

US00D837845S

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

(10) **Patent No.:** **US D837,845 S**
(45) **Date of Patent:** **** Jan. 8, 2019**

(54) **REPLACEABLE PROCESSING HEAD FOR
COMPUTER NUMERICAL CONTROL (CNC)
MACHINES**

(71) Applicant: **Hybrid Manufacturing Technologies
LLC, Plano, TX (US)**

(72) Inventors: **Jason B. Jones, Fairview, TX (US);
Peter Coates, Sutton Coldfield (GB)**

(73) Assignee: **Hybrid Manufacturing Technologies
LLC, Plano, TX (US)**

(**) Term: **15 Years**

(21) Appl. No.: **29/649,947**

(22) Filed: **Jun. 4, 2018**

Related U.S. Application Data

(62) Division of application No. 29/598,816, filed on Mar. 29, 2017, now Pat. No. Des. 820,893, which is a division of application No. 29/493,266, filed on Jun. 6, 2014, now Pat. No. Des. 786,323.

(51) **LOC (11) Cl.** **15-09**

(52) **U.S. Cl.**
USPC **D15/138**

(58) **Field of Classification Search**
USPC D8/70, 71; D15/122, 131, 132, 138, 139
CPC B23Q 1/626; B23Q 11/0017; Y10T 29/50;
Y10T 408/92; Y10T 409/308288; Y10T
409/309576; Y10T 409/309688
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,513,540 A * 4/1985 Dzewaltowski B23Q 15/14
451/226
4,616,398 A * 10/1986 Rutschle B23B 31/006
29/26 A

4,981,402 A * 1/1991 Krenzer B23F 9/00
409/26
5,309,368 A * 5/1994 Chern B23Q 3/1576
483/14
5,340,962 A * 8/1994 Schmidt B23K 26/04
219/121.78
5,634,250 A * 6/1997 Mihailovic B23F 17/00
29/26 A
5,808,893 A * 9/1998 Pugh B23G 1/04
29/38 B
5,915,892 A * 6/1999 Glimpel B23B 31/083
279/16
6,022,132 A * 2/2000 Schulz G05B 19/4184
318/569

(Continued)

