



US00D839410S

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

(10) **Patent No.:** **US D839,410 S**
(45) **Date of Patent:** **** Jan. 29, 2019**

- (54) **ORAL IRRIGATOR**
- (71) Applicant: **Water Pik, Inc.**, Fort Collins, CO (US)
- (72) Inventors: **Hyunchul Kim**, Chicago, IL (US);
Scott Thorne, Chicago, IL (US)
- (73) Assignee: **WATER PIK, INC.**, Fort Collins, CO (US)
- (**) Term: **15 Years**
- (21) Appl. No.: **29/630,980**
- (22) Filed: **Dec. 26, 2017**

- 1,498,267 A 6/1924 Hachman
- 1,602,742 A 10/1926 Bennet
- 1,650,686 A 11/1927 Binks
- 1,669,889 A 5/1928 Andrews et al.
- 1,681,320 A 8/1928 Bergl et al.
- (Continued)

FOREIGN PATENT DOCUMENTS

- CA 851479 9/1970
- CH 655237 4/1986
- (Continued)

OTHER PUBLICATIONS

- US RE27,274, 01/1972, Mattingly (withdrawn)
- (Continued)

Related U.S. Application Data

- (63) Continuation of application No. 29/555,462, filed on Feb. 22, 2016, now Pat. No. Des. 809,650.
- (51) **LOC (11) Cl.** **24-02**
- (52) **U.S. Cl.**
USPC **D24/111**
- (58) **Field of Classification Search**
USPC D24/108, 111-113, 133, 152, 176;
D4/101, 138
CPC A61C 17/0205; A61C 17/0202; A61C 17/224; A61C 17/20; A61C 17/005; A61C 17/028; A61C 17/02; A61C 17/36; A61C 17/00; A61C 17/0211; A61C 17/0214; A61C 17/28; A61C 17/043; A61C 17/22; A61C 17/222; A61C 17/225
See application file for complete search history.

- Primary Examiner* — Eric L Goodman
- Assistant Examiner* — Lilyana Bekic
- (74) *Attorney, Agent, or Firm* — Dorsey & Whitney LLP

(57) **CLAIM**

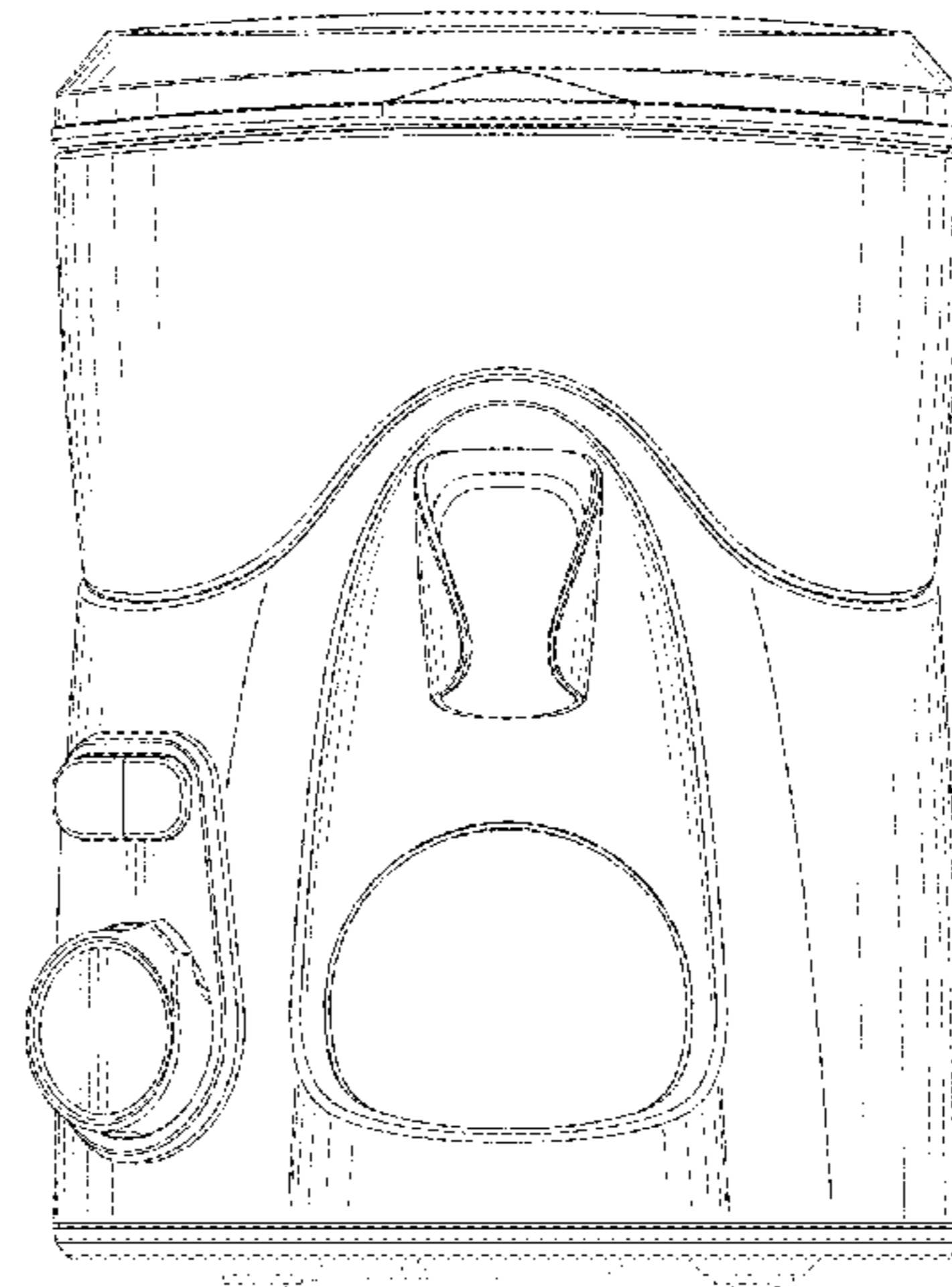
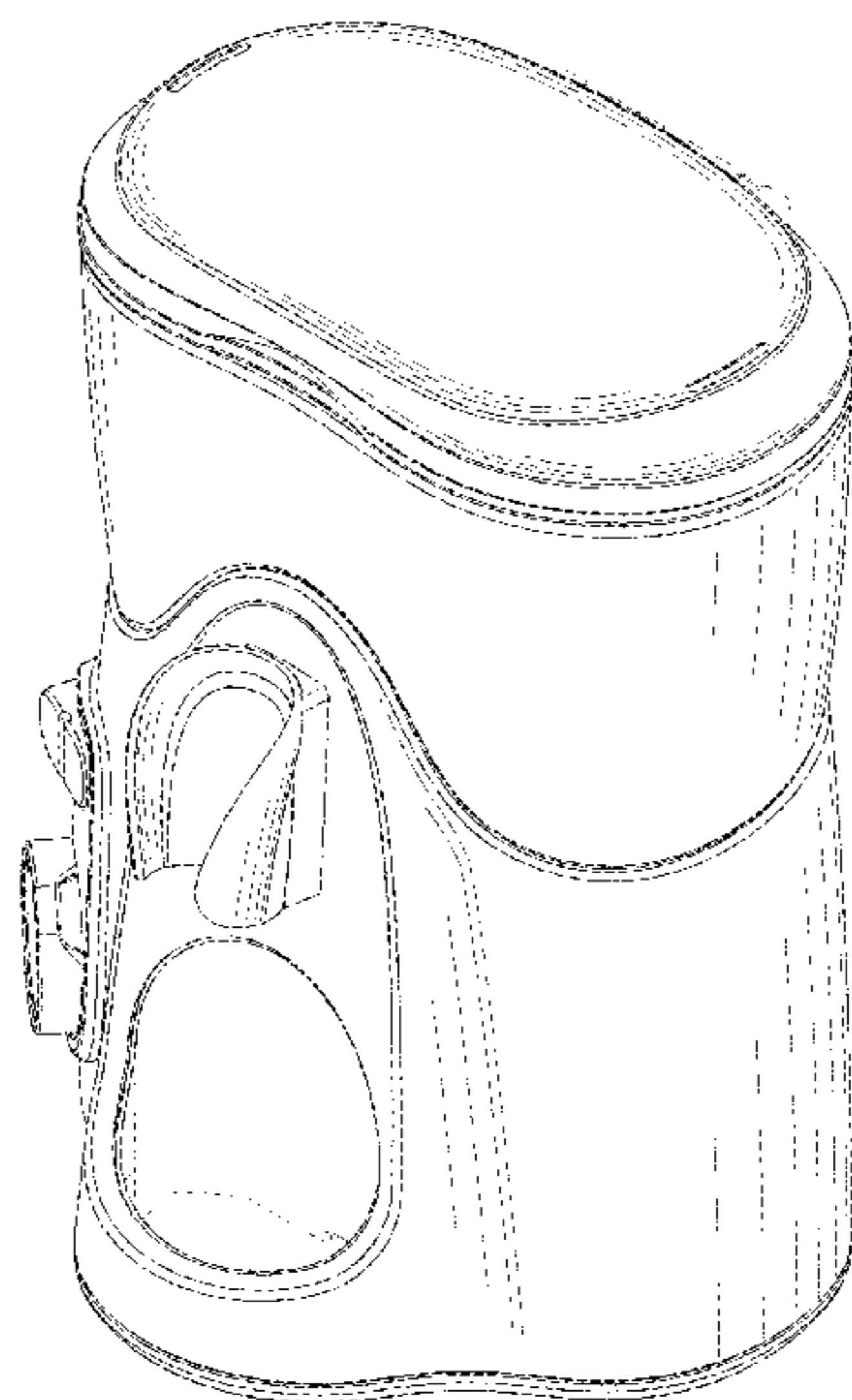
We claim the ornamental design for an oral irrigator, as shown and described.

