US00D810942S

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

(10) **Patent No.: US D810,942 S**
(45) **Date of Patent: ** Feb. 20, 2018**

(54) **INTERBODY BONE IMPLANT**

(71) Applicant: **Spinal Elements, Inc.**, Carlsbad, CA (US)

(72) Inventors: **Jason Blain**, Encinitas, CA (US); **Greg Martin**, Encinitas, CA (US)

(73) Assignee: **Spinal Elements, Inc.**, Carlsbad, CA (US)

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

(21) Appl. No.: **29/602,768**

(22) Filed: **May 3, 2017**

Related U.S. Application Data

(60) Continuation of application No. 29/562,284, filed on Apr. 25, 2016, now Pat. No. Des. 790,062, which is
(Continued)

(51) **LOC (11) Cl.** **24-02**
(52) **U.S. Cl.**
USPC **D24/155**
(58) **Field of Classification Search**
USPC D24/155, 133, 135; D12/204, 207
(Continued)

(56) **References Cited**

U.S. PATENT DOCUMENTS

86,106 A 1/1869 Howell
1,630,239 A 5/1927 Binkley et al.
(Continued)

FOREIGN PATENT DOCUMENTS

CA 2 437 575 4/2009
DE 93 04 368 5/1993
(Continued)

OTHER PUBLICATIONS

3rd Party Lab Notebook, "Facet Cartilage Repair," dated May 20, 2003 in 2 pages.
(Continued)

Primary Examiner — Charles Hanson
(74) *Attorney, Agent, or Firm* — Knobbe, Martens, Olson & Bear, LLP

(57) **CLAIM**

The ornamental design for an interbody bone implant, as shown and described.

DESCRIPTION

This application is related to U.S. patent application Ser. No. 29/404,922 entitled "Interbody Bone Implant," filed on Oct. 26, 2011, now U.S. Pat. No. D. 724,733 issued on Mar. 17, 2015, the disclosures of each U.S. patent application Ser. No. 29/404,921 and U.S. patent application Ser. No. 29/404,922 are incorporated herein by reference in their entireties.

FIG. **1** is a front perspective view of an interbody bone implant according to an embodiment;

FIG. **2** is a top view of the interbody bone implant illustrated in FIG. **1**;

FIG. **3** is a bottom view of the interbody bone implant illustrated in FIG. **1**;

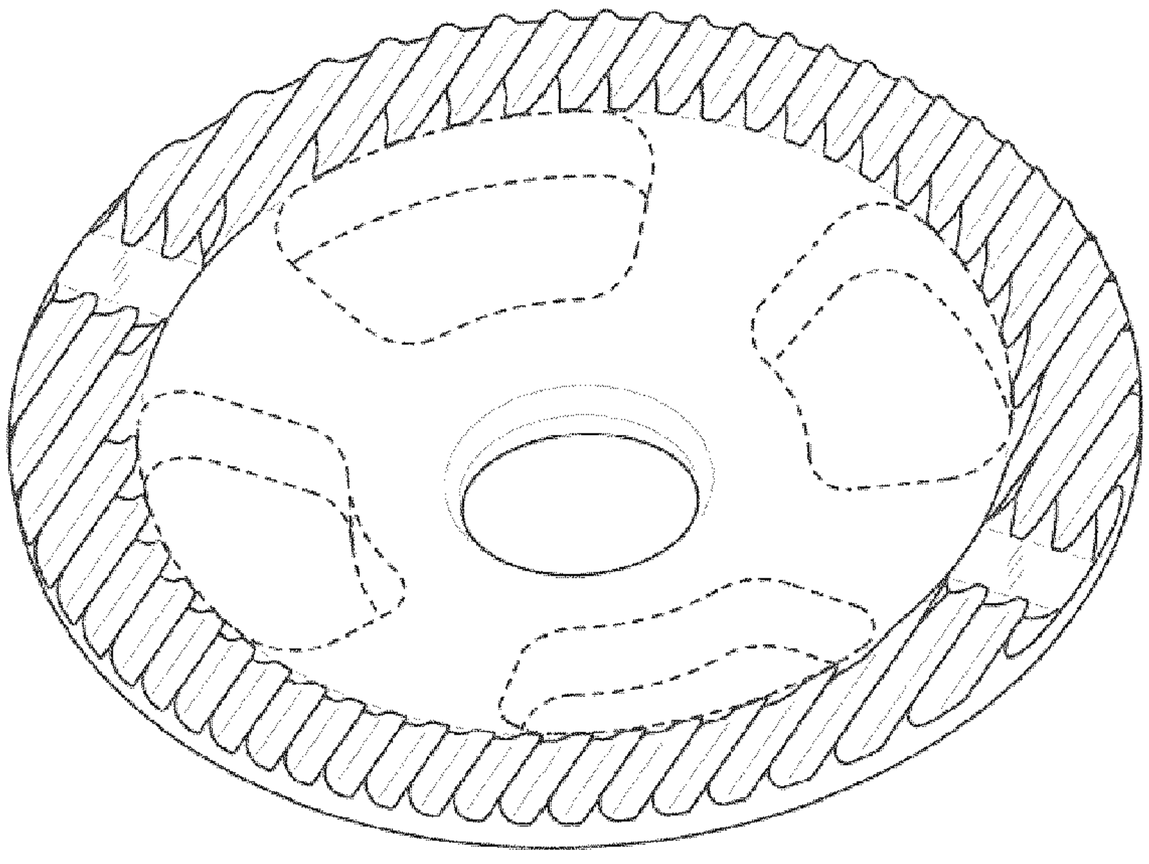
FIG. **4** is a first side view of the interbody bone implant illustrated in FIG. **1**; and

FIG. **5** is a second side view of the interbody bone implant illustrated in FIG. **1**; and,

FIG. **6** is a cross-sectional view of the interbody bone implant taken along line **120-120** in FIG. **2**.

The broken-jagged lines which define the boundary of the claimed design do not form part of the claimed design. The broken lines are for environmental purposes only and form no part of the claimed design.

1 Claim, 3 Drawing Sheets



Related U.S. Application Data

a continuation of application No. 29/537,496, filed on Aug. 26, 2015, now Pat. No. Des. 765,854, which is a division of application No. 29/404,921, filed on Oct. 26, 2011, now Pat. No. Des. 739,935.

