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(12) **United States Design Patent**  
**Huang**

(10) **Patent No.:** **US D878,882 S**

(45) **Date of Patent:** **\*\* Mar. 24, 2020**

(54) **BOLT EXTRACTOR**

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(72) Inventor: **Chia-Hao Huang**, Taichung (TW)

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

(21) Appl. No.: **29/661,622**

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(51) **LOC (12) Cl.** ..... **08-05**

(52) **U.S. Cl.**  
USPC ..... **D8/14**

(58) **Field of Classification Search**  
USPC ..... D8/14, 51  
CPC ..... Y10T 29/53687; Y10T 29/53596; Y10T  
29/53952; Y10T 29/53883; B25B 27/24;  
B25B 27/02; B25B 27/023; B25B 27/14;  
B25B 27/18  
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,735,650	A *	5/1973	Weng, Jr.	.....	B25B 27/18 81/53.2
3,740,814	A *	6/1973	Marshall	.....	B25B 23/103 29/264
4,604,917	A *	8/1986	Polonsky	.....	B25B 27/18 7/158
4,651,596	A *	3/1987	Rachanski	.....	B25B 13/44 29/264
5,031,487	A *	7/1991	Polonsky	.....	B25B 27/18 81/53.2
5,894,665	A *	4/1999	Olmsted	.....	B25B 27/062 29/258
6,122,810	A *	9/2000	McInnes	.....	B25B 27/023 29/255
6,584,662	B1 *	7/2003	Krick	.....	B25B 27/0035 29/244
6,910,252	B2 *	6/2005	Draggie	.....	B21J 15/50 254/18

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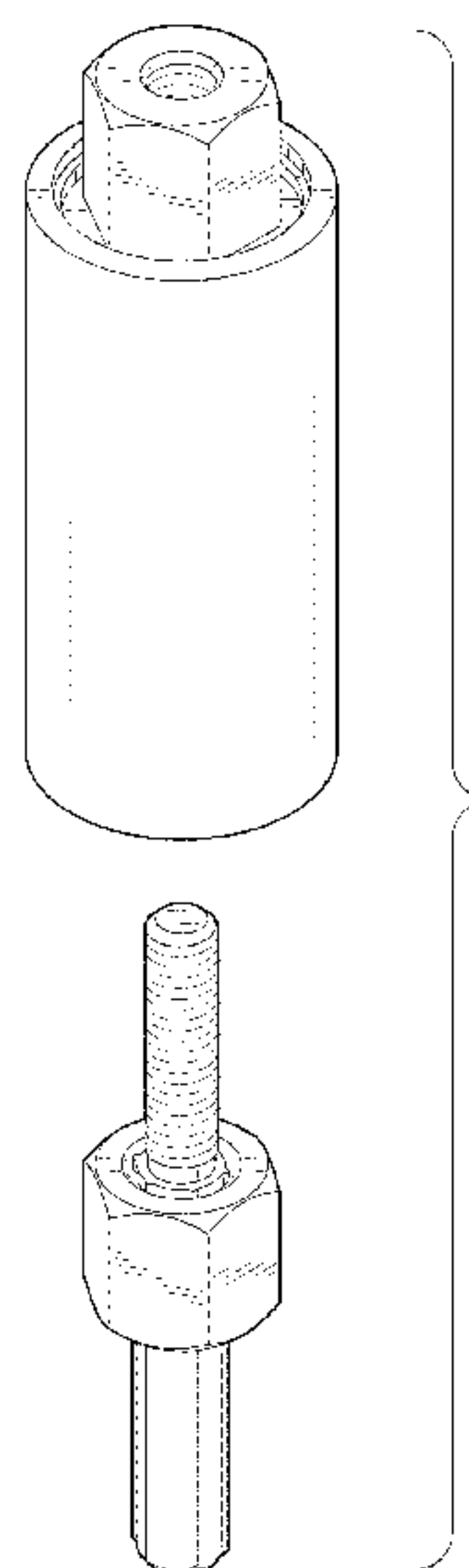
(57) **CLAIM**

The ornamental design for a bolt extractor, as shown and described.

**DESCRIPTION**

FIG. 1 is an exploded perspective view of a bolt extractor embodying the new design;  
 FIG. 2 is an exploded front view thereof;  
 FIG. 3 is an exploded rear view thereof;  
 FIG. 4 is an exploded left side elevation view thereof;  
 FIG. 5 is an exploded right side elevation view thereof;  
 FIG. 6 is a top plan view thereof;  
 FIG. 7 is a bottom plan view thereof;  
 FIG. 8 is another exploded perspective view thereof;  
 FIG. 9 is a perspective view of the upper component of the bolt extractor;  
 FIG. 10 is a front elevation view thereof, the rear elevation view being identical;  
 FIG. 11 is a left side elevation view thereof, the right side elevation view being identical;  
 FIG. 12 is a top plan view thereof;  
 FIG. 13 is a bottom plan view thereof;  
 FIG. 14 is a perspective view of the lower component of the bolt extractor;  
 FIG. 15 is a front elevation view thereof, the rear elevation view being identical;  
 FIG. 16 is a left side elevation view thereof, the right side elevation view being identical;  
 FIG. 17 is a top plan view thereof;  
 FIG. 18 is a bottom plan view thereof;  
 FIG. 19 is a perspective view of the bolt extractor in an assembled state; and,  
 FIG. 20 is a longitudinal sectional view thereof, the section being taken along lines 20-20 of FIG. 19.

**1 Claim, 17 Drawing Sheets**



(56)

**References Cited**

U.S. PATENT DOCUMENTS

8,925,167 B1 \* 1/2015 Miller ..... B25B 27/023  
254/20  
8,997,608 B2 \* 4/2015 Merrick ..... B25B 13/5016  
81/53.2  
D791,560 S \* 7/2017 Mitchell ..... D8/21  
2005/0257357 A1 \* 11/2005 Huang ..... B25B 27/0071  
29/256  
2009/0236572 A1 \* 9/2009 Laun ..... B25C 11/02  
254/18  
2013/0042473 A1 \* 2/2013 Imam ..... B25B 27/0035  
29/888.011  
2014/0345100 A1 \* 11/2014 Huang ..... B25B 27/023  
29/264  
2018/0071903 A1 \* 3/2018 Dudot ..... B25B 27/18

