



US00D663833S

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

(10) **Patent No.:** **US D663,833 S**  
(45) **Date of Patent:** **\*\* Jul. 17, 2012**

(54) **MIXING SYRINGE**

(75) Inventors: **Edward S. Ahn**, Dover, MA (US);  
**Stephen Capistrone**, Melrose, MA (US);  
**Brian Schlossberg**, Chestnut Hill, MA (US)

(73) Assignee: **Pioneer Surgical Technology, Inc.**,  
Marquette, MI (US)

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

(21) Appl. No.: **29/378,941**

(22) Filed: **Nov. 11, 2010**

(51) **LOC (9) Cl.** ..... **24-02**

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

(58) **Field of Classification Search** ..... D24/112-114,  
D24/133, 186, 104, 130, 127; 606/181, 185;  
604/88-91, 228, 232, 187, 158, 164.08, 192,  
604/263, 163, 181, 184, 198, 227  
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,195,778	A	7/1965	Coates	
4,041,945	A *	8/1977	Guiney	604/91
4,116,240	A *	9/1978	Guiney	604/89
4,826,047	A	5/1989	Heflin	
D366,698	S *	1/1996	Stiehl et al.	D24/114
5,630,800	A	5/1997	Blank et al.	
D383,205	S *	9/1997	Pagay et al.	D24/112
D401,324	S *	11/1998	Hjertman et al.	D24/114
5,829,875	A	11/1998	Hagel et al.	
D412,205	S *	7/1999	Duchon et al.	D24/112
6,367,962	B1	4/2002	Mizutani et al.	
6,406,175	B1	6/2002	Marino	
D470,234	S *	2/2003	Mahurkar	D24/114
6,530,906	B2 *	3/2003	Hu	604/187
6,575,941	B1 *	6/2003	Mumford	604/192
6,974,247	B2	12/2005	Frei et al.	
7,018,089	B2	3/2006	Wenz et al.	
7,156,880	B2	1/2007	Evans et al.	
7,166,133	B2	1/2007	Evans et al.	

7,168,847	B2	1/2007	Frei et al.	
7,175,336	B2	2/2007	Voellmicke et al.	
7,216,761	B2	5/2007	de Vries	
7,235,107	B2	6/2007	Evans et al.	
7,241,316	B2	7/2007	Evans et al.	
7,320,540	B2	1/2008	Coffeen	
7,329,235	B2 *	2/2008	Bertron et al.	604/88
D578,210	S *	10/2008	Muta et al.	D24/114

(Continued)

FOREIGN PATENT DOCUMENTS

WO 2009/032173 A1 3/2009

OTHER PUBLICATIONS

Brochure, Bone Cement Delivery System, available at <http://www.medmix.ch/>, the picture of the device shown on p. 1 of the Brochure available at least as of Oct. 28, 2010, 4 pages.

(Continued)

