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Inventor(s)

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Mirroring in image guided surgery

Abstract

An imaging system, including a head-mounted display worn by a system operator. A marker defines a plane when attached to a human subject. Optically reflective elements are disposed on the marker and on opposing sides of the plane in a non-symmetrical arrangement with respect to the plane. A memory stores a graphical representation of a tool used in a procedure performed on the human subject, and an image of anatomy of the human subject. A camera attached to the display acquires an image of the marker and the tool. A processor analyzes the image to identify the plane and to identify a side of the plane wherein the camera is located, and to render to the display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a point of view in the identified side of the plane.

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References Cited

U.S. PATENT DOCUMENTS

Patent No.	Issued Date	Patentee Name	U.S. Cl.	CPC
3101715	12/1962	Glassman	N/A	N/A
3690776	12/1971	Zaporoshan	N/A	N/A
4459358	12/1983	Berke	N/A	N/A
4711512	12/1986	Upatnieks	N/A	N/A
4863238	12/1988	Brewster	N/A	N/A
4944739	12/1989	Torre	N/A	N/A
5100420	12/1991	Green et al.	N/A	N/A
5147365	12/1991	Whitlock et al.	N/A	N/A
5357292	12/1993	Wiedner	N/A	N/A
5410802	12/1994	Buckley	N/A	N/A
5441042	12/1994	Putman	N/A	N/A
5442146	12/1994	Bell et al.	N/A	N/A
5510832	12/1995	Garcia	N/A	N/A
D370309	12/1995	Stucky	N/A	N/A
5620188	12/1996	McCurry et al.	N/A	N/A
5636255	12/1996	Ellis	N/A	N/A
5665092	12/1996	Mangiardi et al.	N/A	N/A
5743731	12/1997	Lares et al.	N/A	N/A
5771121	12/1997	Hentschke	N/A	N/A
5792046	12/1997	Dobrovolny	N/A	N/A
5841507	12/1997	Barnes	N/A	N/A
6006126	12/1998	Cosman	N/A	N/A
6038467	12/1999	De Bliek et al.	N/A	N/A
6125164	12/1999	Murphy et al.	N/A	N/A
6138530	12/1999	McClure	N/A	N/A
6147805	12/1999	Fergason	N/A	N/A
6227667	12/2000	Halldorsson et al.	N/A	N/A
6256529	12/2000	Holupka et al.	N/A	N/A
6285505	12/2000	Melville et al.	N/A	N/A

6349001 12/2001 Spitzer N/A N/A 6444192 12/2001 Mattrey N/A N/A 6444193 12/2001 Wynne et al. N/A N/A 6449090 12/2001 Omar et al. N/A N/A 6449090 12/2001 Horikoshi et al. N/A N/A 6456405 12/2001 Horikoshi et al. N/A N/A 6456405 12/2001 Foxlin et al. N/A N/A 6456868 12/2001 Foxlin et al. N/A N/A 6474159 12/2002 Kikuchi N/A N/A 6518939 12/2002 Kikuchi N/A N/A 6529331 12/2002 Massof et al. N/A N/A 6529331 12/2002 Oikawa et al. N/A N/A 6578962 12/2002 Oikawa et al. N/A N/A 6678962 12/2002 Oikawa et al. N/A N/A 6678962 12/2002 Vilsmeier et al. N/A N/A 66790022 12/2002 Person N/A N/A N/A 66809022 12/2002 Person N/A N/A N/A 6659611 12/2002 Person N/A N/A N/A 6659611 12/2002 Amir et al. N/A N/A 6639611 12/2002 Amir et al. N/A N/A 6639611 12/2003 Cosman N/A N/A 663964 12/2003 Gosman N/A N/A N/A 663964 12/2003 Gosman N/A N/A N/A 663964 12/2003 Grzeszczuk et al. N/A N/A 673425 12/2003 Grzeszczuk et al. N/A N/A 673425 12/2003 Grzeszczuk et al. N/A N/A 673425 12/2003 Grzeszczuk et al. N/A N/A 6740882 12/2003 Foxlin N/A N/A 6740882 12/2003 Foxlin N/A N/A 6856324 12/2003 Foxlin N/A N/A 6863634 12/2004 Lemelson et al. N/A N/A 6891518 12/2004 Sauer et al. N/A N/A 699964 12/2003 Foxlin N/A N/A 699964 12/2003 Foxlin N/A N/A 699969 12/2004 Sauer et al. N/A N/A 699969 12/2004 Sauer et al. N/A N/A 6873425 12/2004 Sauer et al. N/A N/A 6999334 12/2004 Sauer et al. N/A N/A 6999334 12/2004 Sauer et al. N/A N/A N/A 699064 12/2004 Sauer et al. N/A N/A N/A 6990334 12/2004 Sauer et al. N/A N/A N/A 699064 12/2004 Sauer et al. N/A N/A N/A 6990666 12/2004 Sauer et al. N/A N/A N/A 699066 12/2006 Hoxeloss et al. N/A N/A N/A 699066 12/2006 Hoxeloss et al. N/A N/A N/A	6314310	12/2000	Ben-Haim et al.	N/A	N/A
6444192 12/2001 Mattrey N/A N/A 6447503 12/2001 Wynne et al. N/A N/A 6447503 12/2001 Omar et al. N/A N/A 6449090 12/2001 Omar et al. N/A N/A 6456868 12/2001 Saito et al. N/A N/A 6456868 12/2001 Foxlin et al. N/A N/A 6518939 12/2002 Kikuchi N/A N/A 6518939 12/2002 Justin N/A N/A 65297777 12/2002 Justin N/A N/A N/A 6549645 12/2002 Massof et al. N/A N/A 6549645 12/2002 Oikawa et al. N/A N/A 6549645 12/2002 Amir et al. N/A N/A 6649645 12/2002 Amir et al. N/A N/A 6649645 12/2002 Person N/A N/A N/A 66609022 12/2002 Person N/A N/A N/A 6660902 12/2002 Person N/A N/A N/A 6659611 12/2002 Martinson et al. N/A N/A 6659611 12/2002 Amir et al. N/A N/A N/A 66859611 12/2002 Amir et al. N/A N/A N/A 6675040 12/2003 Cosman N/A N/A N/A 6690964 12/2003 Ronzani et al. N/A N/A 6674810 12/2003 Grzeszczuk et al. N/A N/A 674082 12/2003 Weinberg N/A N/A N/A 6737425 12/2003 Weinberg N/A N/A N/A 6737425 12/2003 Foxlin N/A N/A 6759200 12/2003 Stanton, Jr. N/A N/A 6847336 12/2003 Stanton, Jr. N/A N/A 6856826 12/2003 Stanton, Jr. N/A N/A 6856826 12/2004 Seeley et al. N/A N/A 689064 12/2003 Stanton, Jr. N/A N/A 6990677 12/2004 Sauer et al. N/A N/A N/A 6951518 12/2004 Sauer et al. N/A N/A N/A 6990677 12/2004 Sauer et al. N/A N/A N/A 6990689 12/2004 Seeley et al. N/A N/A N/A 6990699 12/2004 Sauer et al. N/A N/A N/A 6990699 12/2006 Martins et al. N/A N/A N/A 6990699 12/2006 Martins et al. N/A N/A N/A N/A 6990699 12/2006 Martins et al. N/A N/A					
