



(12) **United States Patent**
Lynam

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(54) **EXTERIOR REARVIEW MIRROR ASSEMBLY**

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(56) **References Cited**

U.S. PATENT DOCUMENTS

1,114,559 A	10/1914	Weed
1,672,559 A	6/1928	Doble
RE17,274 E	4/1929	Porter
2,135,262 A	11/1938	Schumacher
2,263,382 A	11/1941	Gotzinger
2,279,751 A	4/1942	Elwood
2,514,989 A	7/1950	Buren
2,580,014 A	12/1951	Gazda
2,636,419 A	4/1953	Kerr
2,778,273 A	1/1957	Fellmeth

(Continued)

FOREIGN PATENT DOCUMENTS

DE	2409748	9/1975
DE	2550095	5/1976

(Continued)

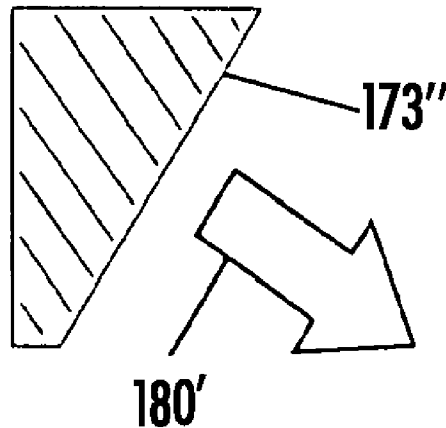
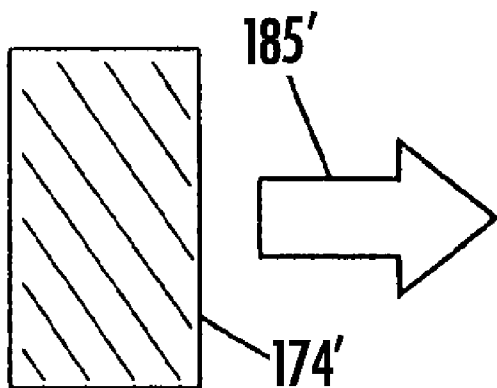
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(57) **ABSTRACT**

An exterior rearview mirror assembly for a vehicle includes a bracket fixedly secured to the vehicle, a mirror casing secured to the bracket and defining a primary opening, and a primary mirror disposed within said primary opening for providing a view rearward of the motor vehicle through a primary field of view. The primary mirror defines a primary plane. A spotting mirror is spaced apart from the primary mirror and extends through a secondary plane different from the primary plane. A divider extends between the primary mirror and the spotting mirror to separate the primary and secondary mirrors visually.

11 Claims, 16 Drawing Sheets



(56)

