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(12) **United States Design Patent** (10) **Patent No.:** **US D812,252 S**  
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- (54) **LED-BASED LIGHT TUBE**
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- (\*\*) Term: **15 Years**
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**Related U.S. Application Data**

- (62) Division of application No. 29/528,767, filed on Jun. 1, 2015, now Pat. No. Des. 780,348.
- (51) **LOC (11) Cl.** ..... **26-04**
- (52) **U.S. Cl.**  
USPC ..... **D26/3**
- (58) **Field of Classification Search**  
USPC ..... D26/1-4; 313/313, 315, 316, 317, 318, 313/493; 315/52, 53, 56, 57, 58  
CPC ..... H01J 5/00; H01J 5/16; H01J 15/00; H01J 5/48; H01J 5/50; H01J 19/54; F21V 5/00; F21K 9/13; F21K 9/135; F21K 9/1375  
See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

5,473,522 A	12/1995	Kriz et al.
5,850,126 A	12/1998	Kanbar
D437,947 S	2/2001	Huang
6,227,679 B1	5/2001	Zhang et al.
D477,093 S	7/2003	Moriyama et al.
6,598,996 B1	7/2003	Lodhie
6,652,117 B2	11/2003	Tsai
6,659,622 B2	12/2003	Katogi et al.
6,851,832 B2	2/2005	Tieszen

D506,274 S	6/2005	Moriyama et al.
7,049,761 B2	5/2006	Timmermans et al.
D553,267 S *	10/2007	Yuen ..... D26/2
7,329,024 B2	2/2008	Lynch et al.
D574,093 S	7/2008	Kitagawa et al.
7,396,146 B2	7/2008	Wang
D576,749 S	9/2008	Kitagawa et al.
D581,556 S *	11/2008	To ..... D26/2
D584,429 S	1/2009	Pei et al.

(Continued)

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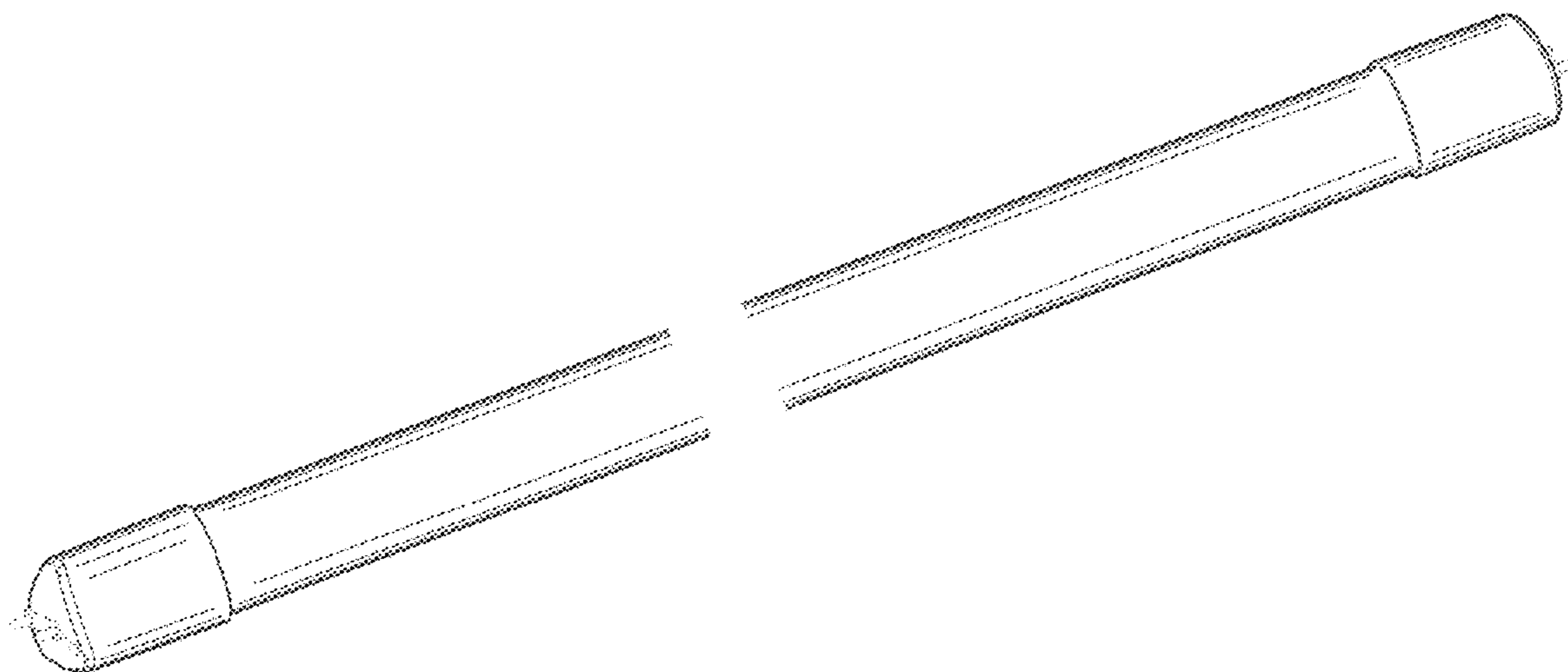
(57) **CLAIM**

