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

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(54) **IMPLANTABLE BLOOD PUMP**
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6,162,167 A 12/2000 Goldstein et al.
6,201,329 B1 3/2001 Chen
6,302,661 B1 10/2001 Khanwilkar et al.
6,351,048 B1 2/2002 Schob et al.
6,394,769 B1 * 5/2002 Bearnson et al. 417/423.7
(Continued)

(73) Assignee: **Thoratec Corporation**, Pleasanton, CA
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FOREIGN PATENT DOCUMENTS
CN 300837668 10/2008
(Continued)

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

OTHER PUBLICATIONS

(21) Appl. No.: **29/390,200**

A New Innovation in Mechanical Circulatory Support for Patients with Advanced Heart Failure, HeartWare® Ventricular Assist System, 2010, 6 pages.

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(Continued)

(51) **LOC (9) Cl.** **24-03**

(52) **U.S. Cl.** **D24/155**

(58) **Field of Classification Search** D24/155,
D24/156, 133, 152, 154, 135, 141, 144-146,
D24/151; 606/194, 198; 623/23.54, 23.7,
623/1.11, 1.15, 1.16, 903, 1.29, 3.26, 3.14;
604/1.02, 103.02; 128/204.18; 600/16, 17;
417/410.1, 423.12, 423.7

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See application file for complete search history.

(57) **CLAIM**
The ornamental design for an implantable blood pump, as shown and described.

