



US00D979766S

(12) **United States Design Patent** (10) **Patent No.:** **US D979,766 S**
Stafford (45) **Date of Patent:** **** Feb. 28, 2023**

(54) **ANALYTE SENSOR DEVICE**

(56) **References Cited**

(71) Applicant: **ABBOTT DIABETES CARE INC.**,
Alameda, CA (US)

U.S. PATENT DOCUMENTS

(72) Inventor: **Gary Ashley Stafford**, Hayward, CA
(US)

3,522,807 A	8/1970	Millenbach
3,670,727 A	6/1972	Reiterman
3,719,564 A	3/1973	Lilly, Jr. et al.
3,949,388 A	4/1976	Fuller
3,972,320 A	8/1976	Kalman
3,979,274 A	9/1976	Newman
4,008,717 A	2/1977	Kowarski
4,120,292 A	10/1978	LeBlanc, Jr. et al.
4,129,128 A	12/1978	McFarlane
4,178,916 A	12/1979	McNamara
4,327,725 A	5/1982	Cortese et al.
4,349,728 A	9/1982	Phillips et al.
4,356,074 A	10/1982	Johnson
4,365,637 A	12/1982	Johnson
4,373,527 A	2/1983	Fischell

(73) Assignee: **ABBOTT DIABETES CARE INC.**,
Alameda, CA (US)

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

(21) Appl. No.: **29/777,142**

(22) Filed: **Apr. 2, 2021**

Related U.S. Application Data

(63) Continuation of application No. 16/427,155, filed on May 30, 2019, which is a continuation of application No. 15/714,538, filed on Sep. 25, 2017, now Pat. No. 10,342,489, which is a continuation of application No. 15/271,991, filed on Sep. 21, 2016, now Pat. No. 9,775,563, which is a continuation of application No. 13/970,397, filed on Aug. 19, 2013, now Pat. No. 9,480,421, which is a continuation of application No. 11/240,259, filed on Sep. 30, 2005, now Pat. No. 8,512,243.

(Continued)

FOREIGN PATENT DOCUMENTS

CN	1202872	5/2005
DE	4401400	7/1995

(Continued)

Primary Examiner — Antoine Duval Davis

(74) *Attorney, Agent, or Firm* — McAndrews Held & Malloy, Ltd.

(51) **LOC (14) Cl.** **24-01**

(57) **CLAIM**

(52) **U.S. Cl.**
USPC **D24/186; D24/169**

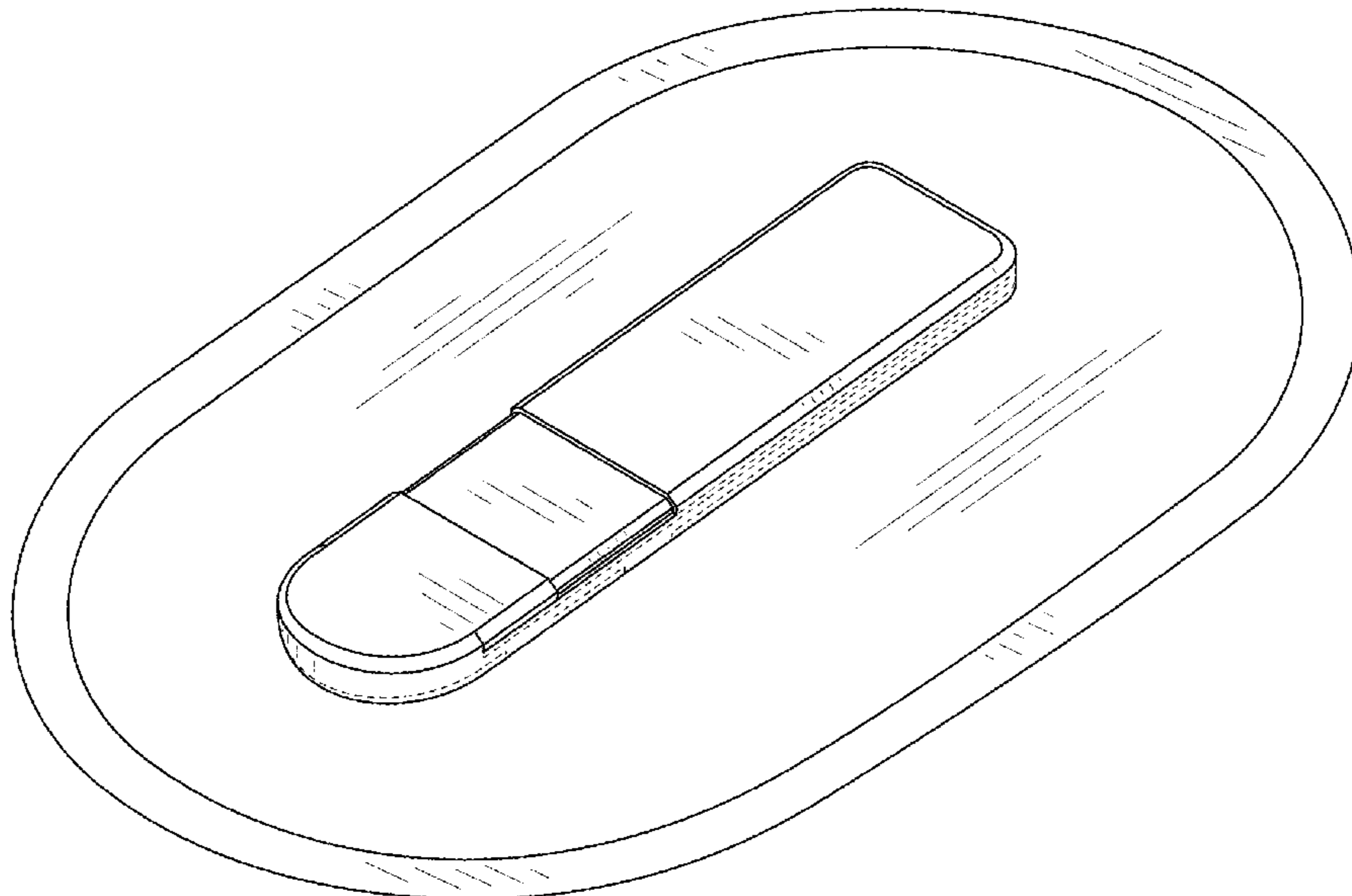
The ornamental design for an analyte sensor device, as shown and described.

(58) **Field of Classification Search**
USPC D10/70, 78, 81, 98; D14/341, 344;
D24/107, 112, 114, 164, 165, 169, 186,
D24/187, 216
CPC ... A61B 5/6849; A61B 5/0004; A61B 5/0022;
A61B 5/14503; A61B 5/1451; A61B
5/14532; A61B 5/14542; A61B 5/14546;
A61B 5/0002; A61B 5/1468; A61B
2560/063
See application file for complete search history.

DESCRIPTION

The FIGURE is a perspective view of an analyte sensor device showing my new design. The dashed broken lines in the figures illustrate portions of the analyte sensor device that form no part of the claimed design.

