



US00D976397S

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

(10) **Patent No.:** **US D976,397 S**

(45) **Date of Patent:** **** Jan. 24, 2023**

(54) **PLUNGER**

FOREIGN PATENT DOCUMENTS

(71) Applicant: **Medtronic, Inc.**, Minneapolis, MN (US)

BR 322015001944-0001 1/2018
CA 80812 5/1997

(Continued)

(72) Inventors: **Matthew T. Vanderpool**, Minneapolis, MN (US); **Michael R. Klardie**, Bloomington, MN (US); **Kris A. Peterson**, St. Louis Park, MN (US)

OTHER PUBLICATIONS

Response to Examination Report from counterpart European Application No. 18188908.0, dated May 26, 2021, filed Sep. 30, 2021, 24 pp.

(Continued)

(73) Assignee: **Medtronic, Inc.**, Minneapolis, MN (US)

Primary Examiner — Jonathan J Han
Assistant Examiner — Amanda J Berlinski

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

(74) *Attorney, Agent, or Firm* — Shumaker & Sieffert, P.A.

(21) Appl. No.: **29/803,142**

(22) Filed: **Aug. 10, 2021**

(57) **CLAIM**

The ornamental design for a plunger, as shown and described.

Related U.S. Application Data

(63) Continuation of application No. 29/748,588, filed on Aug. 31, 2020, which is a continuation of application (Continued)

(51) **LOC (14) Cl.** **24-02**

(52) **U.S. Cl.**
USPC **D24/130**

(58) **Field of Classification Search**
USPC D24/108, 112–114, 127, 129, 130, 133, D24/138, 146, 148, 186
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

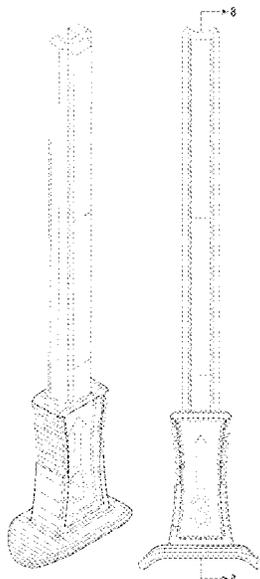
2,009,393 A 7/1935 Gioacchino
D138,589 S * 8/1944 Brandenburg D24/114
(Continued)

DESCRIPTION

FIG. 1 is a front perspective view of a plunger according to an embodiment of the present design; FIG. 2 is front elevation view of the plunger of FIG. 1; FIG. 3 is a rear elevation view of the plunger of FIG. 1; FIG. 4 is a left side view of the plunger of FIG. 1; FIG. 5 is a right side view of the plunger of FIG. 1; FIG. 6 is a top plan view of the plunger of FIG. 1; FIG. 7 is a bottom plan view of the plunger of FIG. 1; and, FIG. 8 is a cross-sectional view of the plunger of FIG. 1 taken in the plane of and the direction indicated by line 8-8 of FIG. 2, with a cross-sectional view taken in the plane of and in an opposite direction indicated by line 8-8 being a mirror image thereof.

The broken lines in the drawings are for the purpose of illustrating portions of the plunger that form no part of the claimed design. The dot-dash lines in the drawings represent the bounds of the claimed design and form no part thereof.

1 Claim, 4 Drawing Sheets



Related U.S. Application Data

No. 15/610,076, filed on May 31, 2017, now Pat. No. 10,786,279, which is a continuation of application No. 14/204,227, filed on Mar. 11, 2014.

- (60) Provisional application No. 61/788,940, filed on Mar. 15, 2013.
- (58) **Field of Classification Search**
 CPC A61M 5/31515; A61M 5/31511; A61M 5/31513; A61M 5/14526; A61J 7/0053; A61B 17/32093
 See application file for complete search history.

