



US00D771818S

(12) **United States Design Patent**  
**Callahan**

(10) **Patent No.:** **US D771,818 S**

(45) **Date of Patent:** **\*\* Nov. 15, 2016**

- (54) **ECG ELECTRODE CONNECTOR**
- (71) Applicant: **Covidien LP**, Mansfield, MA (US)
- (72) Inventor: **Mark J. Callahan**, Medway, MA (US)
- (73) Assignee: **Covidien LP**, Mansfield, MA (US)
- (\*\*) Term: **14 Years**

3,997,225 A	12/1976	Horwinski
3,998,213 A	12/1976	Price
4,027,664 A	6/1977	Heavner, Jr. et al.
4,034,854 A	7/1977	Bevilacqua
4,077,397 A	3/1978	Ellis et al.
4,112,941 A	9/1978	Larimore
4,166,465 A	9/1979	Esty et al.
4,220,390 A	9/1980	Cobaugh et al.
4,303,293 A	12/1981	Grunwald

(Continued)

- (21) Appl. No.: **29/498,717**
- (22) Filed: **Aug. 7, 2014**

**FOREIGN PATENT DOCUMENTS**

CN	101491437 A	7/2009
CN	101491438 A	7/2009

(Continued)

**Related U.S. Application Data**

- (63) Continuation-in-part of application No. 13/987,326, filed on Mar. 15, 2013.
- (51) **LOC (10) Cl.** ..... **24-01**
- (52) **U.S. Cl.**  
USPC ..... **D24/167; D24/187**
- (58) **Field of Classification Search**  
USPC ..... D24/165–168, 186, 187, 107; D10/70, D10/98; 600/301, 382–384, 386, 390, 483, 600/500–503, 508, 509, 513; 128/DIG. 15; 439/729  
CPC A61B 5/0416; A61B 5/04286; A61B 5/024; A61B 5/02405; A61B 5/02438  
See application file for complete search history.

**OTHER PUBLICATIONS**

A&D Company, Limited, "Vital Sensor Graphic Model;" No. TM-2560G/TM2564G-TM-2564GP/TM2564GP, Jan. 1, 2004; 62 Pages.

(Continued)

*Primary Examiner* — Anhdao Doan

(57) **CLAIM**

The ornamental design for an ECG electrode connector, as shown and described.

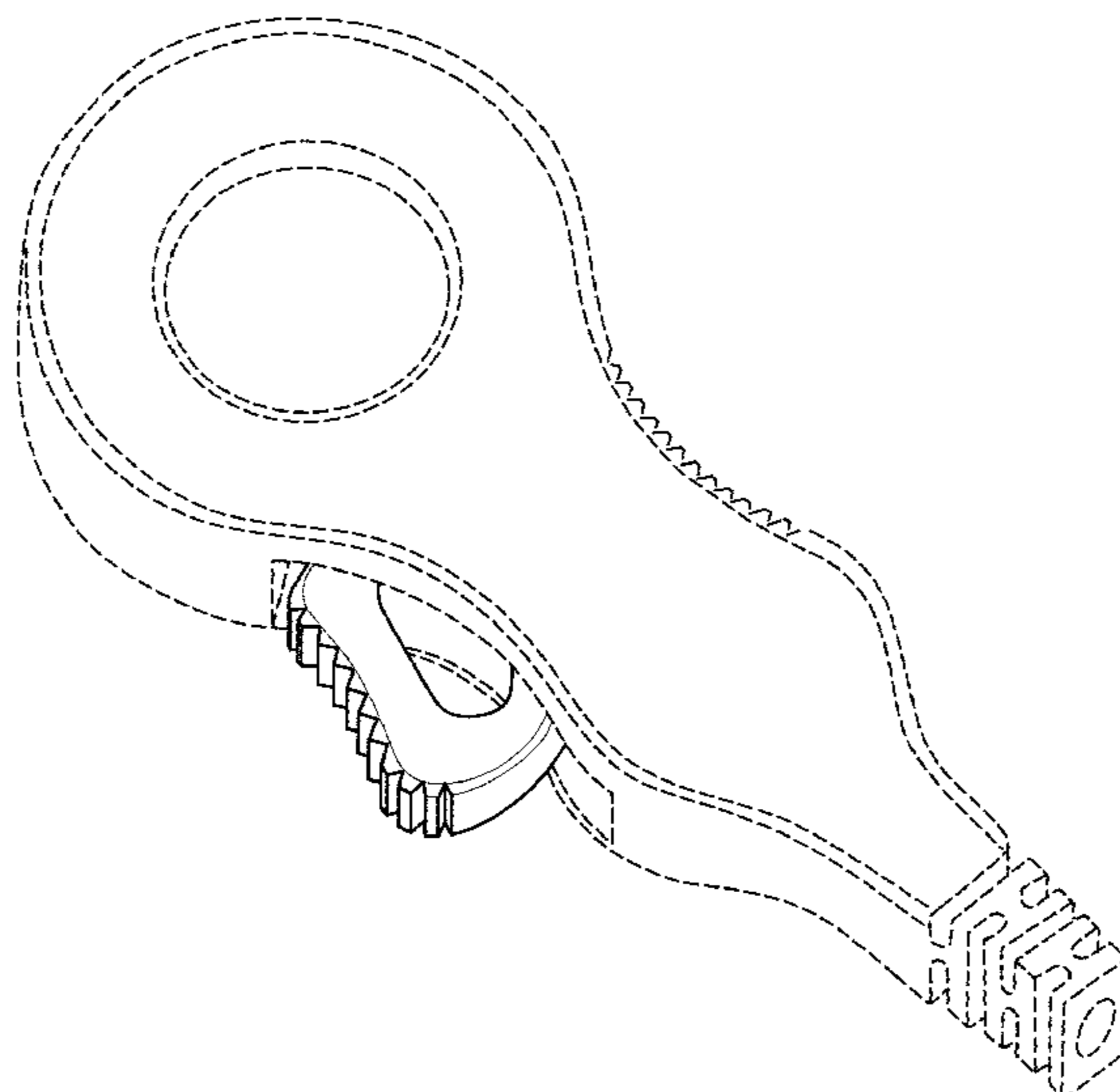
**DESCRIPTION**

FIG. 1 is a top, back-side, and left-side perspective of an embodiment of an ECG electrode connector showing my new design;  
FIG. 2 is a top view thereof;  
FIG. 3 is a left-side view thereof; and,  
FIG. 4 is a bottom view thereof.  
The broken lines in the drawings are included for the purpose of illustrating portions of the electrode connector that form no part of the claimed design.