DESCRIPTION

FIG. 1 is a front perspective of a first embodiment of an oral irrigator.
 FIG. 2 is a front elevation of the oral irrigator of FIG. 1.
 FIG. 3 is a rear elevation of the oral irrigator of FIG. 1.
 FIG. 4 is a left side elevation view of the oral irrigator of FIG. 1.
 FIG. 5 is a right side elevation view of the oral irrigator of FIG. 1.
 FIG. 6 is a top plan view of the oral irrigator of FIG. 1; and,
 FIG. 7 is a bottom plan view of the oral irrigator of FIG. 1.
 The broken lines in the drawings depict portions of the oral irrigator that form no part of the claimed design.

1 Claim, 7 Drawing Sheets

- (56) **References Cited**
U.S. PATENT DOCUMENTS
- 555,588 A 3/1896 Spencer
- 1,278,225 A 9/1918 Schamberg
- 1,452,258 A 4/1923 Smith
- 1,464,419 A 8/1923 Gill
- 1,480,310 A 1/1924 Smith



(56)

References Cited

U.S. PATENT DOCUMENTS

1,933,454 A	10/1933	Sidney	3,747,595 A	7/1973	Grossan
1,940,111 A	12/1933	Austin	3,768,472 A	10/1973	Hodosh et al.
D93,019 S	8/1934	Hose	3,771,186 A	11/1973	Moret et al.
1,977,782 A	10/1934	Roy	3,783,364 A	1/1974	Gallanis et al.
2,107,686 A	2/1938	Bramsen et al.	3,809,506 A	5/1974	Malcosky
D159,872 S	8/1950	Skold	3,809,977 A	5/1974	Balamuth et al.
2,531,730 A	11/1950	Henderson	3,811,432 A	5/1974	Moret
2,595,666 A	5/1952	Hutson	3,820,532 A	6/1974	Eberhardt et al.
2,669,233 A	2/1954	Friend	3,827,147 A	8/1974	Condon
2,709,227 A	5/1955	Foley et al.	3,837,166 A	9/1974	Hiraoka
2,733,713 A	2/1956	Kabnick	3,840,795 A	10/1974	Roszyk et al.
2,783,919 A	3/1957	Ansell	3,847,145 A	11/1974	Grossan
2,794,437 A	6/1957	Tash	3,854,209 A	12/1974	Franklin et al.
2,870,932 A	1/1959	Davis	3,863,628 A	2/1975	Vit
2,984,452 A	5/1961	Hooper	3,871,560 A	3/1975	Crippa
3,089,490 A	5/1963	Goldberg	3,874,506 A	4/1975	Hill et al.
3,096,913 A	7/1963	Jousson	3,912,125 A	10/1975	Acklin
3,144,867 A	8/1964	Trupp et al.	3,943,628 A	3/1976	Kronman et al.
D202,041 S	8/1965	Burzlauff	3,959,883 A	6/1976	Walls et al.
3,209,956 A	10/1965	McKenzie	3,973,558 A	8/1976	Stouffer et al.
3,216,619 A	11/1965	Richards et al.	3,977,084 A	8/1976	Sloan
3,225,759 A	12/1965	Drapen et al.	4,001,526 A	1/1977	Olson
3,227,158 A	1/1966	Mattingly	4,004,302 A	1/1977	Hori
3,266,623 A	8/1966	Poferl	4,007,739 A	2/1977	Bron et al.
3,297,558 A	1/1967	Hillquist	4,013,227 A	3/1977	Herrera
D208,778 S	10/1967	Koch	4,052,002 A	10/1977	Stouffer et al.
D209,202 S	11/1967	Fulton et al.	D246,667 S	12/1977	Mackay et al.
D209,203 S	11/1967	Mattingly et al.	D246,668 S	12/1977	Mackay et al.
D209,204 S	11/1967	St. Clair et al.	4,060,870 A	12/1977	Cannarella
D209,395 S	11/1967	Gilbert	4,075,761 A	2/1978	Behne et al.
D210,018 S	1/1968	Mattingly et al.	4,078,558 A	3/1978	Woog et al.
D210,019 S	1/1968	Johnson et al.	4,094,311 A	6/1978	Hudson
3,370,214 A	2/1968	Aymar	4,108,167 A	8/1978	Hickman et al.
3,391,696 A	7/1968	Woodward	4,108,178 A	8/1978	Betush
3,393,673 A	7/1968	Mattingly et al.	4,109,650 A	8/1978	Peclard
3,400,999 A	9/1968	Goldstein	4,122,845 A	10/1978	Stouffer et al.
3,418,552 A	12/1968	Holmes	4,133,971 A	1/1979	Boyd et al.
3,420,228 A	1/1969	Kalbfeld	4,135,501 A	1/1979	Leunissan
3,425,410 A	2/1969	Cammack	4,141,352 A	2/1979	Ebner et al.
3,453,969 A	7/1969	Mattingly	4,144,646 A	3/1979	Takemoto et al.
3,465,751 A	9/1969	Powers	4,149,315 A	4/1979	Page, Jr. et al.
3,467,083 A	9/1969	Mattingly	4,154,375 A	5/1979	Bippus
3,467,286 A	9/1969	Ostrowsky	4,160,383 A	7/1979	Rauschenberger
D215,920 S	11/1969	McCarty et al.	4,171,572 A	10/1979	Nash
3,487,828 A	1/1970	Troy	4,182,038 A	1/1980	Fleer
3,489,268 A	1/1970	Meierhoefer	4,200,235 A	4/1980	Monschke
3,495,587 A	2/1970	Freedman	4,201,200 A	5/1980	Hubner
3,496,933 A	2/1970	Lloyd	4,210,380 A	7/1980	Brzostek
3,499,440 A	3/1970	Gibbs	4,215,476 A	8/1980	Armstrong
3,500,824 A	3/1970	Gilbert	4,219,618 A	8/1980	Leonard
3,501,203 A	3/1970	Falk	4,227,878 A	10/1980	Lohn
3,502,072 A	3/1970	Stillman	4,229,634 A	10/1980	Hickman et al.
3,517,669 A	6/1970	Buono et al.	4,236,889 A	12/1980	Wright
D218,270 S	8/1970	Soper	D258,097 S	2/1981	Wistrand
3,522,801 A	8/1970	Robinson	4,248,589 A	2/1981	Lewis
3,532,221 A	10/1970	Kaluhiokalani et al.	4,249,899 A	2/1981	Davis
3,536,065 A	10/1970	Moret	4,257,458 A	3/1981	Kondo et al.
3,537,444 A	11/1970	Garn	4,262,799 A	4/1981	Perrett
3,538,950 A	11/1970	Porteners	4,266,934 A	5/1981	Pernot
3,547,110 A	12/1970	Balamuth	4,276,023 A	6/1981	Phillips et al.
3,561,433 A	2/1971	Kovach	4,276,880 A	7/1981	Malmin
D220,334 S	3/1971	Mackay et al.	4,302,186 A	11/1981	Cammack et al.
3,570,525 A	3/1971	Borsum	4,340,365 A	7/1982	Pisanu
3,572,375 A	3/1971	Rosenberg	4,340,368 A	7/1982	Lococo
3,578,884 A	5/1971	Jacobson	D266,117 S	9/1982	Oberheim
D220,996 S	6/1971	Irons	4,353,694 A	10/1982	Pelerin
3,583,609 A	6/1971	Oppenheimer	4,363,626 A	12/1982	Schmidt et al.
3,590,813 A	7/1971	Roszyk	4,365,376 A	12/1982	Oda et al.
3,608,548 A	9/1971	Lewis	4,370,131 A	1/1983	Banko
D222,862 S	1/1972	Cook	4,374,354 A	2/1983	Petrovic et al.
3,636,947 A	1/1972	Balamuth	4,382,167 A	5/1983	Maruyama et al.
3,651,576 A	3/1972	Massa	4,382,786 A	5/1983	Lohn
3,669,101 A	6/1972	Kleiner	D270,000 S	8/1983	Ketler
3,703,170 A	11/1972	Ryckman, Jr.	4,396,011 A	8/1983	Mack et al.
3,718,974 A	3/1973	Buchtel et al.	4,412,823 A	11/1983	Sakai et al.
			4,416,628 A	11/1983	Cammack
			4,442,830 A	4/1984	Markau
			4,442,831 A	4/1984	Trenary
			4,452,238 A	6/1984	Kerr

(56)

