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Boon et al.

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(54) **ORTHOPEdic SHELL**

(71) Applicant: **OSSUR ICELAND EHF**, Reykjavik (IS)

(72) Inventors: **Liza A. Boon**, Reykjavik (IS); **Valgeir Petursson**, Reykjavik (IS); **Sindri Pall Sigurdsson**, Reykjavik (IS)

(73) Assignee: **OSSUR ICELAND EHF**, Reykjavik (IS)

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(52) **U.S. Cl.**

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See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

667,768 A	2/1901	Puy
777,585 A	12/1904	Beatty
937,478 A	10/1909	Sims
1,153,334 A	9/1915	Oswald
1,227,700 A	5/1917	Tucker
1,328,541 A	1/1920	Palmer
1,510,408 A	9/1924	Lychou
1,622,211 A	3/1927	Sheehan

2,032,923 A	3/1936	Eldridge
2,179,903 A	11/1939	Spears
2,467,907 A	4/1949	Peckham
2,573,866 A	11/1951	Murphy
2,717,841 A	9/1955	Biefeld et al.
2,935,065 A	5/1960	Homier et al.

(Continued)

FOREIGN PATENT DOCUMENTS

CN	101128169 A	2/2008
DE	846 895 C	8/1952

(Continued)

OTHER PUBLICATIONS

“Velstick semi-rigid Fastener Furnished in Separate, Mating Components”, VELCRO Fasteners, Spaenaur, Sep. 2, 2009, 1 Page.

(Continued)

Primary Examiner — Jennifer L Watkins

(74) *Attorney, Agent, or Firm* — Workman Nydegger

(57) **CLAIM**

The ornamental design for an orthopedic shell, as shown and described.

DESCRIPTION

FIG. 1 is a perspective view of an orthopedic shell.

FIG. 2 is a top plan view thereof.

FIG. 3 is a bottom plan view thereof.

FIG. 4 is a front elevational view thereof.

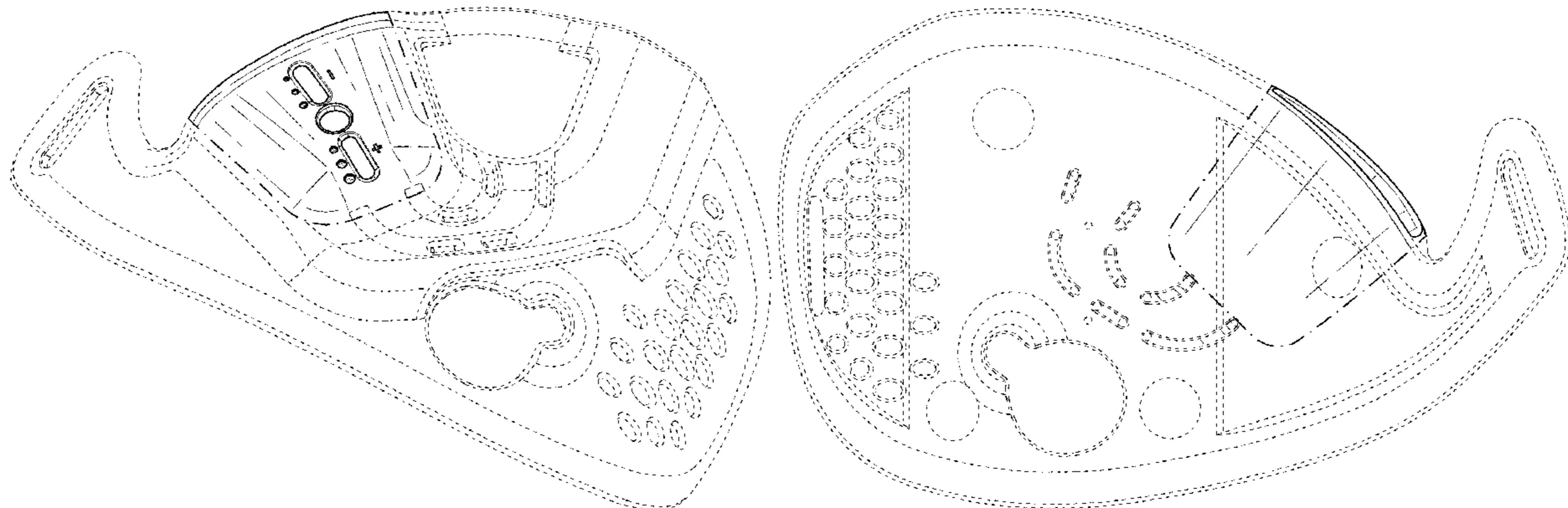
FIG. 5 is a rear elevational view thereof.

FIG. 6 is a first side elevational view thereof; and,

FIG. 7 is a second side elevational view thereof.

The evenly dashed broken lines illustrate environmental supplementary structure of the orthopedic shell and form no part of the claimed design. The dash dot dash broken lines depict the claim boundary and form no part of the claimed design.