**1 Claim, 3 Drawing Sheets**

(56) **References Cited**  
U.S. PATENT DOCUMENTS

3,606,881 A	9/1971	Woodson
3,752,151 A	8/1973	Robichaud
3,805,769 A	4/1974	Sessions
3,828,766 A	8/1974	Krasnow
3,829,826 A	8/1974	Brown et al.
3,842,394 A	10/1974	Bolduc
3,868,946 A	3/1975	Hurley
3,888,240 A	6/1975	Reinhold, Jr. et al.
3,895,635 A	7/1975	Justus et al.
3,901,218 A	8/1975	Buchalter



(56)

References Cited

U.S. PATENT DOCUMENTS

D263,167 S	2/1982	Stone	5,507,665 A	4/1996	Oda
4,353,372 A	10/1982	Ayer	5,507,668 A	4/1996	Lambrinos et al.
4,365,634 A	12/1982	Bare et al.	5,509,822 A	4/1996	Negus et al.
4,498,480 A	2/1985	Mortensen	5,511,553 A	4/1996	Segalowitz
4,674,817 A	6/1987	Olms	5,546,950 A	8/1996	Schoeckert et al.
4,729,377 A	3/1988	Granek et al.	5,558,535 A	9/1996	Saka et al.
4,763,660 A	8/1988	Kroll et al.	5,564,939 A	10/1996	Maitani et al.
4,781,200 A	11/1988	Baker	5,582,180 A	12/1996	Manset et al.
4,785,822 A	11/1988	Wallace	5,584,719 A	12/1996	Tsuji et al.
4,815,964 A	3/1989	Cohen et al.	D377,219 S	1/1997	Strand et al.
4,842,557 A	6/1989	Muz	5,599,199 A	2/1997	Wright
4,850,356 A	7/1989	Heath	5,603,632 A	2/1997	Johannes et al.
4,909,260 A	3/1990	Salem et al.	5,611,708 A	3/1997	Mizunuma et al.
4,947,846 A	8/1990	Kitagawa et al.	5,613,870 A	3/1997	Traver, Jr.
4,957,109 A	9/1990	Groeger et al.	5,615,674 A	4/1997	Maurer
4,974,594 A *	12/1990	Berlin ..... 600/395	5,622,168 A	4/1997	Keusch et al.
5,080,604 A	1/1992	Rider et al.	5,624,271 A	4/1997	Childs et al.
5,083,238 A	1/1992	Bousman	5,624,281 A	4/1997	Christensson
5,083,933 A	1/1992	Colleran et al.	5,626,135 A	5/1997	Sanfilippo
5,104,253 A	4/1992	Zielinski et al.	5,632,274 A	5/1997	Quedens et al.
5,104,334 A	4/1992	Honma et al.	5,651,689 A	7/1997	Plyler et al.
5,131,854 A	7/1992	Jose et al.	5,653,606 A	8/1997	Chrysostomou
5,137,466 A	8/1992	Endo et al.	5,674,088 A	10/1997	Roche et al.
5,154,646 A	10/1992	Shoup	5,676,694 A	10/1997	Boser et al.
5,158,469 A	10/1992	Martin	5,679,022 A	10/1997	Cappa
5,160,276 A	11/1992	Marsh et al.	5,679,029 A	10/1997	Saunier et al.
5,173,059 A	12/1992	Sato et al.	5,685,303 A	11/1997	Rollman et al.
5,176,343 A	1/1993	Cheney et al.	5,695,355 A	12/1997	Hasenfratz et al.
5,178,556 A	1/1993	Chen	5,702,265 A	12/1997	Yamaguchi
5,180,312 A	1/1993	Martin	5,704,351 A	1/1998	Mortara et al.
5,190,467 A	3/1993	Ohta	5,711,684 A	1/1998	Inoue et al.
5,192,226 A	3/1993	Wang	5,718,596 A	2/1998	Inaba et al.
5,197,901 A	3/1993	Hashiguchi	5,724,025 A	3/1998	Tavori
5,199,897 A	4/1993	Hashiguchi	5,724,984 A	3/1998	Arnold et al.
5,201,669 A	4/1993	Lin	5,725,525 A	3/1998	Kordis
5,203,715 A	4/1993	Yamamoto	5,741,155 A	4/1998	Herman
5,203,719 A	4/1993	Kozono	5,749,746 A	5/1998	Tan et al.
5,207,594 A	5/1993	Olson	5,769,650 A	6/1998	Aoyama et al.
5,224,479 A	7/1993	Sekine	5,772,591 A	6/1998	Cram
5,232,383 A	8/1993	Barnick	5,775,953 A	7/1998	Yamanashi et al.
5,234,357 A	8/1993	Yamaguchi	5,782,647 A	7/1998	Okura et al.
5,243,510 A	9/1993	Cheney	5,782,761 A	7/1998	Gusakov
5,263,481 A	11/1993	Axelgaard	5,782,892 A	7/1998	Castle et al.
5,276,443 A	1/1994	Gates et al.	5,788,527 A	8/1998	Sanders et al.
5,278,759 A	1/1994	Berra et al.	5,791,918 A	8/1998	Pierce
5,279,308 A	1/1994	DiSabito et al.	5,797,854 A	8/1998	Hedgecock
5,293,013 A	3/1994	Takahashi	5,806,152 A	9/1998	Saitou et al.
5,320,621 A	6/1994	Gordon et al.	5,813,404 A	9/1998	Devlin et al.
5,326,272 A	7/1994	Harhen et al.	5,813,979 A	9/1998	Wolfer
5,332,330 A	7/1994	Kaneko	5,827,086 A	10/1998	Fukuda
5,338,219 A	8/1994	Hiramoto	5,830,000 A	11/1998	Shifflett et al.
5,341,806 A	8/1994	Gadsby et al.	5,836,783 A	11/1998	Morisawa et al.
5,341,812 A	8/1994	Allaire et al.	5,843,141 A	12/1998	Bischoff et al.
5,353,793 A	10/1994	Bornn	5,848,456 A	12/1998	Sjoqvist
5,354,216 A	10/1994	Cruise et al.	5,865,740 A	2/1999	Kelly et al.
5,362,249 A	11/1994	Carter	5,865,741 A	2/1999	Kelly et al.
5,370,116 A	12/1994	Rollman et al.	5,871,451 A	2/1999	Unger et al.
5,370,550 A	12/1994	Alwine et al.	5,873,747 A	2/1999	Tsuji
5,376,016 A	12/1994	Inaba et al.	5,876,232 A	3/1999	Matsushita et al.
5,378,168 A	1/1995	Sumida	5,895,284 A	4/1999	Kocher et al.
5,380,223 A	1/1995	Marsh et al.	5,895,298 A	4/1999	Faupel
5,382,176 A	1/1995	Norden	5,904,579 A	5/1999	McLean et al.
5,383,794 A	1/1995	Davis et al.	5,913,834 A	6/1999	Francais
5,387,116 A	2/1995	Wang	5,916,159 A	6/1999	Kelly et al.
5,387,127 A	2/1995	Wang	5,931,689 A	8/1999	Patel
5,399,045 A	3/1995	Yoneda et al.	5,931,861 A	8/1999	Werner et al.
5,405,269 A	4/1995	Stupecky	5,934,926 A	8/1999	Gabrisko, Jr. et al.
5,415,164 A	5/1995	Faupel et al.	5,937,950 A	8/1999	Adams et al.
5,429,526 A	7/1995	Ann	5,938,470 A	8/1999	Kashiyama
5,431,166 A	7/1995	Macur	5,938,597 A	8/1999	Stratbucker
5,454,739 A	10/1995	Strand	5,941,725 A	8/1999	Brennan et al.
5,462,448 A	10/1995	Kida et al.	5,944,562 A	8/1999	Christensson
5,484,739 A	1/1996	Lee et al.	5,951,316 A	9/1999	Kawano et al.
5,486,117 A	1/1996	Chang	5,964,624 A	10/1999	Pernelle
5,507,290 A	4/1996	Kelly et al.	5,968,087 A	10/1999	Hess et al.
			5,971,790 A	10/1999	Rohde
			5,971,799 A	10/1999	Swade
			5,980,332 A	11/1999	Tsuji et al.
			5,984,717 A	11/1999	Lee

