US00D645547S

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

(10) **Patent No.: US D645,547 S**
(45) **Date of Patent: ** Sep. 20, 2011**

(54) **MALE QUICK CONNECT FITTING**

(75) Inventors: **Frank Lombardi**, Loveland, CO (US); **Ravikumar S. Narayanan**, Fort Collins, CO (US); **James D. Pisula, Jr.**, Fort Collins, CO (US)

(73) Assignee: **Value Plastics, Inc.**, Fort Collins, CO (US)

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

(21) Appl. No.: **29/380,098**

(22) Filed: **Nov. 30, 2010**

Related U.S. Application Data

(62) Division of application No. 29/297,829, filed on Nov. 19, 2007.

(51) **LOC (9) Cl.** **23-01**
(52) **U.S. Cl.** **D23/262**
(58) **Field of Classification Search** D23/259–269; 4/286–287, 295; 138/89, 91; 217/110; 220/288; 222/552, 554, 546, 563; 285/139.1, 148.18, 285/148.23, 242, 251, 256, 331, 353, 423, 285/921; 174/665; D15/7
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

163,261	A	5/1875	Ruppenthal
185,896	A	1/1877	Curtis
187,982	A	3/1877	Pirsson et al.
200,944	A	3/1878	Smith
235,580	A	12/1880	Smith et al.
327,509	A	10/1885	Aldridge
584,008	A	6/1887	Munson
465,868	A	12/1891	List
725,421	A	4/1903	Dinkins
727,982	A	5/1903	Ludwig
874,957	A	12/1907	Godley

(Continued)

FOREIGN PATENT DOCUMENTS

DE	3439522	8/1985

(Continued)

OTHER PUBLICATIONS

High-Flow Quick Disconnect Couplings; http://www.coleparmer.com/catalog/product_view.asp?sku=3130355; date accessed Sep. 14, 2009, 3 pages.

(Continued)

Primary Examiner — T. Chase Nelson
Assistant Examiner — Eric L Goodman
(74) *Attorney, Agent, or Firm* — Dorsey & Whitney LLP

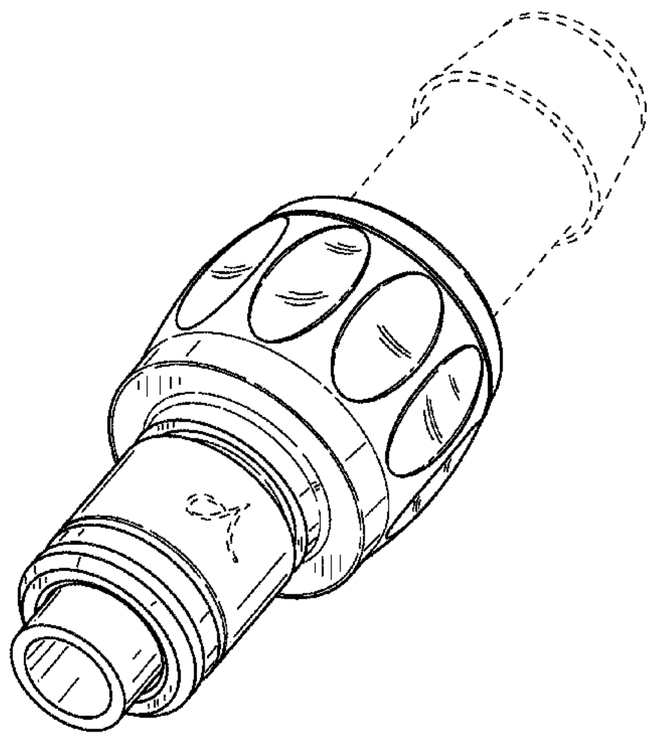
(57) **CLAIM**

We claim the ornamental design for a male quick connect fitting, substantially as shown and described.

DESCRIPTION

FIG. **1** is a front isometric view from the top, left side of a male quick connect fitting in accordance with our new design.
FIG. **2** is a rear isometric view from the top, right side of the male quick connect fitting of FIG. **1**.
FIG. **3** is a rear elevation view of the male quick connect fitting of FIG. **1**.
FIG. **4** is a left side elevation view of the male quick connect fitting of FIG. **1**.
FIG. **5** is a front elevation view of the male quick connect fitting of FIG. **1**.
FIG. **6** is a top plan view of the male quick connect fitting of FIG. **1**; and,
FIG. **7** is a bottom plan view of the male quick connect fitting of FIG. **1**.
The broken lines shown in the drawings are for purposes of illustrating use and environment only and form no part of the claimed design.

