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(54) **IMPLANT DELIVERY APPARATUS**

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(51) **LOC (12) Cl.** **24-02**

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USPC **D24/133**; D24/127

(58) **Field of Classification Search**
USPC D24/133, 140, 146, 150, 155, 157, 127; 606/107–108
CPC .. A61F 9/0017; A61F 9/00781; A61F 9/0008; A61F 9/00709; A61F 9/00736; A61F 2/14
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

2,269,963	A	1/1942	Frederick
3,416,530	A	12/1968	Ness
3,439,675	A	4/1969	Cohen
3,948,271	A	4/1976	Aklyama
3,948,871	A	4/1976	Butterfield et al.
3,976,077	A	8/1976	Kerfoot, Jr.
4,113,088	A	9/1978	Binkhorst
4,299,227	A	11/1981	Lincoff
4,366,582	A	1/1983	Faulkner
4,449,529	A	5/1984	Burns et al.
4,501,274	A	2/1985	Skjaerpe
4,560,383	A	12/1985	Leiske
4,578,058	A	3/1986	Grandon

(Continued)

FOREIGN PATENT DOCUMENTS

AU	200072059	A1	7/2001
AU	2004264913		12/2011

(Continued)

OTHER PUBLICATIONS

De Juan et al., "Refinements in microinstrumentation for vitrous surgery," Am. J. Ophthalmol. 109:218-20 (1990).

(Continued)

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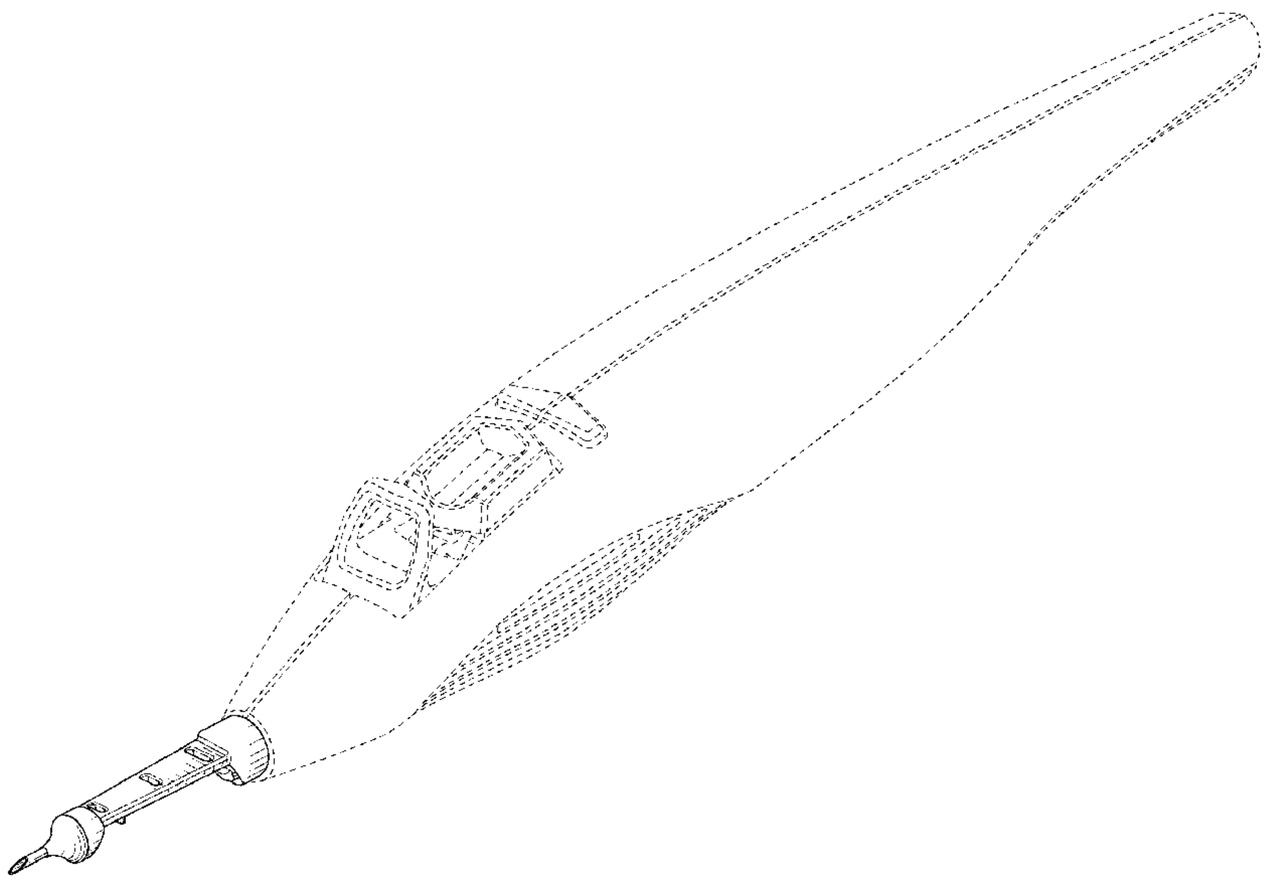
(57) **CLAIM**

The ornamental design for an implant delivery apparatus, as shown and described.