References Cited

U.S. PATENT DOCUMENTS

2,890,539	A	6/1959	Holt	D297,926	S	10/1988	Kesler
2,911,177	A	11/1959	West	4,793,690	A	12/1988	Gahan et al.
3,104,274	A	9/1963	King	4,799,768	A	1/1989	Gahan
3,131,250	A	4/1964	Ely	4,824,231	A	4/1989	Quintana
3,146,296	A	8/1964	Fischer	4,826,289	A	5/1989	Vandenbrink et al.
3,170,985	A	2/1965	Katulich	4,828,379	A	5/1989	Parsons et al.
3,175,463	A	3/1965	Seashore	4,853,283	A	8/1989	Skolnick
3,266,016	A	8/1966	Maruyama et al.	4,859,046	A	8/1989	Traynor et al.
3,267,806	A	8/1966	Azegami	4,882,466	A	11/1989	Friel
3,280,701	A	10/1966	Donnelly et al.	4,882,565	A	11/1989	Gallmeyer
3,337,285	A	8/1967	Travis	4,906,075	A	3/1990	Matsumiya
3,338,655	A	8/1967	Young	4,906,085	A	3/1990	Sugihara et al.
3,375,053	A	3/1968	Ward	4,913,542	A	4/1990	Adolfsson
3,389,952	A	6/1968	Tobin, Jr.	4,917,485	A	4/1990	Baldwin, Sr.
3,404,935	A	10/1968	Creager	4,929,074	A	5/1990	Urban
3,408,136	A	10/1968	Travis	4,932,769	A	6/1990	Goosen
3,424,517	A	1/1969	Budreck	4,932,770	A	6/1990	Caravaty
3,563,638	A	2/1971	Panozzo	4,944,581	A	7/1990	Ichikawa
3,601,614	A	8/1971	Platzer, Jr.	4,948,242	A	8/1990	Desmond et al.
3,610,739	A	10/1971	Seashore	4,989,964	A	2/1991	Meise
3,667,833	A	6/1972	Baldwin, Sr.	5,005,962	A	4/1991	Edelman
3,708,222	A	1/1973	Stern	5,014,167	A	5/1991	Roberts
3,759,647	A	9/1973	Schrenk et al.	5,022,747	A	6/1991	Polanyi et al.
3,764,201	A	10/1973	Haile	5,033,835	A	7/1991	Platzer, Jr.
3,773,882	A	11/1973	Schrenk	5,044,739	A	9/1991	do Espirito Santo
3,806,232	A	4/1974	Gray	5,050,977	A	9/1991	Platzer, Jr.
3,826,563	A	7/1974	Davis	5,052,792	A	10/1991	McDonough
3,881,811	A	5/1975	French	5,066,112	A	11/1991	Lynam et al.
3,884,606	A	5/1975	Schrenk	5,073,012	A	12/1991	Lynam
3,909,117	A	9/1975	Takahashi et al.	5,076,673	A	12/1991	Lynam et al.
4,193,668	A	3/1980	Skinner	5,078,480	A	1/1992	Warszawski
4,200,359	A	4/1980	Lawson	5,080,492	A	1/1992	Platzer, Jr.
4,223,983	A	9/1980	Bloom	5,085,907	A	2/1992	Smith
4,258,979	A	3/1981	Mahin	5,107,374	A	4/1992	Lupo et al.
4,264,144	A	4/1981	McCord	5,115,346	A	5/1992	Lynam
4,268,120	A	5/1981	Jitsumori	5,115,352	A	5/1992	do Espirito Santo
4,281,899	A	8/1981	Oskam	5,117,346	A	5/1992	Gard
4,293,191	A	10/1981	Kim	5,118,540	A	6/1992	Hutchison
4,303,308	A	12/1981	Kobrin	5,140,455	A	8/1992	Varaprasad et al.
4,306,770	A	12/1981	Marhauer	5,142,407	A	8/1992	Varaprasad et al.
4,311,362	A	1/1982	LaPorte	5,151,816	A	9/1992	Varaprasad et al.
4,311,363	A	1/1982	Marsalka et al.	5,151,824	A	9/1992	O'Farrell
4,325,609	A	4/1982	Alford	5,166,833	A	11/1992	Shyu
4,331,382	A	5/1982	Graff	5,178,448	A	1/1993	Adams et al.
4,350,412	A	9/1982	Steenblik et al.	5,179,471	A	1/1993	Caskey et al.
4,385,804	A	5/1983	Tamura et al.	5,183,099	A	2/1993	Bechu
4,435,042	A	3/1984	Wood et al.	5,189,537	A	2/1993	O'Farrell
4,436,371	A	3/1984	Wood et al.	5,193,029	A	3/1993	Schofield et al.
4,436,372	A	3/1984	Schmidt et al.	5,207,492	A	5/1993	Roberts
4,439,013	A	3/1984	Hagn et al.	5,225,943	A	7/1993	Lupo
4,449,786	A	5/1984	McCord	5,233,461	A	8/1993	Dornan et al.
4,470,665	A	9/1984	Blom	5,237,458	A	8/1993	Polanyi et al.
4,499,451	A	2/1985	Suzuki et al.	5,237,459	A	8/1993	Strauss
4,526,446	A	7/1985	Adams	5,239,405	A	8/1993	Varaprasad et al.
4,549,786	A	10/1985	Albers et al.	5,247,395	A	9/1993	Martinez
4,555,166	A	11/1985	Enomoto	5,253,109	A	10/1993	O'Farrell et al.
4,575,202	A	3/1986	McGuire	5,262,894	A	11/1993	Wheatley et al.
4,588,267	A	5/1986	Pastore	5,285,060	A	2/1994	Larson et al.
4,609,266	A	9/1986	Blom	5,295,021	A	3/1994	Swanson
4,623,222	A	11/1986	Itoh et al.	5,296,973	A	3/1994	Burke
4,629,296	A	12/1986	White	5,313,335	A	5/1994	Gray et al.
4,630,904	A	12/1986	Pastore	5,327,288	A	7/1994	Wellington et al.
4,666,264	A	5/1987	Yamabe	5,354,965	A	10/1994	Lee
4,674,849	A	6/1987	Stewart	5,355,245	A	10/1994	Lynam
4,674,850	A	6/1987	Blom	5,361,172	A	11/1994	Schissel et al.
4,678,294	A	7/1987	Van Nostrand	5,371,659	A	12/1994	Pastrick et al.
4,679,906	A	7/1987	Brandenburg	5,406,414	A	4/1995	O'Farrell et al.
4,712,879	A	12/1987	Lynam et al.	5,412,512	A	5/1995	Zebold et al.
4,715,701	A	12/1987	Urban	5,424,875	A	6/1995	Davis, II
4,721,364	A	1/1988	Itoh et al.	5,432,643	A	7/1995	Huang
4,727,302	A	2/1988	Mizuta et al.	5,437,931	A	8/1995	Tsai et al.
4,733,336	A	3/1988	Skogler et al.	5,446,576	A	8/1995	Lynam et al.
4,737,188	A	4/1988	Bahls	5,481,409	A	1/1996	Roberts
				5,483,386	A	1/1996	Carson
				5,497,305	A	3/1996	Pastrick et al.
				5,497,306	A	3/1996	Pastrick
				5,509,606	A	4/1996	Breithaupt et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

