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(12) **United States Design Patent** (10) **Patent No.:** **US D789,520 S**  
**Tseng et al.** (45) **Date of Patent:** **\*\* Jun. 13, 2017**

(54) **INJECTOR BARREL AND PLUNGER**

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(73) Assignee: **ICARES MEDICUS, INC.**, Hsinchu (TW)

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

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(51) **LOC (10) Cl.** ..... **24-02**

(52) **U.S. Cl.**  
USPC ..... **D24/114**

(58) **Field of Classification Search**

USPC ..... D24/112-114, 108, 133, 130, 127, 186;  
606/181, 185; 604/264, 272, 187, 181,  
604/184, 227

CPC ..... A61M 5/178; A61M 3/00; A61M 5/20;  
A61M 5/31; A61M 5/3146; A61M  
5/3129; A61M 5/3148; A61M 5/315

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

4,681,102	A	7/1987	Bartell	
4,906,247	A	3/1990	Fritch	
D318,733	S *	7/1991	Wyzgala	D24/112
D338,957	S *	8/1993	de Faire	D24/112
5,496,328	A	3/1996	Nakajima et al.	
D397,434	S *	8/1998	Pike	D24/112
D449,379	S *	10/2001	Fuhr	D24/133
6,355,046	B2	3/2002	Kikuchi et al.	
6,468,282	B2	10/2002	Kikuchi et al.	
6,666,871	B2	12/2003	Kikuchi et al.	
6,858,033	B2	2/2005	Kobayashi	

(Continued)

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(57) **CLAIM**

The ornamental design for an injector barrel and plunger, as shown and described.

**DESCRIPTION**

FIG. 1 is a perspective view of the injector barrel and injector plunger according to the invention.

FIG. 2 is a side elevation view thereof.

FIG. 3 is an opposite side elevation view thereof.

FIG. 4 is a front elevation view thereof.

FIG. 5 is a rear elevation view thereof.

FIG. 6 is a top plan view thereof.

FIG. 7 is a bottom plan view thereof.

FIG. 8 is a perspective view of an injector plunger of FIG. 1 shown separately.

FIG. 9 is a side elevation view thereof.

FIG. 10 is an opposite side elevation view thereof.

FIG. 11 is a front elevation view thereof.

FIG. 12 is a rear elevation view thereof.

FIG. 13 is a top plan view thereof.

FIG. 14 is a bottom plan view thereof.

FIG. 15 is a perspective view of an injector barrel of FIG. 1 shown separately.

FIG. 16 is a side elevation view thereof.

FIG. 17 is an opposite side elevation view thereof.

FIG. 18 is a front elevation view thereof.

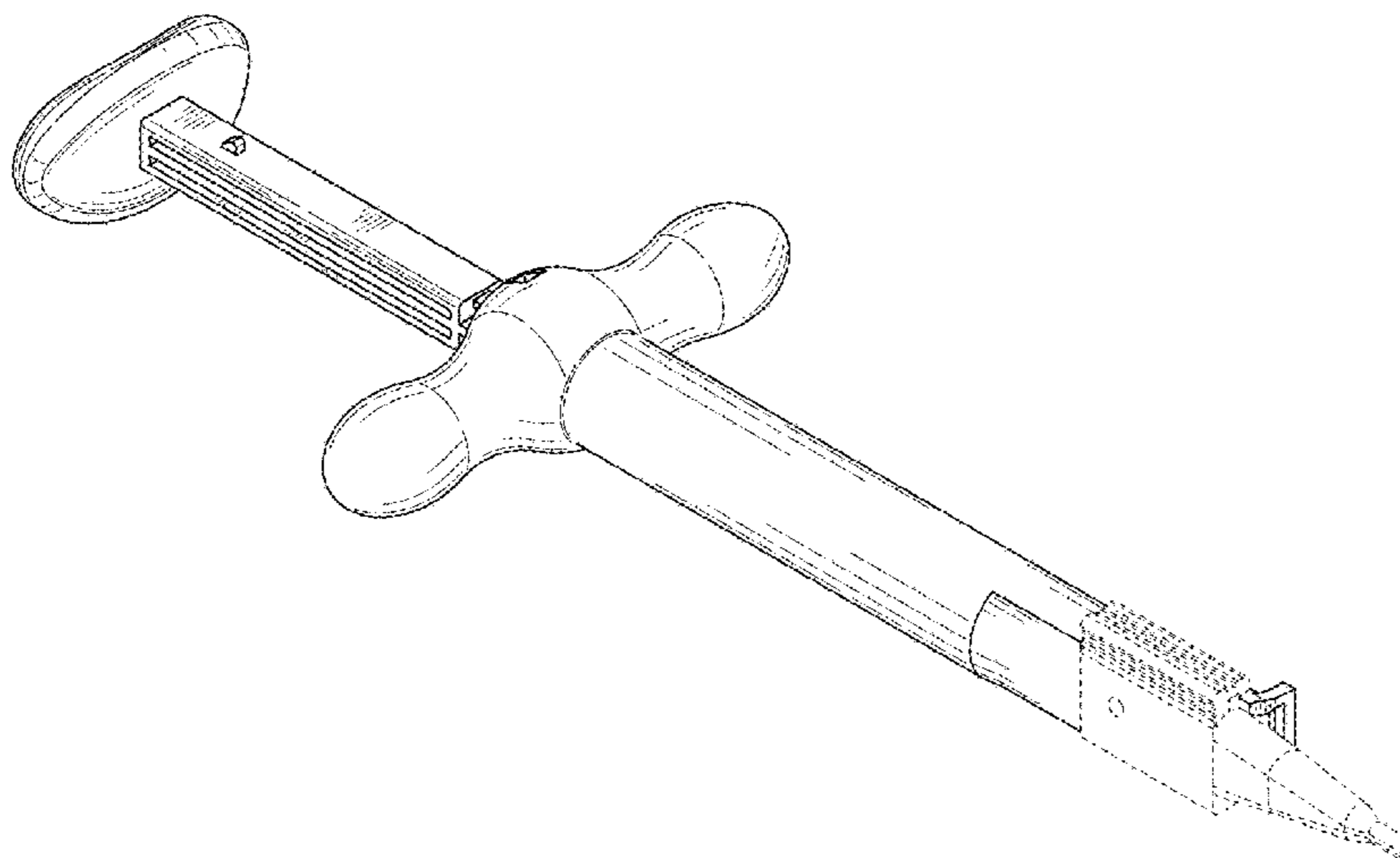
FIG. 19 is a rear elevation view thereof.

FIG. 20 is a top plan view thereof; and,

FIG. 21 is a bottom plan view thereof.

The features shown in broken lines in the Figures form no part of the claimed design. FIGS. 1-7 show the injector barrel and injector plunger fully assembled. For ease of illustration, FIGS. 8-14 show only the injector plunger, and FIGS. 15-21 show only the injector barrel. Together, the injector barrel and injector plunger form the claimed design.