References Cited

U.S. PATENT DOCUMENTS

4,454,866 A	6/1984	Fayen	4,979,503 A	12/1990	Chernack
4,512,769 A	4/1985	Kozam et al.	4,979,504 A	12/1990	Mills
4,517,962 A	5/1985	Heckele	4,989,590 A	2/1991	Baum et al.
4,531,912 A	7/1985	Schuss et al.	4,998,880 A	3/1991	Nerli
4,531,913 A	7/1985	Taguchi	5,013,241 A	5/1991	Von Gutfeld et al.
4,534,340 A	8/1985	Kerr et al.	5,014,884 A	5/1991	Wunsch
4,552,130 A	11/1985	Kinoshita	5,019,054 A	5/1991	Clement et al.
4,561,214 A	12/1985	Inoue	5,027,798 A	7/1991	Primiano
D283,374 S	4/1986	Cheuk-Yiu	5,029,576 A	7/1991	Evans, Sr.
4,585,415 A	4/1986	Hommann	5,033,617 A	7/1991	Hartwein et al.
4,591,777 A	5/1986	McCarty et al.	5,033,961 A	7/1991	Kandler et al.
4,592,728 A	6/1986	Davis	D318,918 S	8/1991	Hartwein
4,602,906 A	7/1986	Grunenfelder	5,046,486 A	9/1991	Grulke et al.
4,607,627 A	8/1986	Leber et al.	5,049,071 A	9/1991	Davis et al.
4,613,074 A	9/1986	Schulze	5,060,825 A	10/1991	Palmer et al.
4,619,009 A	10/1986	Rosenstatter	5,061,180 A	10/1991	Wiele
4,619,612 A	10/1986	Weber et al.	5,062,795 A	11/1991	Woog
4,629,425 A	12/1986	Detsch	5,064,168 A	11/1991	Raines et al.
4,636,198 A	1/1987	Stade	D322,314 S	12/1991	Ohbayashi
4,642,037 A	2/1987	Fritchman	5,071,346 A	12/1991	Domaas
4,644,937 A	2/1987	Hommann	5,082,115 A	1/1992	Hutcheson
4,645,488 A	2/1987	Matukas	5,082,443 A	1/1992	Lohn
4,647,831 A	3/1987	O'Malley et al.	5,085,317 A	2/1992	Jensen et al.
4,648,838 A	3/1987	Schlachter	5,086,756 A	2/1992	Powell
4,650,475 A	3/1987	Smith et al.	5,095,893 A	3/1992	Rawden, Jr.
4,655,198 A	4/1987	Hommann	5,098,291 A	3/1992	Curtis et al.
4,669,453 A	6/1987	Atkinson et al.	5,098,676 A	3/1992	Brooks, Jr.
4,672,953 A	6/1987	DiVito	5,100,319 A	3/1992	Baum
4,673,396 A	6/1987	Urbaniak	5,117,871 A	6/1992	Gardner et al.
D291,354 S	8/1987	Camens	5,125,835 A	6/1992	Young
4,716,352 A	12/1987	Hurn et al.	5,127,831 A	7/1992	Bab
4,749,340 A	6/1988	Ikeda et al.	5,142,723 A	9/1992	Lustig et al.
4,770,632 A	9/1988	Ryder et al.	5,150,841 A	9/1992	Silvenis et al.
D298,565 S	11/1988	Kohler, Jr. et al.	5,172,810 A	12/1992	Brewer
4,783,321 A	11/1988	Spence	5,173,273 A	12/1992	Brewer
4,787,845 A	11/1988	Valentine	5,183,035 A	2/1993	Weir
4,787,847 A	11/1988	Martin et al.	5,197,458 A	3/1993	Ito et al.
4,798,292 A	1/1989	Hauze	5,197,460 A	3/1993	Ito et al.
4,803,974 A	2/1989	Powell	5,199,871 A	4/1993	Young
4,804,364 A	2/1989	Dieras et al.	5,203,697 A	4/1993	Malmin
4,810,148 A	3/1989	Aisa et al.	5,203,769 A	4/1993	Clement et al.
4,818,229 A	4/1989	Vasile	5,204,004 A	4/1993	Johnston et al.
4,820,152 A	4/1989	Warrin et al.	5,208,933 A	5/1993	Lustig et al.
4,821,923 A	4/1989	Skorka	5,215,193 A	6/1993	Dennis
4,824,368 A	4/1989	Hickman	5,218,956 A	6/1993	Handler et al.
4,826,431 A	5/1989	Fujimura et al.	5,220,914 A	6/1993	Thompson
4,827,551 A	5/1989	Maser et al.	5,228,646 A	7/1993	Raines
4,832,683 A	5/1989	Idemoto et al.	5,230,624 A	7/1993	Wolf et al.
4,854,869 A	8/1989	Lawhorn	5,232,687 A	8/1993	Geimer
4,861,340 A	8/1989	Smith et al.	5,235,968 A	8/1993	Woog
4,862,876 A	9/1989	Lih-Sheng	5,241,714 A	9/1993	Barry
4,869,720 A	9/1989	Chernack	5,246,367 A	9/1993	Ito et al.
4,880,382 A	11/1989	Moret et al.	5,252,064 A	10/1993	Baum et al.
4,886,452 A	12/1989	Lohn	D341,200 S	11/1993	Yoshimoto
4,900,252 A	2/1990	Liefke et al.	5,257,933 A	11/1993	Jousson
4,902,225 A	2/1990	Lohn	5,261,448 A	11/1993	Furuya et al.
4,903,687 A	2/1990	Lih-Sheng	D341,943 S	12/1993	Si-Hoe
4,906,187 A	3/1990	Amadera	5,267,586 A	12/1993	Jankavaara
4,907,744 A	3/1990	Jousson	5,269,684 A	12/1993	Fischer
4,915,304 A	4/1990	Campani	5,281,137 A	1/1994	Jousson
4,925,450 A	5/1990	Imonti et al.	5,281,139 A	1/1994	Frank et al.
4,928,675 A	5/1990	Thornton	5,282,745 A	2/1994	Wiltrout et al.
4,930,660 A	6/1990	Porteous	5,286,192 A	2/1994	Dixon
4,941,459 A	7/1990	Mathur	5,286,201 A	2/1994	Yu
4,950,159 A	8/1990	Hansen	5,295,832 A	3/1994	Evans
4,958,629 A	9/1990	Peace et al.	5,297,962 A	3/1994	O'Connor et al.
4,958,751 A	9/1990	Curtis et al.	D346,212 S	4/1994	Hosl
4,959,199 A	9/1990	Brewer	5,301,381 A	4/1994	Klupt
4,961,698 A	10/1990	Vlock	5,302,123 A	4/1994	Bechard
4,966,551 A	10/1990	Betush	5,317,691 A	5/1994	Traeger
4,969,874 A	11/1990	Michel et al.	5,321,865 A	6/1994	Kaesar
4,973,246 A	11/1990	Black	5,323,770 A	6/1994	Ito et al.
4,973,247 A	11/1990	Varnes et al.	5,331,704 A	7/1994	Rosen et al.
4,973,250 A	11/1990	Milman	5,344,317 A	9/1994	Pacher et al.
4,975,054 A	12/1990	Esrock	5,346,677 A	9/1994	Risk
			D351,892 S	10/1994	Wolf et al.
			5,360,338 A	11/1994	Waggoner
			5,368,548 A	11/1994	Jousson
			5,370,534 A	12/1994	Wolf et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