5,525,264	A	6/1996	Cronin et al.	6,176,602	B1	1/2001	Pastrick et al.
5,526,195	A	6/1996	Thomas	6,178,034	B1	1/2001	Allemand et al.
5,530,588	A	6/1996	Vivier	6,196,688	B1	3/2001	Caskey et al.
5,535,056	A	7/1996	Caskey et al.	6,198,409	B1	3/2001	Schofield et al.
5,550,677	A	8/1996	Schofield et al.	6,199,993	B1	3/2001	Mou
5,557,467	A	9/1996	McColgan et al.	6,201,642	B1	3/2001	Bos
5,559,640	A	9/1996	Vachss et al.	6,207,083	B1	3/2001	Varaprasad et al.
5,563,744	A	10/1996	Matsumiya	6,227,689	B1	5/2001	Miller
5,567,360	A	10/1996	Varaprasad et al.	6,245,262	B1	6/2001	Varaprasad et al.
5,575,552	A	11/1996	Faloon et al.	6,250,148	B1	6/2001	Lynam
5,579,133	A	11/1996	Black et al.	6,257,746	B1	7/2001	Todd et al.
5,587,236	A	12/1996	Agrawal et al.	6,260,608	B1	7/2001	Kim
5,587,699	A	12/1996	Faloon et al.	6,270,225	B1	8/2001	Goolsby
5,594,222	A	1/1997	Caldwell	6,276,821	B1	8/2001	Pastrick et al.
5,594,593	A	1/1997	Milner	6,286,965	B1	9/2001	Caskey et al.
5,610,756	A	3/1997	Lynam et al.	6,294,989	B1	9/2001	Schofield et al.
5,621,569	A	4/1997	Schlenke	6,310,611	B1	10/2001	Caldwell
5,621,577	A	4/1997	Lang et al.	6,315,419	B1	11/2001	Platzer, Jr.
5,644,442	A	7/1997	Lemere	6,318,870	B1	11/2001	Spooner et al.
5,649,756	A	7/1997	Adams et al.	6,320,282	B1	11/2001	Caldwell
5,668,663	A	9/1997	Varaprasad et al.	6,329,925	B1	12/2001	Skiver et al.
5,669,698	A	9/1997	Veldman et al.	6,341,523	B2	1/2002	Lynam
5,669,699	A	9/1997	Pastrick et al.	6,343,402	B1	2/2002	Smith et al.
5,669,704	A	9/1997	Pastrick	6,356,376	B1	3/2002	Tonar et al.
5,669,705	A	9/1997	Pastrick et al.	6,390,632	B1	5/2002	Palathingal
5,670,935	A	9/1997	Schofield et al.	6,396,397	B1	5/2002	Bos et al.
5,689,370	A	11/1997	Tonar et al.	6,398,377	B1	6/2002	Chou
5,691,855	A	11/1997	Lupkas	6,409,354	B1	6/2002	Richard
5,715,093	A	2/1998	Schierbeek et al.	6,420,036	B1	7/2002	Varaprasad et al.
5,722,836	A	3/1998	Younker	6,428,172	B1	8/2002	Hutzel et al.
5,724,187	A	3/1998	Varaprasad et al.	6,441,964	B1	8/2002	Chu et al.
5,751,489	A	5/1998	Caskey et al.	6,445,287	B1	9/2002	Schofield et al.
5,760,962	A	6/1998	Schofield et al.	6,449,082	B1	9/2002	Agrawal et al.
5,784,211	A	7/1998	Mingledorff	6,472,979	B2	10/2002	Schofield et al.
5,786,772	A	7/1998	Schofield et al.	6,498,620	B2	12/2002	Schofield et al.
5,788,357	A	8/1998	Muth et al.	6,501,387	B2	12/2002	Skiver et al.
5,790,298	A	8/1998	Tonar	6,511,192	B1	1/2003	Henion et al.
5,790,327	A	8/1998	Lee et al.	6,512,624	B2	1/2003	Tonar et al.