**1 Claim, 14 Drawing Sheets**



(56)

**References Cited**

## U.S. PATENT DOCUMENTS

7,014,641	B2	3/2006	Kobayashi et al.	
7,025,782	B2	4/2006	Kobayashi et al.	
7,037,312	B2	5/2006	Kikuchi et al.	
7,131,976	B2	11/2006	Kobayashi et al.	
7,156,854	B2	1/2007	Brown et al.	
D576,276	S *	9/2008	Osypka .....	D24/130
7,422,604	B2	9/2008	Vaquero et al.	
7,429,263	B2	9/2008	Vaquero et al.	
7,458,976	B2	12/2008	Peterson et al.	
7,476,230	B2	1/2009	Ohno et al.	
7,645,300	B2	1/2010	Tsai	
7,704,258	B2	4/2010	Feingold et al.	
7,867,240	B2	1/2011	Peterson et al.	
7,879,090	B2	2/2011	Pynson	
7,892,283	B2	2/2011	Shepherd	
D638,538	S *	5/2011	Kosinski .....	D24/130
7,947,049	B2	5/2011	Vaquero	
D643,921	S *	8/2011	Davila .....	D24/133
7,988,701	B2	8/2011	Vaquero et al.	
8,048,085	B2	11/2011	Peterson et al.	
8,114,095	B2	2/2012	Rathert	
8,123,804	B2	2/2012	Tanaka	
8,152,817	B2	4/2012	Tanaka	
D681,808	S *	5/2013	Holaschke .....	D24/114
D722,160	S *	2/2015	Armstrong .....	D24/130
D730,515	S *	5/2015	Shahidi Bonjar .....	D24/114
D733,870	S *	7/2015	Broyles .....	D24/114
D747,796	S *	1/2016	Romao .....	D24/112
D747,797	S *	1/2016	Fourt .....	D24/114