(56) **References Cited**

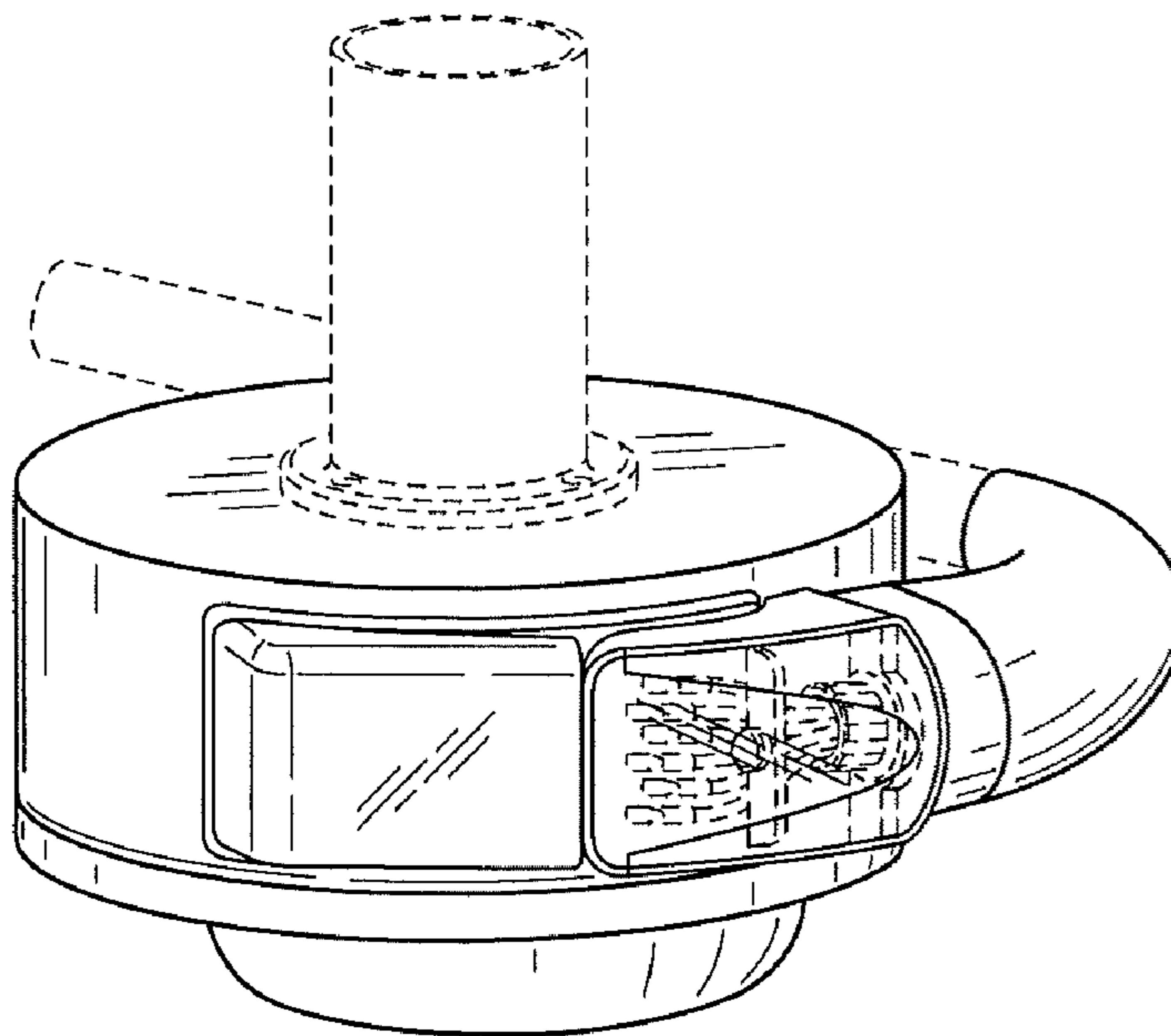
DESCRIPTION

U.S. PATENT DOCUMENTS

4,688,998 A	8/1987	Olsen et al.
5,055,005 A	10/1991	Kletschka
5,174,726 A	12/1992	Findlay
5,195,877 A	3/1993	Kletschka
5,385,581 A *	1/1995	Bramm et al. 623/3.14
5,470,208 A	11/1995	Kletschka
5,708,346 A	1/1998	Schob
5,798,454 A	8/1998	Nakazeki et al.
5,941,813 A	8/1999	Sievers et al.
6,053,705 A	4/2000	Schob et al.
6,080,133 A	6/2000	Wampler
6,100,618 A	8/2000	Schoeb et al.

FIG. 1 is a perspective view of an implementation of a new ornamental design of an implantable blood pump. FIG. 2 is a left side view of the design of FIG. 1. FIG. 3 is a right side view of the design of FIG. 1. FIG. 4 is a front view of the design of FIG. 1. FIG. 5 is a back view of the design of FIG. 1. FIG. 6 is a top view of the design of FIG. 1; and, FIG. 7 is a bottom view of the design of FIG. 1. The broken line showing is included for the purpose of illustrating environment and forms no part of the claimed design.

1 Claim, 4 Drawing Sheets



U.S. PATENT DOCUMENTS

6,595,762	B2	7/2003	Khanwilkar et al.	
6,623,475	B1 *	9/2003	Siess	604/891.1
6,723,039	B2	4/2004	French et al.	
6,991,595	B2	1/2006	Burke et al.	
7,338,521	B2 *	3/2008	Antaki et al.	623/3.26
7,462,019	B1	12/2008	Allarie et al.	
7,578,782	B2 *	8/2009	Miles et al.	600/16
7,861,582	B2 *	1/2011	Miyakoshi et al.	73/168
2005/0004421	A1 *	1/2005	Pacella et al.	600/16
2005/0147512	A1 *	7/2005	Chen et al.	417/423.12
2007/0231135	A1	10/2007	Wampler et al.	
2008/0021394	A1	1/2008	LaRose et al.	
2008/0310963	A1	12/2008	Wampler et al.	
2009/0143635	A1	6/2009	Benkowski et al.	
2009/0234447	A1	9/2009	LaRose et al.	
2010/0150749	A1 *	6/2010	Horvath	417/410.1
2010/0152526	A1 *	6/2010	Pacella et al.	600/17
2010/0221130	A1	9/2010	Yaegashi et al.	
2011/0054239	A1 *	3/2011	Sutton et al.	600/16

FOREIGN PATENT DOCUMENTS

WO WO2007040663 A1 4/2007

OTHER PUBLICATIONS

Levacor™ VAD, A Next-Generation Rotary VAD Designed to Provide Life-Saving Therapy for Congestive Heart Failure Patients, WorldHeart Technology for Life, Rev. 8/07, 2 pages.
 Handled with Care, Significantly Reduce the Risk of Cell Damage, DuraHeart, Terumo Implantable LVAS, printed in USA © Apr. 2010, 2 pages.
 VentrAssist™ LVAD, 2008. Retrieved from the Internet: <http://www.pharmapal.com/pharmapal/cardsrg3.html>, 1 page.
 “European VAD Pump Sizes”, Heart Assist5, Micromed Cardiovascular Inc., 2008. Retrieved from the Internet: <http://www.micromedcv.com/european/heart-assist-5/smallest-lightest.html>, 3 pages.
 Photo of blood pump disclosed prior to Apr. 21, 2011, 1 page.
 U.S. Appl. No. 29/368,272, filed Aug. 20, 2010, 40 pages.
 “Design of a bearingless blood pump,” in Proc.3rd Int. Symp. on Magnetic Suspension Technology, Tallahassee, FL, 1995, pp. 265-274. (23 pages).