(56)

## References Cited

## U.S. PATENT DOCUMENTS

5,997,334	A	12/1999	Goto	6,454,577	B1	9/2002	Yi
6,006,125	A	12/1999	Kelly et al.	6,454,590	B1	9/2002	Goodrich et al.
6,027,359	A	2/2000	Aoki et al.	6,454,605	B1	9/2002	Bassler et al.
6,032,063	A	2/2000	Hoar et al.	6,456,872	B1	9/2002	Faisandier
6,032,064	A	2/2000	Devlin et al.	6,461,179	B1	10/2002	Sullivan et al.
6,038,479	A	3/2000	Werner et al.	6,487,430	B1	11/2002	Henderson et al.
6,038,481	A	3/2000	Werner et al.	6,494,744	B1	12/2002	Lee
6,050,838	A	4/2000	Norizuki et al.	6,514,099	B2	2/2003	Endo
6,055,448	A	4/2000	Anderson et al.	6,517,372	B1	2/2003	Jones
6,062,902	A	5/2000	Buckles et al.	6,531,657	B1	3/2003	Jones, Jr. et al.
6,066,093	A	5/2000	Kelly et al.	6,533,600	B1	3/2003	Kashiyama et al.
6,074,234	A	6/2000	Hasegawa	6,540,549	B2	4/2003	Rupert
6,098,127	A	8/2000	Kwang	6,551,117	B2	4/2003	Poplawski et al.
6,109,948	A	8/2000	Kuo	6,553,246	B1	4/2003	Wenger
6,115,623	A	9/2000	McFee	6,553,250	B2	4/2003	Rantala
6,116,940	A	9/2000	Bertens et al.	6,558,189	B2	5/2003	Groebe et al.
6,122,536	A	9/2000	Sun et al.	6,561,834	B2	5/2003	Chen
6,122,544	A	9/2000	Organ	6,564,079	B1	5/2003	Cory et al.
6,129,666	A	10/2000	DeLuca et al.	6,565,388	B1	5/2003	Van Woensel et al.
6,132,233	A	10/2000	Fukuda	6,567,680	B2	5/2003	Swetlik et al.
6,139,350	A	10/2000	Mathesius	6,575,759	B1	6/2003	Ollivier
6,139,360	A	10/2000	Hayashi	6,575,794	B1	6/2003	Nakamura
6,152,778	A	11/2000	Dalton	6,582,252	B1	6/2003	Lin
6,155,864	A	12/2000	Yoshiura	6,589,066	B1	7/2003	Wu
6,157,851	A	12/2000	Kelly et al.	6,592,391	B1	7/2003	Wu
6,165,017	A	12/2000	Kuo	6,592,404	B2	7/2003	Endo
6,168,453	B1	1/2001	Kuo	6,604,963	B2	8/2003	Lin
6,171,139	B1	1/2001	Sato et al.	6,607,397	B1	8/2003	Zhang et al.
6,190,385	B1	2/2001	Tom et al.	6,609,018	B2	8/2003	Cory et al.
6,203,354	B1	3/2001	Kuwahara	6,609,833	B1	8/2003	Miyachi et al.
6,219,568	B1	4/2001	Kelly et al.	6,611,705	B2	8/2003	Hopman et al.
6,219,569	B1	4/2001	Kelly et al.	6,612,860	B2	9/2003	Droesbeke
6,223,088	B1	4/2001	Scharnberg et al.	6,619,976	B2	9/2003	Huetter et al.
6,232,366	B1	5/2001	Wang et al.	6,619,989	B1	9/2003	Yi
6,234,827	B1	5/2001	Nishio et al.	6,623,312	B2	9/2003	Merry et al.
6,236,874	B1	5/2001	Devlin et al.	6,636,754	B1	10/2003	Baura et al.
6,240,323	B1	5/2001	Calenzo, Sr. et al.	6,647,286	B1	11/2003	Kato et al.
6,247,963	B1	6/2001	Rattner	6,648,665	B1	11/2003	Wu
6,250,955	B1	6/2001	Archuleta	6,648,666	B1	11/2003	Wu
6,254,425	B1	7/2001	Shchervinsky	6,654,626	B2	11/2003	Devlin et al.
6,257,914	B1	7/2001	Comerci et al.	6,655,979	B1	12/2003	Lee
6,257,925	B1	7/2001	Jones	6,659,790	B1	12/2003	Wu
6,280,209	B1	8/2001	Bassler et al.	6,663,412	B2	12/2003	Aramoto et al.
6,280,227	B1	8/2001	Terada et al.	6,663,419	B2	12/2003	Vaden
6,280,243	B1	8/2001	Liu et al.	6,663,420	B1	12/2003	Xiao
6,283,789	B1	9/2001	Tsai	6,663,570	B2	12/2003	Mott et al.
6,290,530	B1	9/2001	Chang	6,669,510	B2	12/2003	Yamawaki et al.
6,298,255	B1	10/2001	Cordero et al.	6,688,894	B2	2/2004	Knox, Jr. et al.
6,304,783	B1	10/2001	Lyster et al.	6,688,907	B2	2/2004	Yamaoka et al.
6,312,297	B1	11/2001	Lorkowski	6,702,602	B2	3/2004	Wu
6,324,432	B1	11/2001	Rigaux et al.	6,702,603	B2	3/2004	Wu
D452,318	S	12/2001	Merry et al.	6,702,616	B1	3/2004	Chang et al.
6,339,720	B1	1/2002	Anzellini et al.	6,709,284	B1	3/2004	Avlonitis
6,340,306	B1	1/2002	Daoud	6,716,165	B1	4/2004	Flanders et al.
6,356,779	B1	3/2002	Katzenmaier et al.	6,722,912	B2	4/2004	Wu
6,358,083	B1	3/2002	Kraft	6,736,650	B1	5/2004	Chen
6,360,119	B1	3/2002	Roberts	6,743,053	B2	6/2004	Wu
6,363,272	B1	3/2002	Combs	6,748,797	B2	6/2004	Breed et al.
6,364,685	B1	4/2002	Manning	6,751,493	B2	6/2004	Wenger
6,383,010	B1	5/2002	Mayo et al.	6,755,689	B2	6/2004	Zhang et al.
6,383,011	B2	5/2002	Chen	6,768,921	B2	7/2004	Organ et al.
6,383,036	B1	5/2002	Steinhauser et al.	6,773,293	B1	8/2004	Lee
6,386,917	B1	5/2002	Sakaguchi	6,780,065	B2	8/2004	Schwarz
6,393,317	B1	5/2002	Fukuda	6,786,755	B2	9/2004	Dambach et al.
6,394,953	B1	5/2002	Devlin et al.	6,786,764	B2	9/2004	Sivertsen
6,398,575	B1	6/2002	Bresson	D498,535	S	11/2004	Genau et al.
6,398,577	B1	6/2002	Simmel et al.	6,816,744	B2	11/2004	Garfield et al.
6,400,977	B1	6/2002	Kelly et al.	6,832,928	B2	12/2004	Suzuki et al.
6,411,834	B1	6/2002	Nagai	6,837,734	B2	1/2005	Ushio et al.
6,413,112	B2	7/2002	Semmeling et al.	6,847,836	B1	1/2005	Sujdak
6,415,169	B1	7/2002	Kornrumpf et al.	6,848,926	B2	2/2005	Ling et al.
6,419,636	B1	7/2002	Young et al.	6,851,969	B2	2/2005	Archuletta
6,434,410	B1	8/2002	Cordero et al.	6,860,750	B1	3/2005	Wu
6,447,170	B1	9/2002	Takahashi et al.	6,866,535	B2	3/2005	Uchida
6,453,186	B1	9/2002	Lovejoy et al.	6,881,098	B2	4/2005	Jeansonne et al.
				6,891,379	B2	5/2005	Kelly et al.
				6,913,482	B1	7/2005	Wu
				6,939,158	B2	9/2005	Moffett et al.
				6,939,345	B2	9/2005	Knight et al.