5,793,542	A	8/1998	Kondo et al.	6,522,451	B1	2/2003	Lynam
5,796,094	A	8/1998	Schofield et al.	6,537,138	B2	3/2003	Ohmori et al.
5,796,532	A	8/1998	Kanazawa	6,582,109	B2	6/2003	Miller
5,805,367	A	9/1998	Kanazawa	6,595,649	B2	7/2003	Hoekstra et al.
5,808,777	A	9/1998	Lynam et al.	6,615,438	B1	9/2003	Franco et al.
5,823,654	A	10/1998	Pastrick et al.	6,627,918	B2	9/2003	Getz et al.
5,825,527	A	10/1998	Forgette et al.	6,642,851	B2	11/2003	DeLine et al.
5,835,294	A	11/1998	Minegishi	6,648,477	B2	11/2003	Hutzel et al.
5,838,505	A	11/1998	Palathingal	6,669,109	B2	12/2003	Ivanov et al.
5,847,889	A	12/1998	Komiyama et al.	6,690,268	B2	2/2004	Schofield et al.
5,863,116	A	1/1999	Pastrick et al.	6,709,119	B2	3/2004	Gillich et al.
5,864,434	A	1/1999	Taylor	6,717,610	B1	4/2004	Bos et al.
5,877,897	A	3/1999	Schofield et al.	6,717,712	B2	4/2004	Lynam et al.
5,910,854	A	6/1999	Varaprasad et al.	6,719,215	B2	4/2004	Drouillard
5,922,176	A	7/1999	Caskey	6,731,205	B2	5/2004	Schofield et al.
5,929,786	A	7/1999	Schofield et al.	6,737,629	B2	5/2004	Nixon et al.
5,938,320	A	8/1999	Crandall	6,742,904	B2	6/2004	Bechtel et al.
5,980,050	A	11/1999	McCord	6,757,109	B2	6/2004	Bos
6,001,486	A	12/1999	Varaprasad et al.	D493,131	S	7/2004	Lawlor et al.
6,002,511	A	12/1999	Varaprasad et al.	D493,394	S	7/2004	Lawlor et al.
6,005,511	A	12/1999	Young et al.	6,824,281	B2	11/2004	Schofield et al.
6,005,724	A	12/1999	Todd	6,831,268	B2	12/2004	Bechtel et al.
6,007,207	A	12/1999	Liu	6,882,287	B2	4/2005	Schofield
6,030,084	A	2/2000	Schmidt	6,919,796	B2	7/2005	Boddy et al.
6,032,323	A	3/2000	Smith et al.	6,932,483	B2	8/2005	Strumolo et al.
6,033,078	A	3/2000	Su et al.	6,979,090	B1	12/2005	Wnuk
6,065,840	A	5/2000	Caskey et al.	7,001,032	B2	2/2006	Lo
6,074,068	A	6/2000	Palathingal	7,005,974	B2	2/2006	McMahon et al.
6,097,023	A	8/2000	Schofield et al.	7,025,469	B1	4/2006	Manfre' et al.
6,109,586	A	8/2000	Hoek	7,038,577	B2	5/2006	Pawlicki et al.
6,111,684	A	8/2000	Forgette et al.	7,097,312	B2	8/2006	Platzer, Jr.
6,116,743	A	9/2000	Hoek	7,106,392	B2	9/2006	You
6,124,647	A	9/2000	Marcus et al.	7,126,456	B2	10/2006	Boddy et al.
6,128,860	A	10/2000	Repp	7,167,294	B2	1/2007	Lynam et al.
6,154,306	A	11/2000	Varaprasad et al.	7,168,830	B2	1/2007	Pastrick et al.
				7,184,190	B2	2/2007	McCabe et al.
				7,195,381	B2	3/2007	Lynam et al.
				7,249,860	B2	7/2007	Kulas et al.
				7,255,451	B2	8/2007	McCabe et al.