\* cited by examiner

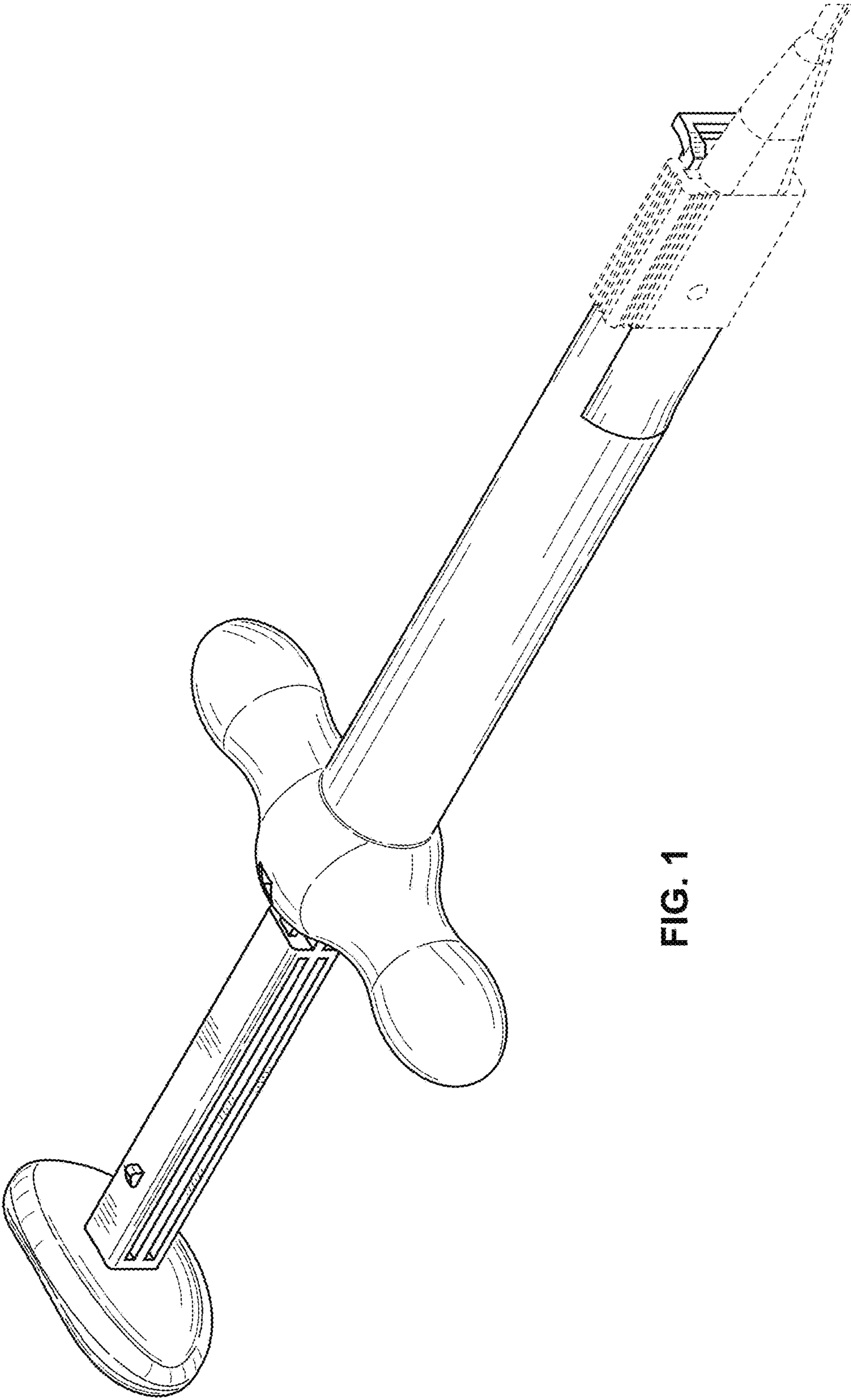


FIG. 1

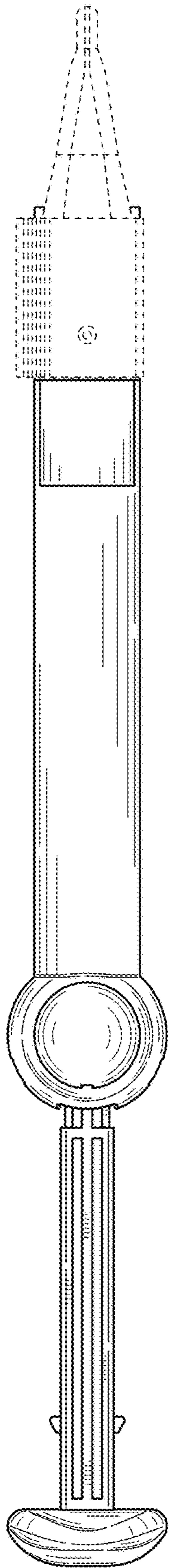


FIG. 2

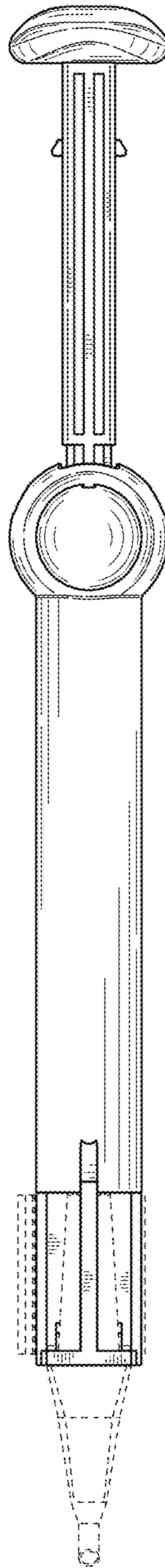


FIG. 3