* cited by examiner

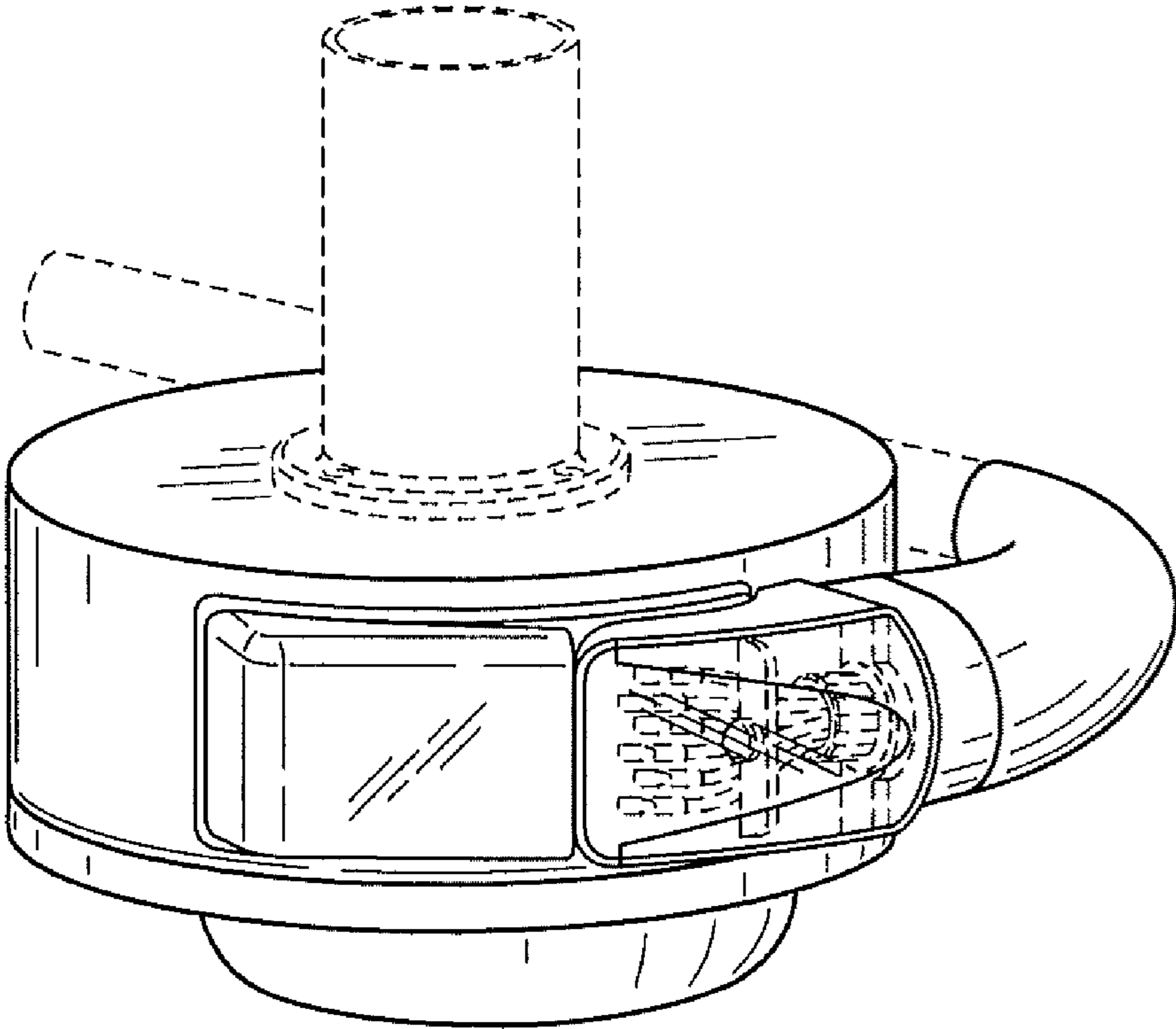