*Primary Examiner* — David Muller

(74) *Attorney, Agent, or Firm* — Fitch, Even, Tabin & Flannery, LLP

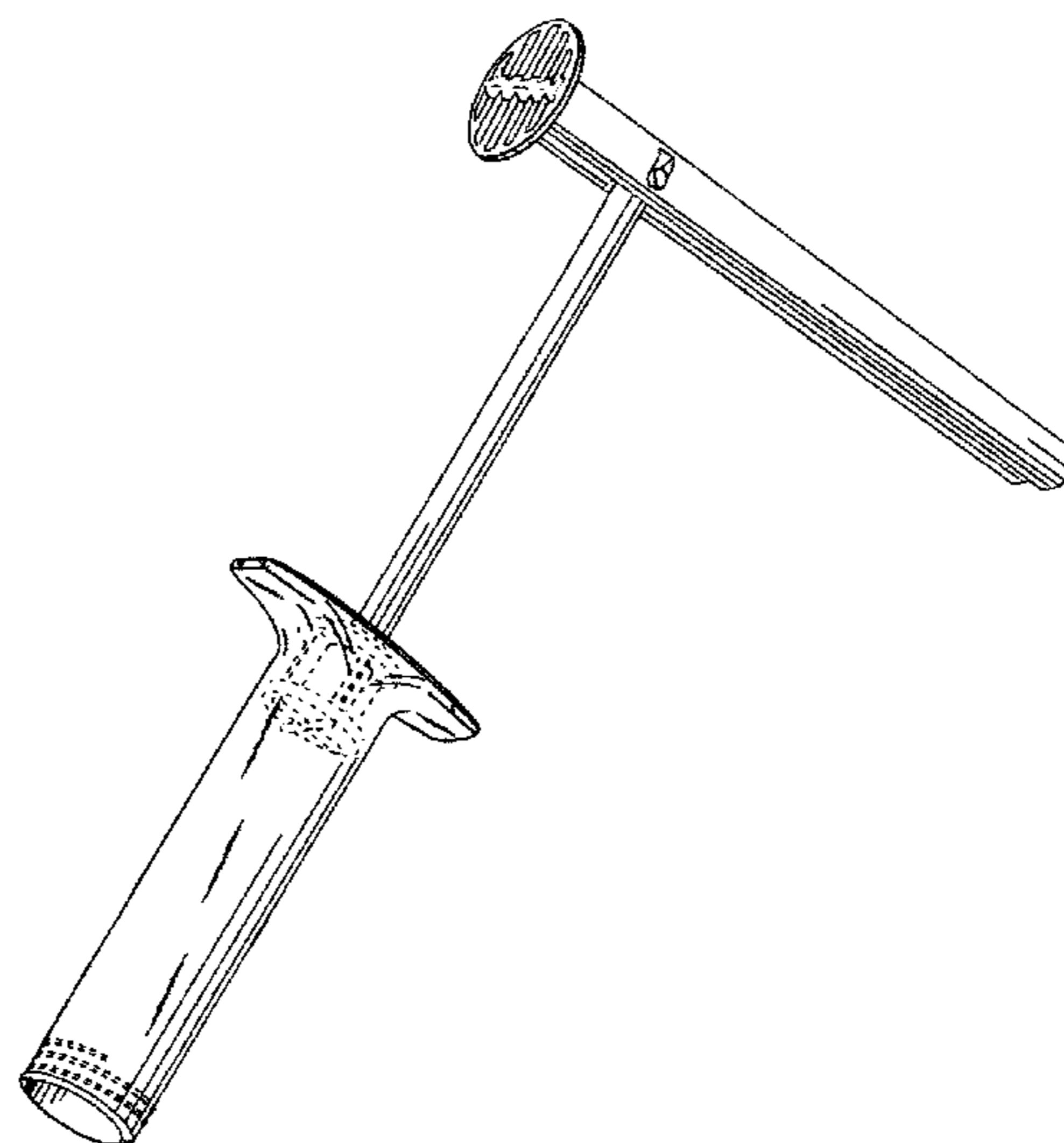
(57) **CLAIM**

We claim the ornamental design for a mixing syringe, as shown and described.

**DESCRIPTION**

FIG. 1 is a perspective view of the mixing syringe showing our new design;  
FIG. 2 is a right side elevational view thereof;  
FIG. 3 is a left side elevational view thereof;  
FIG. 4 is a front elevational view thereof;  
FIG. 5 is a rear elevational view thereof;  
FIG. 6 is a top plan view thereof;  
FIG. 7 is a bottom plan view thereof; and,  
FIG. 8 is a perspective view thereof showing the mixing handle pivoted down for a plunging operation.  
The features shown in broken lines depict environmental structure only and form no part of the claimed design.

**1 Claim, 5 Drawing Sheets**



# US D663,833 S

Page 2

---

## U.S. PATENT DOCUMENTS

7,513,679	B2	4/2009	Grebius	
7,513,901	B2	4/2009	Scifert et al.	
7,524,103	B2	4/2009	McGill et al.	
D610,253	S *	2/2010	Kawamura .....	D24/114
D635,249	S *	3/2011	Becker .....	D24/114
2006/0164913	A1	7/2006	Arramon	
2009/0134186	A1	5/2009	Keller	

## OTHER PUBLICATIONS

Picture available previously at <http://www.medmix.ch/knochenze-ment.49.html>, at least as of Oct. 28, 2010, 1 page.