D354,168 S	1/1995	Hartwein	6,030,215 A	2/2000	Ellion et al.
D354,559 S	1/1995	Knute	6,038,960 A	3/2000	Fukushima et al.
5,378,149 A	1/1995	Stropko	6,039,180 A	3/2000	Grant
5,380,201 A	1/1995	Kawata	6,047,429 A	4/2000	Wu
D356,864 S	3/1995	Woog	D424,181 S	5/2000	Caplow
5,399,089 A	3/1995	Eichman et al.	D425,615 S	5/2000	Bachman et al.
D358,883 S	5/1995	Vos	D425,981 S	5/2000	Bachman et al.
5,456,672 A	10/1995	Diederich et al.	6,056,548 A	5/2000	Neuberger et al.
5,465,445 A	11/1995	Yeh	6,056,710 A	5/2000	Bachman et al.
5,467,495 A	11/1995	Boland et al.	D426,633 S	6/2000	Bachman et al.
5,468,148 A	11/1995	Ricks	6,089,865 A	7/2000	Edgar
5,470,305 A	11/1995	Arnett et al.	6,116,866 A	9/2000	Tomita et al.
5,474,450 A	12/1995	Chronister	6,120,755 A	9/2000	Jacobs
5,474,451 A	12/1995	Dalrymple et al.	6,124,699 A	9/2000	Suzuki et al.
5,476,379 A	12/1995	Disel	D434,500 S	11/2000	Pollock et al.
5,484,281 A	1/1996	Renow et al.	6,159,006 A	12/2000	Cook et al.
5,487,877 A	1/1996	Choi	6,164,967 A	12/2000	Sale et al.
5,490,779 A	2/1996	Malmin	D435,905 S	1/2001	Bachman et al.
5,505,916 A	4/1996	Berry, Jr.	D437,049 S	1/2001	Hartwein
D369,656 S	5/1996	Vos	6,193,512 B1	2/2001	Wallace
D370,125 S	5/1996	Craft et al.	6,193,932 B1	2/2001	Wu et al.
5,525,058 A	6/1996	Gallant et al.	6,199,239 B1	3/2001	Dickerson
5,526,841 A	6/1996	Detsch et al.	6,200,134 B1	3/2001	Kovac
5,540,587 A	7/1996	Malmin	D439,781 S	4/2001	Spore
5,547,374 A	8/1996	Coleman	6,217,835 B1	4/2001	Riley et al.
D373,631 S	9/1996	Maeda et al.	D441,861 S	5/2001	Hafliger
5,554,014 A	9/1996	Becker	6,233,773 B1	5/2001	Karge et al.
5,554,025 A	9/1996	Kinsel	6,234,205 B1	5/2001	D'Amelio et al.
5,556,001 A	9/1996	Weissman et al.	6,237,178 B1	5/2001	Krammer et al.
5,564,629 A	10/1996	Weissman et al.	6,247,929 B1	6/2001	Bachman et al.
D376,893 S	12/1996	Gornet	6,280,190 B1	8/2001	Hoffman
D377,091 S	12/1996	Scott, Sr.	D448,236 S	9/2001	Murray
5,613,259 A	3/1997	Craft et al.	6,293,792 B1	9/2001	Hanson
5,616,028 A	4/1997	Hafele et al.	D449,884 S	10/2001	Tobin et al.
5,626,472 A	5/1997	Pennetta	D453,453 S	2/2002	Lun
5,634,791 A	6/1997	Matsuura et al.	D455,201 S	4/2002	Jones
5,636,987 A	6/1997	Serfaty	D455,203 S	4/2002	Jones
5,640,735 A	6/1997	Manning	6,363,565 B1	4/2002	Paffrath
D382,407 S	8/1997	Craft et al.	D457,949 S	5/2002	Krug
5,653,591 A	8/1997	Loge	D464,799 S	10/2002	Crossman et al.
5,659,995 A	8/1997	Hoffman	6,468,482 B1	10/2002	Frieze et al.
5,667,483 A	9/1997	Santos	6,475,173 B1	11/2002	Bachman et al.
D386,576 S	11/1997	Wang et al.	6,485,451 B1	11/2002	Roberts et al.
5,683,192 A	11/1997	Kilfoil	6,497,375 B1	12/2002	Srinath et al.
5,685,829 A	11/1997	Allen	6,497,572 B2	12/2002	Hood et al.
5,685,851 A	11/1997	Murphy et al.	6,502,584 B1	1/2003	Fordham
5,697,784 A	12/1997	Hafele et al.	D470,660 S	2/2003	Schaber
D388,612 S	1/1998	Stutzer et al.	6,532,837 B1	3/2003	Magussen, Jr.
D388,613 S	1/1998	Stutzer et al.	6,558,344 B2	5/2003	McKinnon et al.
D389,091 S	1/1998	Dickinson	6,561,808 B2	5/2003	Neuberger et al.
5,709,545 A	1/1998	Johnston et al.	D475,346 S	6/2003	McCurrach et al.
D390,934 S	2/1998	McKeone	D476,743 S	7/2003	D'Silva
5,716,007 A	2/1998	Nottingham et al.	6,589,477 B1	7/2003	Frieze et al.
5,718,668 A	2/1998	Arnett et al.	6,602,071 B1	8/2003	Ellion et al.
5,746,595 A	5/1998	Ford	6,632,091 B1	10/2003	Cise et al.
5,749,726 A	5/1998	Kinsel	D482,451 S	11/2003	Page et al.
5,759,502 A	6/1998	Spencer et al.	6,640,999 B2	11/2003	Peterson
5,779,471 A	7/1998	Tseng et al.	6,647,577 B2	11/2003	Tam
5,779,654 A	7/1998	Foley et al.	6,659,674 B2	12/2003	Carlucci et al.
5,795,153 A	8/1998	Rechmann	6,663,386 B1	12/2003	Moelsgaard
5,796,325 A	8/1998	Lundell et al.	6,669,059 B2	12/2003	Mehta
5,833,065 A	11/1998	Burgess	D484,971 S	1/2004	Hartwein
5,836,030 A	11/1998	Hazeu et al.	6,681,418 B1	1/2004	Bierend
D402,744 S	12/1998	Zuege	D486,573 S	2/2004	Callaghan et al.
5,851,079 A	12/1998	Horstman et al.	6,689,078 B1	2/2004	Rehkemper et al.
D403,511 S	1/1999	Serbinski	6,699,208 B2	3/2004	Bachman et al.
D406,334 S	3/1999	Rosenthal et al.	6,719,561 B2	4/2004	Gugel et al.
5,876,201 A	3/1999	Wilson et al.	D489,183 S	5/2004	Akahori et al.
D408,511 S	4/1999	Allen et al.	6,739,782 B1	5/2004	Rehkemper et al.
5,901,397 A	5/1999	Hafele et al.	6,740,053 B2	5/2004	Kaplowitz
5,934,902 A	8/1999	Abahusayn	D490,899 S	6/2004	Gagnon
D413,975 S	9/1999	Maeda	D491,728 S	6/2004	Jimenez
D416,999 S	11/1999	Miyamoto	D492,996 S	7/2004	Rehkemper et al.
D417,082 S	11/1999	Classen et al.	6,761,324 B2	7/2004	Chang
5,993,402 A	11/1999	Sauer et al.	6,766,549 B2	7/2004	Klupt
			D495,142 S	8/2004	Berde
			D495,143 S	8/2004	Berde
			6,779,216 B2	8/2004	Davies et al.
			6,783,004 B1	8/2004	Rinner

(56)

References Cited

U.S. PATENT DOCUMENTS

6,783,505 B1	8/2004	Lai	8,256,979 B2	9/2012	Hilscher et al.
6,796,796 B2	9/2004	Segal	D668,339 S	10/2012	Luoto
6,808,331 B2	10/2004	Hall et al.	D669,169 S	10/2012	Washington et al.
D498,643 S	11/2004	Pryor	8,297,534 B2	10/2012	Li et al.
6,814,259 B1	11/2004	Foster et al.	D670,373 S	11/2012	Taylor et al.
D499,885 S	12/2004	Xi	D670,958 S	11/2012	Picozza et al.
6,835,181 B2	12/2004	Hippensteel	D671,637 S	11/2012	Gebski et al.
D500,599 S	1/2005	Callaghan	D672,018 S	12/2012	Bucher
6,836,917 B2	1/2005	Blaustein et al.	8,366,024 B2	2/2013	Leber et al.
6,837,708 B2	1/2005	Chen et al.	8,403,577 B2	3/2013	Khoshnevis
6,884,069 B2	4/2005	Goldman	8,403,665 B2	3/2013	Thomas et al.
6,902,337 B1	6/2005	Kuo	8,408,483 B2	4/2013	Boyd et al.
6,907,879 B2	6/2005	Drinan et al.	8,418,300 B2	4/2013	Miller et al.
D509,585 S	9/2005	Kling et al.	D686,311 S	7/2013	Mori
D513,638 S	1/2006	Pan	D694,378 S	11/2013	Bates
D515,215 S	2/2006	Wang	D694,398 S	11/2013	Taylor
D522,652 S	6/2006	Massey	D700,343 S	2/2014	Liu
7,080,980 B2	7/2006	Klupt	D702,819 S	4/2014	Garland
D529,661 S	10/2006	Schmidt	D702,821 S	4/2014	Garland
D530,010 S	10/2006	Luetttgen et al.	D707,350 S	6/2014	Woodard
7,117,555 B2	10/2006	Fattori et al.	D709,183 S	7/2014	Kemlein
D532,570 S	11/2006	Vizcarra	D714,929 S *	10/2014	Kim D24/111
7,131,838 B2	11/2006	Suzuki et al.	D714,930 S	10/2014	Kim et al.
D533,720 S	12/2006	Vu	D717,412 S	11/2014	Bucher
7,147,468 B2	12/2006	Snyder et al.	D717,427 S	11/2014	Kim
D538,474 S	3/2007	Sheppard et al.	D718,855 S *	12/2014	Kim A61H 13/005 D24/111
D548,334 S	8/2007	Izumi	D723,387 S	3/2015	Fath
D550,097 S	9/2007	Lepoitevin	D725,770 S *	3/2015	Kim D24/111
D553,980 S	10/2007	VerWeyst	D731,640 S	6/2015	Kim et al.
7,276,035 B2	10/2007	Lu	9,050,157 B2 *	6/2015	Boyd A61C 1/0084
7,314,456 B2	1/2008	Shaw	D735,305 S	7/2015	Obara
D565,175 S	3/2008	Boyd et al.	D740,936 S *	10/2015	Kim D24/111
7,344,510 B1	3/2008	Yande	D745,329 S	12/2015	Ong
D565,713 S	4/2008	Gao	D746,975 S	1/2016	Schenck
7,367,803 B2	5/2008	Egeresi	D747,464 S	1/2016	Taylor
D574,952 S	8/2008	Boyd et al.	D754,330 S	4/2016	Kim et al.
7,414,337 B2	8/2008	Wilkinson et al.	D756,122 S	5/2016	Taylor
D577,198 S	9/2008	Jimenez	D764,051 S *	8/2016	Wang D24/111
D577,814 S	9/2008	Seki et al.	D766,423 S	9/2016	Kim et al.
D581,279 S	11/2008	Oates	D772,396 S	11/2016	Kim et al.
7,455,521 B2	11/2008	Fishburne, Jr.	D772,397 S	11/2016	Kim et al.
7,469,440 B2	12/2008	Boland et al.	D774,651 S	12/2016	Kaib
D585,132 S	1/2009	Pukall	D776,253 S	1/2017	Li
D588,262 S	3/2009	Pukall	D782,326 S	3/2017	Fath
7,500,584 B2	3/2009	Schutz	D782,656 S	3/2017	Au
D590,492 S	4/2009	Powell	9,597,161 B2 *	3/2017	Luetttgen A61H 13/005
D592,748 S	5/2009	Boulton	D786,422 S	5/2017	Au
D595,136 S	6/2009	Canamasas Puigbo	9,642,677 B2	5/2017	Luetttgen et al.
D601,694 S	10/2009	Rocklin	D788,907 S	6/2017	Kim
D601,697 S	10/2009	Sobeich et al.	D798,440 S *	9/2017	Kim D24/111
D603,708 S	11/2009	Handy	D802,119 S	11/2017	Kim
D608,430 S	1/2010	Slothower	D809,650 S *	2/2018	Kim D24/111
7,670,141 B2	3/2010	Thomas et al.	D822,825 S *	7/2018	Au D24/111
7,677,888 B1	3/2010	Halm	D822,826 S *	7/2018	Au D24/111
D613,550 S	4/2010	Picozza et al.	10,010,389 B2 *	7/2018	Boyd A61C 1/0084
D621,949 S	8/2010	Seki et al.	10,022,207 B2 *	7/2018	Taylor A61C 17/0202
D622,928 S	9/2010	Griebel	2002/0090252 A1	7/2002	Hall et al.
D623,376 S	9/2010	Griebel	2002/0108193 A1	8/2002	Gruber
D625,406 S	10/2010	Seki et al.	2002/0119415 A1	8/2002	Bailey
7,814,585 B1	10/2010	Reich	2002/0152565 A1	10/2002	Klupt
D629,884 S	12/2010	Stephens	2003/0060743 A1	3/2003	Chang
7,857,623 B2	12/2010	Greuz	2003/0098249 A1	5/2003	Rollock
7,862,536 B2	1/2011	Chen et al.	2003/0162146 A1	8/2003	Shortt et al.
7,959,597 B2	6/2011	Baker et al.	2003/0204155 A1	10/2003	Egeresi
D640,872 S	7/2011	Nanda	2003/0213075 A1	11/2003	Hui et al.
D648,539 S	11/2011	Wai	2004/0045107 A1	3/2004	Egeresi
D651,409 S	1/2012	Papenfu	2004/0076921 A1	4/2004	Gofman et al.
D651,805 S	1/2012	Hay	2004/0122377 A1	6/2004	Fischer et al.
D653,340 S	1/2012	Goerge et al.	2004/0126730 A1	7/2004	Panagotacos
8,113,832 B2	2/2012	Snyder et al.	2004/0180569 A1	10/2004	Chiou
D655,380 S	3/2012	Taylor	2004/0209222 A1	10/2004	Snyder
D658,381 S	5/2012	Gebski	2005/0049620 A1	3/2005	Chang
D658,538 S	5/2012	Korzeniowski	2005/0064371 A1	3/2005	Soukos et al.
8,220,726 B2	7/2012	Qiu et al.	2005/0101894 A1	5/2005	Hippensteel
D666,912 S	9/2012	Kawai	2005/0102773 A1	5/2005	Obermann et al.
			2005/0144745 A1	7/2005	Russell
			2005/0177079 A1	8/2005	Pan
			2005/0271531 A1	12/2005	Brown et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