D620,591	S	7/2010	Young	
D634,424	S	3/2011	Morejon	
D646,783	S	10/2011	Bast et al.	
D660,418	S	5/2012	Kuczek et al.	
D667,111	S	9/2012	Robinson	
D668,760	S	10/2012	Kawamura	
D687,548	S *	8/2013	Hayashi	D24/130
D690,807	S *	10/2013	Ivosevic	A61M 25/0097 D24/130

D706,923	S	6/2014	Doerr et al.	
D707,356	S	6/2014	Vonck et al.	
D709,189	S	7/2014	Doerr et al.	
D715,431	S	10/2014	Vonck et al.	
8,888,745	B2	11/2014	Van Der Graaf et al.	
D733,289	S *	6/2015	Blanchard	A61M 25/0102 D24/112

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,175,554	A *	3/1965	Stewart	A61B 10/0266 D24/147
D214,112	S *	5/1969	Langdon	D24/114
D269,549	S *	6/1983	Gross	D24/112
D280,463	S	9/1985	Sheahan	
D282,008	S *	12/1985	McFarlane	D24/113
D300,177	S *	3/1989	Bellotti	D24/129
4,915,686	A	4/1990	Frederick	
5,098,389	A *	3/1992	Cappucci	A61M 5/46 604/164.11
5,127,404	A	7/1992	Wyborny et al.	
D338,955	S *	8/1993	Gresl	D24/146
D338,957	S	8/1993	de Faire et al.	
5,250,035	A *	10/1993	Smith	A61M 25/0606 604/168.01
D342,995	S *	1/1994	Simmons	D24/112
5,304,119	A	4/1994	Balaban et al.	
5,314,417	A	5/1994	Stephens et al.	
D350,195	S *	8/1994	Poulsen	D24/169
D350,605	S *	9/1994	Williams	D24/147
D353,454	S *	12/1994	Coombs	D24/112
5,484,403	A	1/1996	Yoakum et al.	
D374,162	S	10/1996	Martin	
5,562,613	A	10/1996	Kaldany	
5,582,595	A	12/1996	Haber et al.	
D378,130	S *	2/1997	Schmidt	D24/129
D379,515	S *	5/1997	Kuehn	D24/146
D388,171	S	12/1997	Fekete	
5,842,999	A	1/1998	Pruitt	
5,772,671	A	6/1998	Harmon	
D401,689	S *	11/1998	Sullivan	D24/130
D403,063	S *	12/1998	Brandhorst	D24/113
5,954,670	A	9/1999	Baker	
5,976,110	A *	11/1999	Greengrass	A61B 17/3401 604/512
5,987,352	A	11/1999	Klein et al.	
D425,198	S	5/2000	Porta	
6,230,059	B1	5/2001	Duffin	
D443,356	S *	6/2001	Pajunk	D24/112
D448,474	S	9/2001	Jansen et al.	
D449,379	S	10/2001	Fuhr	
D450,839	S	11/2001	Junker	
6,412,490	B1	7/2002	Lee	
D471,980	S *	3/2003	Caizza	D24/130
D492,032	S	6/2004	Muller et al.	
D492,775	S	7/2004	Doelling et al.	
7,035,684	B2	4/2006	Lee	
D526,183	S	8/2006	Jackson	
D538,933	S *	3/2007	Andrade	D24/146
D543,279	S	5/2007	Numata et al.	
D544,600	S *	6/2007	Wentling	D24/130
D549,327	S *	8/2007	Aparici	D24/133
D578,215	S *	10/2008	Helder	D24/128
D594,981	S *	6/2009	Bierman	D24/130
D597,667	S *	8/2009	Racz	D24/112
D600,093	S	9/2009	Lin	
D614,296	S	4/2010	Young	
D616,089	S *	5/2010	Van der Stappen	D24/113
D616,544	S *	5/2010	Chesnin	D24/130