(58) **Field of Classification Search**

CPC A61F 2/4611; A61F 2/442; A61F 2/447; A61F 2220/0025; A61F 2310/00023; A61F 2310/00017; A61F 2002/4475; A61F 2002/30841; A61F 2002/2835; A61F 2002/30904; A61F 2002/30785; A61F 2002/443; A61F 2002/30578

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

1,822,280	A	9/1931	Ervay
1,822,330	A	9/1931	Anslie
2,486,303	A	10/1949	Longfellow
2,706,023	A	4/1955	Merritt
3,111,945	A	11/1963	Von Solbrig
3,149,808	A	9/1964	Weckesser
3,570,497	A	3/1971	Lemole
3,867,728	A	2/1975	Stubstad et al.
3,875,595	A	4/1975	Froning
3,879,767	A	4/1975	Stubstad
4,001,896	A	1/1977	Arkangel
4,037,603	A	7/1977	Wendorff
4,085,466	A	4/1978	Goodfellow et al.
4,119,091	A	10/1978	Partridge
4,156,296	A	5/1979	Johnson et al.
4,231,121	A	11/1980	Lewis
D261,935	S	11/1981	Halloran
4,312,337	A	1/1982	Donohue
4,323,217	A	4/1982	Dochterman
4,349,921	A	9/1982	Kuntz
4,502,161	A	3/1985	Wall
D279,502	S	7/1985	Halloran
D279,503	S	7/1985	Halloran
4,535,764	A	8/1985	Ebert
4,573,458	A	3/1986	Lower
4,573,459	A	3/1986	Litton
4,634,445	A	1/1987	Helal
4,662,371	A	5/1987	Whipple et al.
4,706,659	A	11/1987	Matthews et al.
4,714,469	A	12/1987	Kenna
4,722,331	A	2/1988	Fox
4,730,615	A	3/1988	Sutherland et al.
4,759,766	A	7/1988	Buettner-Janz et al.
4,759,769	A	7/1988	Hedman et al.
4,772,287	A	9/1988	Ray et al.
4,773,402	A	9/1988	Asher et al.
4,834,757	A	5/1989	Brantigan
4,863,477	A	9/1989	Monson
4,904,260	A	2/1990	Ray et al.
4,907,577	A	3/1990	Wu
4,911,718	A	3/1990	Lee et al.
4,919,667	A	4/1990	Richmond
4,923,471	A	5/1990	Morgan
4,936,848	A	6/1990	Bagby
4,941,466	A	7/1990	Romano
4,959,065	A	9/1990	Arnett et al.
4,969,909	A	11/1990	Barouk
5,000,165	A	3/1991	Watanabe
5,002,546	A	3/1991	Romano
5,011,484	A	4/1991	Bréard
5,015,255	A	5/1991	Kuslich
5,047,055	A	9/1991	Bao et al.
5,062,845	A	11/1991	Kuslich
5,071,437	A	12/1991	Steffee
5,092,866	A	3/1992	Breard et al.
5,112,013	A	5/1992	Tolbert et al.
5,112,346	A	5/1992	Hiltebrandt et al.
5,127,912	A	7/1992	Ray et al.
5,135,188	A	8/1992	Anderson et al.
5,147,404	A	9/1992	Downey
5,171,280	A	12/1992	Baumgartner
5,192,326	A	3/1993	Bao et al.
5,209,755	A	5/1993	Abrahan et al.
5,258,031	A	11/1993	Salib et al.
5,282,861	A	2/1994	Kaplan
5,286,249	A	2/1994	Thibodaux
5,300,073	A	4/1994	Ray et al.
5,306,275	A	4/1994	Bryan
5,306,308	A	4/1994	Gross et al.
5,306,309	A	4/1994	Wagner et al.
5,330,479	A	7/1994	Whitmore
5,360,431	A	11/1994	Puno et al.
5,368,596	A	11/1994	Burkhart
5,370,697	A	12/1994	Baumgartner
5,372,598	A	12/1994	Luhr et al.
5,400,784	A	3/1995	Durand et al.
5,401,269	A	3/1995	Buttner-Janz et al.
5,413,576	A	5/1995	Rivard
5,415,661	A	5/1995	Holmes
5,425,773	A	6/1995	Boyd et al.
5,437,672	A	8/1995	Alleyne
5,445,639	A	8/1995	Kuslich et al.
5,458,642	A	10/1995	Beer et al.
5,458,643	A	10/1995	Oka et al.
5,462,542	A	10/1995	Alesi, Jr.
5,487,756	A	1/1996	Kallesoe et al.
5,491,882	A	2/1996	Walston et al.
5,496,318	A	3/1996	Howland et al.
5,507,823	A	4/1996	Walston et al.
5,509,918	A	4/1996	Romano
5,514,180	A	5/1996	Heggeness et al.
5,527,312	A	6/1996	Ray
5,527,314	A	6/1996	Brumfield et al.
5,534,028	A	7/1996	Bao et al.
5,534,030	A	7/1996	Navarro et al.
5,540,706	A	7/1996	Aust et al.
5,545,229	A	8/1996	Parsons et al.
5,549,619	A	8/1996	Peters et al.
5,556,431	A	9/1996	Buttner-Janz
5,562,738	A	10/1996	Boyd et al.
5,571,105	A	11/1996	Gundolf
5,571,131	A	11/1996	Ek et al.
5,571,189	A	11/1996	Kuslich
5,571,191	A	11/1996	Fitz
5,577,995	A	11/1996	Walker et al.
5,586,989	A	12/1996	Bray, Jr.
5,591,165	A	1/1997	Jackson
5,603,713	A	2/1997	Aust et al.
5,638,700	A	6/1997	Shechter
5,645,597	A	7/1997	Krapiva
5,645,599	A	7/1997	Samani
5,649,947	A	7/1997	Auerbach et al.
5,653,762	A	8/1997	Pisharodi
5,674,295	A	10/1997	Ray et al.
5,674,296	A	10/1997	Bryan et al.
5,676,701	A	10/1997	Yuan et al.
5,683,464	A	11/1997	Wagner et al.
5,683,466	A	11/1997	Vitale
5,700,265	A	12/1997	Romano
5,702,450	A	12/1997	Bisserie
5,707,373	A	1/1998	Sevrain et al.
5,713,542	A	2/1998	Benoit
5,716,415	A	2/1998	Steffee
5,725,582	A	3/1998	Bevan et al.
5,741,260	A	4/1998	Songer et al.
5,741,261	A	4/1998	Moskovitz et al.
D395,138	S	6/1998	Ohata
5,766,251	A	6/1998	Koshino
5,766,253	A	6/1998	Brosnahan
5,772,663	A	6/1998	Whiteside et al.
5,797,916	A	8/1998	McDowell
5,824,093	A	10/1998	Ray et al.
5,824,094	A	10/1998	Serhan et al.
5,836,948	A	11/1998	Zucherman et al.
5,851,208	A	12/1998	Trott
5,860,977	A	1/1999	Zucherman et al.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,865,846	A	2/1999	Bryan et al.	
5,868,745	A	2/1999	Alleyne	
5,876,404	A	3/1999	Zucherman et al.	
5,879,396	A	3/1999	Walston et al.	
5,888,203	A	3/1999	Goldberg	
5,893,889	A	4/1999	Harrington	
5,895,428	A	4/1999	Berry	
RE36,221	E	6/1999	Breard et al.	