Primary Examiner — Patricia A Palasik

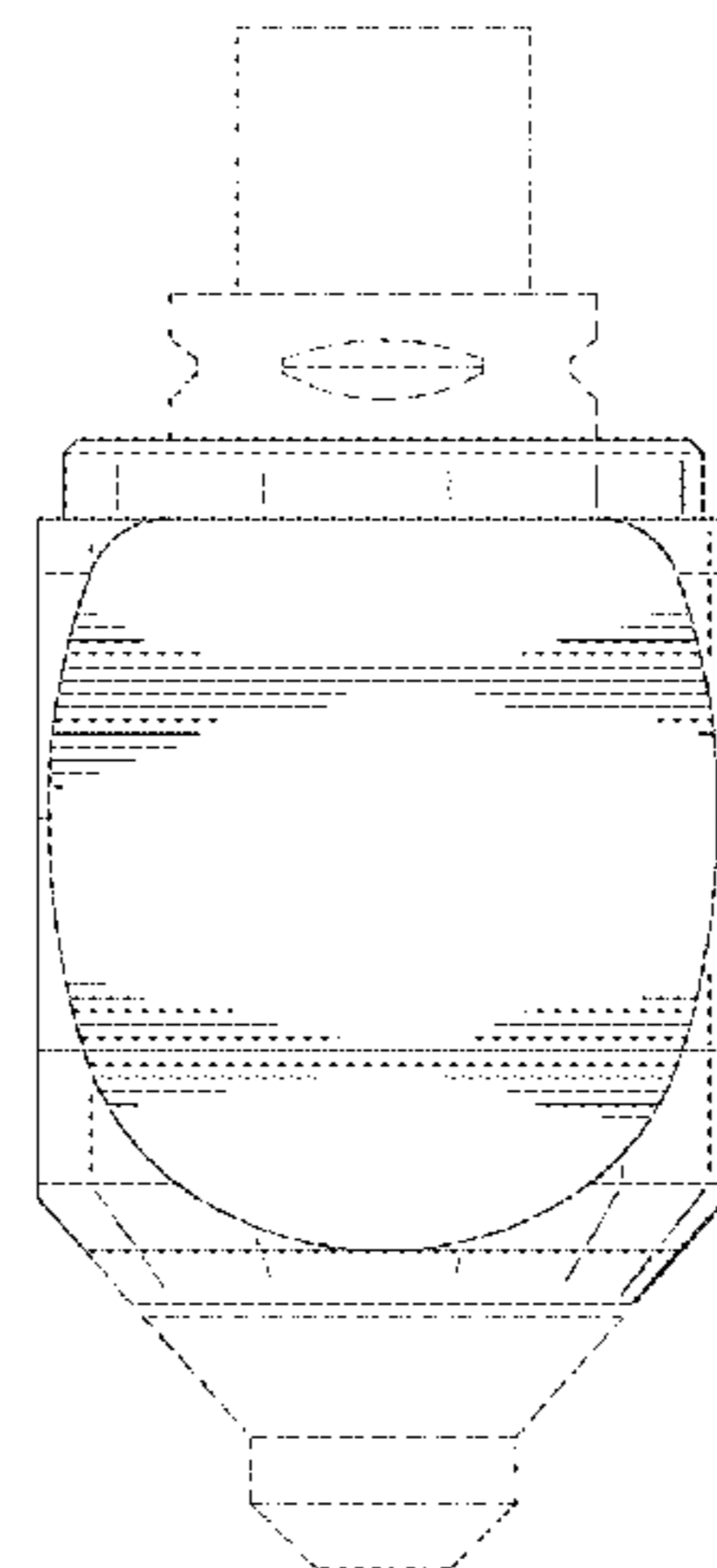
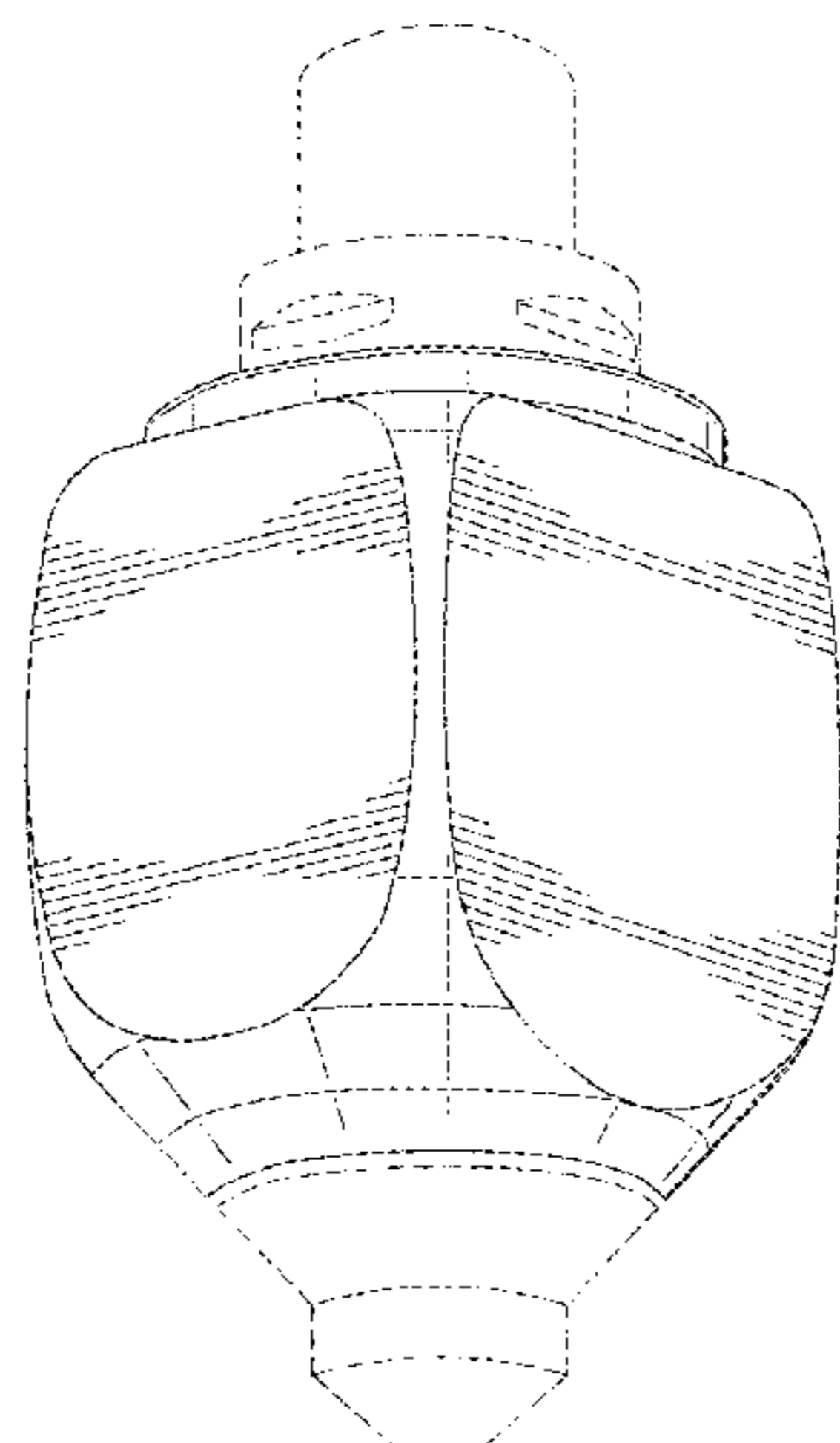
(57) **CLAIM**

The ornamental design for a replaceable processing head for a computer numerical control (CNC) machine, as shown and described.