1 Claim, 1 Drawing Sheet



(56)

References Cited

U.S. PATENT DOCUMENTS

4,404,066 A	9/1983	Johnson	5,772,586 A	6/1998	Heinonen et al.
4,431,004 A	2/1984	Bessman et al.	5,779,665 A	7/1998	Mastrototaro et al.
4,494,950 A	1/1985	Fischell	5,791,344 A	8/1998	Schulman et al.
4,509,531 A	4/1985	Ward	5,800,420 A	9/1998	Gross et al.
4,573,994 A	3/1986	Fischell et al.	5,807,375 A	9/1998	Gross et al.
4,595,011 A	6/1986	Phillips	5,814,020 A	9/1998	Gross
4,627,445 A	12/1986	Garcia et al.	5,820,551 A	10/1998	Hill et al.
4,627,842 A	12/1986	Katz	5,820,622 A	10/1998	Gross et al.
4,671,288 A	6/1987	Gough	5,822,715 A	10/1998	Worthington et al.
4,682,602 A	7/1987	Prohaska	5,827,184 A	10/1998	Netherly et al.
4,685,463 A	8/1987	Williams	5,840,020 A	11/1998	Heinonen et al.
4,685,466 A	8/1987	Rau	5,842,983 A	12/1998	Abel et al.
4,703,756 A	11/1987	Gough et al.	5,851,197 A	12/1998	Marano et al.
4,726,378 A	2/1988	Kaplan	5,858,001 A	1/1999	Tsals et al.
4,755,173 A	7/1988	Konopka	5,865,804 A	2/1999	Bachynsky
4,796,634 A	1/1989	Huntsman et al.	5,885,211 A	3/1999	Eppstein et al.
4,815,469 A	3/1989	Cohen et al.	5,899,855 A	5/1999	Brown
RE32,947 E	6/1989	Dormer et al.	5,924,979 A	7/1999	Sedlow et al.
4,871,440 A	10/1989	Nagata et al.	5,925,021 A	7/1999	Castellano et al.
4,897,173 A	1/1990	Nankai et al.	5,931,814 A	8/1999	Alex et al.
4,909,908 A	3/1990	Ross et al.	5,931,868 A	8/1999	Gross et al.
4,921,199 A	5/1990	Villaveces	5,948,006 A	9/1999	Mann
4,934,369 A	6/1990	Maxwell	5,951,521 A	9/1999	Mastototaro et al.
4,953,552 A	9/1990	DeMarzo	5,954,643 A	9/1999	Van Antwerp
4,969,468 A	11/1990	Byers et al.	5,954,685 A	9/1999	Tierney
4,988,341 A	1/1991	Columbus et al.	5,957,854 A	9/1999	Besson et al.
4,994,167 A	2/1991	Shults et al.	5,961,451 A	10/1999	Reber et al.
4,995,402 A	2/1991	Smith et al.	5,964,993 A	10/1999	Blubaugh, Jr. et al.
5,047,044 A	9/1991	Smith et al.	5,965,380 A	10/1999	Heller et al.
5,050,612 A	9/1991	Matsumura	5,971,922 A	10/1999	Arita et al.
5,058,592 A	10/1991	Whisler	5,972,199 A	10/1999	Heller et al.
5,108,889 A	4/1992	Smith et al.	5,987,353 A	11/1999	Khatchatrian et al.
5,126,034 A	6/1992	Carter et al.	5,993,411 A	11/1999	Choi
5,140,985 A	8/1992	Schroeder et al.	5,995,860 A	11/1999	Sun et al.
5,217,595 A	6/1993	Smith et al.	5,997,501 A	12/1999	Gross et al.
5,264,103 A	11/1993	Yoshioka et al.	6,001,067 A	12/1999	Shults et al.
5,279,294 A	1/1994	Anderson	6,004,278 A	12/1999	Botich et al.
5,285,792 A	2/1994	Sjoquist et al.	6,017,335 A	1/2000	Burnham
5,299,571 A	4/1994	Mastrototaro	6,022,368 A	2/2000	Gavronsky et al.
5,372,133 A	12/1994	Hogen Esch	6,024,699 A	2/2000	Surwit et al.
5,372,427 A	12/1994	Padovani et al.	6,026,321 A	2/2000	Miyata et al.
5,390,671 A	2/1995	Lord et al.	6,027,459 A	2/2000	Shain et al.
5,391,250 A	2/1995	Cheney, II et al.	6,049,727 A	4/2000	Crothall
5,395,504 A	3/1995	Saurer et al.	6,056,718 A	5/2000	Funderburk et al.
5,408,999 A	4/1995	Singh et al.	6,068,399 A	5/2000	Tseng
5,472,317 A	12/1995	Field et al.	6,083,710 A	7/2000	Heller et al.
5,491,474 A	2/1996	Suni et al.	6,088,608 A	7/2000	Schulman et al.
5,494,562 A	2/1996	Maley et al.	6,091,975 A	7/2000	Daddona et al.
5,496,453 A	3/1996	Uenoyama et al.	6,091,976 A	7/2000	Pfeiffer et al.
5,497,772 A	3/1996	Schulman et al.	6,093,172 A	7/2000	Funderburk et al.
5,506,458 A	4/1996	Pace	6,102,896 A	8/2000	Roser
5,507,288 A	4/1996	Bocker et al.	6,103,033 A	8/2000	Say et al.
5,545,191 A	8/1996	Mann et al.	6,117,290 A	9/2000	Say et al.
5,560,357 A	10/1996	Faupei et al.	6,119,028 A	9/2000	Schulman et al.
5,568,806 A	10/1996	Cheney, II et al.	6,120,676 A	9/2000	Heller et al.
5,569,186 A	10/1996	Lord et al.	6,121,009 A	9/2000	Heller et al.
5,582,697 A	12/1996	Ikeda et al.	6,121,611 A	9/2000	Lindsay et al.
5,582,698 A	12/1996	Flaherty et al.	6,122,351 A	9/2000	Schlueter, Jr. et al.
5,584,813 A	12/1996	Livingston et al.	6,134,461 A	10/2000	Say et al.
5,586,553 A	12/1996	Haili et al.	6,143,164 A	11/2000	Heller et al.
5,601,435 A	2/1997	Quy	6,159,147 A	12/2000	Lichter et al.
5,617,851 A	4/1997	Lipkovker	6,162,611 A	12/2000	Heller et al.
5,640,954 A	6/1997	Pfeiffer et al.	6,175,752 B1	1/2001	Say et al.
5,651,869 A	7/1997	Yoshioka et al.	6,186,982 B1	2/2001	Gross et al.
5,653,239 A	8/1997	Pompei et al.	6,200,265 B1	3/2001	Walsh et al.
5,660,163 A	8/1997	Schulman et al.	6,212,416 B1	4/2001	Ward et al.
5,680,858 A	10/1997	Hansen et al.	6,219,574 B1	4/2001	Cormier et al.
5,682,233 A	10/1997	Brinda	6,248,067 B1	6/2001	Causey, III et al.
5,695,623 A	12/1997	Michel et al.	6,254,536 B1	7/2001	DeVito
5,711,861 A	1/1998	Ward et al.	6,254,586 B1	7/2001	Mann et al.
5,711,862 A	1/1998	Sakoda et al.	6,275,717 B1	8/2001	Gross et al.
5,733,044 A	3/1998	Rose et al.	6,283,761 B1	9/2001	Joao
5,741,211 A	4/1998	Renirie et al.	6,283,982 B1	9/2001	Levaughn et al.
5,766,131 A	6/1998	Kondo et al.	6,284,478 B1	9/2001	Heller et al.
5,771,001 A	6/1998	Cobb	6,293,925 B1	9/2001	Safabash et al.
			6,295,506 B1	9/2001	Heinonen et al.
			6,306,104 B1	10/2001	Cunningham et al.
			6,309,884 B1	10/2001	Cooper et al.
			6,329,161 B1	12/2001	Heller et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