6447503 12/2001 Wynne et al. N/A N/A 6449090 12/2001 Omar et al. N/A N/A 6456405 12/2001 Horikoshi et al. N/A N/A 6456868 12/2001 Foxlin et al. N/A N/A 6474159 12/2001 Foxlin et al. N/A N/A 6518939 12/2002 Kikuchi N/A N/A 6527777 12/2002 Justin N/A N/A 6527777 12/2002 Justin N/A N/A 6529331 12/2002 Massof et al. N/A N/A 6549645 12/2002 Oikawa et al. N/A N/A 6578962 12/2002 Amir et al. N/A N/A 6678962 12/2002 Person N/A N/A N/A 6610009 12/2002 Person N/A N/A N/A 6659611 12/2002 Martinson et al. N/A N/A 6659611 12/2002 Amir et al. N/A N/A 6659611 12/2003 Cosman N/A N/A 6683584 12/2003 Ronzani et al. N/A N/A 6690964 12/2003 Grzeszczuk et al. N/A N/A 6737425 12/2003 Grzeszczuk et al. N/A N/A 6737425 12/2003 Weinberg N/A N/A 6736862 12/2003 Weinberg N/A N/A 6739200 12/2003 Stanton, Jr. N/A N/A 6739200 12/2003 Stanton, Jr. N/A N/A 6740882 12/2003 Weinberg N/A N/A 6759200 12/2003 Stanton, Jr. N/A N/A 6856324 12/2003 Grzeszczuk et al. N/A N/A 6759200 12/2003 Stanton, Jr. N/A N/A 6759200 12/2003 Stanton, Jr. N/A N/A 6856324 12/2004 Sauer et al. N/A N/A 6856324 12/2004 Sauer et al. N/A N/A 699077 12/2004 Sauer et al. N/A N/A 699077 12/2004 Sauer et al. N/A N/A 699077 12/2004 Sauer et al. N/A N/A 6990849 12/2004 Sauer et al. N/A N/A 6990337 12/2004 Sauer et al. N/A N/A N/A 6990337 12/2005 Martins et al. N/A N/A N/A 6990337 12/2005 Martins et al. N/A N/A N/A 699337 12/2005 Sasso N/A N/A N/A 699337 12/2005 Desnoyers et al. N/A N/A N/A N/A 699337 12/2005 Desnoyers et al. N/A N/A N/A N/A 699666 12/2005 Desnoyers et al. N/A N/A N/A N/A 699666 12/2006 Desnoyers et al. N/A N/A N/A N/A 699666 12/2006 Ghale et al. N/A N/A N/A N/A 699666 12/2006 Timmer et al. N/A N/A N/A N/A 699666 12/2006 Timmer et al. N/A N/A N/A N/A 699666 12/2006 Ghale et al. N/A N/A N/A N/A 6996666 12/2006 Ghale et al. N/A N/A N/A N/A N/A 6996666 12/2006 Ghale et al. N/A N/A N/A N/A 6996666 12/2006			-		
6449090 12/2001 Omar et al. N/A N/A 6456405 12/2001 Horikoshi et al. N/A N/A 6456405 12/2001 Foxlin et al. N/A N/A 6474159 12/2001 Foxlin et al. N/A N/A 6474159 12/2002 Kikuchi N/A N/A 6518939 12/2002 Justin N/A N/A 6529331 12/2002 Massof et al. N/A N/A 6529331 12/2002 Oikawa et al. N/A N/A 6549645 12/2002 Oikawa et al. N/A N/A 6578962 12/2002 Amir et al. N/A N/A 6610009 12/2002 Person N/A N/A N/A 6600022 12/2002 Person N/A N/A N/A 6639611 12/2002 Martinson et al. N/A N/A N/A 6639611 12/2002 Amir et al. N/A N/A N/A 663584 12/2003 Cosman N/A N/A N/A 663584 12/2003 Cosman N/A N/A N/A 663584 12/2003 Gosman N/A N/A N/A 66408064 12/2003 Gosman N/A N/A N/A 6737425 12/2003 Grzeszczuk et al. N/A N/A 6734810 12/2003 Grzeszczuk et al. N/A N/A 673482 12/2003 Foxlin N/A N/A 6736882 12/2003 Foxlin N/A N/A 6757068 12/2003 Foxlin N/A N/A 6757068 12/2003 Foxlin N/A N/A 6757068 12/2003 Foxlin N/A N/A 6759200 12/2003 Stanton, Jr. N/A N/A 6856324 12/2003 Soxlinon, Jr. N/A N/A 6891518 12/2004 Sauer et al. N/A N/A 6891518 12/2004 Sauer et al. N/A N/A 6990777 12/2004 Hebert et al. N/A N/A 6990777 12/2004 Gosman N/A N/A N/A 69903374 12/2004 Sauer et al. N/A N/A 6993374 12/2004 Sauer et al. N/A N/A N/A 6993374 12/2005 Sasso N/A N/A N/A 6993374 12/2005 Sasso N/A N/A N/A N/A 6993374 12/2005 Desnoyers et al. N/A N/A N/A N/A 6993374 12/2005 Desnoyers et al. N/A N/A N/A N/A 6993374 12/2005 Desnoyers et al. N/A N/A N/A N/A 6993374 12/2005 Desnoyers et al. N/A N/A N/A N/A N/A 699339 12/2006 Timmer et al. N/A N/A N/A N/A N/A N/A 699339 12/2006 Timmer et al. N/A			_	N/A	
6456868 12/2001 Saito et al. N/A N/A 6474159 12/2001 Foxlin et al. N/A N/A 6518939 12/2002 Kikuchi N/A N/A 6527777 12/2002 Justin N/A N/A 6529331 12/2002 Massof et al. N/A N/A 6578962 12/2002 Amir et al. N/A N/A 66790922 12/2002 Wilsmeier et al. N/A N/A 6610009 12/2002 Person N/A N/A 6610009 12/2002 Martinson et al. N/A N/A 6659611 12/2002 Amir et al. N/A N/A 6675040 12/2003 Cosman N/A N/A 6675040 12/2003 Cosman N/A N/A 6714810 12/2003 Bieger et al. N/A N/A 6740882 12/2003 Foxlin N/A N/A 6757068 12/2003 Foxlin	6449090		_	N/A	N/A
6456868 12/2001 Saito et al. N/A N/A 6474159 12/2001 Foxlin et al. N/A N/A 6518939 12/2002 Kikuchi N/A N/A 6527777 12/2002 Justin N/A N/A 6529331 12/2002 Massof et al. N/A N/A 6578962 12/2002 Amir et al. N/A N/A 6610009 12/2002 Vilsmeier et al. N/A N/A 6610009 12/2002 Person N/A N/A 64569611 12/2002 Amir et al. N/A N/A 6675040 12/2003 Cosman N/A N/A 6675040 12/2003 Cosman N/A N/A 66714810 12/2003 Bieger et al. N/A N/A 6714810 12/2003 Grzeszczuk et al. N/A N/A 6757068 12/2003 Foxlin N/A N/A 6759200 12/2003 Stanton, Jr.		12/2001	Horikoshi et al.	N/A	N/A
6474159 12/2001 Foxlin et al. N/A N/A 6518939 12/2002 Kikuchi N/A N/A 6527777 12/2002 Justin N/A N/A 6529331 12/2002 Massof et al. N/A N/A 6549645 12/2002 Oikawa et al. N/A N/A 6690022 12/2002 Amir et al. N/A N/A 6610009 12/2002 Person N/A N/A D480476 12/2002 Martinson et al. N/A N/A 6659611 12/2002 Amir et al. N/A N/A 6675040 12/2003 Cosman N/A N/A 6675040 12/2003 Ronzani et al. N/A N/A 6714810 12/2003 Grosman N/A N/A 6737425 12/2003 Grazeszzuk et al. N/A N/A 6757068 12/2003 Foxlin N/A N/A 6752068 12/2003 Stanton, Jr.					