(56)

## References Cited

## U.S. PATENT DOCUMENTS

6,945,796 B2	9/2005	Bassler et al.	7,374,448 B1	5/2008	Jepsen et al.
6,945,807 B1	9/2005	Wu	7,381,082 B2	6/2008	Lai
6,948,973 B1	9/2005	Hsu et al.	7,390,224 B2	6/2008	Sodemann et al.
6,970,731 B1	11/2005	Jayaraman et al.	7,396,246 B2	7/2008	Okada et al.
6,973,341 B2	12/2005	Watson	7,399,195 B2	7/2008	Kim et al.
6,973,343 B2	12/2005	Wenger	7,401,946 B2	7/2008	Laukhuf
6,980,852 B2	12/2005	Jersey-Willuhn et al.	7,402,071 B2	7/2008	Ohtaka et al.
6,984,143 B2	1/2006	Roese	7,413,461 B2	8/2008	Dawiedczyk et al.
D516,217 S	2/2006	Brown et al.	7,413,485 B2	8/2008	Lappoehn
6,997,733 B2	2/2006	Peng	7,416,440 B2	8/2008	Homyk et al.
7,004,787 B2	2/2006	Milan	7,422,437 B1	9/2008	Lin et al.
7,008,255 B1	3/2006	Wang	7,422,452 B2	9/2008	Achtner et al.
7,025,618 B2	4/2006	Fukuda	7,445,512 B1	11/2008	Lai
7,025,628 B2	4/2006	LaMeres et al.	7,445,522 B2	11/2008	Burnes
7,029,286 B2	4/2006	Hall et al.	7,462,074 B1	12/2008	Devlin et al.
7,033,207 B2	4/2006	Nimura	7,473,141 B2	1/2009	Liao
7,041,918 B1	5/2006	Wu	7,488,187 B2	2/2009	Wolf
7,056,134 B2	6/2006	Martin et al.	7,494,383 B2	2/2009	Cohen et al.
7,056,141 B2	6/2006	Moffett et al.	7,497,738 B2	3/2009	Kuo
7,077,711 B1	7/2006	Moore	7,503,807 B2	3/2009	Martin et al.
7,081,008 B2	7/2006	Tan	7,556,535 B2	7/2009	Liao
7,081,026 B2	7/2006	Schwarz	7,581,992 B1	9/2009	Liu et al.
7,083,480 B2	8/2006	Silber	7,585,182 B2	9/2009	Asante et al.
7,085,598 B2	8/2006	Sato	7,591,673 B2	9/2009	Chan et al.
7,104,801 B1	9/2006	Brodnick et al.	7,604,511 B1	10/2009	Johnson
7,110,804 B2	9/2006	Baumer et al.	7,618,377 B2	11/2009	McAtamney et al.
7,117,590 B2	10/2006	Koenig et al.	7,632,130 B2	12/2009	Sami
7,118,411 B2	10/2006	Huang et al.	D609,813 S	2/2010	Molden et al.
7,127,279 B2	10/2006	Finneran et al.	7,666,028 B2	2/2010	Meleck
7,128,600 B2	10/2006	Osypka	D629,358 S	12/2010	Slippy et al.
7,134,908 B2	11/2006	Wu	7,950,971 B2	5/2011	Hobet et al.
7,137,839 B2	11/2006	Dilliner et al.	8,038,484 B2	10/2011	Selvitelli et al.
7,144,268 B2	12/2006	Koenig et al.	8,152,571 B2	4/2012	Selvitelli et al.
7,150,655 B2	12/2006	Mastrototaro et al.	8,255,041 B2	8/2012	Istvan et al.
D535,029 S	1/2007	McAtamney et al.	D675,738 S *	2/2013	Baumer et al. .... D24/168
7,160,136 B2	1/2007	Zhang et al.	8,408,507 B2	4/2013	Liu
7,169,107 B2	1/2007	Jersey-Willuhn et al.	8,408,948 B2	4/2013	Selvitelli et al.
7,179,111 B2	2/2007	Van Der Mee et al.	8,414,315 B2	4/2013	Dekoski
7,179,113 B2	2/2007	Koenig et al.	D689,614 S *	9/2013	Browne et al. .... D24/167
7,182,630 B1	2/2007	Su	D699,360 S *	2/2014	Marzynski et al. .... D24/186
7,184,820 B2	2/2007	Jersey-Willuhn et al.	8,690,611 B2	4/2014	Selvitelli et al.
7,189,097 B2	3/2007	Benham	8,694,080 B2	4/2014	Farrior
7,197,357 B2	3/2007	Istvan et al.	8,795,004 B2	8/2014	Selvitelli et al.
7,198,502 B2	4/2007	Koenig et al.	8,897,865 B2	11/2014	Farrior
7,201,599 B2	4/2007	Holub	D718,867 S *	12/2014	Schroderus .... D24/167
7,207,825 B2	4/2007	Le Gallic et al.	2001/0053639 A1	12/2001	Endo
7,214,107 B2	5/2007	Powell et al.	2002/0133069 A1	9/2002	Roberts
7,236,825 B2	6/2007	Wang	2002/0138011 A1	9/2002	Rantala
7,252,542 B2	8/2007	Chen	2002/0188216 A1	12/2002	Kayyali et al.
7,252,556 B2	8/2007	Anbo et al.	2003/0068914 A1	4/2003	Merry et al.
7,252,565 B2	8/2007	Hunter	2003/0068918 A1	4/2003	Christensson
7,255,609 B1	8/2007	Epstein	2004/0073127 A1	4/2004	Istvan et al.
7,258,566 B2	8/2007	Koenig et al.	2004/0127802 A1	7/2004	Istvan et al.
7,264,510 B2	9/2007	Koenig et al.	2004/0176674 A1	9/2004	Nazeri
7,270,568 B2	9/2007	Osypka	2004/0203273 A1	10/2004	Schwarz
7,270,580 B2	9/2007	Bradley et al.	2005/0164551 A1	7/2005	Wlos
7,272,427 B2	9/2007	Ristolainen	2005/0177052 A1	8/2005	Istvan et al.
7,272,428 B2	9/2007	Hopman et al.	2005/0203349 A1	9/2005	Nanikashvili
7,275,951 B2	10/2007	Shigeta et al.	2006/0004273 A1	1/2006	Lobodzinski
7,281,937 B2	10/2007	Reed et al.	2006/0073728 A1	4/2006	Zaiken et al.
7,287,998 B2	10/2007	Masai	2006/0110962 A1	5/2006	Powell et al.
7,303,430 B2	12/2007	Butcher	2006/0286861 A1	12/2006	Avevor et al.
7,318,740 B1	1/2008	Henry et al.	2007/0038057 A1	2/2007	Nam et al.
7,319,895 B2	1/2008	Klefstad-Sillonville et al.	2007/0260133 A1	11/2007	Meyer
7,322,849 B2	1/2008	Sutton	2008/0132106 A1	6/2008	Burnes et al.
7,329,139 B2	2/2008	Benham	2008/0132773 A1	6/2008	Burnes et al.
7,333,850 B2	2/2008	Marossero et al.	2008/0177168 A1	7/2008	Callahan et al.
7,335,053 B2	2/2008	Avevor et al.	2009/0099423 A1	4/2009	Al-Ali et al.
7,347,710 B2	3/2008	Ohtaka et al.	2009/0149731 A1	6/2009	Selvitelli et al.
7,347,826 B1	3/2008	Karicherla et al.	2009/0221153 A1	9/2009	Santangelo et al.
7,359,751 B1	4/2008	Erickson et al.	2011/0092833 A1	4/2011	Farrior
7,361,058 B1	4/2008	Lien et al.	2011/0275252 A1	11/2011	Selvitelli et al.
7,364,440 B2	4/2008	Gobron et al.	2012/0196474 A1	8/2012	Selvitelli et al.
7,371,102 B2	5/2008	Sakamoto et al.	2013/0023750 A1	1/2013	Callahan et al.
7,373,196 B2	5/2008	Ryu et al.	2013/0189881 A1	7/2013	Selvitelli et al.
			2014/0170896 A1	6/2014	Selvitelli et al.
			2014/0180148 A1	6/2014	Coggins et al.
			2014/0243644 A1	8/2014	Farrior
			2014/0275927 A1	9/2014	Simpson