\* cited by examiner

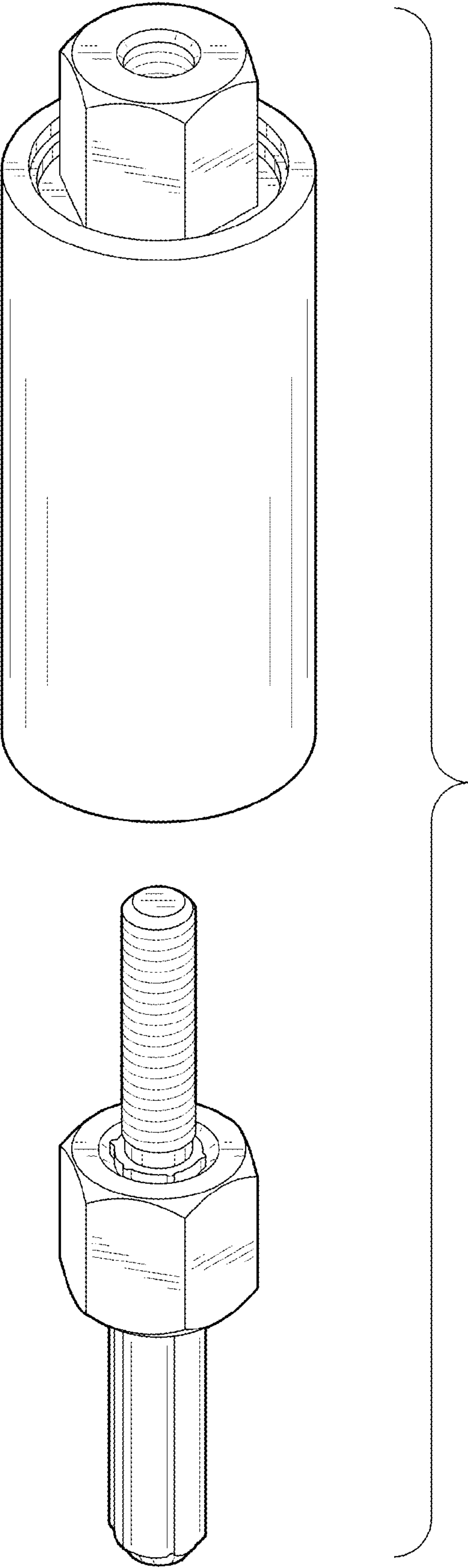


FIG. 1

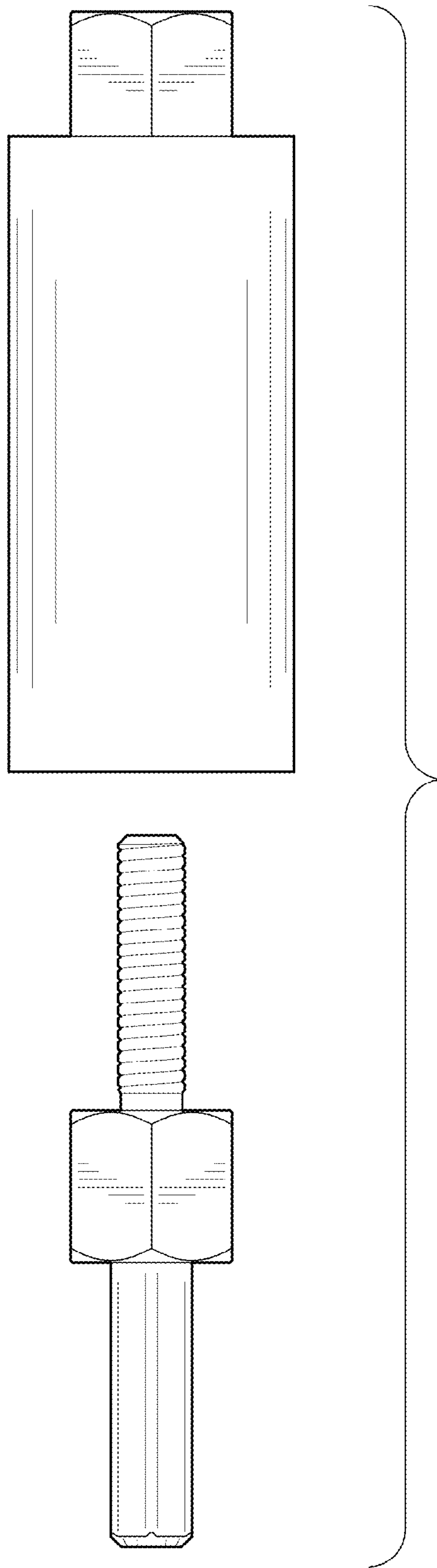


FIG. 2

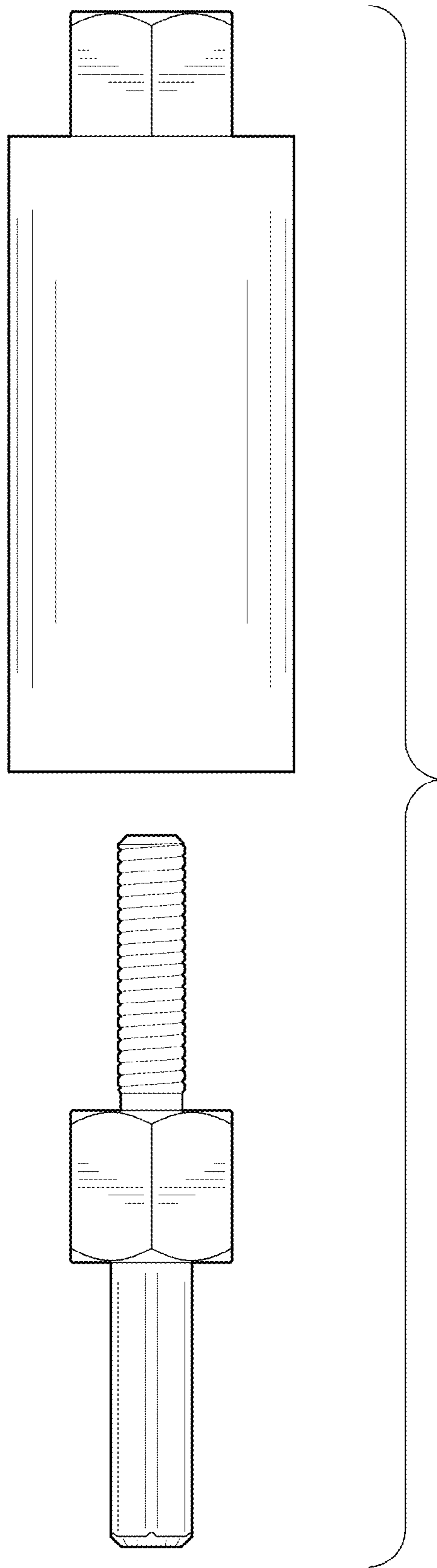