DESCRIPTION

FIG. 1 is a front perspective view of a replaceable processing head for CNC machines;
FIG. 2 is a front elevation view of the replaceable processing head of FIG. 1;
FIG. 3 is a rear elevation view of the replaceable processing head of FIG. 1;
FIG. 4 is a side view of the replaceable processing head of FIG. 1;
FIG. 5 is a top view of the replaceable processing head of FIG. 1;
FIG. 6 is a bottom view of the replaceable processing head of FIG. 1; and,
FIG. 7 is a rear perspective view of the replaceable processing head of FIG. 1.
Broken lines in the drawings show environmental structures or boundaries that form no part of the design to be patented.

1 Claim, 3 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

6,050,760	A *	4/2000	A-Tung	.....	B23Q 37/002 409/203	7,467,449	B1 *	12/2008	Lee	.....	B23B 39/06 29/26 A
6,059,494	A *	5/2000	Susnjara	.....	B23Q 11/006 408/11	7,665,200	B1 *	2/2010	Shimooka	.....	B23Q 1/626 29/560
6,205,372	B1 *	3/2001	Pugh	.....	G05B 19/186 700/180	8,360,944	B2 *	1/2013	Erlenmaier	.....	B23K 26/1482 219/121.67
6,364,818	B1 *	4/2002	Chen	.....	B23Q 1/56 29/27 R	8,366,593	B2 *	2/2013	Schmauder	.....	B23K 26/1482 219/121.72
6,427,098	B1 *	7/2002	Alverson	.....	G05B 19/182 318/568.1	8,650,767	B2 *	2/2014	Matsumiya	.....	G01B 5/016 33/503
6,470,776	B1 *	10/2002	Boland	.....	B23B 31/02 82/118	8,690,499	B2 *	4/2014	Makiyama	.....	B23B 41/12 269/60
6,481,508	B2 *	11/2002	McGlasson	.....	B23F 19/02 173/211	8,695,763	B2 *	4/2014	Haas	.....	B23Q 11/123 184/6.14
6,601,434	B2 *	8/2003	Schaefer	.....	B23Q 17/22 29/39	8,708,774	B2 *	4/2014	Diplotti	.....	B24B 3/021 451/11
6,832,878	B2 *	12/2004	Elrod	.....	B23Q 37/002 408/136	8,827,611	B2 *	9/2014	Trzaskos	.....	B23D 5/00 409/292
7,005,606	B2 *	2/2006	Legge	.....	B23K 26/043 219/121.82	8,920,511	B2 *	12/2014	Southard	.....	A61F 2/44 623/16.11
7,360,271	B2 *	4/2008	Nordstrom	.....	B08B 1/04 15/104.05	9,162,289	B2 *	10/2015	Katsu	.....	B23B 23/00
						9,168,625	B2 *	10/2015	Huang	.....	B24B 1/04
						9,233,428	B2 *	1/2016	Williams	.....	B24B 27/0076
						D786,323	S *	5/2017	Jones	.....	D15/138
						D820,893	S *	6/2018	Jones	.....	D15/138