\* cited by examiner

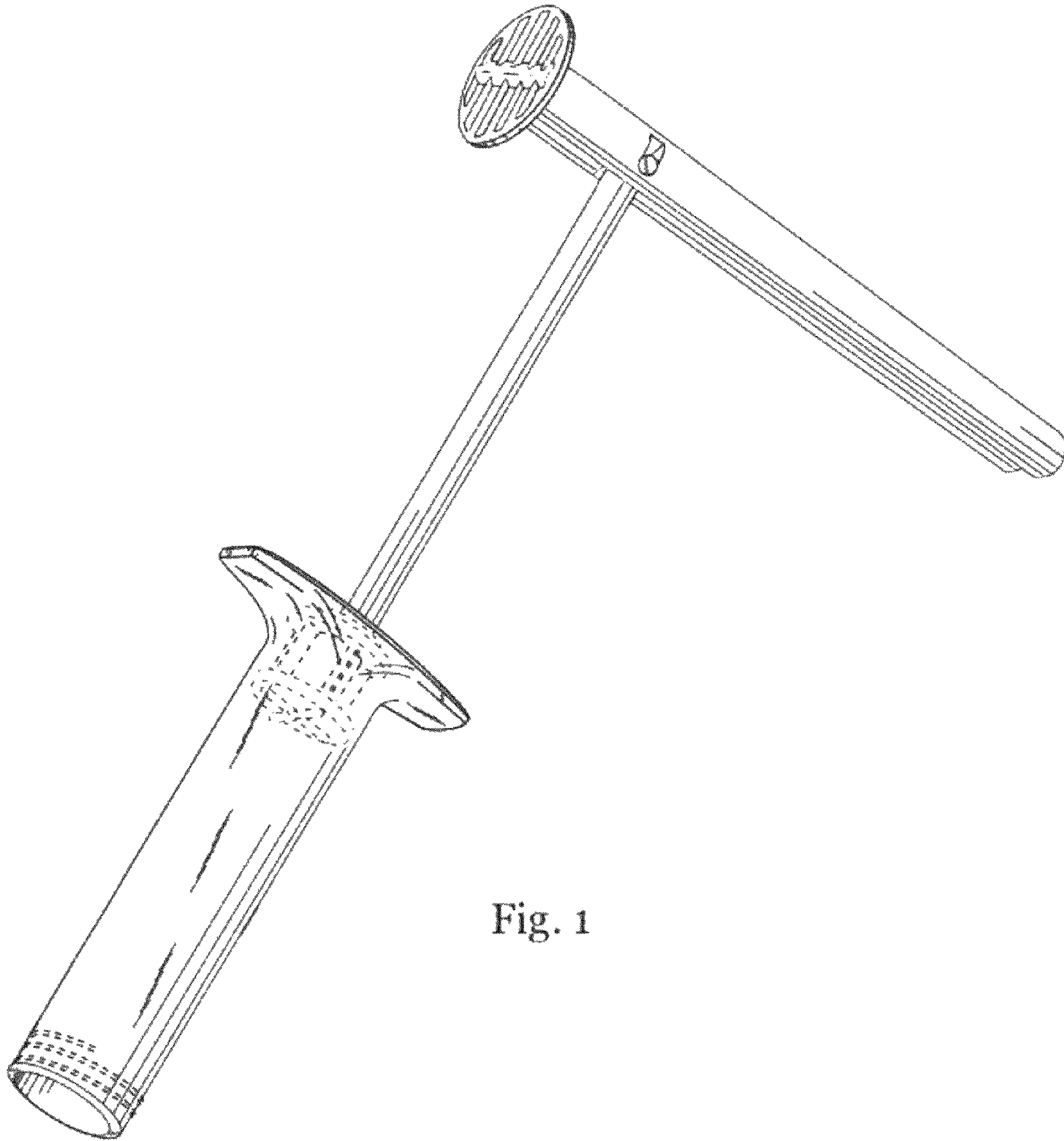


Fig. 1

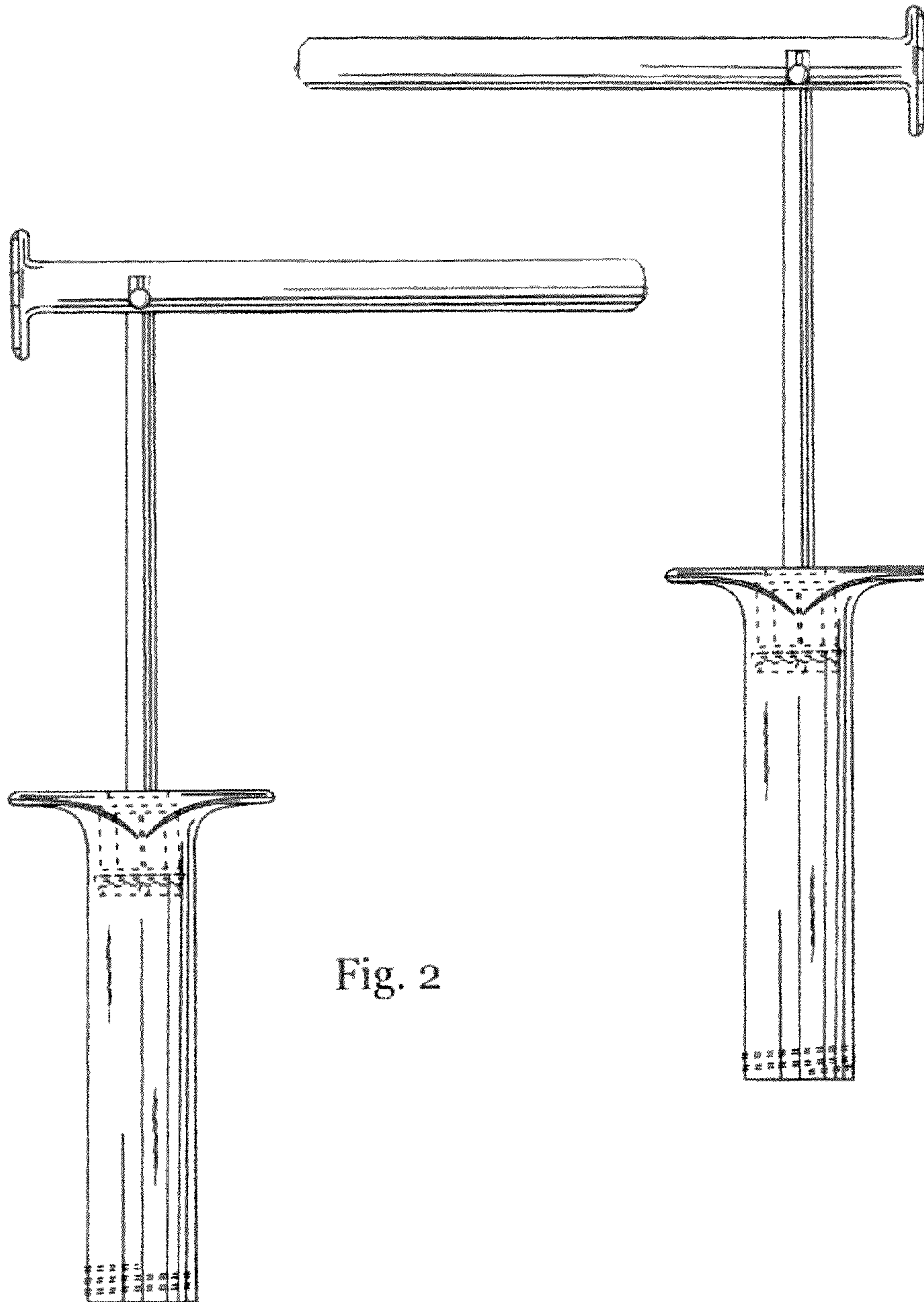