6,331,244 B1	12/2001	Lewis et al.	6,830,551 B1	12/2004	Uchigaki et al.
6,338,790 B1	1/2002	Feldman et al.	6,837,858 B2	1/2005	Cunningham et al.
6,348,640 B1	2/2002	Navot et al.	6,837,988 B2	1/2005	Leong et al.
6,359,444 B1	3/2002	Grimes	6,849,052 B2	2/2005	Ughigaki et al.
6,360,888 B1	3/2002	McIvor et al.	6,854,882 B2	2/2005	Chen
6,366,794 B1	4/2002	Moussy et al.	6,862,465 B2	3/2005	Shults et al.
6,368,141 B1	4/2002	Van Antwerp et al.	6,873,268 B2	3/2005	Lebel et al.
6,368,274 B1	4/2002	Van Antwerp et al.	6,881,551 B2	4/2005	Heller et al.
6,377,828 B1	4/2002	Chaiken et al.	6,892,085 B2	5/2005	McIvor et al.
6,379,301 B1	4/2002	Worthington et al.	6,895,265 B2	5/2005	Silver
6,409,740 B1	6/2002	Kuhr et al.	6,931,327 B2	8/2005	Goode, Jr. et al.
6,413,393 B1	7/2002	Van Antwerp et al.	6,932,894 B2	8/2005	Mao et al.
6,418,332 B1	7/2002	Mastrototaro et al.	6,936,006 B2	8/2005	Sabra
6,424,847 B1	7/2002	Mastrototaro et al.	6,942,518 B2	9/2005	Liamos et al.
6,427,088 B1	7/2002	Bowman, IV	6,950,708 B2	9/2005	Bowman, IV et al.
6,437,679 B1	8/2002	Rogues	6,953,589 B1	10/2005	Trautman et al.
6,440,068 B1	8/2002	Brown et al.	6,958,705 B2	10/2005	Lebel et al.
6,445,374 B2	9/2002	Albert et al.	6,959,211 B2	10/2005	Rule et al.
6,478,736 B1	11/2002	Mault	6,968,294 B2	11/2005	Gutta et al.
6,482,176 B1	11/2002	Wich	6,971,274 B2	12/2005	Olin
6,484,045 B1	11/2002	Holker et al.	6,971,999 B2	12/2005	Py et al.
6,484,046 B1	11/2002	Say et al.	6,974,437 B2	12/2005	Lebel et al.
6,514,718 B2	2/2003	Heller et al.	6,990,366 B2	1/2006	Say et al.
6,520,326 B2	2/2003	McIvor et al.	6,997,907 B2	2/2006	Safabash et al.
6,522,927 B1	2/2003	Bishay et al.	6,998,247 B2	2/2006	Monfre et al.
6,551,494 B1	4/2003	Heller et al.	7,003,336 B2	2/2006	Holker et al.
6,554,798 B1	4/2003	Mann et al.	7,003,340 B2	2/2006	Say et al.
6,558,320 B1	5/2003	Causey, III et al.	7,003,341 B2	2/2006	Say et al.
6,558,321 B1	5/2003	Burd et al.	7,024,245 B2	4/2006	Lebel et al.
6,560,471 B1	5/2003	Heller et al.	7,025,743 B2	4/2006	Mann et al.
6,561,978 B1	5/2003	Conn et al.	7,041,068 B2	5/2006	Freeman et al.
6,562,001 B2	5/2003	Lebel et al.	7,041,468 B2	5/2006	Drucker et al.
6,564,105 B2	5/2003	Starkweather et al.	7,052,483 B2	5/2006	Wojcik
6,565,509 B1	5/2003	Say et al.	7,056,302 B2	6/2006	Douglas
6,571,128 B2	5/2003	Lebel et al.	7,074,307 B2	7/2006	Simpson et al.
6,572,566 B2	6/2003	Effenhauser	7,081,195 B2	7/2006	Simpson et al.
6,576,101 B1	6/2003	Heller et al.	7,097,637 B2	8/2006	Triplett et al.
6,577,899 B2	6/2003	Lebel et al.	7,098,803 B2	8/2006	Mann et al.
6,579,690 B1	6/2003	Bonnecaze et al.	7,108,778 B2	9/2006	Simpson et al.
6,585,644 B2	7/2003	Lebel et al.	7,110,803 B2	9/2006	Shults et al.
6,589,229 B1	7/2003	Connelly et al.	7,113,821 B1	9/2006	Sun et al.
6,591,125 B1	7/2003	Buse et al.	7,134,999 B2	11/2006	Brauker et al.
6,595,919 B2	7/2003	Berner et al.	7,136,689 B2	11/2006	Shults et al.
6,605,200 B1	8/2003	Mao et al.	7,163,511 B2	1/2007	Conn et al.
6,605,201 B1	8/2003	Mao et al.	7,171,274 B2	1/2007	Starkweather et al.
6,607,509 B2	8/2003	Bobroff et al.	7,190,988 B2	3/2007	Say et al.
6,610,012 B2	8/2003	Mault	7,192,450 B2	3/2007	Brauker et al.
6,633,772 B2	10/2003	Ford et al.	7,198,606 B2	4/2007	Boecker et al.
6,635,014 B2	10/2003	Starkweather et al.	7,207,974 B2	4/2007	Safabash et al.
6,648,821 B2	11/2003	Lebel et al.	7,226,978 B2	6/2007	Tapsak et al.
6,654,625 B1	11/2003	Say et al.	7,276,029 B2	10/2007	Goode, Jr. et al.
6,659,948 B2	12/2003	Lebel et al.	7,278,983 B2	10/2007	Ireland et al.
6,666,849 B1	12/2003	Marshall et al.	7,297,151 B2	11/2007	Boecker et al.
6,668,196 B1	12/2003	Villegas et al.	7,299,082 B2	11/2007	Feldman et al.
6,676,290 B1	1/2004	Lu	7,310,544 B2	12/2007	Brister et al.
6,682,338 B2	1/2004	Maurilio	7,318,816 B2	1/2008	Bobroff et al.
6,687,546 B2	2/2004	Lebel et al.	7,324,012 B2	1/2008	Mann et al.
6,689,056 B1	2/2004	Kilcoyne et al.	7,329,239 B2	2/2008	Safabash et al.
6,694,191 B2	2/2004	Starkweather et al.	7,335,294 B2	2/2008	Heller et al.
6,695,860 B1	2/2004	Ward et al.	7,340,287 B2	3/2008	Mason et al.
6,699,188 B2	3/2004	Wessel	7,340,309 B2	3/2008	Miazga et al.
6,702,857 B2	3/2004	Brauker et al.	7,354,420 B2	4/2008	Steil et al.
6,733,446 B2	5/2004	Lebel et al.	7,364,592 B2	4/2008	Carr-Brendel et al.
6,740,075 B2	5/2004	Lebel et al.	7,366,556 B2	4/2008	Brister et al.
6,741,877 B1	5/2004	Shults et al.	7,379,765 B2	5/2008	Petisce et al.
6,746,582 B2	6/2004	Heller et al.	7,381,184 B2	6/2008	Funderburk et al.
6,758,810 B2	7/2004	Lebel et al.	7,402,153 B2	7/2008	Steil et al.
6,770,030 B1	8/2004	Schaupp et al.	7,407,493 B2	8/2008	Cane
6,771,995 B2	8/2004	Kurnik	7,416,541 B2	8/2008	Yuzhakov et al.
6,790,178 B1	9/2004	Mault et al.	7,424,318 B2	9/2008	Brister et al.
6,809,653 B1	10/2004	Mann et al.	7,455,663 B2	11/2008	Bikovsky
6,810,290 B2	10/2004	Lebel et al.	7,460,898 B2	12/2008	Brister et al.
6,811,533 B2	11/2004	Lebel et al.	7,467,003 B2	12/2008	Brister et al.
6,811,534 B2	11/2004	Bowman, IV et al.	7,471,972 B2	12/2008	Rhodes et al.
6,813,519 B2	11/2004	Lebel et al.	7,494,465 B2	2/2009	Brister et al.
			7,497,827 B2	3/2009	Brister et al.
			7,519,408 B2	4/2009	Rasdal et al.
			7,583,990 B2	9/2009	Goode, Jr. et al.
			7,591,801 B2	9/2009	Brauker et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