FIG. 1

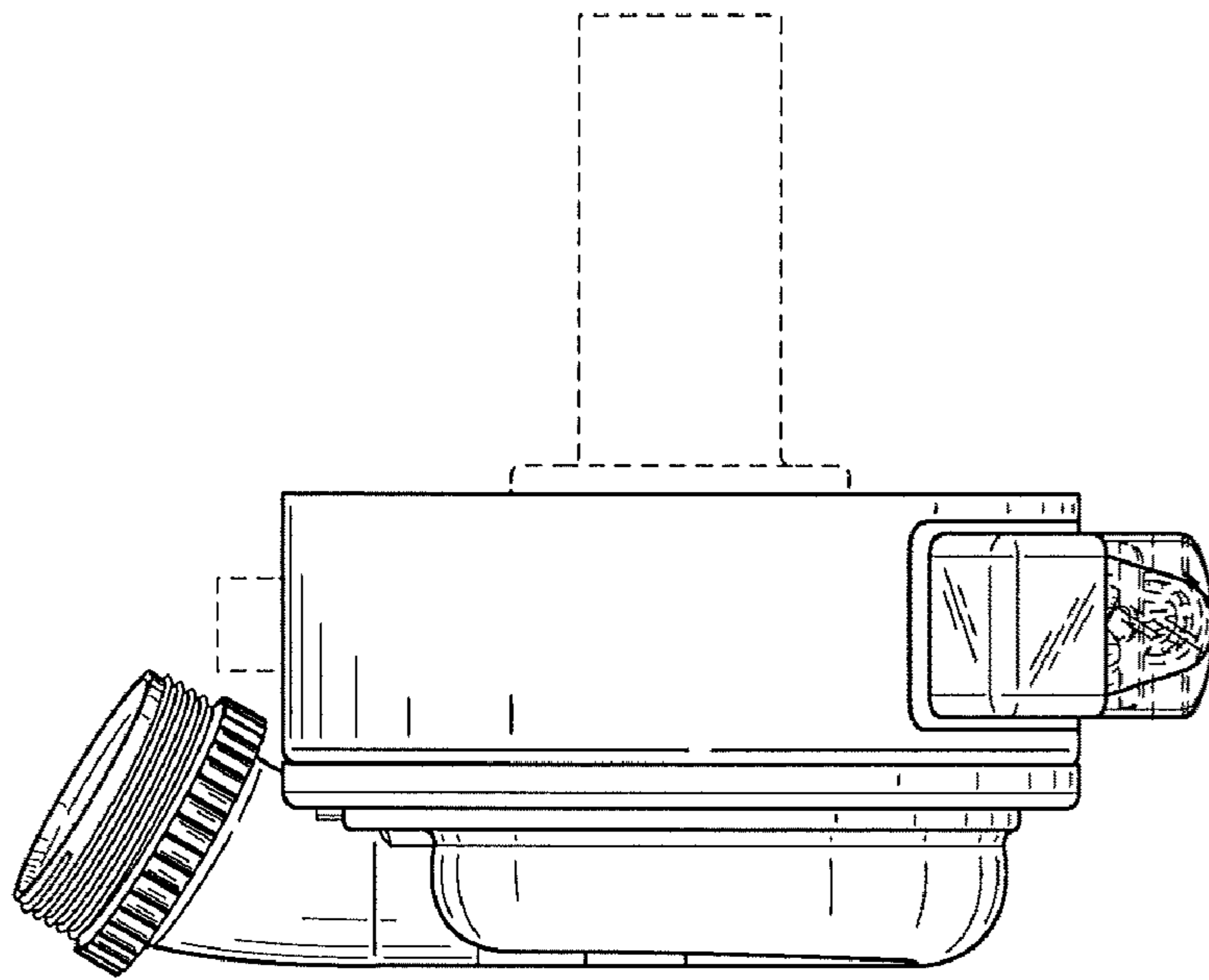


FIG. 2