(56)

References Cited

U.S. PATENT DOCUMENTS

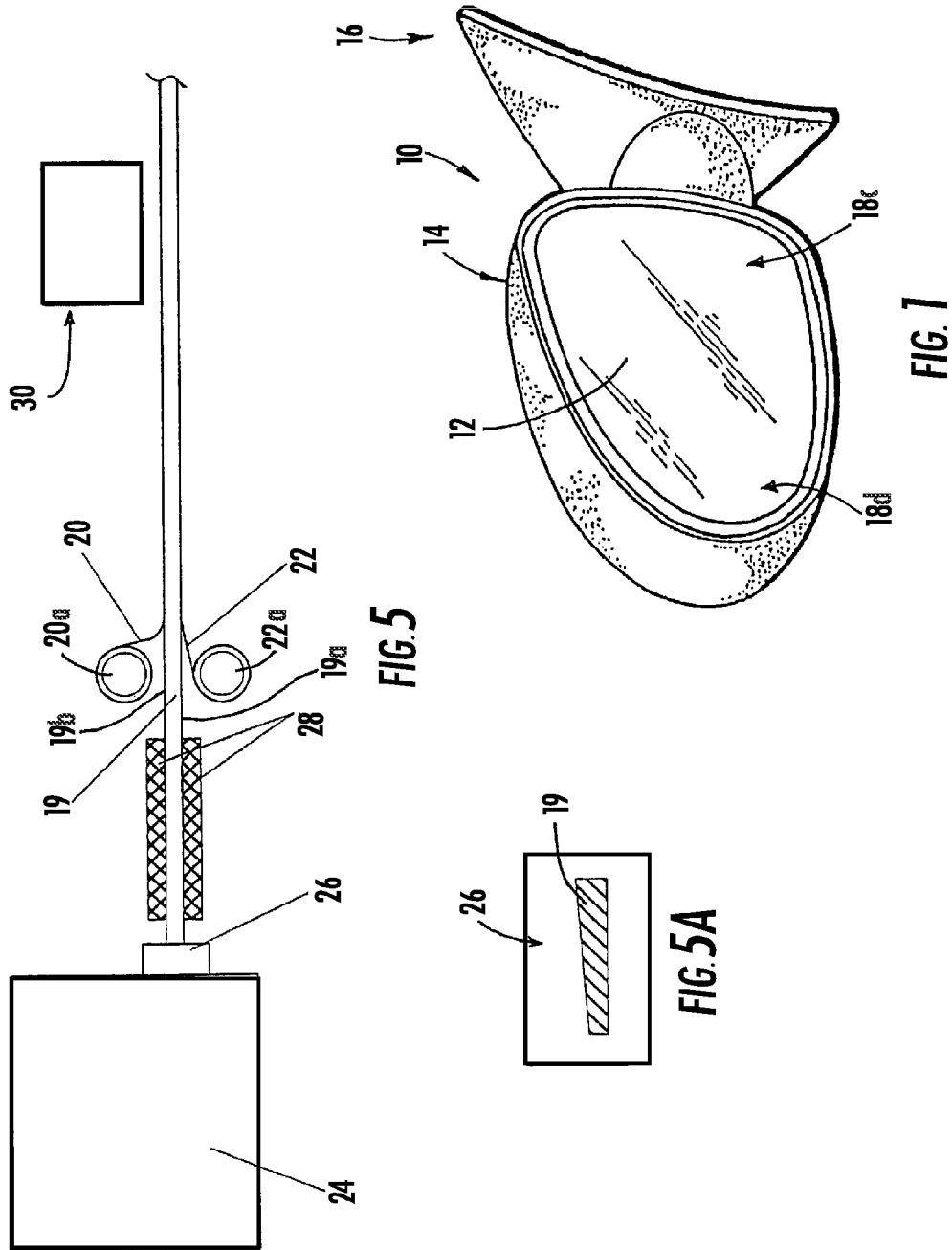
7,289,037 B2 10/2007 Uken et al.
 7,338,177 B2 3/2008 Lynam
 7,339,149 B1 3/2008 Schofield et al.
 7,345,680 B2 3/2008 David
 7,370,983 B2 5/2008 DeWind et al.
 7,377,675 B2 5/2008 Pastrick et al.
 7,391,563 B2 6/2008 McCabe et al.
 7,400,435 B2 7/2008 Byers et al.
 7,420,756 B2 9/2008 Lynam
 7,423,522 B2 9/2008 O'Brien et al.
 7,492,281 B2 2/2009 Lynam et al.
 7,526,103 B2 4/2009 Schofield et al.
 7,581,859 B2 9/2009 Lynam
 7,626,749 B2 12/2009 Baur et al.
 7,636,188 B2 12/2009 Baur et al.
 7,857,469 B2 12/2010 Sinelli et al.
 7,934,843 B2 5/2011 Lynam
 8,128,243 B2* 3/2012 Lynam 359/866
 8,267,534 B2 9/2012 Lynam
 2002/0036828 A1 3/2002 Wong
 2002/0048100 A1 4/2002 Hoek
 2002/0072026 A1* 6/2002 Lynam et al. 432/77
 2002/0105741 A1 8/2002 Platzer, Jr.
 2002/0159169 A1 10/2002 McCord
 2002/0159270 A1 10/2002 Lynam et al.
 2003/0026009 A1 2/2003 Vandenbrink
 2003/0026012 A1 2/2003 Pavao
 2003/0031023 A1 2/2003 Hutzel
 2003/0043589 A1 3/2003 Blank
 2003/0117731 A1 6/2003 Platzer, Jr.
 2004/0032638 A1 2/2004 Tonar et al.
 2004/0032675 A1 2/2004 Weller et al.
 2004/0032676 A1 2/2004 Drummond et al.
 2004/0114260 A1 6/2004 Bartnick
 2004/0165291 A1 8/2004 Platzer, Jr.
 2004/0257685 A1 12/2004 Minor et al.
 2004/0264011 A1 12/2004 Lynam
 2005/0078389 A1 4/2005 Kulas et al.
 2005/0083577 A1 4/2005 Varapasad et al.
 2005/0099693 A1 5/2005 Schofield et al.
 2005/0134983 A1 6/2005 Lynam
 2005/0232469 A1 10/2005 Schofield et al.
 2005/0248859 A1 11/2005 Platzer, Jr.
 2006/0050018 A1 3/2006 Hutzel et al.
 2006/0061008 A1 3/2006 Karner et al.
 2006/0125919 A1 6/2006 Camilleri et al.
 2006/0126150 A1 6/2006 Tonar et al.
 2006/0171704 A1 8/2006 Bingle et al.
 2006/0184297 A1 8/2006 Higgins-Luthman
 2006/0268440 A1 11/2006 Platzer, Jr.

