



US00D786433S

(12) **United States Design Patent** (10) **Patent No.:** **US D786,433 S**
Seaver et al. (45) **Date of Patent:** **** May 9, 2017**

(54) **TROCAR**
(71) Applicant: **Arkis Biosciences Inc.**, Knoxville, TN (US)
(72) Inventors: **Chad Eric Seaver**, Knoxville, TN (US); **James Chris Arnott**, Knoxville, TN (US); **James Alexander Killeffer**, Knoxville, TN (US)
(73) Assignee: **Arkis BioSciences Inc.**, Knoxville, TN (US)

5,762,615 A 6/1998 Weier
5,916,193 A 6/1999 Stevens et al.
5,944,732 A 8/1999 Raulerson et al.
5,980,504 A 11/1999 Sharkey et al.
(Continued)

FOREIGN PATENT DOCUMENTS

DE 69633411 10/2005
WO 9952481 10/1999
(Continued)

OTHER PUBLICATIONS

Restriction Requirement issued in U.S. Appl. No. 29/522,886, dated Mar. 14, 2017.

(Continued)

Primary Examiner — Garth Rademaker
Assistant Examiner — Samantha Q Lawrence
(74) *Attorney, Agent, or Firm* — Meunier Carlin & Curfman LLC

(**) Term: **15 Years**
(21) Appl. No.: **29/553,272**
(22) Filed: **Jan. 29, 2016**
(51) **LOC (10) Cl.** **24-02**
(52) **U.S. Cl.**
USPC **D24/147**
(58) **Field of Classification Search**
USPC D7/649; D8/93, 97, 300, 310, 311, 313;
D19/110, 115; D24/146, 147, 148
See application file for complete search history.

(57) **CLAIM**

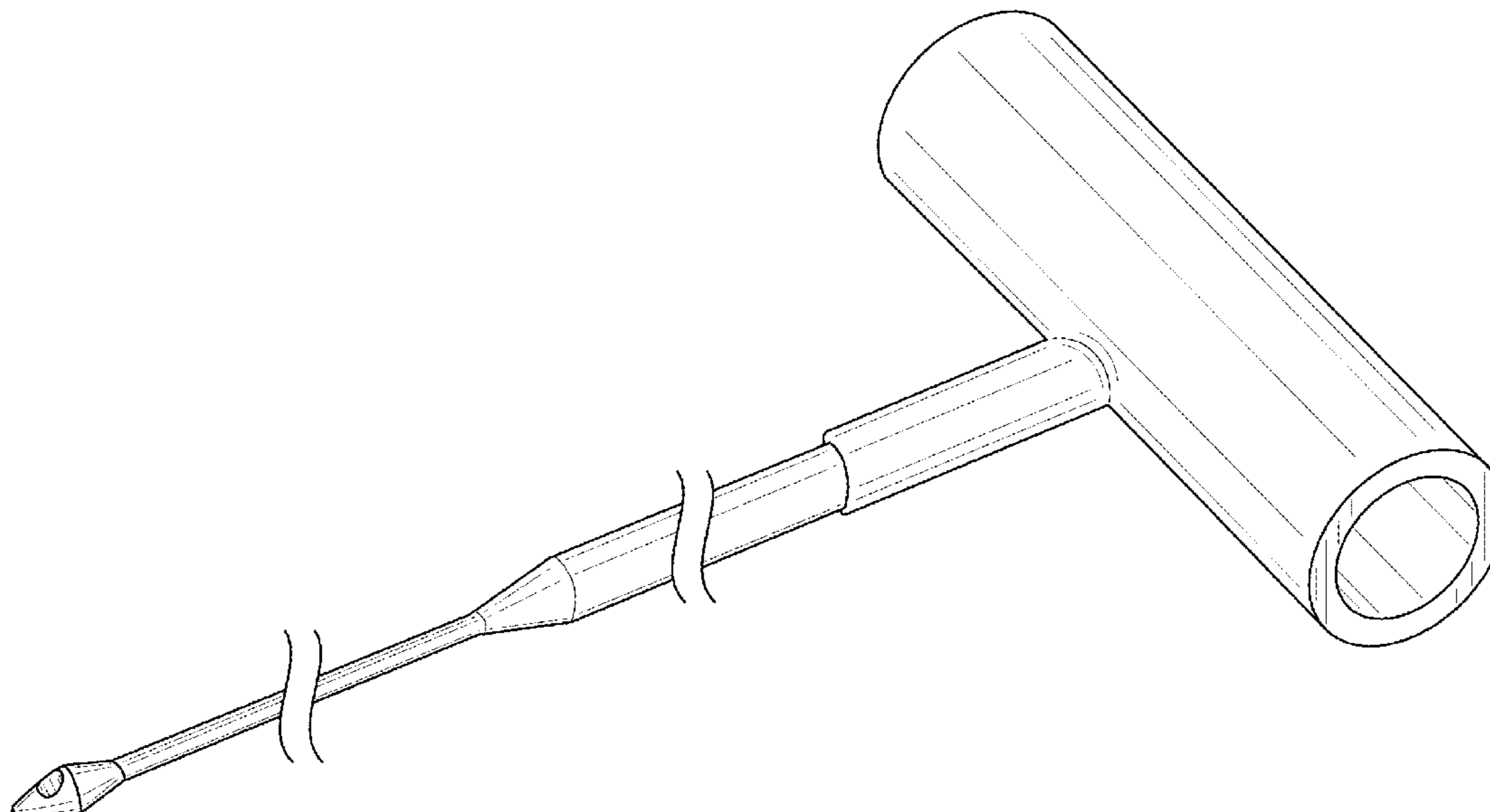
The ornamental design for a trocar, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a trocar showing our new design;
FIG. 2 is a top view thereof;
FIG. 3 is a bottom view thereof;
FIG. 4 is a left-side view thereof;
FIG. 5 is a right-side view thereof;
FIG. 6 is a rear view thereof; and,
FIG. 7 is a front view thereof.
The break lines shown in the drawings indicate symbolic breaks in length. The appearance of any portion of the article between the break lines forms no part of the claimed design.