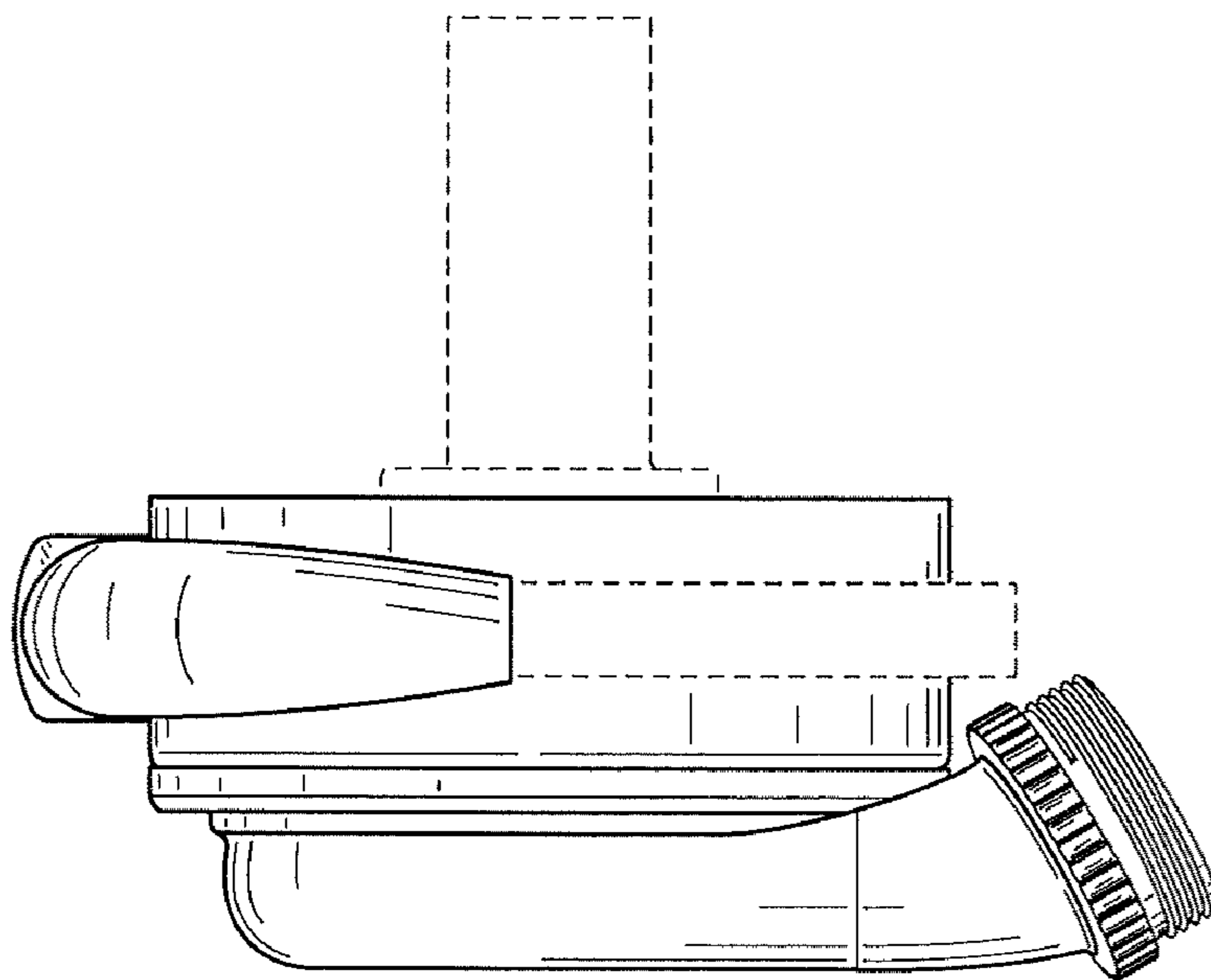


FIG. 3