DESCRIPTION

FIG. **1** is a front, top, and left side perspective view of an implant delivery apparatus of our design;
FIG. **2** is a front view thereof;
FIG. **3** is a rear view thereof;
FIG. **4** is a right side view thereof;
FIG. **5** is a left side view thereof;
FIG. **6** is a top view thereof; and,
FIG. **7** is a bottom view thereof.
The broken lines shown in the figures are included for the purpose of illustrating portions of the implant delivery apparatus and form no part of the claimed design.

1 Claim, 4 Drawing Sheets



(56) **References Cited**

U.S. PATENT DOCUMENTS

4,634,418	A		1/1987	Binder
4,642,090	A		2/1987	Ultrata
4,782,819	A		11/1988	Adair
4,800,870	A		1/1989	Reid, Jr.
4,800,890	A		1/1989	Cramer
4,846,172	A		7/1989	Berlin
4,846,793	A		7/1989	Leonard et al.
4,867,173	A		9/1989	Leoni
4,870,953	A		10/1989	DonMicheal et al.
4,900,300	A		2/1990	Lee
4,905,667	A		3/1990	Foerster et al.
4,991,602	A		2/1991	Amplatz et al.
5,053,040	A		10/1991	Goldsmith, III
5,053,044	A		10/1991	Mueller et al.
5,095,887	A		3/1992	Leon et al.
5,129,895	A		7/1992	Vassiliadis et al.
5,169,386	A		12/1992	Becker et al.
5,180,362	A		1/1993	Worst
5,207,685	A		5/1993	Cinberg et al.
5,221,255	A		6/1993	Mahurkar et al.
5,246,451	A		9/1993	Trescony et al.
5,284,476	A		2/1994	Koch
5,290,295	A		3/1994	Querals et al.
5,324,306	A		6/1994	Makower et al.
5,342,370	A		8/1994	Simon et al.
5,360,399	A		11/1994	Stegmann
5,415,666	A		5/1995	Gourlay et al.
5,445,637	A		8/1995	Bretton
5,462,558	A		10/1995	Kolesa et al.
5,472,440	A		12/1995	Beckman
5,486,165	A		1/1996	Stegmann
5,556,400	A		9/1996	Tunis
5,558,637	A		9/1996	Allonen et al.
5,626,588	A		5/1997	Sauer et al.
5,643,321	A		7/1997	McDevitt
5,651,782	A		7/1997	Simon et al.
5,651,783	A		7/1997	Reynard
5,653,724	A		8/1997	Imonti
5,669,501	A		9/1997	Hissong et al.
5,676,679	A		10/1997	Simon et al.
5,681,323	A		10/1997	Arick
5,695,479	A		12/1997	Jagpal
5,702,414	A		12/1997	Richter et al.
5,702,419	A		12/1997	Berry et al.
5,725,546	A		3/1998	Samson
5,733,256	A		3/1998	Costin
5,741,292	A		4/1998	Mendius
5,762,625	A		6/1998	Igaki
5,792,099	A		8/1998	DeCamp et al.
5,807,244	A		9/1998	Barot
5,817,100	A		10/1998	Igaki
5,833,694	A		11/1998	Poncet
5,836,939	A		11/1998	Negus et al.
D402,757	S	*	12/1998	Davis D24/133
5,846,199	A		12/1998	Hijlkema et al.
5,865,831	A		2/1999	Cozean et al.
5,868,697	A		2/1999	Richter et al.
5,891,084	A		4/1999	Lee
5,893,837	A		4/1999	Eagles et al.
5,927,585	A		7/1999	Moorman et al.
5,941,250	A		8/1999	Aramant et al.
5,984,913	A		11/1999	Kritzinger et al.
6,004,302	A		12/1999	Brierley
6,030,416	A		2/2000	Huo et al.
6,036,678	A		3/2000	Giungo
6,036,682	A		3/2000	Lange et al.
6,045,557	A		4/2000	White et al.
6,050,999	A		4/2000	Paraschac et al.
6,071,286	A		6/2000	Mawad
6,074,395	A		6/2000	Trott et al.
6,135,977	A		10/2000	Drasler et al.
6,142,990	A		11/2000	Burk
6,146,387	A		11/2000	Trott et al.
6,187,016	B1		2/2001	Hedges et al.
6,221,078	B1		4/2001	Bylsma
6,224,570	B1		5/2001	Le et al.
6,254,612	B1		7/2001	Hieshima
6,264,668	B1		7/2001	Prywes
6,287,313	B1		9/2001	Sasso
6,299,603	B1		10/2001	Hecker et al.
6,342,058	B1		1/2002	Portney
6,355,033	B1		3/2002	Moorman et al.
6,361,519	B1		3/2002	Knudson et al.
6,363,938	B2		4/2002	Saadat et al.
6,375,642	B1		4/2002	Grieshaber et al.
6,378,526	B1		4/2002	Bowman
6,402,734	B1		6/2002	Weiss
6,405,732	B1		6/2002	Edwards et al.
6,428,501	B1		8/2002	Reynard
6,428,566	B1		8/2002	Holt
6,450,937	B1		9/2002	Mercereau et al.
6,454,787	B1		9/2002	Maddalo et al.
6,530,896	B1		3/2003	Elliott
6,544,249	B1		4/2003	Yu
6,561,974	B1		5/2003	Grieshaber et al.
6,582,426	B2		6/2003	Moorman et al.
6,585,680	B2		7/2003	Bugge
6,589,203	B1		7/2003	Mitrev
6,607,542	B1		8/2003	Wild
6,613,343	B2		9/2003	Dillingham et al.
6,620,154	B1		9/2003	Amirkhanian et al.
6,629,981	B2		10/2003	Bui et al.
6,638,239	B1		10/2003	Bergheim et al.
6,676,607	B2		1/2004	De Juan, Jr. et al.
6,699,272	B2		3/2004	Slepian et al.
D490,152	S		5/2004	Myall et al.
6,763,833	B1		7/2004	Khera et al.
6,764,439	B2		7/2004	Schaaf et al.
6,767,346	B2		7/2004	Damasco et al.
6,780,165	B2		8/2004	Kadziauskas et al.
6,827,738	B2		12/2004	Willis et al.
6,902,577	B2		6/2005	Lipshitz et al.
6,955,656	B2		10/2005	Bergheim et al.
6,966,888	B2		11/2005	Cullen et al.
6,981,958	B1		1/2006	Gharib et al.
7,077,821	B2		7/2006	Durgin
7,077,848	B1		7/2006	de Juan et al.
7,090,681	B2		8/2006	Weber et al.
7,135,009	B2		11/2006	Tu et al.
7,135,016	B1		11/2006	Asia et al.
7,163,543	B2		1/2007	Smedley et al.
7,186,232	B1		3/2007	Smedley et al.
7,217,263	B2		5/2007	Humayun et al.
7,273,475	B2		9/2007	Tu et al.
7,297,130	B2		11/2007	Bergheim et al.
7,331,984	B2		2/2008	Tu et al.
7,344,528	B1		3/2008	Tu et al.
7,431,710	B2		10/2008	Tu et al.
7,468,065	B2		12/2008	Weber et al.
7,488,303	B1		2/2009	Haffner et al.
7,520,876	B2		4/2009	Ressemann et al.
D592,746	S		5/2009	Highley et al.
7,563,241	B2		7/2009	Tu et al.
D606,190	S		12/2009	Pruitt et al.
7,678,065	B2		3/2010	Haffner et al.
7,708,711	B2		5/2010	Tu et al.
7,713,228	B2		5/2010	Robin
7,758,624	B2		7/2010	Dorn et al.
7,771,388	B2		8/2010	Olsen et al.
7,857,782	B2		12/2010	Tu et al.
7,867,186	B2		1/2011	Haffner et al.
7,867,205	B2		1/2011	Bergheim et al.
7,879,001	B2		2/2011	Haffner et al.
7,879,079	B2		2/2011	Tu et al.
7,905,904	B2		3/2011	Stone et al.
7,931,660	B2		4/2011	Aranyi et al.
7,945,336	B2		5/2011	Sauter-Starace et al.
7,959,632	B2		6/2011	Fugo
7,967,772	B2		6/2011	McKenzie et al.
8,007,459	B2		8/2011	Haffner et al.
D645,489	S		9/2011	Gille et al.
D645,490	S		9/2011	Gille et al.
8,062,244	B2		11/2011	Tu et al.
8,075,511	B2		12/2011	Tu et al.