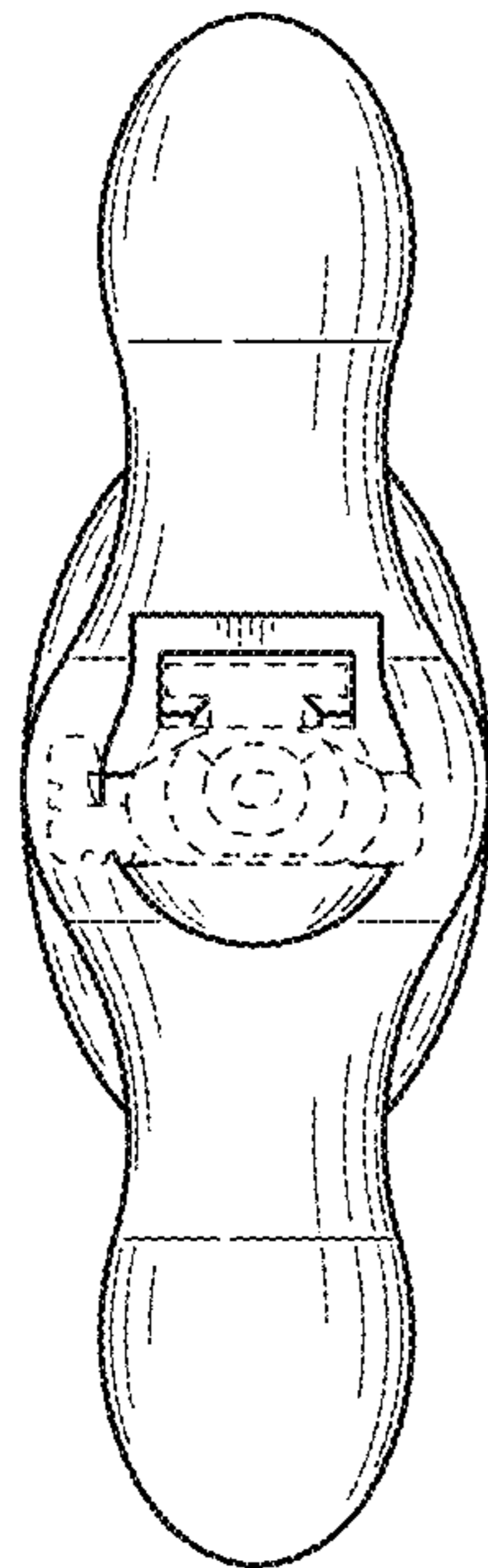


FIG. 4

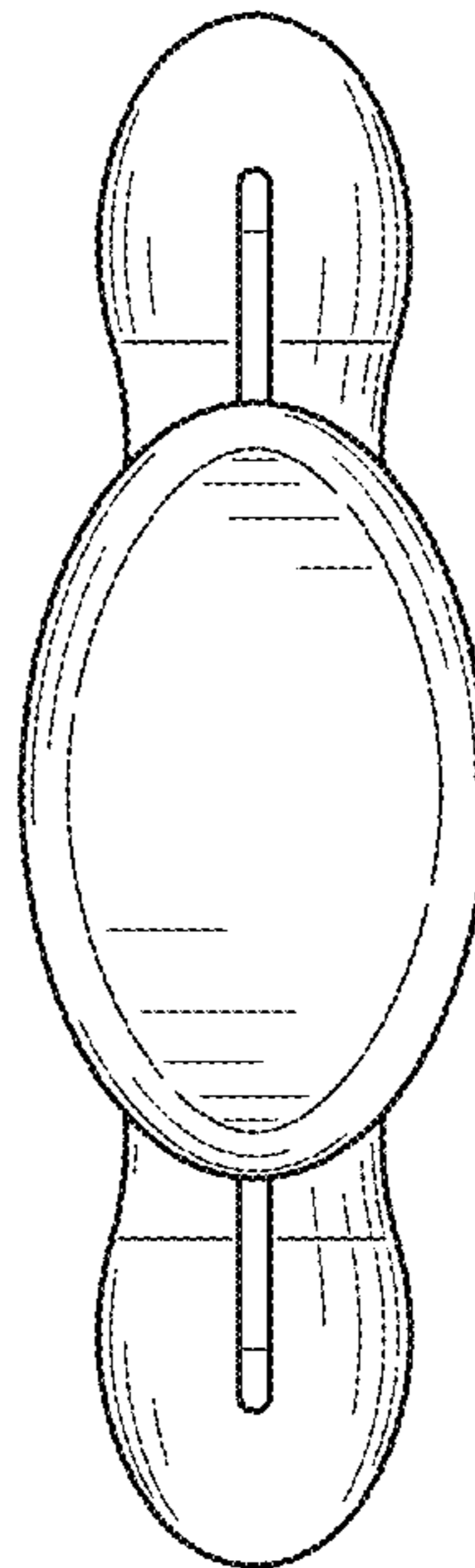


FIG. 5

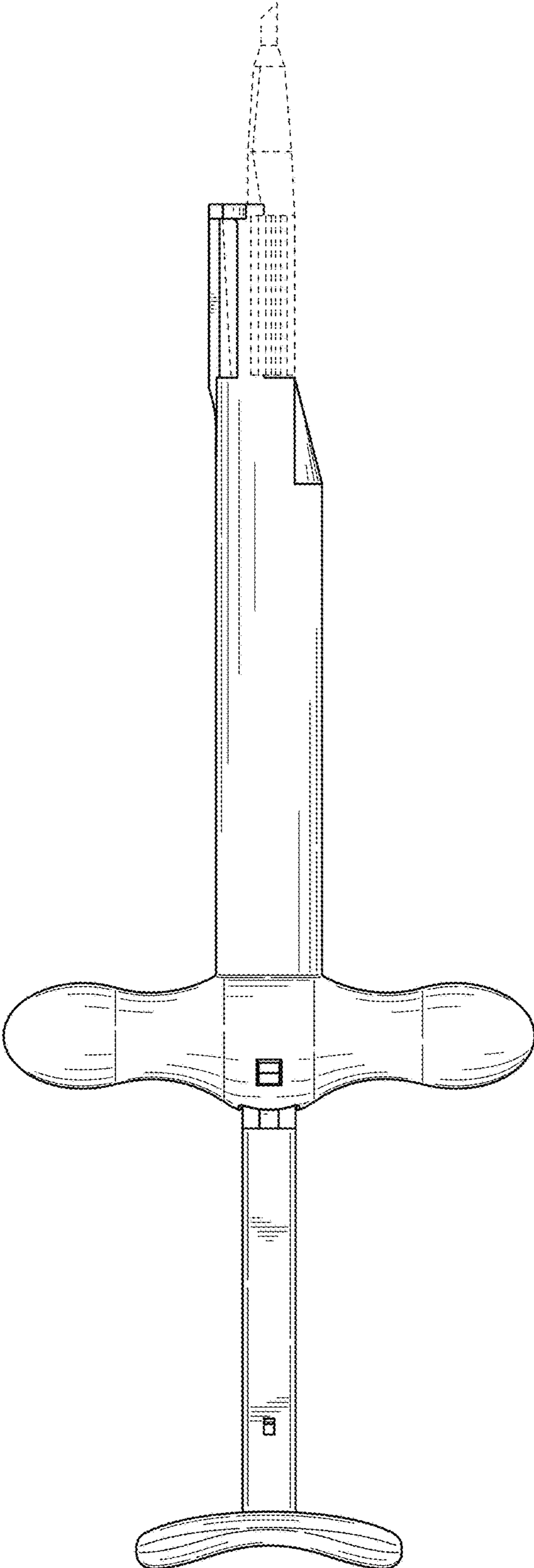


FIG. 6

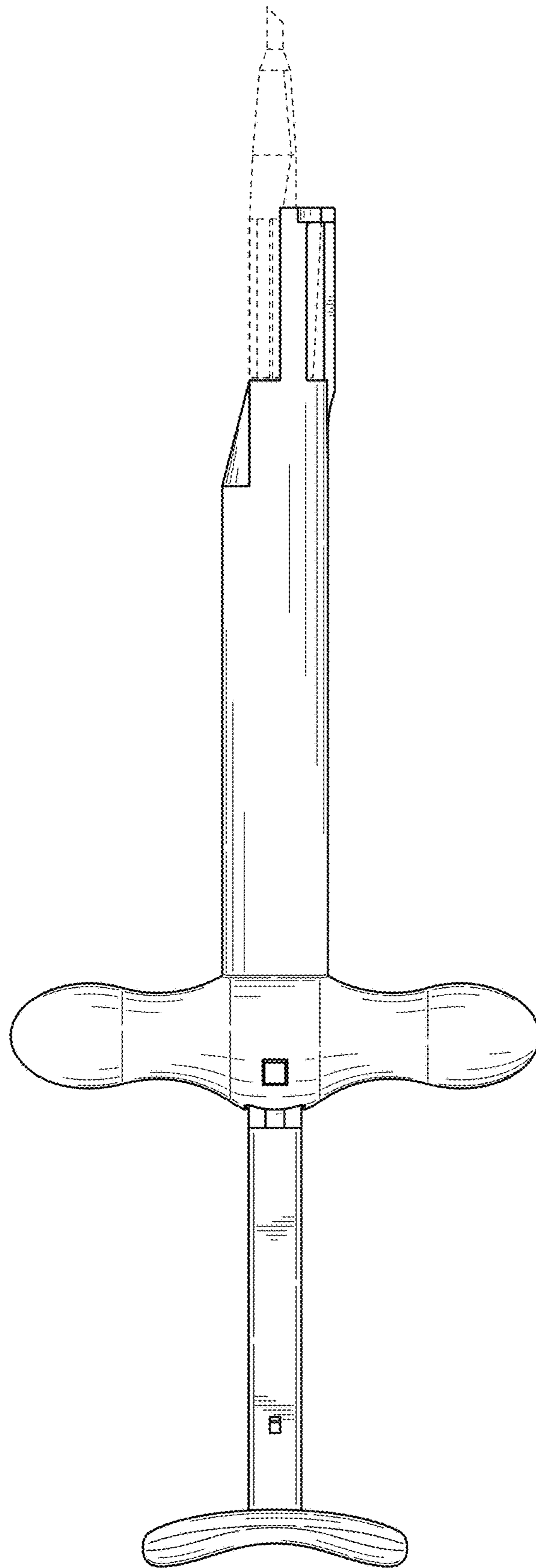