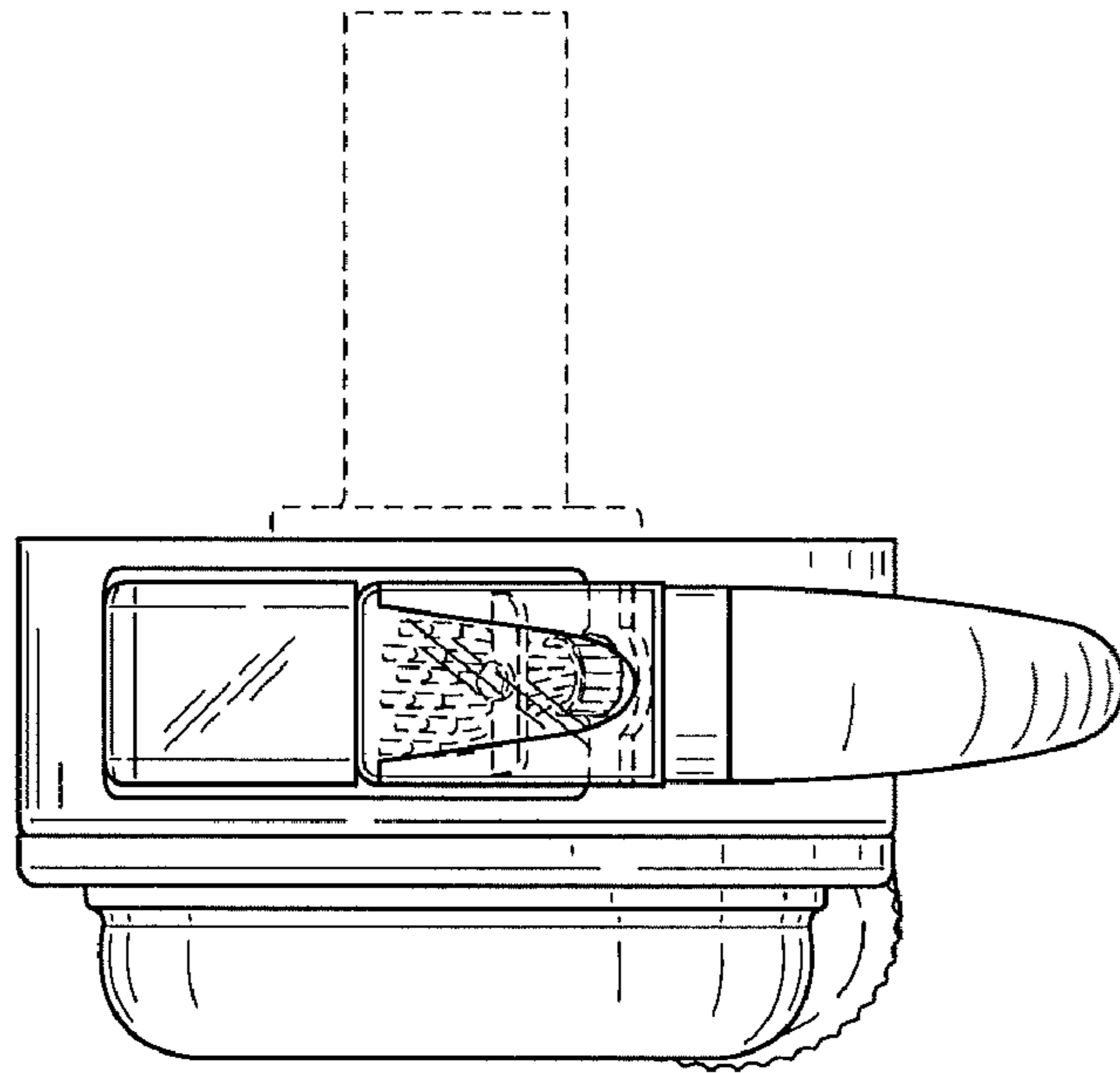


FIG. 4

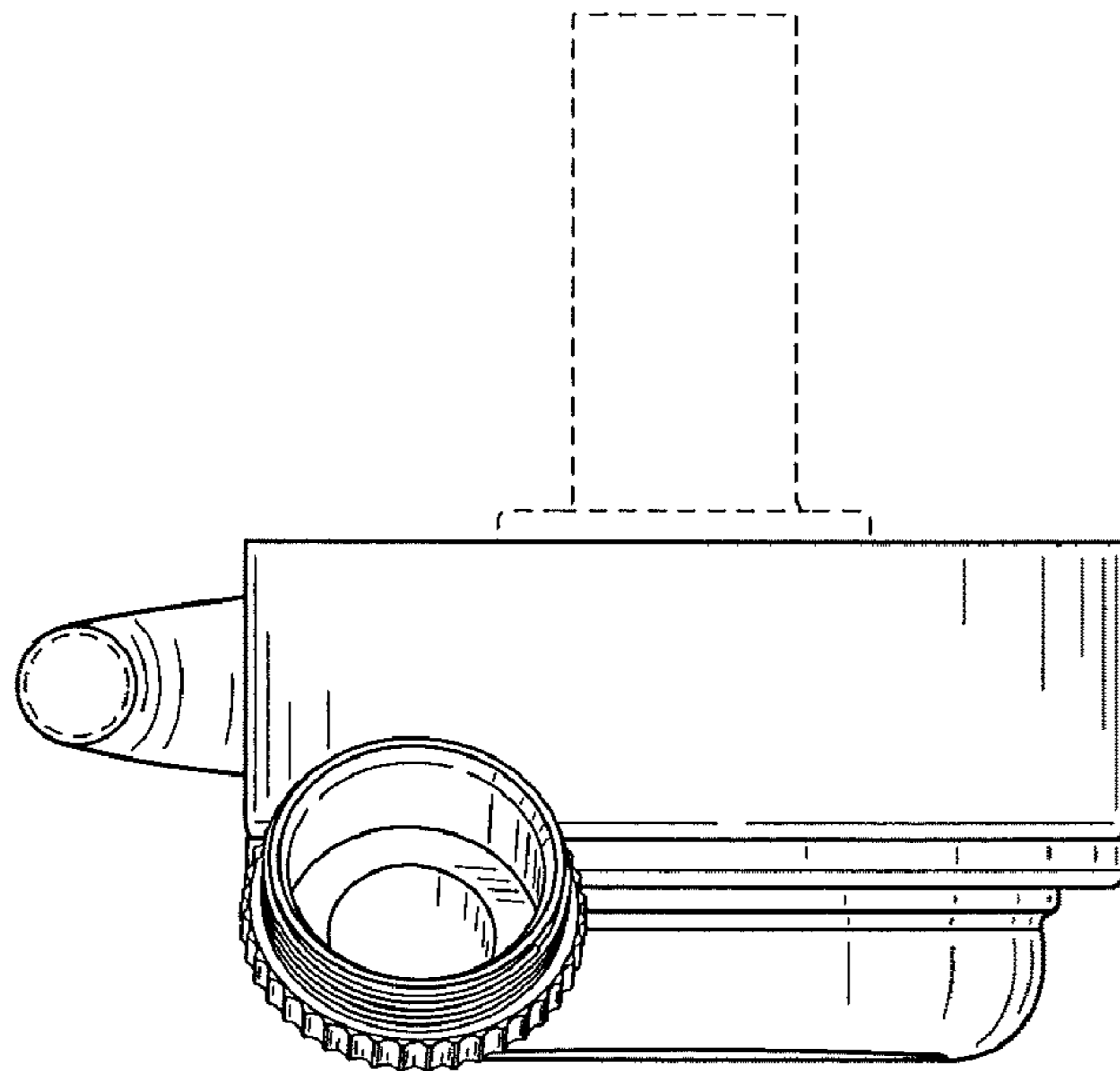


