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

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(54) **MIXING ELEMENT**

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

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(30) **Foreign Application Priority Data**

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(51) **LOC (9) Cl.** **23-01**

(52) **U.S. Cl.**
USPC **D24/220**

(58) **Field of Classification Search**
USPC D24/220, 155, 156, 180, 176, 221;
433/173, 176, 125, 126; 606/74, 72;
366/172.1, 307; 442/149
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

D269,039 S 5/1983 Klein
D290,395 S 6/1987 Stevens et al.
5,249,862 A 10/1993 Herold et al.
6,244,740 B1 6/2001 Wagner et al.
6,394,643 B1 5/2002 Bublewitz et al.
6,443,612 B1 9/2002 Keller
6,523,992 B1 2/2003 Bublewitz et al.

D474,271 S 5/2003 Iori et al.
D483,495 S 12/2003 Sand
6,837,612 B2 1/2005 Bublewitz et al.
7,320,541 B2* 1/2008 Wagner et al. 366/172.1

(Continued)

FOREIGN PATENT DOCUMENTS

DE 20302987 4/2003
EP 1149627 10/2001
WO WO 98/43727 10/1998

OTHER PUBLICATIONS

Color photograph (one page) of a Penta Mixing Tip, 3M ESPE Item #71510 (white mixing tip shaft), which was made commercially available by 3M ESPE Dental Products prior to Sep. 20, 2004.

(Continued)

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Assistant Examiner — Ania Aman

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(57) **CLAIM**

The ornamental design for a mixing element, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of a design for a new mixing element;

FIG. 2 is a top view thereof;

FIG. 3 is a bottom view thereof;

FIG. 4 is a front view thereof;

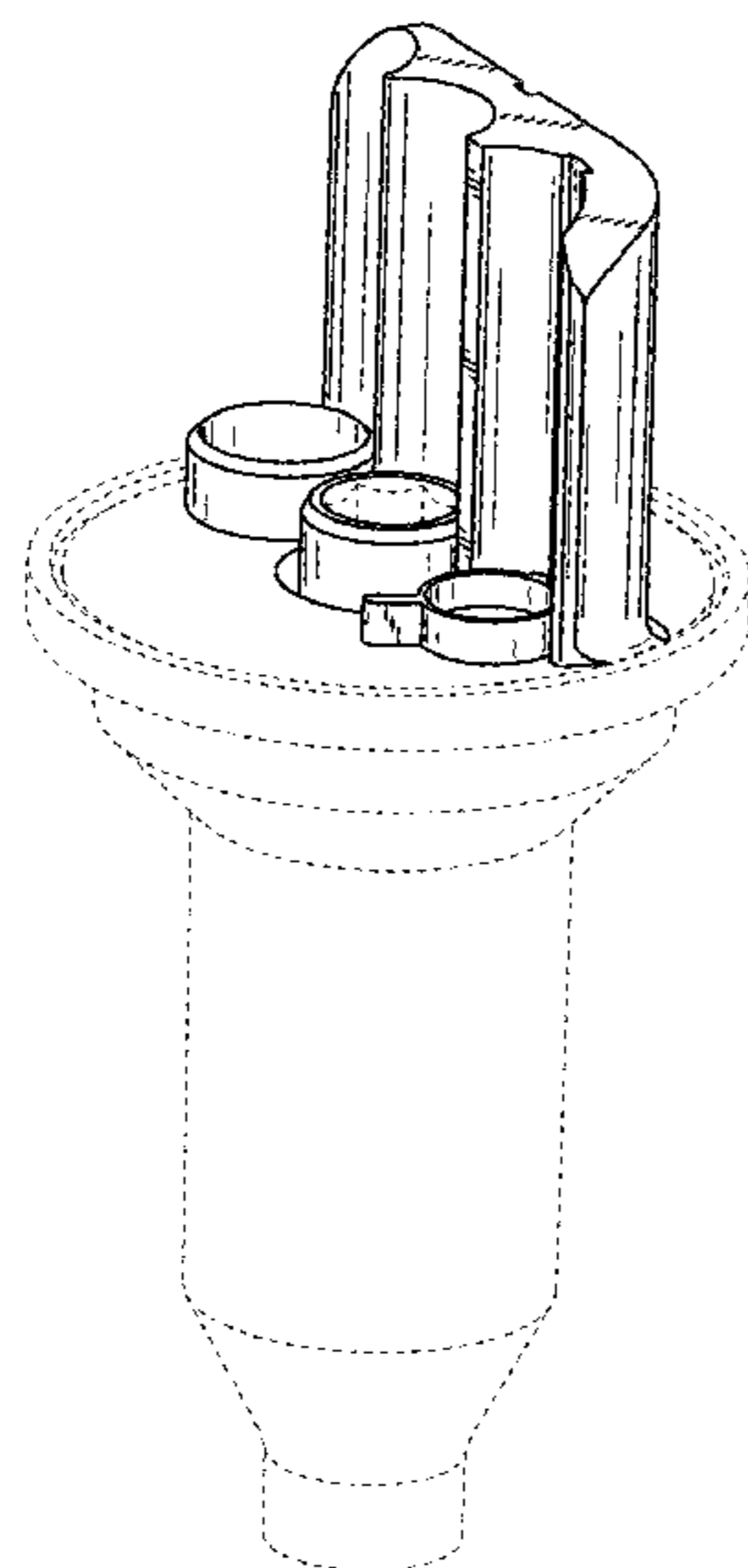
FIG. 5 is a back view thereof;