FIG. 3

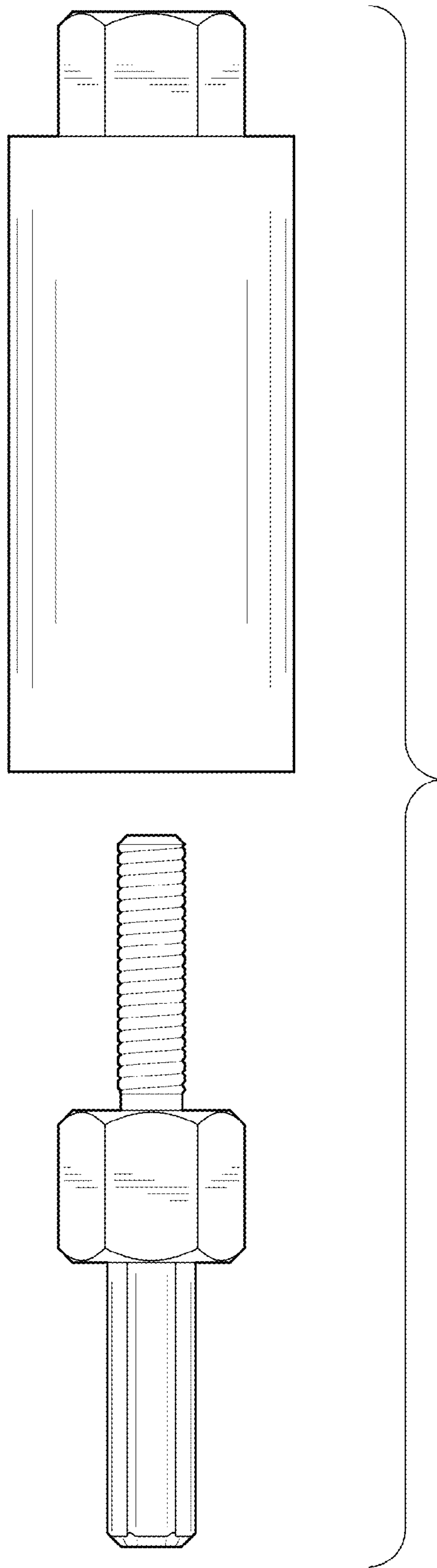


FIG. 4

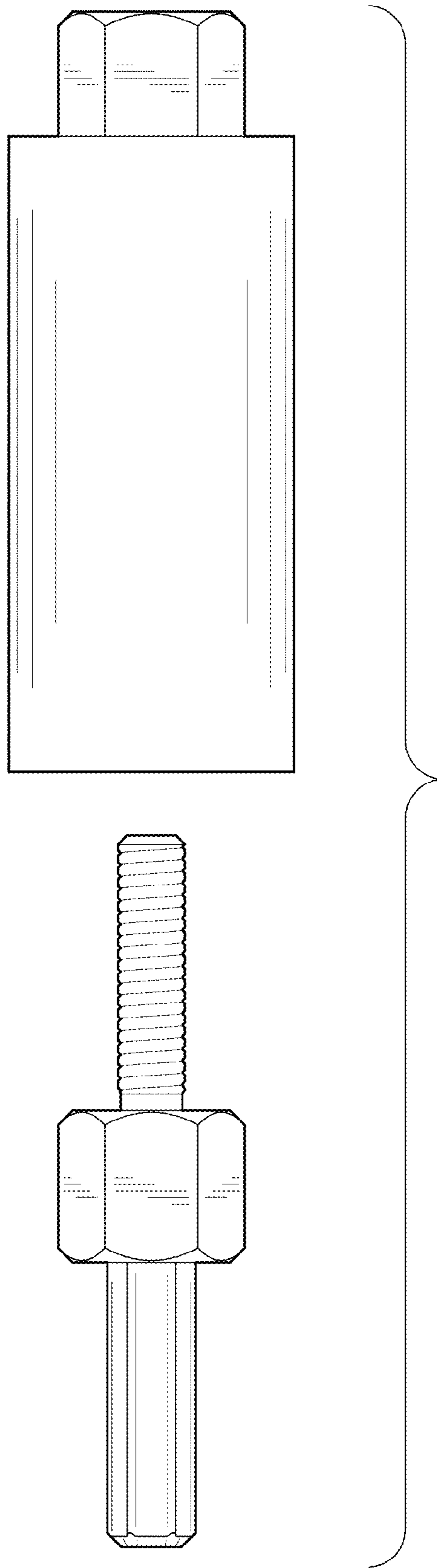


FIG. 5



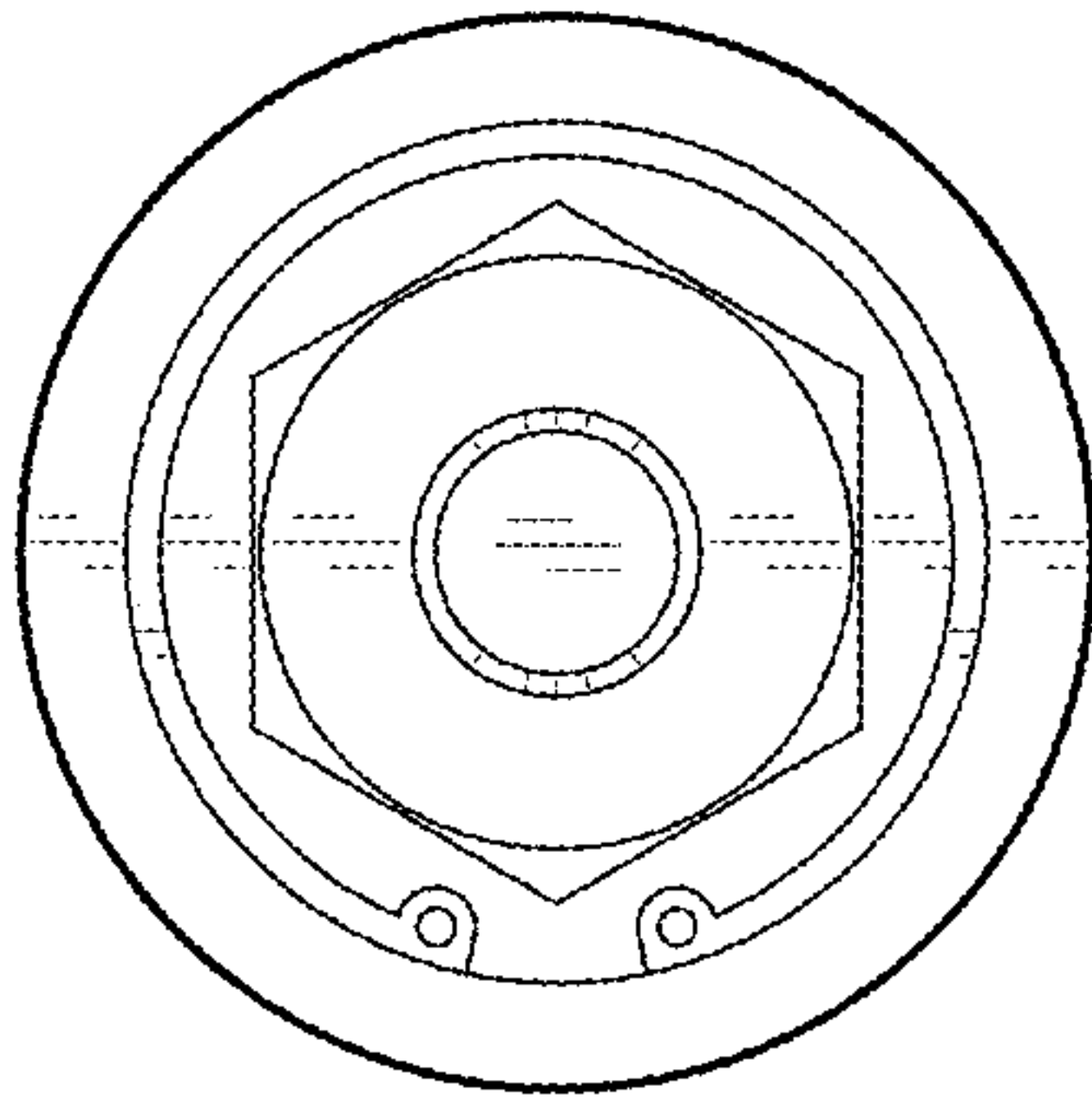