Fig. 2

Fig. 3

Fig. 4

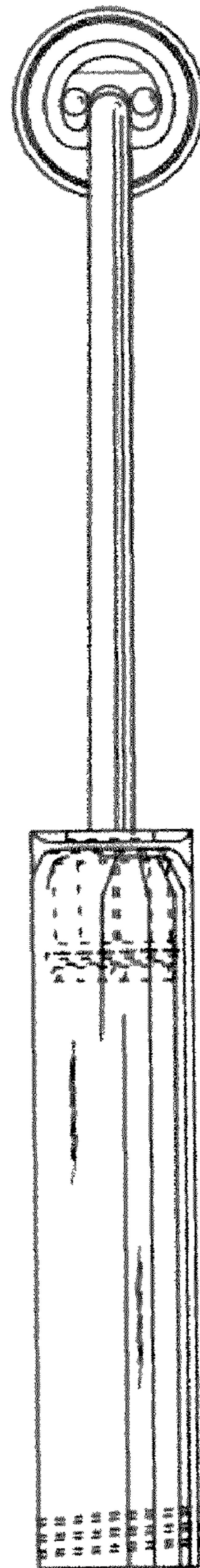
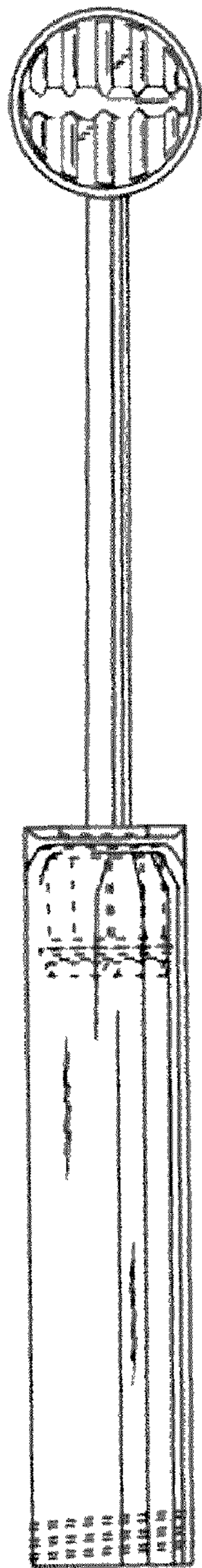