2006/0008373 A1 1/2006 Schutz
 2006/0010624 A1 1/2006 Cleland
 2006/0026784 A1 2/2006 Moskovich et al.
 2006/0057539 A1 3/2006 Sodo
 2006/0078844 A1 4/2006 Goldman et al.
 2006/0079818 A1 4/2006 Yande
 2006/0207052 A1 9/2006 Tran
 2007/0082316 A1 4/2007 Zhadanov et al.
 2007/0082317 A1 4/2007 Chuang
 2007/0113360 A1 5/2007 Tsai
 2007/0202459 A1 8/2007 Boyd et al.
 2007/0203439 A1 8/2007 Boyd et al.
 2007/0254260 A1 11/2007 Alden
 2008/0189951 A1 8/2008 Molema et al.
 2008/0213719 A1 9/2008 Giniger et al.
 2008/0253906 A1 10/2008 Strong
 2009/0070949 A1 3/2009 Sagel et al.
 2009/0071267 A1 3/2009 Mathus et al.
 2009/0082706 A1 3/2009 Shaw
 2009/0124945 A1 5/2009 Reich et al.
 2009/0139351 A1 6/2009 Reichmuth
 2009/0163839 A1 6/2009 Alexander
 2009/0188780 A1 7/2009 Watanabe
 2009/0281454 A1 11/2009 Baker et al.
 2010/0010524 A1 1/2010 Barrington
 2010/0015566 A1 1/2010 Shaw
 2010/0049177 A1 2/2010 Boone, III et al.
 2010/0190132 A1 7/2010 Taylor et al.
 2010/0239998 A1 9/2010 Snyder et al.
 2010/0261134 A1 10/2010 Boyd et al.
 2010/0261137 A1 10/2010 Boyd et al.
 2010/0326536 A1 12/2010 Nan
 2010/0330527 A1 12/2010 Boyd et al.
 2011/0027749 A1 2/2011 Syed
 2011/0076090 A1 3/2011 Wu et al.
 2011/0097683 A1 4/2011 Boyd et al.
 2011/0139826 A1 6/2011 Hair et al.
 2011/0144588 A1 6/2011 Taylor et al.
 2011/0184341 A1 7/2011 Baker et al.
 2011/0307039 A1 12/2011 Cornell
 2012/0021374 A1 1/2012 Cacka et al.
 2012/0045730 A1 2/2012 Snyder et al.
 2012/0064480 A1 3/2012 Hegemann
 2012/0077145 A1 3/2012 Tsurukawa
 2012/0141952 A1 6/2012 Snyder et al.
 2012/0179118 A1 7/2012 Hair
 2012/0189976 A1 7/2012 McDonough et al.
 2012/0266396 A1 10/2012 Leung
 2012/0277663 A1 11/2012 Millman et al.
 2012/0277677 A1 11/2012 Taylor et al.
 2012/0277678 A1 11/2012 Taylor et al.
 2012/0279002 A1 11/2012 Sokol et al.
 2012/0295220 A1 11/2012 Thomas et al.
 2013/0089832 A1 4/2013 Lee
 2013/0295520 A1 11/2013 Hsieh
 2014/0106296 A1 4/2014 Woodard et al.
 2014/0193774 A1 7/2014 Snyder et al.
 2014/0259474 A1 9/2014 Sokol et al.
 2014/0272769 A1 9/2014 Luetzgen et al.
 2014/0272782 A1 9/2014 Luetzgen et al.
 2014/0352088 A1 12/2014 Wu
 2015/0004559 A1 1/2015 Luetzgen et al.
 2015/0147717 A1 5/2015 Taylor et al.
 2015/0173850 A1 6/2015 Garrigues et al.
 2015/0182319 A1 7/2015 Wagner et al.
 2016/0100921 A1 4/2016 Ungar
 2016/0151133 A1 6/2016 Luetzgen et al.
 2017/0049530 A1 2/2017 Cacka
 2017/0239132 A1* 8/2017 Luetzgen A61H 13/005
 2018/0168785 A1* 6/2018 Wagner A61C 17/0202

FOREIGN PATENT DOCUMENTS

CN 204049908 12/2014
 DE 1466963 5/1969

DE 2019003 11/1971
 DE 2409752 9/1975
 DE 2545936 4/1977
 DE 2714876 10/1978
 DE 2910982 2/1980
 DE 3346651 7/1985
 EP 0023672 7/1980
 EP 0515983 2/1992
 EP 1825827 8/2007
 FR 2556954 6/1985
 FR 2654627 5/1991
 GB 838564 6/1960
 GB 1182031 2/1970
 GB 2018605 10/1979
 JP 02-134150 5/1990
 JP 2009-039455 2/2009
 KR 20120126265 11/2012
 WO WO95/016404 6/1995
 WO WO01/10327 2/2001
 WO WO2004/021958 3/2004
 WO WO2004/039205 5/2004
 WO WO2004/060259 7/2004
 WO WO2004/062518 7/2004
 WO WO2008/070730 6/2008
 WO WO2008/157585 12/2008
 WO WO2013/124691 8/2013

OTHER PUBLICATIONS

The Right Tool, Electron Fusion Devices, Inc., 2 pages, at least as early as Feb. 1991.
 Japanese Packaging, 2 pages, at least as early as Dec. 2002.
 Japanese Instruction Brochure, 20 pages, at least as early as Dec. 2002.
 Brochure: Woog International, "You have a 98% chance of getting gum disease. Unless you read this.", Lancaster, Pennsylvania, 5 pages, Feb. 1987.
 Brochure: Woog International, "We put the control of home dental care back into the hands of the professional", Lancaster, Pennsylvania, 2 pages, Feb. 1987.
 Brochure: Woog International, "Products at a Glance: Home Dental Care System" Woog Orajel, 3 pages, at least as early as Dec. 18, 1998.
 Website: http://www.just4teeth.com/product/Panasonic/Panasonic_Portable_Irrigator.htm, 2 pages, at least as early as Jun. 20, 2003.
 Website: http://www.videodirectstore.com/store/merchant.mv?Screen=PROD&Product_Code=EW1'..., 2 pages, at least as early as Jun. 20, 2003.
 Website: <http://products.consumerguide.com/cp/family/review/index.cfm/id/18742>, 2 pages, at least as early as Jun. 20, 2003.
 Website: <http://www.racekarteng.com/images/walbroparts.gif> and <http://www.muller.net/mullermachine/docs/walbro1.html>, 4 pages, at least as early as Jun. 20, 2003.
 European Search Report, EPO Application No. 07250799.9, Jul. 5, 2007.
 European Search Report, EPO Application No. 07252693.2, 14 pages, Apr. 28, 2008.
 European Examination Report, EPO Application No. 07250799.9, Feb. 5, 2009.
 International Search Report, Application No. PCT/US2010/028180, 2 pages, May 18, 2010.
 International Search Report, PCT/US2010/060800, 2 pages, Feb. 11, 2011.
 International Search Report, PCT/US2011/052795, 10 pages, Jan. 17, 2012.
 Waterpik SinuSense Website: <http://www.insightsbyapril.com/2012/03/waterpik-natural-remedy-for-sinus.html>, 8 pages, retrieved on May 31, 2012.
 Waterpik WP 350W Oral Irrigator. Dentist.net. Copyright date 2013. Date accessed: Mar. 30, 2017, 2 pages <<http://www.dentalhoo.com/waterpik-wp350.asp>>.
 iPik Portable Oral Irrigator. AliExpress. Date reviewed: Oct. 5, 2016. <https://www.aliexpress.com/...e-Oral-Care-Product-Nasal-Irrigator-Tooth-Flosser-Water/1525541997.html?aff_platform=aaf>

(56)

References Cited

OTHER PUBLICATIONS

&cpt=1490913714609&sk=yfAeyJa&aff_trace_key=c5a300c4f02e46d08c042f5292e1762f-1490913714609-07517-yfAeyJa>, 18 pages.