5,918,604	A	7/1999	Whelan	
5,951,555	A	9/1999	Rehak et al.	
5,964,765	A	10/1999	Fenton et al.	
5,993,452	A	11/1999	Vandewalle	
5,997,542	A	12/1999	Burke	
6,001,130	A	12/1999	Bryan et al.	
6,014,588	A	1/2000	Fitz	
6,019,763	A *	2/2000	Nakamura	A61B 17/866 523/105
6,019,792	A	2/2000	Cauthen	
6,039,763	A	3/2000	Shelokov	
6,048,342	A	4/2000	Zucherman et al.	
6,050,998	A	4/2000	Fletcher	
6,063,121	A	5/2000	Xavier et al.	
6,066,325	A	5/2000	Wallace et al.	
6,068,630	A	5/2000	Zucherman et al.	
RE36,758	E	6/2000	Fitz	
6,080,157	A	6/2000	Cathro et al.	
6,099,531	A	8/2000	Bonutti	
6,102,347	A	8/2000	Benoit	
6,106,558	A	8/2000	Picha	
6,113,637	A	9/2000	Gill et al.	
6,132,464	A	10/2000	Martin	
6,132,465	A	10/2000	Ray et al.	
6,146,422	A	11/2000	Lawson	
6,156,067	A	12/2000	Bryan et al.	
6,179,839	B1 *	1/2001	Weiss	A61B 17/1659 606/280
D439,340	S *	3/2001	Michelson	D24/155
6,200,322	B1	3/2001	Branch et al.	
6,293,949	B1	9/2001	Justis et al.	
D450,122	S *	11/2001	Michelson	D24/155
6,325,803	B1	12/2001	Schumacher et al.	
D454,953	S	3/2002	Michelson	
6,368,325	B1	4/2002	McKinley et al.	
6,368,350	B1	4/2002	Erickson et al.	
6,371,958	B1	4/2002	Overaker	
6,375,573	B2	4/2002	Romano	
6,379,386	B1	4/2002	Resch et al.	
D460,188	S	7/2002	Michelson	
D460,189	S	7/2002	Michelson	
6,419,678	B1	7/2002	Asfora	
6,419,703	B1	7/2002	Fallin et al.	
6,436,099	B1	8/2002	Drewry et al.	
6,436,101	B1	8/2002	Hamada et al.	
6,436,146	B1	8/2002	Hassler et al.	
D463,560	S *	9/2002	Michelson	D24/155
6,470,207	B1	10/2002	Simon et al.	
6,565,605	B2	5/2003	Goble et al.	
6,572,617	B1	6/2003	Senegas	
6,579,318	B2	6/2003	Varga et al.	
6,579,319	B2	6/2003	Goble et al.	
6,589,244	B1	7/2003	Sevrain et al.	
6,600,956	B2	7/2003	Maschino et al.	
6,607,530	B1	8/2003	Carl et al.	
6,610,091	B1	8/2003	Reiley	
D479,331	S	9/2003	Pike et al.	
6,626,944	B1	9/2003	Taylor	
6,641,614	B1	11/2003	Wagner et al.	
6,656,195	B2	12/2003	Peters et al.	
6,669,697	B1	12/2003	Pisharodi	
6,669,729	B2	12/2003	Chin	
6,706,068	B2	3/2004	Ferree	
6,743,232	B2 *	6/2004	Overaker	A61F 2/30756 606/327
6,761,720	B1	7/2004	Senegas	
6,764,491	B2	7/2004	Frey et al.	
6,770,095	B2	8/2004	Grinberg et al.	
6,783,527	B2	8/2004	Drewry et al.	
6,790,210	B1	9/2004	Cragg et al.	
6,802,863	B2	10/2004	Lawson et al.	
6,811,567	B2	11/2004	Reiley	
6,902,566	B2	6/2005	Zucherman et al.	
6,908,484	B2	6/2005	Zubok et al.	
6,966,930	B2	11/2005	Arnin et al.	
6,974,478	B2	12/2005	Reiley et al.	
6,974,479	B2	12/2005	Trieu	
D517,404	S *	3/2006	Schluter	D8/387
7,008,429	B2	3/2006	Golobek	
7,013,675	B2	3/2006	Marquez-Pickering	
7,051,451	B2	5/2006	Augostino et al.	
7,074,238	B2	7/2006	Stinson et al.	
7,101,375	B2	9/2006	Zucherman et al.	
7,223,269	B2	5/2007	Chappuis	
D565,180	S *	3/2008	Liao	D24/155
7,371,238	B2	5/2008	Sololeski et al.	
7,458,981	B2	12/2008	Fielding et al.	
7,517,358	B2	4/2009	Petersen	
7,537,611	B2	5/2009	Lee	
7,559,940	B2	7/2009	McGuire et al.	
7,563,286	B2	7/2009	Gerber et al.	
7,585,300	B2	9/2009	Cha	
7,608,104	B2	10/2009	Yuan et al.	
7,695,472	B2	4/2010	Young	
7,799,077	B2	9/2010	Lang et al.	
7,806,895	B2	10/2010	Weier et al.	
7,846,183	B2	12/2010	Blain	
7,862,590	B2	1/2011	Lim et al.	
7,935,136	B2	5/2011	Alamin et al.	
D643,121	S	8/2011	Milford et al.	
7,993,370	B2	8/2011	Jahng	
7,998,172	B2	8/2011	Blain	
8,052,728	B2	11/2011	Hestad	
8,109,971	B2	2/2012	Hale	
8,133,225	B2	3/2012	Pieske	
8,163,016	B2	4/2012	Linares	
8,192,468	B2	6/2012	Biedermann et al.	
8,216,275	B2	7/2012	Fielding et al.	
8,246,655	B2	8/2012	Jackson et al.	
8,292,954	B2	10/2012	Robinson et al.	
8,306,307	B2	11/2012	Koike et al.	
8,394,125	B2	3/2013	Assell	
8,460,346	B2	6/2013	Ralph et al.	
8,486,078	B2	7/2013	Carl et al.	
8,496,691	B2	7/2013	Blain	
8,579,903	B2	11/2013	Carl	
8,652,137	B2	2/2014	Blain et al.	
8,740,942	B2	6/2014	Blain	
8,740,949	B2	6/2014	Blain	
8,753,345	B2	6/2014	McCormack et al.	
8,784,423	B2	7/2014	Kowarsch et al.	
8,858,597	B2	10/2014	Blain	
8,882,804	B2	11/2014	Blain	
8,961,613	B2	2/2015	Assell et al.	
D724,733	S	3/2015	Blain et al.	
8,974,456	B2	3/2015	Allen et al.	
8,979,529	B2	3/2015	Marcus	
8,992,533	B2	3/2015	Blain et al.	
8,998,953	B2	4/2015	Blain	
9,017,389	B2	4/2015	Assell et al.	
9,060,787	B2	6/2015	Blain et al.	
D739,935	S	9/2015	Blain et al.	
9,149,283	B2	10/2015	Assell et al.	
9,161,763	B2	10/2015	Assell et al.	
9,179,943	B2	11/2015	Blain	
9,220,547	B2	12/2015	Blain et al.	
D748,262	S	1/2016	Blain	
9,233,006	B2	1/2016	Assell et al.	
D748,793	S	2/2016	Blain	
9,265,546	B2	2/2016	Blain	
9,271,765	B2	3/2016	Blain	
9,301,786	B2	4/2016	Blain	
9,314,277	B2	4/2016	Assell et al.	
9,345,488	B2	5/2016	Assell et al.	
9,421,044	B2	8/2016	Blain et al.	
D765,853	S	9/2016	Blain et al.	