* cited by examiner

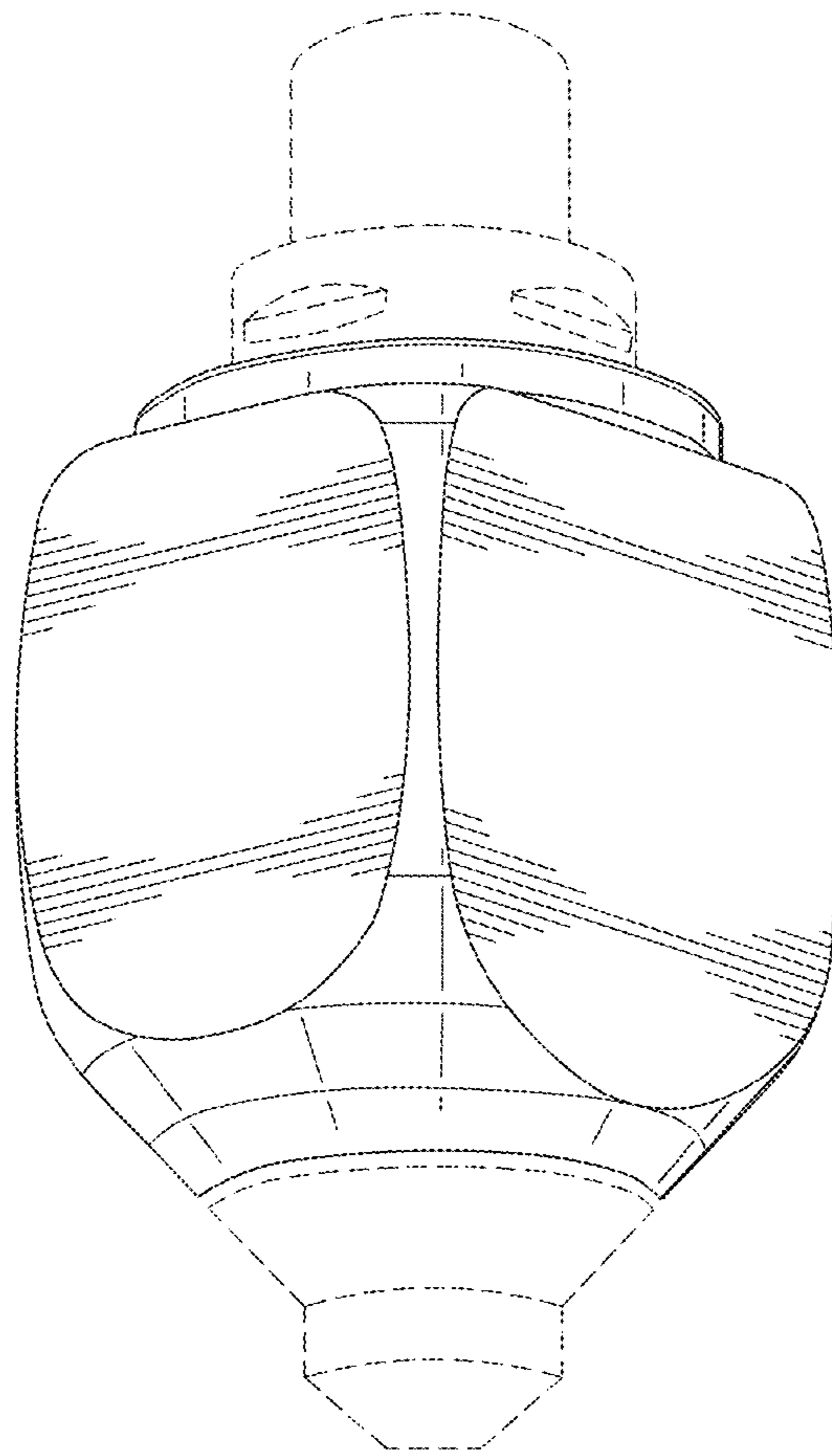


FIG. 1

