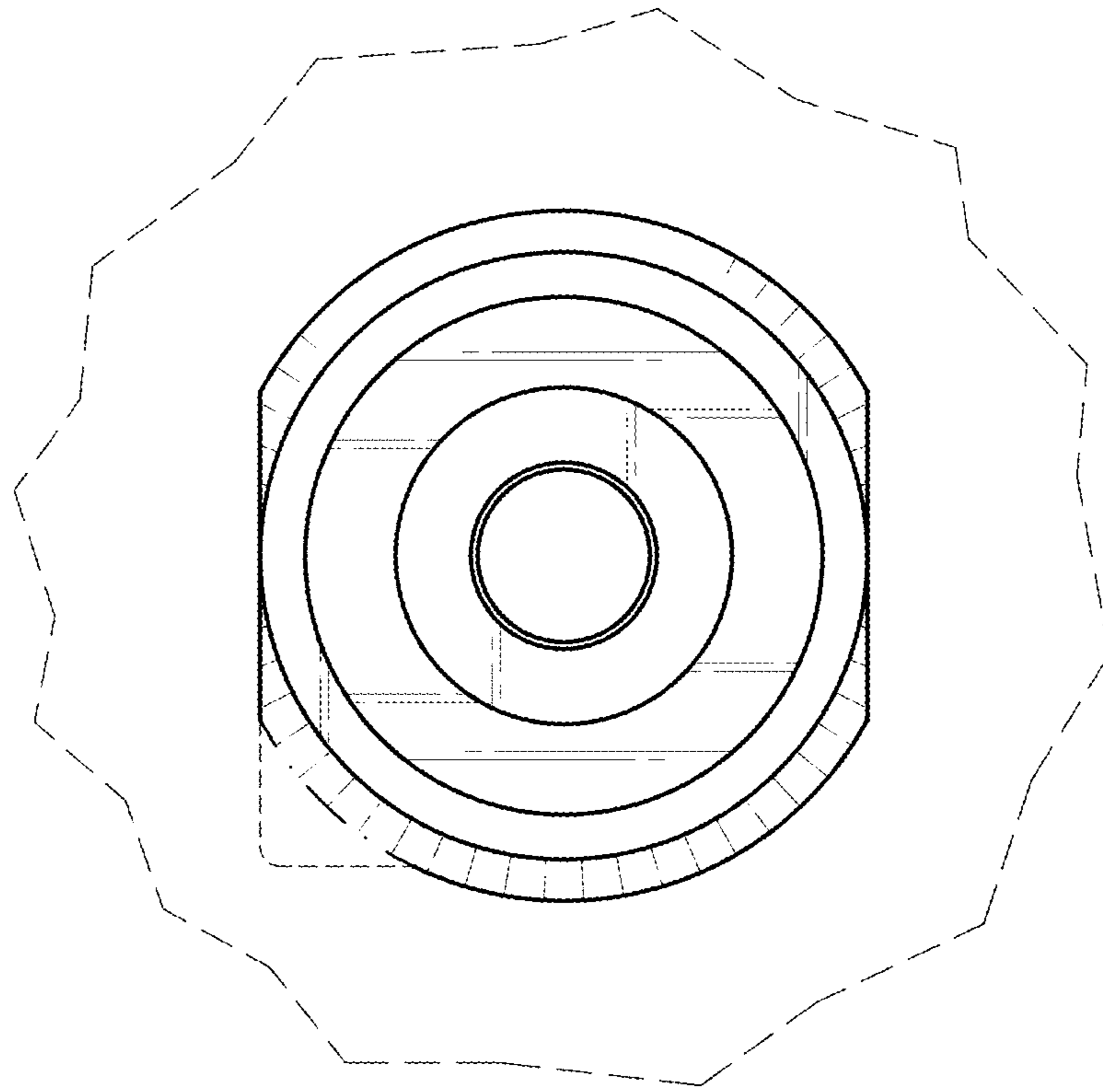


Fig. 35