(56) **References Cited**

U.S. PATENT DOCUMENTS

D765,854	S	9/2016	Blain et al.
9,456,855	B2	10/2016	Blain et al.
9,517,077	B2	12/2016	Blain et al.
D777,921	S	1/2017	Blain et al.
D780,315	S	2/2017	Blain et al.
9,572,602	B2	2/2017	Blain et al.
2001/0018614	A1	8/2001	Bianchi
2002/0018799	A1	2/2002	Spector et al.
2002/0019637	A1	2/2002	Frey et al.
2002/0029039	A1	3/2002	Zucherman et al.
2002/0040227	A1	4/2002	Harari
2002/0065557	A1	5/2002	Goble et al.
2002/0072800	A1	6/2002	Goble et al.
2002/0077700	A1	6/2002	Varga et al.
2002/0086047	A1	7/2002	Mueller et al.
2002/0120335	A1	8/2002	Angelucci et al.
2002/0123806	A1	9/2002	Reiley
2002/0151895	A1	10/2002	Soboleski et al.
2002/0173800	A1	11/2002	Dreyfuss et al.
2002/0173813	A1	11/2002	Peterson et al.
2002/0198527	A1	12/2002	Muckter
2003/0004572	A1	1/2003	Goble et al.
2003/0028250	A1	2/2003	Reiley et al.
2003/0040797	A1	2/2003	Fallin et al.
2003/0120343	A1	6/2003	Whelan
2003/0176919	A1	9/2003	Schmieding
2003/0176922	A1	9/2003	Lawson et al.
2003/0187454	A1	10/2003	Gill et al.
2003/0191532	A1	10/2003	Goble et al.
2003/0204259	A1	10/2003	Goble et al.
2003/0216669	A1	11/2003	Lang et al.
2003/0233146	A1	12/2003	Grinberg et al.
2004/0006391	A1	1/2004	Reiley
2004/0010318	A1	1/2004	Ferree
2004/0024462	A1	2/2004	Ferree et al.
2004/0049271	A1	3/2004	Biedermann et al.
2004/0049272	A1	3/2004	Reiley
2004/0049273	A1	3/2004	Reiley
2004/0049274	A1	3/2004	Reiley
2004/0049275	A1	3/2004	Reiley
2004/0049276	A1	3/2004	Reiley
2004/0049277	A1	3/2004	Reiley
2004/0049278	A1	3/2004	Reiley
2004/0049281	A1	3/2004	Reiley
2004/0059429	A1	3/2004	Amin et al.
2004/0087954	A1	5/2004	Allen et al.
2004/0116927	A1	6/2004	Graf
2004/0127989	A1	7/2004	Dooris et al.
2004/0143264	A1	7/2004	McAfee
2004/0176844	A1	9/2004	Zubok et al.
2004/0199166	A1	10/2004	Schmieding et al.
2004/0215341	A1	10/2004	Sybert et al.
2004/0230201	A1	11/2004	Yuan et al.
2004/0230304	A1	11/2004	Yuan et al.
2005/0010291	A1	1/2005	Stinson et al.
2005/0015146	A1	1/2005	Louis et al.
2005/0043797	A1	2/2005	Lee
2005/0043799	A1	2/2005	Reiley
2005/0049705	A1	3/2005	Hale et al.
2005/0055096	A1	3/2005	Serhan et al.
2005/0059972	A1	3/2005	Biscup
2005/0131409	A1	6/2005	Chervitz et al.
2005/0131538	A1	6/2005	Chervitz et al.
2005/0143818	A1	6/2005	Yuan et al.
2005/0159746	A1	7/2005	Grab et al.
2005/0197700	A1	9/2005	Boehem et al.
2005/0216017	A1	9/2005	Fielding et al.
2005/0240201	A1	10/2005	Yeung
2005/0251256	A1	11/2005	Reiley
2005/0256494	A1	11/2005	Datta
2006/0004367	A1	1/2006	Alamin et al.
2006/0036323	A1	2/2006	Carl et al.
2006/0041311	A1	2/2006	McLeer
2006/0084985	A1	4/2006	Kim
2006/0085006	A1	4/2006	Ek et al.
2006/0085072	A1	4/2006	Funk et al.
2006/0111782	A1	5/2006	Petersen
2006/0116684	A1	6/2006	Whelan
2006/0149375	A1	7/2006	Yuan et al.
2006/0200137	A1	9/2006	Soboleski et al.
2006/0241601	A1	10/2006	Trautwein et al.
2006/0241758	A1	10/2006	Peterman et al.
2006/0293691	A1	12/2006	Mitra et al.
2007/0055236	A1	3/2007	Hudgins et al.
2007/0055252	A1	3/2007	Blain et al.
2007/0078464	A1	4/2007	Jones et al.
2007/0118218	A1	5/2007	Hooper
2007/0149976	A1	6/2007	Hale et al.
2007/0179619	A1	8/2007	Grab
2007/0250166	A1	10/2007	McKay
2007/0270812	A1	11/2007	Peckham
2008/0009866	A1	1/2008	Alamin et al.
2008/0058929	A1	3/2008	Whelan
2008/0177264	A1	7/2008	Alamin et al.
2008/0183211	A1	7/2008	Lamborne et al.
2008/0228225	A1	9/2008	Trautwein et al.
2008/0287996	A1	11/2008	Soholeski et al.
2009/0005818	A1	1/2009	Chin et al.
2009/0005873	A1	1/2009	Slivka et al.
2009/0018662	A1	1/2009	Pasquet et al.
2009/0024166	A1	1/2009	Carl et al.
2009/0076617	A1	3/2009	Ralph et al.
2009/0125066	A1	5/2009	Kraus et al.
2009/0138048	A1	5/2009	Baccelli et al.
2009/0171360	A1	7/2009	Whelan
2009/0198282	A1	8/2009	Fielding et al.
2009/0264928	A1	10/2009	Blain
2009/0264929	A1	10/2009	Alamin et al.
2009/0270918	A1	10/2009	Attia et al.
2009/0270929	A1	10/2009	Suddaby
2009/0326589	A1	12/2009	Lemoine et al.
2010/0010548	A1	1/2010	Ochoa
2010/0076503	A1	3/2010	Beyar et al.
2010/0131008	A1	5/2010	Overes et al.
2010/0179553	A1	7/2010	Ralph et al.
2010/0185241	A1	7/2010	Malandain et al.
2010/0191286	A1	7/2010	Butler
2010/0204700	A1	8/2010	Falahee
2010/0204732	A1	8/2010	Aschmann et al.
2010/0234894	A1	9/2010	Alamin et al.
2010/0274289	A1	10/2010	Carls et al.
2010/0298829	A1	11/2010	Schaller et al.
2010/0318133	A1	12/2010	Tornier
2011/0022089	A1	1/2011	Assell et al.
2011/0098816	A1	4/2011	Jacob et al.
2011/0160772	A1	6/2011	Arcenio et al.
2011/0172712	A1	7/2011	Chee et al.
2011/0295318	A1	12/2011	Alamin et al.
2012/0035658	A1	2/2012	Goble et al.
2012/0046749	A1	2/2012	Tatsumi
2012/0101502	A1	4/2012	Kartalian et al.
2012/0150231	A1	6/2012	Alamin et al.
2012/0221048	A1	8/2012	Blain
2012/0221049	A1	8/2012	Blain
2012/0221060	A1	8/2012	Blain
2012/0245586	A1	9/2012	Lehenkari et al.
2012/0271354	A1	10/2012	Baccelli et al.
2012/0277801	A1	11/2012	Marik et al.
2013/0023878	A1	1/2013	Belliard et al.
2013/0041410	A1	2/2013	Hestad et al.
2013/0079778	A1	3/2013	Azuero et al.
2013/0123923	A1	5/2013	Pavlov et al.
2013/0253649	A1	9/2013	Davis
2013/0325065	A1	12/2013	Malandain et al.
2014/0012318	A1	1/2014	Goel
2014/0066758	A1	3/2014	Marik et al.
2014/0228883	A1	8/2014	Blain
2014/0257397	A1	9/2014	Akbarnia et al.
2014/0277142	A1	9/2014	Blain
2014/0277148	A1	9/2014	Blain et al.
2014/0277149	A1	9/2014	Rooney et al.
2014/0336653	A1	11/2014	Bromer
2014/0378976	A1	12/2014	Garcia
2015/0081023	A1	3/2015	Blain