FIG. 6 is a left side view thereof; and,

FIG. 7 is a right side view thereof.

The broken lines depict portions of the mixing element that form no part of the claimed design.

1 Claim, 3 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

| | | | | |
|--------------|------|---------|------------------|-----------|
| D571,479 | S | 6/2008 | Wagner | |
| D571,927 | S * | 6/2008 | Wagner | D24/220 |
| D617,001 | S * | 6/2010 | Lee | D24/220 |
| 7,771,110 | B2 * | 8/2010 | Wang | 366/155.1 |
| 2001/0005338 | A1 | 6/2001 | Muhlbauer et al. | |
| 2002/0175186 | A1 | 11/2002 | Keller | |
| 2003/0137898 | A1 | 7/2003 | Wagner et al. | |
| 2004/0085854 | A1 | 5/2004 | Pauser et al. | |
| 2012/0218856 | A1 * | 8/2012 | Walter et al. | 366/307 |

OTHER PUBLICATIONS

Color photograph (one page) of a MixPac Systems AG dynamic mixing tip (blue mixing tip shaft), which was publicly available prior to Sep. 20, 2004.

Color photograph (one page) of a Heraeus Kulzer GmbH dynamic mixing tip (grey mixing tip shaft), which was publicly available prior to Sep. 20, 2004.

Color photograph (one page) of a Heraeus Kulzer GmbH dynamic mixing tip (blue mixing tip shaft), which was publicly available prior to Sep. 20, 2004.

Color photograph (one page) of a Heraeus Kulzer GmbH dynamic mixing tip (white mixing tip shaft), which was publicly available prior to Sep. 20, 2004.

Color photograph (one page) of a Kettenbach GmbH & Co. KG Panasil Binetics Putty Dynamic Mixer Mixing Tip (white mixing tip shaft), which was publicly available prior to Sep. 20, 2004.

Color photograph (one page) of a Kettenbach GmbH & Co. KG dynamic mixing tip (white mixing tip shaft), which was publicly available prior to Sep. 20, 2004.

Color photograph (one page) of a Kettenbach GmbH & Co. KG dynamic mixing tip (grey mixing tip shaft), which was publicly available prior to Sep. 20, 2004.

Color photograph (one page) of a DMG Chemisch-Pharmazeutische Fabrik GmbH dynamic mixing tip, which was publicly available prior to Sep. 20, 2004.

Color photograph (one page) of a DMG Chemisch-Pharmazeutische Fabrik GmbH Honigum—Heavy, MixStar Tip, which was publicly available prior to Sep. 20, 2004.

