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(12) **United States Design Patent** (10) **Patent No.:** **US D839,599 S**
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(54) **DENTAL CLEANING APPLIANCE**

FOREIGN PATENT DOCUMENTS

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CN 304361403 11/2017
GB 2538299 11/2016

(Continued)

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OTHER PUBLICATIONS

Electric Teeth | Dyson is designing an electric toothbrush, posted on Nov. 27, 2016 by Jon Love, © 2018 Electric Teeth [online], [site visited Apr. 24, 2018]. Available from Internet, <URL: <http://www.electriceeth.co.uk/dyson-is-designing-an-electric-toothbrush/>>.*

(Continued)

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(*) Notice: This patent is subject to a terminal disclaimer.

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

(21) Appl. No.: **29/602,365**

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(30) **Foreign Application Priority Data**

(57) **CLAIM**

Nov. 2, 2016 (GB) 6002242

We claim the ornamental design for a dental cleaning appliance, as shown and described.

(51) **LOC (11) Cl.** **28-03**

(52) **U.S. Cl.**
USPC **D4/101**

(58) **Field of Classification Search**
USPC D1/106, 199; D4/100–104, 108–111, D4/127, 128, 132–136, 138, 199; D8/61; D13/107, 108; D14/288; D24/119, 146, D24/180; D30/158, 159
CPC A46B 5/00; A46B 9/04; A46B 9/10; A46B 7/00; A46B 2200/1066; A46B 2200/1073; A46B 2200/1086

DESCRIPTION

See application file for complete search history.

FIG. 1 is a perspective view of a dental cleaning appliance showing our new design;
FIG. 2 is a front view thereof;
FIG. 3 is a rear view thereof;
FIG. 4 is a side view thereof;
FIG. 5 is a side view of the opposite side of FIG. 4;
FIG. 6 is a top view thereof; and,
FIG. 7 is a bottom view thereof.
Portions of the dental cleaning appliance shown in FIGS. 1-6 are illustrated with gray shading to show color contrast. The broken lines shown in the drawings illustrate portions of a dental cleaning appliance that form no part of the claimed design.

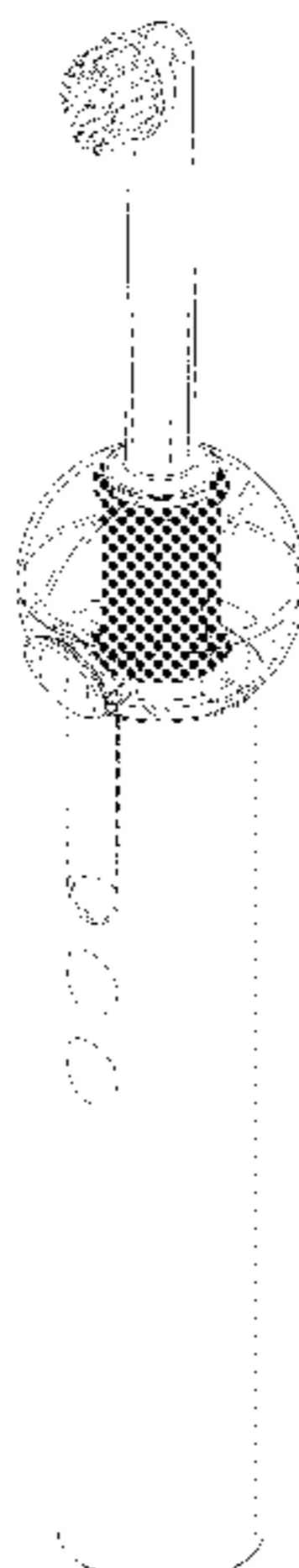
(56) **References Cited**

U.S. PATENT DOCUMENTS

1,051,815 A 1/1913 Morgan
D84,131 S * 5/1931 D'Ayrenx et al. D4/104
1,847,495 A 3/1932 Priest

(Continued)