FIG. 6

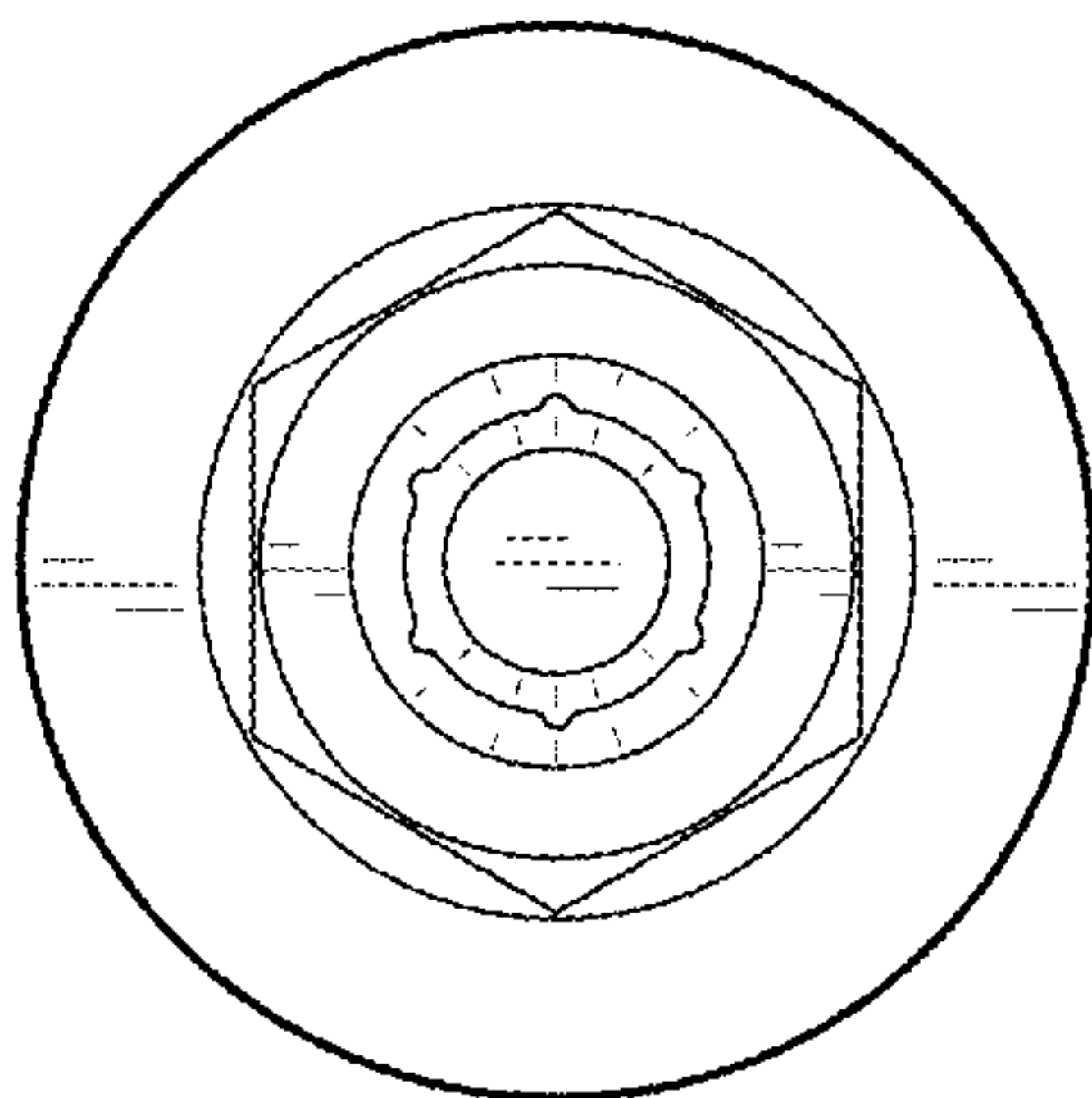


FIG. 7



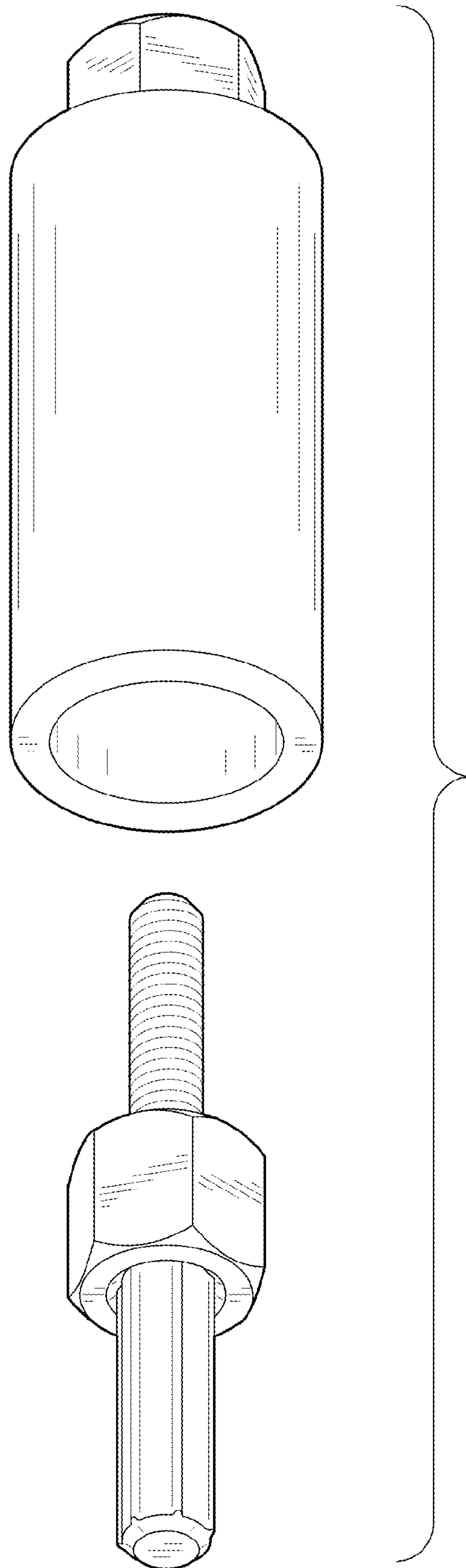


FIG. 8