The ornamental design for an LED-based light tube, as shown and described.

**DESCRIPTION**

FIGS. 1 and 2 are perspective views of an example of an LED-based light tube showing our new design with a middle portion removed in FIG. 2 for ease of illustration; FIG. 3 is an enlarged, front elevation view of the LED-based light tube of FIG. 1 with the middle portion removed for ease of illustration; FIG. 4 is an enlarged, rear elevation view of the LED-based light tube of FIG. 1 with the middle portion removed for ease of illustration; FIG. 5 is an enlarged, left side elevation view of the LED-based light tube of FIGS. 1 and 2; FIG. 6 is an enlarged, right side elevation view of the LED-based light tube of FIGS. 1 and 2; FIG. 7 is an enlarged, top plan view of the LED-based light tube of FIGS. 1 and 2 with the middle portion removed for ease of illustration; FIG. 8 is an enlarged, bottom plan view of the LED-based light tube of FIGS. 1 and 2 with the middle portion removed for ease of illustration; and, FIG. 9 is a cross-sectional view taken along line 9-9 in FIG. 1 of the LED-based light tube of FIGS. 1 and 2.

**1 Claim, 3 Drawing Sheets**



(56)

**References Cited**

U.S. PATENT DOCUMENTS

7,510,299 B2	3/2009	Timmermans et al.	7,926,975 B2	4/2011	Siemiet et al.
7,514,876 B2	4/2009	Roach, Jr.	7,938,562 B2	5/2011	Ivey et al.
7,521,872 B2	4/2009	Bruning	7,946,729 B2	5/2011	Ivey et al.
D594,999 S	6/2009	Uchida et al.	7,976,196 B2	7/2011	Ivey et al.
D597,686 S	8/2009	Noh	7,990,070 B2	8/2011	Nerone
7,594,738 B1	9/2009	Lin et al.	7,997,770 B1	8/2011	Meurer
D601,726 S	10/2009	Mollaert et al.	D650,097 S	12/2011	Trumble et al.
D610,724 S	2/2010	Chiang et al.	D650,494 S	12/2011	Tsao et al.
D611,172 S	3/2010	Lin et al.	D652,968 S	1/2012	Aguiar et al.
7,712,918 B2	5/2010	Siemiet et al.	8,093,823 B1	1/2012	Ivey et al.
7,758,207 B1	7/2010	Zhou et al.	D654,192 S	2/2012	Maxik et al.
D621,975 S	8/2010	Wang	8,118,447 B2	2/2012	Simon et al.
7,784,966 B2	8/2010	Verfuert et al.	D660,472 S	5/2012	Aguiar et al.
7,815,338 B2	10/2010	Siemiet et al.	D662,236 S	6/2012	Matsushita
7,850,341 B2	12/2010	Mrakovich et al.	2003/0218879 A1	11/2003	Tieszen
RE42,161 E	2/2011	Hochstein	2007/0195527 A1	8/2007	Russell
7,878,683 B2	2/2011	Logan et al.	2007/0285926 A1	12/2007	Maxik
7,887,216 B2	2/2011	Patrick	2009/0046473 A1	2/2009	Tsai et al.
7,887,226 B2	2/2011	Huang et al.	2010/0270925 A1	10/2010	Withers
D634,452 S	3/2011	de Visser	2011/0090682 A1	4/2011	Zheng et al.
D636,504 S	4/2011	Duster	2011/0156584 A1	6/2011	Kim
			2011/0176298 A1	7/2011	Meurer et al.
			2011/0199769 A1	8/2011	Bretschneider et al.