1 Claim, 7 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

1,959,601 A	5/1934	Schulze	
2,036,706 A	4/1936	Law	
D113,432 S	2/1939	Newman	
2,318,460 A	5/1943	Brief	
D153,130 S	3/1949	Fischer	
2,490,185 A	12/1949	Work	
D197,763 S	3/1964	Aymar	
3,370,415 A	2/1968	McIlvaine	
3,728,035 A *	4/1973	Reitknecht	A46B 11/0079 401/175
3,734,106 A	5/1973	Zimmerman	
D230,654 S	3/1974	Fishbein	
D258,237 S	2/1981	Anspach	
4,277,194 A	7/1981	Smith	
D264,359 S	5/1982	Grubb et al.	
4,344,184 A	8/1982	Edwards	
D276,935 S	12/1984	Fattaleh	
4,761,138 A	8/1988	Niesyn	
D301,400 S	6/1989	Berendsen et al.	
4,949,875 A	8/1990	Kuo	
D310,368 S	9/1990	Derhaag et al.	
D315,831 S	4/1991	Kawano	
D319,170 S	8/1991	Franke	
D320,275 S	9/1991	Wada et al.	
D321,285 S	11/1991	Hirabayashi	
5,062,728 A	11/1991	Kuo	
D323,326 S	1/1992	Takawo	
D323,745 S *	2/1992	Stuart	D4/104
D336,567 S *	6/1993	Glover	D4/108
5,303,109 A	4/1994	Takao	
5,349,480 A	9/1994	Takao	
D353,490 S	12/1994	Hartwein	
D354,168 S	1/1995	Hartwein	
5,379,271 A	1/1995	Moedt	
D357,016 S	4/1995	Li et al.	
D359,607 S	6/1995	Yun	
D379,472 S	5/1997	Smith	
D384,207 S	9/1997	Underwood	
D385,702 S	11/1997	Okada	
D387,805 S	12/1997	Hsu	
D388,958 S	1/1998	Hartwein	
D393,016 S	3/1998	Young	
D396,957 S	8/1998	Allende	
5,815,872 A	10/1998	Meginniss, III et al.	
D401,270 S	11/1998	Cockram	
D403,864 S	1/1999	Holland et al.	
D411,483 S	6/1999	Greene, Jr.	
D411,769 S	7/1999	Wright	
D413,729 S	9/1999	Jansheski, Jr.	
D417,082 S	11/1999	Classen et al.	
D419,305 S	1/2000	Porter et al.	
6,047,429 A	4/2000	Wu	
D423,784 S	5/2000	Joulin	
D428,704 S	8/2000	Wildman	
D433,232 S	11/2000	Stützer et al.	
D433,813 S	11/2000	Stützer et al.	
D433,814 S	11/2000	Blaustein et al.	
D436,254 S	1/2001	Kling et al.	
D440,766 S	4/2001	Hartwein et al.	
6,220,772 B1	4/2001	Taylor	
D445,831 S	7/2001	Lindner	
D446,022 S	8/2001	Vonarburg et al.	
D451,244 S	11/2001	Chen et al.	
6,332,233 B1	12/2001	Proulx	
D453,996 S	3/2002	Kling et al.	
D455,010 S	4/2002	Kling	
D455,556 S	4/2002	Kling	
D456,608 S	5/2002	Lim	
D456,996 S	5/2002	McCurrach	
D458,028 S *	6/2002	McCurrach	D4/101
D458,029 S	6/2002	Li	
6,422,974 B1	7/2002	Schimmel	
D462,174 S	9/2002	Schaber	
6,461,164 B1	10/2002	Ramelli	
D465,279 S	11/2002	Etter et al.	
D468,422 S	1/2003	McCurrach	
D476,156 S *	6/2003	Ferber	D4/101
D477,716 S	7/2003	Roberson	
D478,212 S	8/2003	Winkler	
D478,214 S	8/2003	Winkler et al.	
D478,423 S	8/2003	Mulder et al.	
D483,182 S	12/2003	Blaustein et al.	
D487,911 S	3/2004	Cheney	
D492,717 S	7/2004	Cohen	
D492,996 S	7/2004	Rehkemper et al.	
6,766,549 B2	7/2004	Klupt	
D497,481 S	10/2004	Porter et al.	
D499,554 S *	12/2004	Ramelli	D4/107
D500,136 S	12/2004	Rehkemper et al.	
D500,209 S	12/2004	Kellogg	
D500,599 S	1/2005	Callaghan	
D501,605 S	2/2005	Brown, Jr. et al.	
D503,852 S	4/2005	Hensel	
D504,911 S	5/2005	Ng	
D508,776 S	8/2005	Kling et al.	
D509,362 S	9/2005	Maeda	
7,007,331 B2	3/2006	Davics et al.	
D521,681 S	5/2006	Xu	
D527,187 S	8/2006	Ramelli	
D527,527 S	9/2006	Ramelli	
D528,176 S	9/2006	Milliken	
D531,240 S	10/2006	Geisendorfer	
D531,811 S	11/2006	Cochran	
D532,974 S	12/2006	Zhuan	
D533,720 S	12/2006	Vu	
D534,728 S	1/2007	Vu	
D541,049 S	4/2007	Huang	
D549,209 S	8/2007	Bauman et al.	
D556,453 S *	12/2007	Sprosta	D4/107
D556,455 S	12/2007	Williams	
D562,488 S	2/2008	Weiser	
D569,623 S	5/2008	Beedham	
7,389,781 B2	6/2008	Kemp et al.	
D572,007 S	7/2008	Lamason et al.	
D577,199 S	9/2008	Zhuan	
D579,664 S	11/2008	Fisher et al.	
D579,666 S	11/2008	Jamson	
D580,173 S	11/2008	Beedham	
D583,052 S	12/2008	Kagawa	
D586,125 S *	2/2009	Winkler	D4/101
D588,364 S	3/2009	Nanda	
D589,255 S *	3/2009	Taylor	D4/101
7,527,446 B2	5/2009	Johnson Papa et al.	
D595,366 S	6/2009	Katzke	
D595,771 S	7/2009	Oas	
D598,653 S	8/2009	Crossman	
D598,806 S	8/2009	Rosenkötter	
D599,555 S	9/2009	Oliphant	
D612,611 S	3/2010	Brown, Jr. et al.	
D621,455 S	8/2010	Chernick et al.	
D627,971 S	11/2010	Battaglia	
D634,547 S *	3/2011	Botelho	D4/101
D636,604 S	4/2011	Zhuan	
D637,817 S	5/2011	Smith	
D645,922 S	9/2011	Wu	
D649,787 S	12/2011	Ivarsson	
D657,954 S	4/2012	Gebski	
D658,883 S *	5/2012	Winkler	D4/101
D669,274 S *	10/2012	Meurrens	D32/35
D669,978 S	10/2012	Gebski et al.	
8,317,424 B2	11/2012	Chenvainu et al.	
D673,225 S	12/2012	Heidrich	
8,434,190 B2	5/2013	Stief et al.	
8,444,416 B2	5/2013	Chenvainu et al.	
D688,464 S	8/2013	Hara	
D688,877 S	9/2013	Li	
D689,125 S	9/2013	Lochen	
D689,698 S	9/2013	Dickie et al.	
D690,369 S	9/2013	Wu	
D693,581 S	11/2013	Ballmaier et al.	
D694,524 S	12/2013	Erskine-Smith	
D696,024 S	12/2013	Shigeno et al.	
D696,517 S	12/2013	Gebski	
D701,388 S *	3/2014	Chuanzhou	D4/101