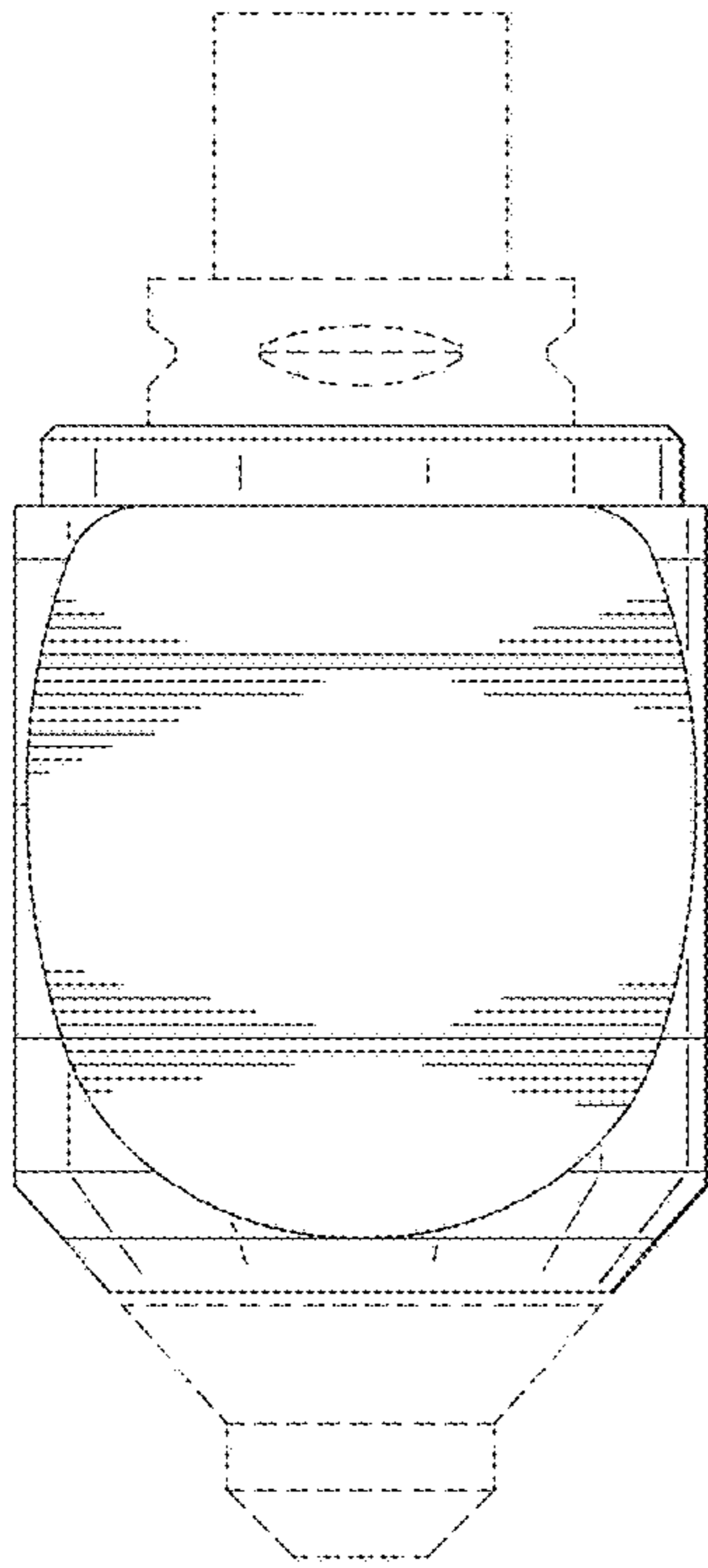


FIG. 2

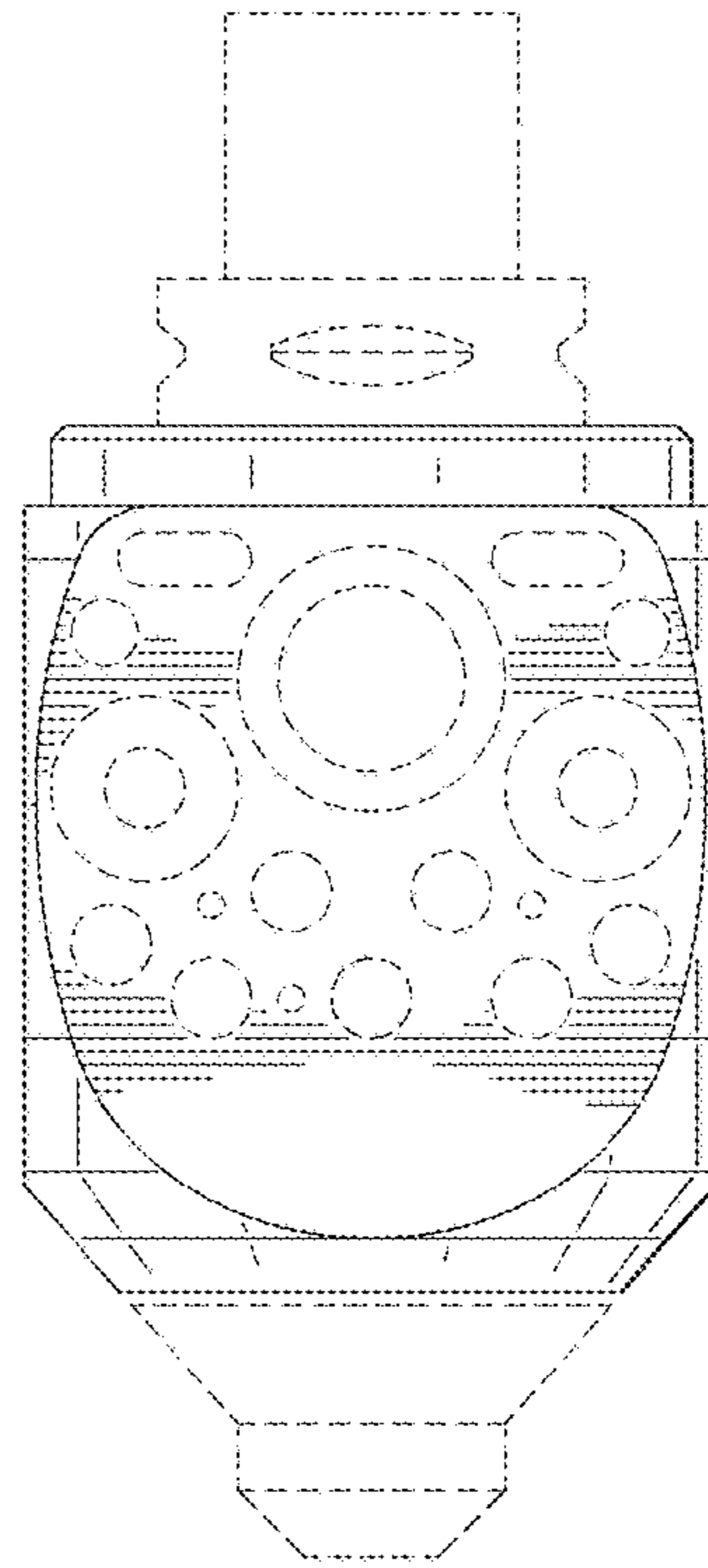