1 Claim, 7 Drawing Sheets



U.S. PATENT DOCUMENTS

884,461	A	4/1908	Browne
909,131	A	1/1909	Antic
951,889	A	3/1910	Teuer
1,029,819	A	6/1912	Nylander
1,033,187	A	7/1912	Metzger
1,039,354	A	9/1912	Bonadio
1,077,417	A	11/1913	McCracken
1,078,112	A	11/1913	Storm
1,115,945	A	11/1914	Kunz
1,193,446	A	8/1916	Wells
1,239,345	A	9/1917	Brown
1,255,847	A	2/1918	Arkin
1,259,684	A	3/1918	Vinten
1,489,310	A	4/1924	Critchlow
1,526,218	A	2/1925	Johnson
1,578,504	A	3/1926	Bronson et al.
1,587,079	A	6/1926	Machino
1,767,073	A	6/1930	Ingold
1,863,360	A	6/1932	Weatherhead
1,950,947	A	3/1934	Mulroyan
2,023,428	A	12/1935	Liebhardt
2,056,524	A	10/1936	Johnson
2,066,473	A	1/1937	Jorgensen
2,097,628	A	11/1937	Liebhardt
2,099,335	A	11/1937	Hansen
2,108,714	A	2/1938	Hirsch et al.
2,116,705	A	5/1938	Marx et al.
2,139,745	A	12/1938	Goodall
2,147,355	A	2/1939	Scholtes
2,159,116	A	5/1939	Zacharias
2,211,147	A	8/1940	Miller
2,257,321	A	9/1941	Arnold
2,263,293	A	11/1941	Ewald
2,264,815	A	12/1941	Thomsen
2,340,119	A	1/1944	Graham
2,346,445	A	4/1944	Merker et al.
2,352,728	A	7/1944	Merker et al.
2,429,782	A	10/1947	Versoy
2,432,946	A	12/1947	Theunissen
2,470,800	A	5/1949	Ashton
2,479,499	A	8/1949	Le Clair
2,500,720	A	3/1950	Van der Heem
2,507,536	A	5/1950	Goodson
2,516,583	A	7/1950	Moore
2,535,740	A	12/1950	Knopp
2,577,009	A	12/1951	Frantz
2,626,974	A	1/1953	Howard et al.
2,630,131	A	3/1953	Snyder
2,661,018	A	12/1953	Snyder
2,701,147	A	2/1955	Summerville
2,722,399	A	11/1955	Oetiker
2,753,195	A	7/1956	Palmer
2,774,616	A	12/1956	Dodd et al.
2,790,571	A	4/1957	Flaith et al.
2,864,628	A	12/1958	Edleson
2,915,325	A	12/1959	Foster
2,926,934	A	3/1960	Gill
2,931,668	A	4/1960	Baley
2,937,892	A	5/1960	Prescott, Jr.
2,948,553	A	8/1960	Gill et al.
2,967,067	A	1/1961	Singer
2,991,090	A	7/1961	De Cenzo
3,017,203	A	1/1962	Macleod
3,037,497	A	6/1962	Roberson
3,046,028	A	7/1962	Nathan
3,048,415	A	8/1962	Shook
3,073,342	A	1/1963	Magorien
3,078,068	A	2/1963	Romney
D196,473	S	10/1963	Hill
3,124,157	A	3/1964	Krzewina
3,129,020	A	4/1964	Bujnowski
3,171,196	A	3/1965	Helitas
3,191,628	A	6/1965	Kirkwood et al.
3,217,400	A	11/1965	Illesy et al.
3,217,771	A	11/1965	Beall et al.
3,227,380	A	1/1966	Pinkston
3,237,974	A	3/1966	Press
3,245,703	A	4/1966	Manly
3,276,799	A	10/1966	Moore et al.
3,279,497	A	10/1966	Norton et al.
3,314,696	A	4/1967	Ferguson et al.
3,317,214	A	5/1967	Durgom
D209,166	S	11/1967	Hunt
D209,168	S	11/1967	Hunt
3,352,576	A	11/1967	Thomas
3,382,892	A	5/1968	Cerbin
3,403,930	A	10/1968	Bernier
3,432,176	A	3/1969	Valenziano
3,448,760	A	6/1969	Cranage
3,450,424	A	6/1969	Calisher
3,512,808	A	5/1970	Graham
3,523,701	A	8/1970	Graham
3,538,940	A	11/1970	Graham
3,542,338	A	11/1970	Scaramucci
3,545,490	A	12/1970	Burrus
3,550,626	A	12/1970	Daniels et al.
3,560,027	A	2/1971	Graham
3,563,265	A	2/1971	Graham
3,574,314	A	4/1971	Quercia
3,588,149	A	6/1971	Demler
3,596,933	A	8/1971	Luckenbill
3,599,843	A	8/1971	Johnston
3,600,917	A	8/1971	Krock
3,666,297	A	5/1972	Marks
3,690,336	A	9/1972	Drum
3,712,583	A	1/1973	Martindale et al.
3,747,964	A	7/1973	Nilsen
3,750,238	A	8/1973	Tanner
3,815,887	A	6/1974	Curtis et al.
3,817,561	A	6/1974	Kay
3,829,135	A	8/1974	Forni
3,876,234	A	4/1975	Harms
3,889,710	A	6/1975	Brost
3,899,200	A	8/1975	Gamble
3,921,656	A	11/1975	Meisenheimer, Jr. et al.
3,979,934	A	9/1976	Isenmann
3,990,674	A	11/1976	Schattenberg
4,025,049	A	5/1977	Schmidt
4,039,213	A	8/1977	Walters
4,072,330	A	2/1978	Brysch
4,099,748	A	7/1978	Kavick
4,113,627	A	9/1978	Leason
4,129,145	A	12/1978	Wynn
4,142,546	A	3/1979	Sandau
D252,470	S	7/1979	Pawlak
4,181,149	A	1/1980	Cox
4,182,519	A	1/1980	Wilson
D254,505	S	3/1980	Parsons et al.
4,200,605	A	4/1980	Imamura
D255,145	S	5/1980	Nederman
4,220,360	A	9/1980	Jacek et al.
D258,526	S	3/1981	Nederman
4,253,687	A	3/1981	Maples
D259,278	S	5/1981	McCaw
4,271,865	A	6/1981	Galloway et al.
4,282,175	A	8/1981	Volgstadt et al.
4,287,644	A	9/1981	Durand
4,294,285	A	10/1981	Joslyn
4,296,949	A	10/1981	Muetterties et al.
4,319,774	A	3/1982	Kavick
4,330,010	A	5/1982	Drescher et al.
4,330,142	A	5/1982	Paini
4,331,175	A	5/1982	Brake et al.
4,331,177	A	5/1982	Makishima
4,340,200	A	7/1982	Stegmeier
4,345,786	A	8/1982	Egert
4,346,703	A	8/1982	Dennehey
4,351,351	A	9/1982	Flory et al.
4,366,816	A	1/1983	Bayard et al.
4,393,548	A	7/1983	Herb
4,397,442	A	8/1983	Larkin
4,407,526	A	10/1983	Cicenas
4,431,031	A	2/1984	Ettlinger
4,431,218	A	2/1984	Paul
4,434,121	A	2/1984	Schaper
4,436,125	A	3/1984	Blenkush
4,437,689	A	3/1984	Goebel et al.