7,599,726 B2	10/2009	Goode, Jr. et al.	2002/0103499 A1	8/2002	Perez et al.
7,604,592 B2	10/2009	Freeman et al.	2002/0106709 A1	8/2002	Potts et al.
7,613,491 B2	11/2009	Boock et al.	2002/0119711 A1	8/2002	Van Antwerp et al.
7,615,007 B2	11/2009	Shults et al.	2002/0128594 A1	9/2002	Das et al.
7,632,228 B2	12/2009	Brauker et al.	2002/0130042 A1	9/2002	Moerman et al.
7,637,868 B2	12/2009	Saint et al.	2002/0154050 A1	10/2002	Krupp et al.
7,640,048 B2	12/2009	Dobbles et al.	2002/0161288 A1	10/2002	Shin et al.
7,651,596 B2	1/2010	Petisce et al.	2002/0165462 A1	11/2002	Westbrook et al.
7,654,956 B2	2/2010	Brister et al.	2002/0169369 A1	11/2002	Ward et al.
7,657,297 B2	2/2010	Simpson et al.	2002/0198444 A1	12/2002	Ughigaki et al.
7,666,149 B2	2/2010	Simons et al.	2003/0023317 A1	1/2003	Brauker et al.
7,697,967 B2	4/2010	Stafford	2003/0023461 A1	1/2003	Quintanilla et al.
7,699,807 B2	4/2010	Faust et al.	2003/0032867 A1	2/2003	Crothall et al.
7,711,402 B2	5/2010	Shults et al.	2003/0032874 A1	2/2003	Rhodes et al.
7,713,574 B2	5/2010	Brister et al.	2003/0042137 A1	3/2003	Mao et al.
7,715,893 B2	5/2010	Kamath et al.	2003/0060753 A1	3/2003	Starkweather et al.
D618,337 S	6/2010	Pratt	2003/0065308 A1	4/2003	Lebel et al.
7,727,147 B1	6/2010	Osorio et al.	2003/0069510 A1	4/2003	Semler
7,731,657 B2	6/2010	Stafford	2003/0078481 A1	4/2003	McIvor et al.
7,736,344 B2	6/2010	Moberg et al.	2003/0078560 A1	4/2003	Miller et al.
7,763,042 B2	7/2010	Iio et al.	2003/0097092 A1	5/2003	Flaherty
7,822,454 B1	10/2010	Alden et al.	2003/0100040 A1	5/2003	Bonnecaze et al.
7,850,652 B2	12/2010	Liniger et al.	2003/0109775 A1	6/2003	O'Neil et al.
7,896,844 B2	3/2011	Thalmann et al.	2003/0073686 A1	7/2003	Nugiel et al.
7,955,297 B2	6/2011	Radmer et al.	2003/0134347 A1	7/2003	Heller et al.
7,985,203 B2	7/2011	Haueter et al.	2003/0135333 A1	7/2003	Aceti et al.
8,114,023 B2	2/2012	Ward	2003/0144581 A1	7/2003	Conn et al.
8,172,805 B2	5/2012	Mogensen et al.	2003/0144608 A1	7/2003	Kojima et al.
8,262,618 B2	9/2012	Scheurer	2003/0155656 A1	8/2003	Chiu et al.
D668,164 S	10/2012	Cowles	2003/0168338 A1	9/2003	Gao et al.
8,409,145 B2	4/2013	Raymond et al.	2003/0176933 A1	9/2003	Lebel et al.
8,486,003 B2	7/2013	Nielsen	2003/0187338 A1	10/2003	Say et al.
D691,710 S	10/2013	White	2003/0199790 A1	10/2003	Boecker et al.
D694,397 S	11/2013	White	2003/0199910 A1	10/2003	Boecker et al.
8,696,570 B2	4/2014	Yodfat et al.	2003/0212379 A1	11/2003	Bylund et al.
8,734,391 B2	5/2014	Yodfat et al.	2003/0217966 A1	11/2003	Tapsak et al.
8,747,363 B2	6/2014	Nielsen et al.	2003/0225361 A1	12/2003	Sabra
8,844,007 B2	9/2014	Vicente	2004/0002682 A1	1/2004	Kovelman et al.
8,864,664 B2	10/2014	Frey et al.	2004/0010207 A1	1/2004	Flaherty et al.
8,870,822 B2	10/2014	Thalmann et al.	2004/0011671 A1	1/2004	Shults et al.
8,880,138 B2	11/2014	Cho	2004/0040840 A1	3/2004	Mao et al.
8,930,028 B2	1/2015	McKee	2004/0045879 A1	3/2004	Shults et al.
8,971,981 B2	3/2015	Yodfat et al.	2004/0054263 A1	3/2004	Moerman et al.
D731,334 S	6/2015	Fiedler	2004/0064068 A1	4/2004	DeNuzzio et al.
9,072,476 B2	7/2015	Shah et al.	2004/0064133 A1	4/2004	Miller et al.
9,295,786 B2	3/2016	Gottlieb et al.	2004/0096959 A1	5/2004	Steine et al.
9,402,544 B2	8/2016	Yee	2004/0106858 A1	6/2004	Say et al.
9,439,599 B2	9/2016	Thompson et al.	2004/0106859 A1	6/2004	Say et al.
D775,987 S	1/2017	Sheridan	2004/0116847 A1	6/2004	Wall
D776,285 S	1/2017	Dinger	2004/0116865 A1	6/2004	Bengtsson
9,610,127 B2	4/2017	Heck et al.	2004/0116866 A1	6/2004	Gorman et al.
D806,254 S	12/2017	Im	2004/0122353 A1	6/2004	Shahmirian et al.
D810,952 S	2/2018	Hsu	2004/0122489 A1	6/2004	Mazar et al.
D824,034 S	7/2018	Pushpala	2004/0133164 A1	7/2004	Funderburk et al.
D830,856 S	10/2018	Golnik	2004/0135684 A1	7/2004	Steinhal et al.
D842,996 S *	3/2019	Frick D24/169	2004/0138544 A1	7/2004	Ward et al.
D847,365 S	4/2019	Vellutato, Jr.	2004/0138588 A1	7/2004	Saikley et al.
10,448,872 B2	10/2019	Wolfe et al.	2004/0138688 A1	7/2004	Giraud
D875,575 S *	2/2020	Fagnot D10/70	2004/0147996 A1	7/2004	Miazga et al.
D882,432 S	4/2020	Yee et al.	2004/0152622 A1	8/2004	Keith et al.
10,827,954 B2	11/2020	Hoss et al.	2004/0158207 A1	8/2004	Hunn et al.
10,959,654 B2	3/2021	Curry et al.	2004/0167801 A1	8/2004	Say et al.
10,973,449 B2	4/2021	Stafford	2004/0171910 A1	9/2004	Moore-Steele
2001/0056262 A1	12/2001	Cabiri et al.	2004/0171921 A1	9/2004	Say et al.
2002/0013538 A1	1/2002	Teller	2004/0176672 A1	9/2004	Silver et al.
2002/0019022 A1	2/2002	Dunn et al.	2004/0186362 A1	9/2004	Brauker et al.
2002/0019606 A1	2/2002	Lebel et al.	2004/0186365 A1	9/2004	Jin et al.
2002/0022855 A1	2/2002	Bobroff et al.	2004/0193090 A1	9/2004	Lebel et al.
2002/0023852 A1	2/2002	McIvor et al.	2004/0199059 A1	10/2004	Brauker et al.
2002/0042090 A1	4/2002	Heller et al.	2004/0204687 A1	10/2004	Mogensen et al.
2002/0055711 A1	5/2002	Lavi et al.	2004/0210122 A1	10/2004	Sleburg
2002/0057993 A1	5/2002	Maisey et al.	2004/0223985 A1	11/2004	Dunfield et al.
2002/0066764 A1	6/2002	Perry et al.	2004/0225338 A1	11/2004	Lebel et al.
2002/0076966 A1	6/2002	Carron et al.	2004/0236200 A1	11/2004	Say et al.
2002/0082487 A1	6/2002	Kollias et al.	2004/0236251 A1	11/2004	Roe et al.
			2004/0254433 A1	12/2004	Bandis et al.
			2004/0254434 A1	12/2004	Goodnow et al.
			2004/0267300 A1	12/2004	Mace
			2005/0003470 A1	1/2005	Nelson et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