1 Claim, 5 Drawing Sheets

(56) **References Cited**
U.S. PATENT DOCUMENTS
4,149,535 A 4/1979 Volder
4,318,401 A 3/1982 Zimmerman
4,464,178 A 8/1984 Dalton
4,475,898 A 10/1984 Brodner et al.
4,631,051 A 12/1986 Harris
4,846,186 A 7/1989 Box et al.
4,950,232 A 8/1990 Ruzicka et al.
5,183,464 A 2/1993 Dubrul et al.
5,356,390 A 10/1994 Erskine
5,370,640 A 12/1994 Kolff
5,385,541 A 1/1995 Kirsch et al.
5,704,352 A 1/1998 Tremblay et al.



(56)

References Cited

U.S. PATENT DOCUMENTS

6,007,510 A 12/1999 Nigam
 6,007,544 A 12/1999 Kim
 6,197,041 B1 3/2001 Shichman et al.
 6,267,769 B1 7/2001 Truwit
 6,655,386 B1 12/2003 Makower et al.
 6,902,547 B2 6/2005 Aves et al.
 7,134,438 B2 11/2006 Makower et al.
 7,189,222 B2 3/2007 Elsberry
 7,678,100 B2 3/2010 Chin et al.
 7,942,826 B1 5/2011 Scholl et al.
 8,177,772 B2 5/2012 Christensen et al.
 8,337,475 B2 12/2012 Christensen et al.
 D692,133 S * 10/2013 Steinwachs D24/146
 8,768,487 B2 7/2014 Farnan et al.
 8,784,330 B1 7/2014 Scholl et al.
 D733,880 S * 7/2015 Mueller D24/147
 D744,649 S * 12/2015 Brannon D24/146
 D761,961 S 7/2016 Tan et al.
 D771,812 S 11/2016 Shayle
 D772,411 S 11/2016 Heath et al.
 D773,664 S 12/2016 DeNeui
 D775,355 S * 12/2016 Georgian D24/172
 D776,277 S 1/2017 Prendergast
 D778,443 S * 2/2017 Brannon D24/147
 2002/0121282 A1 9/2002 McGuckin, Jr. et al.
 2005/0171452 A1 8/2005 Neff