Brite Leafs Professional Portable 2-in-1 Nasal Sinus & Oral Irrigator. Brite Leafs. Copyright date 2012, <<http://www.briteleafs.com/product6.html>>, 1 page.

AliExpress. Date reviewed: Jan. 12, 2017. <<https://www.aliexpress.com/item/Cordless-Water-Floss-Portable-Oral-Irrigator-Dental-Water-Flosser-Waterpic-Whatpick-Dental-Water-Pic-Whater-Pick/32769416341.html?spm=2114.40010308.4.75.Owuzfj>>.

Suvo. "Helical Gears vs Spur Gears—Advantages and Disadvantages Compared." Brighthub Engineering, Aug. 18, 2010, www.brighthubengineering.com/manufacturing-technology/33535-helical-gears-vs-spur-gears/, 7 pages.

Waterpik ADA Accepted WP-663, posted at amazon.com, earliest date reviewed on Feb. 6, 2014, [online], acquired on Feb. 12, 2018. Available from Internet, <URL: https://www.amazon.com/Waterpik-Accepted-WP-663-Aquarius-Flosser/dp/B072JFVXSY/ref=cm_cr_arp_d_product_top?ie=UTF8&th=1> (Year: 2014).

Waterpik Classic Professional Water Flosser, WP-72, posted at amazon.com, earliest date reviewed on Mar. 5, 2016, [online], acquired on Feb. 23, 2018. Available from Internet, <URL: https://www.amazon.com/Waterpik-Classic-Professional-Flosser-WP-72/dp/B00HFQQOU6/ref=cm_cr_arp_d_product_top?ie=UTF8> (Year: 2016).