FIG. 5

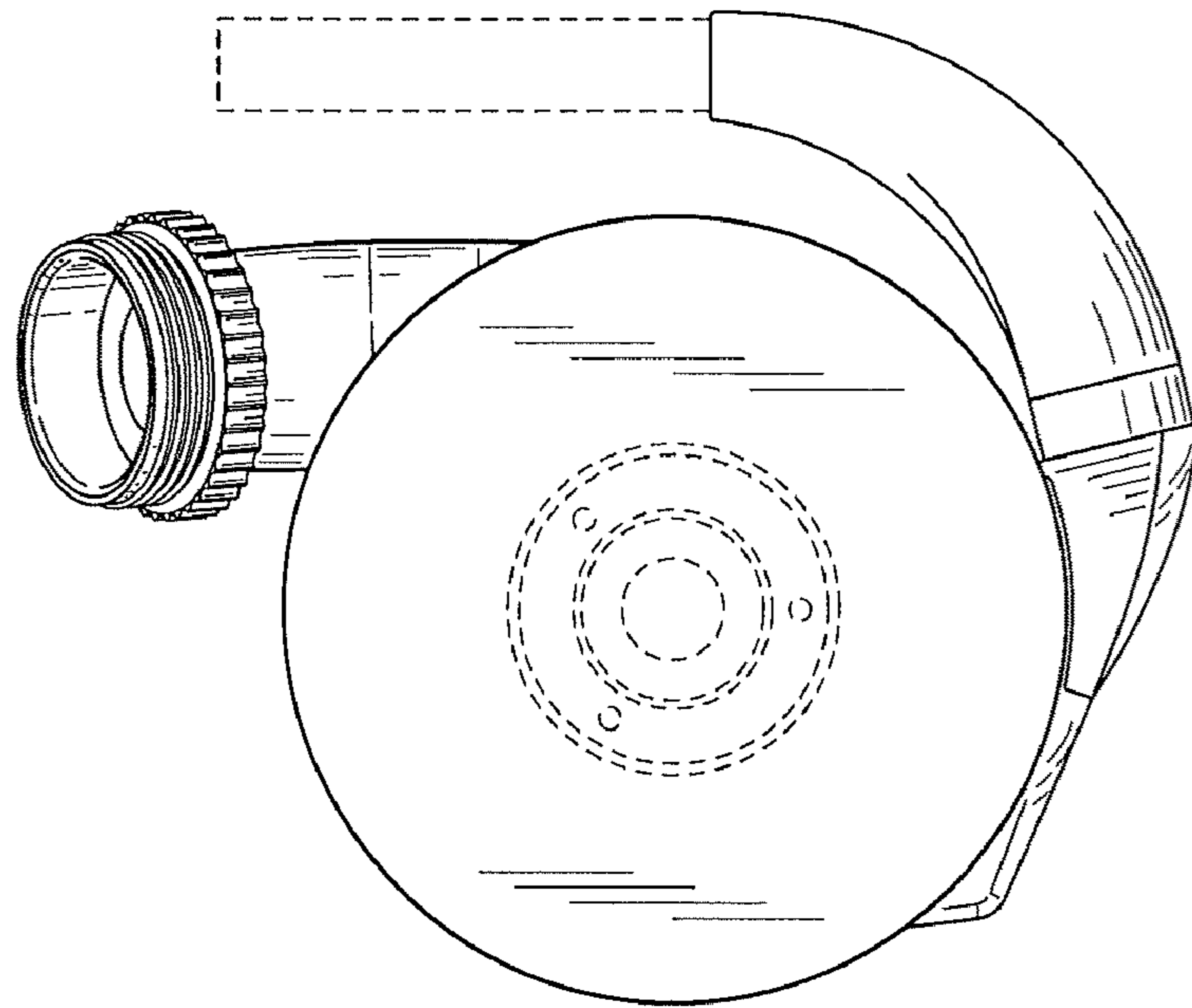