4,439,188	A		3/1984	Dennehey	
4,458,719	A		7/1984	Strybel	
4,489,914	A		12/1984	Stevenson et al.	
4,489,961	A		12/1984	Laidig	
4,500,118	A		2/1985	Blenkush	
4,527,745	A		7/1985	Butterfield et al.	
4,541,457	A		9/1985	Blenkush	
4,541,657	A		9/1985	Smyth	
4,553,587	A		11/1985	Traylor	
D282,962	S		3/1986	Gerber	
4,580,816	A		4/1986	Campbell et al.	
4,603,888	A		8/1986	Goodall et al.	
4,603,890	A		8/1986	Huppee	
4,613,112	A		9/1986	Phlipot et al.	
4,616,859	A	*	10/1986	Brunet	285/317
4,626,001	A		12/1986	Lee	
4,632,436	A		12/1986	Kimura	
4,635,972	A		1/1987	Lyall	
4,645,245	A		2/1987	Cunningham	
4,658,326	A		4/1987	Clark et al.	
4,659,116	A		4/1987	Cameron	
4,694,544	A		9/1987	Chapman	
4,699,298	A		10/1987	Grant et al.	
4,700,926	A		10/1987	Hansen	
4,703,957	A		11/1987	Blenkush	
4,706,847	A		11/1987	Sankey et al.	
4,712,280	A		12/1987	Fildan	
4,733,890	A		3/1988	Vyse	
4,738,401	A		4/1988	Filicicchia	
4,753,268	A		6/1988	Palau	
4,768,558	A		9/1988	Weber	
4,776,067	A		10/1988	Sorensen	
4,790,567	A		12/1988	Kawano et al.	
4,790,569	A		12/1988	Chaffee	
4,792,115	A		12/1988	Jindra et al.	
4,793,637	A		12/1988	Laipply et al.	
D300,361	S		3/1989	Tokarz	
4,824,148	A		4/1989	Grabowski	
4,827,921	A		5/1989	Rugheimer	
4,832,237	A		5/1989	Hurford, Jr.	
4,834,423	A		5/1989	DeLand	
4,844,512	A	*	7/1989	Gahwiler	285/39
4,863,201	A		9/1989	Carstens	
4,863,202	A		9/1989	Oldford	
4,896,402	A		1/1990	Jansen et al.	
4,900,065	A		2/1990	Houck	
4,903,995	A		2/1990	Blenkush et al.	
4,923,228	A		5/1990	Laipply et al.	
4,928,999	A		5/1990	Landriault et al.	
4,934,655	A		6/1990	Blenkush et al.	
4,935,992	A		6/1990	Due	
4,946,204	A		8/1990	Boticki	
4,949,745	A		8/1990	McKeon	
4,966,398	A		10/1990	Peterson	
4,969,879	A		11/1990	Lichte	
D313,067	S		12/1990	Kotake et al.	
D313,277	S		12/1990	Haining	
D314,050	S		1/1991	Sone	
D314,233	S	*	1/1991	Medvick	D23/262
4,982,736	A		1/1991	Schneider	
4,991,880	A		2/1991	Bernart	
5,009,252	A		4/1991	Faughn	
5,015,014	A		5/1991	Sweeney	
5,029,908	A		7/1991	Belisaire	
5,033,777	A		7/1991	Blenkush	
D319,312	S		8/1991	Schneider	
5,052,725	A		10/1991	Meyer et al.	
5,074,601	A	*	12/1991	Spors et al.	285/308
5,076,615	A		12/1991	Sampson	
5,078,429	A		1/1992	Braut et al.	
5,085,472	A		2/1992	Guest	
5,090,448	A		2/1992	Truchet	
5,090,747	A		2/1992	Kotake	
5,094,482	A		3/1992	Petty et al.	
5,104,158	A		4/1992	Meyer et al.	
5,106,127	A		4/1992	Briet	
D326,155	S		5/1992	Boehringer et al.	
5,110,163	A		5/1992	Benson et al.	
5,112,084	A		5/1992	Washizu	
5,114,250	A		5/1992	Usui	
5,123,677	A		6/1992	Kreczko et al.	
5,143,381	A		9/1992	Temple	
5,160,177	A		11/1992	Washizu	
5,160,474	A		11/1992	Huff	
5,165,733	A		11/1992	Sampson	
5,169,161	A		12/1992	Jones	
D332,482	S		1/1993	Petty et al.	
5,176,406	A		1/1993	Straghan	
5,181,752	A		1/1993	Benson et al.	
D333,178	S		2/1993	Novy	
5,190,224	A		3/1993	Hamilton	
5,222,279	A		6/1993	Frano et al.	
5,228,724	A		7/1993	Godeau	
5,232,020	A		8/1993	Mason et al.	
D339,417	S		9/1993	Sampson et al.	
5,251,025	A		10/1993	Cooper et al.	
5,273,053	A		12/1993	Pohndorf	
5,297,826	A		3/1994	Percebois et al.	
5,316,041	A		5/1994	Ramacier, Jr. et al.	
5,318,332	A		6/1994	Hohmann et al.	
5,330,235	A		7/1994	Wagner et al.	
5,348,051	A		9/1994	Kallenbach	
5,348,354	A		9/1994	Badoureaux	
5,356,183	A		10/1994	Cole	
5,374,088	A		12/1994	Moretti et al.	
5,385,311	A		1/1995	Morikawa et al.	
5,385,331	A		1/1995	Allread et al.	
D357,307	S	*	4/1995	Ramacier et al.	D23/262
5,405,333	A		4/1995	Richmond	
5,405,339	A		4/1995	Kohnen et al.	
5,405,340	A		4/1995	Fageol et al.	
5,411,300	A		5/1995	Mitsui	
5,417,442	A		5/1995	Jornhagen	
5,421,622	A		6/1995	Godeau	
5,437,650	A		8/1995	Larkin et al.	
5,494,074	A		2/1996	Ramacier, Jr. et al.	
5,507,733	A		4/1996	Larkin et al.	
5,511,527	A		4/1996	Lorraine et al.	
D372,093	S		7/1996	Sampson et al.	
5,536,258	A		7/1996	Folden	
5,542,712	A		8/1996	Klinger et al.	
5,547,166	A		8/1996	Engdahl	
5,547,230	A		8/1996	Bank et al.	
5,553,895	A		9/1996	Karl et al.	
D375,160	S		10/1996	Sampson et al.	
5,568,946	A		10/1996	Jackowski	
5,595,217	A		1/1997	Gillen et al.	
5,601,317	A		2/1997	Crouse et al.	
5,607,190	A		3/1997	Exandier et al.	
5,617,609	A		4/1997	Bently	
5,620,025	A		4/1997	Lewin	
5,628,726	A		5/1997	Cotter	
D380,262	S		6/1997	Van Funderburk et al.	
D382,639	S		8/1997	Musgrave et al.	
5,681,062	A		10/1997	Fukao et al.	
5,682,662	A		11/1997	Coules et al.	
5,683,117	A		11/1997	Corbett et al.	
D387,147	S	*	12/1997	Vandermast et al.	D23/262
5,695,223	A		12/1997	Boticki	
D388,876	S		1/1998	Sampson	
5,709,244	A		1/1998	Patriquin et al.	
5,725,258	A	*	3/1998	Kujawski	285/308
5,737,810	A		4/1998	Krauss	
5,745,957	A		5/1998	Khokhar et al.	
5,746,414	A		5/1998	Weldon et al.	
5,762,646	A		6/1998	Cotter	
5,784,750	A		7/1998	Sankovic et al.	
5,799,987	A		9/1998	Sampson	
5,820,614	A		10/1998	Erskine et al.	
5,837,180	A		11/1998	Linder et al.	
5,845,943	A		12/1998	Ramacier, Jr. et al.	
5,855,568	A		1/1999	Battiato et al.	
5,879,033	A		3/1999	Hansel et al.	
5,882,047	A		3/1999	Ostrander et al.	
5,884,531	A		3/1999	Koenig	
D407,803	S		4/1999	Redman	
5,897,142	A		4/1999	Kulevsky	
5,911,367	A		6/1999	McInerney	