2007/0179426 A1 8/2007 Selden
 2008/0051721 A1 2/2008 Carter et al.
 2008/0161843 A1 7/2008 Clague et al.
 2008/0194993 A1 8/2008 McLaren et al.
 2008/0262406 A1 10/2008 Wiener
 2009/0048537 A1 2/2009 Lydon et al.
 2009/0171367 A1 7/2009 Hardin
 2010/0211048 A1 8/2010 Arai et al.
 2010/0222732 A1 9/2010 Sevrain
 2013/0267982 A1 10/2013 Seaver et al.

FOREIGN PATENT DOCUMENTS

WO 2007089724 A2 8/2007
 WO 2013147978 A2 10/2013

OTHER PUBLICATIONS

Non-final Office Action issued in U.S. Appl. No. 15/237,024, dated Sep. 27, 2016.
 Sandquist, Michael A., A Single-Pass Tunneling Technique for CSF Shunting Procedures, Pediatric Neurosurgery, 2003, 39: 254-257.
 International Search Report and Written Opinion, received in connection with International Application No. PCT/US2015/020979, mailed Jun. 26, 2015.
 Non-final Office Action issued in U.S. Appl. No. 14/660,616, dated Dec. 31, 2015.

* cited by examiner

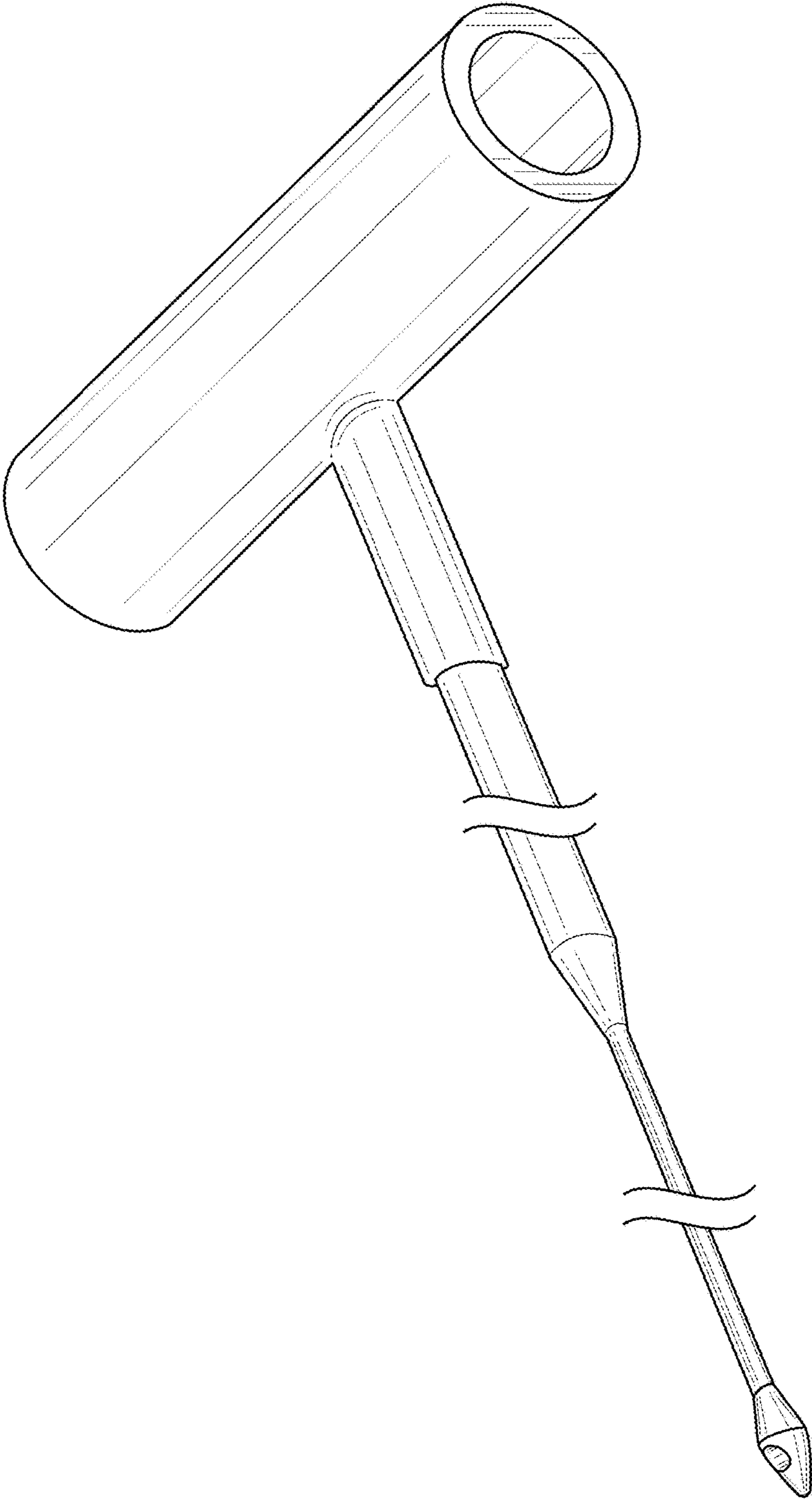


FIG. 1

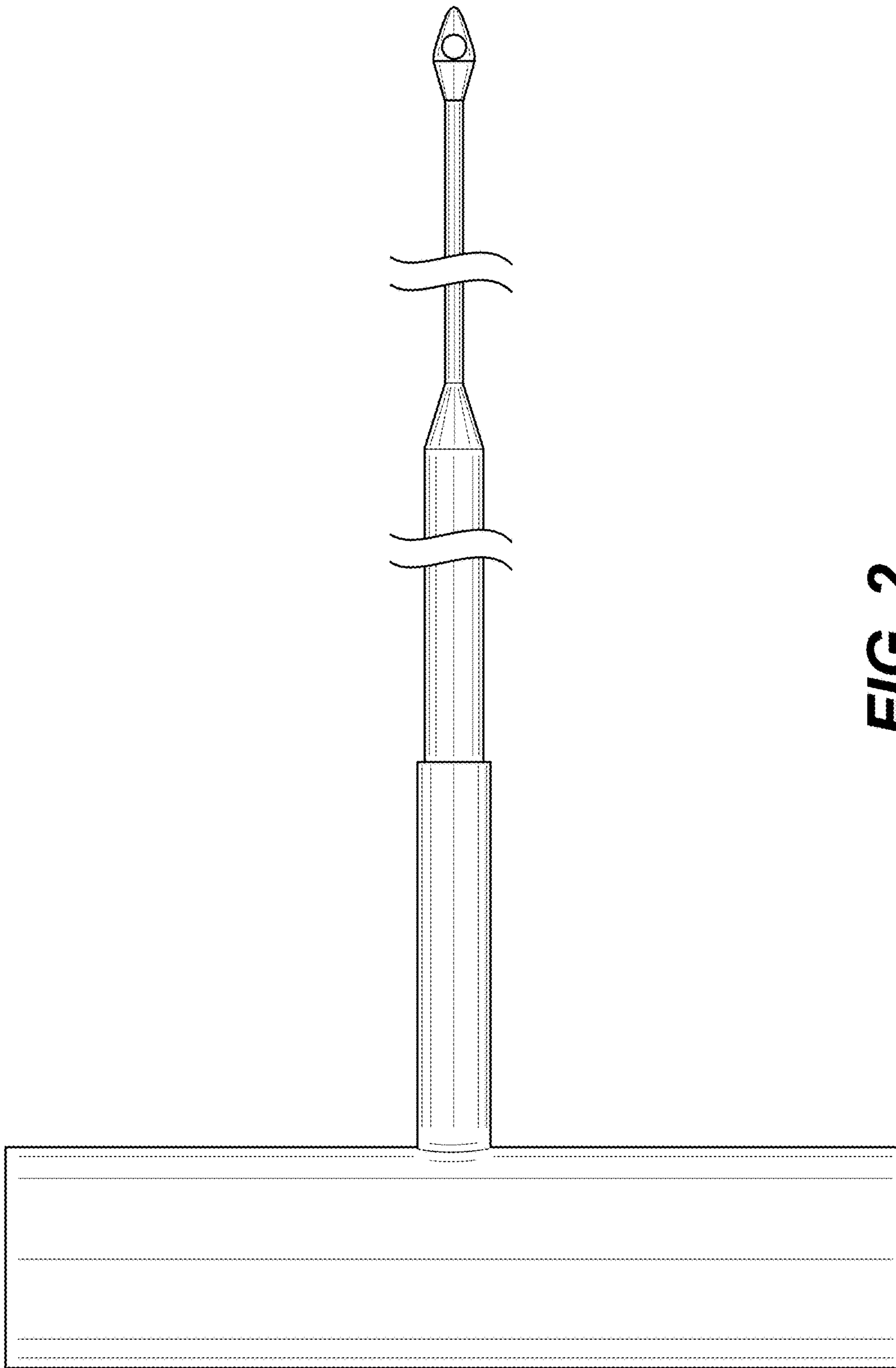


FIG. 2