* cited by examiner

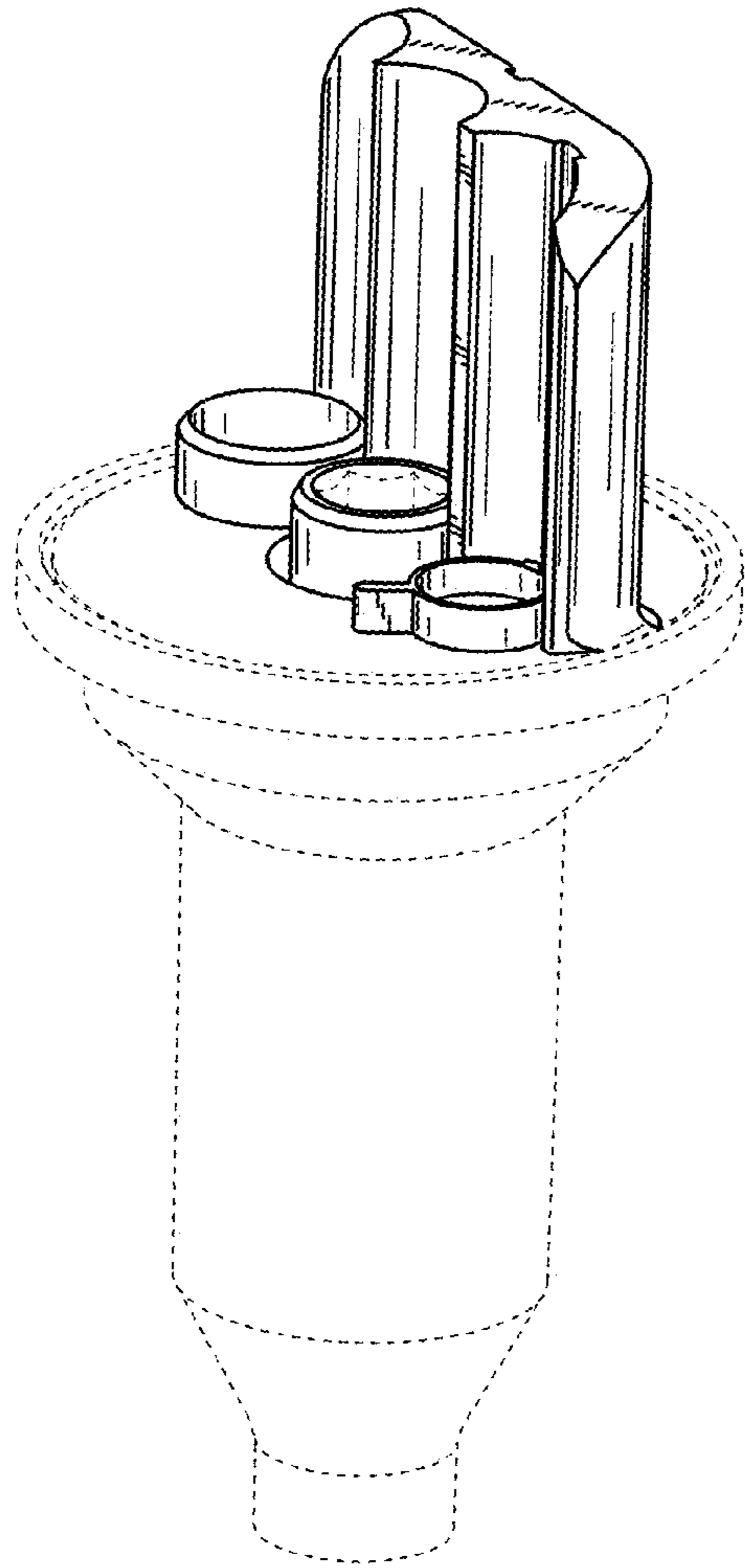