5,911,403	A		6/1999	deCler et al.
5,911,404	A		6/1999	Cheng
5,930,424	A		7/1999	Heimberger et al.
5,937,501	A		8/1999	Imgram
5,938,244	A		8/1999	Meyer
5,941,577	A		8/1999	Musellec
D413,967	S	*	9/1999	Yuen D23/262
5,957,898	A		9/1999	Jepson et al.
5,961,157	A		10/1999	Baron et al.
5,964,485	A		10/1999	Hame et al.
5,965,077	A		10/1999	Rowley et al.
5,975,489	A		11/1999	deCler et al.
5,984,378	A		11/1999	Ostrander et al.
5,988,704	A		11/1999	Ryhman
6,012,743	A		1/2000	Godeau et al.
6,015,171	A		1/2000	Schorn
D419,861	S		2/2000	Khokhar
6,019,348	A		2/2000	Powell
6,024,124	A		2/2000	Braun et al.
6,029,701	A		2/2000	Chaffardon et al.
6,032,691	A		3/2000	Powell et al.
6,041,805	A		3/2000	Gydesen et al.
D422,487	S		4/2000	Khokhar
6,050,297	A		4/2000	Ostrowski et al.
6,076,234	A		6/2000	Khokhar et al.
6,077,245	A		6/2000	Heinrich et al.
6,077,259	A		6/2000	Caizza et al.
6,082,401	A		7/2000	Braun et al.
6,086,044	A		7/2000	Guest
6,089,540	A		7/2000	Heinrichs et al.
6,099,045	A		8/2000	Pirona
6,112,855	A		9/2000	Camacho et al.
6,123,690	A		9/2000	Mejslov
6,135,150	A		10/2000	Powell et al.
6,135,992	A		10/2000	Wang
6,142,538	A		11/2000	Volgstadt et al.
6,145,896	A		11/2000	Vitel et al.
6,152,914	A		11/2000	Van De Kerkhof et al.
6,155,610	A		12/2000	Godeau et al.
6,161,578	A		12/2000	Braun et al.
6,176,523	B1		1/2001	Winslett
6,182,694	B1		2/2001	Sievers et al.
6,189,560	B1		2/2001	Reynolds
6,199,915	B1		3/2001	Becker
6,199,919	B1		3/2001	Kawasaki et al.
6,199,920	B1		3/2001	Neustadtl
6,221,064	B1		4/2001	Nadal
6,231,089	B1		5/2001	DeCler et al.
D444,054	S		6/2001	Bernard et al.
6,250,688	B1		6/2001	Kirby
6,257,626	B1		7/2001	Campau
6,260,851	B1		7/2001	Baron
6,261,282	B1		7/2001	Jepson et al.
6,293,596	B1		9/2001	Kinder
6,296,796	B1		10/2001	Gordon
6,302,147	B1		10/2001	Rose et al.
6,318,764	B1		11/2001	Trede et al.
6,344,033	B1		2/2002	Jepson et al.
D459,206	S		6/2002	Caveney et al.
6,402,207	B1		6/2002	Segal et al.
6,422,574	B1		7/2002	Mooklar
6,423,053	B1		7/2002	Lee
6,439,620	B1		8/2002	Guest
6,454,314	B1		9/2002	Grosspietsch et al.
6,481,758	B1		11/2002	Andre et al.
6,481,759	B1		11/2002	Kawasaki et al.
6,485,064	B1		11/2002	Davidson
6,485,483	B1		11/2002	Fujii
6,505,866	B1		1/2003	Nakamura et al.
6,508,807	B1		1/2003	Peters
6,520,546	B2	*	2/2003	Szabo 285/308
D471,261	S		3/2003	Kozu
6,540,263	B1		4/2003	Sausner
6,543,745	B1		4/2003	Enerson
6,595,964	B2		7/2003	Finley et al.
6,609,696	B2		8/2003	Enerson
6,612,634	B1		9/2003	Zoppas
6,626,465	B2		9/2003	Lacroix et al.
D481,125	S		10/2003	Hayamizu
6,641,177	B1		11/2003	Pinciaro
6,649,829	B2		11/2003	Garber et al.
6,652,007	B1		11/2003	Hwang
D484,241	S		12/2003	Peters et al.
6,669,681	B2		12/2003	Dudar et al.
6,676,172	B2		1/2004	Alksnis
D486,909	S		2/2004	Cise et al.
6,688,654	B2	*	2/2004	Romero 285/308
6,692,038	B2		2/2004	Braun
6,695,817	B1		2/2004	Fangrow
6,722,705	B2		4/2004	Korkor
6,722,708	B2		4/2004	Morohoshi et al.
6,762,365	B2		7/2004	Inoue et al.
6,767,017	B2		7/2004	Crapart et al.
D495,050	S		8/2004	Guala
6,783,520	B1		8/2004	Candray et al.
D497,428	S		10/2004	Hayamizu
6,799,747	B1		10/2004	Lai
D498,533	S		11/2004	Hayamizu
6,814,726	B1		11/2004	Lauer
6,840,277	B1		1/2005	Nimberger
6,846,021	B2		1/2005	Rohde et al.
6,848,723	B2		2/2005	Lamich
6,863,314	B2		3/2005	Guest
6,871,878	B2		3/2005	Miros
D503,778	S		4/2005	Wicks
6,886,803	B2		5/2005	Mikiya et al.
6,897,374	B2		5/2005	Garber et al.
6,899,315	B2		5/2005	Maiville et al.
D507,647	S		7/2005	Beck et al.
6,916,007	B2		7/2005	deCler et al.
6,916,050	B2		7/2005	Milhas
6,929,246	B2		8/2005	Arzenton et al.
6,945,273	B2		9/2005	Reid
6,949,084	B2		9/2005	Marggi et al.
6,997,486	B2		2/2006	Milhas
6,997,919	B2		2/2006	Olsen et al.
7,005,581	B2		2/2006	Burnette
7,011,342	B2		3/2006	Guivarc'h et al.
7,014,214	B2		3/2006	Kaneko
D522,109	S		5/2006	White et al.
7,044,161	B2		5/2006	Tiberghien
7,044,506	B2	*	5/2006	Dong 285/319
D523,553	S		6/2006	Beck et al.
7,081,223	B2		7/2006	Khoury
7,108,297	B2	*	9/2006	Takayanagi et al. 285/319
7,118,138	B1		10/2006	Rowley et al.
7,128,348	B2		10/2006	Kawamura et al.
7,137,654	B2		11/2006	Segal et al.
7,140,592	B2		11/2006	Phillips
7,147,252	B2		12/2006	Teuscher et al.
7,150,478	B2		12/2006	Poirier et al.
7,153,296	B2		12/2006	Mitchell
D540,944	S		4/2007	Guala
7,210,917	B2		5/2007	Lai et al.
D550,355	S		9/2007	Racz et al.
D557,409	S		12/2007	Veliss et al.
D564,660	S		3/2008	Hayashi
7,343,931	B2		3/2008	Packham
D567,340	S		4/2008	Tiberghien
D569,955	S	*	5/2008	Chen D23/262
7,377,553	B2		5/2008	Takayanagi
D570,457	S	*	6/2008	Brown D23/262
7,390,029	B2	*	6/2008	Matsubara 285/321
7,434,842	B2		10/2008	Schmidt
7,434,846	B2		10/2008	Baumgartner
7,448,653	B2		11/2008	Jensen et al.
7,464,970	B2		12/2008	Yamada et al.
7,467,813	B2		12/2008	Gunderson
7,469,472	B2		12/2008	DeCler et al.
7,478,840	B2		1/2009	Youssefifar
7,494,156	B2		2/2009	Okada
7,503,595	B2		3/2009	McKay
7,516,990	B2		4/2009	Jamison et al.
7,547,047	B2		6/2009	deCler et al.
D595,845	S		7/2009	Miros et al.
D595,846	S		7/2009	Racz et al.
D596,739	S		7/2009	Ng et al.
7,562,906	B2		7/2009	Schmidt