* cited by examiner

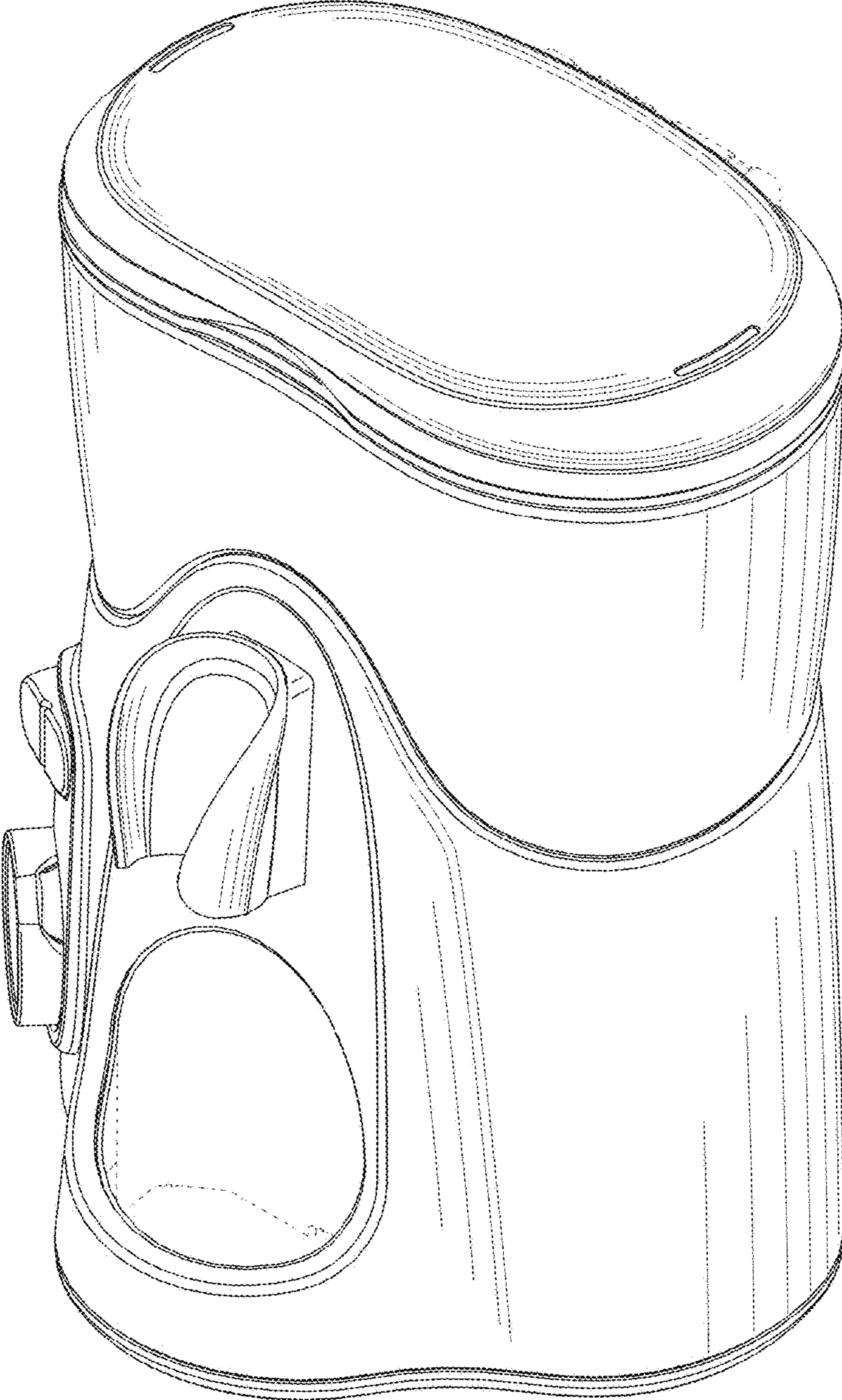


FIG. 1

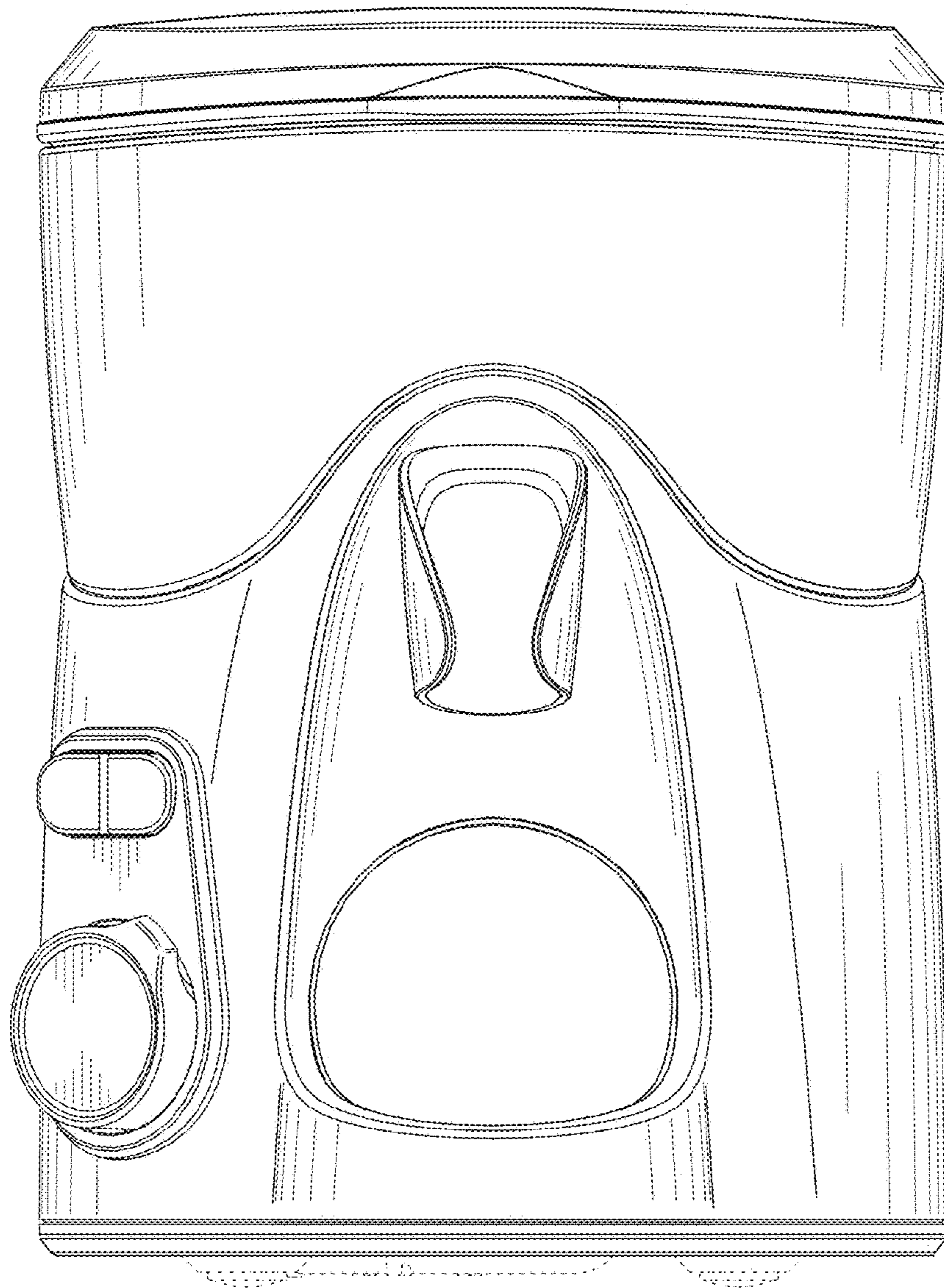


FIG. 2

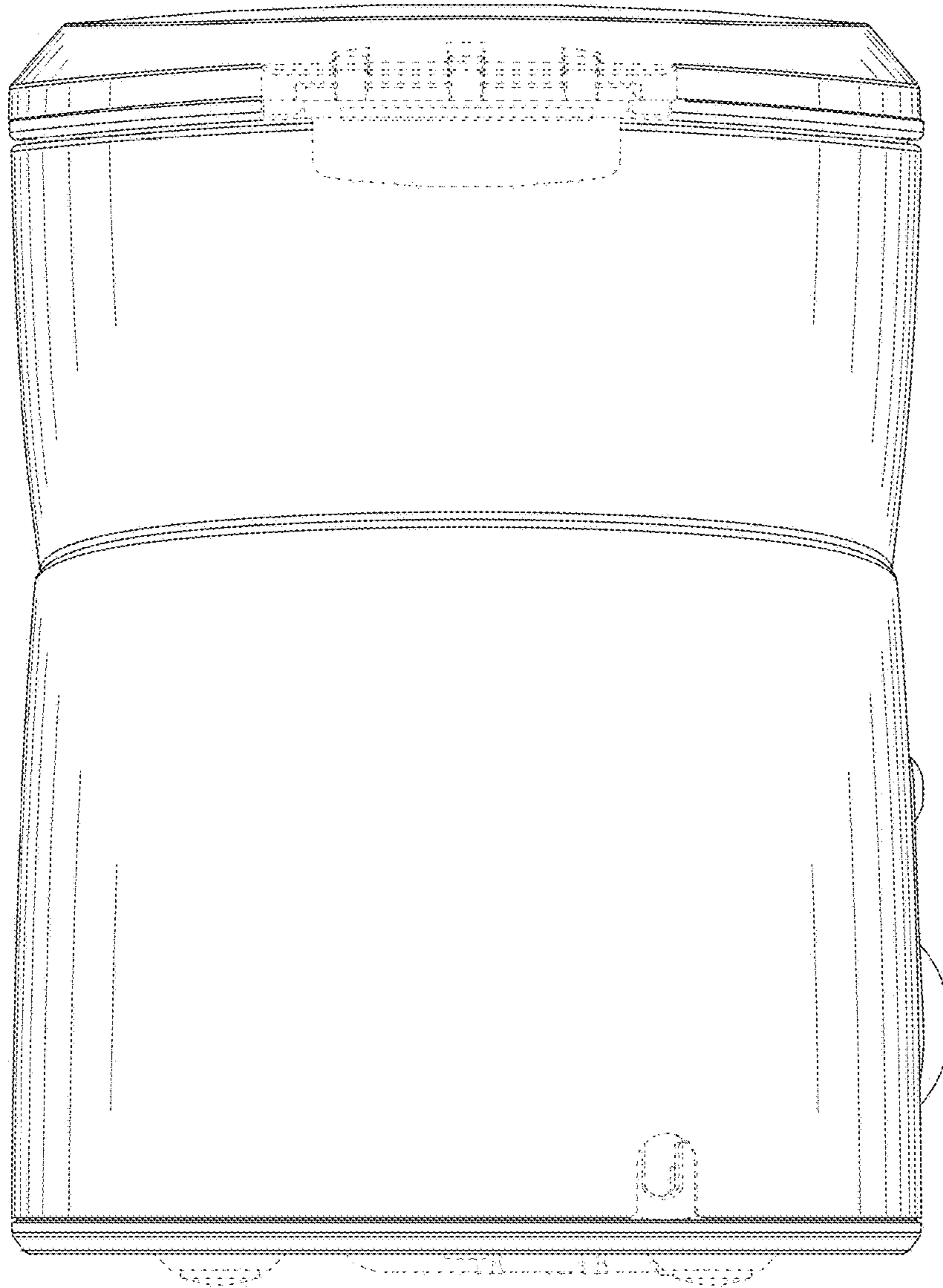


FIG. 3