1 Claim, 4 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

3,031,730 A	5/1962	Morin	4,989,593 A	2/1991	Campagna et al.
3,046,981 A	7/1962	Biggs, Jr. et al.	4,991,574 A	2/1991	Pocknell
3,089,486 A	5/1963	Pike	4,991,640 A	2/1991	Verkindt et al.
3,266,113 A	8/1966	Flanagan, Jr.	5,005,527 A	4/1991	Hatfield
3,463,147 A	8/1969	Stubbs	5,005,627 A	4/1991	Hatfield
3,514,313 A	5/1970	Martel et al.	5,016,621 A	5/1991	Bender
3,520,765 A	7/1970	Bateman	5,018,514 A	5/1991	Grood et al.
3,528,412 A	9/1970	McDavid	5,020,196 A	6/1991	Panach et al.
3,581,741 A	1/1971	Rosman	5,022,109 A	6/1991	Pekar
3,561,436 A	2/1971	Gaylord, Jr.	5,063,916 A	11/1991	France et al.
3,594,863 A	7/1971	Erb	5,067,772 A	11/1991	Koa
3,594,865 A	7/1971	Erb	5,077,870 A	1/1992	Melbye et al.
3,742,557 A	7/1973	Francois	5,085,210 A	2/1992	Smith, III
3,752,619 A	8/1973	Menzin et al.	5,112,296 A	5/1992	Beard et al.
3,758,657 A	9/1973	Menzin et al.	5,154,682 A	10/1992	Kellerman
3,789,842 A	2/1974	Froimson	5,157,813 A	10/1992	Carroll
3,804,084 A	4/1974	Lehman	5,181,331 A	1/1993	Berger
3,817,244 A	6/1974	Taylor	5,227,698 A	7/1993	Simpson et al.
3,851,357 A	12/1974	Ribich et al.	5,242,379 A	9/1993	Harris et al.
3,877,426 A	4/1975	Nirschl	5,267,951 A	12/1993	Ishii
3,916,077 A	10/1975	Damrau	5,277,697 A	1/1994	France et al.
3,927,881 A	12/1975	Lemelson et al.	5,277,698 A	1/1994	Taylor
3,945,046 A	3/1976	Stromgren	5,288,287 A	2/1994	Castillo et al.
3,955,565 A	5/1976	Johnson, Jr.	5,302,169 A	4/1994	Taylor
4,130,115 A	12/1978	Taylor	5,306,230 A	4/1994	Bodine
4,193,395 A	3/1980	Gruber	5,314,455 A	5/1994	Johnson, Jr. et al.
4,204,532 A	5/1980	Lind et al.	5,316,547 A	5/1994	Gildersleeve
4,240,414 A	12/1980	Theisler	5,322,729 A	6/1994	Heeter et al.
4,269,179 A	5/1981	Burton et al.	5,334,135 A	8/1994	Grim et al.
4,269,181 A	5/1981	Delannoy	5,344,135 A	9/1994	Isobe et al.
4,275,716 A	6/1981	Scott, Jr.	5,368,549 A	11/1994	McVicker
4,280,489 A	7/1981	Johnson, Jr.	5,383,845 A	1/1995	Nebolon
4,291,072 A	9/1981	Barrett et al.	5,397,296 A	3/1995	Sydor et al.
4,296,744 A	10/1981	Palumbo	5,415,625 A	5/1995	Cassford
4,304,560 A	12/1981	Greenwood	5,431,623 A	7/1995	Rice
4,312,335 A	1/1982	Daniell, Jr.	5,437,619 A	8/1995	Malewicz et al.
4,336,279 A	6/1982	Metzger	5,445,602 A	8/1995	Grim et al.
4,372,298 A	2/1983	Lerman	5,449,341 A	9/1995	Harris
4,381,768 A	5/1983	Erichsen et al.	5,458,565 A	10/1995	Tillinghast, III et al.
4,381,769 A	5/1983	Prahl	5,468,219 A	11/1995	Crippen
4,386,723 A	6/1983	Mule	5,472,413 A	12/1995	Detty
4,396,012 A	8/1983	Cobiski	5,474,524 A	12/1995	Carey
4,470,857 A	9/1984	Casalou	5,497,513 A	3/1996	Arabeyre et al.
4,472,461 A	9/1984	Johnson	5,500,268 A	3/1996	Billarant
4,506,661 A	3/1985	Foster	5,512,039 A	4/1996	White
4,528,440 A	7/1985	Ishihara	5,513,658 A	5/1996	Goseki
4,554,913 A	11/1985	Womack et al.	5,514,081 A	5/1996	Mann
4,556,053 A	12/1985	Irons	5,527,269 A	6/1996	Reithofer
4,572,170 A	2/1986	Cronk et al.	5,540,982 A	7/1996	Scholz et al.
D283,165 S *	3/1986	Womack D24/190	5,542,911 A	8/1996	Cassford et al.
4,617,214 A	10/1986	Billarant	5,562,605 A	10/1996	Taylor
4,632,098 A	12/1986	Grundeil et al.	5,599,288 A	2/1997	Shirley et al.
4,677,713 A	7/1987	Copp	5,695,452 A	2/1997	Grim et al.
4,693,921 A	9/1987	Billarant et al.	5,614,045 A	3/1997	Billarant
D292,529 S	10/1987	Saare	5,624,389 A	4/1997	Zepf
4,697,583 A	10/1987	Mason et al.	5,635,201 A	6/1997	Fabo
4,724,831 A	2/1988	Huntjens	5,638,588 A	6/1997	Jungkind
4,768,500 A	9/1988	Mason et al.	5,654,070 A	8/1997	Billarant
4,775,310 A	10/1988	Fischer	5,656,226 A	8/1997	McVicker
D298,568 S	11/1988	Womack et al.	5,665,449 A	9/1997	Billarant
4,782,605 A	11/1988	Cahpnick	5,713,837 A	2/1998	Grim et al.
4,791,916 A	12/1988	Paez	D392,877 S	3/1998	Eguchi
4,794,028 A	12/1988	Fischer	5,737,854 A	4/1998	Susmann
4,801,138 A	1/1989	Airy et al.	5,759,167 A	6/1998	Shields, Jr. et al.
4,802,939 A	2/1989	Billarant et al.	5,769,808 A	6/1998	Matthijs et al.
4,805,606 A	2/1989	McDavid, III	5,774,902 A	7/1998	Gehse
4,854,308 A	8/1989	Drillio	5,795,640 A	8/1998	Billarant
4,856,501 A	8/1989	Castillo et al.	5,807,294 A	9/1998	Cawley et al.
4,856,502 A	8/1989	Ersfeld et al.	5,823,931 A	10/1998	Gilmour
4,872,243 A	10/1989	Fischer	5,823,981 A	10/1998	Grim et al.
4,922,929 A	5/1990	DeJournett	5,840,398 A	11/1998	Billarant
4,933,035 A	6/1990	Billarant et al.	5,857,988 A	1/1999	Shirley
4,953,543 A	9/1990	Grim et al.	5,857,989 A	1/1999	Smith, III
4,961,544 A	10/1990	Bidoia	5,865,776 A	2/1999	Springs
4,966,133 A	10/1990	Kausek	5,865,777 A	2/1999	Detty
			5,865,782 A	2/1999	Fareed
			5,873,848 A	2/1999	Fulkerson
			5,891,061 A	4/1999	Kaiser
			5,891,071 A	4/1999	Stearns et al.

US D882,803 S

Page 3

(56)