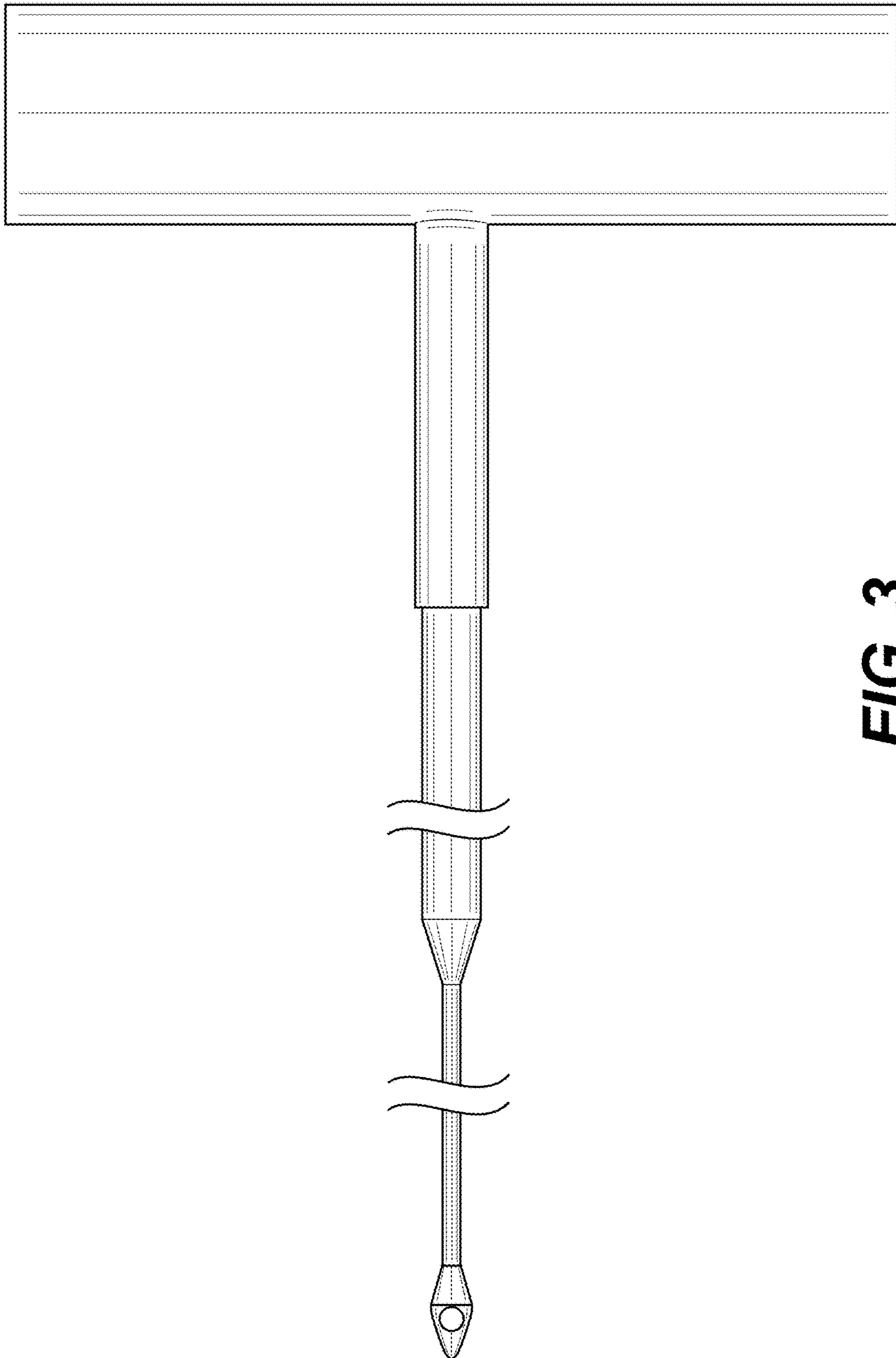


FIG. 3

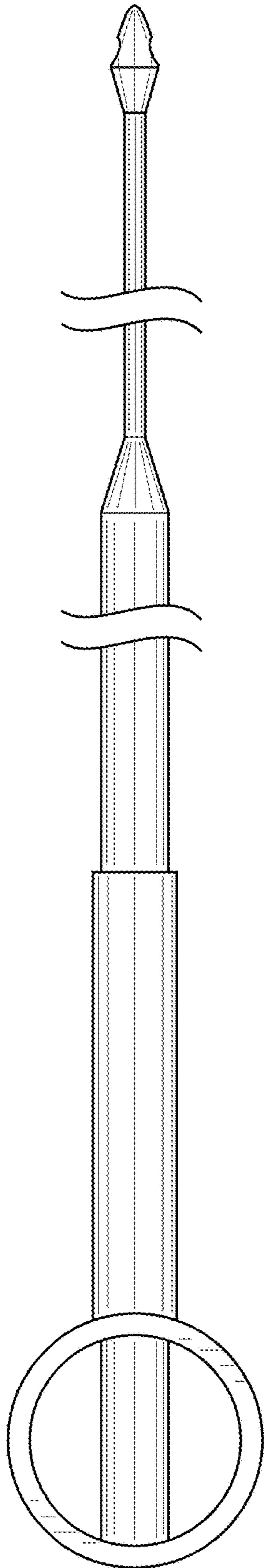


FIG. 4

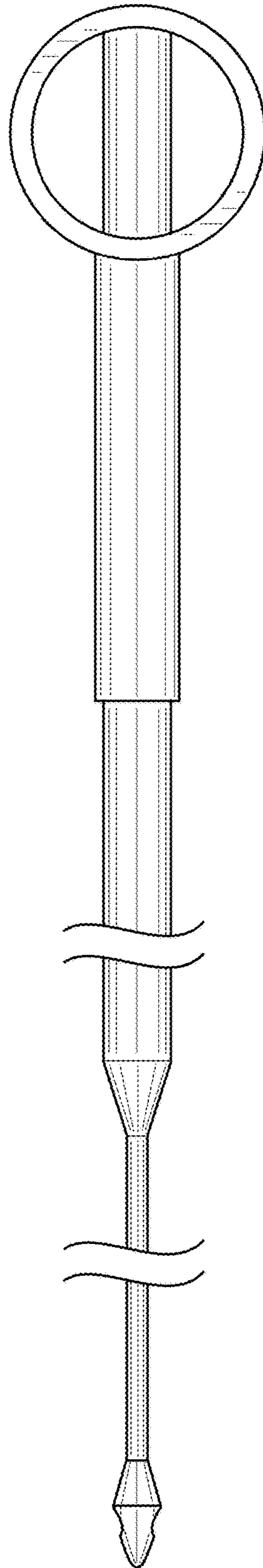


FIG. 5

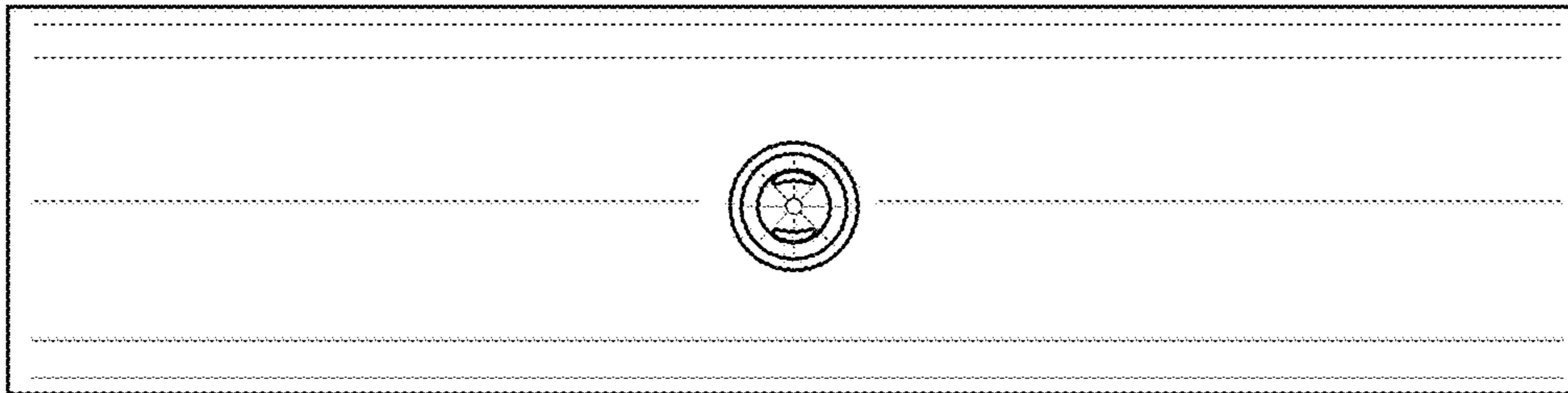


FIG. 7

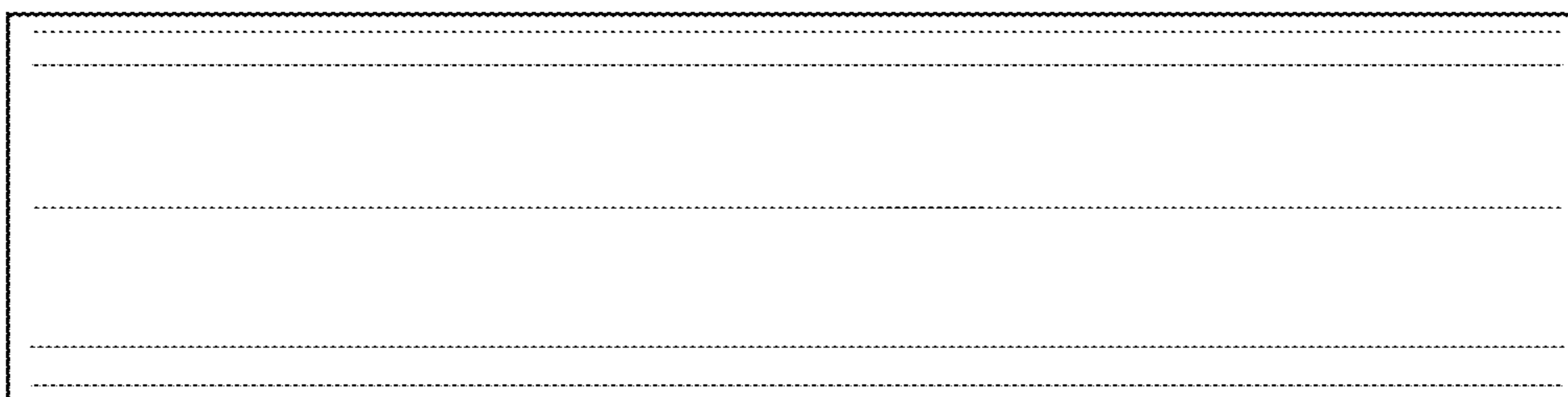


FIG. 6