Fig. 5

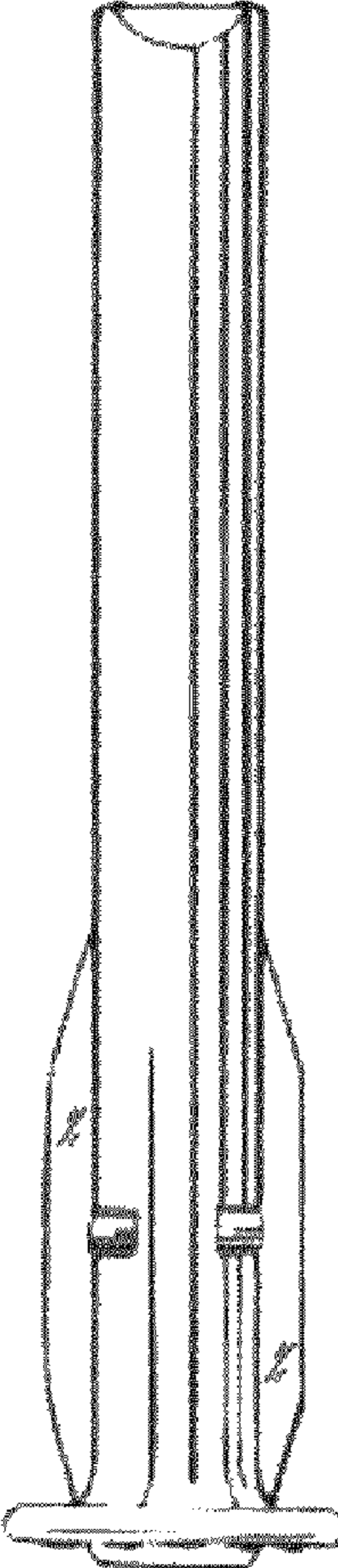


Fig. 6

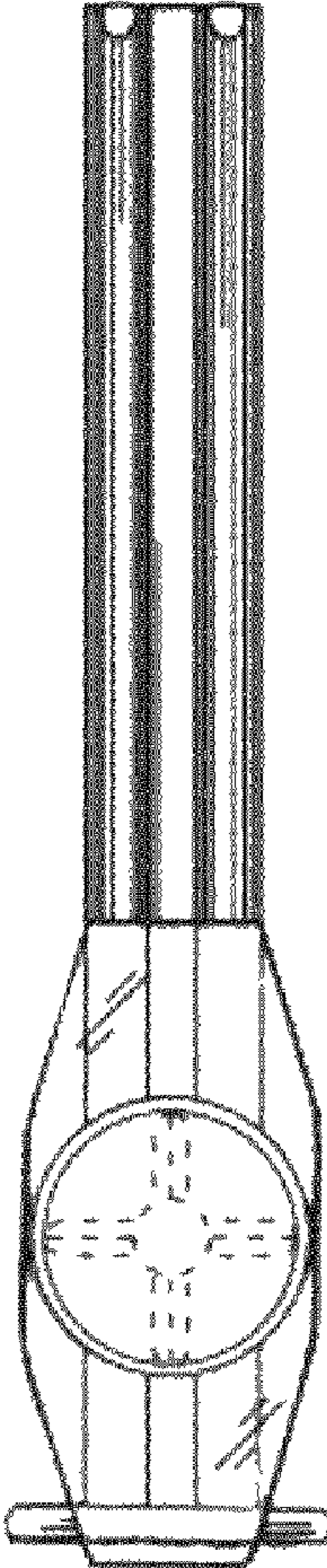