References Cited

U.S. PATENT DOCUMENTS

5,900,303	A	5/1999	Billarant	9,265,644	B2	2/2016	Einarsson et al.
5,916,187	A	6/1999	Brill	9,358,146	B2	6/2016	Thorsteinsdottir et al.
5,948,707	A	9/1999	Crawley et al.	9,474,334	B2*	10/2016	Jonsson A61F 5/01
5,971,946	A	10/1999	Quinn	9,498,025	B2*	11/2016	Omarsson A44B 11/2588
6,010,474	A	1/2000	Wycoki	D835,289	S*	12/2018	Frost D24/190
6,021,780	A	2/2000	Darby	D849,253	S*	5/2019	Siddiqui D24/190
6,022,617	A	2/2000	Calkins	D854,173	S*	7/2019	Violeau D24/190
6,024,712	A	2/2000	Iglesias et al.	D870,899	S*	12/2019	Hsu D24/191
6,063,048	A	5/2000	Bodenschatz et al.	2001/0020143	A1	9/2001	Stark et al.
6,110,138	A	8/2000	Shirley	2001/0056251	A1	12/2001	Peters
6,111,138	A	8/2000	Van Wijck et al.	2002/0032397	A1	3/2002	Coligado
6,142,965	A	11/2000	Mathewson	2002/0077574	A1	6/2002	Gildersleeve et al.
6,152,893	A	11/2000	Pigg et al.	2002/0082542	A1	6/2002	Hall
6,159,583	A	12/2000	Calkins	2002/0095750	A1	7/2002	Hammerslag
6,250,651	B1	6/2001	Reuss et al.	2002/0107464	A1	8/2002	Castillo
6,254,554	B1	7/2001	Turtzo	2002/0132086	A1	9/2002	Su-Tuan
6,267,741	B1	7/2001	Lerman	2003/0032907	A1	2/2003	Prahl
RE37,338	E	8/2001	McVicker	2003/0069531	A1	4/2003	Hall
6,287,268	B1	9/2001	Gilmour	2003/0204156	A1	10/2003	Nelson et al.
6,289,558	B1	9/2001	Hammerslag	2004/0002674	A1	1/2004	Sterling
6,360,404	B1	3/2002	Mudge et al.	2004/0054311	A1	2/2004	Sterling
6,368,295	B1	4/2002	Lerman	2004/0058102	A1	3/2004	Baychar
6,402,713	B1	6/2002	Doyle	2004/0137178	A1	7/2004	Janusson et al.
6,405,731	B1	6/2002	Ching	2004/0137192	A1	7/2004	McVicker
6,413,232	B1	7/2002	Townsend et al.	2004/0153016	A1	8/2004	Salmon et al.
6,416,074	B1	7/2002	Maravetz et al.	2004/0176715	A1	9/2004	Nelson
6,461,318	B2	10/2002	Freeman et al.	2004/0199095	A1	10/2004	Frangi
6,485,776	B2	11/2002	Janusson et al.	2004/0225245	A1	11/2004	Nelson
6,520,926	B2	2/2003	Hall	2004/0267179	A1	12/2004	Lerman
6,540,703	B1	4/2003	Lerman	2005/0020951	A1	1/2005	Gaylord et al.
6,540,709	B1	4/2003	Smits	2005/0038367	A1	2/2005	McCormick et al.
D477,409	S	7/2003	Mills et al.	2005/0081339	A1	4/2005	Sakabayashi
6,592,538	B1	7/2003	Hotchkiss et al.	2005/0159691	A1	7/2005	Turrini et al.
6,592,539	B1	7/2003	Einarsson et al.	2005/0160627	A1	7/2005	Dalgaard et al.
6,596,371	B1	7/2003	Billarant et al.	2006/0015980	A1	1/2006	Nordt, III et al.
6,598,250	B1	7/2003	Pekar	2006/0020237	A1	1/2006	Nordt, III et al.
6,543,158	B2	8/2003	Dieckhaus	2006/0026732	A1	2/2006	Nordt, III et al.
6,656,142	B1	12/2003	Lee	2006/0026733	A1	2/2006	Nordt, III et al.
6,666,894	B2	12/2003	Perkins et al.	2006/0026736	A1	2/2006	Nordt, III et al.
6,689,080	B2	2/2004	Castillo	2006/0030802	A1	2/2006	Nordt, III et al.
6,726,641	B2	4/2004	Chiang et al.	2006/0030803	A1	2/2006	Nordt, III et al.
6,735,819	B2	5/2004	Iverson et al.	2006/0030804	A1	2/2006	Nordt, III et al.
6,740,054	B2	5/2004	Stearns	2006/0030805	A1	2/2006	Nordt, III et al.
6,769,155	B2	8/2004	Hess et al.	2006/0030806	A1	2/2006	Nordt, III et al.
6,773,411	B1	8/2004	Alvarez	2006/0070164	A1	4/2006	Nordt, III et al.
6,861,371	B2	3/2005	Kamikawa et al.	2006/0070165	A1	4/2006	Nordt, III et al.
6,861,379	B1	3/2005	Blaszcykiewicz	2006/0084899	A1	4/2006	Verkade et al.
6,898,804	B2	5/2005	Sandler	2006/0090806	A1	5/2006	Friedline et al.
6,898,826	B2	5/2005	Draper et al.	2006/0094999	A1	5/2006	Cropper
6,936,020	B2	8/2005	Davis	2006/0116619	A1	6/2006	Weinstein et al.
D519,637	S	4/2006	Nordt et al.	2006/0135900	A1	6/2006	Ingimundarson et al.
D519,638	S	4/2006	Nordt et al.	2006/0135902	A1	6/2006	Ingimundarson et al.
7,025,738	B2	4/2006	Hall	2006/0135903	A1	6/2006	Ingimundarson et al.
D520,141	S	5/2006	Nordt et al.	2006/0155229	A1	7/2006	Ceriani et al.
D521,644	S	5/2006	Nordt et al.	2006/0156517	A1	7/2006	Hammerslag et al.
7,037,287	B2	5/2006	Cormier et al.	2006/0191110	A1	8/2006	Howell et al.
D527,825	S*	9/2006	Ingimundarson D24/190	2007/0083136	A1	4/2007	Einarsson
7,150,721	B2	12/2006	Houser	2007/0106191	A1	5/2007	Mueller et al.
7,161,056	B2	1/2007	Gudnason et al.	2007/0130665	A1	6/2007	Wang
7,169,720	B2	1/2007	Etchells et al.	2007/0167892	A1	7/2007	Gramza et al.
7,198,610	B2	4/2007	Ingimundarson et al.	2007/0167895	A1	7/2007	Gramaza et al.
7,303,539	B2	12/2007	Binder et al.	2007/0185425	A1	8/2007	Einarsson et al.
7,367,958	B2	5/2008	McBean et al.	2007/0225824	A1	9/2007	Einarsson
D577,828	S*	9/2008	Ingimundarson D24/190	2008/0034459	A1	2/2008	Nordt, III et al.
7,448,115	B2	11/2008	Howell et al.	2008/0066272	A1	3/2008	Hammerslag et al.
7,749,183	B2	7/2010	Ingimundarson et al.	2008/0195014	A1	8/2008	Ingimundarson et al.
7,762,973	B2	7/2010	Einarsson et al.	2008/0229556	A1	9/2008	Hammer
D623,760	S*	9/2010	Chiang D24/190	2009/0099562	A1	4/2009	Ingimundarson et al.
7,806,842	B2	10/2010	Stevenson et al.	2009/0126413	A1	5/2009	Sorensen et al.
7,874,996	B2	1/2011	Weinstein et al.	2009/0259154	A1	10/2009	Nace
7,905,851	B1	3/2011	Bledsoe	2010/0068464	A1	3/2010	Meyer
7,937,973	B2	5/2011	Sorensen et al.	2010/0125231	A1	5/2010	Knecht
8,043,244	B2	10/2011	Einarsson et al.	2011/0057466	A1	3/2011	Sachee et al.
8,328,747	B2	12/2012	Matsunaga	2011/0275970	A1	11/2011	Paulos et al.
D696,785	S*	12/2013	Weaver, II D24/192	2012/0010547	A1	1/2012	Hinds
				2012/0046585	A1	2/2012	Lee et al.
				2012/0090624	A1	4/2012	Chang
				2012/0109031	A1	5/2012	Vollbrecht et al.
				2012/0220910	A1	8/2012	Gaylord et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

2013/0245523 A1 9/2013 Romo
 2014/0121579 A1 5/2014 Hinds
 2014/0194801 A1 7/2014 Ingimundarson et al.
 2014/0214016 A1 7/2014 Ingimundarson et al.
 2014/0257158 A1 9/2014 Lee et al.
 2015/0290014 A1 10/2015 Anglada et al.