\* cited by examiner

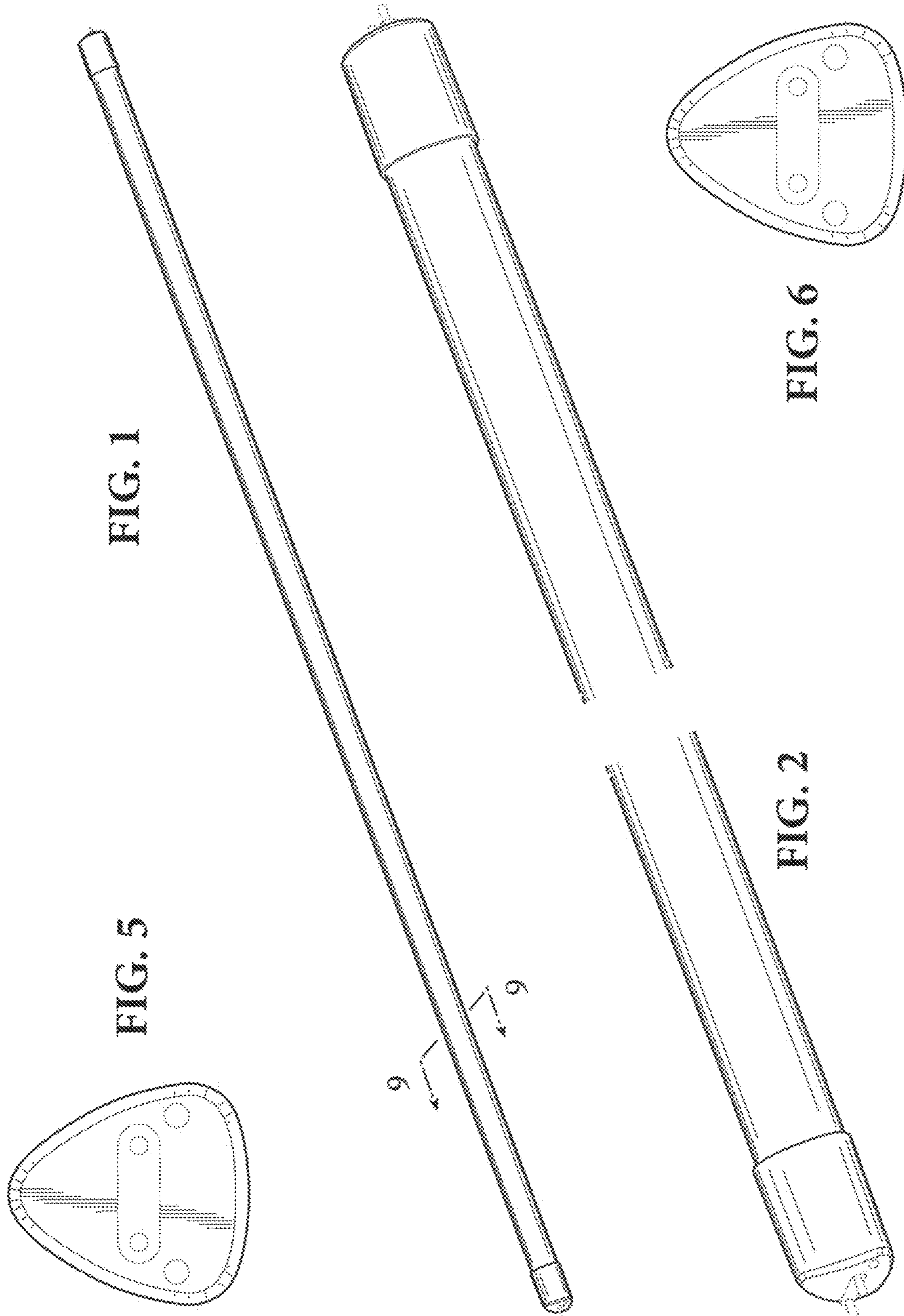


FIG. 1

FIG. 5

FIG. 6

FIG. 2