(56) **References Cited**

U.S. PATENT DOCUMENTS

8,118,768	B2	2/2012	Tu et al.	
8,142,364	B2	3/2012	Haffner et al.	
8,197,418	B2	6/2012	Lal et al.	
8,267,882	B2	9/2012	Euteneuer et al.	
8,273,050	B2	9/2012	Bergheim et al.	
8,333,742	B2	12/2012	Bergheim et al.	
8,337,445	B2	12/2012	Tu et al.	
8,348,877	B2	1/2013	Tu et al.	
8,506,515	B2	8/2013	Burns et al.	
8,540,659	B2	9/2013	Berlin	
8,579,846	B2	11/2013	Tu et al.	
8,617,094	B2	12/2013	Smedley et al.	
8,679,089	B2	3/2014	Berlin	
8,801,648	B2	8/2014	Bergheim et al.	
8,801,649	B2 *	8/2014	De Juan, Jr.	A61F 9/00781 604/8
8,808,219	B2	8/2014	Bergheim et al.	
8,814,820	B2	8/2014	Bergheim et al.	
8,852,137	B2	10/2014	Horvath et al.	
8,852,266	B2	10/2014	Brooks et al.	
8,998,983	B2 *	4/2015	Auld	A61F 2/167 606/107
9,066,782	B2	6/2015	Tu et al.	
9,155,654	B2	10/2015	Tu et al.	
9,155,656	B2 *	10/2015	Schaller	A61F 9/00781
9,173,775	B2	11/2015	Haffner et al.	
9,220,632	B2	12/2015	Smedley et al.	
9,301,875	B2	4/2016	Tu et al.	
9,554,940	B2	1/2017	Haffner et al.	
9,561,131	B2	2/2017	Tu et al.	
9,572,963	B2	2/2017	Tu et al.	
9,592,151	B2	3/2017	Rangel-Friedman et al.	
9,597,230	B2	3/2017	Haffner et al.	
9,603,738	B2	3/2017	Haffner et al.	
9,636,255	B2	5/2017	Haffner et al.	
9,849,027	B2	12/2017	Highley et al.	
9,987,472	B2	6/2018	Tu et al.	
9,993,368	B2	6/2018	Bergheim et al.	
10,188,551	B2 *	1/2019	Rangel-Friedman	A61F 9/00781
10,206,813	B2	2/2019	Haffner et al.	
10,271,989	B2	4/2019	Haffner et al.	
10,406,029	B2	9/2019	Tu et al.	
10,485,701	B2	11/2019	Haffner et al.	
10,492,950	B2	12/2019	Lynch et al.	
10,517,759	B2	12/2019	Crimaldi et al.	
2001/0000527	A1	4/2001	Yaron et al.	
2001/0025150	A1	9/2001	de Juan et al.	
2002/0052640	A1	5/2002	Bigus et al.	
2002/0072673	A1	6/2002	Yamamoto et al.	
2002/0111608	A1	8/2002	Baerveldt et al.	
2002/0120284	A1	8/2002	Schachar et al.	
2002/0120285	A1	8/2002	Schachar et al.	
2002/0133168	A1	9/2002	Smedley et al.	
2002/0143284	A1	10/2002	Tu et al.	
2002/0165522	A1	11/2002	Holmen	
2002/0177856	A1	11/2002	Richter et al.	
2003/0014021	A1	1/2003	Holmen	
2003/0014092	A1	1/2003	Neuhann	
2003/0060752	A1	3/2003	Bergheim et al.	
2003/0079329	A1	5/2003	Yaron et al.	
2003/0093084	A1	5/2003	Nissan et al.	
2003/0097117	A1	5/2003	Buono	
2003/0097151	A1	5/2003	Smedley et al.	
2003/0105456	A1	6/2003	Lin	
2003/0109907	A1	6/2003	Shadduck	
2003/0135149	A1	7/2003	Cullen et al.	
2003/0139729	A1	7/2003	Stegmann et al.	
2003/0195438	A1	10/2003	Petillo	
2003/0208217	A1	11/2003	Dan	
2003/0212383	A1	11/2003	Cote et al.	
2004/0088048	A1	5/2004	Richter et al.	
2004/0098122	A1	5/2004	Lee et al.	
2004/0102729	A1	5/2004	Haffner et al.	
2004/0147870	A1	7/2004	Burns et al.	
2004/0236343	A1	11/2004	Taylor et al.	
2004/0243227	A1	12/2004	Starksen et al.	
2004/0249404	A1	12/2004	Haefliger	
2004/0254517	A1	12/2004	Quiroz-Mercado et al.	