FOREIGN PATENT DOCUMENTS

DE 100 04 561 A1 8/2001
 DE 20 2004 012 892 U1 10/2004
 EP 0 050 769 A1 5/1985
 EP 0 196 204 A2 10/1986
 EP 0 611 069 A 8/1994
 EP 1016351 A1 7/2000
 EP 2612626 A2 7/2013
 FR 2 399 811 A1 3/1979
 FR 2 553 996 A1 5/1985
 FR 2 766 359 A1 1/1999
 GB 1209413 A 10/1970
 GB 2 136 294 A 9/1984
 GB 2 455 972 A 7/2009
 WO 88/01855 A1 3/1988
 WO 94/00082 A1 1/1994
 WO 00/49982 A1 8/2000
 WO 00/70984 A1 11/2000
 WO 2006/015599 A1 2/2006
 WO 2006/069221 A2 6/2006
 WO 2006/069222 A2 6/2006
 WO 2008/115376 A1 9/2008
 WO 2009/052031 A1 4/2009
 WO 2010/117749 A2 10/2010
 WO 2011/073803 A2 6/2011

OTHER PUBLICATIONS

Article: "An Orthosis for Medial or Lateral Stabilization of Arthritic Knees", by S. Cousins and James Foort, *Orthotics and Prosthetics*, vol. 29, No. 4, pp. 21-26, Dec. 1975.

Advertising Brochure: "NUKO Camp", 6 pages, Camp International, Inc. Jackson, MI (1984).

Advertising Brochure: "Lerman Multi-Ligaments Knee Control Orthosis", 2 pages, Zinco Industries, Inc. of Montrose, CA (1985).
 "Information on Flexible Polyurethane Foam", *In Touch*, vol. 4, No. 3, Jul. 1994, 5 pages.

Advertisement: "Custom Engineered Fabrics and Products for Advanced High Performance", 1 page, Gehring Textiles (visited Dec. 15, 2005), <http://www.gehringtextiles.com/d3.html>.

Article: "Osteoarthritis of the Knee: An Information Booklet", Arthritis Research Campaign (visited Dec. 14, 2004) http://www.arc.org.uk/about_arth/booklets/6027/6027.htm.

Advertising Brochure: "Freedom to Perform-Fusion", 5 pages, (2005).

Advertising Brochure: "Fusion", 6 pages, Breg, Inc. of Vista, CA (2005).

Advertising Brochure: "Fusion XT", 2 pages, Breg, Inc. of Vista, CA (2005).

Advertising Brochure: "Anderson Knee Stabler", 4 pages, Omni Scientific, Inc. of Lafayette, CA. Feb. 7, 2013.

Advertising Brochure: "OTI Brace", 4 pages, Orthopedic Technology, Inc. of San Leandro, CA. Feb. 7, 2013.

Advertising Brochure: "The Four Axioms of Functional Bracing", 2 pages, Bledsoe by Medical Technology, Inc. (2005).

Advertising Brochure: "The Leader in Knee Motion Management", 8 pages. Donjoy, Carsbad, CA. Feb. 7, 2013.

Advertising Brochure: "The Lenox Hill Lightweight", 1page, Lenox Hill Brace, Inc., New York, NY. Feb. 7, 2013.

Advertising Brochure: "XCL System", 2 pages, Innovation Sports of Foothill Ranch, CA. Feb. 7, 2013.

Advertising Brochure: "The 9 Innovations of the Axiom Custom Brace", 1 page, Bledsoe, Medical Technology, Inc. (2005).

Technical Manual: Bellacure: Restore Your Lifestyle, 10 pages, Bellacure, Inc. (2005).

Technical Manual: "Boa Technology", 3 pages, Boa Technology, Inc. of Steamboat Springs, CO, Feb. 7, 2013.

Advertising Brochure: "GII Unloader Select", 2 page, Ossur HF of Reykjavik, Iceland (visited Mar. 8, 2005), <http://www.ossur.com/pring.asp?pageID=1729>.

Advertisement: "McDavid Knee Guard and 155 Ligament Augmentation System", 3 pages, Advanced Brace of Irving TX (visited Mar. 8, 2005), <http://www.supports4u.com/mcdavid/kneeguard.htm>.

Advertisement: "Triax", 1 page, Lanxess AG (visited Mar. 8, 2005), <http://www.techcenter.lanxess.com/sty/emea/en/products/description/57/index/jsp?print=true&pid=57>.

Reference: "Anatomical Planes", 1 page, (visited Mar. 26, 2005), <http://www.spineuniverse.com/displayarticle.phpo/article1023.html>.

Advertisement: "M2 Inc. Parts Catalog", 3 pages, M2 Inc. of Winooski, VT (visited Mar. 29, 2005), <http://www.m2intl.com/medical.MedClsr.htm>.

Advertisement: "Axiom", 3 pages, Bledsoe by Medical Technology, Inc. (visited Jun. 15, 2005), <http://www.bledsoebrace.com/custom/axiom.asp>.

Advertisement: "Bellacure: The Treatment Device", 6 pages, Bellacure, Inc. (visited Jan. 5, 2006), <http://www.bellacure.com/products/index/html>.

Advertisement: "Lerman 3-Point Knee Orthosis", 2 pages, Becker Orthopedic of Troy, MI (visited Feb. 26, 2006), <http://www.beckerortho.com/knee/3-point/htm>.

Article: "Thermoplastic Elastomers TPE, TPR, TPV", 6 pages (visited Mar. 14, 2007), http://www.bpf.co.uk.bpfindustry/plastics_thermplasrubber_TBR.cfm.