(56)

References Cited

U.S. PATENT DOCUMENTS

2014/0303472 A1 10/2014 Callahan  
 2014/0309514 A1 10/2014 Zhou et al.  
 2014/0322945 A1 10/2014 Selvitelli et al.

FOREIGN PATENT DOCUMENTS

DE	90 02 539.3	U1	5/1990
DE	102 25 621	B3	1/2004
DE	10 2004 032 410	A1	1/2006
EP	0 766 946	A2	4/1997
EP	0 799 628	A2	10/1997
EP	1 050 269		11/2000
EP	1 645 224		4/2008
EP	1 932 470	A1	6/2008
EP	2 070 474	A2	6/2009
GB	162804		5/1921
JP	10-248820	A	9/1998
JP	2003-010138		1/2003
JP	2004-282608		10/2004
WO	WO 03/047427	A2	6/2003
WO	WO 2008/092098	A2	7/2008
WO	WO 2013/013370	A1	1/2013

OTHER PUBLICATIONS

Andreas Boos et al., "A New Lightweight Fetal Telemetry System;" Dec. 1995; Hewlett-Packard Journal; 12 Pages.  
 Tyco Healthcare Kendal, "ECG Electrodes Where Quality Leads;" 2003; 8 Pages.  
 European Search Report Corresponding to European Application No. EP 07 25 3850, Date of completion is Dec. 21, 2007; 3 Pages.  
 EP Notice Under Rule161 dated Feb. 28, 2014, for EP App. No. 11869957.8; 3 Pages.  
 Response to Written Opinion and Claims Filed on Jun. 11, 2014, for EP App. No. 11869957.8; 6 Pages.  
 First Office Action dated Jul. 26, 2011, for Chinese App. No. 200810191090.1; 6 Pages.  
 Letter regarding Response to Office Action dated Nov. 22, 2011, for Chinese App. No. 200810191090.1; 9 Pages.  
 Response to Office Action dated Dec. 12, 2011, for Chinese App. No. 200810191090.1; 18 Pages.  
 Letter dated May 11, 2012 enclosing Second Office Action dated Apr. 27, 2012, for Chinese App. No. 200810191090.1; 6 Pages.  
 Notification of Response to Second Office Action dated Jun. 11, 2012, for Chinese App. No. 200810191090.1; 5 Pages.  
 Letter dated Dec. 20, 2012 enclosing Grant Notification dated Dec. 19, 2012, for Chinese App. No. 200810191090.1; 4 Pages.  
 Divisional Application as filed on Mar. 1, 2013, for Chinese App. No. 200810191090.1; 37 Pages.  
 European Office Action dated Nov. 19, 2010, for EP App. No. 08171185.5; 1 Page.  
 Letter dated Dec. 22, 2010 in response to EP Office Action Nov. 19, 2010 European Office Action for EP App. No. 08171185.5; 1 Page.  
 Response to Office Action dated Oct. 3, 2012 for EP App. No. 08171185.5; 2 Page.  
 Letter dated Oct. 4, 2012 and copy of Divisional for EP App. No. 08171185.5; 39 Pages.  
 Search Report and Written Opinion dated Apr. 12, 2012, for App. No. PCT/CN2011/077506; 14 Pages.  
 Letter dated Dec. 16, 2013 in response to Communication dated Jun. 24, 2013, for EP App. No. 08171185.5; 4 Pages.  
 Examination Report dated Jun. 24, 2013, for EP App. No. 08171185.5; 4 Pages.  
 Extended Search Report dated Mar. 7, 2012, for EP App. No. 08171185.5; 8 Pages.  
 Letter dated Apr. 2, 2012 and Office Action for Mexican App. No. MX/a/2008/015927; 3 Pages.  
 Letter dated May 15, 2012 and Response to Office Action for Mexican App. No. MX/a/2008/015927; Filed on Dec. 11, 2008; 9 Pages.