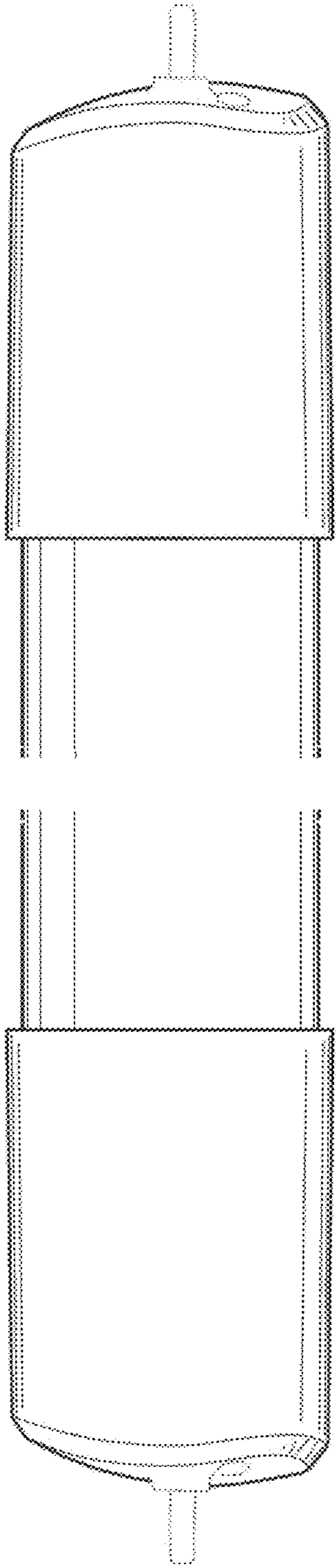


FIG. 3

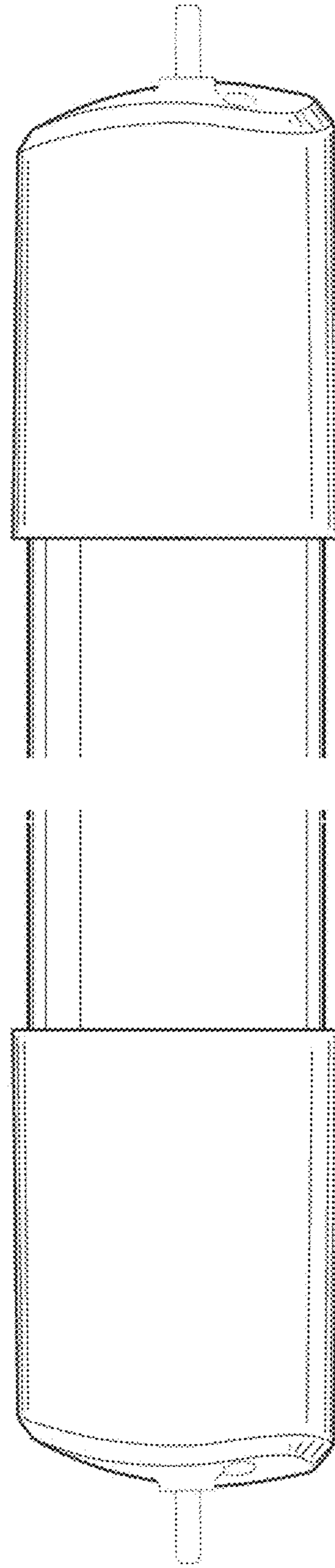