FIG. 3

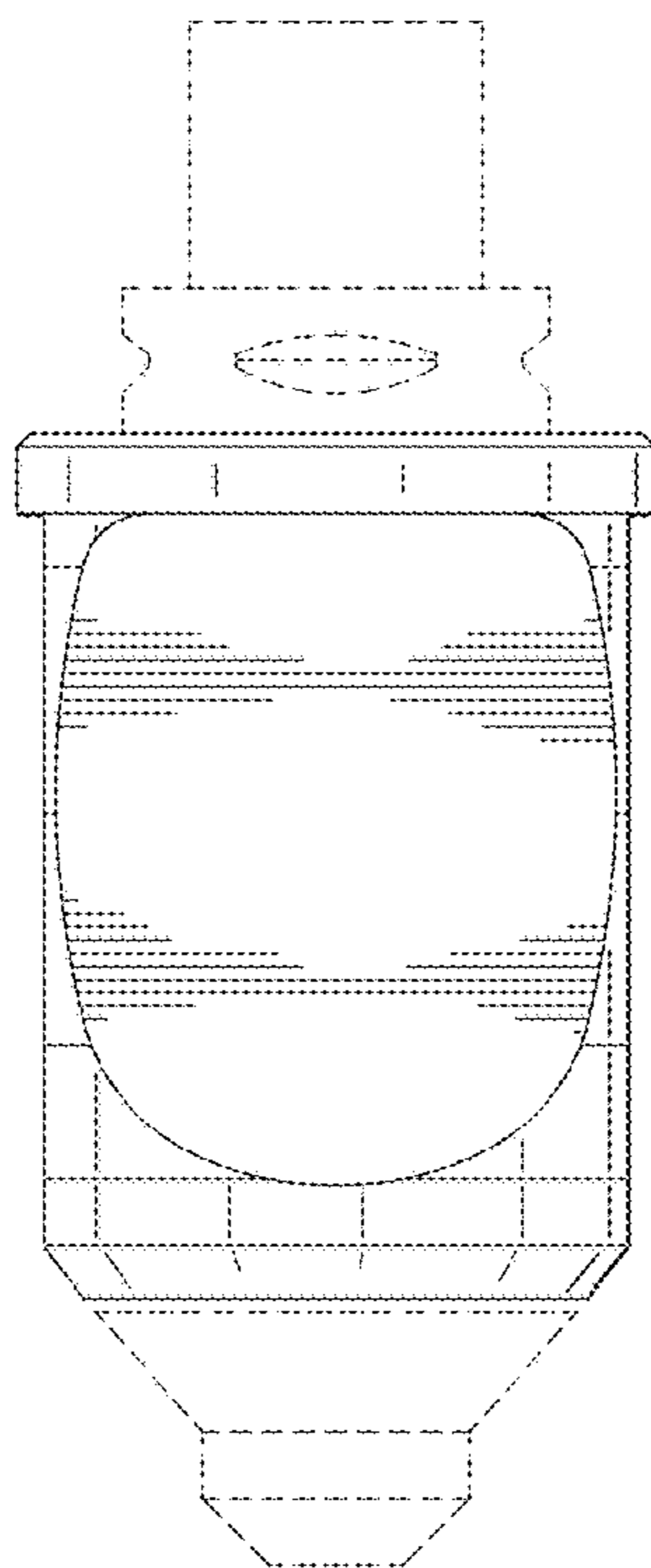


FIG. 4