FIG. 1

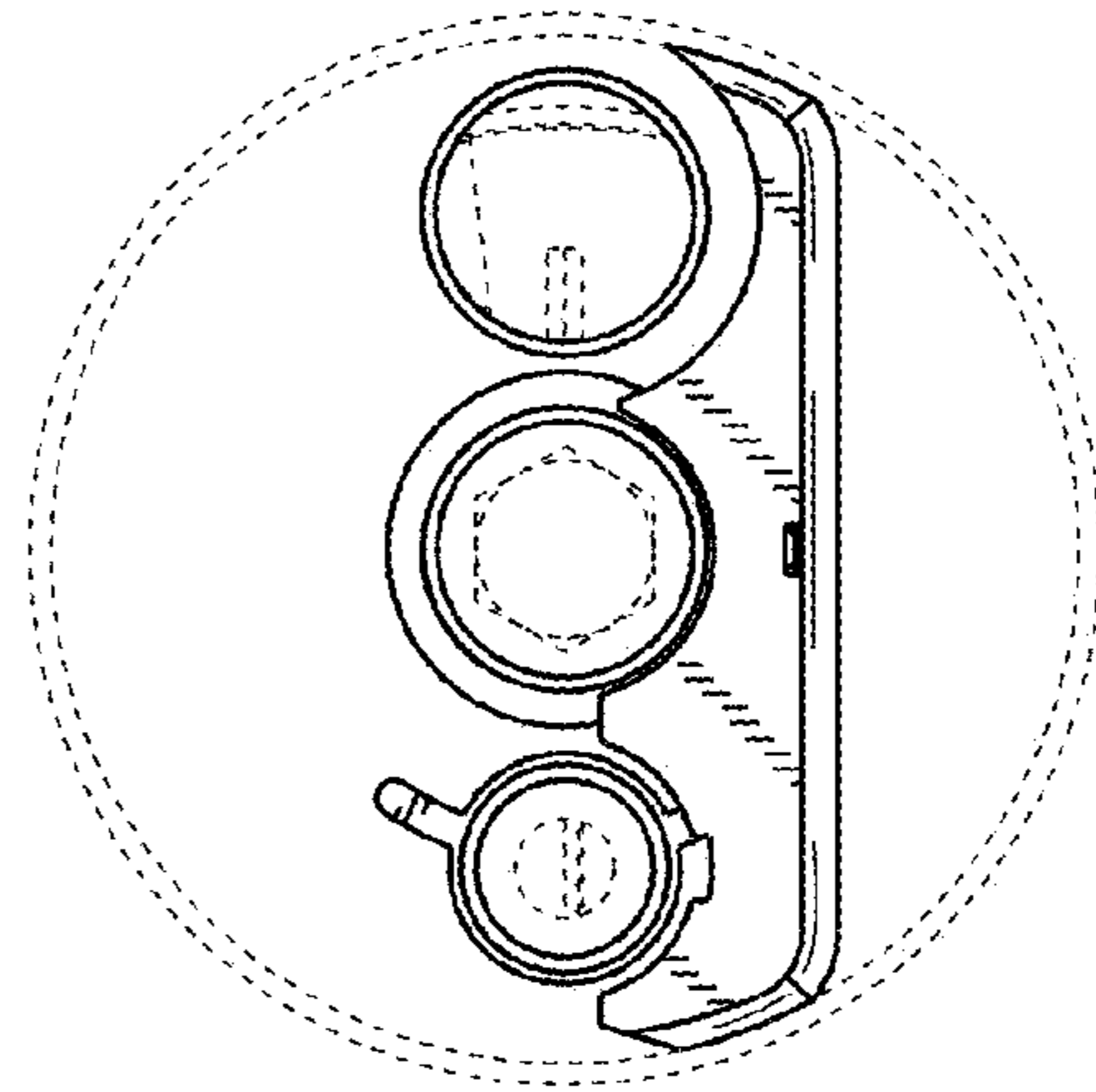


FIG. 2