FIG. 4

FIG. 7

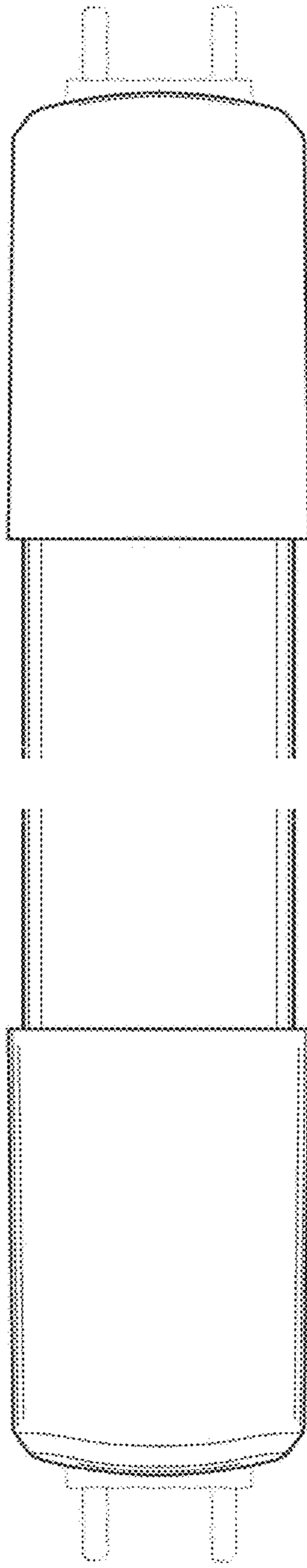
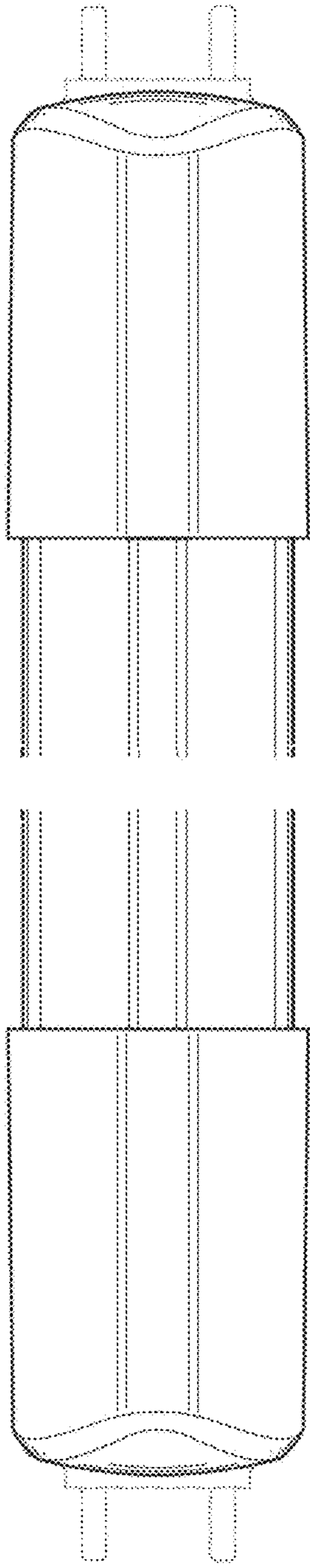