FIG. 7

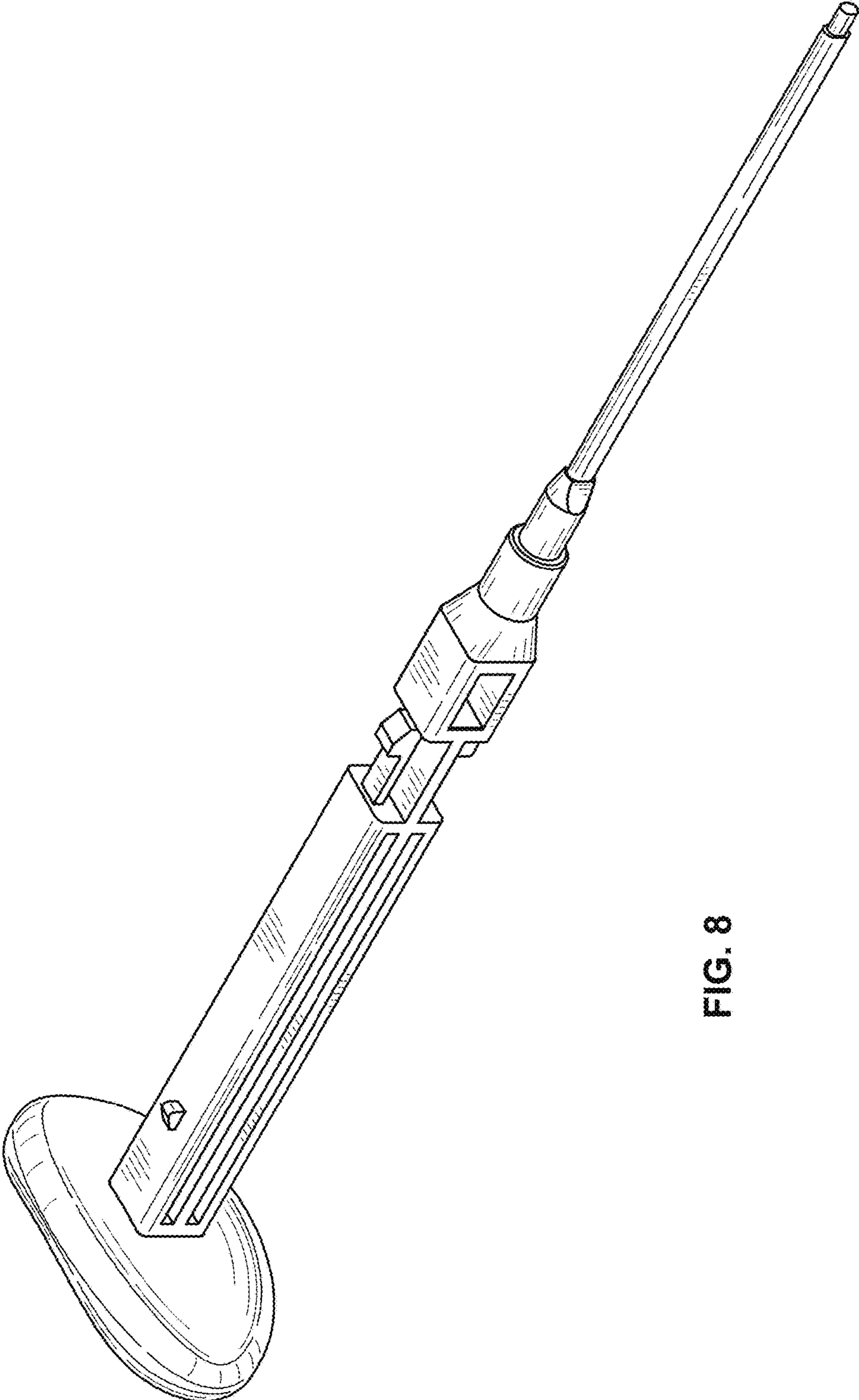


FIG. 8



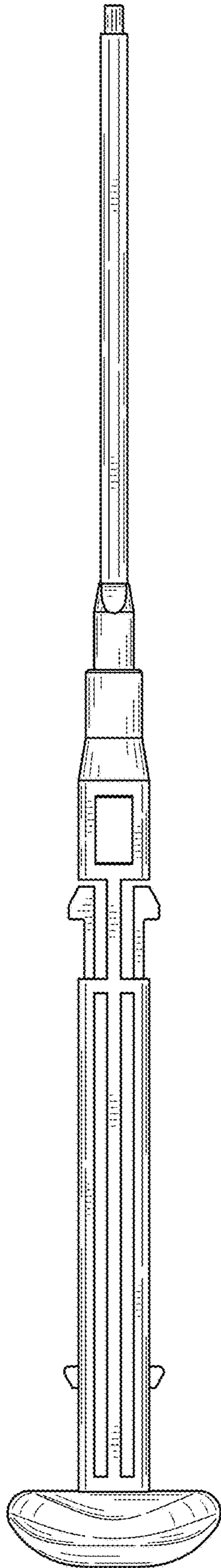


FIG. 9

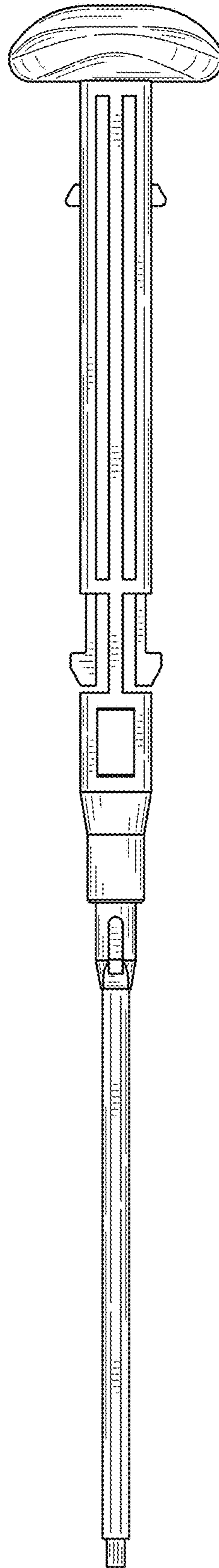


FIG. 10