Letter dated Jun. 26, 2012 and Regarding Notice Of Allowance with allowed claims for Mexican App. No. MX/a/2008/015927; Filed on Dec. 11, 2008; 7 Pages.  
 Letter dated Feb. 5, 2014 Confirming receipt of Notice Of Allowance. For Mexican App. No. MX/a/2012/009542; 2 Pages.  
 Letter dated Feb. 25, 2013 also enclosing Office Action for App. No. MX/a/2012/009542; 3 Pages.  
 Letter And Response to Office Action dated Apr. 23, 2013, for Mexican App. No. MX/a/2012/009542; 20 Pages.  
 Letter dated Sep. 18, 2013 and Office Action for Mexican App. No. MX/a/2012/009542; 4 Pages.  
 Letter dated Oct. 30, 2013 and Response to Office Action for Mexican App. No. MX/a/2012/009542; 5 Pages.  
 Letter dated Jun. 10, 2014 Confirming receipt of Notice Of Allowance for Mexican App. No. MX/a/2013/012636; 2 Pages.  
 Letter dated Jun. 10, 2014 Confirming receipt of Notice Of Allowance for Mexican App. No. MX/a/2013/012635; 2 Pages.  
 Extended Search Report dated Oct. 8, 2013, for EP App. No. 12187209.7009542; 6 Pages.  
 European Notice Responding to Search Report dated Nov. 11, 2013, for EP App. No. 12187209.7009542; 2 Pages.  
 European Exam Report dated Mar. 11, 2014, for EP App. No. 12187209.7009542; 4 Pages.  
 Response dated Jan. 27, 2014 to Extended Search Report dated Oct. 8, 2013, for EP App. No. 12187209.7009542; 16 Pages.  
 Response to Exam Report dated Jun. 24, 2014 for EP App. No. 12187209.7009542; 8 Pages.  
 Response dated Nov. 2, 2011 to Communication dated May 10, 2011 for EP App. No. 10013624.10; 5 Pages.  
 Extended Search Report dated Apr. 4, 2011, for EP App. No. 10013624.10; 14 Pages.  
 European Exam Report dated Nov. 12, 2013, for EP App. No. 12187209.7009542; 6 Pages.  
 Response to Communication dated Mar. 17, 2014 for EP App. No. 12187209.7009542; 14 Pages.  
 European Office Action dated May 21, 2014, for EP App. No. 12187209.7009542; 5 Pages.  
 European Search Report dated May 23, 2014, for EP App. No. 14162076.5; 10 Pages.  
 Response to Chinese Office Action dated May 4, 2011, for Chinese App. No. 201010624971.50; 21 Pages.  
 Notification of Entry into Examination Procedure dated Oct. 11, 2012, for Chinese App. No. 201010624971.50; 2 Pages.  
 Receipt of First Office Action dated Nov. 28, 2013, for Chinese App. No. 201010624971.50; 136 Pages.  
 Response to Office Action dated Apr. 14, 2014, for Chinese App. No. 201010624971.50; 34 Pages.  
 Search Report dated Jun. 4, 2014, for App. No. PCT/US2014/019479; 10 Pages.  
 Letter and Chinese Office Action dated Jul. 1, 2014, for Chinese App. No. 2013100649128.3; 38 Pages.  
 Voluntary Amendment with English claims dated Jul. 15, 2014 for Application No. 201180072455.9; 7 Pages.  
 Preliminary Amendment dated Jul. 7, 2014 for U.S. Appl. No. 14/324,380; 6 Pages.  
 Article 19 Amendment as filed dated Jul. 2, 2014 for App. No. PCT/US2014/019479; 10 Pages.  
 Selvitelli et al., "ECG Electrode Connector;" U.S. Appl. No. 14/324,380, filed Jul. 7, 2014; 41 Pages.  
 Simpson, "Electrode Connector With a Conductive Member;" U.S. Appl. No. 14/209,278, filed Mar. 13, 2014; 30 Pages.  
 Zhou et al., "ECG Electrode Connector;" U.S. Appl. No. 14/160,798, filed Jan. 22, 2014; 26 Pages.  
 International Search Report and Written Opinion dated Sep. 9, 2014 corresponding to PCT Pat. Appl. No. US2014/027328; 16 Pages.  
 Office Action dated Sep. 10, 2014 for U.S. Appl. No. 14/324,380; 7 Pages.  
 Chinese Office Action dated Aug. 6, 2014 for Chinese Appl. No. 201010624971.50; 19 Pages.  
 Australian Examiner's Report dated Jul. 2, 2014 for Australian Appl. No. 2010235901; 7 Pages.  
 Extended European Search Report dated Nov. 18, 2014 corresponding to PCT Pat. Appl. No. PCT/CN2011077506; 9 Pages.

(56)