6518939 12/2002 Kikuchi N/A N/A 6527777 12/2002 Justin N/A N/A 6529331 12/2002 Massof et al. N/A N/A 6549645 12/2002 Oikawa et al. N/A N/A 6679962 12/2002 Amir et al. N/A N/A 6609022 12/2002 Person N/A N/A 6610009 12/2002 Person N/A N/A D480476 12/2002 Martinson et al. N/A N/A 6659611 12/2002 Amir et al. N/A N/A 6675040 12/2003 Cosman N/A N/A 6675040 12/2003 Ronzani et al. N/A N/A 66714810 12/2003 Bieger et al. N/A N/A 6714810 12/2003 Grzeszczuk et al. N/A N/A 6757068 12/2003 Foxlin N/A N/A 675206 12/2003 Foxlin <t< td=""><td>6474159</td><td>12/2001</td><td>Foxlin et al.</td><td>N/A</td><td>N/A</td></t<>	6474159	12/2001	Foxlin et al.	N/A	N/A
6529331 12/2002 Massof et al. N/A N/A 6549645 12/2002 Oikawa et al. N/A N/A 6578962 12/2002 Amir et al. N/A N/A 6609022 12/2002 Vilsmeier et al. N/A N/A 6610009 12/2002 Person N/A N/A 064009 12/2002 Amir et al. N/A N/A 6659611 12/2003 Cosman N/A N/A 6675040 12/2003 Ronzani et al. N/A N/A 6683584 12/2003 Ronzani et al. N/A N/A 6714810 12/2003 Grzeszczuk et al. N/A N/A 6737425 12/2003 Yamamoto et al. N/A N/A 675908 12/2003 Foxlin N/A N/A 6757068 12/2003 Foxlin N/A N/A 6847336 12/2004 Lemelson et al. N/A N/A 6856224 12/2004 Seeley	6518939	12/2002	Kikuchi	N/A	N/A
6549645 12/2002 Oikawa et al. N/A N/A 6578962 12/2002 Amir et al. N/A N/A 6609022 12/2002 Vilsmeier et al. N/A N/A 6610009 12/2002 Person N/A N/A D480476 12/2002 Martinson et al. N/A N/A 6659611 12/2002 Amir et al. N/A N/A 6675040 12/2003 Cosman N/A N/A 6675040 12/2003 Ronzani et al. N/A N/A 6683584 12/2003 Bieger et al. N/A N/A 6690964 12/2003 Grzeszczuk et al. N/A N/A 6714810 12/2003 Grzeszczuk et al. N/A N/A 6740882 12/2003 Weinberg N/A N/A 6759200 12/2003 Foxlin N/A N/A 6856324 12/2004 Sauer et al. N/A N/A 6891518 12/2004 S	6527777	12/2002	Justin	N/A	N/A
6578962 12/2002 Amir et al. N/A N/A 6609022 12/2002 Vilsmeier et al. N/A N/A 6610009 12/2002 Person N/A N/A D480476 12/2002 Martinson et al. N/A N/A D480476 12/2002 Amir et al. N/A N/A 6659611 12/2003 Cosman N/A N/A 6675040 12/2003 Cosman N/A N/A 6683584 12/2003 Ronzani et al. N/A N/A 6690964 12/2003 Bieger et al. N/A N/A 6714810 12/2003 Grzeszczuk et al. N/A N/A 6740882 12/2003 Yamamoto et al. N/A N/A 6757068 12/2003 Foxlin N/A N/A 6757068 12/2003 Stanton, Jr. N/A N/A 6847336 12/2004 Lemelson et al. N/A N/A 6856324 12/2004 Sau	6529331	12/2002	Massof et al.	N/A	N/A
6609022 12/2002 Vilsmeier et al. N/A N/A 6610009 12/2002 Person N/A N/A D480476 12/2002 Martinson et al. N/A N/A 6659611 12/2002 Amir et al. N/A N/A 6675040 12/2003 Cosman N/A N/A 6683584 12/2003 Ronzani et al. N/A N/A 6699964 12/2003 Bieger et al. N/A N/A 6714810 12/2003 Grzeszczuk et al. N/A N/A 6737425 12/2003 Yamamoto et al. N/A N/A 6740882 12/2003 Foxlin N/A N/A 6759200 12/2003 Stanton, Jr. N/A N/A 6847336 12/2004 Lemelson et al. N/A N/A 6856324 12/2004 Sauer et al. N/A N/A 6991518 12/2004 Sauer et al. N/A N/A 69916668 12/2004	6549645	12/2002	Oikawa et al.	N/A	N/A
6610009 12/2002 Person N/A N/A D480476 12/2002 Martinson et al. N/A N/A 6659611 12/2003 Cosman N/A N/A 6675040 12/2003 Cosman N/A N/A 6675040 12/2003 Ronzani et al. N/A N/A 6683584 12/2003 Bieger et al. N/A N/A 6690964 12/2003 Grzeszczuk et al. N/A N/A 6714810 12/2003 Grzeszczuk et al. N/A N/A 6740882 12/2003 Weinberg N/A N/A 6757068 12/2003 Foxlin N/A N/A 6757068 12/2003 Stanton, Jr. N/A N/A 6847336 12/2004 Lemelson et al. N/A N/A 6856324 12/2004 Sauer et al. N/A N/A 6891518 12/2004 Sauer et al. N/A N/A 69919867 12/2004 Sauer	6578962	12/2002	Amir et al.	N/A	N/A
D480476 12/2002 Martinson et al. N/A N/A 6659611 12/2002 Amir et al. N/A N/A 6675040 12/2003 Cosman N/A N/A 6683584 12/2003 Ronzani et al. N/A N/A 6689064 12/2003 Bieger et al. N/A N/A 6714810 12/2003 Grzeszczuk et al. N/A N/A 6737425 12/2003 Yamamoto et al. N/A N/A 6740882 12/2003 Foxlin N/A N/A 6757068 12/2003 Foxlin N/A N/A 6757908 12/2003 Stanton, Jr. N/A N/A 6759200 12/2003 Stanton, Jr. N/A N/A 6847336 12/2004 Lemelson et al. N/A N/A 6856324 12/2004 Sauer et al. N/A N/A 6891518 12/2004 Sauer et al. N/A N/A 69919867 12/2004 <td< td=""><td>6609022</td><td>12/2002</td><td>Vilsmeier et al.</td><td>N/A</td><td>N/A</td></td<>	6609022	12/2002	Vilsmeier et al.	N/A	N/A
6659611 12/2002 Amir et al. N/A N/A 6675040 12/2003 Cosman N/A N/A 6683584 12/2003 Ronzani et al. N/A N/A 6690964 12/2003 Bieger et al. N/A N/A 6714810 12/2003 Grzeszczuk et al. N/A N/A 6737425 12/2003 Yamamoto et al. N/A N/A 6740882 12/2003 Weinberg N/A N/A 6757068 12/2003 Foxlin N/A N/A 6759200 12/2003 Stanton, Jr. N/A N/A 6847336 12/2004 Sauer et al. N/A N/A 6847336 12/2004 Sauer et al. N/A N/A 6856324 12/2004 Seeley et al. N/A N/A 6891518 12/2004 Sauer et al. N/A N/A 69919867 12/2004 Sauer N/A N/A 69919867 12/2004 Nagata <td>6610009</td> <td>12/2002</td> <td>Person</td> <td>N/A</td> <td>N/A</td>	6610009	12/2002	Person	N/A	N/A
6675040 12/2003 Cosman N/A N/A 6683584 12/2003 Ronzani et al. N/A N/A 6690964 12/2003 Bieger et al. N/A N/A 6714810 12/2003 Grzeszczuk et al. N/A N/A 6714810 12/2003 Grzeszczuk et al. N/A N/A 6737425 12/2003 Yamamoto et al. N/A N/A 6740882 12/2003 Foxlin N/A N/A 6757068 12/2003 Foxlin N/A N/A 6759200 12/2003 Stanton, Jr. N/A N/A 6759200 12/2003 Stanton, Jr. N/A N/A 6847336 12/2004 Lemelson et al. N/A N/A 6847336 12/2004 Sauer et al. N/A N/A 685626 12/2004 Seeley et al. N/A N/A 6991518 12/2004 Sauer et al. N/A N/A 6991777 12/2004 <t< td=""><td>D480476</td><td>12/2002</td><td>Martinson et al.</td><td>N/A</td><td>N/A</td></t<>	D480476	12/2002	Martinson et al.	N/A	N/A