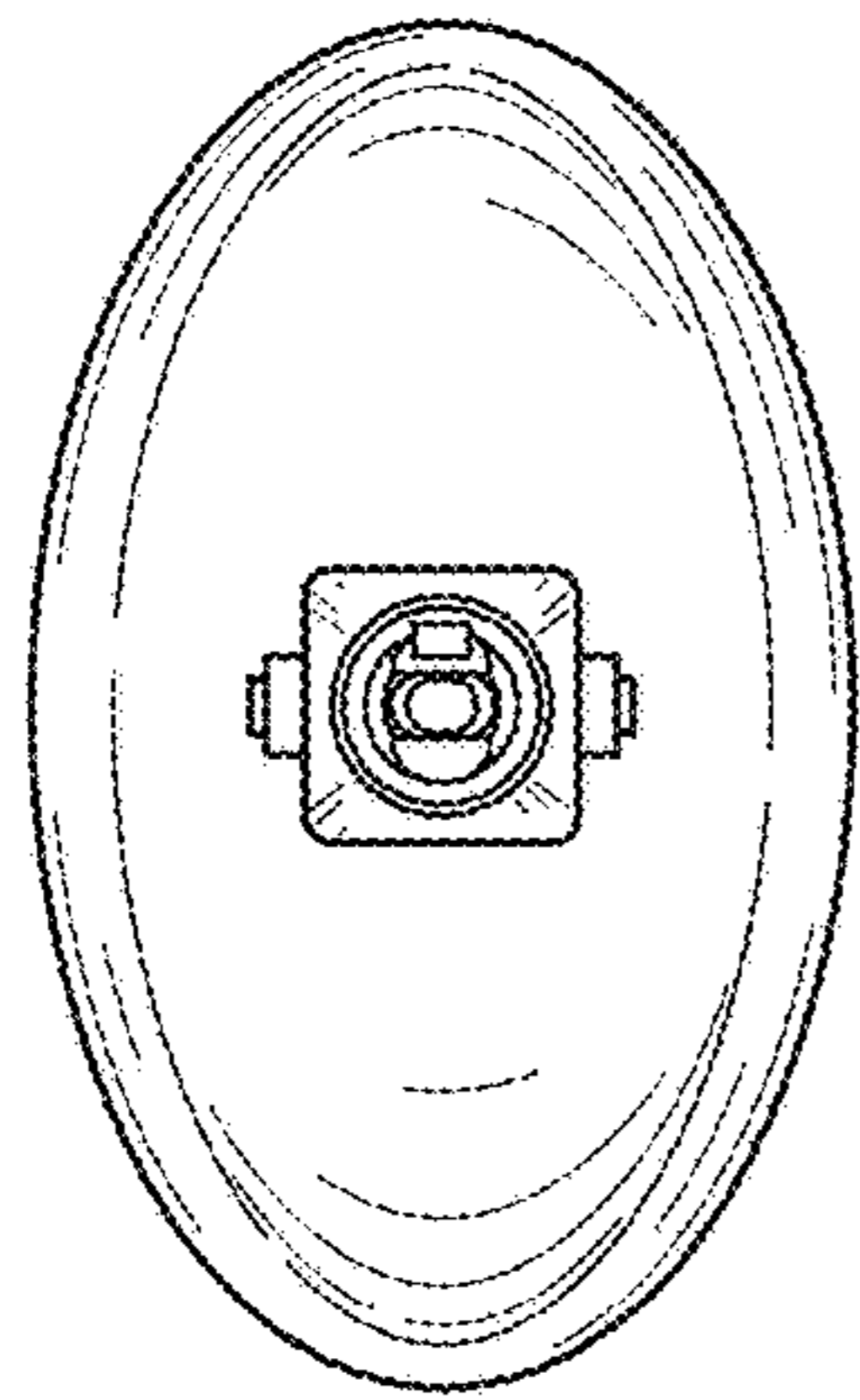


FIG. 11

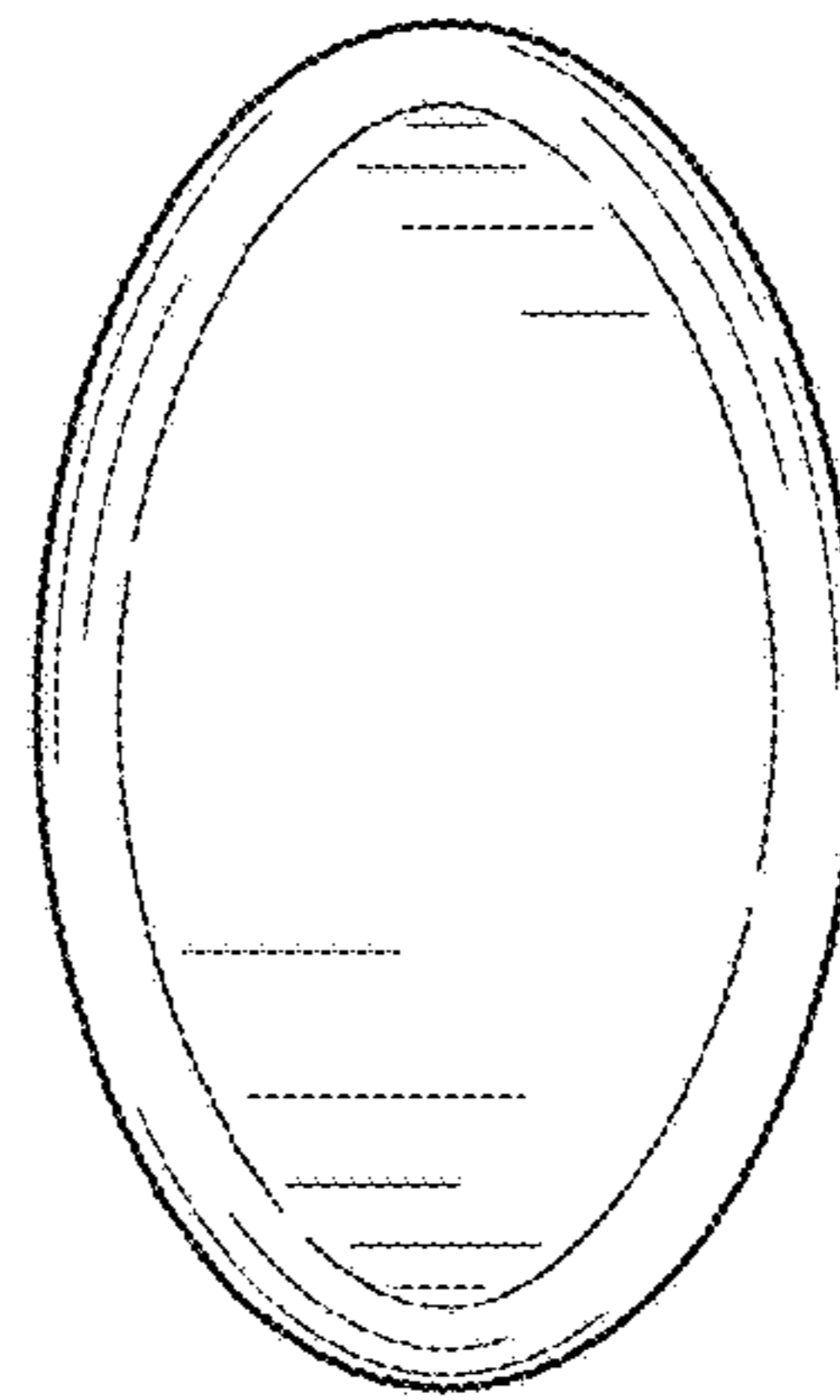


FIG. 12

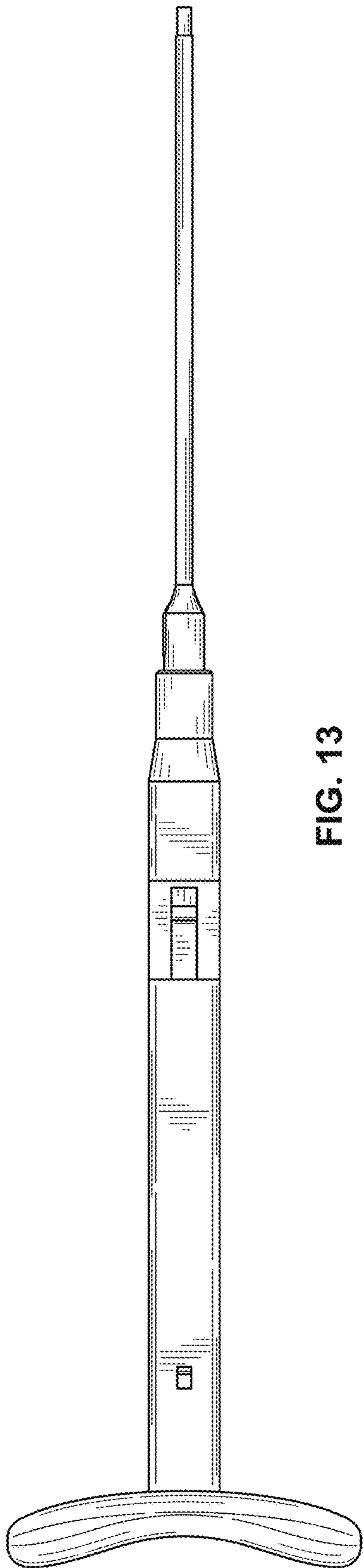


FIG. 13

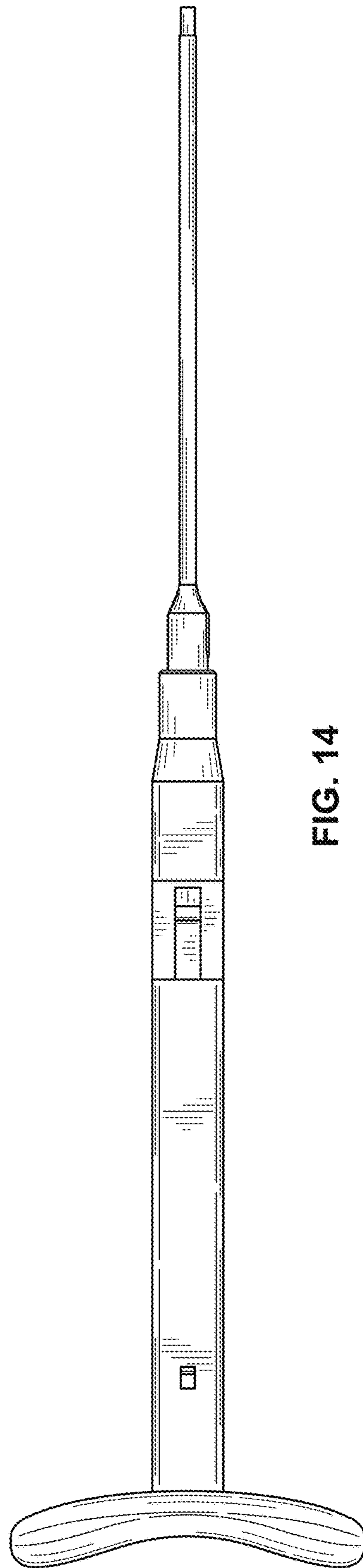