(56) **References Cited**

U.S. PATENT DOCUMENTS

2015/0094766	A1	4/2015	Blain et al.
2015/0094767	A1	4/2015	Blain et al.
2015/0119988	A1	4/2015	Assell et al.
2015/0164516	A1	6/2015	Blain et al.
2015/0164652	A1	6/2015	Assell et al.
2015/0190149	A1	7/2015	Assell et al.
2015/0196330	A1	7/2015	Blain
2015/0209096	A1	7/2015	Gephart
2015/0257770	A1	9/2015	Assell et al.
2015/0257773	A1	9/2015	Blain
2015/0327872	A1	11/2015	Assell et al.
2016/0051294	A1	2/2016	Blain
2016/0113692	A1	4/2016	Knoepfle
2016/0128739	A1	5/2016	Blain et al.
2016/0128838	A1	5/2016	Assell et al.
2016/0213481	A1	7/2016	Blain
2016/0324549	A1	11/2016	Blain
2017/0000527	A1	1/2017	Blain et al.
2017/0105767	A1	4/2017	Blain

FOREIGN PATENT DOCUMENTS

DE	201 12 123	9/2001
DE	101 35 771	2/2003
EP	0 238 219	9/1987
EP	0 322 334	6/1989
EP	0 392 124	10/1990
EP	0 610 837	8/1994
EP	0 928 603	7/1999
EP	1 201 202	5/2002
EP	1 201 256	5/2002
EP	2 919 717	9/2015
FR	2 704 745	11/1994
FR	2 722 980	2/1996
GB	2 366 736	3/2002
JP	62-270147	11/1987
JP	10-179622	7/1998
JP	2000-210297	8/2000
JP	2004-508888	3/2004
JP	2004-181236	7/2004
JP	2007-503884	3/2007
JP	2007-517627	7/2007
JP	2007-190389	8/2007
JP	2008-510526	4/2008
JP	2009-533167	9/2009
JP	2013-534451	9/2013
MX	6012309	1/2007
WO	WO 93/14721	8/1993
WO	WO 94/04088	3/1994
WO	WO 97/047246	12/1997
WO	WO 98/48717	11/1998
WO	WO 99/23963	5/1999
WO	WO 00/38582	7/2000
WO	WO 00/53126	9/2000
WO	WO 01/30248	5/2001
WO	WO 02/45765	6/2002
WO	WO 02/65954	8/2002
WO	WO 02/96300	12/2002
WO	WO 03/101350	12/2003
WO	WO 2004/071358	8/2004
WO	WO 2005/020850	3/2005
WO	WO 2005/072661	8/2005
WO	WO 2006/023980	3/2006
WO	WO 2006/096803	9/2006
WO	WO 2009/021876	2/2009
WO	WO 2010/060072	5/2010
WO	WO 2010/122472	10/2010
WO	WO 2011/011621	1/2011
WO	WO 2012/007941	1/2012
WO	WO 2012/116266	8/2012
WO	WO 2012/116267	8/2012
WO	WO 2013/022880	2/2013
WO	WO 2013/138655	9/2013
WO	WO 2014/078541	5/2014
WO	WO 2016/044432	3/2016

OTHER PUBLICATIONS

ArthroTek, "CurvTek® Bone Tunneling System," Surgical Technique, 2000, pp. 6.

Ash, H.E., "Proximal Interphalangeal Joint Dimensions for the Design of a Surface Replacement Prosthesis", School of Engineering, University of Durham, Proceedings of the Institution of Mechanical Engineers Part H Journal of Engineering in Medicine Feb. 1996, vol. 210, No. 2, pp. 95-108.

E-mail from 3rd Party citing U.S. Appl. Nos. 60/721,909; 60/750,005 and 60/749,000, initial e-mail dated May 11, 2009, reply e-mail dated May 18, 2009.

King et al., "Mechanism of Spinal Injury Due to Caudocephalad Acceleration," Symposium on the Lumbar Spine, Orthopedic Clinic of North America, Jan. 1975, vol. 6, pp. 19-31.

Parteq Innovations, "Facet Joint Implants & Resurfacing Devices," Technology Opportunity Bulletin, Tech ID 1999-012, Queen's University, Ontario Canada, pp. 2.

Official Communication in Australian Application No. 2005213459, dated Dec. 11, 2009.

Official Communication in Australian Application No. 2005213459, dated Dec. 15, 2010.

Official Communication in Australian Application No. 2011226832, dated Sep. 4, 2012.

Official Communication in Australian Application No. 2011226832, dated Oct. 31, 2012.

Official Communication in Australian Application No. AU2013237744, dated Sep. 2, 2014.

Notice of Acceptance in Australian Application No. AU2013237744, dated Apr. 23, 2015.

Official Communication in Australian Application No. AU2015205875, dated Apr. 2, 2016.

Official Communication in Canadian Application No. 2,555,355, dated Sep. 2, 2011.

Official Communication in Canadian Application No. 2,803,783, dated Sep. 29, 2014.

Official Communication in Canadian Application No. 2,803,783, dated Aug. 5, 2015.

Official Communication in European Application No. 05712981.9, dated Jul. 24, 2007.

Official Communication in European Application No. 05712981.9, dated Mar. 10, 2008.

Official Communication in European Application No. 05712981.9, dated Apr. 6, 2009.

Official Communication in European Application No. 05712981.9, dated Jun. 15, 2010.

Official Communication in European Application No. 10178979.0, dated Mar. 14, 2011.

Official Communication in European Application No. 10178979.0, dated Nov. 13, 2012.

Official Communication in European Application No. 10178979.0, dated Aug. 5, 2013.

Official Communication in European Application No. 14175088.5, dated Sep. 8, 2014.

Official Communication in European Application No. 14175088.5, dated Nov. 18, 2015.

Official Communication in Japanese Application No. 2006-552309, dated May 25, 2010.

Official Communication in Japanese Application No. 2006-552309, dated Feb. 15, 2011.

Official Communication in Japanese Application No. 2010-221380, dated Feb. 15, 2011.

Official Communication in Japanese Application No. 2012-272106, dated Dec. 3, 2013.

Official Communication in Japanese Application No. 2012-272106, dated May 26, 2014.

Official Communication in Japanese Application No. 2012-272106, dated Feb. 23, 2015.

Official Communication in Japanese Application No. 2012-272106, dated Nov. 2, 2015.

International Search Report and Written Opinion in International Application No. PCT/US2005/003753, dated Dec. 5, 2006.