(56)

References Cited

U.S. PATENT DOCUMENTS

D702,946 S 4/2014 Shigeno et al.
 D704,337 S 5/2014 Dunn
 D706,033 S 6/2014 Dickie et al.
 D707,764 S 6/2014 Deveaux
 D708,440 S 7/2014 Owen et al.
 D711,988 S 8/2014 Gubany
 D712,988 S 9/2014 Sagedahl
 D713,391 S 9/2014 Ibuki et al.
 D718,056 S 11/2014 Masee et al.
 D718,057 S 11/2014 Masee et al.
 D719,737 S * 12/2014 Adriaenssen D4/101
 D724,679 S 3/2015 Martyn
 D727,445 S 4/2015 Viramontez
 9,039,642 B2 5/2015 Lee
 D735,280 S 7/2015 O'Malley
 D736,870 S 8/2015 Nagi
 D738,968 S 9/2015 Oz
 D741,423 S 10/2015 Holland
 9,154,025 B2 10/2015 Schaefer et al.
 D742,649 S * 11/2015 Thompson D4/104
 D749,851 S * 2/2016 Watkins D4/101
 D749,852 S * 2/2016 Since D4/101
 9,265,334 B1 2/2016 Fung-A-Wing
 D751,821 S 3/2016 Since
 D752,868 S 4/2016 McGarry et al.
 D757,439 S 5/2016 Shigeno et al.
 D758,079 S * 6/2016 Since D4/101
 D758,080 S * 6/2016 Since D4/101
 D758,736 S 6/2016 Shigeno et al.
 D759,382 S 6/2016 Watkins
 D761,567 S 7/2016 Uchida
 D766,580 S 9/2016 Kollar et al.
 D766,581 S 9/2016 Bloch et al.
 D767,895 S 10/2016 Stebila et al.
 D768,386 S * 10/2016 Demarest D4/100
 D773,192 S * 12/2016 Nabavi D4/101
 D773,822 S * 12/2016 Sikora D4/101
 D774,144 S 12/2016 Fjelstad
 D775,288 S 12/2016 Spiegler
 D777,442 S 1/2017 White et al.
 D780,456 S 3/2017 Shigeno et al.
 D787,189 S 5/2017 Fretwell et al.
 9,668,598 B2 6/2017 Wartersian et al.
 D790,859 S 7/2017 McGarry et al.
 D790,861 S 7/2017 Demarest et al.
 D791,485 S * 7/2017 McGarry D4/101
 9,700,129 B2 7/2017 Follows et al.
 D795,419 S 8/2017 Kohler
 9,743,749 B2 8/2017 Follows et al.
 D798,060 S 9/2017 Shigeno et al.
 D799,217 S 10/2017 Masee
 D799,756 S 10/2017 Fox
 D801,696 S 11/2017 McGarry et al.
 9,814,302 B2 11/2017 Follows et al.
 9,820,563 B2 11/2017 Follows et al.
 D804,918 S 12/2017 Lipford
 D806,228 S 12/2017 Yan
 9,839,284 B2 12/2017 Follows et al.
 D810,513 S 2/2018 McCoy et al.
 D814,195 S * 4/2018 Sikora D4/102
 2001/0034917 A1 11/2001 DuCey
 2004/0187889 A1 9/2004 Kemp et al.
 2006/0078844 A1 4/2006 Goldman et al.
 2006/0133885 A1 6/2006 Kaminski
 2009/0007357 A1 1/2009 Meadows et al.
 2012/0272468 A1 11/2012 Weisman et al.
 2013/0007969 A1 1/2013 Driesen et al.
 2013/0091645 A1 4/2013 Suwanbutr
 2014/0246049 A1 9/2014 Ikkink et al.
 2014/0259474 A1 9/2014 Sokol et al.
 2015/0150664 A1 6/2015 Crossman et al.
 2015/0230898 A1 8/2015 Miller
 2015/0310763 A1 10/2015 Miller et al.
 2016/0015163 A1 1/2016 Newman et al.
 2016/0157596 A1 6/2016 Fifield