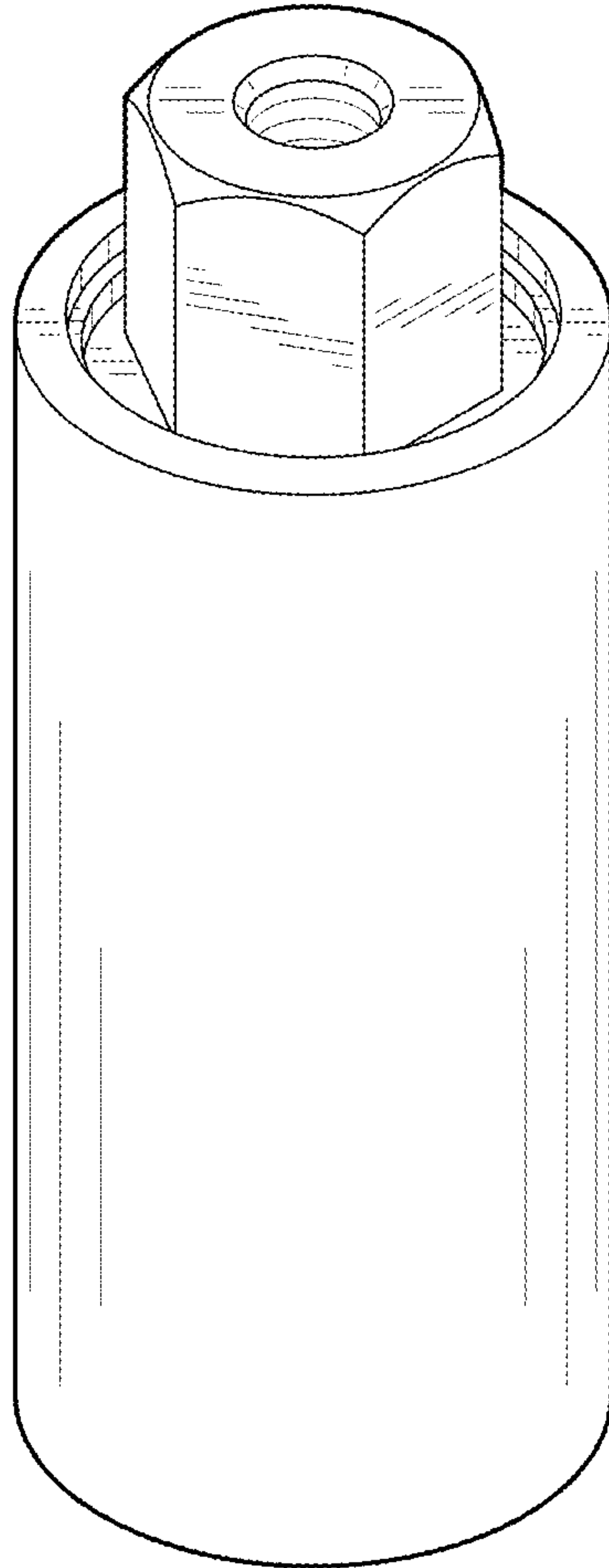


FIG. 9

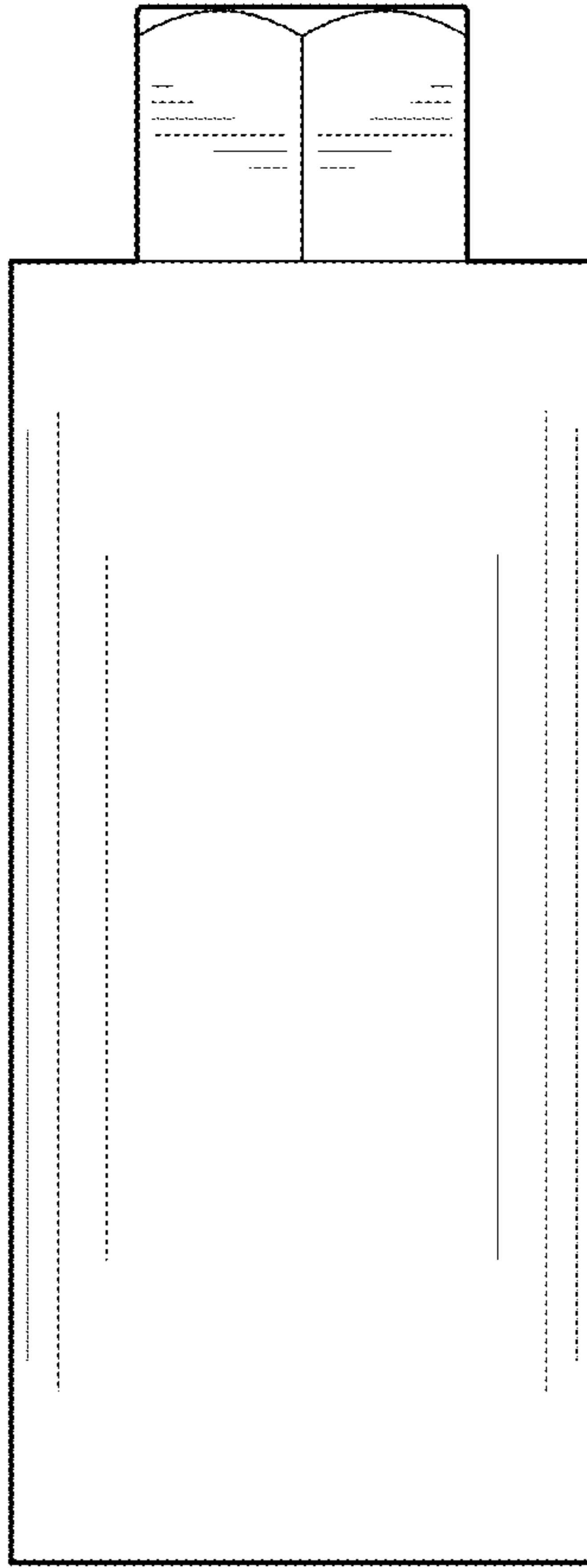


FIG. 10

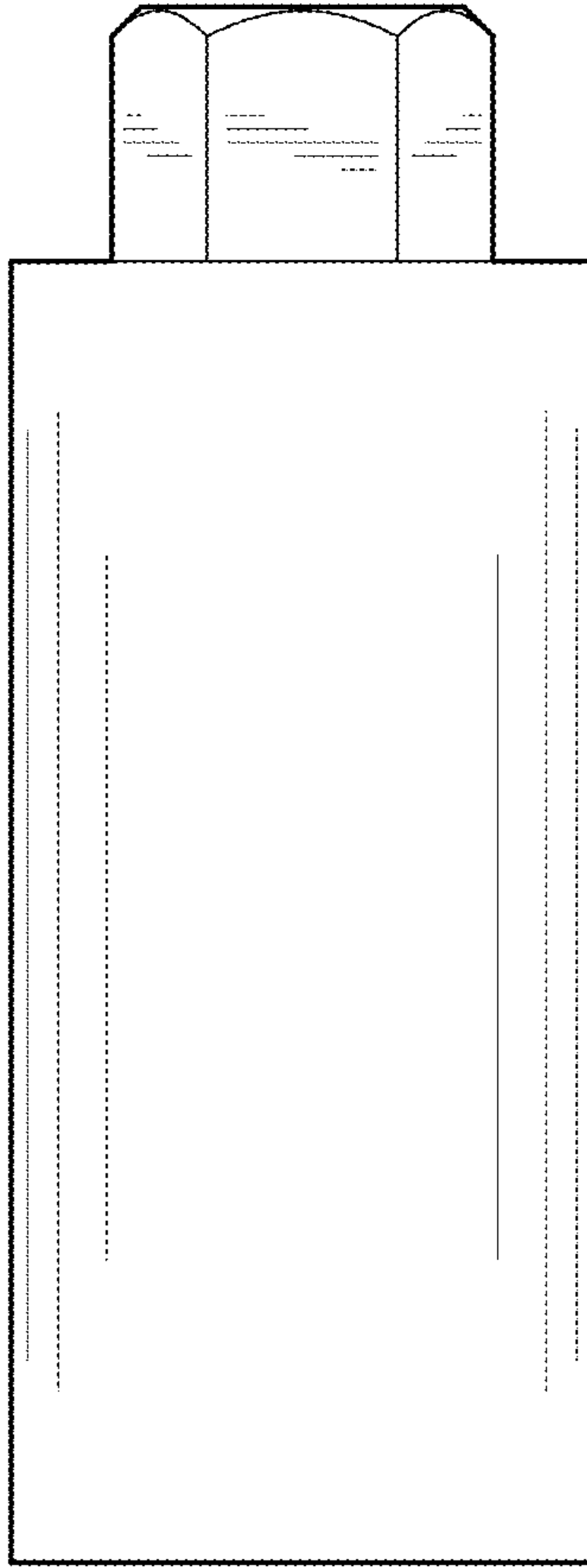


FIG. 11