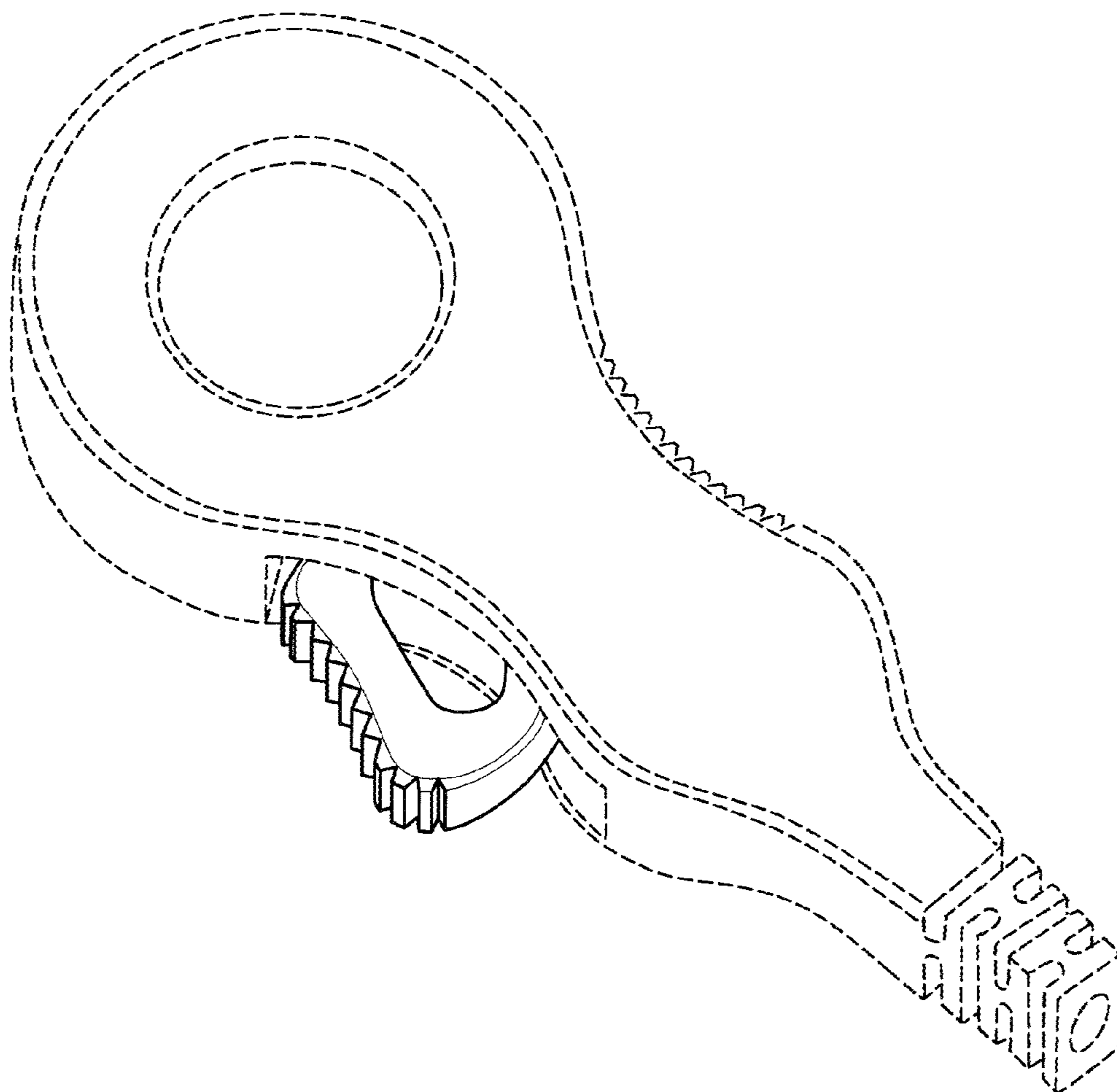
References Cited

OTHER PUBLICATIONS

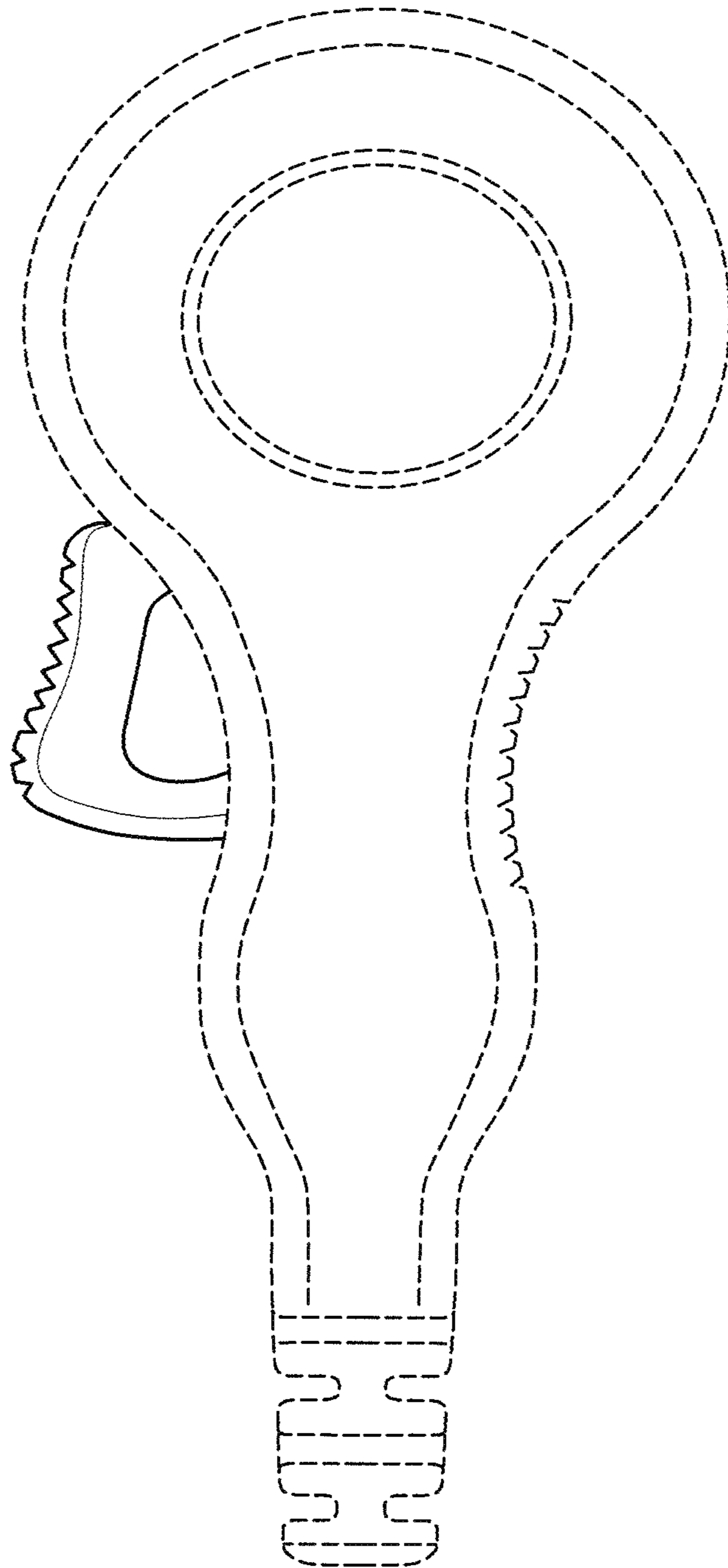
Selvitelli et al., "ECG Electrode Connector;" U.S. Appl. No. 29/486,095, filed Mar. 26, 2014; 6 Pages.  
Office Action dated Aug. 13, 2014 for U.S. Appl. No. 29/486,095; 11 Pages.  
Response to Office Action dated Aug. 13, 2014 for U.S. Appl. No. 29/486,095; Response filed on Oct. 27, 2014; 8 Pages.  
Office Action dated Dec. 3, 2014 for U.S. Appl. No. 29/486,095; 6 Pages.  
U.S. Appl. No. 12/330,550; 175 Pages.  
U.S. Appl. No. 13/182,656; 143 Pages.  
U.S. Appl. No. 13/443,096; 205 Pages.  
U.S. Appl. No. 13/785,713, 200 Pages, Part 1 of 14.  
U.S. Appl. No. 13/785,713, 200 Pages, Part 2 of 14.  
U.S. Appl. No. 13/785,713, 200 pages, Part 3 of 14.  
U.S. Appl. No. 13/785,713, 200 pages, Part 4 of 14.  
U.S. Appl. No. 13/785,713, 200 pages, Part 5 of 14.  
U.S. Appl. No. 13/785,713, 200 pages, Part 6 of 14.  
U.S. Appl. No. 13/785,713, 200 pages, Part 7 of 14.  
U.S. Appl. No. 13/785,713, 200 pages, Part 8 of 14.  
U.S. Appl. No. 13/785,713, 200 pages, Part 9 of 14.  
U.S. Appl. No. 13/785,713, 200 pages, Part 10 of 14.  
U.S. Appl. No. 13/785,713, 200 pages, Part 11 of 14.  
U.S. Appl. No. 13/785,713, 200 pages, Part 12 of 14.  
U.S. Appl. No. 13/785,713, 200 pages, Part 13 of 14.  
U.S. Appl. No. 13/785,713, 18 pages, Part 14 of 14.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 1 of 17.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 2 of 17.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 3 of 17.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 4 of 17.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 5 of 17.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 6 of 17.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 7 of 17.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 8 of 17.  
U.S. Appl. No. 14/041,471; 150 Pages, Part 9 of 17.  
U.S. Appl. No. 14/041,471; 200 Pages, Part 10 of 17.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 11 of 17.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 12 of 17.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 13 of 17.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 14 of 17.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 15 of 17.  
U.S. Appl. No. 14/041,471; 350 Pages, Part 16 of 17.  
U.S. Appl. No. 14/041,471; 143 Pages, Part 17 of 17.  
U.S. Appl. No. 14/041,484; 101 Pages.  
U.S. Appl. No. 13/987,326; 137 Pages, Part 1 of 48.  
U.S. Appl. No. 13/987,326; 263 Pages, Part 2 of 48.  
U.S. Appl. No. 13/987,326; 194 Pages, Part 3 of 48.  
U.S. Appl. No. 13/987,326; 247 Pages, Part 4 of 48.  
U.S. Appl. No. 13/987,326; 159 Pages, Part 5 of 48.  
U.S. Appl. No. 13/987,326; 191 Pages, Part 6 of 48.  
U.S. Appl. No. 13/987,326; 175 Pages, Part 7 of 48.  
U.S. Appl. No. 13/987,326; 257 Pages, Part 8 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 9 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 10 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 11 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 12 of 48.