2006/0279863 A1 12/2006 Starbuck
 2007/0058257 A1 3/2007 Lynam
 2007/0285789 A1 12/2007 Lindahl et al.
 2008/0212189 A1 9/2008 Baur et al.
 2008/0225421 A1 9/2008 Platzer
 2008/0304170 A1 12/2008 Zhao
 2008/0308219 A1 12/2008 Lynam
 2009/0040306 A1 2/2009 Foote et al.
 2009/0115631 A1 5/2009 Foote et al.
 2009/0237820 A1 9/2009 McCabe et al.
 2009/0268321 A1 10/2009 Wilson
 2010/0195228 A1 8/2010 Sinelli et al.
 2010/0296187 A1 11/2010 Lynam
 2011/0157732 A1 6/2011 Henion et al.
 2011/0170207 A1 7/2011 Lynam

FOREIGN PATENT DOCUMENTS

DE 2647592 4/1978
 DE 2915521 10/1980
 DE 3302735 8/1984
 DE 3329998 3/1985
 DE 3620228 12/1987
 DE 4026578 4/1992
 EP 0210757 2/1987
 EP 0310261 4/1989
 EP 0356099 2/1990
 EP 0551802 1/1992
 EP 0728618 8/1996
 EP 0729864 9/1996
 EP 0791503 8/1997
 EP 0917987 5/1999
 FR 2628042 3/1988
 GB 1279158 6/1972
 GB 2048189 12/1980
 GB 2092534 8/1982
 JP 0051637 4/1980
 JP 55076721 10/1980
 JP 362075619 4/1987
 JP 62105103 5/1987
 JP 1186443 7/1989
 JP 1208245 8/1989
 KR 2002092059 12/2002
 NL 7908257 6/1981
 TW 424057 3/2001
 WO WO 0181956 11/2001
 WO WO 2004026633 4/2004
 WO WO 2004047421 6/2004
 WO WO 2004103772 12/2004
 WO WO 2006124682 11/2006
 WO WO 2007005942 1/2007
 WO WO 2008051910 5/2008

* cited by examiner



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