2016/0331113 A1* 11/2016 Follows A61C 17/0202
 2016/0331114 A1* 11/2016 Follows A61C 17/02
 2016/0331115 A1* 11/2016 Follows A61C 17/0202
 2016/0331116 A1* 11/2016 Follows A46B 11/001
 2016/0331117 A1* 11/2016 Follows A61C 17/02
 2016/0331497 A1* 11/2016 Follows A61C 17/227
 2016/0331498 A1* 11/2016 Follows A61C 17/227
 2017/0119510 A1 5/2017 Tomori et al.
 2018/0021116 A1 1/2018 Störkel et al.
 2018/0055212 A1* 3/2018 Follows A61C 17/40
 2018/0084898 A1* 3/2018 Vincent A46B 11/0006
 2018/0085207 A1* 3/2018 Tweedie A61C 17/36

FOREIGN PATENT DOCUMENTS

GB 2538308 11/2016
 GB 2538309 11/2016
 JP 1595568 1/2018
 JP 1595649 1/2018
 WO WO-2005/076818 8/2005

OTHER PUBLICATIONS

Courtney et al., U.S. Office Action dated May 16, 2018, directed to U.S. Appl. No. 29/602,343; 9 pages.
 Courtney et al., U.S. Office Action dated May 16, 2018, directed to U.S. Appl. No. 29/602,351; 9 pages.
 Courtney et al., U.S. Office Action dated May 16, 2018, directed to U.S. Appl. No. 29/602,360; 7 pages.
 Courtney et al., U.S. Office Action dated Apr. 19, 2018, directed to U.S. Appl. No. 29/602,366; 14 pages.
 Courtney et al., U.S. Office Action dated Apr. 20, 2018, directed to U.S. Appl. No. 29/602,376; 16 pages.
 Courtney et al., U.S. Office Action dated Apr. 19, 2018, directed to U.S. Appl. No. 29/602,381; 17 pages.
 Courtney et al., U.S. Office Action dated May 18, 2018, directed to U.S. Appl. No. 29/602,340; 13 pages.
 Courtney et al., U.S. Office Action dated May 18, 2018, directed to U.S. Appl. No. 29/602,342; 12 pages.
 Courtney et al., U.S. Office Action dated May 16, 2018, directed to U.S. Appl. No. 29/602,345; 9 pages.
 Courtney et al., U.S. Office Action dated May 16, 2018, directed to U.S. Appl. No. 29/602,349; 9 pages.
 Courtney et al., U.S. Office Action dated May 16, 2018, directed to U.S. Appl. No. 29/602,319; 6 pages.
 Courtney et al., U.S. Office Action dated May 16, 2018, directed to U.S. Appl. No. 29/602,320; 6 pages.
 Courtney et al., U.S. Office Action dated May 16, 2018, directed to U.S. Appl. No. 29/602,323; 7 pages.
 Courtney et al., U.S. Office Action dated May 16, 2018, directed to U.S. Appl. No. 29/602,326; 7 pages.
 Courtney et al., U.S. Office Action dated Apr. 23, 2018, directed to U.S. Appl. No. 29/602,389; 16 pages.
 Courtney et al., U.S. Office Action dated Feb. 23, 2018, directed to U.S. Appl. No. 29/602,395; 10 pages.
 Courtney et al., U.S. Office Action dated Feb. 23, 2018, directed to U.S. Appl. No. 29/602,397; 10 pages.
 Courtney et al., U.S. Office Action dated Apr. 20, 2018, directed to U.S. Appl. No. 29/602,387; 17 pages.
 Courtney et al., U.S. Office Action dated Apr. 20, 2018, directed to U.S. Appl. No. 29/602,390; 17 pages.
 Courtney et al., U.S. Office Action dated Mar. 8, 2018, directed to U.S. Appl. No. 29/602,391; 12 pages.
 Courtney et al., U.S. Office Action dated Mar. 8, 2018, directed to U.S. Appl. No. 29/602,393; 9 pages.
 Courtney et al., U.S. Office Action dated Feb. 22, 2018, directed to U.S. Appl. No. 29/602,394; 16 pages.
 Courtney et al., U.S. Office Action dated Feb. 22, 2018, directed to U.S. Appl. No. 29/602,396; 17 pages.
 Courtney et al., U.S. Office Action dated Feb. 22, 2018, directed to U.S. Appl. No. 29/602,402; 20 pages.
 Courtney et al., U.S. Office Action dated Feb. 22, 2018, directed to U.S. Appl. No. 29/602,403; 20 pages.