U.S. Appl. No. 13/987,326; 250 Pages, Part 13 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 14 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 15 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 16 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 17 of 48.  
U.S. Appl. No. 13/987,326; 255 Pages, Part 18 of 48.  
U.S. Appl. No. 13/987,326; 255 Pages, Part 19 of 48.  
U.S. Appl. No. 13/987,326; 255 Pages, Part 20 of 48.  
U.S. Appl. No. 13/987,326; 255 Pages, Part 21 of 48.  
U.S. Appl. No. 13/987,326; 255 Pages, Part 22 of 48.  
U.S. Appl. No. 13/987,326; 255 Pages, Part 23 of 48.  
U.S. Appl. No. 13/987,326; 255 Pages, Part 24 of 48.  
U.S. Appl. No. 13/987,326; 233 Pages, Part 25 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 26 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 27 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 28 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 29 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 30 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 31 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 32 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 33 of 48.  
U.S. Appl. No. 13/987,326; 100 Pages, Part 34 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 35 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 36 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 37 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 38 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 39 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 40 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 41 of 48.  
U.S. Appl. No. 13/987,326; 138 Pages, Part 42 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 43 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 44 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 45 of 48.  
U.S. Appl. No. 13/987,326; 250 Pages, Part 46 of 48.  
U.S. Appl. No. 13/987,326; 238 Pages, Part 47 of 48.  
U.S. Appl. No. 13/987,326; 203 Pages, Part 48 of 48.  
U.S. Appl. No. 12/876,316; 250 Pages, Part 1 of 5.  
U.S. Appl. No. 12/876,316; 250 Pages, Part 2 of 5.  
U.S. Appl. No. 12/876,316; 250 Pages, Part 3 of 5.  
U.S. Appl. No. 12/876,316; 250 Pages, Part 4 of 5.  
U.S. Appl. No. 12/876,316; 238 Pages, Part 5 of 5.  
U.S. Appl. No. 14/195,140; 328 Pages.  
Notice of Allowance dated May 15, 2015 corresponding to U.S. Appl. No. 29/486,095; 25 Pages.  
Response to Chinese Office Action (with English Translation) dated Jun. 9, 2014 corresponding to Pat. Appl. No. 201310064924.3; Response Filed Oct. 24, 2014; 28 Pages.  
Second Chinese Office Action (with English Translation) dated Nov. 17, 2014 corresponding to Pat. Appl. No. 201310064924.3; 10 Pages.  
Response to Office Action dated Dec. 3, 2014 corresponding to U.S. Appl. No. 29/486,095; Response Filed Jan. 9, 2015; 5 Pages.  
Notice of Allowance from U.S. Appl. No. 14/825,206, mailed Jul. 27, 2016, 8 pages.  
Notice of Allowance from U.S. Appl. No. 14/209,278, mailed Aug. 9, 2016, 7 pages.

\* cited by examiner

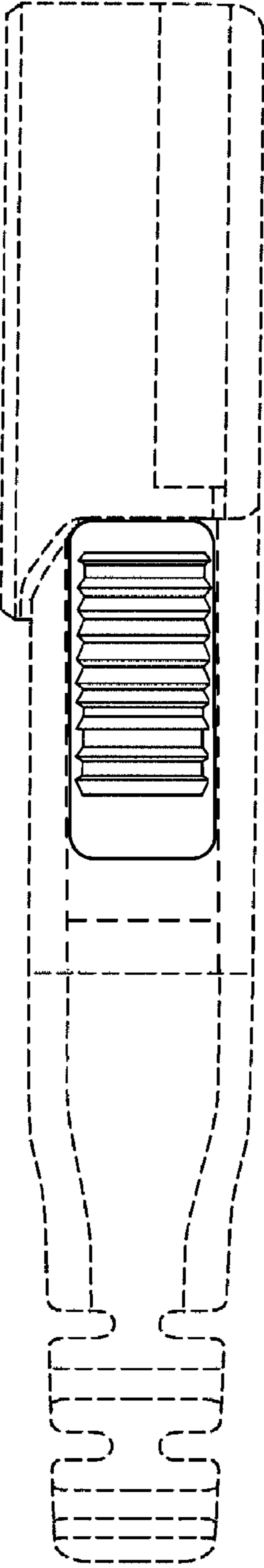


**FIG. 1**

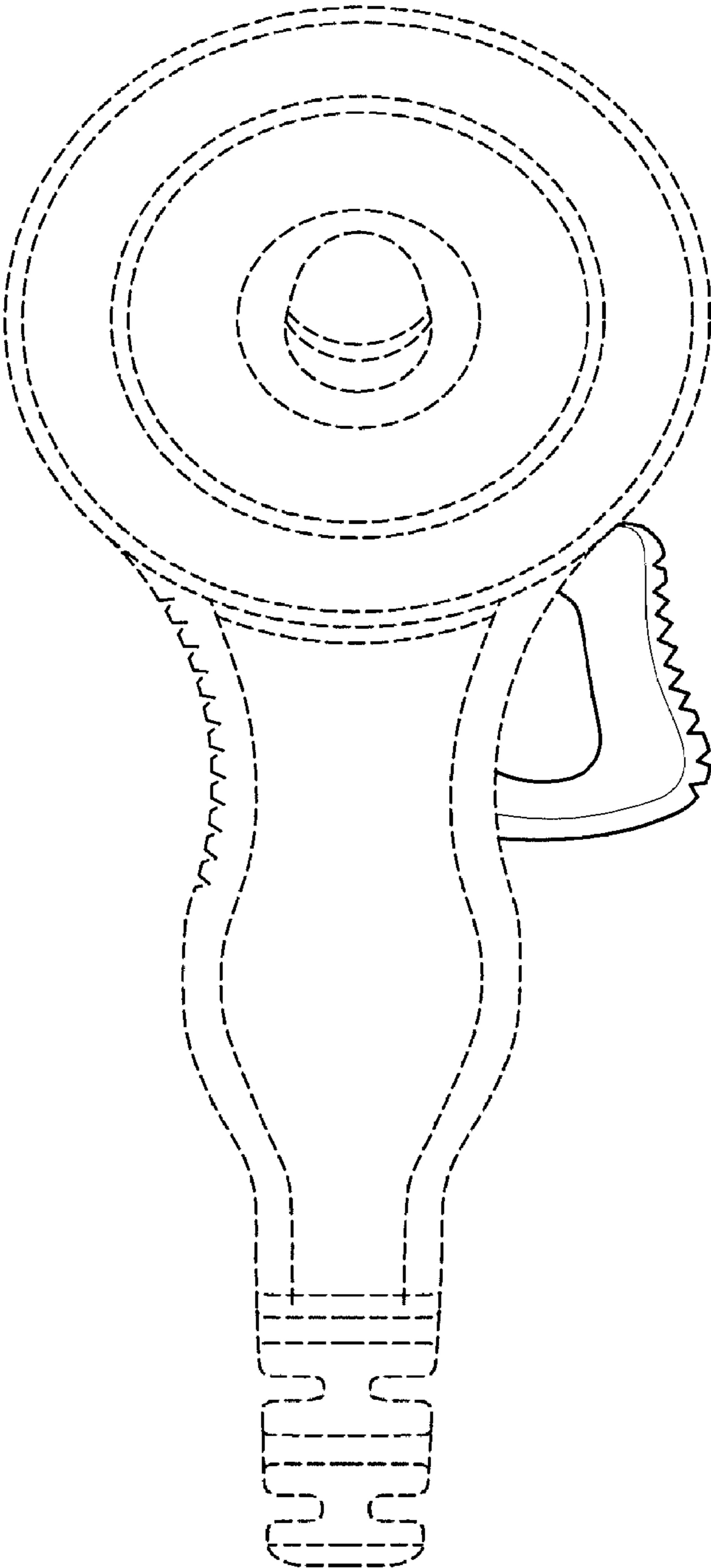


**FIG. 2**





**FIG. 3**



**FIG. 4**