2004/0254520	A1	12/2004	Porteous et al.	
2005/0096639	A1	5/2005	Slatkine et al.	
2005/0125003	A1	6/2005	Pinchuk et al.	
2005/0165385	A1	7/2005	Simon	
2005/0171562	A1	8/2005	Criscuolo et al.	
2005/0209549	A1	9/2005	Bergheim et al.	
2005/0209672	A1	9/2005	George et al.	
2005/0240222	A1	10/2005	Shipp	
2005/0267478	A1	12/2005	Corradi et al.	
2005/0277864	A1	12/2005	Haffner et al.	
2006/0032507	A1	2/2006	Tu	
2006/0084907	A1	4/2006	Bergheim et al.	
2006/0106370	A1	5/2006	Baerveldt et al.	
2006/0116626	A1	6/2006	Smedley et al.	
2006/0155300	A1	7/2006	Stamper et al.	
2006/0195055	A1	8/2006	Bergheim et al.	
2006/0195056	A1	8/2006	Bergheim et al.	
2006/0200113	A1	9/2006	Haffner et al.	
2006/0210605	A1	9/2006	Chang et al.	
2006/0217741	A1	9/2006	Ghannoum	
2006/0241580	A1	10/2006	Mittelstein et al.	
2006/0241749	A1	10/2006	Tu et al.	
2007/0021653	A1	1/2007	Hattenbach et al.	
2007/0073275	A1	3/2007	Conston et al.	
2007/0078471	A1	4/2007	Schachar et al.	
2007/0118065	A1	5/2007	Pinchuk et al.	
2007/0118066	A1	5/2007	Pinchuk et al.	
2007/0123812	A1	5/2007	Pinchuk et al.	
2007/0123919	A1	5/2007	Schachar et al.	
2007/0149927	A1	6/2007	Itou et al.	
2007/0161981	A1	7/2007	Sanders et al.	
2007/0179471	A1	8/2007	Christian et al.	
2007/0191863	A1	8/2007	De Juan et al.	
2007/0276315	A1	11/2007	Haffner	
2007/0282244	A1	12/2007	Tu et al.	
2007/0287958	A1	12/2007	McKenzie et al.	
2007/0293873	A1	12/2007	Chang	
2008/0027304	A1	1/2008	Pardo et al.	
2008/0033351	A1	2/2008	Trogden et al.	
2008/0045878	A1	2/2008	Bergheim et al.	
2008/0051681	A1	2/2008	Schwartz	
2008/0058704	A1	3/2008	Hee et al.	
2008/0082078	A1	4/2008	Berlin	
2008/0091224	A1	4/2008	Griffis, III et al.	
2008/0097214	A1	4/2008	Meyers et al.	
2008/0097335	A1	4/2008	Trogden et al.	
2008/0108933	A1	5/2008	Yu et al.	
2008/0109037	A1	5/2008	Steiner et al.	
2008/0114440	A1	5/2008	Hlavka et al.	
2008/0125691	A1	5/2008	Yaron et al.	
2008/0140059	A1	6/2008	Schachar et al.	
2008/0147083	A1	6/2008	Vold et al.	
2008/0183289	A1	7/2008	Werblin	
2008/0188860	A1	8/2008	Vold	
2008/0200860	A1	8/2008	Tu et al.	
2008/0200923	A1	8/2008	Beckman et al.	
2008/0208176	A1	8/2008	Loh	
2008/0215062	A1	9/2008	Bowen et al.	
2008/0221501	A1	9/2008	Cote et al.	
2008/0228127	A1	9/2008	Burns et al.	
2008/0243156	A1	10/2008	John	
2008/0255545	A1	10/2008	Mansfield et al.	
2008/0269730	A1	10/2008	Dotson	
2008/0281250	A1	11/2008	Bergsneider et al.	
2008/0306429	A1	12/2008	Shields et al.	
2009/0043242	A1	2/2009	Bene et al.	
2009/0043321	A1	2/2009	Conston et al.	
2009/0043365	A1	2/2009	Friedland et al.	
2009/0112245	A1	4/2009	Haefliger	
2009/0124973	A1	5/2009	D'Agostino et al.	
2009/0132040	A1	5/2009	Frion et al.	
2009/0137983	A1	5/2009	Bergheim et al.	
2009/0137989	A1	5/2009	Kataoka	
2009/0138081	A1	5/2009	Bergheim et al.	
2009/0182421	A1	7/2009	Silvestrini et al.	