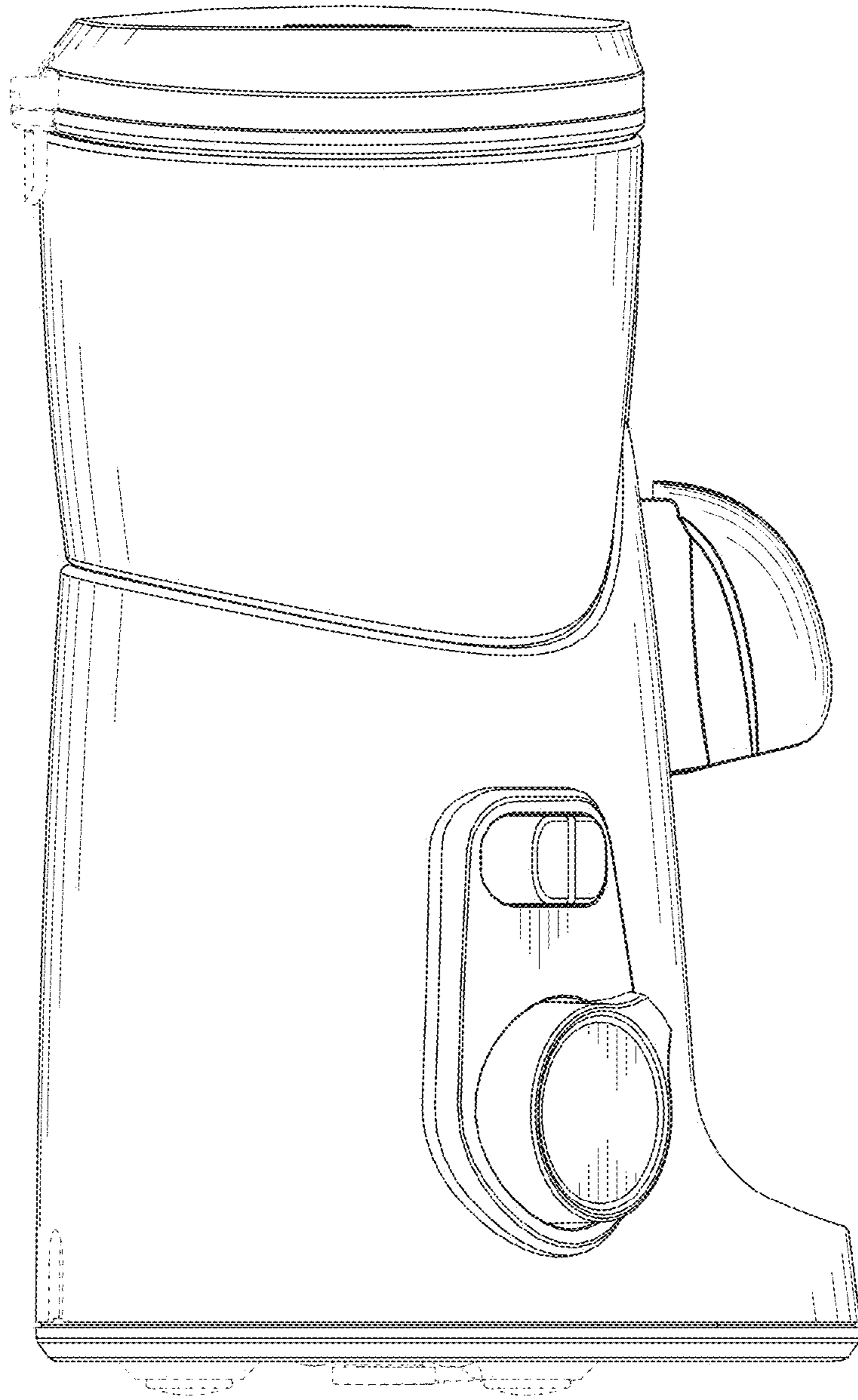


FIG. 4

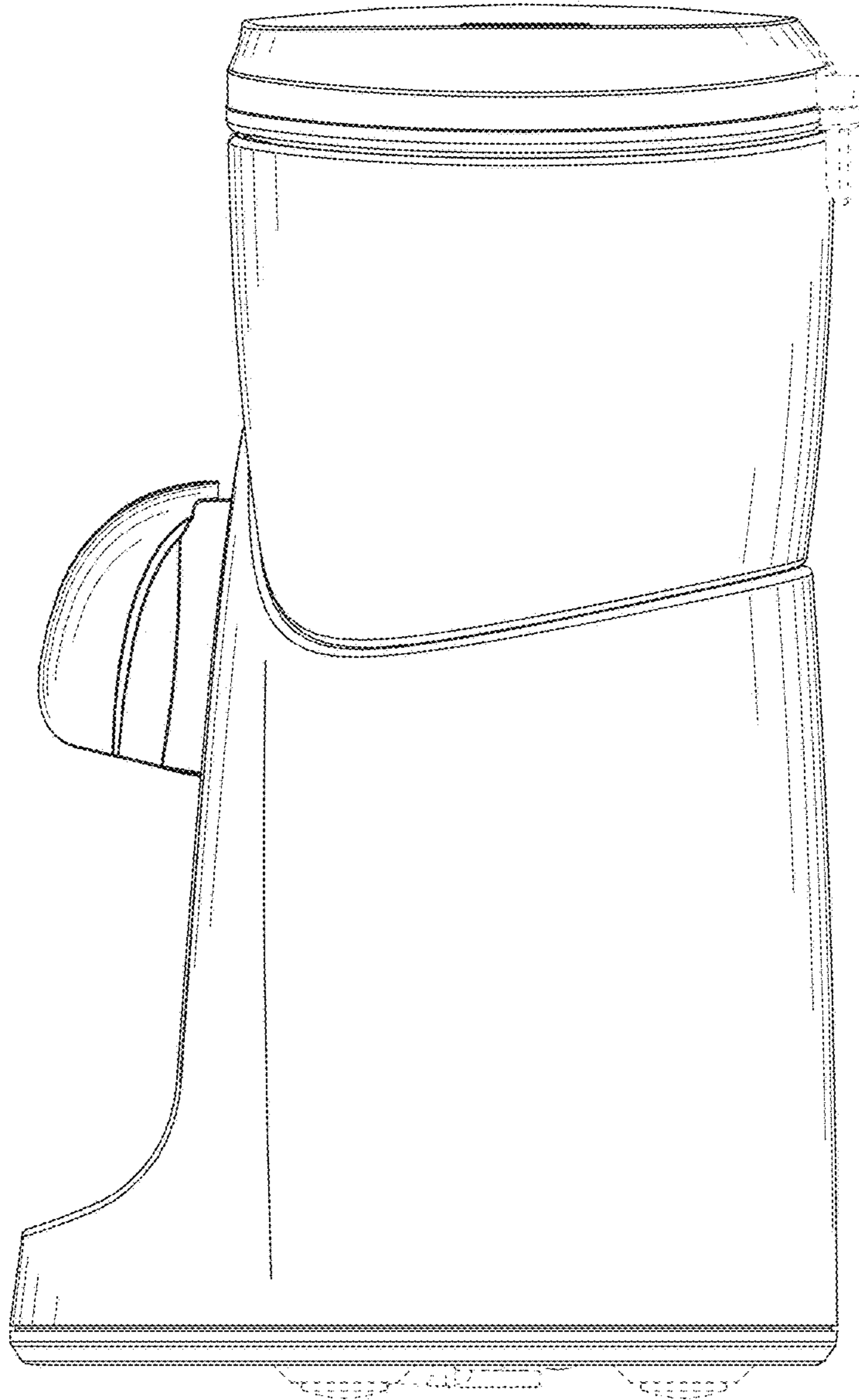


FIG. 5

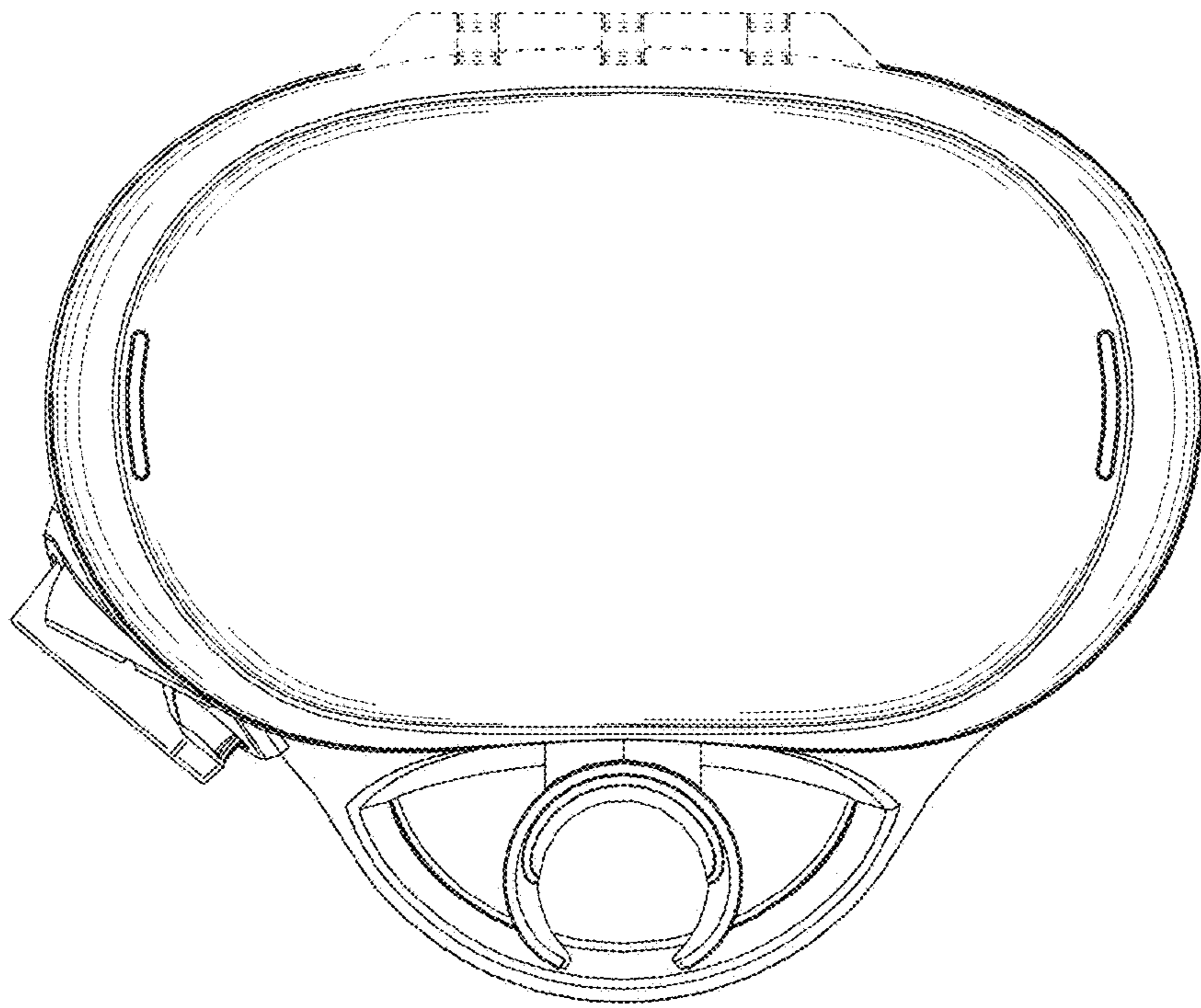


FIG. 6

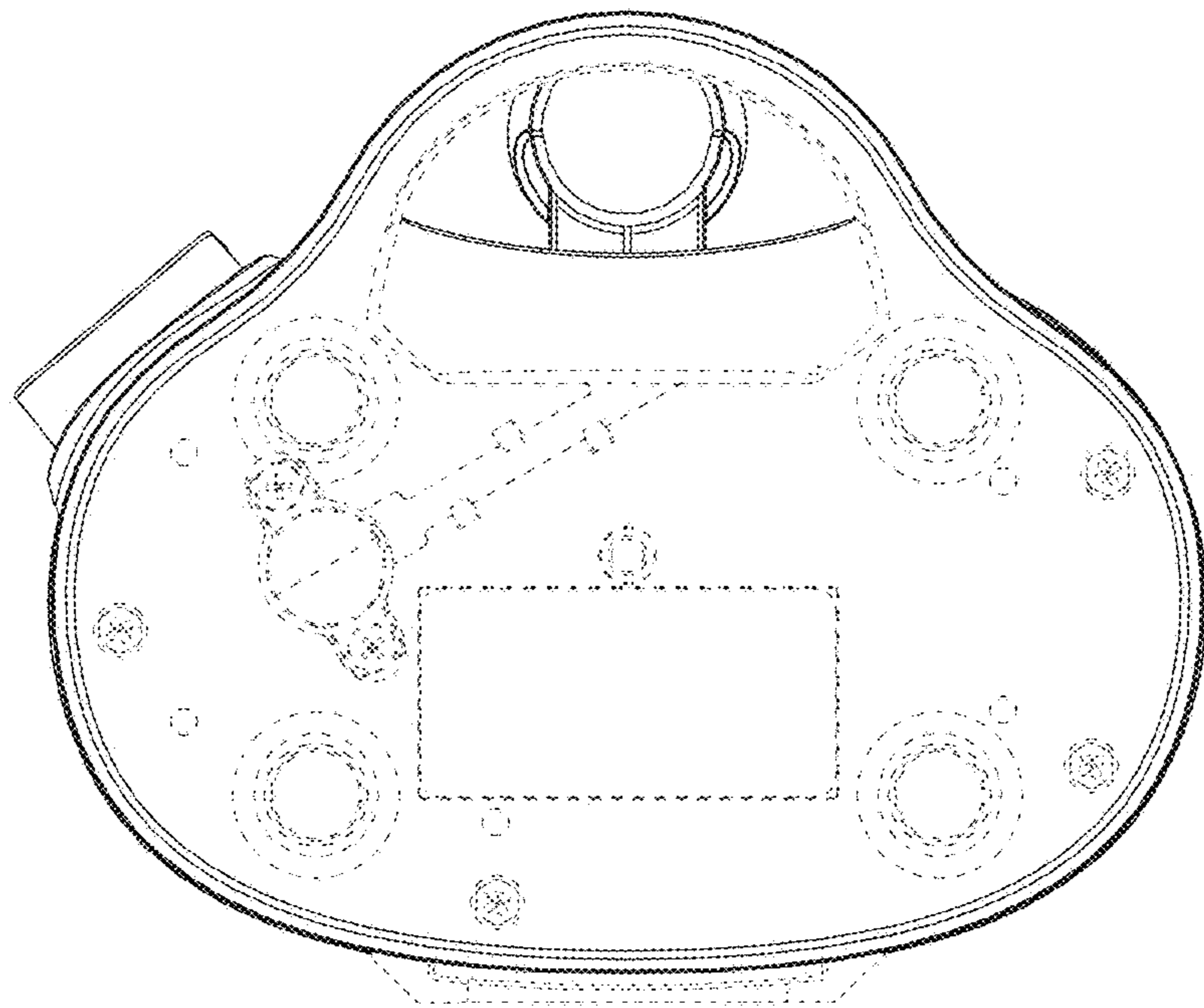


FIG. 7