(56)

References Cited

OTHER PUBLICATIONS

Courtney et al., U.S. Office Action dated Feb. 21, 2018, directed to U.S. Appl. No. 29/602,405; 7 pages.
 Courtney et al., U.S. Office Action dated Feb. 21, 2018, directed to U.S. Appl. No. 29/602,407; 7 pages.
 Courtney et al., U.S. Office Action dated Feb. 22, 2018, directed to U.S. Appl. No. 29/602,409; 16 pages.
 Courtney et al., U.S. Office Action dated Feb. 23, 2018, directed to U.S. Appl. No. 29/602,411; 17 pages.
 Courtney et al., U.S. Office Action dated May 17, 2018, directed to U.S. Appl. No. 29/602,327; 14 pages.
 Courtney et al., U.S. Office Action dated Apr. 25, 2018, directed to U.S. Appl. No. 29/602,330; 10 pages.
 Courtney et al., U.S. Office Action dated Apr. 25, 2018, directed to U.S. Appl. No. 29/602,339; 11 pages.
 Courtney et al., U.S. Office Action dated Feb. 21, 2018, directed to U.S. Appl. No. 29/602,416; 8 pages.
 Courtney et al., U.S. Office Action dated Feb. 21, 2018, directed to U.S. Appl. No. 29/602,418; 8 pages.
 Courtney et al., U.S. Office Action dated May 18, 2018, directed to U.S. Appl. No. 29/602,355; 12 pages.
 Courtney et al., U.S. Office Action dated May 18, 2018, directed to U.S. Appl. No. 29/602,357; 11 pages.
 Courtney et al., U.S. Office Action dated Apr. 19, 2018, directed to U.S. Appl. No. 29/602,367; 13 pages.
 Courtney et al., U.S. Office Action dated May 25, 2018, directed to U.S. Appl. No. 29/602,422; 15 pages.
 Courtney et al., U.S. Office Action dated Apr. 19, 2018, directed to U.S. Appl. No. 29/602,370; 16 pages.
 Courtney et al., U.S. Office Action dated Apr. 23, 2018, directed to U.S. Appl. No. 29/602,374; 16 pages.
 Courtney et al., U.S. Office Action dated Apr. 19, 2018, directed to U.S. Appl. No. 29/602,378; 14 pages.
 Courtney et al., U.S. Office Action dated Apr. 20, 2018, directed to U.S. Appl. No. 29/602,384; 14 pages.
 Courtney et al., U.S. Office Action dated Apr. 20, 2018, directed to U.S. Appl. No. 29/602,388; 15 pages.
 Courtney et al., U.S. Office Action dated Apr. 20, 2018, directed to U.S. Appl. No. 29/602,386; 14 pages.
 Courtney et al., U.S. Office Action dated Mar. 7, 2018, directed to U.S. Appl. No. 29/602,426; 11 pages.
 Courtney et al., U.S. Office Action dated Mar. 8, 2018, directed to U.S. Appl. No. 29/602,427; 12 pages.
 Courtney et al., U.S. Office Action dated Mar. 8, 2018, directed to U.S. Appl. No. 29/602,430; 12 pages.

Courtney et al., U.S. Office Action dated Mar. 8, 2018, directed to U.S. Appl. No. 29/602,431; 11 pages.
 Courtney et al., U.S. Office Action dated Mar. 8, 2018, directed to U.S. Appl. No. 29/602,435; 12 pages.
 Courtney et al., U.S. Office Action dated Mar. 8, 2018, directed to U.S. Appl. No. 29/602,436; 10 pages.
 Courtney et al., U.S. Office Action dated Mar. 8, 2018, directed to U.S. Appl. No. 29/602,385; 10 pages.
 Courtney et al., U.S. Office Action dated Mar. 8, 2018, directed to U.S. Appl. No. 29/602,383; 10 pages.
 Courtney et al., U.S. Office Action dated Apr. 19, 2018, directed to U.S. Appl. No. 29/602,382; 14 pages.
 Courtney et al., U.S. Office Action dated Mar. 8, 2018, directed to U.S. Appl. No. 29/602,437; 11 pages.
 Courtney et al., U.S. Office Action dated Mar. 8, 2018, directed to U.S. Appl. No. 29/602,438; 12 pages.
 Courtney et al., U.S. Office Action dated Apr. 19, 2018, directed to U.S. Appl. No. 29/602,369; 16 pages.
 Courtney et al., U.S. Office Action dated May 16, 2018, directed to U.S. Appl. No. 29/602,363; 10 pages.
 Courtney et al., U.S. Office Action dated May 16, 2018, directed to U.S. Appl. No. 29/602,359; 8 pages.
 Courtney et al., U.S. Office Action dated May 16, 2018, directed to U.S. Appl. No. 29/602,347; 8 pages.
 Courtney et al., U.S. Office Action dated May 16, 2018, directed to U.S. Appl. No. 29/602,344; 7 pages.
 Courtney et al., U.S. Office Action dated May 18, 2018, directed to U.S. Appl. No. 29/602,341; 16 pages.
 Courtney et al., U.S. Office Action dated May 18, 2018, directed to U.S. Appl. No. 29/602,333; 14 pages.
 Courtney et al., U.S. Office Action dated May 17, 2018, directed to U.S. Appl. No. 29/602,331; 13 pages.
 Courtney et al., U.S. Office Action dated May 18, 2018, directed to U.S. Appl. No. 29/602,328; 15 pages.
 Courtney et al., U.S. Office Action dated Apr. 25, 2018, directed to U.S. Appl. No. 29/602,325; 13 pages.
 Courtney et al., U.S. Office Action dated Apr. 25, 2018, directed to U.S. Appl. No. 29/602,321; 13 pages.
 Courtney et al., U.S. Office Action dated Mar. 8, 2018, directed to U.S. Appl. No. 29/602,440; 12 pages.
 Courtney et al., U.S. Office Action dated Mar. 8, 2018, directed to U.S. Appl. No. 29/602,443; 12 pages.
 Pettit, H. (Nov. 24, 2016). "Dyson's next device could be a smart Toothbrush that flosses your teeth with high-powered jets of water," located at <<http://www.dailymail.co.uk/sciencetech/article-3968756/Dyson-s-invention-smart-TOOTBRUSH-flosses-teeth-water-clean-them.html>> (5 pages).