D751,705	S	3/2016	Nitscherich, Jr. et al.	
D775,324	S *	12/2016	Larson	D24/114
D784,527	S *	4/2017	Llewellyn-Hyde	D24/127
D785,788	S	5/2017	Nguyen	
D787,664	S	5/2017	Grunhut	
D793,552	S	8/2017	Schiller et al.	
D800,303	S	10/2017	Ratjen	
D802,125	S	11/2017	Schiller et al.	
D806,861	S *	1/2018	Amano	D24/112
D811,591	S	2/2018	Bartley et al.	
D830,540	S	10/2018	Rolfs et al.	
D844,774	S *	4/2019	Akcay	A61M 25/0097 D24/112
D846,737	S *	4/2019	Karasawa	D24/130
D849,935	S	5/2019	Rolfs et al.	
D854,148	S *	7/2019	Prinz	D24/133
D865,949	S	11/2019	Mandaroux et al.	
D867,582	S	11/2019	Mandaroux et al.	
10,588,780	B2	3/2020	Van Noy et al.	
D883,480	S	5/2020	Leibowitz et al.	
D885,560	S	5/2020	Wang	
10,646,657	B2	5/2020	Dowds	
D893,708	S	8/2020	Trokel	
D893,710	S	8/2020	Neby	
10,786,279	B2	9/2020	Vanderpool et al.	
D903,108	S	11/2020	Scrimgeour et al.	
D905,232	S *	12/2020	Schifano	D24/112
D914,208	S	3/2021	Shabudin et al.	
2001/0029386	A1	10/2001	Matsutani et al.	
2004/0082969	A1	4/2004	Kerr	
2004/0193154	A1	9/2004	Leatherbury et al.	
2004/0249388	A1	12/2004	Michelson	
2005/0090852	A1	4/2005	Layne et al.	
2005/0096645	A1	5/2005	Wellman et al.	
2005/0107768	A1	5/2005	Ting	
2006/0052748	A1 *	3/2006	Coelho	A61M 5/3216 604/110
2006/0074434	A1	4/2006	Wenstrom et al.	
2006/0097331	A1	5/2006	Hattori et al.	
2006/0106415	A1	5/2006	Gabbay	
2006/0174898	A1	8/2006	Brown	
2007/0010738	A1	1/2007	Mark et al.	
2007/0179515	A1	8/2007	Matsutani et al.	
2007/0249992	A1	10/2007	Bardy	
2008/0154298	A1	6/2008	Grayzel et al.	
2009/0030426	A1	1/2009	Zinn et al.	
2009/0036917	A1	2/2009	Anderson	
2009/0137946	A1	5/2009	Nassiri et al.	
2010/0030227	A1	2/2010	Kast et al.	
2010/0094252	A1	4/2010	Wengreen et al.	
2010/0198140	A1	8/2010	Lawson	
2010/0318036	A1 *	12/2010	Kawamura	A61M 5/31511 604/189
2010/0324578	A1	12/2010	Bardy	
2010/0331868	A1	12/2010	Bardy	
2012/0283705	A1	11/2012	Lee et al.	
2014/0128963	A1	5/2014	Quill et al.	
2014/0276928	A1	9/2014	Vanderpool et al.	
2016/0175007	A1	6/2016	Valbuena et al.	
2016/0325048	A1 *	11/2016	Berry	A61M 5/31515
2017/0258346	A1	9/2017	Vanderpool et al.	
2020/0129206	A1	4/2020	Cornelius et al.	
2020/0383702	A1	12/2020	Vanderpool et al.	

(56)

References Cited

U.S. PATENT DOCUMENTS

2021/0106760	A1	4/2021	Kanazawa et al.
2021/0153895	A1	5/2021	Vanderpool et al.
2021/0267634	A1	9/2021	Vanderpool et al.
2021/0267635	A1	9/2021	Vanderpool et al.
2021/0267636	A1	9/2021	Vanderpool et al.
2021/0275221	A1	9/2021	Vanderpool et al.

FOREIGN PATENT DOCUMENTS

CN	1031481	A	3/1989
CN	2621634	Y	6/2004
CN	2702718	Y	6/2005
CN	301436611		1/2011
CN	202342097	U	7/2012
CN	306108102		10/2020
CN	306571877		5/2021
DE	469951	C	1/1929
DE	4243641	A1	9/1994
EA	2005044116	A2	5/2005
EM	008305346-0001		1/2021
EM	008305346-0002		1/2021
EP	3034128	A1	6/2016
FR	005597-001		1/2001
GB	6108588		12/2020
JP	2001502937	A	3/2001
JP	2007516031	A	6/2007
JP	2008528084	A	7/2008
JP	2011092065	A	5/2011
JP	1686263	D	5/2021
KR	300981706.0000		11/2018
KR	301087076.0000		12/2020
KR	301107388.0000		5/2021
WO	2005060306	A1	6/2005
WO	2008016551	A1	2/2008
WO	2009018008	A2	2/2009
WO	2012098356	A1	7/2012
WO	2014184321	A2	11/2014

OTHER PUBLICATIONS

Prosecution History from U.S. Appl. No. 17/329,986, dated Sep. 30, 2021, 17 pp.

Prosecution History from U.S. Appl. No. 17/323,298, dated Sep. 9, 2021, 16 pp.

Prosecution History from U.S. Appl. No. 17/325,873, dated Sep. 3, 2021, 14 pp.