6683584 12/2003 Ronzani et al. N/A N/A 6690964 12/2003 Bieger et al. N/A N/A 6714810 12/2003 Grzeszczuk et al. N/A N/A 6737425 12/2003 Yamamoto et al. N/A N/A 6740882 12/2003 Weinberg N/A N/A 6757068 12/2003 Foxlin N/A N/A 6759200 12/2003 Stanton, Jr. N/A N/A 6847336 12/2004 Lemelson et al. N/A N/A 6856324 12/2004 Sauer et al. N/A N/A 6891518 12/2004 Seeley et al. N/A N/A 69919867 12/2004 Sauer et al. N/A N/A 6991867 12/2004 Nagata N/A N/A 6993849 12/2004 Sasso N/A N/A 6993374 12/2005 Sasso N/A N/A 6999239 12/2005 Martins et al	6659611	12/2002	Amir et al.	N/A	N/A
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7653226	12/2009	Guhring et al.	N/A	N/A
7657075	12/2009	Viswanathan	N/A	N/A
7689019	12/2009	Boese et al.	N/A	N/A
7689042	12/2009	Brunner et al.	N/A	N/A
7689320	12/2009	Prisco et al.	N/A	N/A
7699486	12/2009	Beiner	N/A	N/A
7699793	12/2009	Goette et al.	N/A	N/A
7719769	12/2009	Sugihara et al.	N/A	N/A
D617825	12/2009	Chang	N/A	N/A
7734327	12/2009	Colquhoun	N/A	N/A
D619285	12/2009	Cristoforo	N/A	N/A
7751865	12/2009	Jascob et al.	N/A	N/A
7758204	12/2009	Klipstein et al.	N/A	N/A
7768702	12/2009	Hirose et al.	N/A	N/A
7769236	12/2009	Fiala	N/A	N/A
7773074	12/2009	Arenson et al.	N/A	N/A
7774044	12/2009	Sauer et al.	N/A	N/A
7822483	12/2009	Stone et al.	N/A	N/A
D628307	12/2009	Krause-Bonte	N/A	N/A
7826902	12/2009	Stone et al.	N/A	N/A
7831073	12/2009	Fu et al.	N/A	N/A
7831096	12/2009	Williamson, Jr.	N/A	N/A
7835778	12/2009	Foley et al.	N/A	N/A
7835784	12/2009	Mire et al.	N/A	N/A
7837987	12/2009	Shi et al.	N/A	N/A
7840093	12/2009	Fu et al.	N/A	N/A
7840253	12/2009	Tremblay et al.	N/A	N/A
7840256	12/2009	Lakin et al.	N/A	N/A
7853305	12/2009	Simon et al.	N/A	N/A
7854705	12/2009	Pawluczyk et al.	N/A	N/A
7857271	12/2009	Lees	N/A	N/A
7860282	12/2009	Boese et al.	N/A	N/A
D630766	12/2010	Harbin	N/A	N/A
7865269	12/2010	Prisco et al.	N/A	N/A
7874686	12/2010	Rossner et al.	N/A	N/A
7881770	12/2010	Melkent et al.	N/A	N/A
7893413	12/2010	Appleby et al.	N/A	N/A
7894649	12/2010	Fu et al.	N/A	N/A
7920162	12/2010	Masini et al.	N/A	N/A
7922391	12/2010	Essenreiter et al.	N/A	N/A
7938553	12/2010	Beiner	N/A	N/A
7945310 7953471	12/2010 12/2010	Gattani et al.	N/A N/A	N/A N/A
7969383	12/2010	Clayton et al. Eberl et al.	N/A N/A	N/A N/A
7909363 7974677	12/2010	Mire et al.	N/A N/A	N/A N/A
7985756	12/2010	Barlow et al.	N/A N/A	N/A N/A
7905750 7991557	12/2010	Liew et al.	N/A N/A	N/A N/A
7993353	12/2010	Roner et al.	N/A	N/A N/A
7996064	12/2010	Simon et al.	N/A	N/A N/A
8004524	12/2010	Deinzer	N/A	N/A
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8021300	12/2010	Ma et al.	N/A	N/A
8022984	12/2010	Cheong et al.	N/A	N/A
8045266	12/2010	Nakamura	N/A	N/A
8060181	12/2010	Rodriguez et al.	N/A	N/A
8068581	12/2010	Boese et al.	N/A	N/A
8068896	12/2010	Daghighian et al.	N/A	N/A
8077943	12/2010	Williams et al.	N/A	N/A
8079957	12/2010	Ma et al.	N/A	N/A
8081812	12/2010	Kreiser	N/A	N/A
8085075	12/2010	Huffman et al.	N/A	N/A
8085897	12/2010	Morton	N/A	N/A
8090175	12/2011	Fu et al.	N/A	N/A
8092400	12/2011	Warkentine et al.	N/A	N/A
8108072	12/2011	Zhao et al.	N/A	N/A
8112292	12/2011	Simon	N/A	N/A
8116847	12/2011	Gattani et al.	N/A	N/A
8120847	12/2011	Chang	N/A	N/A
8121255	12/2011	Sugiyama	N/A	N/A
8155479	12/2011	Hoffman et al.	N/A	N/A
8180132	12/2011	Gorges et al.	N/A	N/A
8180429	12/2011	Sasso	N/A	N/A
8208599	12/2011	Ye et al.	N/A	N/A
8216211	12/2011	Mathis et al.	N/A	N/A
8221402	12/2011	Francischelli et al.	N/A	N/A
8239001	12/2011	Verard et al.	N/A	N/A
8244012	12/2011	Liang et al.	N/A	N/A
8253778	12/2011	Atsushi	N/A	N/A
8271069	12/2011	Jascob et al.	N/A	N/A
8280491	12/2011	Kuduvalli et al.	N/A	N/A
8285021	12/2011	Boese et al.	N/A	N/A
8300315	12/2011	Kobayashi	N/A	N/A
8305685	12/2011	Heine et al.	N/A	N/A
8306305	12/2011	Porat et al.	N/A	N/A
8309932	12/2011	Haselman et al.	N/A	N/A
8317320	12/2011	Huang	N/A	N/A
8328815	12/2011	Farr et al.	N/A	N/A
8335553	12/2011	Rubner et al.	N/A	N/A
8335557	12/2011	Maschke	N/A	N/A
8340379	12/2011	Razzaque et al.	N/A	N/A
8369925	12/2012	Giesel et al.	N/A	N/A
8386022	12/2012	Jutras et al.	N/A	N/A
8394144	12/2012	Zehavi et al.	N/A	N/A
8398541	12/2012	Dimaio et al.	N/A	N/A
8444266	12/2012	Waters	N/A	N/A
8457719	12/2012	Moctezuma De La Barrera et al.	N/A	N/A
8467851	12/2012	Mire et al.	N/A	N/A
8469902	12/2012	Dick et al.	N/A	N/A
8475470	12/2012	Von Jako	N/A	N/A
8494612	12/2012	Vetter et al.	N/A	N/A
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8509503	12/2012	Nahum et al.	N/A	N/A
8511827	12/2012	Hua et al.	N/A	N/A
8531394	12/2012	Maltz	N/A	N/A
8540364	12/2012	Waters	N/A	N/A
8545012	12/2012	Waters	N/A	N/A
8548567	12/2012	Maschke et al.	N/A	N/A
8556883	12/2012	Saleh	N/A	N/A
8559596	12/2012	Thomson et al.	N/A	N/A
8567945	12/2012	Waters	N/A	N/A
8571353	12/2012	Watanabe	N/A	N/A
8585598	12/2012	Razzaque et al.	N/A	N/A
8600001	12/2012	Schweizer	N/A	N/A
8600477	12/2012	Beyar et al.	N/A	N/A
8605199	12/2012	Imai	N/A	N/A
8611988	12/2012	Miyamoto	N/A	N/A
8612024	12/2012	Stone et al.	N/A	N/A
8634897	12/2013	Simon et al.	N/A	N/A
8641621	12/2013	Razzaque et al.	N/A	N/A
8643950	12/2013	König	N/A	N/A
8644907	12/2013	Hartmann et al.	N/A	N/A
8674902	12/2013	Park et al.	N/A	N/A
8686923	12/2013	Eberl et al.	N/A	N/A
8690581	12/2013	Ruf et al.	N/A	N/A
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8692845	12/2013	Fedorovskaya et al.	N/A	N/A
8693632	12/2013	Allison	N/A	N/A
8694075	12/2013	Groszmann et al.	N/A	N/A
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8705829	12/2013	Frank et al.	N/A	N/A
8737708	12/2013	Hartmann et al.	N/A	N/A
8746887	12/2013	Shestak et al.	N/A	N/A
8764025	12/2013	Gao	N/A	N/A
8784450	12/2013	Moskowitz et al.	N/A	N/A
8786689	12/2013	Liu	N/A	N/A
D710545	12/2013	Wu	N/A	N/A
D710546	12/2013	Wu Channa at al	N/A	N/A
8827934	12/2013	Chopra et al.	N/A	N/A
8831706	12/2013	Fu et al.	N/A	N/A
8836768	12/2013	Rafii et al.	N/A	N/A
8838199	12/2013	Simon et al.	N/A	N/A
8848977	12/2013	Bammer et al. Baturin et al.	N/A N/A	N/A
8855395 8878900	12/2013 12/2013		N/A N/A	N/A N/A