* cited by examiner

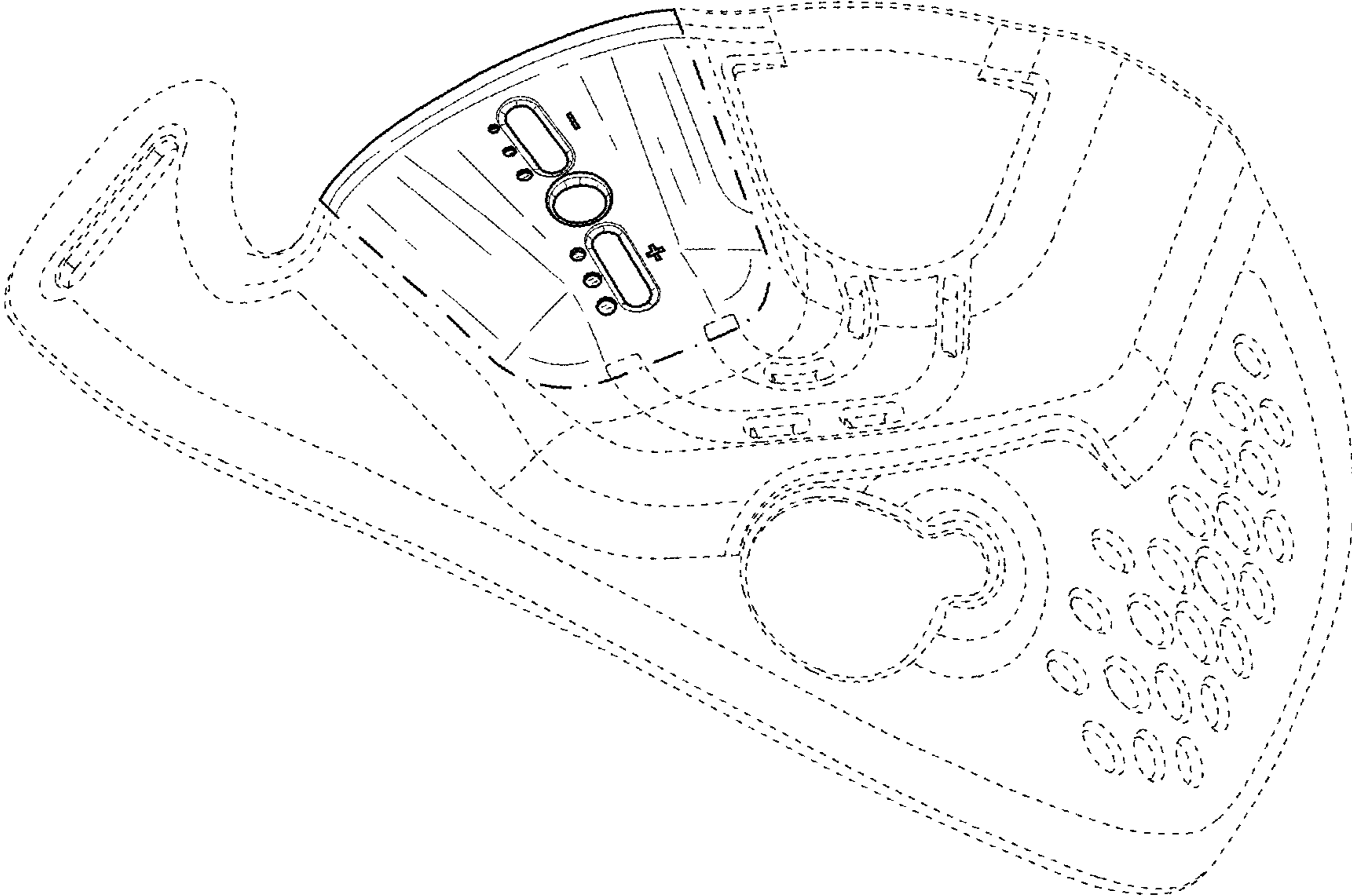


FIG. 1

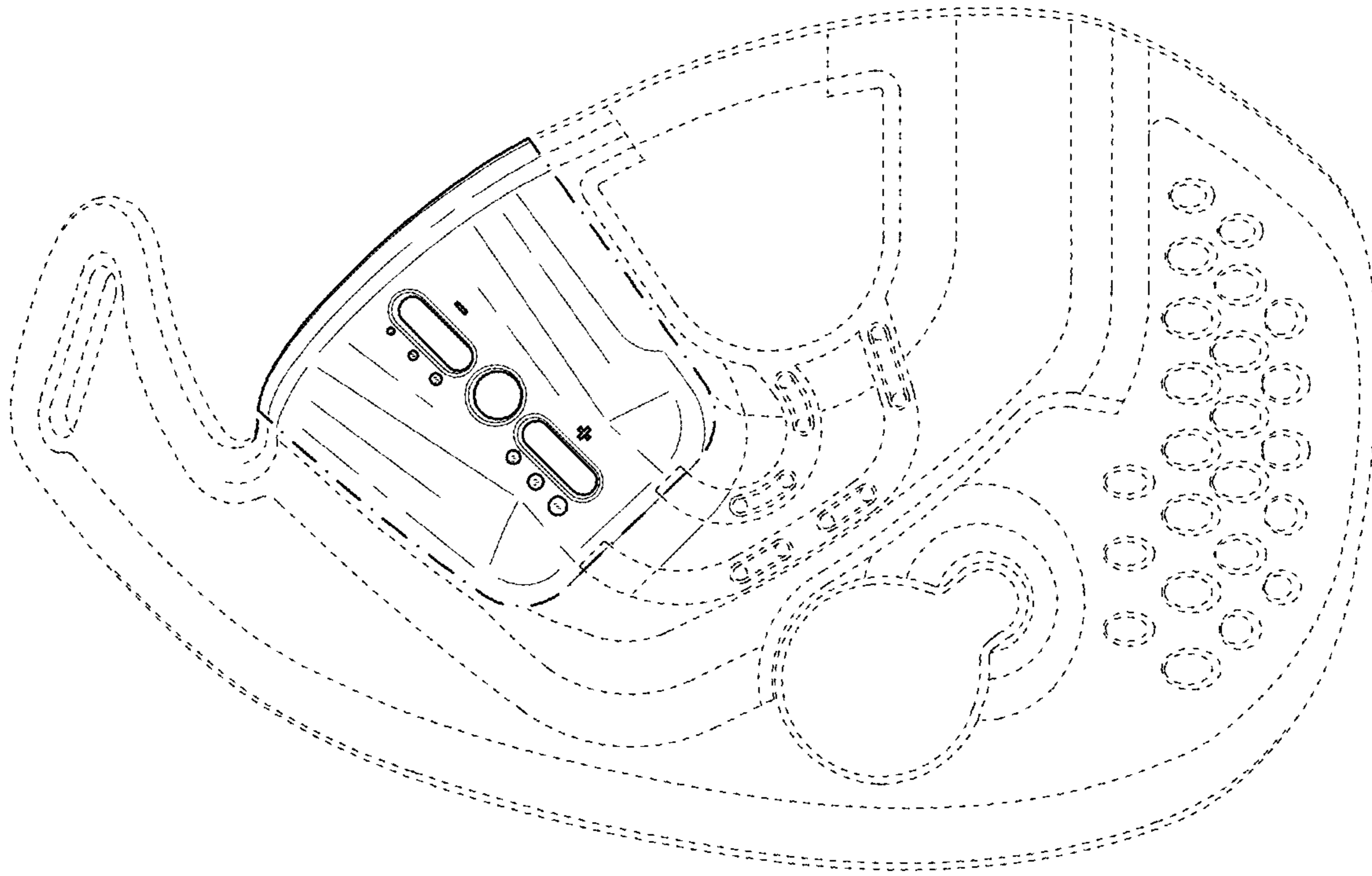