* cited by examiner

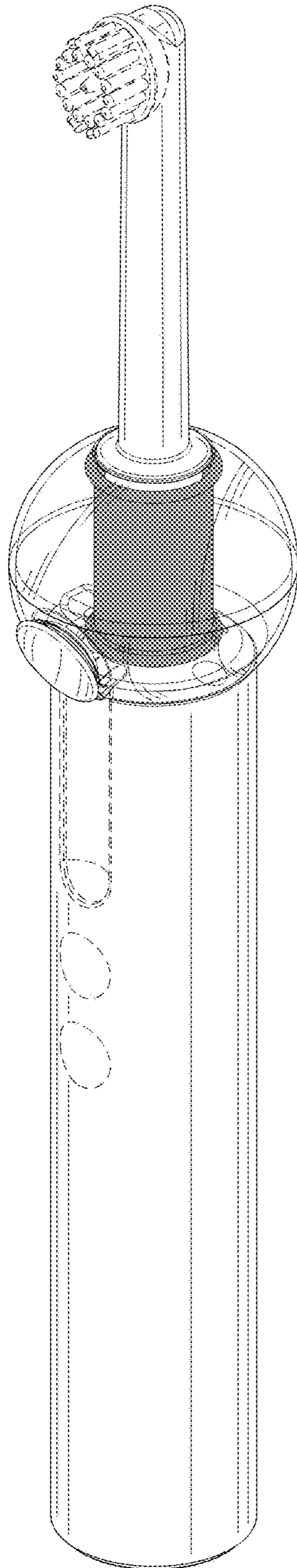


FIG. 1

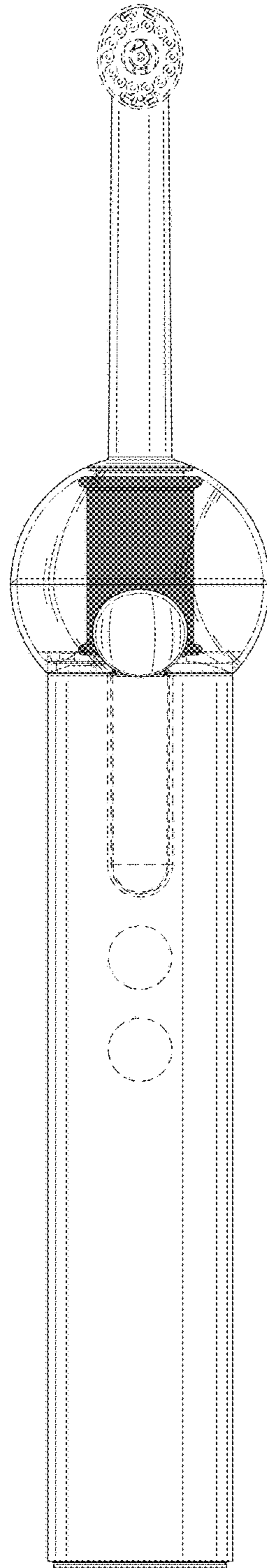


FIG. 2