8879815	12/2013	Yang et al. Miao et al.	N/A N/A	N/A N/A
8885177	12/2013	Ben-Yishai et al.	N/A N/A	N/A N/A
8890772	12/2013	Woo et al.	N/A N/A	N/A N/A
8890773	12/2013	Pederson	N/A N/A	N/A N/A
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8897514	12/2013	Feikas et al.	N/A	N/A N/A
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8908952 12/2013 Isaacs et al. N/A N/A 8911358 12/2013 Koninckx et al. N/A N/A 8912076 12/2013 Gaiger et al. N/A N/A 892076 12/2013 Gaiger et al. N/A N/A 8922589 12/2014 Bar-Zeev et al. N/A N/A 8941559 12/2014 Chou et al. N/A N/A 8952877 12/2014 Northeye tal. N/A N/A 895280877 12/2014 Northeye tal. N/A N/A 8952346 12/2014 Koenig N/A N/A 8961500 12/2014 Ottmaier et al. N/A N/A 8965829 12/2014 Ottmaier et al. N/A N/A 8989349 12/2014 Bar et al. N/A N/A 8994729 12/2014 Bar et al. N/A N/A 8994795 12/2014 Gerolemou N/A N/A 9005211 12/2014	8903150	12/2013	Star-Lack et al.	N/A	N/A
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9244278	12/2015	Sugiyama et al.	N/A	N/A
9247240	12/2015	Park et al.	N/A	N/A
9259192	12/2015	Ishihara	N/A	N/A
9265572	12/2015	Fuchs et al.	N/A	N/A
9269192	12/2015	Kobayashi	N/A	N/A
9283052	12/2015	Rodriguez Ponce	N/A	N/A
9286730	12/2015	Bar-Zeev et al.	N/A	N/A
9289267	12/2015	Sauer et al.	N/A	N/A
9294222	12/2015	Proctor, Jr.	N/A	N/A
9300949	12/2015	Ahearn	N/A	N/A
9305354	12/2015	Burlon et al.	N/A	N/A
9310591	12/2015	Hua et al.	N/A	N/A
9320474	12/2015	Demri et al.	N/A	N/A
9323055	12/2015	Baillot	N/A	N/A
9330477	12/2015	Rappel	N/A	N/A
9335547	12/2015	Takano et al.	N/A	N/A
9335567	12/2015	Nakamura	N/A	N/A
9341704	12/2015	Picard et al.	N/A	N/A
9344686	12/2015	Moharir	N/A	N/A
9349066	12/2015	Koo et al.	N/A	N/A
9349520	12/2015	Demetriou et al.	N/A	N/A
9364294	12/2015	Razzaque et al.	N/A	N/A
9370332	12/2015	Paladini et al.	N/A	N/A
9373166	12/2015	Azar	N/A	N/A
9375639	12/2015	Kobayashi et al.	N/A	N/A
9378558	12/2015	Kajiwara et al.	N/A	N/A
9380287	12/2015	Nistico et al.	N/A	N/A
9387008	12/2015	Sarvestani et al.	N/A	N/A
9392129	12/2015	Simmons	N/A	N/A
9395542	12/2015	Tilleman et al.	N/A	N/A
9398936	12/2015	Razzaque et al.	N/A	N/A
9400384	12/2015	Griffith	N/A	N/A
9414041	12/2015	Ko et al.	N/A	N/A
9424611	12/2015	Kanjirathinkal et al.	N/A	N/A
9424641	12/2015	Wiemker et al.	N/A	N/A
9427286	12/2015	Siewerdsen et al.	N/A	N/A
9438894	12/2015	Park et al.	N/A	N/A
9443488	12/2015	Borenstein et al.	N/A	N/A
9453804	12/2015	Tahtali	N/A	N/A
9456878	12/2015	MacFarlane et al.	N/A	N/A
9465235	12/2015	Chang	N/A	N/A
9468373	12/2015	Larsen	N/A	N/A
9470908	12/2015	Frankel et al.	N/A	N/A
9473766	12/2015	Douglas et al.	N/A	N/A
9492222	12/2015	Singh	N/A	N/A
9495585	12/2015	Bicer et al.	N/A	N/A
9498132	12/2015	Maier-Hein et al.	N/A	N/A
9498231	12/2015	Haider et al.	N/A	N/A
9507155 9513495	12/2015 12/2015	Morimoto Waters	N/A N/A	N/A N/A
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9521966	12/2015	Schwartz	N/A	N/A
9526443	12/2015	Berme et al.	N/A	N/A
9530382	12/2015	Simmons	N/A	N/A
9532846	12/2016	Nakamura	N/A	N/A
9532849	12/2016	Anderson et al.	N/A	N/A
9533407	12/2016	Ragner	N/A	N/A
9538962	12/2016	Hannaford et al.	N/A	N/A
9545233	12/2016	Sirpad et al.	N/A	N/A
9546779	12/2016	Rementer	N/A	N/A
9547174	12/2016	Gao et al.	N/A	N/A
9547940	12/2016	Sun et al.	N/A	N/A
9557566	12/2016	Fujimaki	N/A	N/A
9560318	12/2016	Reina et al.	N/A	N/A
9561095	12/2016	Nguyen et al.	N/A	N/A
9561446	12/2016	Brecher	N/A	N/A
9565415	12/2016	Zhang et al.	N/A	N/A
9572661	12/2016	Robin et al.	N/A	N/A
9576398	12/2016	Zehner et al.	N/A	N/A
9576556	12/2016	Simmons	N/A	N/A
9581822	12/2016	Morimoto	N/A	N/A
9610056	12/2016	Lavallee et al.	N/A	N/A
9612657	12/2016	Bertram et al.	N/A	N/A
9626936	12/2016	Bell	N/A	N/A
9629595	12/2016	Walker et al.	N/A	N/A
9633431	12/2016	Merlet	N/A	N/A
9645395	12/2016	Bolas et al.	N/A	N/A
9646423	12/2016	Sun et al.	N/A	N/A
9672597	12/2016	Amiot et al.	N/A	N/A
9672607	12/2016	Demri et al.	N/A	N/A
9672640	12/2016	Kleiner	N/A	N/A
9675306	12/2016	Morton	N/A	N/A
9675319	12/2016	Razzaque et al.	N/A	N/A
9684980	12/2016	Royalty et al.	N/A	N/A
9690119	12/2016	Garofolo et al.	N/A	N/A
RE46463	12/2016	Fienbloom et al.	N/A	N/A
9693748	12/2016	Rai et al.	N/A	N/A
9710968	12/2016	Dillavou et al.	N/A	N/A
9713502	12/2016	Finkman et al.	N/A	N/A
9724119	12/2016	Hissong et al. Arata et al.	N/A	N/A
9724165	12/2016 12/2016		N/A	N/A
9726888 9728006	12/2016	Giartosio et al.	N/A N/A	N/A N/A
9729831	12/2016	Varga Birnkrant et al.	N/A N/A	N/A
9746739	12/2016	Alton et al.	N/A N/A	N/A
9757034	12/2016	Desjardins et al.	N/A N/A	N/A N/A
9757034	12/2016	Simon et al.	N/A N/A	N/A
9766441	12/2016	Rappel	N/A N/A	N/A
9766459	12/2016	Alton et al.	N/A	N/A
9767608	12/2016	Lee et al.	N/A	N/A
9770203	12/2016	Berme et al.	N/A	N/A
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9772102	12/2016	Ferguson	N/A	N/A
9772495	12/2016	Tam et al.	N/A	N/A
9791138	12/2016	Feinbloom et al.	N/A	N/A
9800995	12/2016	Libin et al.	N/A	N/A
9805504	12/2016	Zhang et al.	N/A	N/A
9808148	12/2016	Miller et al.	N/A	N/A
9839448	12/2016	Reckling et al.	N/A	N/A
9844413	12/2016	Daon et al.	N/A	N/A
9851080	12/2016	Wilt et al.	N/A	N/A
9858663	12/2017	Penney et al.	N/A	N/A
9861446	12/2017	Lang	N/A	N/A
9864214	12/2017	Fass	N/A	N/A
9872733	12/2017	Shoham et al.	N/A	N/A
9875544	12/2017	Rai et al.	N/A	N/A
9877642	12/2017	Duret	N/A	N/A
9885465	12/2017	Nguyen	N/A	N/A
9886552	12/2017	Dillavou et al.	N/A	N/A
9886760	12/2017	Liu et al.	N/A	N/A
9892564	12/2017	Cvetko et al.	N/A	N/A
9898866	12/2017	Fuchs et al.	N/A	N/A
9901414	12/2017	Lively et al.	N/A	N/A
9911187	12/2017	Steinle et al.	N/A	N/A
9911236	12/2017	Bar et al.	N/A	N/A
9927611	12/2017	Rudy et al.	N/A	N/A
9928629	12/2017	Benishti et al.	N/A	N/A
9940750	12/2017	Dillavou et al.	N/A	N/A
9943374	12/2017	Merritt et al.	N/A	N/A