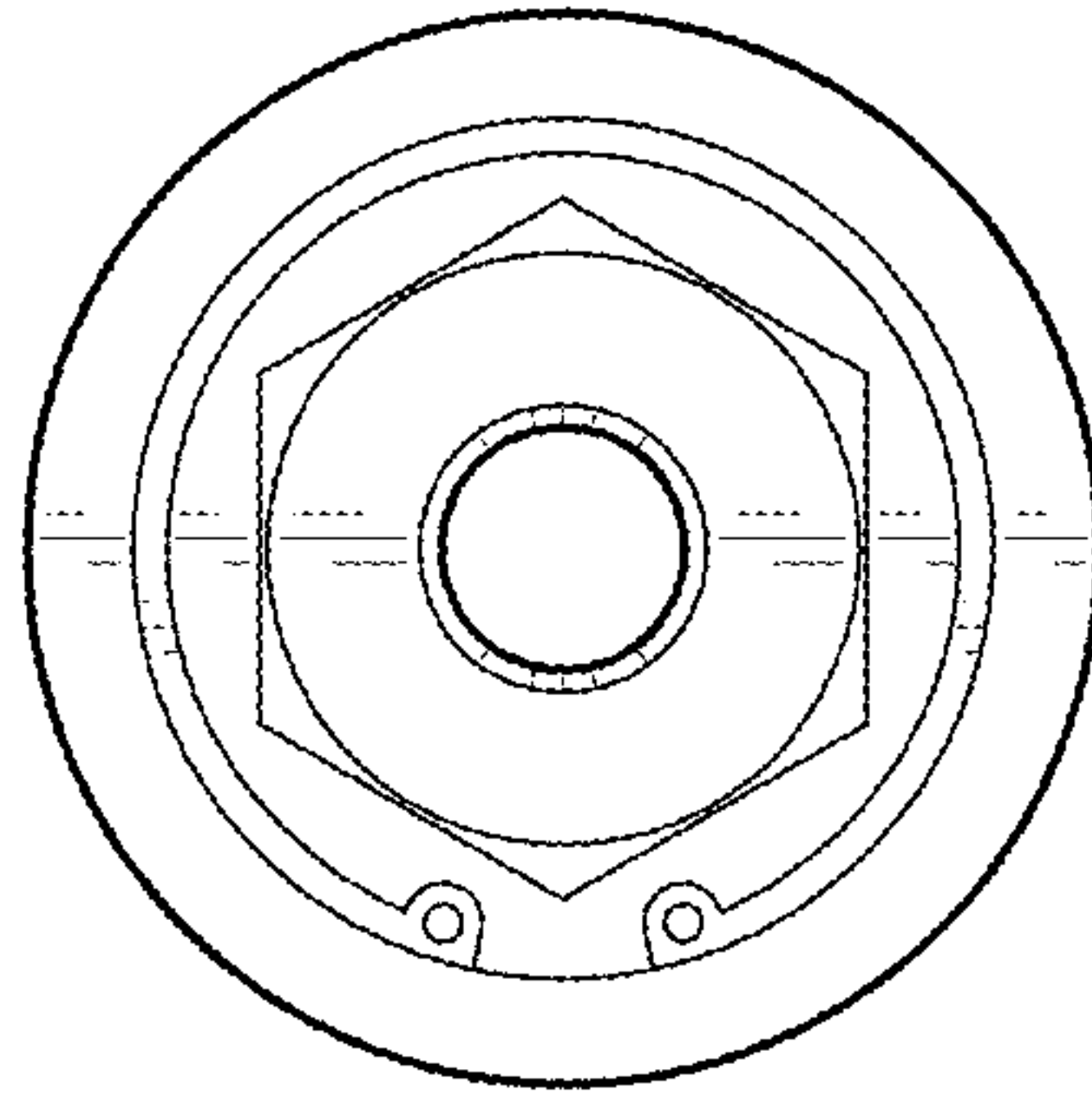


FIG. 12

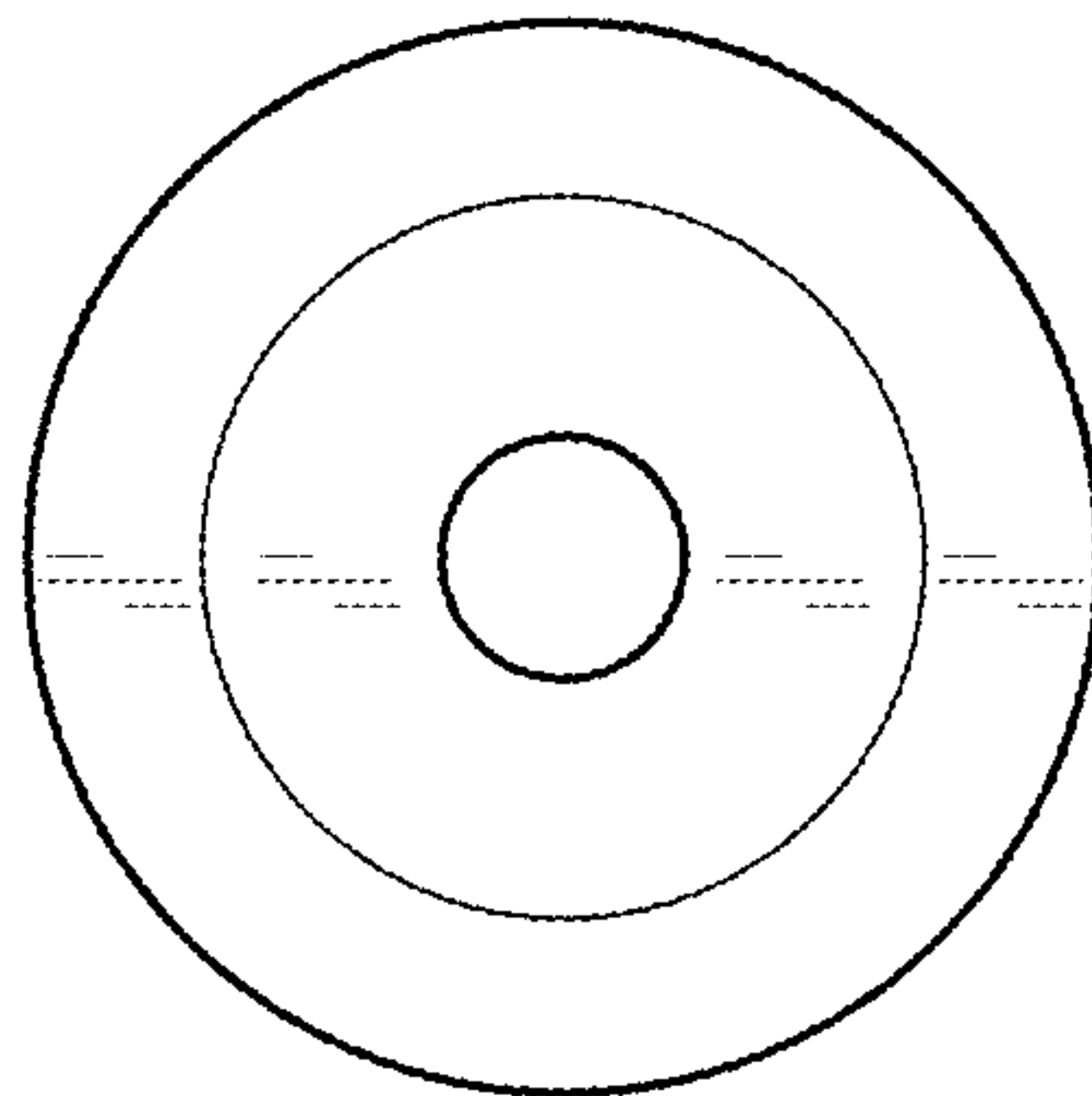


FIG. 13

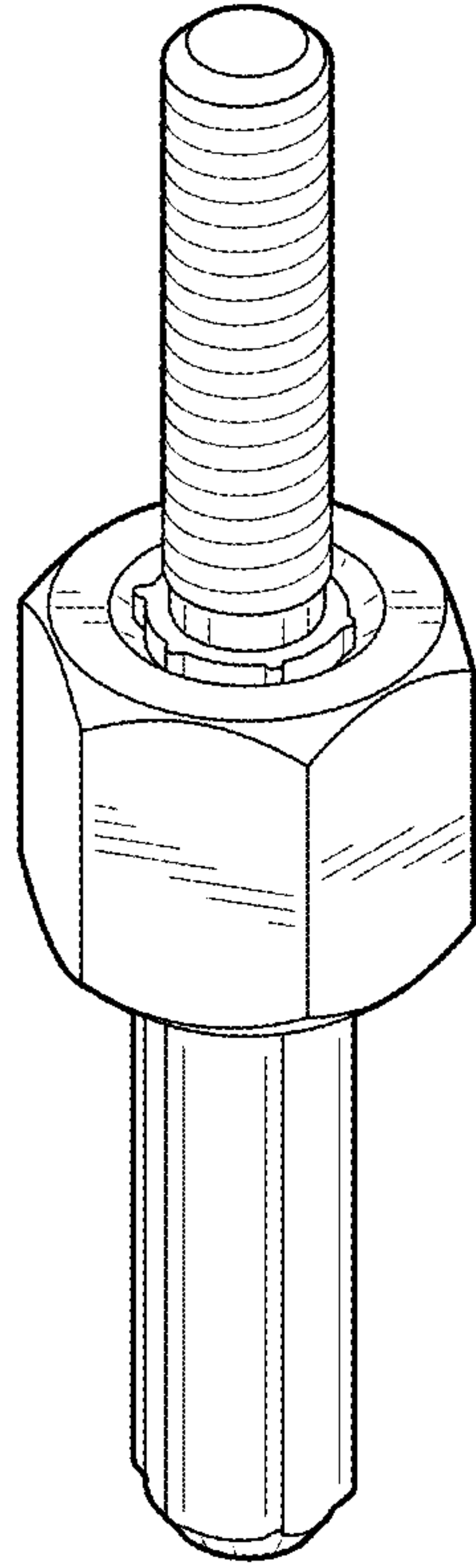


FIG. 14