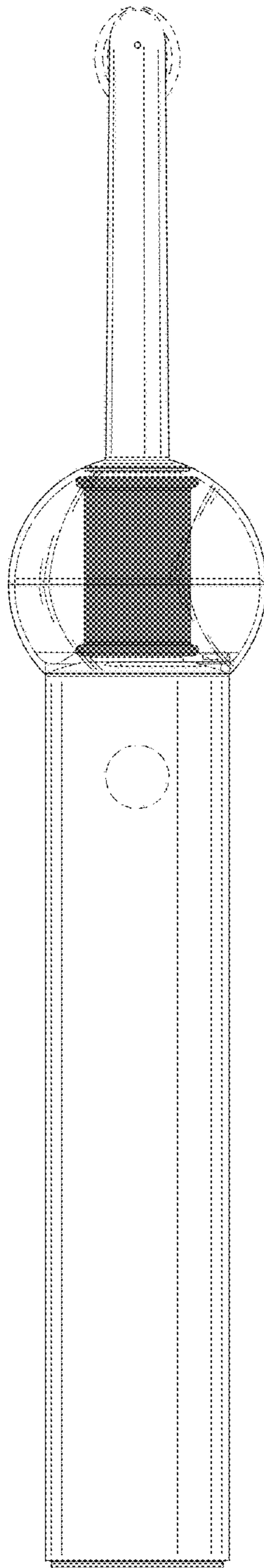


FIG. 3

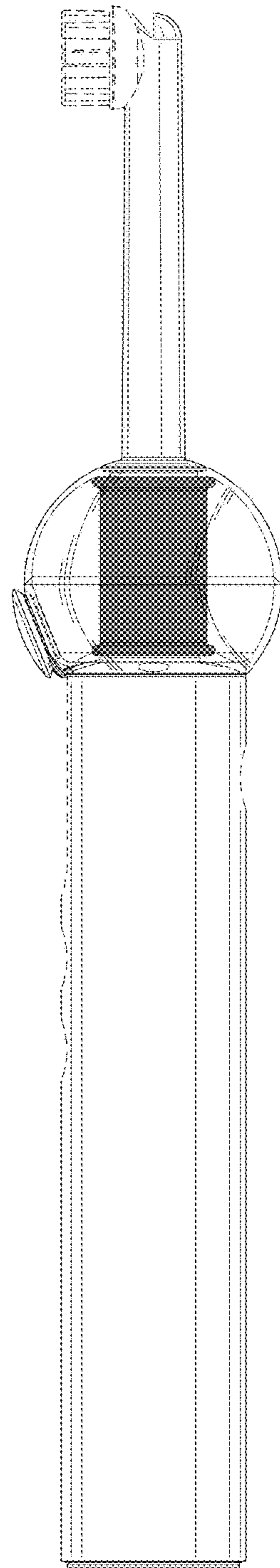


FIG. 4

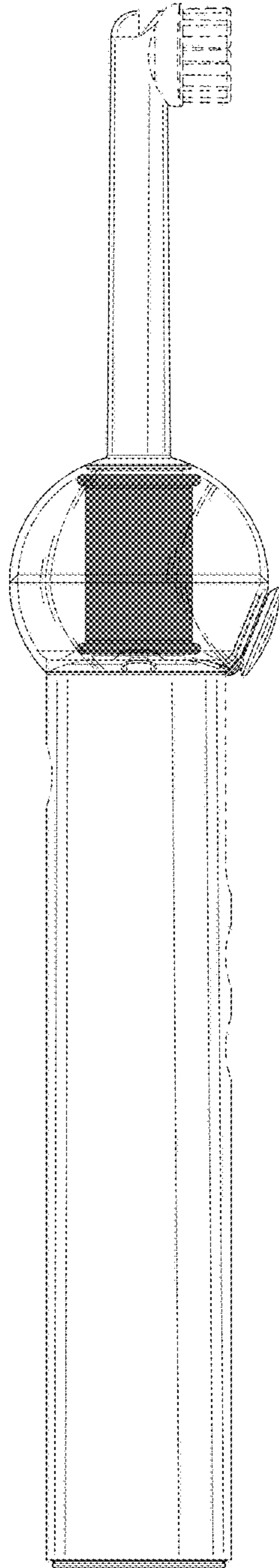