2005/0004494	A1	1/2005	Perez et al.
2005/0006122	A1	1/2005	Burnette
2005/0010269	A1	1/2005	Lebel et al.
2005/0027177	A1	2/2005	Shin et al.
2005/0027180	A1	2/2005	Goode, Jr. et al.
2005/0031689	A1	2/2005	Shults et al.
2005/0043598	A1	2/2005	Goode, Jr. et al.
2005/0070819	A1	3/2005	Poux et al.
2005/0085872	A1	4/2005	Yanagihara et al.
2005/0090607	A1	4/2005	Tapsak et al.
2005/0090725	A1	4/2005	Page et al.
2005/0090850	A1	4/2005	Thoes et al.
2005/0101912	A1	5/2005	Faust et al.
2005/0106713	A1	5/2005	Phan et al.
2005/0112169	A1	5/2005	Brauker et al.
2005/0114068	A1	5/2005	Chey et al.
2005/0121322	A1	6/2005	Say et al.
2005/0131346	A1	6/2005	Douglas
2005/0131347	A1	6/2005	Marano-Ford
2005/0143635	A1	6/2005	Kamath et al.
2005/0154410	A1	7/2005	Conway et al.
2005/0165404	A1	7/2005	Miller
2005/0173245	A1	8/2005	Feldman et al.
2005/0176136	A1	8/2005	Burd et al.
2005/0182306	A1	8/2005	Sloan
2005/0187720	A1	8/2005	Goode, Jr. et al.
2005/0192557	A1	9/2005	Brauker et al.
2005/0195930	A1	9/2005	Spital et al.
2005/0197554	A1	9/2005	Polcha
2005/0199494	A1	9/2005	Say et al.
2005/0203360	A1	9/2005	Brauker et al.
2005/0222518	A1	10/2005	Dib
2005/0222599	A1	10/2005	Czernecki et al.
2005/0236277	A9	10/2005	Imran et al.
2005/0239154	A1	10/2005	Feldman et al.
2005/0239156	A1	10/2005	Drucker et al.
2005/0241957	A1	11/2005	Mao et al.
2005/0245795	A1	11/2005	Goode, Jr. et al.
2005/0245799	A1	11/2005	Brauker et al.
2005/0245844	A1	11/2005	Mace et al.
2005/0267440	A1	12/2005	Herman et al.
2005/0277164	A1	12/2005	Drucker et al.
2005/0283114	A1	12/2005	Bresina et al.
2005/0287620	A1	12/2005	Heller et al.
2006/0001538	A1	1/2006	Kraft et al.
2006/0004303	A1	1/2006	Weidenhaupt et al.
2006/0009727	A1	1/2006	O'Mahony et al.
2006/0010098	A1	1/2006	Goodnow et al.
2006/0015020	A1	1/2006	Neale et al.
2006/0015024	A1	1/2006	Brister et al.
2006/0016700	A1	1/2006	Brister et al.
2006/0019327	A1	1/2006	Brister et al.
2006/0020186	A1	1/2006	Brister et al.
2006/0020187	A1	1/2006	Brister et al.
2006/0020188	A1	1/2006	Kamath et al.
2006/0020189	A1	1/2006	Brister et al.
2006/0020190	A1	1/2006	Kamath et al.
2006/0020191	A1	1/2006	Brister et al.
2006/0020192	A1	1/2006	Brister et al.
2006/0036139	A1	2/2006	Brister et al.
2006/0036140	A1	2/2006	Brister et al.
2006/0036141	A1	2/2006	Kamath et al.
2006/0036142	A1	2/2006	Brister et al.
2006/0036143	A1	2/2006	Brister et al.
2006/0036144	A1	2/2006	Brister et al.
2006/0036145	A1	2/2006	Chambers et al.
2006/0047220	A1	3/2006	Sakata et al.
2006/0081469	A1	4/2006	Lee
2006/0129173	A1	6/2006	Wilkinson
2006/0155210	A1	7/2006	Beckman et al.
2006/0155317	A1	7/2006	List
2006/0166629	A1	7/2006	Reggiardo
2006/0173444	A1	8/2006	Choy et al.
2006/0189863	A1	8/2006	Peyser et al.
2006/0189939	A1	8/2006	Gonnelli et al.
2006/0195029	A1	8/2006	Shults et al.
2006/0200181	A1	9/2006	Fukuzawa et al.
2006/0200970	A1	9/2006	Brister et al.
2006/0222566	A1	10/2006	Brauker et al.
2006/0224171	A1	10/2006	Sakata et al.
2006/0226985	A1	10/2006	Goodnow et al.
2006/0247508	A1	11/2006	Fennell
2006/0253086	A1	11/2006	Moberg et al.
2006/0258929	A1	11/2006	Goode, Jr. et al.
2006/0264888	A1	11/2006	Moberg et al.
2006/0276724	A1	12/2006	Freeman et al.
2006/0282042	A1	12/2006	Walters et al.
2006/0287591	A1	12/2006	Ocvirk et al.
2007/0016381	A1	1/2007	Kamath et al.
2007/0027381	A1	2/2007	Stafford
2007/0038044	A1	2/2007	Dobbles et al.
2007/0060814	A1	3/2007	Stafford
2007/0073129	A1	3/2007	Shah et al.
2007/0078320	A1	4/2007	Stafford
2007/0078321	A1	4/2007	Mazza et al.
2007/0078322	A1	4/2007	Stafford
2007/0088377	A1	4/2007	Levaughn et al.
2007/0106135	A1	5/2007	Sloan et al.
2007/0110124	A1	5/2007	Shiraki et al.
2007/0123819	A1	5/2007	Mernoe et al.
2007/0149875	A1	6/2007	Ouyang et al.
2007/0156094	A1	7/2007	Safabash et al.
2007/0163880	A1	7/2007	Woo et al.
2007/0173706	A1	7/2007	Neinast et al.
2007/0173741	A1	7/2007	Deshmukh et al.
2007/0191701	A1	8/2007	Feldman et al.
2007/0203407	A1	8/2007	Hoss et al.
2007/0203966	A1	8/2007	Brauker et al.
2007/0213611	A1	9/2007	Simpson et al.
2007/0235331	A1	10/2007	Simpson et al.
2007/0244368	A1	10/2007	Bayloff et al.
2007/0244398	A1	10/2007	Lo et al.
2007/0249922	A1	10/2007	Peyser et al.
2007/0255302	A1	11/2007	Koeppel et al.
2008/0004512	A1	1/2008	Funderbunk et al.
2008/0004573	A1	1/2008	Kaufmann et al.
2008/0009692	A1	1/2008	Statfurd
2008/0009805	A1	1/2008	Ethelfeld
2008/0017522	A1	1/2008	Heller et al.
2008/0021666	A1	1/2008	Goode, Jr. et al.
2008/0027474	A1	1/2008	Curry et al.
2008/0029391	A1	2/2008	Mao et al.
2008/0031941	A1	2/2008	Pettersson
2008/0033254	A1	2/2008	Kamath et al.
2008/0033268	A1	2/2008	Stafford
2008/0033318	A1	2/2008	Mace et al.
2008/0039702	A1	2/2008	Hayter et al.
2008/0045824	A1	2/2008	Tapsak et al.
2008/0064937	A1	3/2008	McGarraugh et al.
2008/0064941	A1	3/2008	Funderbunk et al.
2008/0064944	A1	3/2008	Van Antwerp et al.
2008/0065646	A1	3/2008	Zhang et al.
2008/0071156	A1	3/2008	Brister et al.
2008/0083617	A1	4/2008	Simpson et al.
2008/0086042	A1	4/2008	Brister et al.
2008/0086044	A1	4/2008	Brister et al.
2008/0086273	A1	4/2008	Shults et al.
2008/0097246	A1	4/2008	Stafford
2008/0108942	A1	5/2008	Brister et al.
2008/0112848	A1	5/2008	Huffstodt et al.
2008/0114280	A1	5/2008	Stafford
2008/0119707	A1	5/2008	Stafford
2008/0133702	A1	6/2008	Sharma et al.
2008/0139903	A1	6/2008	Bruce et al.
2008/0154205	A1	6/2008	Wojcik
2008/0161664	A1	7/2008	Mastrototaro et al.
2008/0167578	A1	7/2008	Bryer et al.
2008/0183061	A1	7/2008	Goode, Jr. et al.
2008/0183399	A1	7/2008	Goode, Jr. et al.
2008/0188731	A1	8/2008	Brister et al.
2008/0189051	A1	8/2008	Goode, Jr. et al.
2008/0194935	A1	8/2008	Brister et al.
2008/0194936	A1	8/2008	Goode, Jr. et al.
2008/0194937	A1	8/2008	Goode, Jr. et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