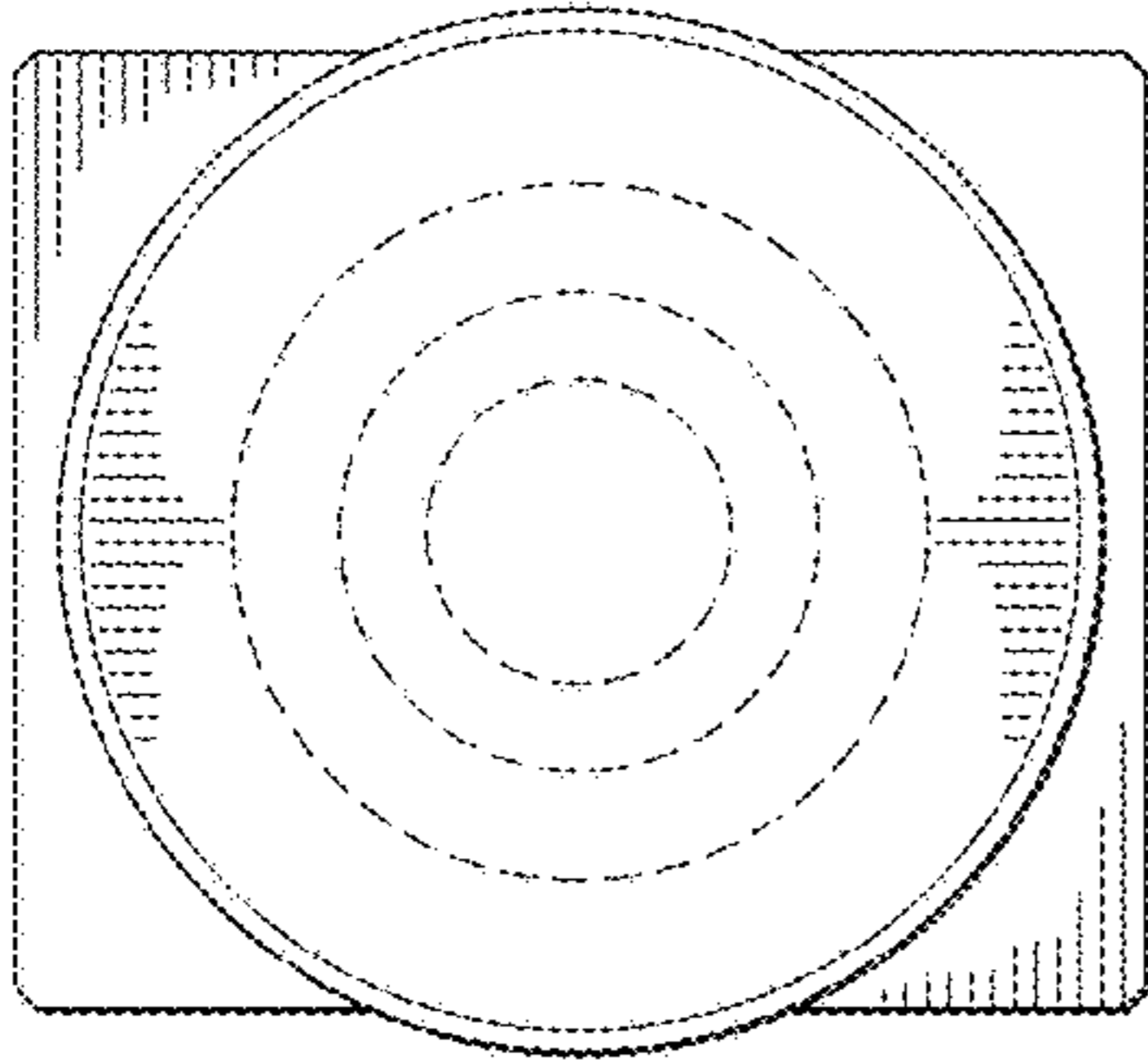


FIG. 5

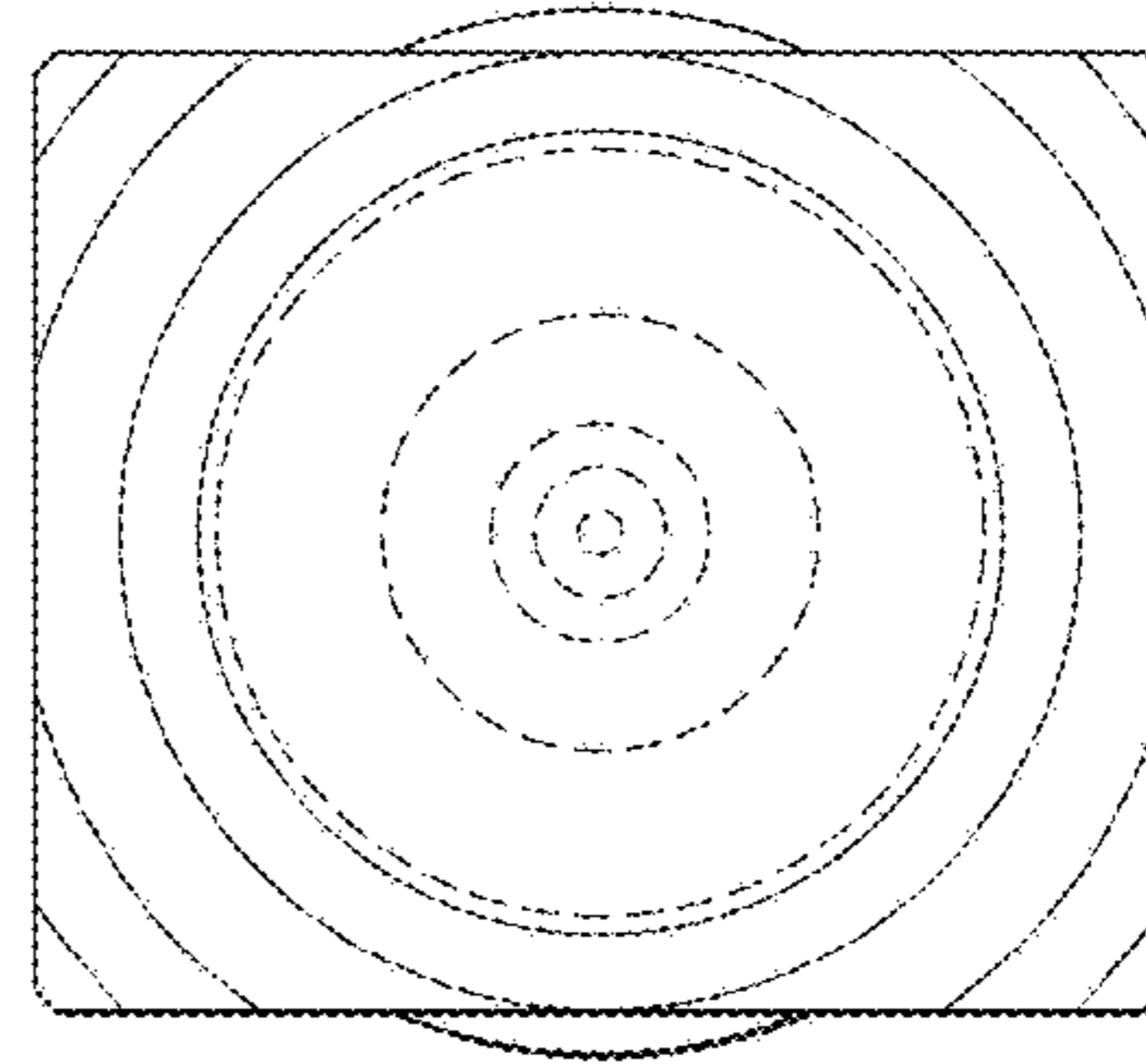