FIG. 6

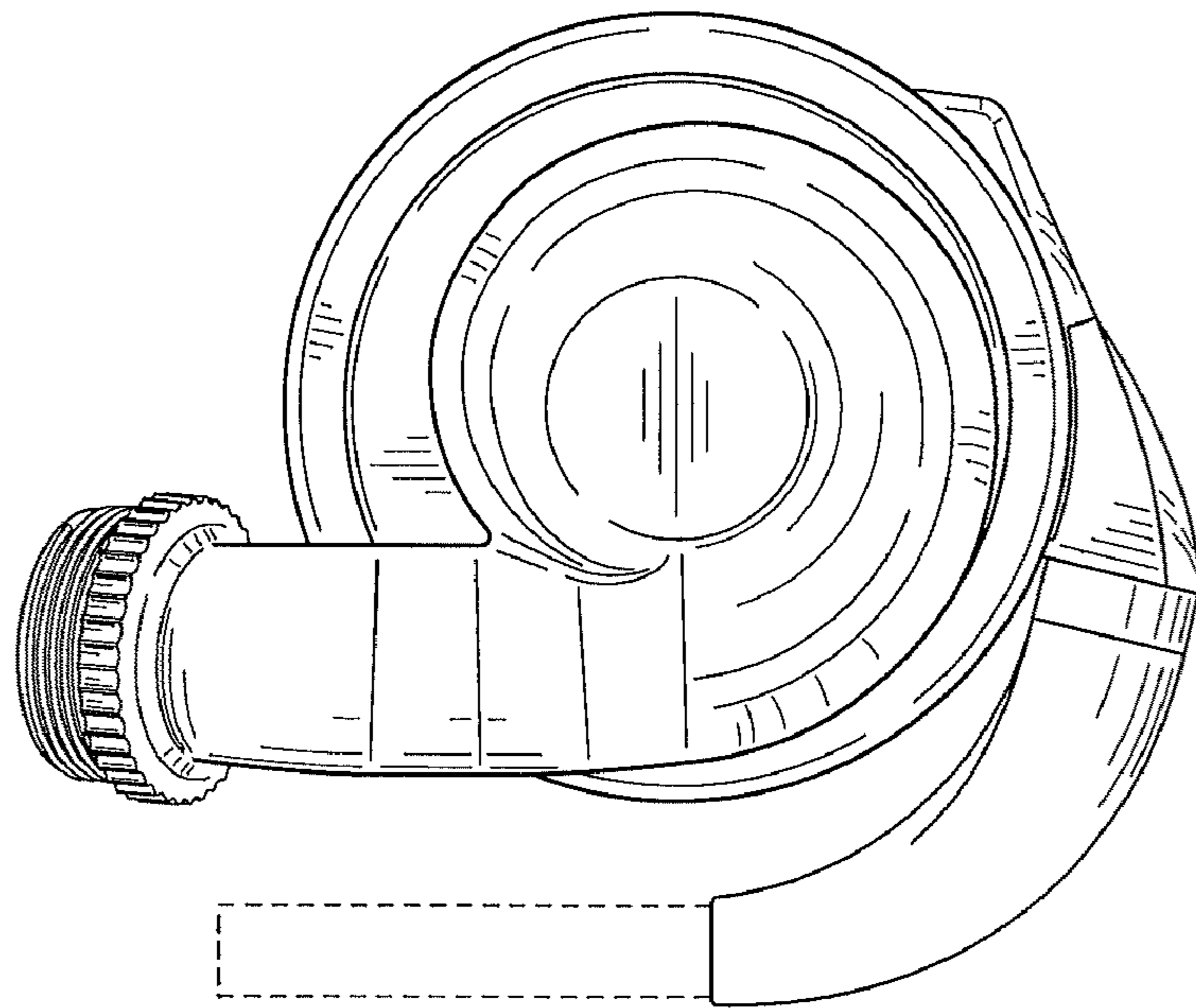


FIG. 7