7,566,077	B2	7/2009	Tsurumi	
7,581,763	B2	9/2009	Salomon-Bahls	
7,614,666	B2	11/2009	Eggert et al.	
7,647,954	B2	1/2010	Garber et al.	
7,666,178	B2	2/2010	McMichael	
D612,021	S	3/2010	Schmidt	
7,677,608	B2 *	3/2010	Takayanagi	285/319
D613,853	S	4/2010	Ng et al.	
7,695,020	B2	4/2010	Schmidt	
7,731,244	B2	6/2010	Miros et al.	
D619,706	S	7/2010	Schon et al.	
7,770,939	B2	8/2010	Jensen et al.	
7,806,139	B2	10/2010	Packham et al.	
D629,894	S	12/2010	Lombardi, III et al.	
7,849,877	B2	12/2010	Tan et al.	
D630,320	S	1/2011	Lombardi, III et al.	
7,878,553	B2	2/2011	Wicks et al.	
D634,840	S	3/2011	Lombardi, III et al.	
2001/0017466	A1	8/2001	Braun	
2002/0022762	A1	2/2002	Beane et al.	
2002/0093192	A1	7/2002	Matkovich	
2002/0140172	A1	10/2002	Platusich	
2002/0156344	A1	10/2002	Pasricha et al.	
2002/0185861	A1	12/2002	Inoue	
2003/0004397	A1	1/2003	Kameya et al.	
2003/0067162	A1	4/2003	Welsh et al.	
2003/0193188	A1	10/2003	Miros	
2003/0230894	A1	12/2003	Cleveland et al.	
2004/0021318	A1	2/2004	Fritze et al.	
2004/0056484	A1	3/2004	Kwon et al.	
2004/0094903	A1	5/2004	Sutherland	
2004/0195830	A1	10/2004	Gilmour	
2004/0199143	A1	10/2004	Lauer	
2004/0227346	A1	11/2004	Jamison et al.	
2004/0232696	A1	11/2004	Andre	
2005/0033237	A1	2/2005	Fentress et al.	
2005/0057042	A1	3/2005	Wicks	
2005/0082828	A1	4/2005	Wicks et al.	
2005/0087981	A1	4/2005	Yamada et al.	
2005/0209583	A1	9/2005	Powers et al.	
2005/0217265	A1	10/2005	Popp et al.	
2005/0242579	A1	11/2005	Bright et al.	
2005/0275220	A1	12/2005	Shu	
2006/0066100	A1	3/2006	Nakashima et al.	
2006/0152003	A1	7/2006	Slunick et al.	
2006/0264814	A1	11/2006	Sage	
2006/0293629	A1	12/2006	Cote, Sr. et al.	
2007/0025811	A1	2/2007	Wilhelm	
2007/0029795	A1	2/2007	Moner et al.	
2007/0029796	A1 *	2/2007	Bibby	285/308
2007/0106213	A1	5/2007	Spera et al.	
2007/0137718	A1	6/2007	Rushlander et al.	
2007/0169825	A1	7/2007	Packham et al.	
2007/0209716	A1	9/2007	Rankin	
2007/0284875	A1	12/2007	Salomon-Bahls et al.	
2008/0011703	A1	1/2008	Schmeisser et al.	
2008/0012314	A1	1/2008	Harger et al.	
2008/0018105	A1	1/2008	Le Bars	
2008/0048448	A1	2/2008	Jamison et al.	
2008/0078464	A1	4/2008	Loewe	
2008/0111371	A1	5/2008	Feger et al.	
2008/0111372	A1	5/2008	Trede et al.	
2008/0129047	A1	6/2008	Blivet et al.	
2008/0164694	A1	7/2008	Zdroik et al.	
2008/0191466	A1	8/2008	Knipple et al.	
2008/0200901	A1	8/2008	Rasmussen et al.	
2008/0277923	A1	11/2008	Brandt et al.	
2008/0277924	A1	11/2008	Jensen et al.	
2008/0284167	A1	11/2008	Lim et al.	
2008/0287920	A1	11/2008	Fangrow et al.	
2009/0079187	A1	3/2009	Malone	
2009/0127847	A1	5/2009	Hagen et al.	
2009/0129047	A1	5/2009	Park et al.	
2009/0140519	A1	6/2009	Pavnaskar et al.	
2009/0167018	A1	7/2009	Lien	
2009/0187166	A1	7/2009	Young	
2009/0188575	A1	7/2009	Williams et al.	
2009/0256355	A1	10/2009	Wicks et al.	
2010/0001516	A1	1/2010	Pisula, Jr. et al.	
2010/0056975	A1	3/2010	Dale et al.	
2010/0185040	A1	7/2010	Uber et al.	
2010/0194100	A1 *	8/2010	Koch	285/256
2010/0276922	A1 *	11/2010	Rehder et al.	285/26
2010/0295295	A1	11/2010	Schmidt	
2010/0301599	A1	12/2010	Jensen et al.	
2010/0319796	A1	12/2010	Whitaker	
2011/0012340	A1	1/2011	Packham et al.	

FOREIGN PATENT DOCUMENTS

DE	3533000	3/1987
DE	4122455	1/1993
DE	19800050	7/1998
DE	102005015343	10/2006
EP	0360634	3/1990
EP	0390746	10/1990
EP	0267067	7/1991
EP	0482277	4/1992
EP	0592823	4/1994
EP	0865779	9/1998
EP	0877891	11/1998
EP	0890054	1/1999
EP	0982525	3/2000
EP	1497582	1/2005
EP	1564469	8/2005
EP	1843074	10/2007
FR	2031965	11/1970
FR	2429370	1/1980
FR	280871	10/2001
FR	2853043	10/2004
FR	2870921	12/2005
GB	583459	12/1946
GB	890775	3/1962
GB	2177769	1/1987
GB	2218166	11/1989
GB	2271157	4/1994
GB	2379253	3/2003
JP	53-006918	1/1978
JP	5-223189	8/1993
JP	7-145889	6/1995
JP	10-169869	6/1998
JP	11-82849	3/1999
JP	2003-42363	2/2003
JP	2003-42368	2/2003
WO	WO 93/17270	9/1993
WO	WO 95/08732	3/1995
WO	WO 00/79172	12/2000
WO	WO 2004/104466	12/2004
WO	WO 2005/064216	7/2005
WO	WO 2006/031958	3/2006
WO	WO 2006/073778	7/2006
WO	WO 2006/084171	8/2006
WO	WO2006/135666	12/2006
WO	WO 2007/038222	4/2007
WO	WO 2007/116387	10/2007
WO	WO 2007/120620	10/2007
WO	WO 2008/023021	2/2008
WO	WO 2009/026441	2/2009

OTHER PUBLICATIONS

Stackable Hose Barb Elbow—1/2" CTS x 1/2 ID Barb, http://www.freshwatersystems.com/p-1714-stackable-hose-barb-elbow-12-cts-x-12-id-barb.aspx?affiliatied=10052&utm_source=shopzilla&utm_medium=Feed&utm_campaign=Product&utm_term=3512-1008, date accessed Sep. 14, 2009, 1 page.

About Us [online], Thuro Metal Products [retrieved on Apr. 9, 2010], retrieved from the Internet: <URL: http://www.thurometal.com/about.html>, 2 pages.

Barbed Tee Adapter, 1/2 in to 2/8 in to 1/2 in [Item # F1728], http://www.horticulturesource.com/product_info.php/products_id/4016/language/en; dated accessed Sep. 14, 2009, 3 pages.

Brochure, "Precision Components", Value Plastics, Inc., 2002, 132 pages.

Capabilities [online], Jay Manufacturing Corp., retrieved on Apr. 9, 2010, retrieved from the Internet: <URL: http://www.jaymfg.com/capabilities.htm>, 2 pages.

Flojet "Quick Connect" Port System Adapter 90 Elbow Type Quad Port X 1/2" Hose Barb, http://www.amazon.com/Quick-Connect-Port-System-Quad-Barb-90/dp/B0000AZ771/ref=sr_1_16?s=sporting-goods&ie=UTF8&qid=1300220596&sr=1-16, date accessed Sep. 14, 2009; 3 pages.
Mills, The Process of Vacuum-forming Plastic Parts, IPFrontline.com [online], retrieved on Apr. 9, 2010, retrieved from the Internet: <URL:http://www.ipfrontline.com/depts/article.asp?id=453&deptid=2>, 3 pages.
Nylon, Polypropylene Kynar (PVDF) Plastic Fittings for Flexible Tubing & Hose, http://www.omega.com/pdf/tubing/fittings_tubing_hose/nylon_poly_kynar/nylon.asp; dated accessed Sep. 14, 2009, 2 pages.
Science of Hose Barbs, Colder Products Company, http://www.pddnet.com/article-the-science-of-hose-barbs/, date accessed Sep. 4, 2009, 6 pages.
Stainless Steel Overview: History [online], Stainless Steel Industry of North America, retrieved on Apr. 9, 2010, retrieved from the Internet: <URL:http://www.ssina.com/overview/history.html>, 1 page.