9947110	12/2017	Haimerl	N/A	N/A
9952664	12/2017	Border et al.	N/A	N/A
9956054	12/2017	Aguirre-Valencia	N/A	N/A
9958674	12/2017	Border	N/A	N/A
9959620	12/2017	Merlet	N/A	N/A
9959629	12/2017	Dillavou et al.	N/A	N/A
9965681	12/2017	Border et al.	N/A	N/A
9968297	12/2017	Connor	N/A	N/A
9980780	12/2017	Lang	N/A	N/A
9986228	12/2017	Woods	N/A	N/A
D824523	12/2017	Paoli et al.	N/A	N/A
10010379	12/2017	Gibby et al.	N/A	N/A
10013531	12/2017	Richards et al.	N/A	N/A
10015243	12/2017	Kazerani et al.	N/A	N/A
10016243 10022064	12/2017 12/2017	Esterberg Kim et al.	N/A N/A	N/A N/A
10022065	12/2017	Ben-Yishai et al.	N/A N/A	N/A N/A
10022003	12/2017	Sell et al.	N/A N/A	N/A N/A
10022104	12/2017		N/A N/A	N/A
10025615	12/2017	Bonny Cavusoglu et al.	N/A N/A	N/A N/A
10020013	12/2017	Yang et al.	N/A N/A	N/A N/A
10034713	12/2017	McDowall et al.	N/A	N/A
10042107	12/2017	Frewin et al.	N/A	N/A
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10055838	12/2017	Elenbaas et al.	N/A	N/A
10066816	12/2017	Chang	N/A	N/A
10067359	12/2017	Ushakov	N/A	N/A
10073515	12/2017	Awdeh	N/A	N/A
10080616	12/2017	Wilkinson et al.	N/A	N/A
10082680	12/2017	Chung	N/A	N/A
10085709	12/2017	Lavallee et al.	N/A	N/A
10105187	12/2017	Corndorf et al.	N/A	N/A
10107483	12/2017	Oren	N/A	N/A
10108833	12/2017	Hong et al.	N/A	N/A
10123840	12/2017	Dorman	N/A	N/A
10130378	12/2017	Bryan	N/A	N/A
10132483	12/2017	Feinbloom et al.	N/A	N/A
10134166	12/2017	Benishti et al.	N/A	N/A
10134194	12/2017	Kepner et al.	N/A	N/A
10139652	12/2017	Windham	N/A	N/A
10139920	12/2017	Isaacs et al.	N/A	N/A
10142496	12/2017	Rao et al.	N/A	N/A
10151928	12/2017	Ushakov	N/A	N/A
10154239	12/2017	Casas	N/A	N/A
10159530	12/2017	Ang	N/A	N/A
10163207	12/2017	Merlet	N/A	N/A
10166079	12/2018	McLachlin et al.	N/A	N/A
10175507	12/2018	Nakamura	N/A	N/A
10175753	12/2018	Boesen	N/A	N/A
10181361	12/2018	Dillavou et al.	N/A	N/A
10186055	12/2018	Takahashi et al.	N/A	N/A
10188672	12/2018	Wagner	N/A	N/A
10194131	12/2018	Casas	N/A	N/A
10194990	12/2018	Amanatullah et al.	N/A	N/A
10194993	12/2018	Roger et al.	N/A	N/A
10195076	12/2018	Fateh	N/A	N/A
10197803	12/2018	Badiali et al.	N/A	N/A
10197816	12/2018	Waisman et al.	N/A	N/A
10207315	12/2018	Appleby et al.	N/A	N/A
10212517	12/2018	Beltran et al.	N/A	N/A
10230719	12/2018	Vaughn et al.	N/A	N/A
10231893	12/2018	Lei et al.	N/A	N/A
10235606	12/2018	Miao et al.	N/A	N/A
10240769	12/2018	Braganca et al.	N/A	N/A
10247965	12/2018	Ton Malachlin et al	N/A	N/A
10251724	12/2018	McLachlin et al.	N/A	N/A
10261324	12/2018	Chuang et al. Ketcha et al.	N/A	N/A
10262424 10274731	12/2018		N/A N/A	N/A
	12/2018	Maimone		N/A
10278777 10292768	12/2018 12/2018	Lang	N/A N/A	N/A N/A
10296805	12/2018	Lang Yang et al.	N/A N/A	N/A N/A
10290003	12/2018	Chakravarthula et al.	N/A N/A	N/A N/A
10319134	12/2018	Casas	N/A N/A	N/A
10020070	12/2010	Gusus	1 1/ 1 1	1 1/ 1 1

10332267	12/2018	Rai et al.	N/A	N/A
10339719	12/2018	Jagga et al.	N/A	N/A
10352543	12/2018	Braganca et al.	N/A	N/A
10357146	12/2018	Fiebel et al.	N/A	N/A
10357574	12/2018	Hilderbrand et al.	N/A	N/A
10366489	12/2018	Boettger et al.	N/A	N/A
10368947	12/2018	Lang	N/A	N/A
10368948	12/2018	Tripathi	N/A	N/A
10382748	12/2018	Benishti et al.	N/A	N/A
10383654	12/2018	Yilmaz et al.	N/A	N/A
10386645	12/2018	Abou Shousha	N/A	N/A
10388076	12/2018	Bar-Zeev et al.	N/A	N/A
10398514	12/2018	Ryan et al.	N/A	N/A
10401657	12/2018	Jiang et al.	N/A	N/A
10405825	12/2018	Rai et al.	N/A	N/A
10405927	12/2018	Ang	N/A	N/A
10413752	12/2018	Berlinger et al.	N/A	N/A
10419655	12/2018	Sivan	N/A	N/A
10420626	12/2018	Tokuda et al.	N/A	N/A
10420813	12/2018	Newell-Rogers et al.	N/A	N/A
10424115	12/2018	Ellerbrock	N/A	N/A
D862469	12/2018	Sadot et al.	N/A	N/A
10426554	12/2018	Siewerdsen et al.	N/A	N/A
10429675	12/2018	Greget	N/A	N/A
10431008	12/2018	Djajadiningrat et al.	N/A	N/A
10433814	12/2018	Razzaque et al.	N/A	N/A
10434335	12/2018	Takahashi et al.	N/A	N/A
10441236	12/2018	Bar-Tal et al.	N/A	N/A
10444514	12/2018	Abou Shousha et al.	N/A	N/A
10447947	12/2018	Liu	N/A	N/A
10448003	12/2018	Grafenberg	N/A	N/A
10449040	12/2018	Lashinski et al.	N/A	N/A
10453187	12/2018	Peterson et al.	N/A	N/A
10463434	12/2018	Siegler et al.	N/A	N/A
10465892	12/2018	Feinbloom et al.	N/A	N/A
10466487	12/2018	Blum et al.	N/A	N/A
10470732	12/2018	Baumgart et al.	N/A	N/A
10473314	12/2018	Braganca et al.	N/A	N/A
10485989	12/2018	Jordan et al.	N/A	N/A
10488663	12/2018	Choi	N/A	N/A
D869772	12/2018	Gand	N/A	N/A
D870977	12/2018	Berggren et al.	N/A	N/A
10492755	12/2018	Lin et al.	N/A	N/A
10499997	12/2018	Weinstein et al.	N/A	N/A
10502363	12/2018	Edwards et al.	N/A	N/A
10504231 10507066	12/2018 12/2018	Fiala Dimaio et al.	N/A N/A	N/A N/A
10507066	12/2018	Casas	N/A N/A	N/A N/A
10517622	12/2018	Taguchi et al.	N/A N/A	N/A N/A
10517544	12/2016	Perez	N/A N/A	N/A N/A
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10540780	12/2019	Cousins et al.	N/A	N/A
10543485	12/2019	Ismagilov et al.	N/A	N/A
10546423	12/2019	Jones et al.	N/A	N/A
10548557	12/2019	Lim et al.	N/A	N/A
10555775	12/2019	Hoffman et al.	N/A	N/A
10568535	12/2019	Roberts et al.	N/A	N/A
10571696	12/2019	Urey et al.	N/A	N/A
10571716	12/2019	Chapiro	N/A	N/A
10573086	12/2019	Bar-Zeev et al.	N/A	N/A
10573087	12/2019	Gallop et al.	N/A	N/A
10577630	12/2019	Zhang et al.	N/A	N/A
10586400	12/2019	Douglas	N/A	N/A
10591737	12/2019	Yildiz et al.	N/A	N/A
10592748	12/2019	Cousins et al.	N/A	N/A
10594998	12/2019	Casas	N/A	N/A
10595716	12/2019	Nazareth et al.	N/A	N/A
10601950	12/2019	Devam et al.	N/A	N/A
10602114	12/2019	Casas	N/A	N/A
10603113	12/2019	Lang	N/A	N/A
10603133	12/2019	Wang et al.	N/A	N/A
10606085	12/2019	Toyama	N/A	N/A
10610172	12/2019	Hummel et al.	N/A	N/A
10610179	12/2019	Altmann	N/A	N/A
10613352	12/2019	Knoll	N/A	N/A
10617566	12/2019	Esmonde	N/A	N/A