(56) **References Cited**

OTHER PUBLICATIONS

International Preliminary Report and Written Opinion in International App No. PCT/US2005/003753, dated Jan. 9, 2007.
Official Communication in European Application No. 08730413.5, dated Feb. 16, 2012.
Official Communication in European Application No. 14177951.2, dated Nov. 13, 2014.
International Search Report and Written Opinion in International Application No. PCT/US2008/054607, dated Jul. 10, 2008.
International Preliminary Report on Patentability in International Application No. PCT/US2008/054607, dated Sep. 3, 2009.
Official Communication in Australian Application No. 2011292297, dated Jul. 10, 2013.
Official Communication in European Application No. 11818586.7, dated Nov. 6, 2014.
Official Communication in Japanese Application No. 2013-524882, dated Mar. 2, 2015.
Official Communication in Japanese Application No. 2013-524882, dated Nov. 16, 2015.
International Search Report and Written Opinion in International Application No. PCT/US2011/047432, dated Dec. 12, 2011.
International Preliminary Report on Patentability in International Application No. PCT/US2011/047432, dated Feb. 28, 2013.
Official Communication in Australian Application No. AU2012222229, dated Aug. 21, 2015.
Official Communication in Australian Application No. AU2012222230, dated Aug. 21, 2015.
Official Communication in Japanese Application No. JP 2013-555591, dated Jan. 4, 2016.
Official Communication in Japanese Application No. JP 2013-555592, dated Dec. 7, 2015.
International Search Report in International Application No. PCT/US2012/026470, dated May 30, 2012.
International Preliminary Report on Patentability and Written Opinion in International Application No. PCT/US2012/026470, dated Sep. 6, 2013.
International Search Report and Written Opinion in International Application No. PCT/US2012/026472, dated Jun. 20, 2012.
International Preliminary Report on Patentability and Written Opinion in International Application No. PCT/US2012/026472, dated Mar. 12, 2014.
International Search Report and Written Opinion in International Application No. PCT/US2014/019302, dated May 18, 2015.
International Search Report and Written Opinion in International Application No. PCT/US2014/019325, dated Jun. 17, 2014.
International Preliminary Report on Patentability and Written Opinion in International Application No. PCT/US2014/019325, dated Sep. 24, 2015.
International Search Report and Written Opinion in International Application No. PCT/US2014/056598, dated Dec. 29, 2014.
International Preliminary Report on Patentability and Written Opinion in International Application No. PCT/US2014/056598, dated Apr. 7, 2016.
International Search Report and Written Opinion in International Application No. PCT/US2015/050441, dated Dec. 28, 2015.
International Search Report and Written Opinion in International Application No. PCT/US2016/013062, dated Mar. 16, 2016.
International Search Report in International Application No. PCT/CA2002/000193 filed Feb. 15, 2002, dated Jun. 18, 2002.
International Search Report and Written Opinion in International Application No. PCT/US2004/028094, dated May 16, 2005.
International Preliminary Report on Patentability in International Application No. PCT/US2004/028094, dated Feb. 25, 2013.
International Search Report in International Application No. PCT/US2005/000987 filed Jan. 13, 2005, dated May 24, 2005.
International Preliminary Report on Patentability in International Application No. PCT/US2005/000987 filed Jan. 13, 2005, dated Jan. 17, 2006.
ArthroTek, "CurvTek® Bone Tunneling System," User's Manual, 2000, pp. 20.
Beaman, MD et al., "Substance P Innervation of Lumbar Spine Facet Joints", Spine, 1993, vol. 18, No. 8, pp. 1044-1049.
Butterman, et al., "An Experimental Method for Measuring Force on the Spinal Facet Joint: Description and Application of the Method", Journal of Biomechanical Engineering, Nov. 1991, vol. 113, pp. 375-386.
Cruess et al., "The Response of Articular Cartilage to Weight-Bearing Against Metal", The Journal of Bone and Joint Surgery, Aug. 1984, vol. 66-B, No. 4, pp. 592-597.
Dalldorf et al., "Rate of Degeneration of Human Acetabular Cartilage after Hemiarthroplasty", The Journal of Bone and Joint Surgery, Jun. 1995, vol. 77. No. 6, pp. 877-882.
Frost, Harold M., "From Wolff's Law to the Utah Paradigm: Insights About Bone Physiology and Its Clinical Applications", The Anatomical Record, 2001, vol. 262, pp. 398-419.
Kurtz, PhD et al., "Isoelastic Polyaryletheretherketone Implants for Total Joint Replacement", Peek Biomaterials Handbook, Ch. 14, 2012, pp. 221-226.
Meisel et al., "Minimally Invasive Facet Restoration Implant for Chronic Lumbar Zygapophysial Pain: 1-Year Outcomes", Annals of Surgical Innovation and Research (ASIR), 2014, vol. 8, No. 7, pp. 6.
Panjabi, PhD et al., "Articular Facets of the Human Spine: Quantitative Three-Dimensional Anatomy", Spine, 1993, vol. 18, No. 10, pp. 1298-1310.
Ravikumar et al., "Internal Fixation Versus Hemiarthroplasty Versus Total Hip Arthroplasty for Displaced Subcapital Fractures of Femur—13 year Results of a Prospective Randomised Study", International Journal of the Care of the Injured (Injury), 2000, vol. 31, pp. 793-797.
Schendel et al., "Experimental Measurement of Ligament Force, Facet Force, and Segment Motion in the Human Lumbar Spine", Journal of Biomechanics, 1993, vol. 26, No. 4/5, pp. 427-438.
Tanno et al., "Which Portion in a Facet is Specifically Affected by Articular Cartilage Degeneration with Aging in the Human Lumbar Zygapophysial Joint?", Okajimas Folia Anatomica Japonica, May 2003, vol. 80, No. 1, pp. 29-34.
Official Communication in Australian Application No. AU2015205875, dated Jun. 15, 2016.
Official Communication in Canadian Application No. 2,803,783, dated Jul. 7, 2016.
Official Communication in Canadian Application No. 2,803,783, dated Apr. 5, 2017.
Official Communication in European Application No. 16180368.9, dated Mar. 31, 2017.
Official Communication in Australian Application No. 2014277721, dated Sep. 8, 2016.
Official Communication in Australian Application No. 2014277721, dated Jan. 9, 2017.
Official Communication in European Application No. 11818586.7, dated Feb. 3, 2017.
Official Communication in Japanese Application No. 2015-242990, dated Dec. 12, 2016.
Official Communication in Australian Application No. AU2012222229, dated May 11, 2016.
Official Communication in European Application No. EP12749447.4, dated Jan. 4, 2017.
Official Communication in European Application No. EP12749447.4, dated Apr. 4, 2017.
Official Communication in European Application No. 12749251.0, dated Jan. 4, 2017.
Official Communication in Japanese Application No. JP 2013-555592, dated Aug. 8, 2016.
Official Communication in European Application No. 14774714.1, dated Oct. 21, 2016.
Official Communication in European Application No. 14776445.0, dated Nov. 7, 2016.
Official Communication in European Application No. 14850082.0, dated Aug. 31, 2016.

(56) **References Cited**

OTHER PUBLICATIONS

International Preliminary Report on Patentability and Written Opinion in International Application No. PCT/US2015/050441, dated Mar. 30, 2017.