FIG. 2

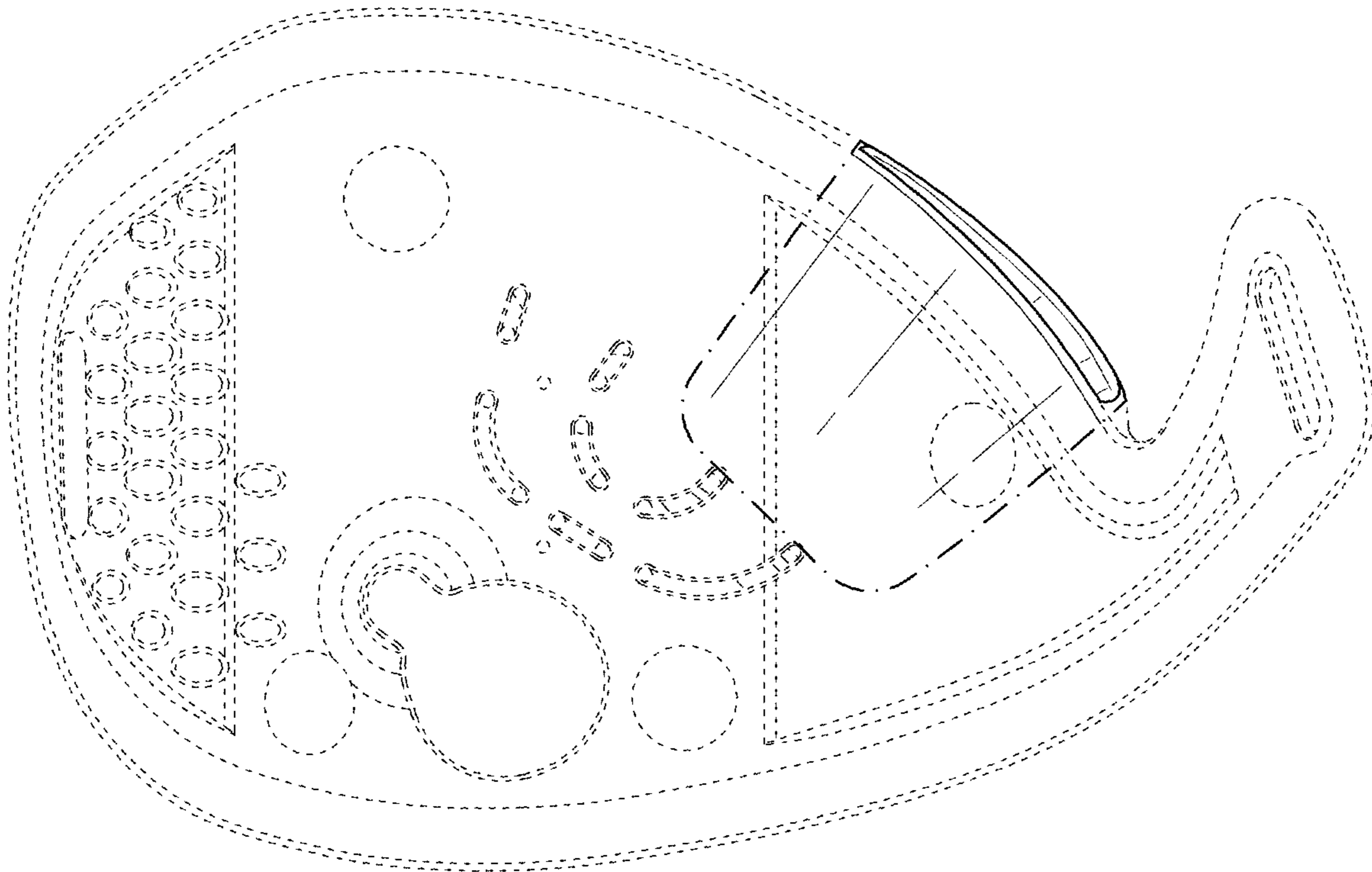


FIG. 3