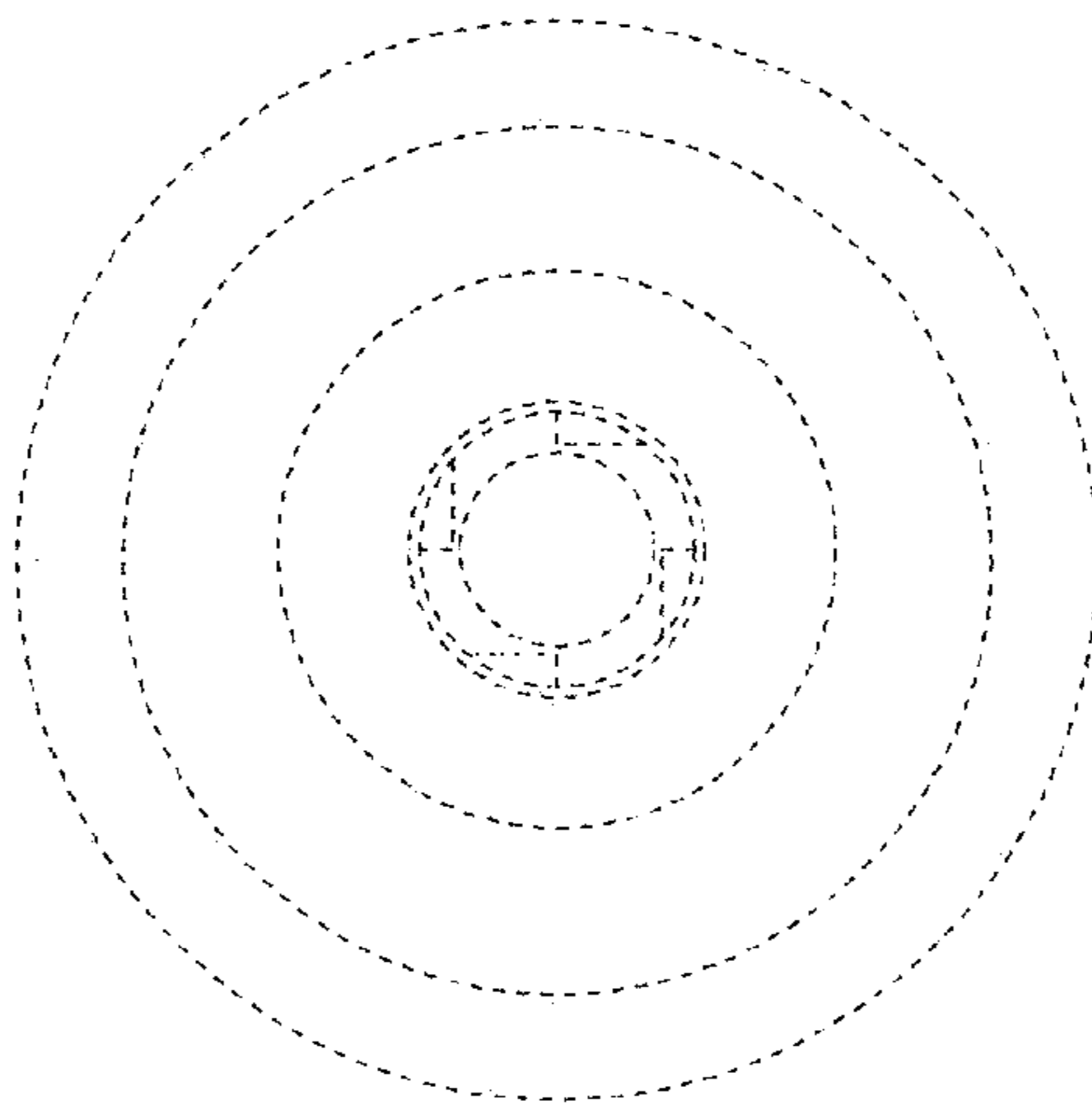


FIG. 3