(56) **References Cited**

U.S. PATENT DOCUMENTS

2009/0198213	A1	8/2009	Tanaka	
2009/0204053	A1	8/2009	Nissan et al.	
2009/0227933	A1	9/2009	Karageozian	
2009/0227934	A1	9/2009	Eutenever et al.	
2009/0264813	A1	10/2009	Chang	
2009/0287233	A1	11/2009	Huculak	
2010/0004581	A1	1/2010	Brigatti et al.	
2010/0010416	A1	1/2010	Juan, Jr. et al.	
2010/0010452	A1	1/2010	Paques et al.	
2010/0030150	A1	2/2010	Paques et al.	
2010/0057093	A1	3/2010	Ide et al.	
2010/0076419	A1	3/2010	Chew et al.	
2010/0087774	A1	4/2010	Haffner et al.	
2010/0106073	A1	4/2010	Haffner et al.	
2010/0121248	A1	5/2010	Yu et al.	
2010/0121249	A1	5/2010	Yu et al.	
2010/0121342	A1	5/2010	Schieber et al.	
2010/0137981	A1	6/2010	Silvestrini et al.	
2010/0152626	A1	6/2010	Schwartz	
2010/0158980	A1	6/2010	Kopczynski et al.	
2010/0173866	A1	7/2010	Hee et al.	
2010/0185138	A1	7/2010	Yaron et al.	
2010/0185205	A1	7/2010	Novakovic et al.	
2010/0191103	A1	7/2010	Stamper et al.	
2010/0225061	A1	9/2010	Bath	
2010/0240987	A1	9/2010	Christian et al.	
2010/0255061	A1	10/2010	De Juan, Jr. et al.	
2010/0262174	A1	10/2010	Sretavan	
2010/0274258	A1	10/2010	Silvestrini et al.	
2010/0278898	A1	11/2010	Hughes et al.	
2010/0280317	A1	11/2010	Silvestrini et al.	
2011/0009874	A1	1/2011	Wardle et al.	
2011/0009958	A1	1/2011	Wardle et al.	
2011/0022065	A1	1/2011	Shipp	
2011/0028883	A1	2/2011	Juan, Jr. et al.	
2011/0028983	A1	2/2011	Silvestrini et al.	
2011/0046536	A1	2/2011	Stegmann et al.	
2011/0071524	A1	3/2011	Keller	
2011/0077626	A1	3/2011	Baerveldt et al.	
2011/0082385	A1	4/2011	Diaz et al.	
2011/0092878	A1	4/2011	Tu et al.	
2011/0092965	A1	4/2011	Slatkine et al.	
2011/0098629	A1	4/2011	Juan, Jr. et al.	
2011/0098809	A1	4/2011	Wardle et al.	
2011/0105987	A1	5/2011	Bergheim et al.	
2011/0112546	A1	5/2011	Juan, Jr. et al.	
2011/0118649	A1	5/2011	Stegmann et al.	
2011/0118835	A1	5/2011	Silvestrini et al.	
2011/0144641	A1	6/2011	Dimalanta, Jr. et al.	
2011/0202049	A1	8/2011	Jia et al.	
2011/0224597	A1	9/2011	Stegmann et al.	
2011/0230877	A1	9/2011	Huculak et al.	
2011/0257658	A1*	10/2011	Chen	A61F 2/1678 606/107
2011/0306915	A1	12/2011	De Juan, Jr. et al.	
2011/0319793	A1	12/2011	Hyhynen	
2011/0319806	A1	12/2011	Wardle	
2012/0016286	A1	1/2012	Silvestrini et al.	
2012/0022409	A1	1/2012	Gertner et al.	
2012/0022424	A1	1/2012	Yamamoto et al.	
2012/0022429	A1	1/2012	Silvestrini et al.	
2012/0035524	A1	2/2012	Silvestrini	
2012/0035525	A1	2/2012	Silvestrini	
2012/0065570	A1	3/2012	Yeung et al.	
2012/0071809	A1	3/2012	Tu et al.	
2012/0071908	A1	3/2012	Sorensen et al.	
2012/0078158	A1	3/2012	Haffner et al.	
2012/0078281	A1	3/2012	Cox et al.	
2012/0078362	A1	3/2012	Haffner et al.	
2012/0109040	A1	5/2012	Smedley et al.	
2012/0123439	A1	5/2012	Romoda et al.	
2012/0123440	A1	5/2012	Horvath et al.	
2012/0165721	A1	6/2012	Grabner et al.	
2012/0165722	A1	6/2012	Horvath et al.	
2012/0165723	A1	6/2012	Horvath et al.	
2012/0165933	A1	6/2012	Haffner et al.	
2012/0197175	A1	8/2012	Horvath et al.	
2012/0203262	A1	8/2012	Connors et al.	
2012/0220917	A1	8/2012	Silvestrini et al.	
2012/0232570	A1	9/2012	Jenson et al.	
2012/0238994	A1	9/2012	Nazzaro et al.	
2012/0259195	A1	10/2012	Haffner et al.	
2012/0271272	A1	10/2012	Hammack et al.	
2012/0283557	A1	11/2012	Berlin	
2012/0310137	A1	12/2012	Silvestrini	
2012/0323159	A1	12/2012	Wardle et al.	
2013/0006165	A1	1/2013	Eutenener et al.	
2013/0018295	A1	1/2013	Haffner et al.	
2013/0018296	A1	1/2013	Bergheim et al.	
2013/0018412	A1	1/2013	Journey et al.	
2013/0079701	A1	3/2013	Schieber et al.	
2013/0079759	A1	3/2013	Dotson et al.	
2013/0085507	A1*	4/2013	Nagasaka	A61F 9/0017 606/107
2013/0110125	A1	5/2013	Silvestrini et al.	
2013/0184631	A1	7/2013	Pinchuk	
2013/0245532	A1	9/2013	Tu et al.	
2013/0253404	A1	9/2013	Tu	
2013/0253405	A1	9/2013	Tu	
2013/0253528	A1	9/2013	Haffner et al.	
2013/0281910	A1	10/2013	Tu et al.	
2013/0289467	A1	10/2013	Haffner et al.	
2014/0052046	A1	2/2014	Peartree et al.	
2014/0081194	A1	3/2014	Burns et al.	
2014/0135916	A1	5/2014	Clauson et al.	
2014/0155803	A1	6/2014	Silvestrini	
2014/0207137	A1*	7/2014	Keller	A61F 9/00754 606/107
2014/0276332	A1	9/2014	Crimaldi et al.	
2014/0276901	A1*	9/2014	Auld	A61F 2/1662 606/107
2015/0065940	A1	3/2015	Glaukos Corporation	
2016/0151204	A1	6/2016	Haffner et al.	
2017/0273829	A1	9/2017	Tu et al.	
2017/0312124	A1	11/2017	Rangel-Friedman et al.	
2018/0021170	A1	1/2018	Haffner et al.	
2018/0177633	A1	6/2018	Haffner et al.	
2018/0325732	A1	11/2018	Burns et al.	
2019/0105077	A1*	4/2019	Kalina, Jr.	A61F 9/0017
2020/0155349	A1	5/2020	Haffner et al.	
2020/0179171	A1	6/2020	Crimaldi et al.	