Prosecution History from U.S. Appl. No. 17/325,904, dated Aug. 11, 2021 through Aug. 18, 2021, 25 pp.

U.S. Appl. No. 29/803,137, filed Aug. 10, 2021, naming inventors Vanderpool et al.

Prosecution History from U.S. Appl. No. 14/204,227, dated Nov. 5, 2015 through Sep. 8, 2021, 486 pp.

Communication pursuant to Article 94(3) EPC from counterpart European Application No. 18188908.0 dated Feb. 3, 2022, 5 pp.

Corrected Notice of Allowability from U.S. Appl. No. 14/204,227, dated Mar. 24, 2022, 3 pp.

Corrected Notice of Allowability from U.S. Appl. No. 17/329,986, dated Oct. 20, 2021, 12 pp.

Notice of Allowance from U.S. Appl. No. 14/204,227 dated Nov. 3, 2021, 10 pp.

Notice of Allowance from U.S. Appl. No. 14/204,227, dated Dec. 9, 2021, 2 pp.

Notice of Allowance from U.S. Appl. No. 17/329,986, dated Dec. 15, 2021, 2 pp.

Response to Examination Report dated Feb. 3, 2022, from counterpart European Application No. 18188908.0, filed May 16, 2022, 22 pp.

Decision on Reexamination from Counterpart Chinese Application No. 201480015082.5, dated Sep. 11, 2019, 11 pp.

The Decision on Rejection, and translation thereof, from counterpart Chinese Application No. 201480015082.5, dated Dec. 5, 2019, 14 pp.

Fourth Office Action, and translation thereof, from counterpart Chinese Application No. 201480015082.5, dated Jun. 22, 2020, 13 pp.

The Notification of Rejection, and translation thereof, from counterpart Chinese Application No. 201480015082.5, dated Nov. 4, 2020, 11 pp.

Preliminary Amendments filed in counterpart European Patent Application No. 14717919.6, filed on Oct. 9, 2015, 9 pp.

Communication Pursuant to Rules 161(1) and 162 EPC from counterpart European Application No. 14717919.6, dated Nov. 4, 2015, 2 pp.

Response to Communication Pursuant to Rules 161(1) and 162 EPC, dated Nov. 4, 2015, from counterpart European Application No. 14717919.6, filed May 13, 2016, 5 pp.

Communication pursuant to Article 94(3) EPC (examination report) from counterpart European Patent Applicant No. 14717919.6 dated Jul. 28, 2017, 5 pp.

Response to the Communication pursuant to Article 94(3) EPC (examination report), dated Jul. 28, 2017, from counterpart European Patent Application No. 14717919.6, filed Dec. 6, 2017, 13 pp.

Intent to Grant from counterpart European Application No. 14717919.6, dated Apr. 16, 2018, 30 pp.

Decision to Grant from counterpart European Application No. 14717919.6, dated Jun. 9, 2018, 1 pp.

U.S. Appl. No. 29/748,593, filed Aug. 31, 2020, naming inventors Vanderpool et al.

U.S. Appl. No. 29/748,588, filed Aug. 31, 2020, naming inventors Vanderpool et al.

Notice of Allowance from U.S. Appl. No. 29/803,137 dated Oct. 13, 2022, 10 pp.

First Office Action and Search Report, and translation thereof, from counterpart Chinese Application No. 201480015082.5, dated Mar. 20, 2017, 18 pp.

Notice on the Second Office Action, and translation thereof, from counterpart CN Application No. 201480015082.5, dated Mar. 5, 2018, 9 pp.

Third Office Action, and translation thereof, from counterpart Chinese Application No. 201480015082.5, dated Apr. 7, 2020, 13 pp.

Extended European Search Report from counterpart European Patent Application No. 18188908.0, dated Oct. 19, 2018, 7 pp.

Response to Communication Pursuant to Rule 69 EPC dated Jan. 7, 2019 and the Extended European Search Report dated Oct. 19, 2018, from counterpart European Application No. 18188908.0, filed Apr. 15, 2019, 13 pp.

Office Action, and translation thereof, from counterpart Japanese Patent Application No. 2016-501382, dated Oct. 29, 2017, 7 pp.

Decision to Grant and translation thereof, from counterpart Japanese Application No. 2016-501382, dated Jun. 26, 2018, 5 pp.

Notice of Reasons for Refusal and translation thereof, from counterpart Japanese Application No. 2018-137778, dated Jun. 25, 2019, 15 pp.