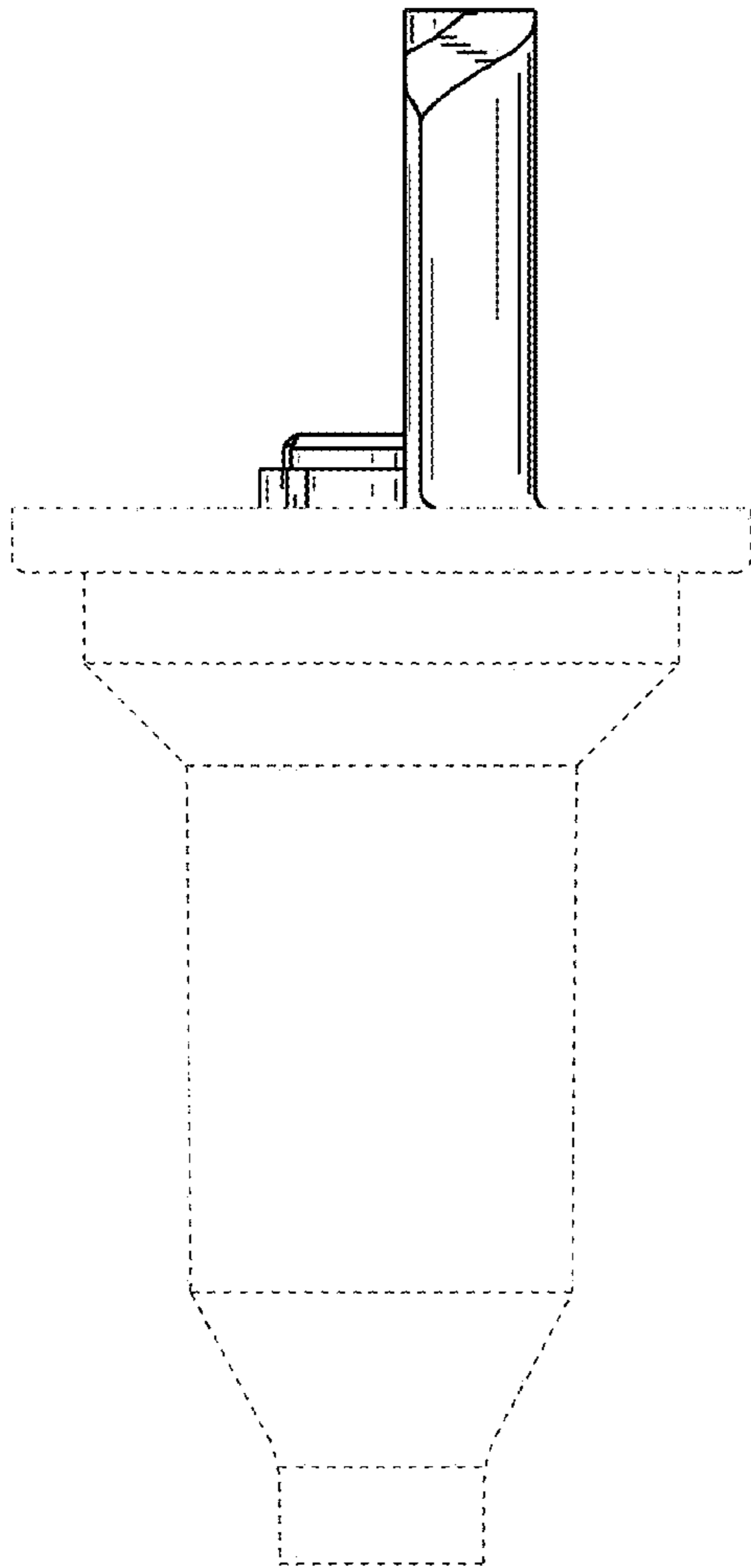


FIG. 4

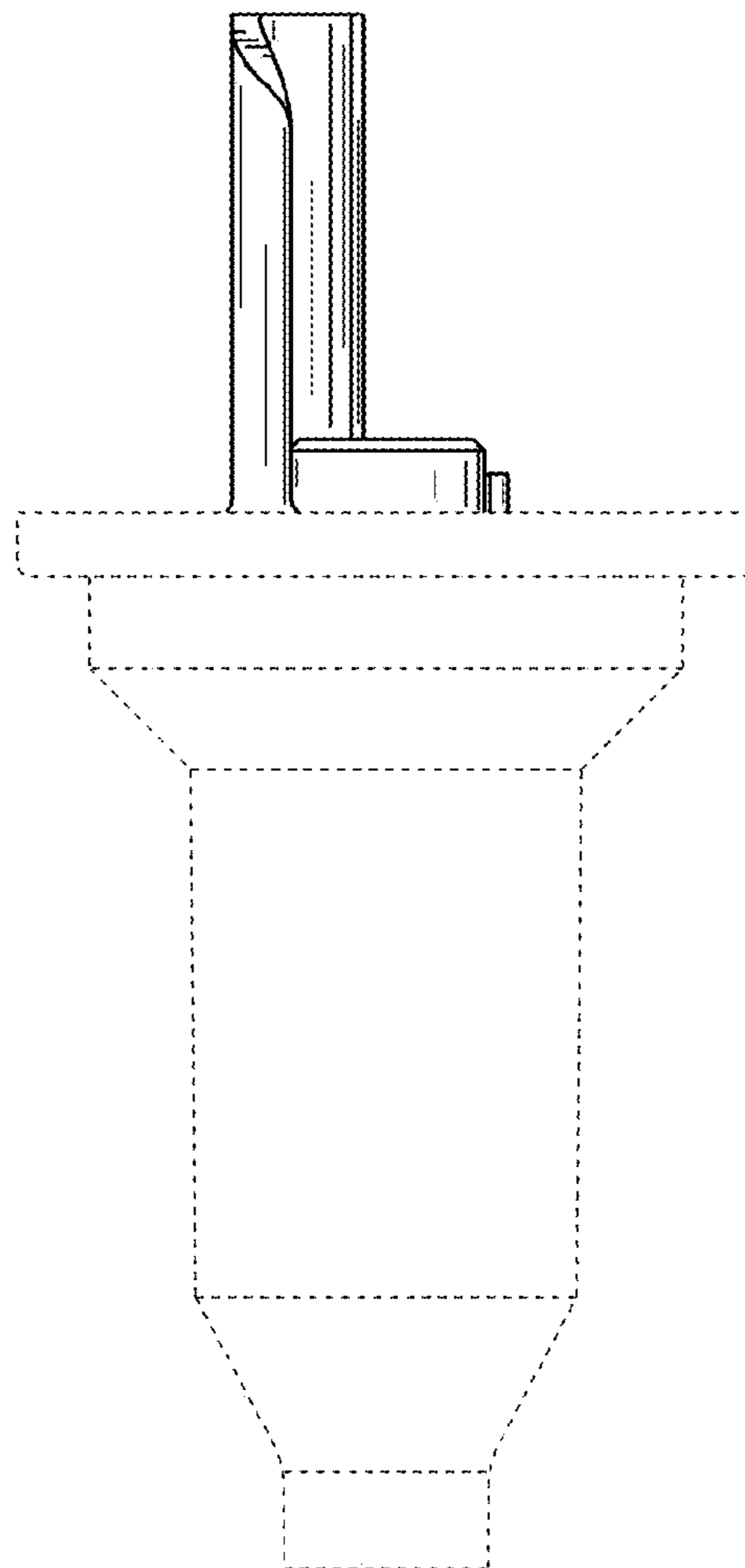