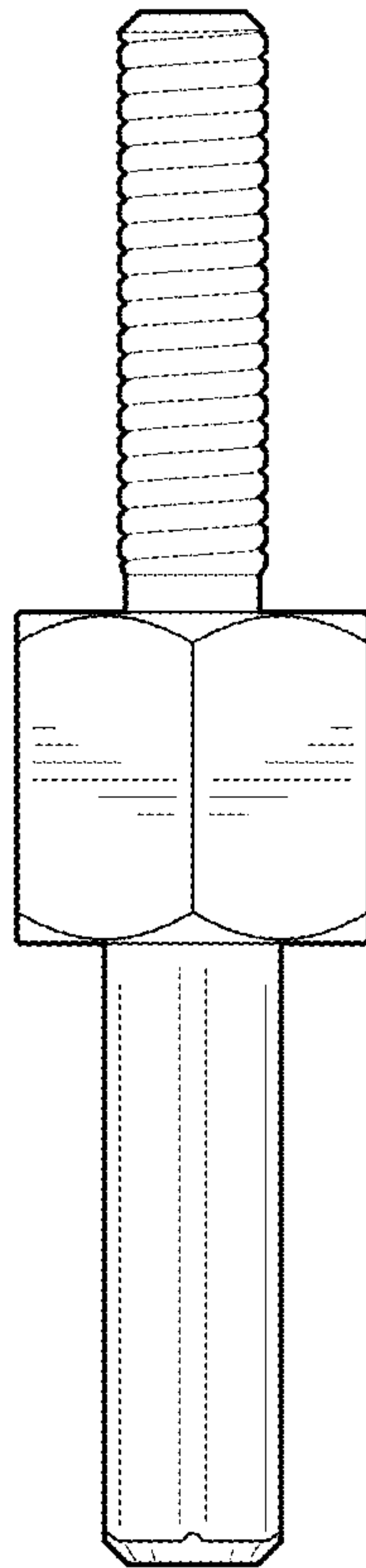


FIG. 15



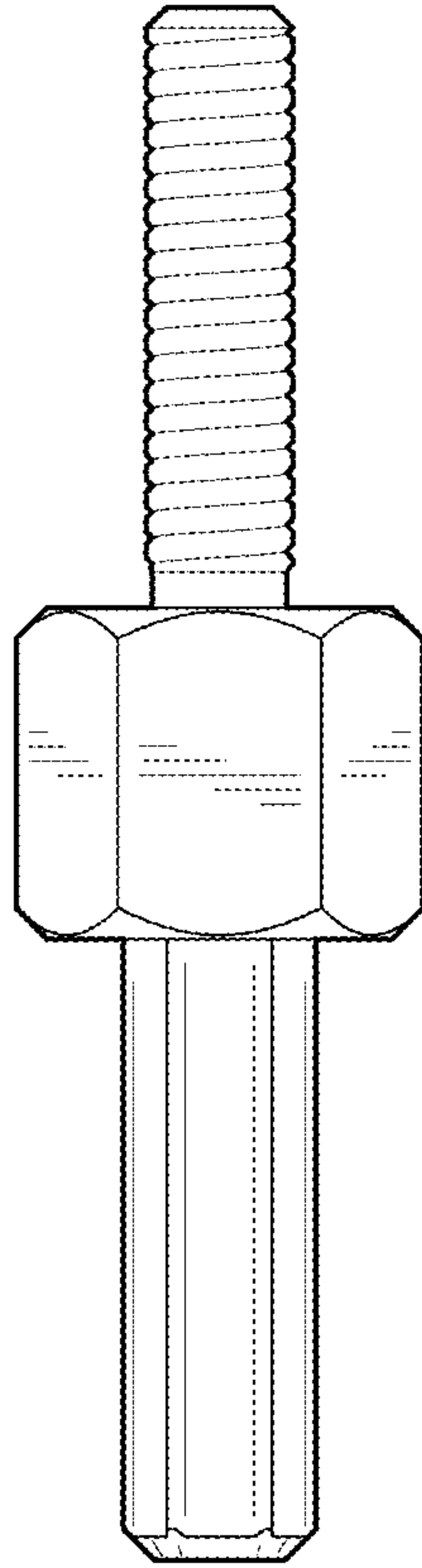


FIG. 16

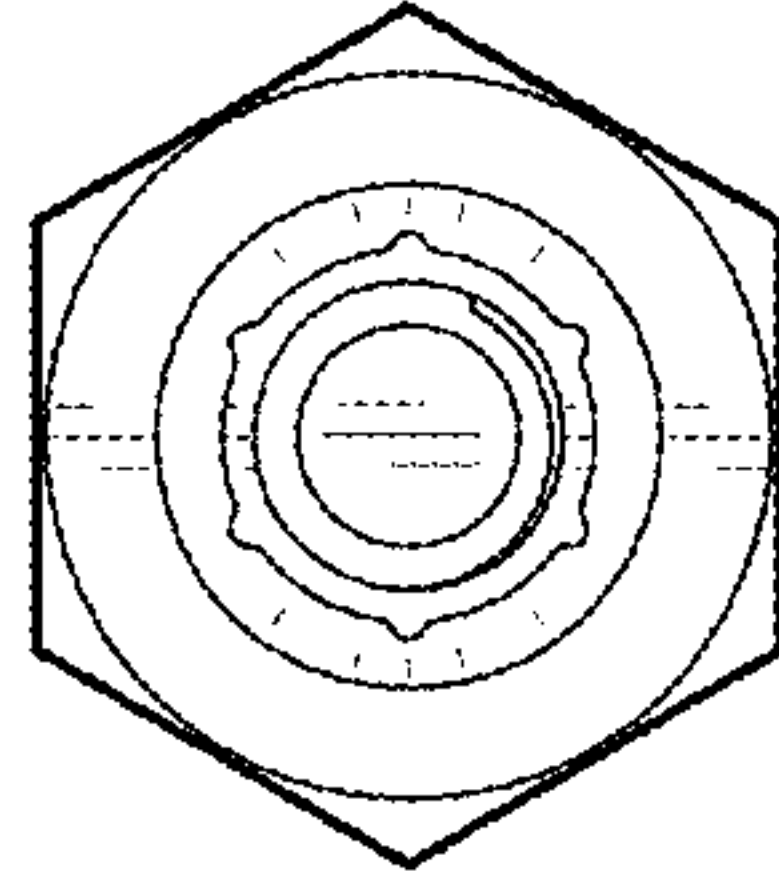


FIG. 17