FIG. 6

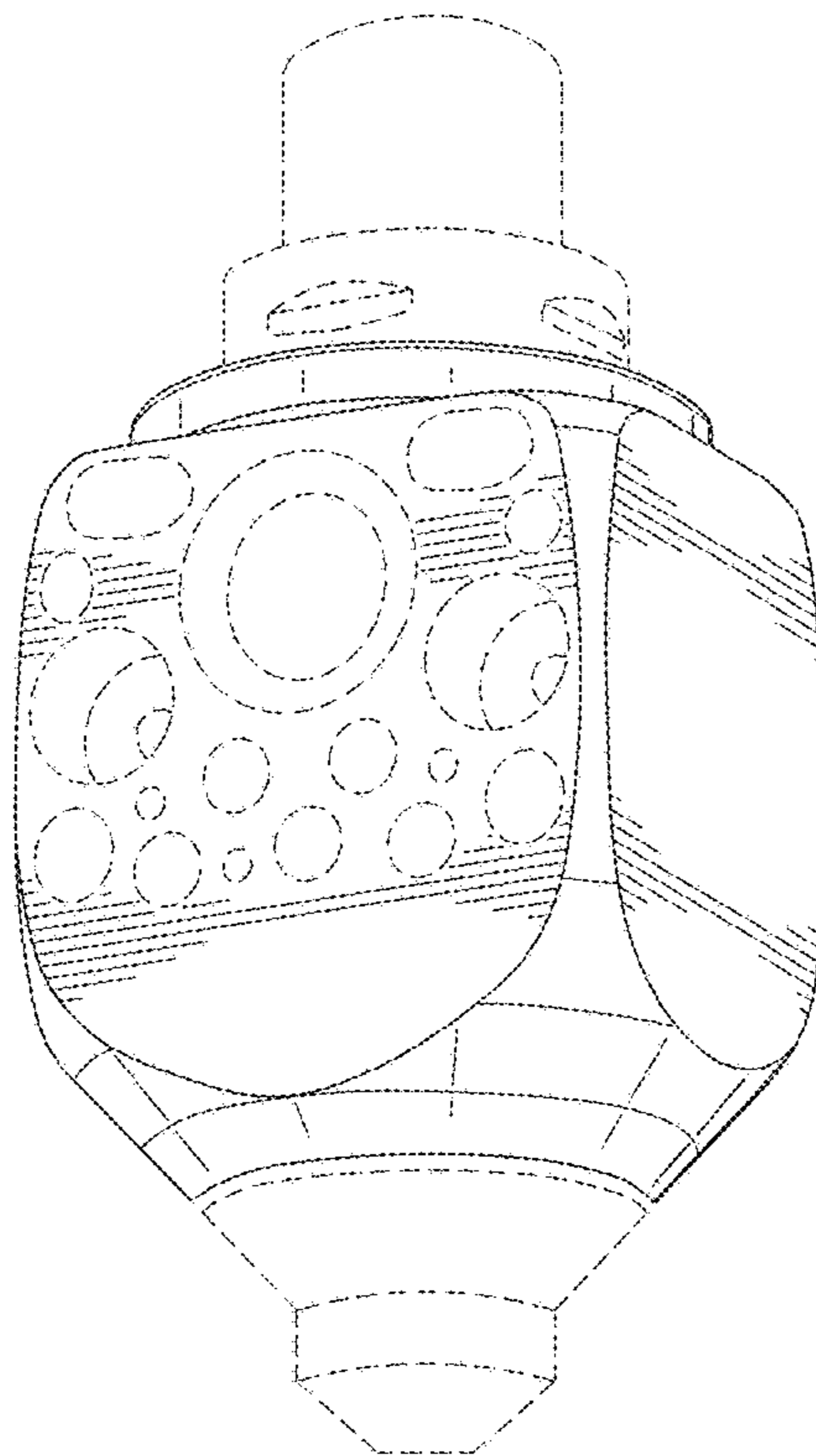


FIG. 7