2008/0194938	A1	8/2008	Brister et al.	2009/0143660	A1	6/2009	Brister et al.
2008/0195049	A1	8/2008	Thalmann et al.	2009/0156919	A1	6/2009	Brister et al.
2008/0195232	A1	8/2008	Carr-Brendel et al.	2009/0156924	A1	6/2009	Shariati et al.
2008/0195967	A1	8/2008	Goode, Jr. et al.	2009/0163790	A1	6/2009	Brister et al.
2008/0197024	A1	8/2008	Simpson et al.	2009/0163791	A1	6/2009	Brister et al.
2008/0200788	A1	8/2008	Brister et al.	2009/0171182	A1	7/2009	Stafford
2008/0200789	A1	8/2008	Brister et al.	2009/0178459	A1	7/2009	Li et al.
2008/0200791	A1	8/2008	Simpson et al.	2009/0182217	A1	7/2009	Li et al.
2008/0200897	A1	8/2008	Hoss et al.	2009/0192366	A1	7/2009	Mensingher et al.
2008/0208025	A1	8/2008	Shults et al.	2009/0192380	A1	7/2009	Shariati et al.
2008/0214481	A1	9/2008	Challoner et al.	2009/0192722	A1	7/2009	Shariati et al.
2008/0214915	A1	9/2008	Brister et al.	2009/0192724	A1	7/2009	Brauker et al.
2008/0214918	A1	9/2008	Brister et al.	2009/0192745	A1	7/2009	Kamath et al.
2008/0228051	A1	9/2008	Shults et al.	2009/0192751	A1	7/2009	Kamath et al.
2008/0228054	A1	9/2008	Shults et al.	2009/0198215	A1	8/2009	Chong et al.
2008/0242961	A1	10/2008	Brister et al.	2009/0203981	A1	8/2009	Brauker et al.
2008/0249383	A1	10/2008	Sass et al.	2009/0204341	A1	8/2009	Brauker et al.
2008/0255440	A1	10/2008	Eilerson et al.	2009/0212766	A1	8/2009	Olson et al.
2008/0262469	A1	10/2008	Brister et al.	2009/0216103	A1	8/2009	Brister et al.
2008/0269673	A1	10/2008	Butoi et al.	2009/0240120	A1	9/2009	Mensingher et al.
2008/0275313	A1	11/2008	Brister et al.	2009/0240128	A1	9/2009	Mensingher et al.
2008/0283396	A1	11/2008	Wang et al.	2009/0240193	A1	9/2009	Mensingher et al.
2008/0287764	A1	11/2008	Rasdal et al.	2009/0242399	A1	10/2009	Kamath et al.
2008/0287765	A1	11/2008	Rasdal et al.	2009/0242425	A1	10/2009	Kamath et al.
2008/0287766	A1	11/2008	Rasdal et al.	2009/0247855	A1	10/2009	Boock et al.
2008/0294096	A1	11/2008	Uber et al.	2009/0247856	A1	10/2009	Boock et al.
2008/0296155	A1	12/2008	Shults et al.	2009/0259118	A1	10/2009	Feldman et al.
2008/0300476	A1	12/2008	Stafford	2009/0259201	A1	10/2009	Hwang et al.
2008/0306368	A1	12/2008	Goode, Jr. et al.	2009/0259202	A1	10/2009	Leefflang et al.
2008/0306434	A1	12/2008	Dobbles et al.	2009/0270765	A1	10/2009	Ghesquire et al.
2008/0306435	A1	12/2008	Kamath et al.	2009/0287073	A1	11/2009	Boock et al.
2008/0306444	A1	12/2008	Brister et al.	2009/0287074	A1	11/2009	Shults et al.
2008/0319414	A1	12/2008	Yodfat et al.	2009/0292184	A1	11/2009	Funderburk et al.
2009/0005659	A1	1/2009	Kollias et al.	2009/0292185	A1	11/2009	Funderburk et al.
2009/0012377	A1	1/2009	Jennewine et al.	2009/0299155	A1	12/2009	Yang et al.
2009/0012379	A1	1/2009	Goode, Jr. et al.	2009/0299156	A1	12/2009	Simpson et al.
2009/0018424	A1	1/2009	Kamath et al.	2009/0299162	A1	12/2009	Brauker et al.
2009/0030294	A1	1/2009	Petisce et al.	2009/0299167	A1	12/2009	Seymour
2009/0036758	A1	2/2009	Brauker et al.	2009/0299276	A1	12/2009	Brauker et al.
2009/0036763	A1	2/2009	Brauker et al.	2010/0004597	A1	1/2010	Gryn et al.
2009/0036915	A1	2/2009	Karbowniczek et al.	2010/0010324	A1	1/2010	Brauker et al.
2009/0043181	A1	2/2009	Brauker et al.	2010/0010331	A1	1/2010	Brauker et al.
2009/0043182	A1	2/2009	Brauker et al.	2010/0010332	A1	1/2010	Brauker et al.
2009/0043525	A1	2/2009	Brauker et al.	2010/0016687	A1	1/2010	Brauker et al.
2009/0043541	A1	2/2009	Brauker et al.	2010/0016698	A1	1/2010	Rasdal et al.
2009/0043542	A1	2/2009	Brauker et al.	2010/0022855	A1	1/2010	Brauker et al.
2009/0045055	A1	2/2009	Rhodes et al.	2010/0022863	A1	1/2010	Mogensen et al.
2009/0054866	A1	2/2009	Teisen-Simony et al.	2010/0030038	A1	2/2010	Brauker et al.
2009/0062633	A1	3/2009	Brauker et al.	2010/0030053	A1	2/2010	Goode, Jr. et al.
2009/0062635	A1	3/2009	Brauker et al.	2010/0030111	A1	2/2010	Perriere
2009/0069658	A1	3/2009	Say et al.	2010/0030484	A1	2/2010	Brauker et al.
2009/0069750	A1	3/2009	Schraga	2010/0030485	A1	2/2010	Brauker et al.
2009/0076356	A1	3/2009	Simpson et al.	2010/0036215	A1	2/2010	Goode, Jr. et al.
2009/0076359	A1	3/2009	Peyser	2010/0036216	A1	2/2010	Goode, Jr. et al.
2009/0076360	A1	3/2009	Brister et al.	2010/0036222	A1	2/2010	Goode, Jr. et al.
2009/0076361	A1	3/2009	Kamath et al.	2010/0036223	A1	2/2010	Goode, Jr. et al.
2009/0082693	A1	3/2009	Stafford	2010/0036225	A1	2/2010	Goode, Jr. et al.
2009/0088614	A1	4/2009	Taub	2010/0036281	A1	2/2010	Doi
2009/0088787	A1	4/2009	Koike et al.	2010/0041971	A1	2/2010	Goode, Jr. et al.
2009/0099436	A1	4/2009	Brister et al.	2010/0045465	A1	2/2010	Brauker et al.
2009/0102678	A1	4/2009	Mazza et al.	2010/0049014	A1	2/2010	Funderburk et al.
2009/0105569	A1	4/2009	Stafford	2010/0049024	A1	2/2010	Saint et al.
2009/0124877	A1	5/2009	Goode, Jr. et al.	2010/0063373	A1	3/2010	Kamath et al.
2009/0124878	A1	5/2009	Goode et al.	2010/0069728	A1	3/2010	Funderburk et al.
2009/0124879	A1	5/2009	Brister et al.	2010/0076283	A1	3/2010	Simpson et al.
2009/0124964	A1	5/2009	Leach et al.	2010/0081908	A1	4/2010	Dobbles et al.
2009/0124979	A1	5/2009	Raymond et al.	2010/0081910	A1	4/2010	Brister et al.
2009/0131768	A1	5/2009	Simpson et al.	2010/0087724	A1	4/2010	Brauker et al.
2009/0131769	A1	5/2009	Leach et al.	2010/0096259	A1	4/2010	Zhang et al.
2009/0131776	A1	5/2009	Simpson et al.	2010/0099970	A1	4/2010	Shults et al.
2009/0131777	A1	5/2009	Simpson et al.	2010/0099971	A1	4/2010	Shults et al.
2009/0131860	A1	5/2009	Nielsen	2010/0100113	A1	4/2010	Iio et al.
2009/0137886	A1	5/2009	Shariati et al.	2010/0113897	A1	5/2010	Brenneman et al.
2009/0137887	A1	5/2009	Shariati et al.	2010/0119693	A1	5/2010	Tapsak et al.
2009/0143659	A1	6/2009	Li et al.	2010/0121169	A1	5/2010	Petisce et al.
				2010/0145377	A1	6/2010	Lai et al.
				2010/0168677	A1	7/2010	Gabriel et al.
				2010/0174157	A1	7/2010	Brister et al.
				2010/0174158	A1	7/2010	Kamath et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