FIG. 5

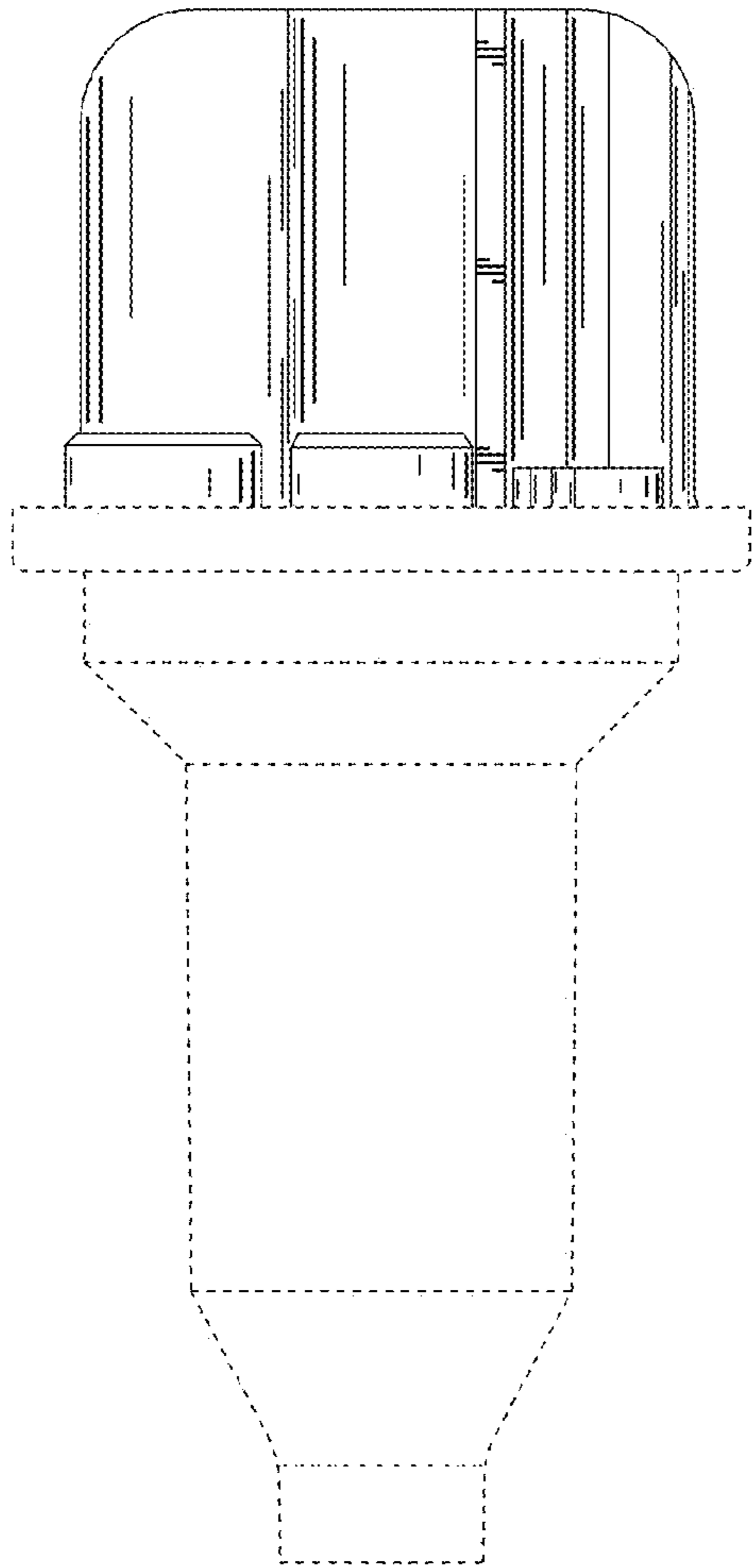