Fig. 7

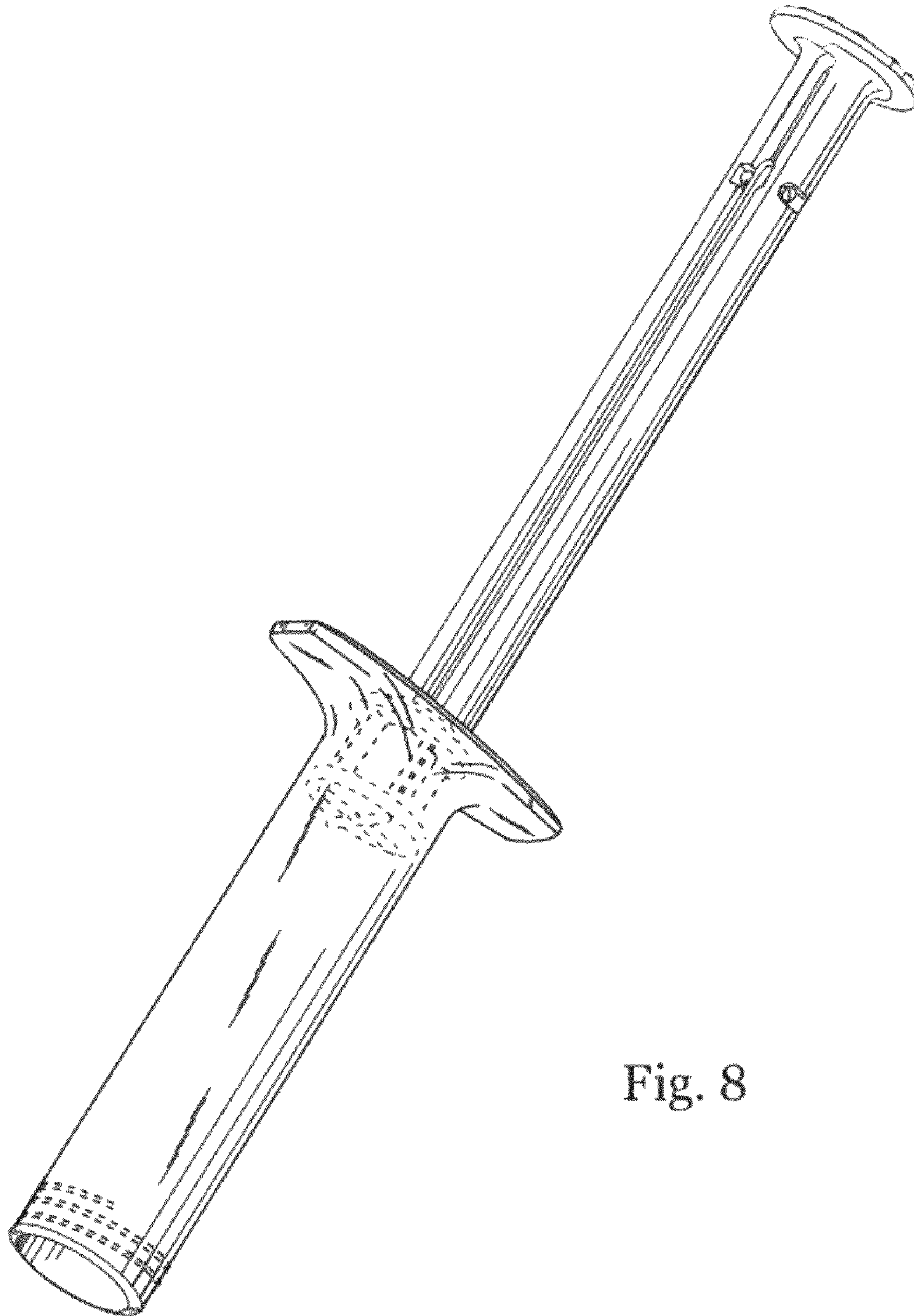


Fig. 8