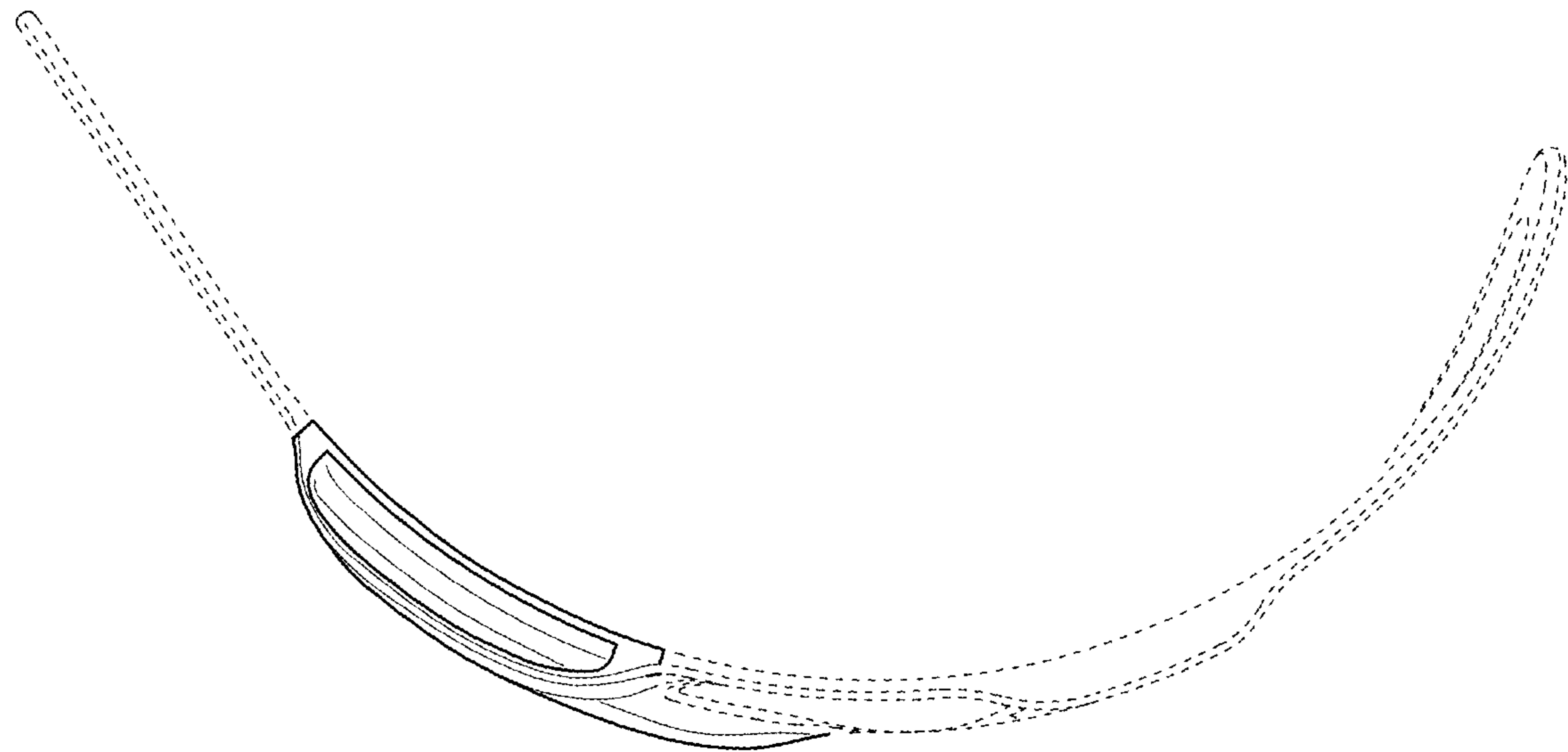


FIG. 4

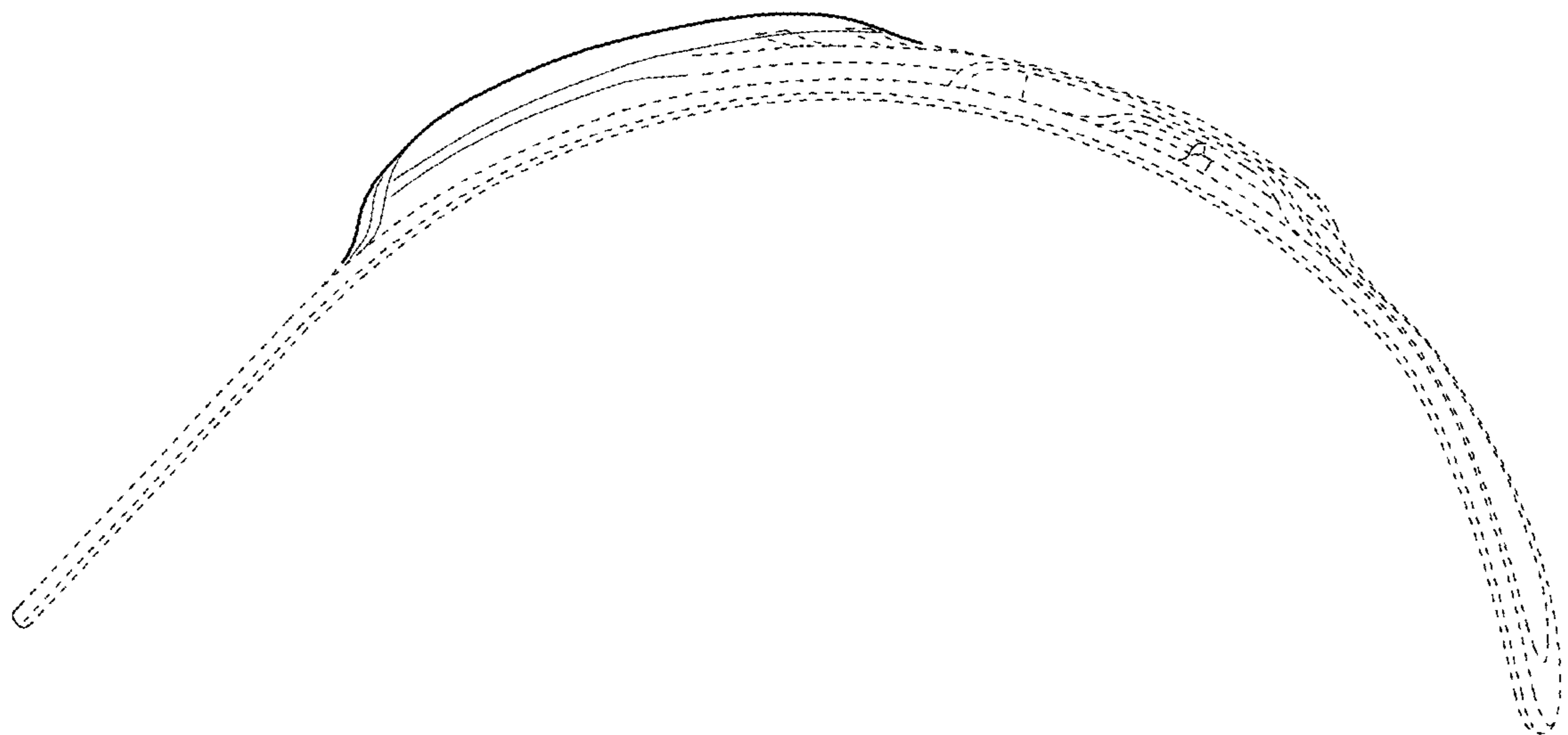


FIG. 5

FIG. 6