* cited by examiner

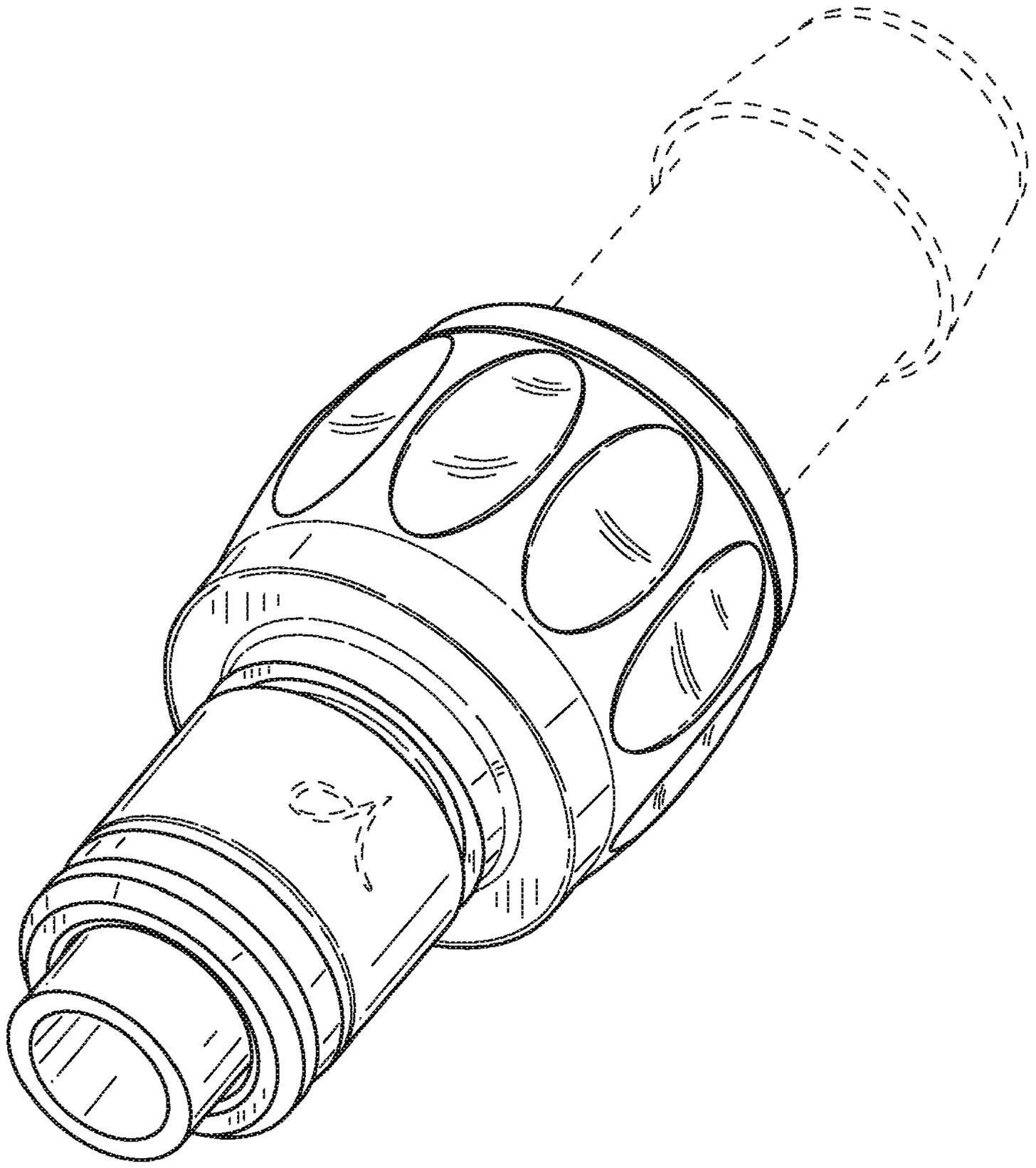


FIG. 1

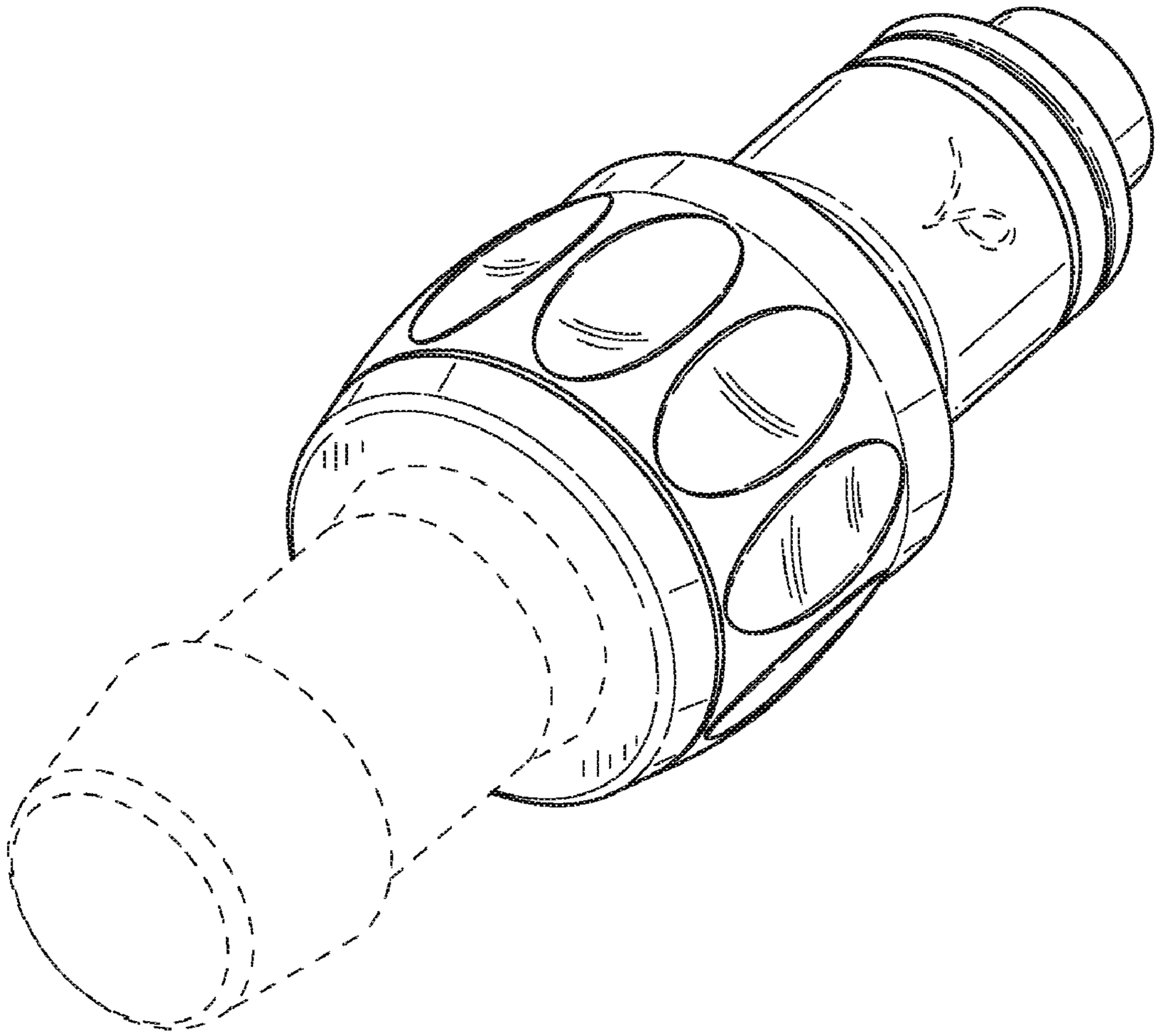


FIG.2