Notice of Reasons for Refusal, and translation thereof, from counterpart Japanese Application No. 2018-137778, dated Jun. 28, 2019, 12 pp.

Office Action, and translation thereof, from counterpart Japanese Application No. 2018137778, dated Feb. 6, 2020, 3 pp.

International Search Report and the Written Opinion from the International Application No. PCT/US2014/023912, dated Jun. 20, 2014, 9 pp.

International Preliminary Report on Patentability from International Application No. PCT/US2014/023912, dated Sep. 15, 2015, 5 pp.

Examination Report from counterpart European Application No. 18188908.0, dated May 26, 2021, 7 pp.

Hamilton™ 1000 Series Gaslight™ Syringes: Luer Lock Syringes, TLL Termination, by Fisher Scientific, retrieved from <https://www.fishersci.ca/shop/products/hamilton-1000-series-gastight-syringes-luer-lock-syringes-tll-termination-14/14815193> on Jun. 10, 2021, 2 pp.

(56)

References Cited

OTHER PUBLICATIONS

Special Feature—Prefilled Syringes & parental Contract Manufacturing: Biologics Present a New Set of Challenges, Drug Development & Delivery May 2, 2016 by contributor Cindy H. Dublin, retrieved from <https://drug-dev.com/special-feature-prefilled-syringes-parental-contract-manufacturing-biologics-present-a-new-set-of-challenges/> on Aug. 5, 2021, 23 pp.

“First Reveal Linq Insertable Cardiac Monitor in the Levant and North Africa Implanted at AUBMC,”⁰ from American University of Beirut Medical Center, Nov. 1, 2017, 1 pp. retrieved from https://aubmc.org.lb/Pages/First-ICM-in-Levant-and-North_Africa-Implanted-at-AUBMC.aspx.

“JY Cookment Meat Injector—Flavor Injector Syringe with 6 Professional Needles (B07G9LMTMG),” from Amazon, retrieve on Jun. 17, 2021 from—<https://www.amazon.com/COOKMENT-Meat-Kit-Injector-Professional/dp/B07G9LMTMG>, 9 pp.

“Statewide T323 Framed Door Bauer T Handle CW,” from SAFEandLOCKSTORE, 4 pp. retrieved on Jun. 17, 2021 from <https://www.safeandlockstore.com/products/Statewide-T323-Framed-Door-Bauer-T-Handle-CW.html>.

“Surgical Instruments, Table of Contents,” from Nordent, 1 pp. retrieved on Jun. 17, 2021 from <https://www.yumpu.com/en/document/read/11339595/surgical-instruments-nordent>.

Prosecution History from U.S. Appl. No. 14/204,227, dated Nov. 5, 2015 through May 10, 2021, 461 pp.

Prosecution History from U.S. Appl. No. 15/610,076, dated Aug. 7, 2017 through Aug. 3, 2020, 198 pp.

U.S. Appl. No. 17/323,298, filed May 18, 2021, naming inventors Vanderpool et al.

U.S. Appl. No. 17/325,873, filed May 20, 2021, naming inventors Vanderpool et al.

U.S. Appl. No. 17/325,904, filed May 20, 2021, naming inventors Vanderpool et al.

U.S. Appl. No. 17/329,986, filed May 25, 2021, naming inventors Vanderpool et al.