10620460	12/2019	Carabin	N/A	N/A
10621738	12/2019	Miao et al.	N/A	N/A
10625099	12/2019	Takahashi et al.	N/A	N/A
10626473	12/2019	Mariani et al.	N/A	N/A
10631905	12/2019	Asfora et al.	N/A	N/A
10631907	12/2019	Zucker et al.	N/A	N/A
10634331	12/2019	Feinbloom et al.	N/A	N/A
10634921	12/2019	Blum et al.	N/A	N/A
10638080	12/2019	Ovchinnikov et al.	N/A	N/A
10646285	12/2019	Siemionow et al.	N/A	N/A
10650513	12/2019	Penney et al.	N/A	N/A
10650594	12/2019	Jones et al.	N/A	N/A
10652525	12/2019	Woods	N/A	N/A
10653495	12/2019	Gregerson et al.	N/A	N/A
10660715	12/2019	Dozeman	N/A	N/A
10663738	12/2019	Carlvik et al. Bar-Zeev et al.	N/A	N/A
10665033 10670937	12/2019 12/2019	Alton et al.	N/A N/A	N/A N/A
10672145	12/2019	Albiol et al.	N/A N/A	N/A N/A
10672143	12/2019	Pizaine et al.	N/A	N/A N/A
10682767	12/2019		N/A N/A	N/A N/A
10682767	12/2019	Grafenberg et al. Thomas	N/A N/A	N/A N/A
10691397	12/2019	Clements	N/A	N/A N/A
10702713	12/2019	Mori et al.	N/A	N/A N/A
10706540	12/2019	Merlet	N/A	N/A
10,00040	14/4013	WICHEL	1 1/ 1 1	1 1/ / 1

10709398	12/2019	Schweizer	N/A	N/A
10713801	12/2019	Jordan et al.	N/A	N/A
10716643	12/2019	Justin et al.	N/A	N/A
10722733	12/2019	Takahashi	N/A	N/A
10725535	12/2019	Yu	N/A	N/A
10731832	12/2019	Koo	N/A	N/A
10732721	12/2019	Clements	N/A	N/A
10742949	12/2019	Casas	N/A	N/A
10743939	12/2019	Lang	N/A	N/A
10743943	12/2019	Razeto et al.	N/A	N/A
10747315	12/2019	Tungare et al.	N/A	N/A
10748319	12/2019	Tao et al.	N/A	N/A
10758315	12/2019	Johnson et al.	N/A	N/A
10777094	12/2019	Rao et al.	N/A	N/A
10777315	12/2019	Zehavi et al.	N/A	N/A
10781482	12/2019	Gubatayao et al.	N/A	N/A
10792110	12/2019	Leung et al.	N/A	N/A
10799145	12/2019	West et al.	N/A	N/A
10799296	12/2019	Ang	N/A	N/A
10799298	12/2019	Crawford et al.	N/A	N/A
10799316	12/2019	Sela et al.	N/A	N/A
10810799	12/2019	Tepper et al.	N/A	N/A
10818019	12/2019	Piat et al.	N/A	N/A
10818101	12/2019	Gallop et al.	N/A	N/A
10818199	12/2019	Buras et al.	N/A	N/A
10825563	12/2019	Gibby et al.	N/A	N/A
10827164	12/2019	Perreault et al.	N/A	N/A
10831943	12/2019	Santarone et al.	N/A	N/A
10835296	12/2019	Elimelech et al.	N/A	N/A
10838206	12/2019	Fortin-Deschnes et al.	N/A	N/A
10839629	12/2019	Jones et al.	N/A	N/A
10839956	12/2019	Beydoun et al.	N/A	N/A
10841556	12/2019	Casas	N/A	N/A
10842002	12/2019	Chang	N/A	N/A
10842461	12/2019	Johnson et al.	N/A	N/A
10849691	12/2019	Zucker et al.	N/A	N/A
10849693	12/2019	Lang	N/A	N/A
10849710	12/2019	Liu Cari at al	N/A	N/A
10861236	12/2019	Geri et al.	N/A	N/A
10865220	12/2019	Ebetino et al.	N/A	N/A
10869517 10869727	12/2019 12/2019	Halpern Yanof et al.	N/A N/A	N/A N/A
10872472	12/2019	Watola et al.	N/A N/A	N/A N/A
10877262	12/2019		N/A N/A	N/A N/A
10877296	12/2019	Luxembourg Lindsey et al.	N/A N/A	N/A N/A
10878639	12/2019	Douglas et al.	N/A N/A	N/A N/A
10893260	12/2019	Trail et al.	N/A N/A	N/A N/A
10895742	12/2020	Schneider et al.	N/A	N/A
10895743	12/2020	Dausmann	N/A	N/A
10895906	12/2020	West et al.	N/A	N/A
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10898151	12/2020	Harding et al.	N/A	N/A
10908420	12/2020	Lee et al.	N/A	N/A
10921595	12/2020	Rakshit et al.	N/A	N/A
10921613	12/2020	Gupta et al.	N/A	N/A
10928321	12/2020	Rawle	N/A	N/A
10928638	12/2020	Ninan et al.	N/A	N/A
10929670	12/2020	Troy et al.	N/A	N/A
10935815	12/2020	Castaeda	N/A	N/A
10935816	12/2020	Ban et al.	N/A	N/A
10936537	12/2020	Huston	N/A	N/A
10939973	12/2020	Dimaio et al.	N/A	N/A
10939977	12/2020	Messinger et al.	N/A	N/A
10941933	12/2020	Ferguson	N/A	N/A
10946108	12/2020	Zhang et al.	N/A	N/A
10950338	12/2020	Douglas	N/A	N/A
10951872	12/2020	Casas	N/A	N/A
10964095	12/2020	Douglas	N/A	N/A
10964124	12/2020	Douglas	N/A	N/A
10966768	12/2020	Poulos	N/A	N/A
10969587	12/2020	McDowall et al.	N/A	N/A
10993754	12/2020	Kuntz et al.	N/A	N/A
11000335	12/2020	Dorman	N/A	N/A
11002994	12/2020	Jiang et al.	N/A	N/A
11006093	12/2020	Hegyi	N/A	N/A
11013550	12/2020	Rioux et al.	N/A	N/A
11013560	12/2020	Lang	N/A	N/A
11013562	12/2020	Marti et al.	N/A	N/A
11013573	12/2020	Chang	N/A	N/A
11013900	12/2020	Malek et al.	N/A	N/A
11016302	12/2020	Freeman et al.	N/A	N/A
11019988	12/2020	Fiebel et al.	N/A	N/A
11027027	12/2020	Manning et al.	N/A	N/A
11029147	12/2020	Abovitz et al.	N/A	N/A
11030809	12/2020	Wang	N/A	N/A
11041173	12/2020	Zhang et al.	N/A	N/A
11045663	12/2020	Mori et al.	N/A	N/A
11049293	12/2020	Chae et al.	N/A	N/A
11049476	12/2020	Fuchs et al.	N/A	N/A
11050990	12/2020	Casas	N/A	N/A
11057505	12/2020	Dharmatilleke	N/A	N/A
11058390	12/2020	Douglas Hakim	N/A N/A	N/A
11061257 11064904	12/2020 12/2020		N/A N/A	N/A N/A
	12/2020	Kay et al. Frushour et al.	N/A N/A	
11065062 11067387	12/2020	Marell et al.	N/A N/A	N/A N/A
11071497 11079596	12/2020 12/2020	Hallack et al. Hua et al.	N/A N/A	N/A N/A
11079596	12/2020	Duff et al.	N/A N/A	N/A N/A
11090019	12/2020	Siemionow et al.	N/A N/A	N/A N/A
11090019	12/2020	Sakata et al.	N/A N/A	N/A N/A
1103/123	12/2020	Janala El al.	1 V/ / 1	1 V/ / A

11103320	11099376	12/2020	Steier et al.	N/A	N/A
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11300790 12/2021 Cheng et al. N/A N/A	11300252	12/2021	Nguyen	N/A	N/A
	11300790	12/2021	Cheng et al.	N/A	N/A

11304621	12/2021	Merschon et al.	N/A	N/A
11304759	12/2021	Kovtun et al.	N/A	N/A
11307402	12/2021	Steier et al.	N/A	N/A
11308663	12/2021	Alhrishy et al.	N/A	N/A
11311341	12/2021	Lang	N/A	N/A
11317973	12/2021	Calloway et al.	N/A	N/A
11337763	12/2021	Choi	N/A	N/A
11348257	12/2021	Lang	N/A	N/A
11350072	12/2021	Quiles Casas	N/A	N/A
11350965	12/2021	Yilmaz et al.	N/A	N/A
11351006	12/2021	Aferzon et al.	N/A	N/A
11354813	12/2021	Piat et al.	N/A	N/A
11360315	12/2021	Tu et al.	N/A	N/A
11373342	12/2021	Stafford et al.	N/A	N/A
11382699	12/2021	Wassall et al.	N/A	N/A
11382700	12/2021	Calloway et al.	N/A	N/A