2010/0174163 A1 7/2010 Brister et al.
 2010/0174164 A1 7/2010 Brister et al.
 2010/0174165 A1 7/2010 Brister et al.
 2010/0174166 A1 7/2010 Brister et al.
 2010/0174167 A1 7/2010 Kamath et al.
 2010/0174168 A1 7/2010 Goode et al.
 2010/0179401 A1 7/2010 Rasdal et al.
 2010/0179402 A1 7/2010 Goode, Jr. et al.
 2010/0179404 A1 7/2010 Kamath et al.
 2010/0179408 A1 7/2010 Kamath et al.
 2010/0179409 A1 7/2010 Kamath et al.
 2010/0185065 A1 7/2010 Goode, Jr. et al.
 2010/0185069 A1 7/2010 Brister et al.
 2010/0185070 A1 7/2010 Brister et al.
 2010/0185071 A1 7/2010 Simpson et al.
 2010/0185072 A1 7/2010 Goode, Jr. et al.
 2010/0185075 A1 7/2010 Brister et al.
 2010/0191082 A1 7/2010 Brister et al.
 2010/0198033 A1 8/2010 Krulevitch et al.
 2010/0198034 A1 8/2010 Thomas et al.
 2010/0198035 A1 8/2010 Kamath et al.
 2010/0198036 A1 8/2010 Kamath et al.
 2010/0204653 A1 8/2010 Gryn et al.
 2010/0212583 A1 8/2010 Brister et al.
 2010/0214104 A1 8/2010 Goode, Jr. et al.
 2010/0217105 A1 8/2010 Yodfat et al.
 2010/0217557 A1 8/2010 Kamath et al.
 2010/0223013 A1 9/2010 Kamath et al.
 2010/0223022 A1 9/2010 Kamath et al.
 2010/0223023 A1 9/2010 Kamath et al.
 2010/0228109 A1 9/2010 Kamath et al.
 2010/0228497 A1 9/2010 Kamath et al.
 2010/0240975 A1 9/2010 Goode, Jr. et al.
 2010/0240976 A1 9/2010 Goode, Jr. et al.
 2010/0261987 A1 10/2010 Kamath et al.
 2010/0262201 A1 10/2010 He et al.
 2010/0274107 A1 10/2010 Boock et al.
 2010/0280341 A1 11/2010 Boock et al.
 2010/0286496 A1 11/2010 Simpson et al.
 2010/0298684 A1 11/2010 Leach et al.
 2010/0324392 A1 12/2010 Yee et al.
 2010/0324403 A1 12/2010 Brister et al.
 2010/0331642 A1 12/2010 Bruce et al.
 2010/0331644 A1 12/2010 Neale et al.
 2010/0331647 A1 12/2010 Shah et al.
 2010/0331648 A1 12/2010 Kamath et al.
 2010/0331653 A1 12/2010 Stafford
 2010/0331656 A1 12/2010 Mensinger et al.
 2010/0331657 A1 12/2010 Mensinger et al.
 2011/0004085 A1 1/2011 Mensinger et al.
 2011/0009727 A1 1/2011 Mensinger et al.
 2011/0021889 A1 1/2011 Hoss et al.
 2011/0024043 A1 2/2011 Boock et al.
 2011/0024307 A1 2/2011 Simpson et al.
 2011/0027127 A1 2/2011 Simpson et al.
 2011/0027453 A1 2/2011 Boock et al.
 2011/0027458 A1 2/2011 Boock et al.
 2011/0028815 A1 2/2011 Simpson et al.
 2011/0028816 A1 2/2011 Simpson et al.
 2011/0040256 A1 2/2011 Bobroff et al.
 2011/0040263 A1 2/2011 Hordum et al.
 2011/0046456 A1 2/2011 Hordum et al.
 2011/0046467 A1 2/2011 Simpson et al.
 2011/0054275 A1 3/2011 Stafford
 2011/0060196 A1 3/2011 Stafford
 2011/0073475 A1 3/2011 Kastanos et al.
 2011/0077490 A1 3/2011 Simpson et al.
 2011/0082484 A1 4/2011 Saravia et al.
 2011/0106126 A1 5/2011 Love et al.
 2011/0118579 A1 5/2011 Goode et al.
 2011/0118580 A1 5/2011 Goode et al.
 2011/0124992 A1 5/2011 Brauker et al.
 2011/0124997 A1 5/2011 Goode et al.
 2011/0125410 A1 5/2011 Goode et al.
 2011/0130970 A1 6/2011 Goode et al.