* cited by examiner

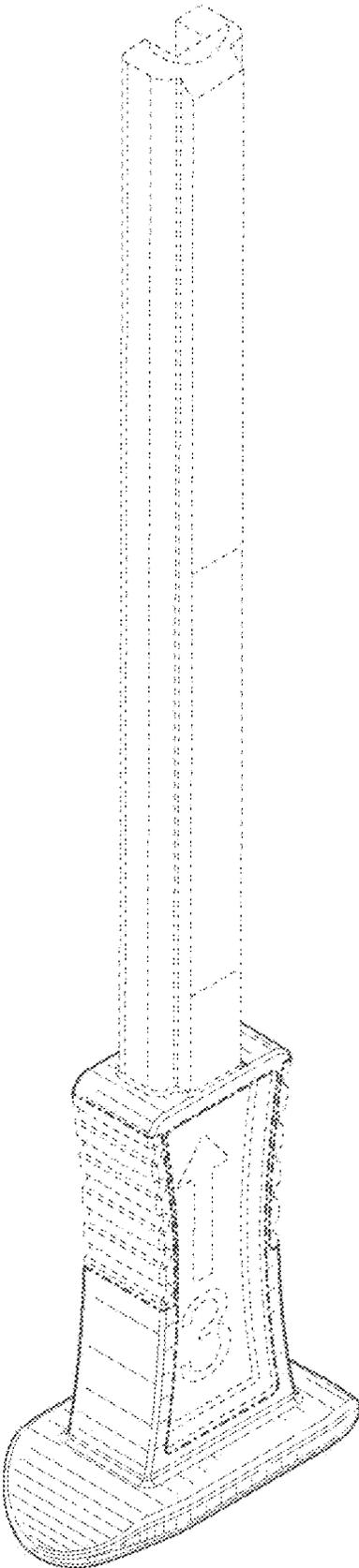


FIG. 1

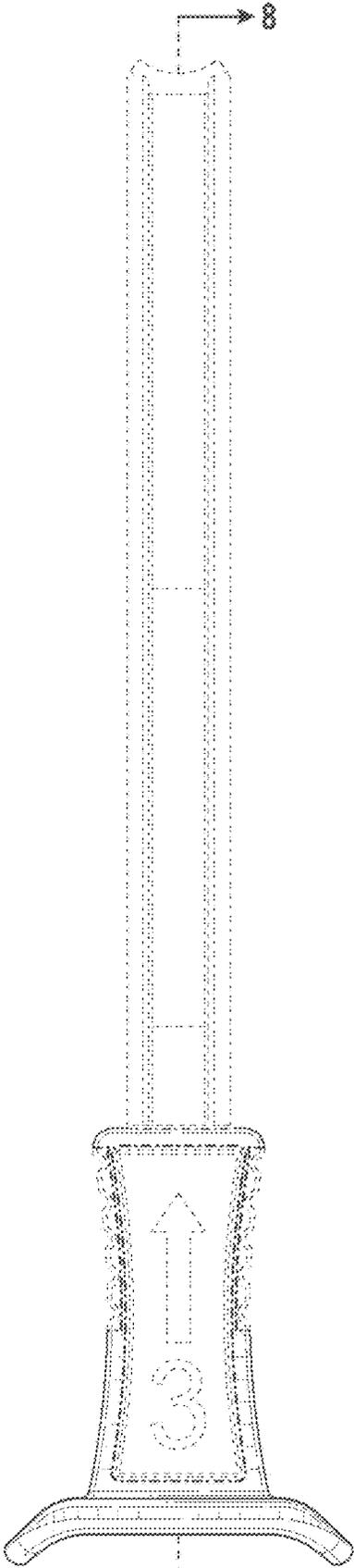


FIG. 2

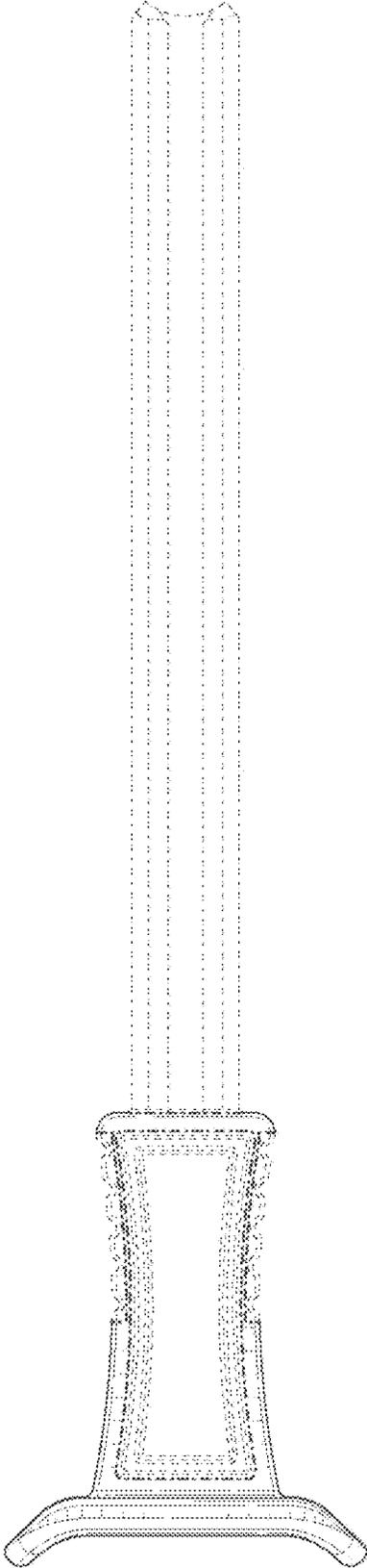


FIG. 3

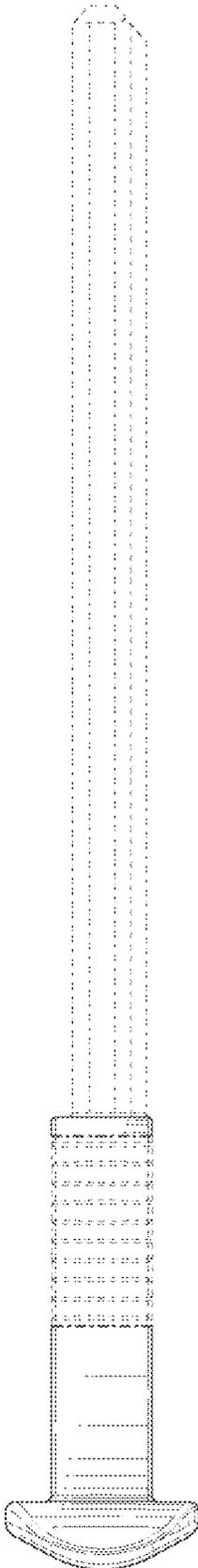