FIG. 14

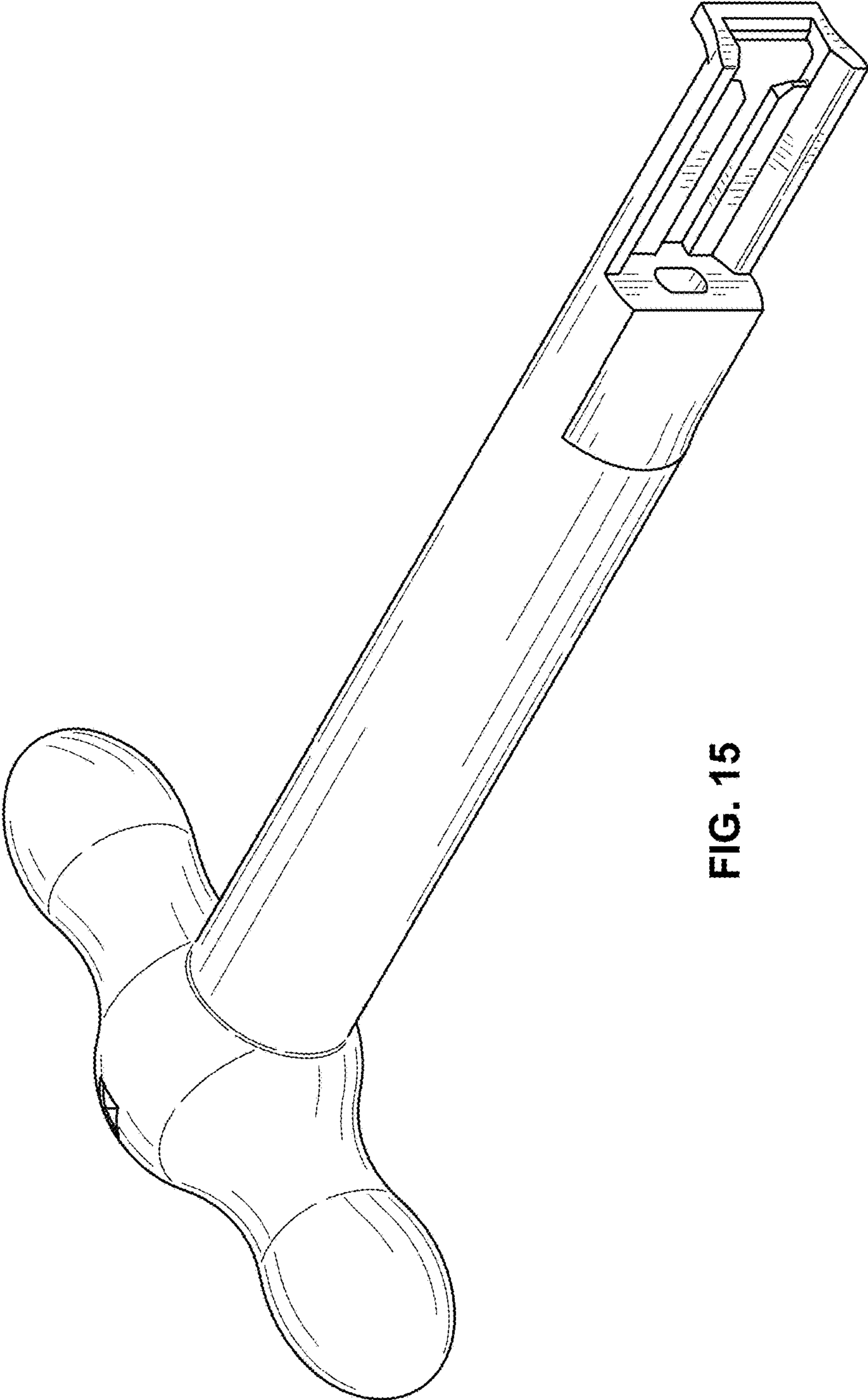


FIG. 15

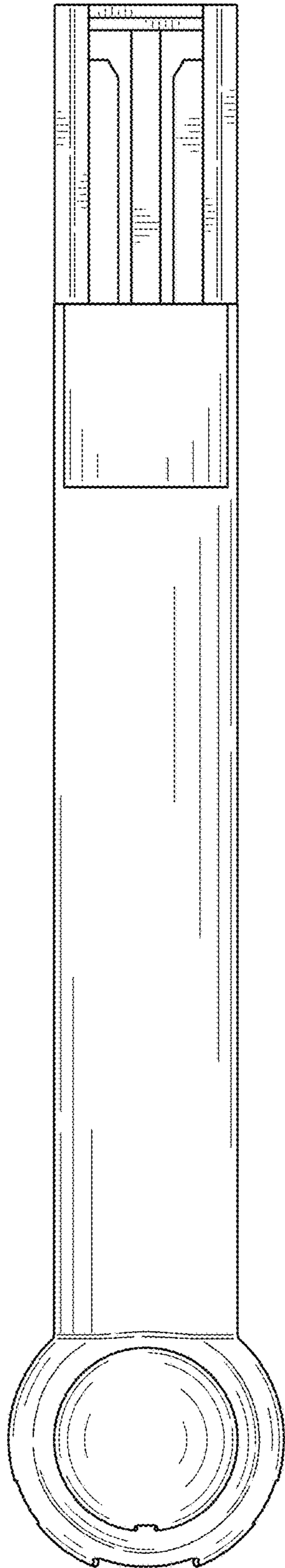


FIG. 16

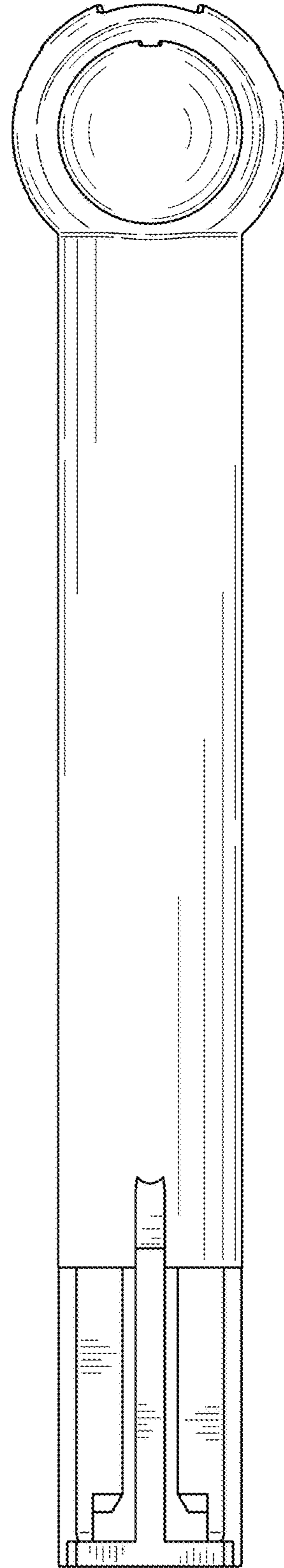


FIG. 17

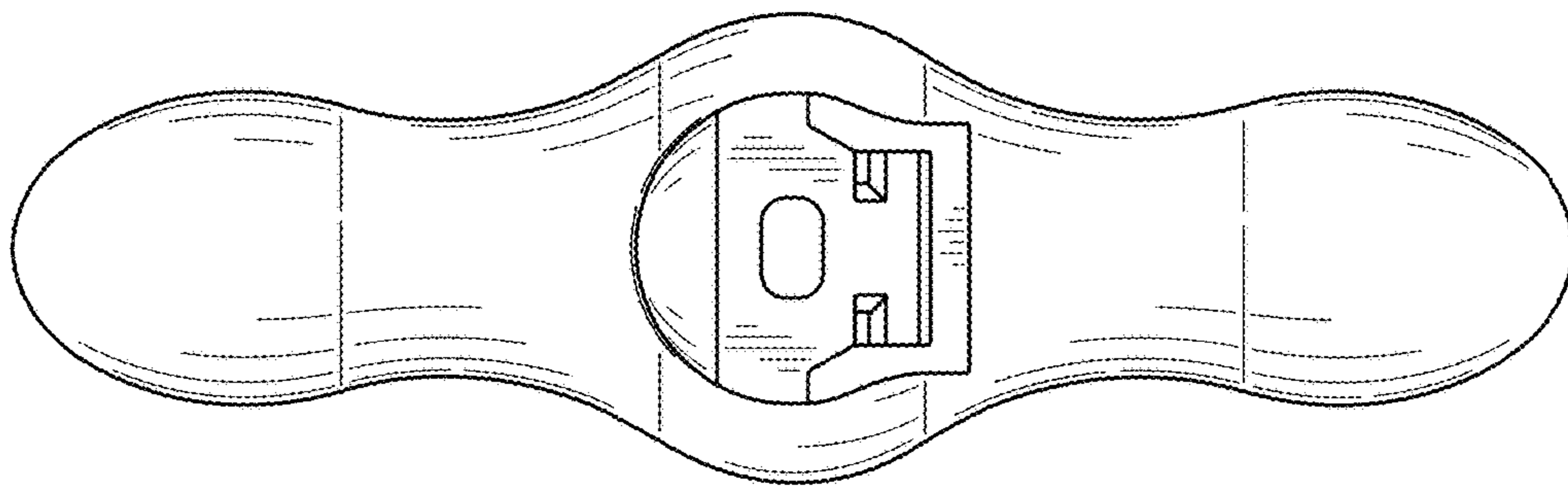