FIG. 6

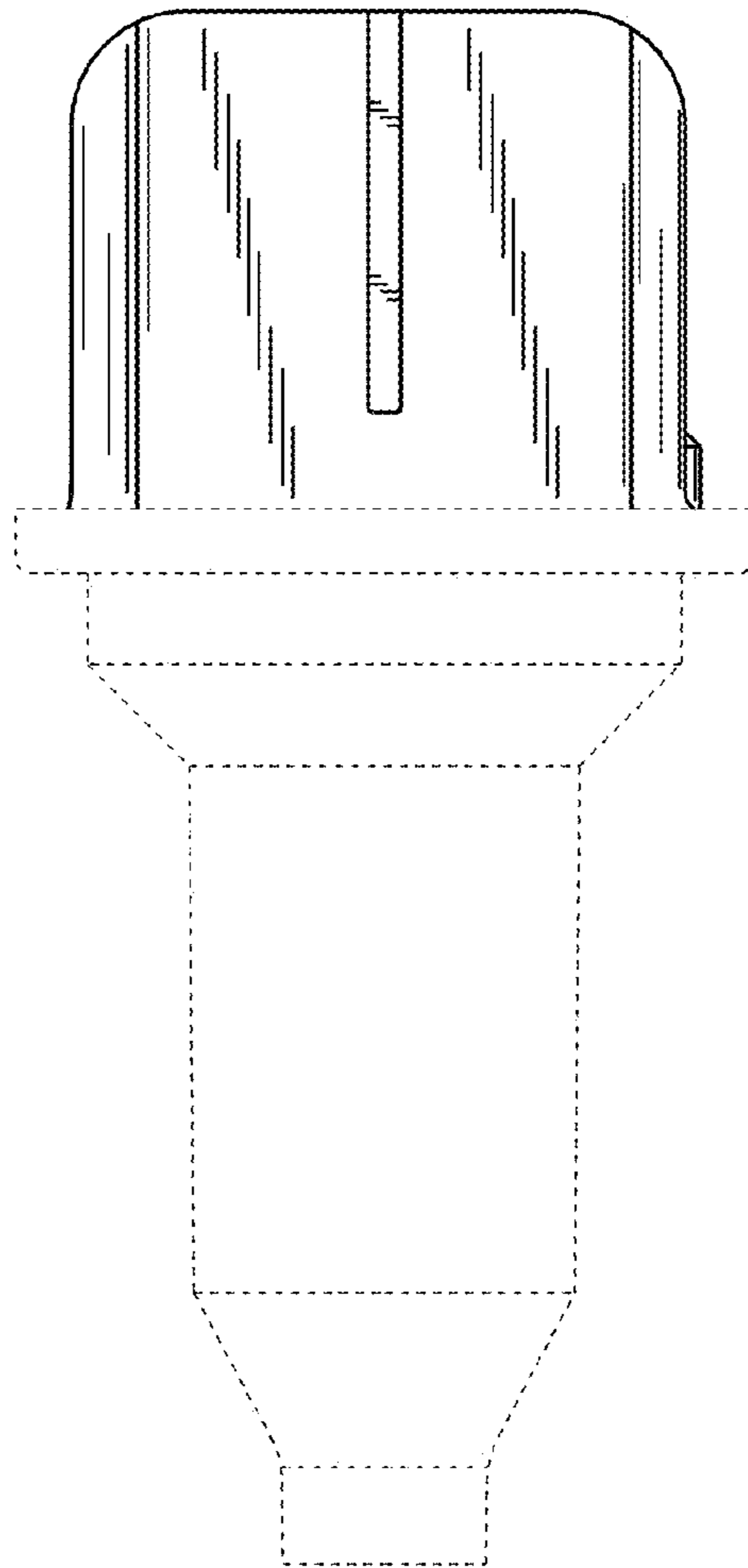


FIG. 7