FIG. 5

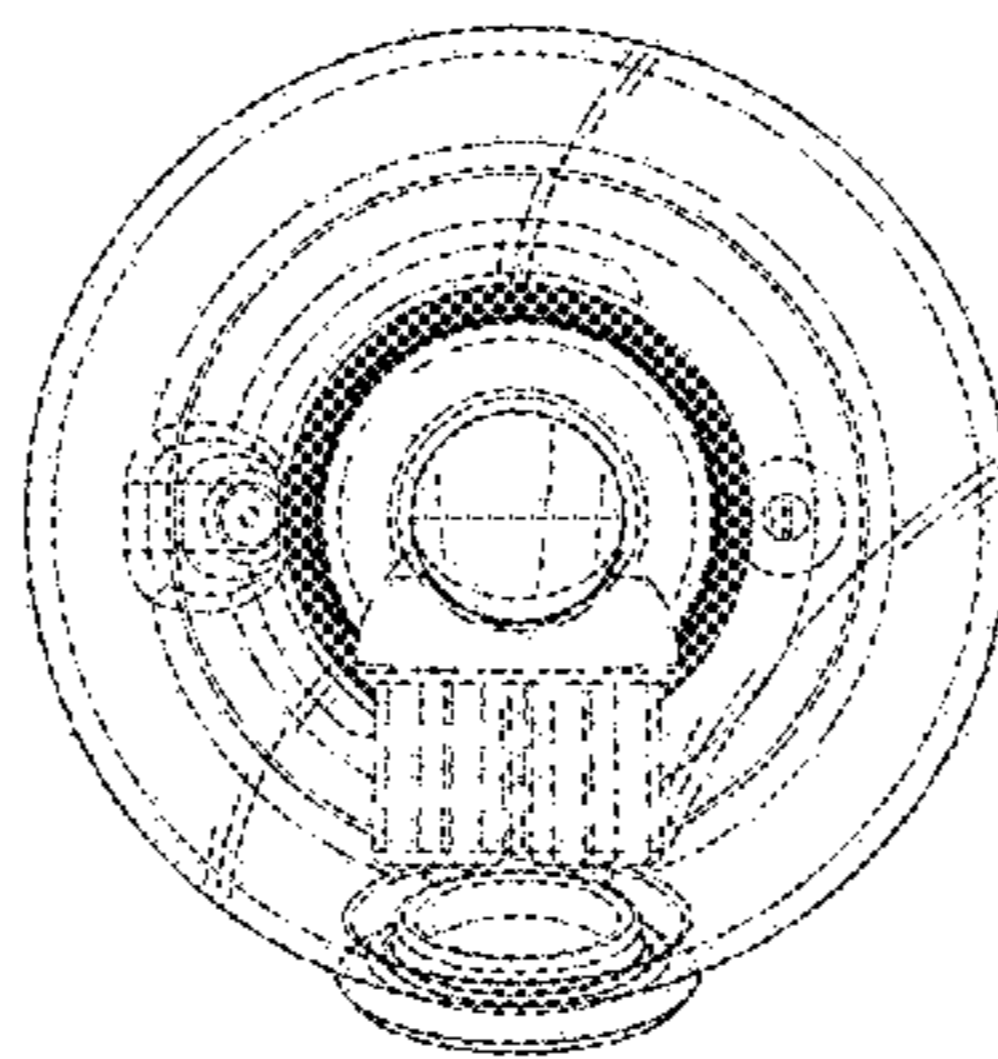


FIG. 6

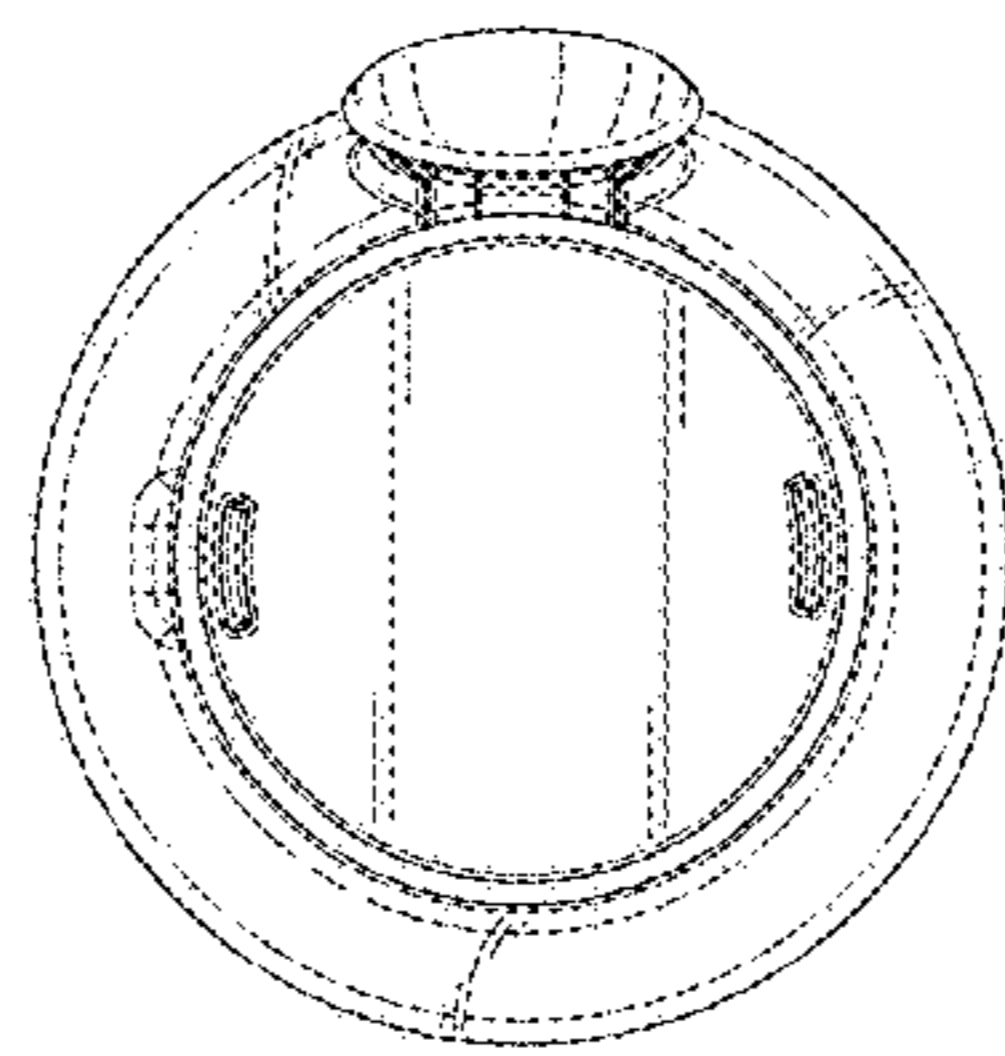


FIG. 7