FIG. 18

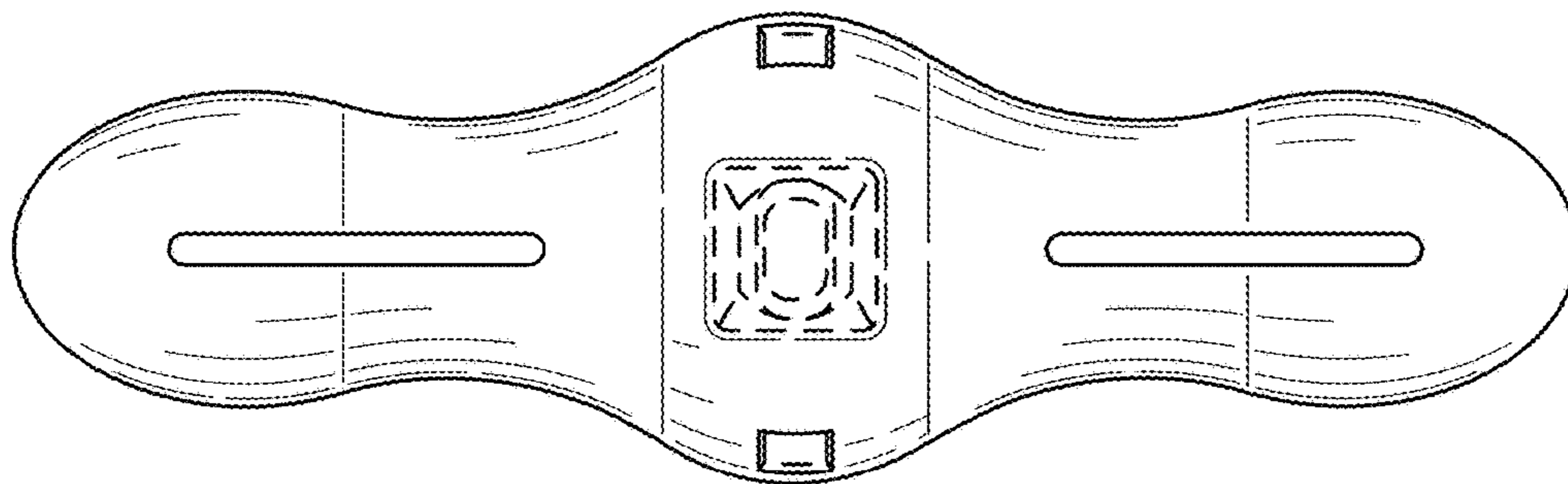


FIG. 19

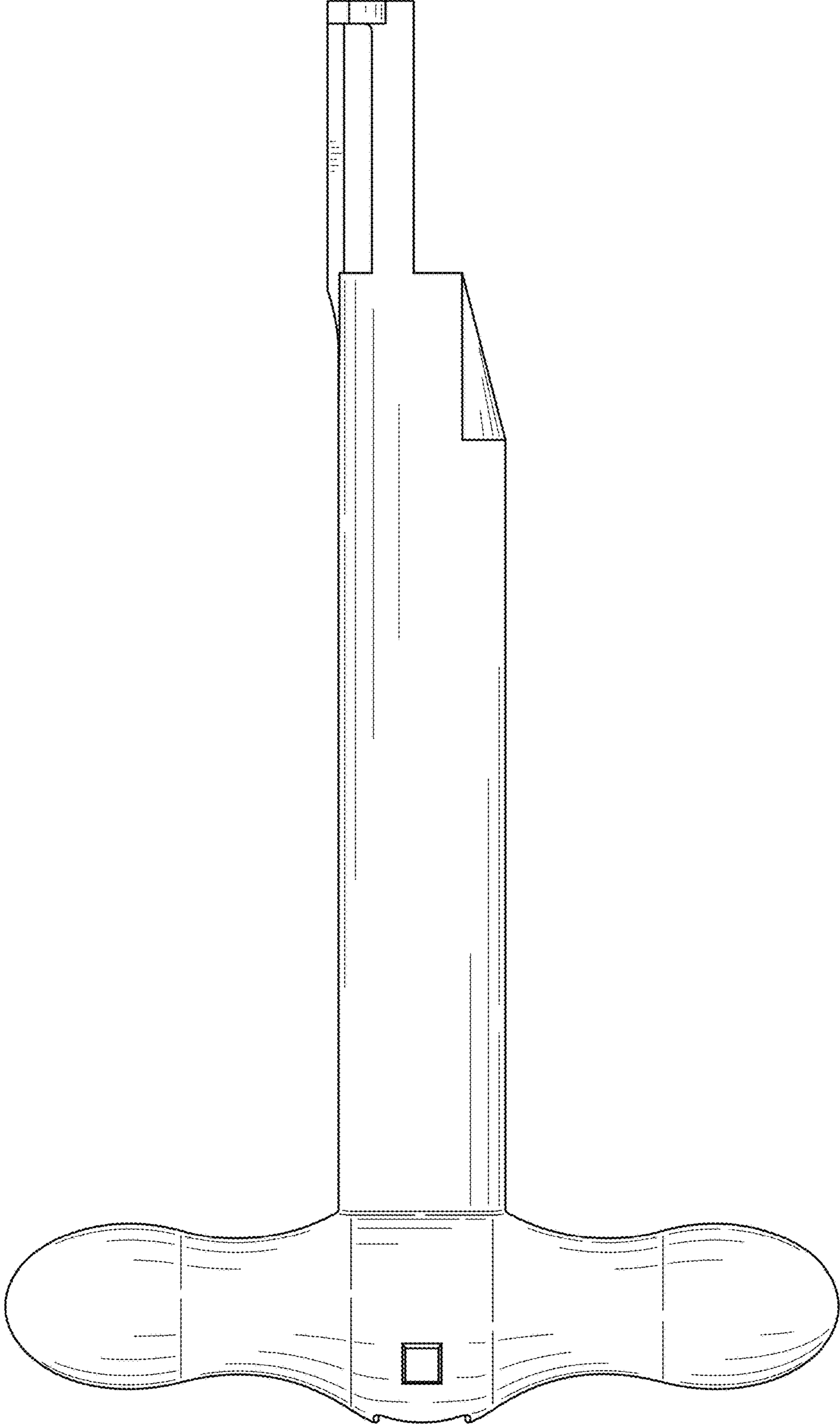


FIG. 20

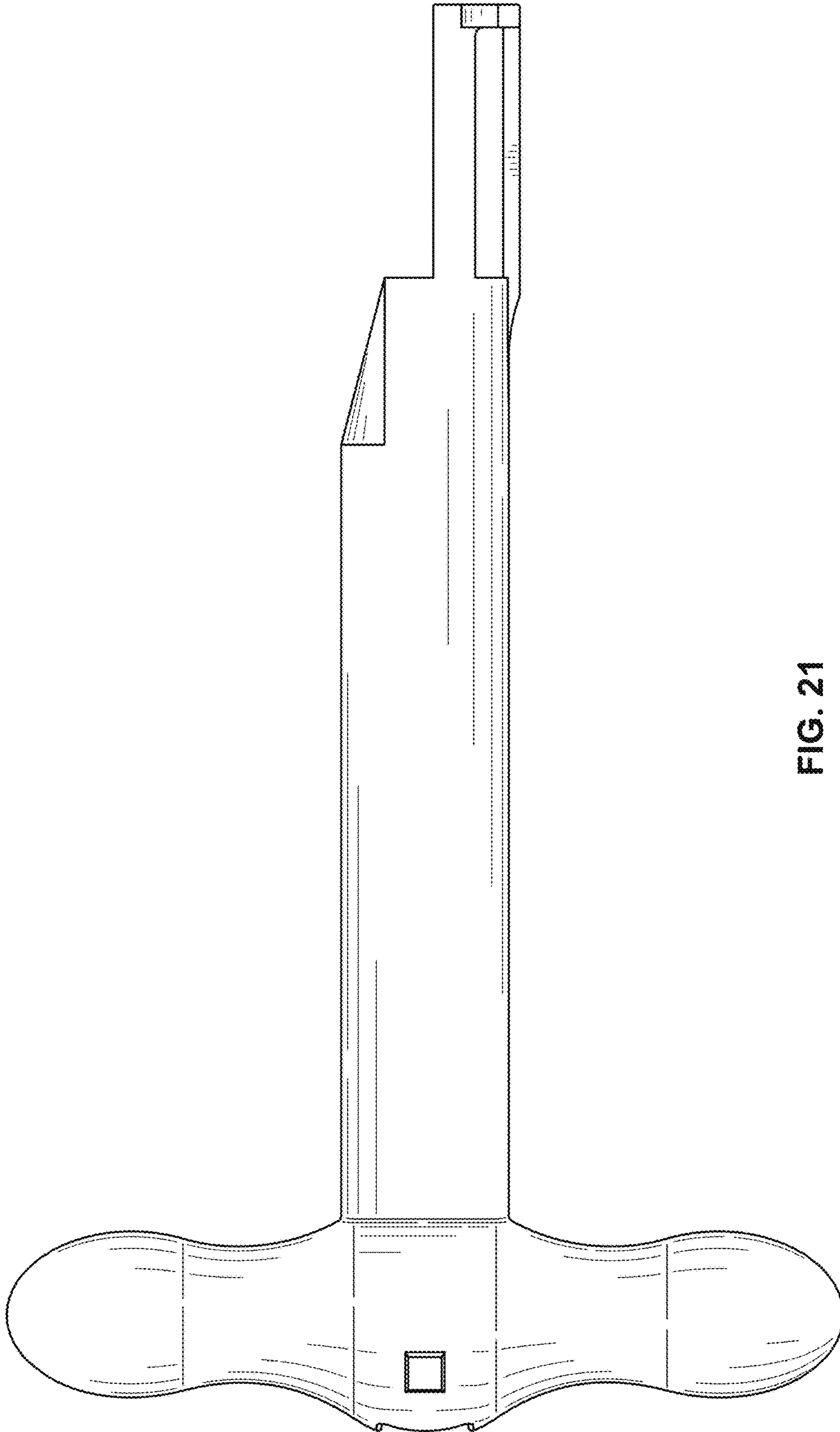


FIG. 21