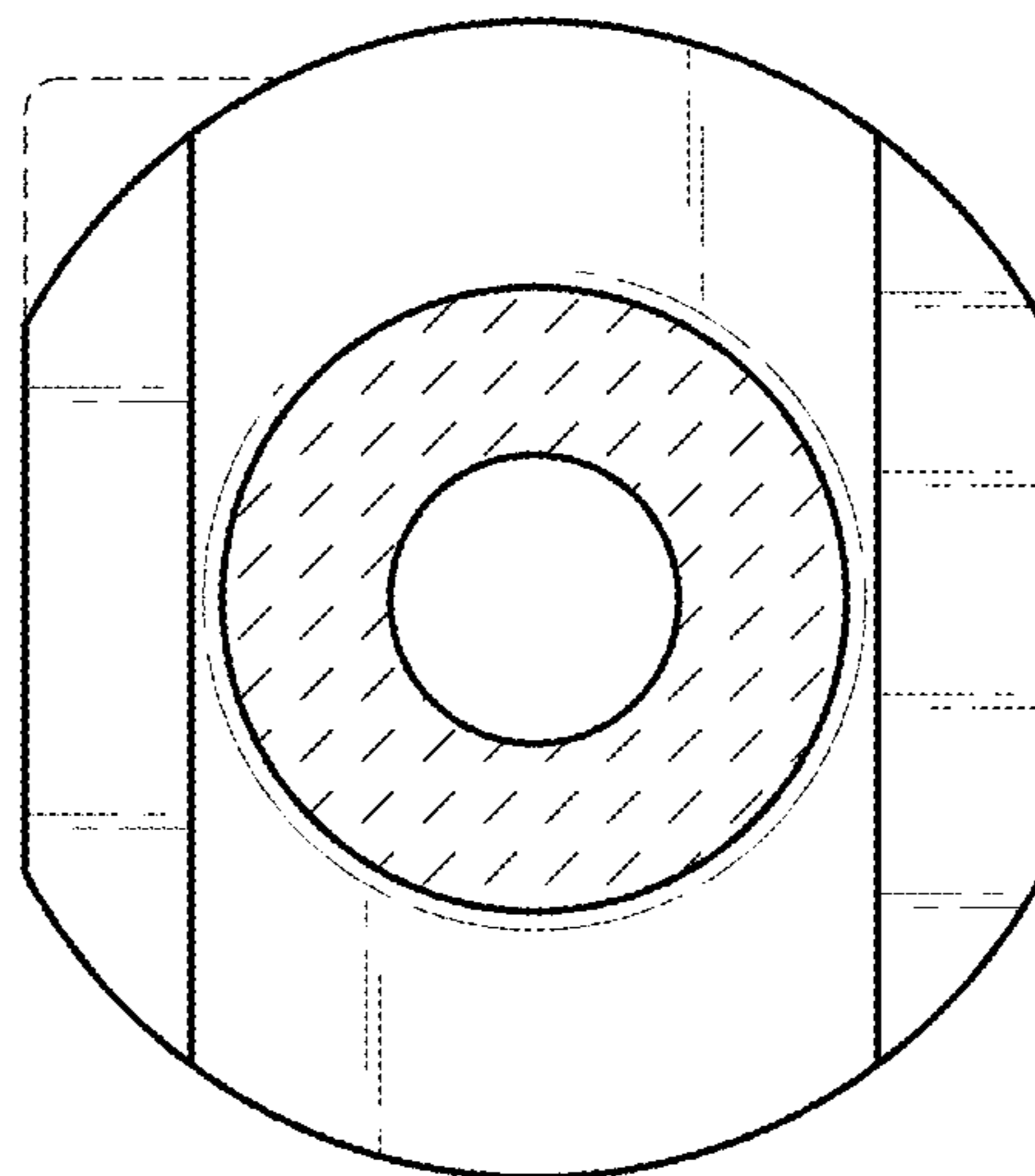


Fig. 36