FOREIGN PATENT DOCUMENTS

CA	2244646	A1	2/1999
CA	2643357		11/1999
CA	2766131	A1	1/2011
CH	92111244		7/1993
EM	000071071-0001		12/2003
EM	000071071-0002		12/2003
EM	000071071-0003		12/2003
EM	000097431-0001		12/2005
EM	000097431-0002		12/2005
EM	000097431-0003		12/2005
EP	0436232	A1	7/1991
EP	0858788	A1	8/1998
EP	2088976		8/2009
EP	2260803	A2	12/2010
EP	2351589		8/2011
EP	2982354	A1	2/2016
EP	2985012	A1	2/2016
JP	2005-533619		11/2005
JP	4031836	B2	1/2008
JP	2012-198134		9/2012
JP	2013-208434		10/2013
JP	2014-193366		10/2014
JP	2014-240022		12/2014
RU	2143250		12/1999
WO	WO 92/08406		5/1992
WO	WO 98/23237	A1	6/1998
WO	WO 98/37831		9/1998
WO	WO 99/26567	A1	6/1999
WO	WO 01/68016	A2	9/2001
WO	WO 01/85065		11/2001

(56) **References Cited**

FOREIGN PATENT DOCUMENTS

WO	WO 02/074052	A2	9/2002
WO	WO 03/041622		5/2003
WO	WO 03/045290	A1	6/2003
WO	WO 2005/107845		11/2005
WO	WO 08/061043	A2	5/2008
WO	WO 2008/083118		7/2008
WO	WO 2009/012406		1/2009
WO	WO 2009/126569		10/2009
WO	WO 2009/151543		12/2009
WO	WO 2010/006053	A1	1/2010
WO	WO 2010/078063	A1	7/2010
WO	WO 11/020633	A1	2/2011
WO	WO 13/148275		10/2013
WO	WO 14/151070		9/2014
WO	WO 2014/150292	A1	9/2014
WO	WO 2019/036025	A2	2/2019

OTHER PUBLICATIONS

Bucciarelli, Patrice D., Working Model is Next Step in Team's Long Journey to Commercial Product, Healthfirst, Business First of Louisville, louisville.bizjournals.com, Feb. 27, 2004.

https://entokey.com/gonioscopy-2/ Uploaded Oct. 2016.