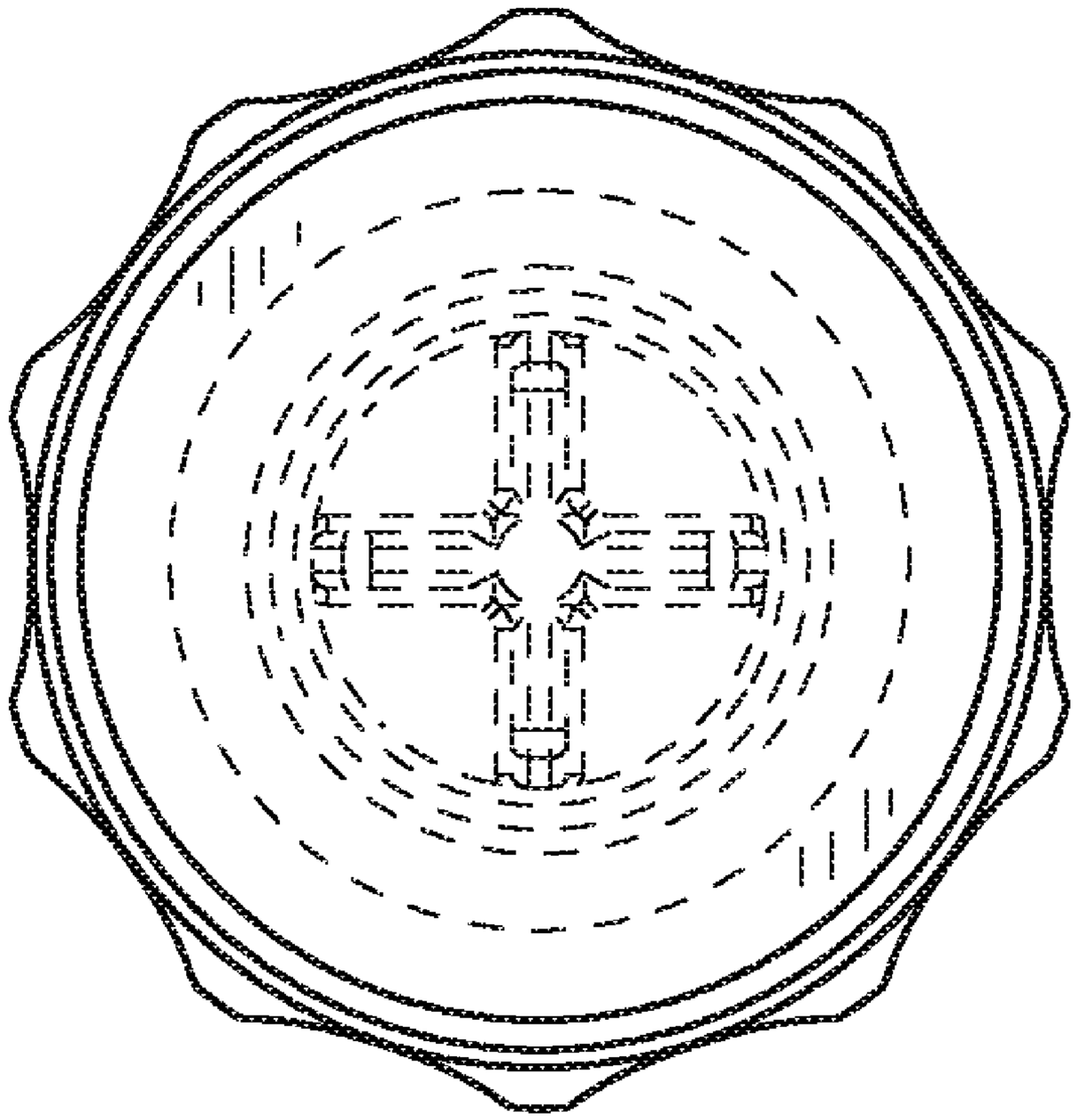


FIG.3

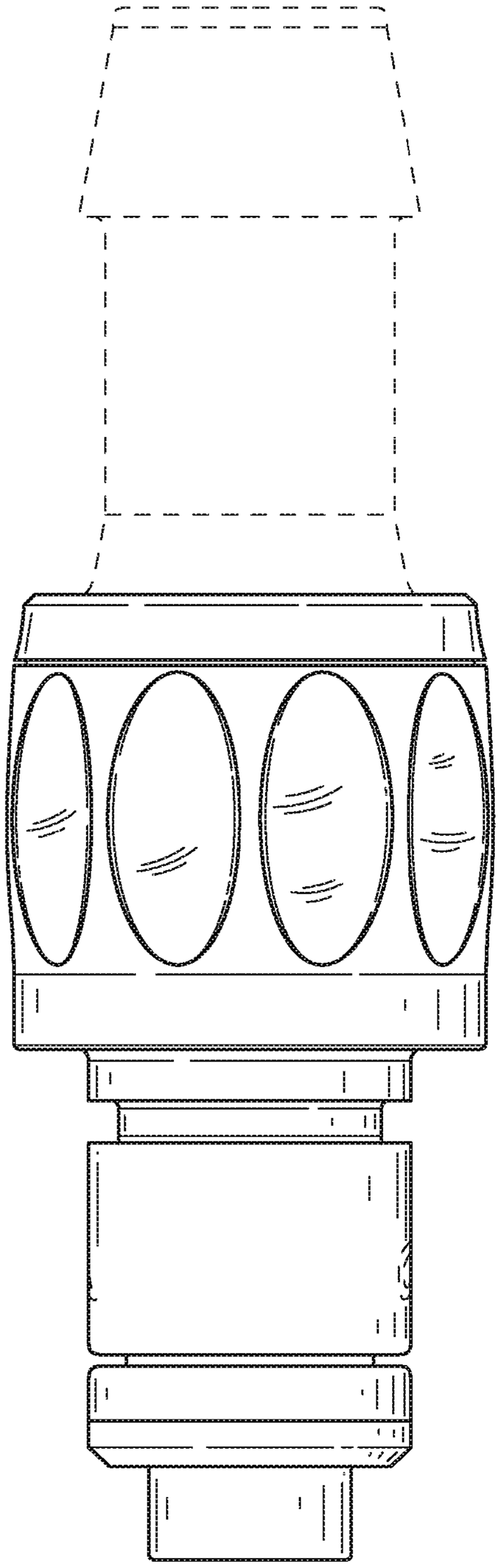


FIG.4

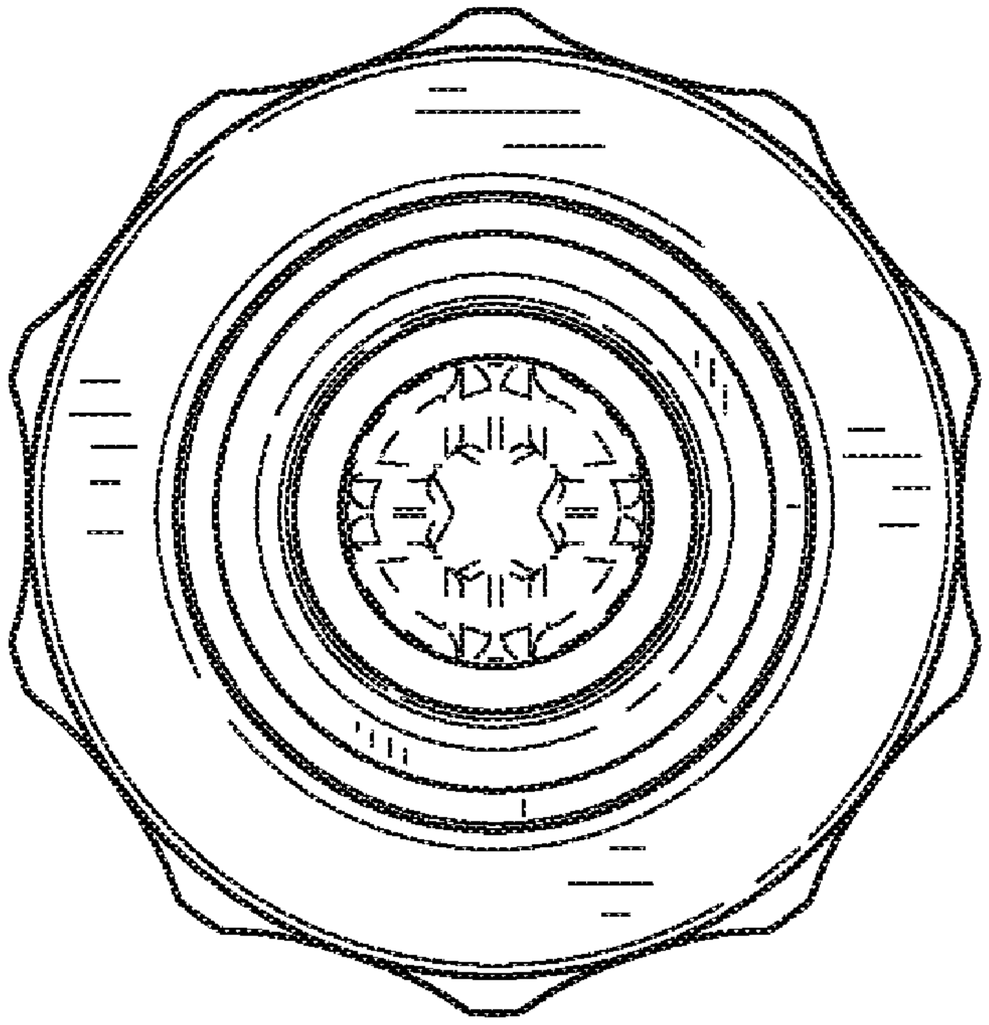