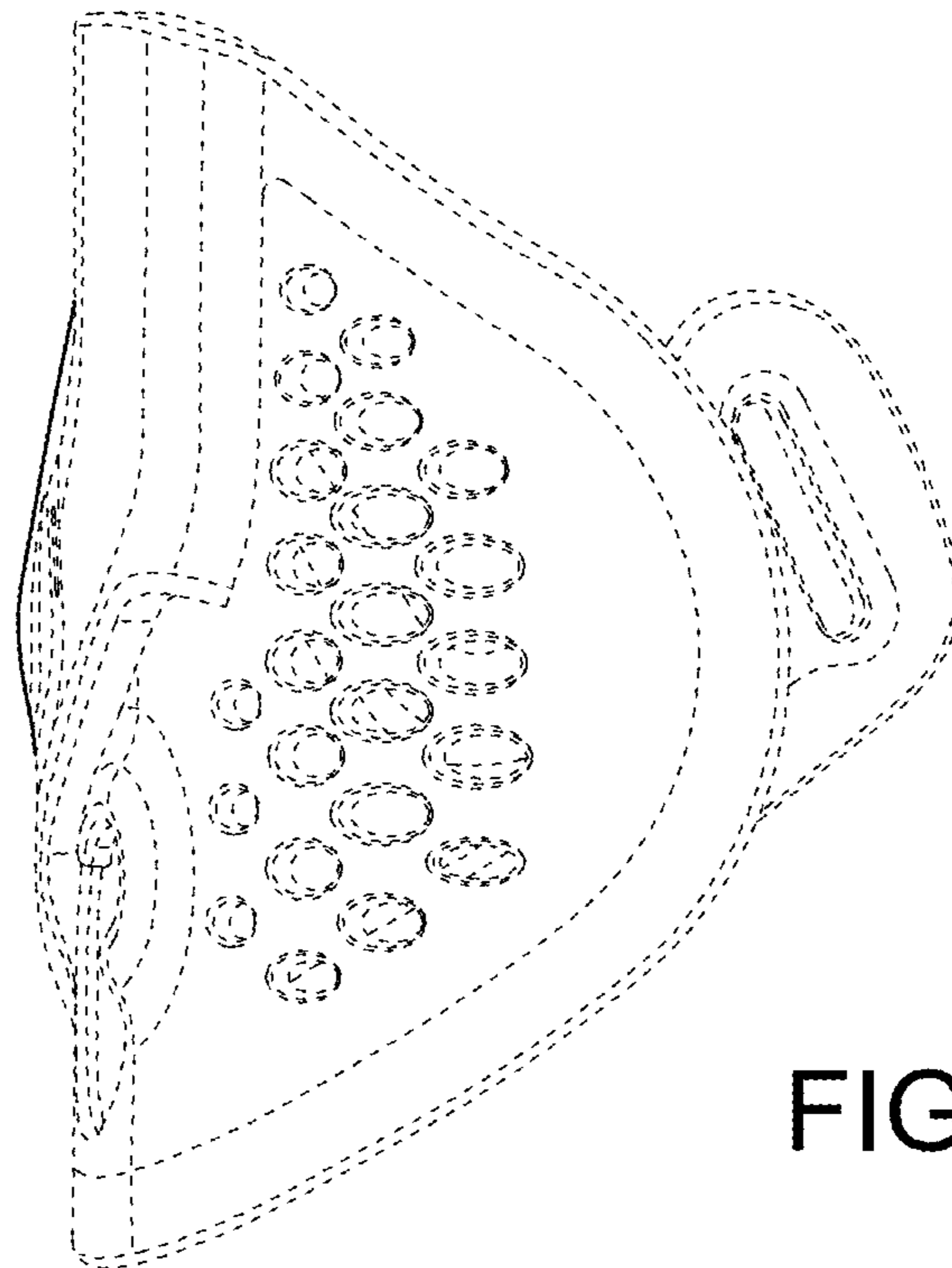
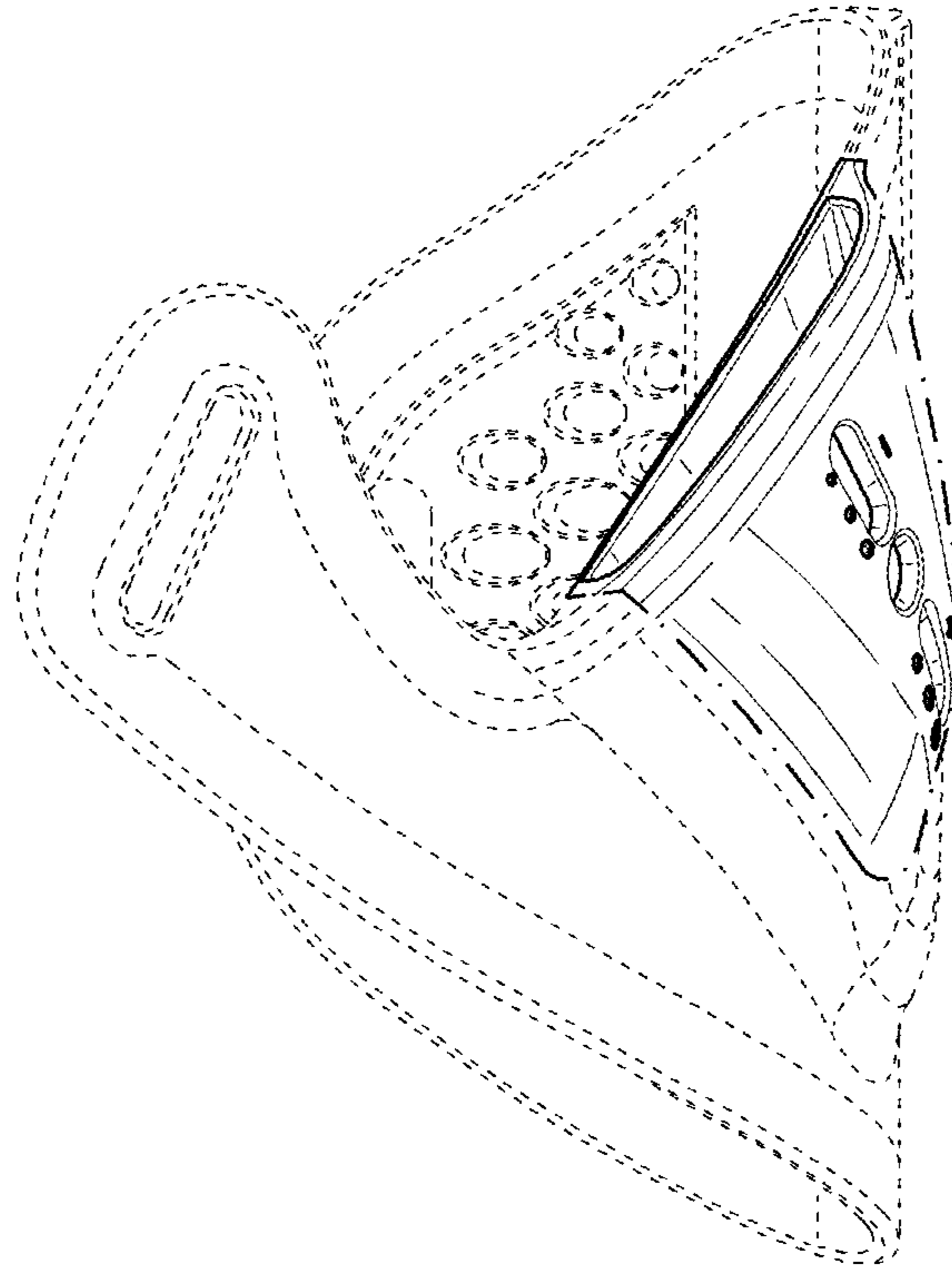


FIG. 7