FIG. 4

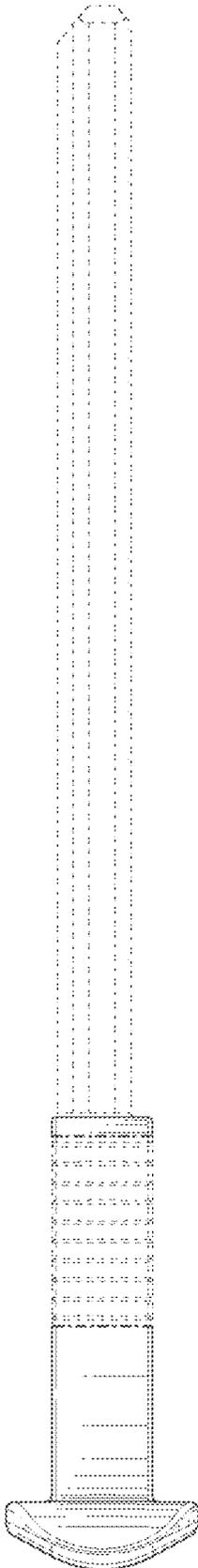


FIG. 5

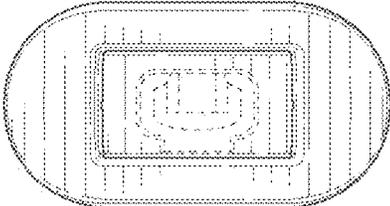


FIG. 6

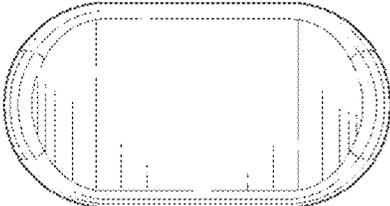


FIG. 7

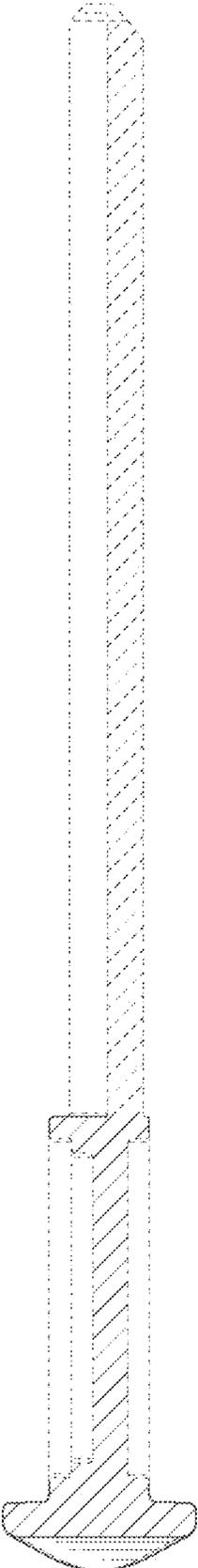


FIG. 8