2011/0130971 A1 6/2011 Goode et al.
 2011/0130998 A1 6/2011 Goode et al.
 2011/0137257 A1 6/2011 Gryn et al.
 2011/0144465 A1 6/2011 Shults et al.
 2011/0178378 A1 7/2011 Brister et al.
 2011/0178461 A1 7/2011 Chong et al.
 2011/0184258 A1 7/2011 Stafford
 2011/0184265 A1 7/2011 Hayter
 2011/0190603 A1 8/2011 Stafford
 2011/0190614 A1 8/2011 Brister et al.
 2011/0191044 A1 8/2011 Stafford
 2011/0201910 A1 8/2011 Rasdal et al.
 2011/0201911 A1 8/2011 Johnson et al.
 2011/0218414 A1 9/2011 Kamath et al.
 2011/0231107 A1 9/2011 Brauker et al.
 2011/0231140 A1 9/2011 Goode, Jr. et al.
 2011/0231141 A1 9/2011 Goode, Jr. et al.
 2011/0231142 A1 9/2011 Goode, Jr. et al.
 2011/0253533 A1 10/2011 Shults et al.
 2011/0257521 A1 10/2011 Fraden
 2011/0257895 A1 10/2011 Brauker et al.
 2011/0263958 A1 10/2011 Brauker et al.
 2011/0270062 A1 11/2011 Goode, Jr. et al.
 2011/0270158 A1 11/2011 Brauker et al.
 2011/0275919 A1 11/2011 Petisce et al.
 2011/0288574 A1 11/2011 Curry et al.
 2011/0290645 A1 12/2011 Brister et al.
 2011/0313543 A1 12/2011 Brauker et al.
 2011/0319729 A1 12/2011 Donnay et al.
 2011/0319733 A1 12/2011 Stafford
 2011/0319738 A1 12/2011 Woodruff et al.
 2011/0319739 A1 12/2011 Kamath et al.
 2011/0320130 A1 12/2011 Valdes et al.
 2012/0035445 A1 2/2012 Boock et al.
 2012/0040101 A1 2/2012 Tapsak et al.
 2012/0046534 A1 2/2012 Simpson et al.
 2012/0078071 A1 3/2012 Bohm et al.
 2012/0095406 A1 4/2012 Gryn et al.
 2012/0108934 A1 5/2012 Valdes et al.
 2012/0108983 A1 5/2012 Banet et al.
 2012/0143135 A1 6/2012 Cole et al.
 2012/0184909 A1 7/2012 Gym et al.
 2012/0296327 A1 11/2012 Hutchins et al.
 2012/0303043 A1 11/2012 Donnay
 2013/0047981 A1 2/2013 Bacon
 2013/0060107 A1 3/2013 Crane et al.
 2013/0079719 A1 3/2013 Gym et al.
 2013/0137952 A1 5/2013 McCann et al.
 2013/0150691 A1 6/2013 Pace et al.
 2014/0079051 A1 3/2014 Lakkis et al.
 2014/0107581 A1 4/2014 Safabash et al.
 2015/0025338 A1 1/2015 Lee et al.
 2016/0015303 A1 1/2016 Bernstein et al.
 2016/0174881 A1 6/2016 Taub
 2016/0302707 A1 10/2016 Pesach et al.
 2016/0331284 A1 11/2016 Pace
 2017/0290534 A1 10/2017 Antonio et al.
 2017/0290546 A1 10/2017 Antonio et al.
 2019/0183393 A1 6/2019 Taub et al.
 2020/0329966 A1 10/2020 Valdes et al.
 2020/0352489 A1 11/2020 Hoppe et al.
 2021/0015411 A1 1/2021 Yee et al.
 2022/0104733 A1* 4/2022 Wu A61B 5/14865

FOREIGN PATENT DOCUMENTS

EP 0320109 6/1989
 EP 0353328 2/1990
 EP 0390390 10/1990
 EP 0396788 11/1990
 EP 0286118 1/1995
 EP 1048264 11/2000
 EP 1177802 9/2004
 EP 0987982 1/2007
 EP 2060284 5/2009
 EP 1704889 3/2010
 EP 2201969 3/2011
 EP 2327362 11/2013
 EP 2335587 2/2014

(56)

References Cited

FOREIGN PATENT DOCUMENTS

JP 11-506629 6/1999
 JP 2004-033438 2/2004
 JP 2004-520103 7/2004
 JP 2004-520898 7/2004
 KR 30-00536603 8/2009
 WO WO-1991/015993 10/1991
 WO WO-1992/013271 8/1992
 WO WO-1994/020602 9/1994
 WO WO-1996/025089 8/1996
 WO WO-1996/039977 12/1996
 WO WO-1998/035053 8/1998
 WO WO-1998/056293 12/1998
 WO WO-1999/033504 7/1999
 WO WO-1999/056613 11/1999
 WO WO-2000/049940 8/2000
 WO WO-2000/059370 10/2000
 WO WO-2000/078992 12/2000
 WO WO-2001/052935 7/2001
 WO WO-2001/054753 8/2001
 WO WO-2002/016905 2/2002
 WO WO-2002/050534 6/2002

WO WO-2002/058537 8/2002
 WO WO-2003/028784 4/2003
 WO WO-2003/076893 9/2003
 WO WO-2003/082091 10/2003
 WO WO-2004/028337 4/2004
 WO WO-2004/060436 7/2004
 WO WO-2004/061420 7/2004
 WO WO-2004/098684 11/2004
 WO 2004103170 12/2004
 WO WO-2004/112602 12/2004
 WO WO-2005/084534 9/2005
 WO WO-2005/089103 9/2005
 WO WO-2006/024671 3/2006
 WO WO-2006/042811 4/2006
 WO WO-2006/108809 10/2006
 WO WO-2007/089738 8/2007
 WO WO-2007/140783 12/2007
 WO WO-2008/065646 6/2008
 WO 2008105768 9/2008
 WO WO-2008/133702 11/2008
 WO WO-2009/016638 2/2009
 WO WO-2009/062675 5/2009
 WO WO-2010/112521 10/2010
 WO WO-2011/002815 1/2011

* cited by examiner