* cited by examiner

FIG. 1

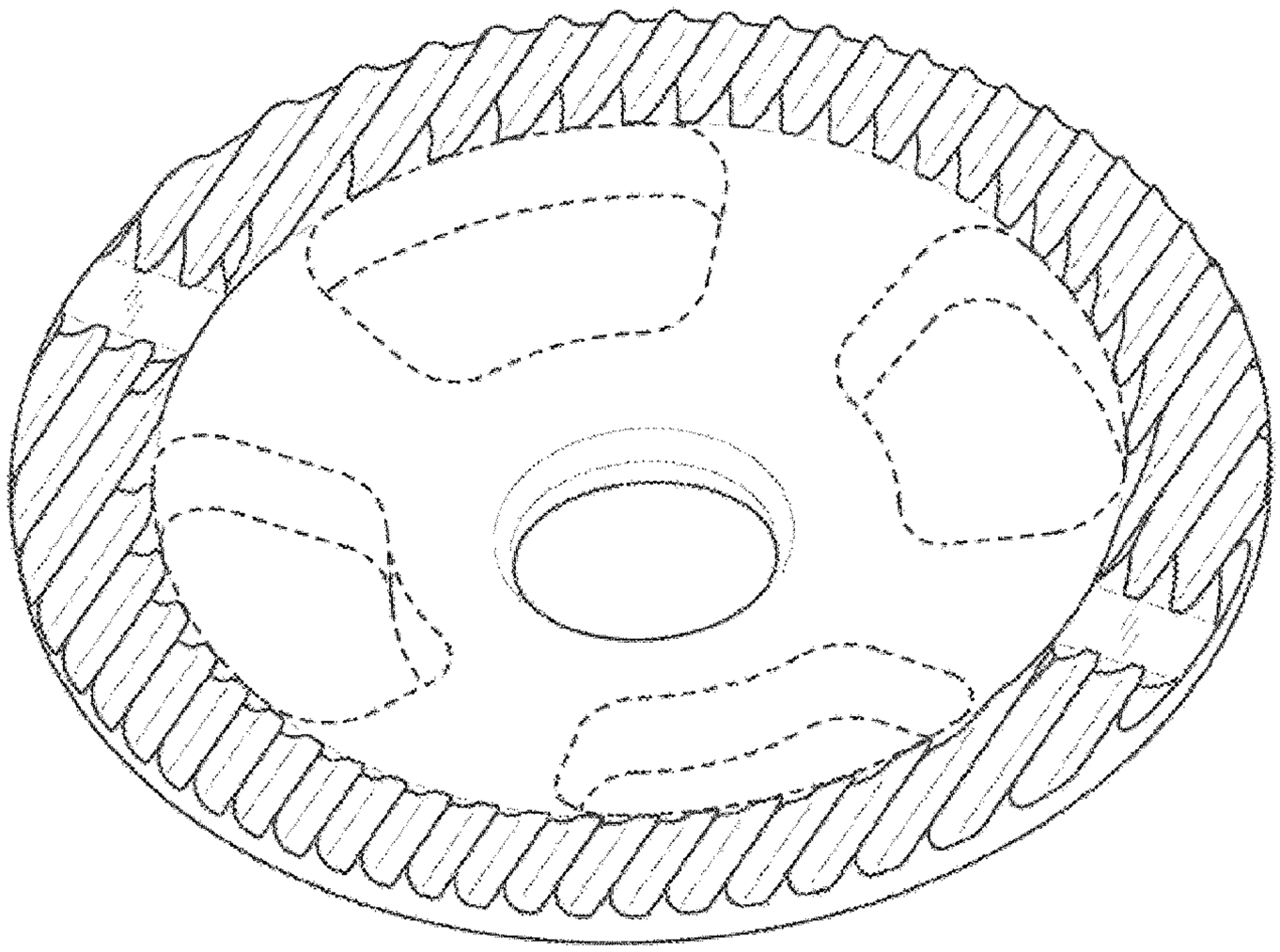


FIG. 2

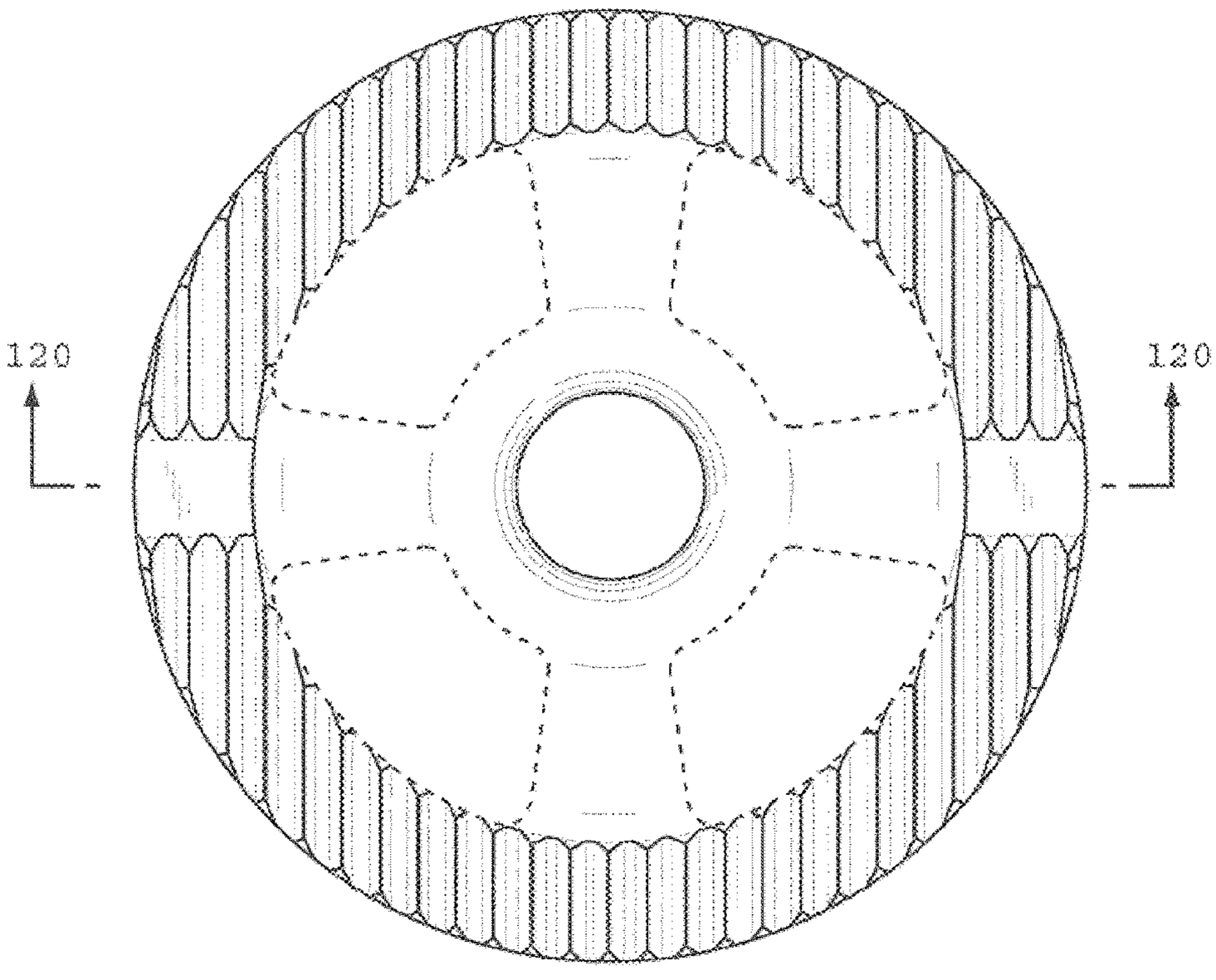


FIG. 3

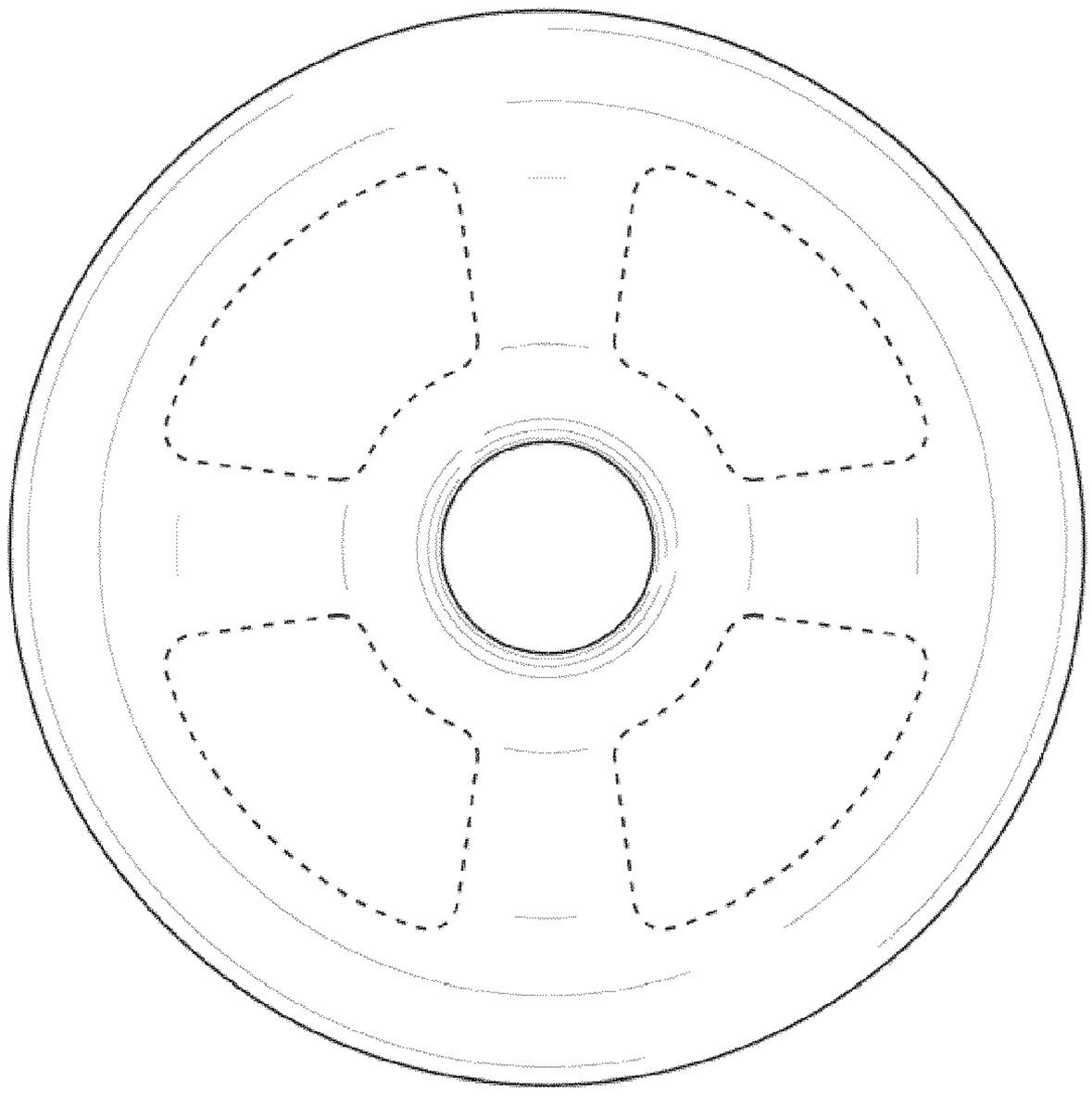


FIG. 4

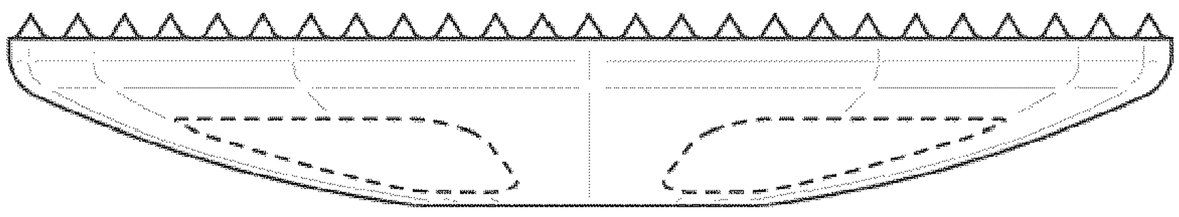


FIG. 5

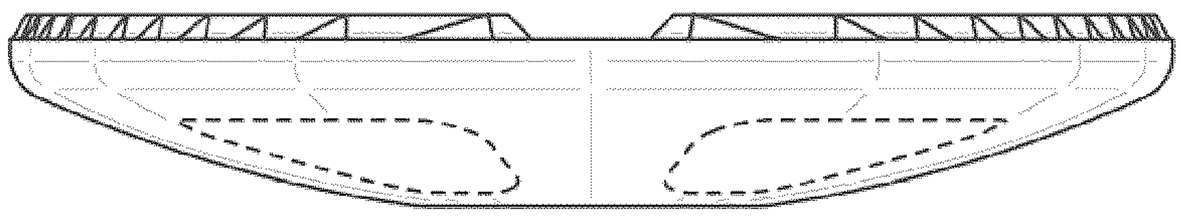
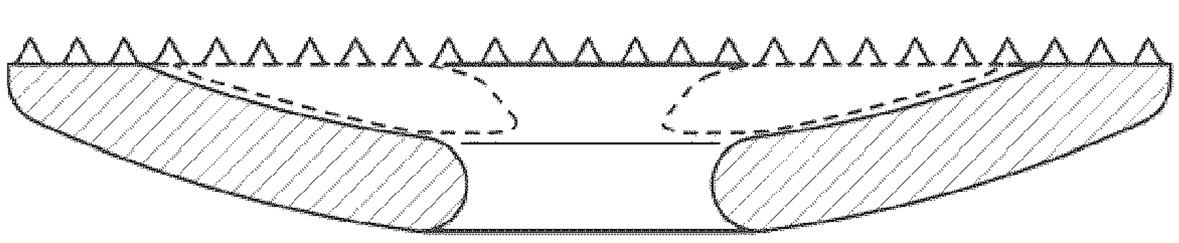


FIG. 6



UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : D810,942 S
APPLICATION NO. : 29/602768
DATED : February 20, 2018
INVENTOR(S) : Jason Blain et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

On the Title Page

In Column 1, item (56) at Line 3, Under U.S. Patent Documents, change "86,106" to --86,016--.

Item (57), (Description) at Line 7, Change "D. 724,733" to --D724,733--.

Signed and Sealed this
Fifth Day of June, 2018

Andrei Iancu
Director of the United States Patent and Trademark Office