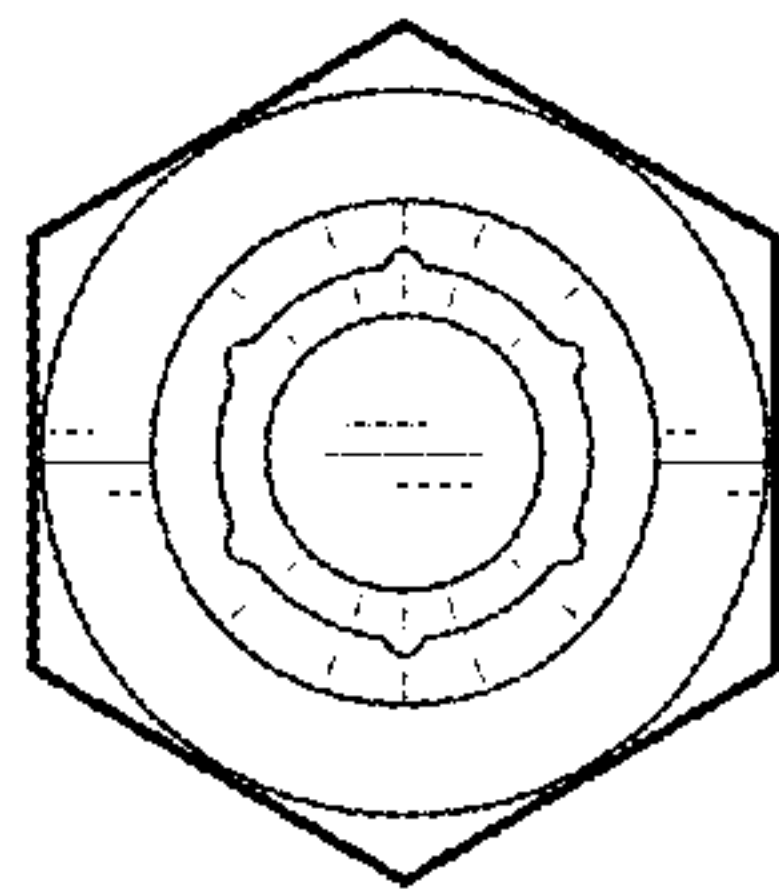


FIG. 18

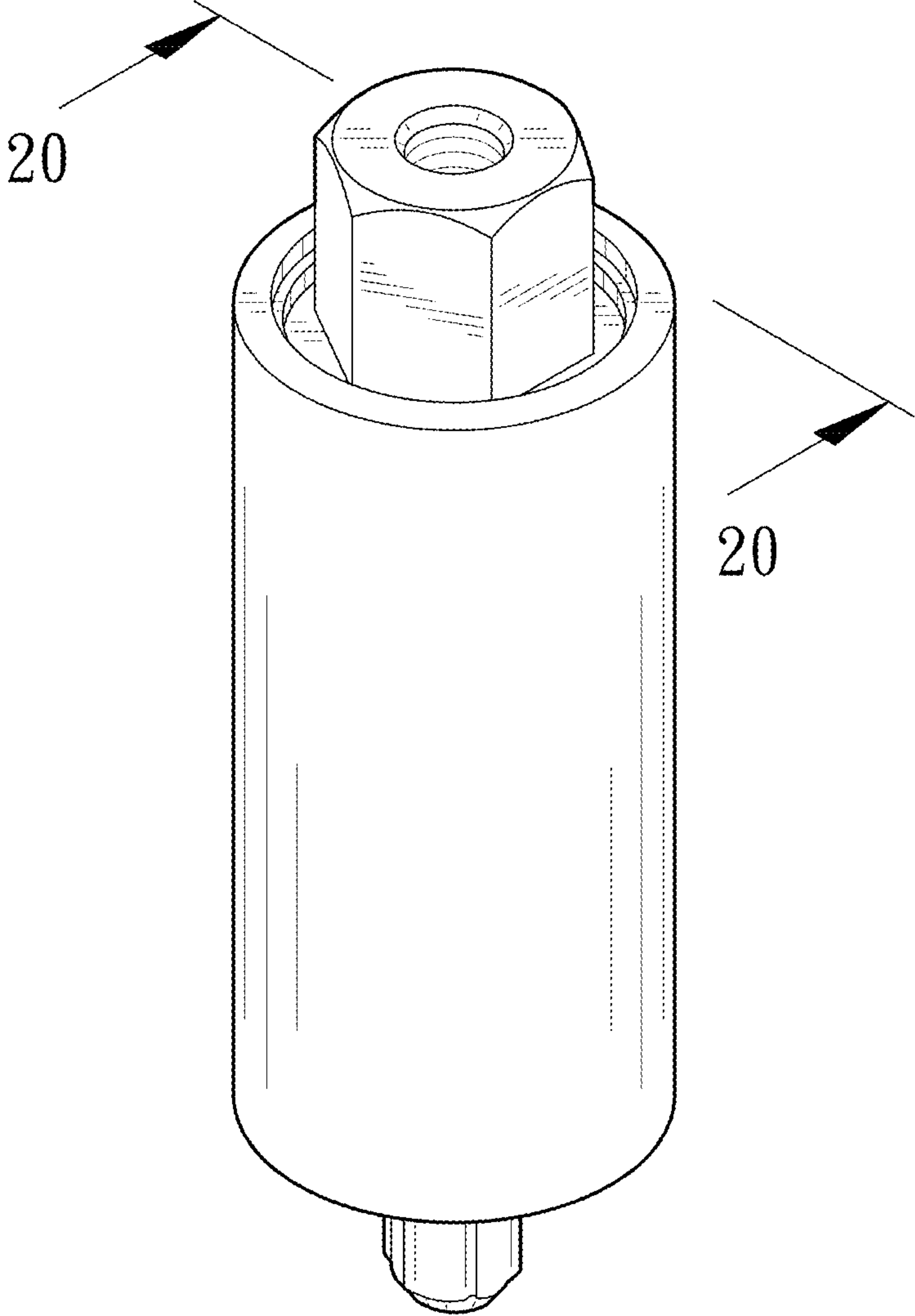


FIG. 19

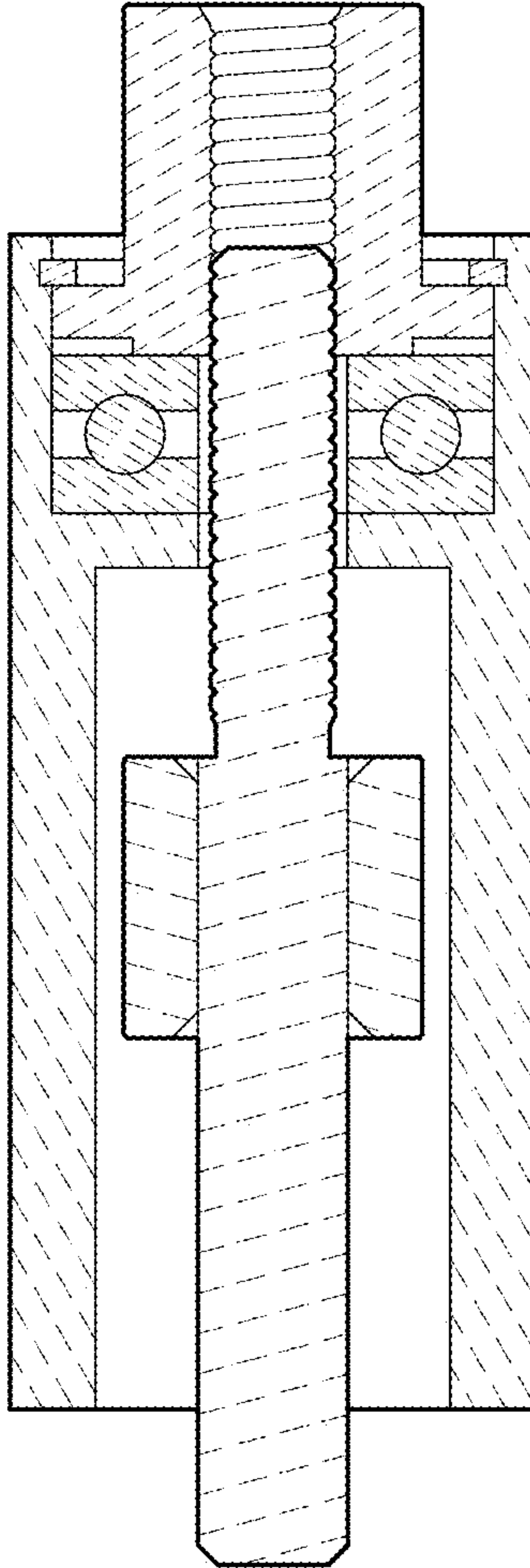


FIG. 20