FIG.5

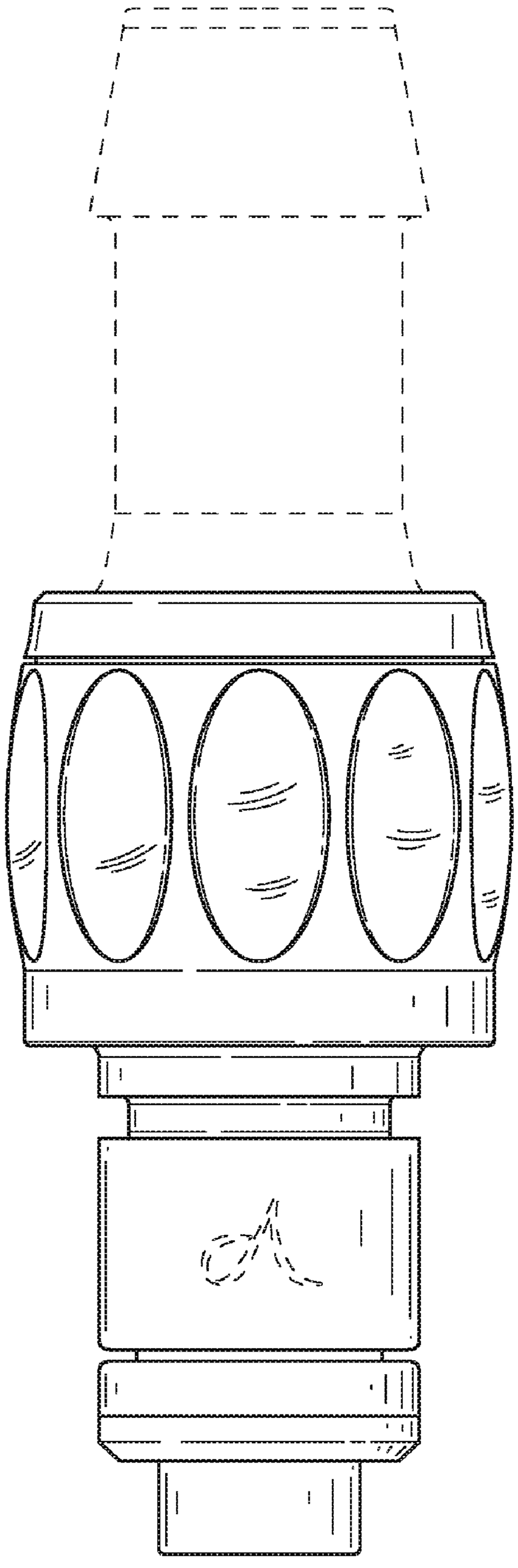


FIG.6

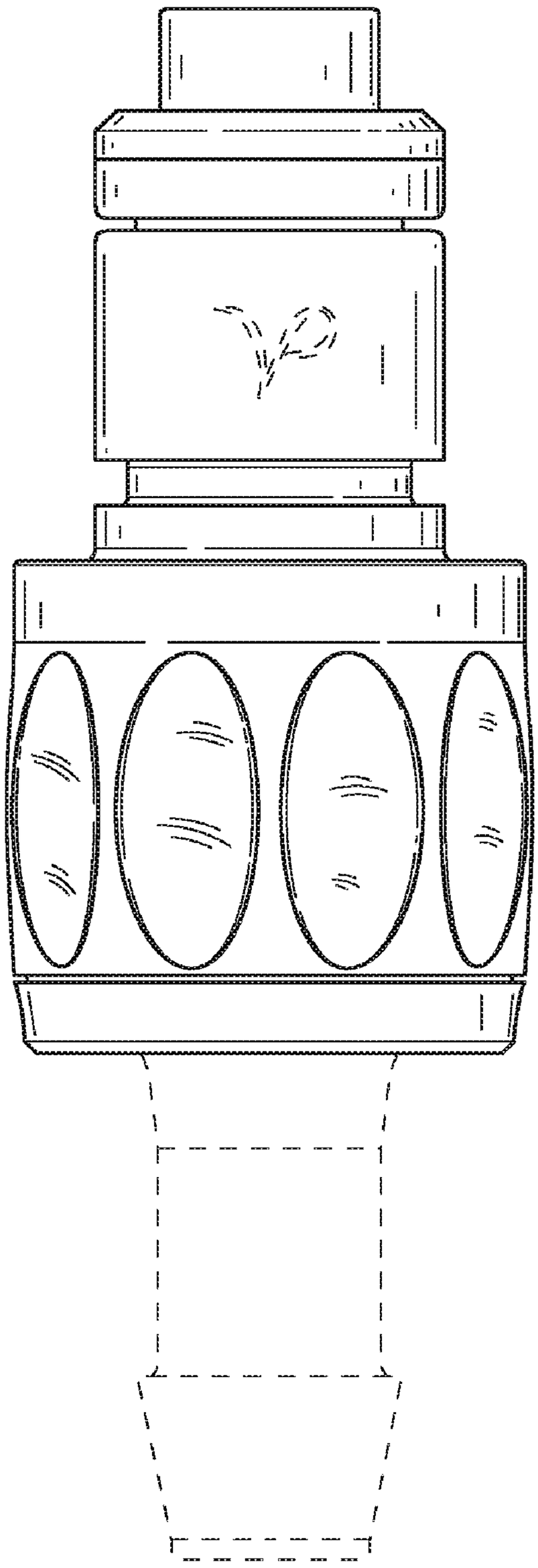


FIG.7