Jordon, et al., "A Novel Approach to Suprachoroidal Drainage for the Surgical Treatment of Intractable Glaucoma," J Glaucoma 15(3): 200-205 (2006).

* cited by examiner

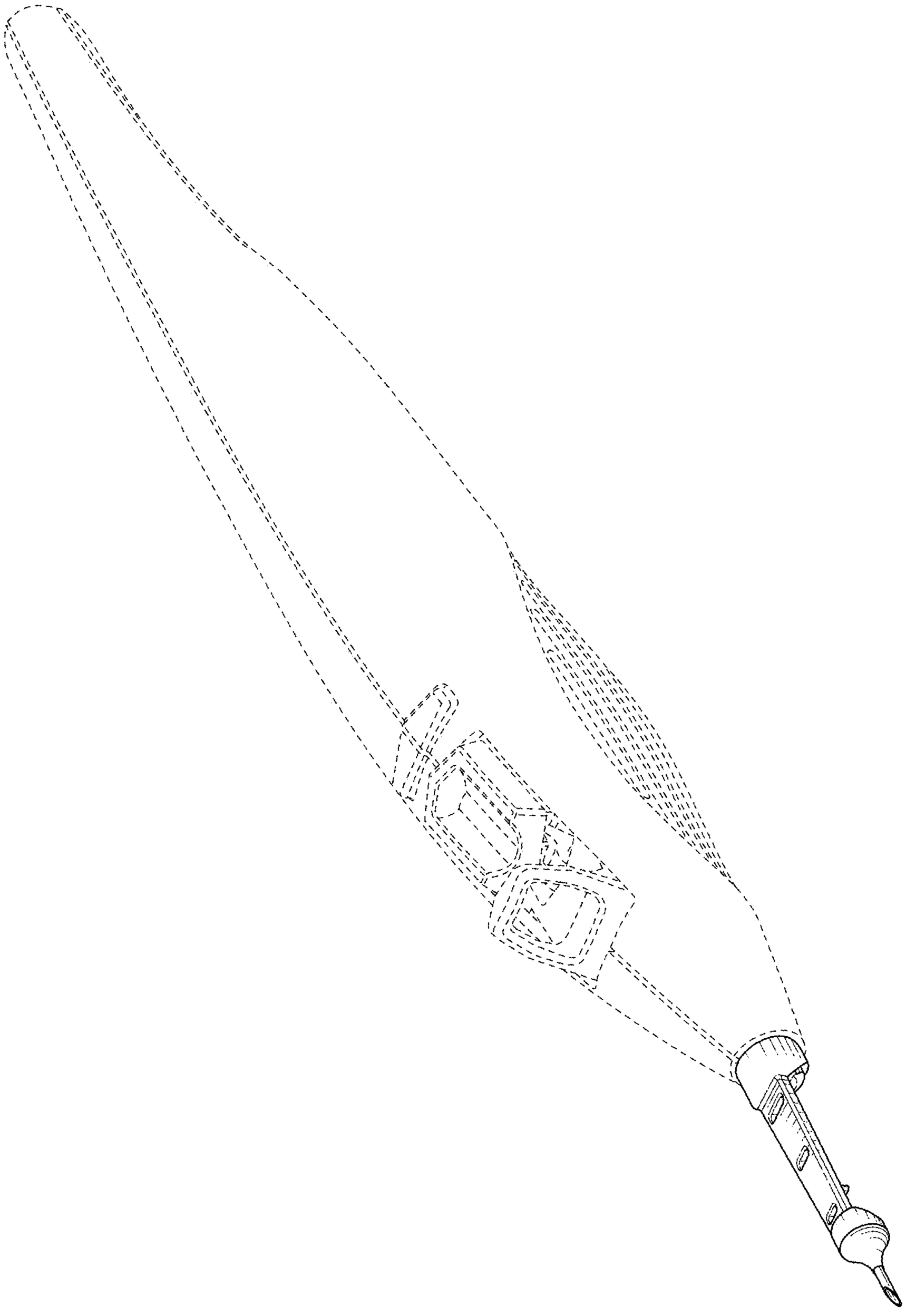


FIG. 1

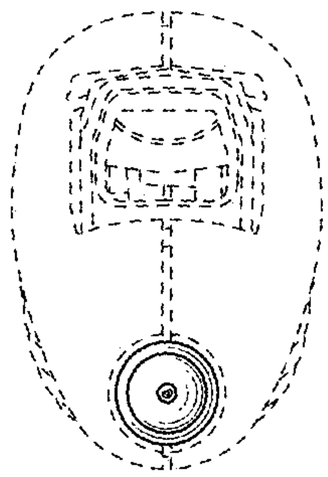