FIG. 8

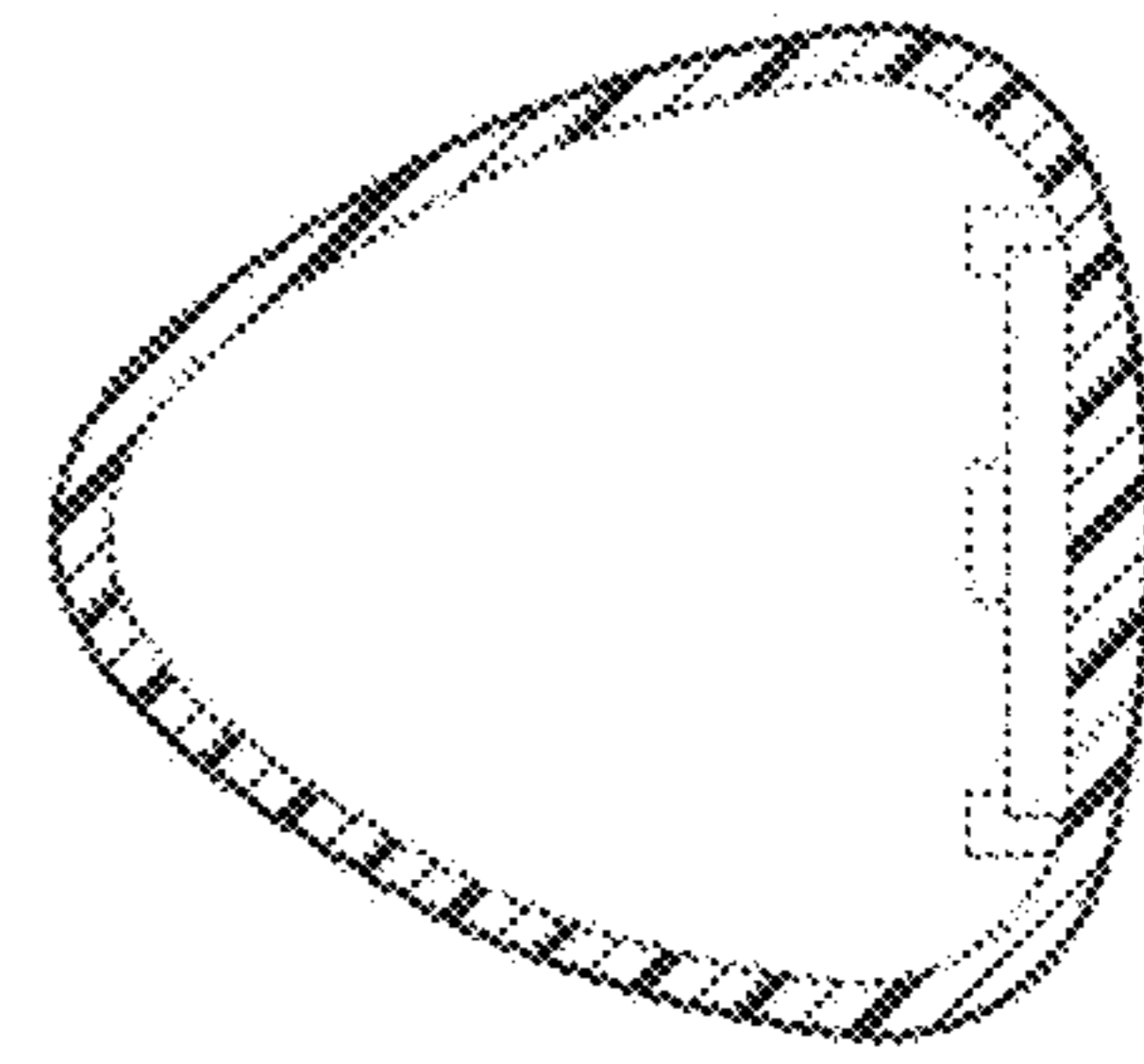


FIG. 9