FIG. 2

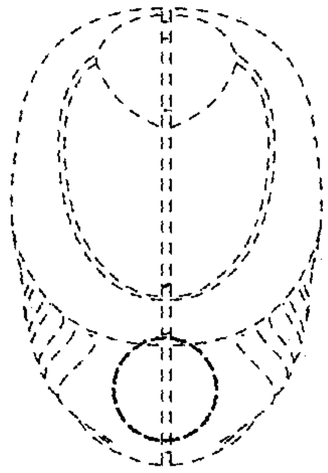


FIG. 3

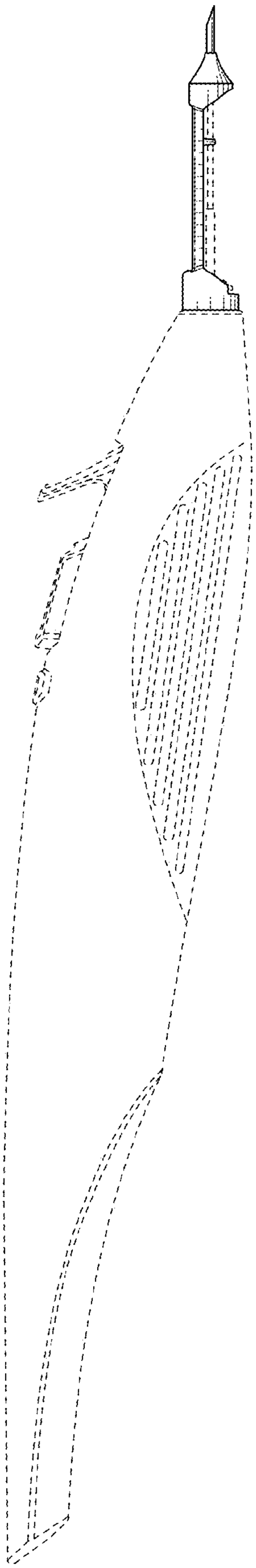


FIG. 4

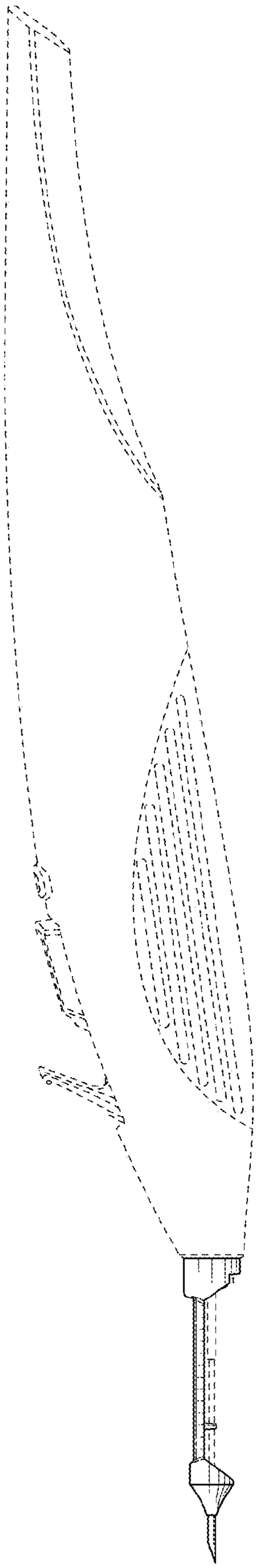


FIG. 5

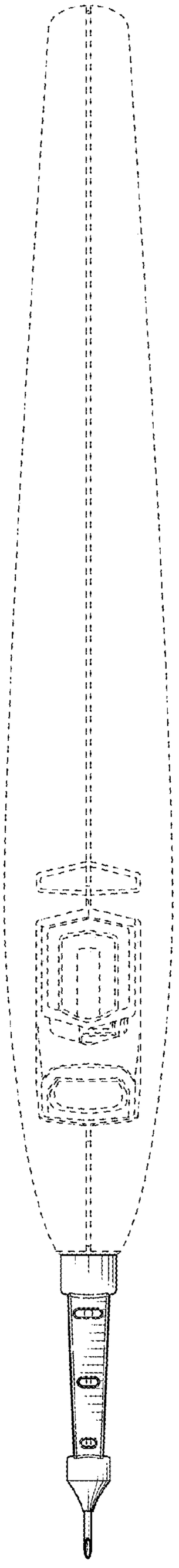


FIG. 6

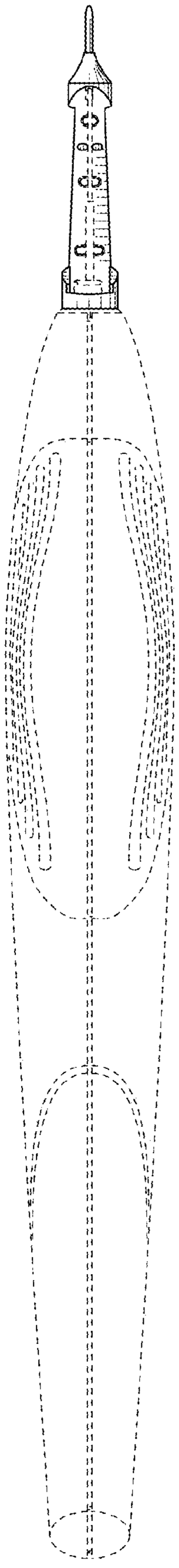


FIG. 7