11382712	12/2021	Elimelech et al.	N/A	N/A
11382713	12/2021	Healy et al.	N/A	N/A
11389252	12/2021	Gera et al.	N/A	N/A
11393229	12/2021	Zhou et al.	N/A	N/A
11399895	12/2021	Soper et al.	N/A	N/A
11402524	12/2021	Song et al.	N/A	N/A
11406338	12/2021	Tolkowsky	N/A	N/A
11412202	12/2021	Hegyi	N/A	N/A
11423554	12/2021	Borsdorf et al.	N/A	N/A
11430203	12/2021	Navab et al.	N/A	N/A
11432828	12/2021	Lang	N/A	N/A
11432931	12/2021	Lang	N/A	N/A
11443428	12/2021	Petersen et al.	N/A	N/A
11443431	12/2021	Flossmann et al.	N/A	N/A
11452568	12/2021	Lang	N/A	N/A
11452570	12/2021	Tolkowsky	N/A	N/A
11460915	12/2021	Frielinghaus et al.	N/A	N/A
11461936	12/2021	Freeman et al.	N/A	N/A
11461983	12/2021	Jones et al.	N/A	N/A
11464580	12/2021	Kemp et al.	N/A	N/A
11464581	12/2021	Calloway	N/A	N/A
11475625	12/2021	Douglas	N/A	N/A
11478214	12/2021	Siewerdsen et al.	N/A	N/A
11483532	12/2021	Quiles Casas	N/A	N/A
11488021	12/2021	Sun et al.	N/A	N/A
11490986	12/2021	Ben-Yishai	N/A	N/A
11510750	12/2021	Dulin et al.	N/A	N/A
11513358	12/2021	McDowall et al.	N/A	N/A
11527002	12/2021	Govari	N/A	N/A
11528393	12/2021	Garofolo et al.	N/A	N/A
11544031	12/2022	Harviainen	N/A	N/A
11573420	12/2022	Sarma et al.	N/A	N/A
11589927	12/2022	Oezbek et al.	N/A	N/A
11627924	12/2022	Alexandroni et al.	N/A	N/A

11648016 12/2022 Hathaway et al. N/A N/A 11651499 12/2022 Wang et al. N/A N/A N/A 11651499 12/2022 Ketcha et al. N/A N/A 11666458 12/2022 Kim et al. N/A N/A 11666984 12/2022 Siewerdsen et al. N/A N/A 11669984 12/2022 Siewerdsen et al. N/A N/A 11669936 12/2022 Avital et al. N/A N/A N/A 117936 12/2022 Miyazaki et al. N/A N/A N/A 11715282 12/2022 Miyazaki et al. N/A N/A N/A 11715210 12/2022 Haslam et al. N/A N/A N/A 117130389 12/2022 Farshad et al. N/A N/A N/A 11730389 12/2022 Edwin et al. N/A N/A N/A 117333516 12/2022 Edwin et al. N/A N/A N/A 11734657 12/2022 Jones et al. N/A N/A N/A 11750794 12/2022 Leboeuf et al. N/A N/A 11750794 12/2022 Wolf et al. N/A N/A 11766296 12/2022 Wolf et al. N/A N/A 11801097 12/2022 Merlet N/A N/A 11801097 12/2022 Elimelech et al. N/A N/A 11801115 12/2022 Elimelech et al. N/A N/A 1180583 12/2022 Benishit et al. N/A N/A 1180583 12/2022 Robaina et al. N/A N/A 11806943 12/2022 Benishit et al. N/A N/A 11806943 12/2022 Robaina et al. N/A N/A 11806943 12/2022 Robaina et al. N/A N/A 11832886 12/2022 Benishit et al. N/A N/A 11806943 12/2022 Robaina et al. N/A N/A 11806943 12/2022 Robaina et al. N/A N/A 11806943 12/2022 Benishit et al. N/A N/A 11806943 12/2022 Robaina et al. N/A N/A N/A 11806943 12/2022 Robaina et al. N/A N/A N/A 11832866 12/2022 Dorman N/A N/A N/A 11839433 12/2022 Schaewe et al. N/A N/A N/A 11839433 12/2022 Schaewe et al. N/A N/A N/A 11839433 12/2022 Schaewe et al. N/A N/A N/A 11806445 12/2023 Junio et al. N/A N/A N/A 11806445 12/2023 Lalys et al. N/A N/A N/A 11996645 12/2023 Crawford et al. N/A N/A N/A 11996645 12/2023 Cowin et al. N/A N/A N/A 11996645 12/2023 Cowin et al. N/A N/A N/A 11996645 12/2023 Cowin et al. N/A N/A N/A 11996645 12/2023 Elimelech et al. N/A N/A N/A 11996673 12/2023 Elimelech et al. N/A N/A N/A 11996670 12/2023 Elimelech et al. N/A N/A N/A 11996670 12/2023 Elimelech et al. N/A N/A N/A 11996060 12/2023 Elimelech et al. N/A N/A N/A 11996060 12/2023 Elimelech et al. N/A N/A N/A 11996060 12/2023 Elimelech et al. N/A N/A 11996060 12/2023 Elimelech et al. N/	11644675	12/2022	Manly et al.	N/A	N/A
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11983824	12/2023	Avisar et al.	N/A	N/A
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12010285	12/2023	Quiles Casas	N/A	N/A
12014497	12/2023	Hong et al.	N/A	N/A
12019314	12/2023	Steines et al.	N/A	N/A
12026897	12/2023	Frantz et al.	N/A	N/A
12033322	12/2023	Laaksonen et al.	N/A	N/A
12044856	12/2023	Gera et al.	N/A	N/A
12044858	12/2023	Gera et al.	N/A	N/A
12053247	12/2023	Chiou	N/A	G06F
12056920	12/2023	Cvetko et al.	N/A	3/011 N/A
12056830 12059281	12/2023	Weingarten et al.	N/A N/A	N/A N/A
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12009255	12/2023		N/A	N/A
12076136	12/2023	Geiger et al. Elimelech et al.	N/A N/A	N/A N/A
12070190	12/2023	Ben-Yishai et al.	N/A	N/A
12079303	12/2023	Grady et al.	N/A	N/A
12112403	12/2023	Seo et al.	N/A	N/A N/A
12114933	12/2023	Dulin et al.	N/A	N/A
12113020	12/2023	Qian et al.	N/A	N/A N/A
12127600	12/2023	Calloway et al.	N/A	N/A N/A
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12178666	12/2023	Wolf et al.	N/A	N/A
12176000	12/2023	Gera et al.	N/A	N/A
12201384	12/2024	Wolf et al.	N/A	N/A
12201304	12/2024	Benishti et al.	N/A	N/A
12239385	12/2024	Wolf et al.	N/A	N/A
2002/0082498	12/2024	Wendt et al.	N/A	N/A
2002/0052430	12/2001	Abovitz et al.	N/A	N/A
2003/0033037	12/2002	Sauer et al.	N/A	N/A
2003/0117535	12/2002	Seeley et al.	N/A	N/A
2003/0156144	12/2002	Morita	N/A	N/A
2003/0210812	12/2002	Khamene et al.	N/A	N/A
2003/0210312	12/2002	Rossner et al.	N/A	N/A
2004/0019263	12/2003	Jutras et al.	N/A	N/A
2004/0030237	12/2003	Lee et al.	N/A	N/A
2004/0138556	12/2003	Cosman	N/A	N/A
2004/0152955	12/2003	McGinley et al.	N/A	N/A
2004/0171930	12/2003	Grimm et al.	N/A	N/A
2004/0238732	12/2003	State et al.	N/A	N/A
2005/0017972	12/2004	Poole et al.	N/A	N/A
2005/0017572	12/2004	Teiwes et al.	N/A	N/A
2005/0119639	12/2004	McCombs et al.	N/A	N/A
2005/0154296	12/2004	Lechner et al.	N/A	N/A
2005/0203367	12/2004	Ahmed et al.	N/A	N/A
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2005/0203380	12/2004	Sauer et al.	N/A	N/A
2005/0215879	12/2004	Chuanggui	N/A	N/A
2005/0267358	12/2004	Tuma et al.	N/A	N/A
2006/0072124	12/2005	Smetak et al.	N/A	N/A
2006/0134198	12/2005	Tawa et al.	N/A	N/A
2006/0147100	12/2005	Fitzpatrick	N/A	N/A
2006/0176242	12/2005	Jaramaz et al.	N/A	N/A
2006/0241760	12/2005	Randall et al.	N/A	N/A
2007/0018975	12/2006	Chuanggui et al.	N/A	N/A
2007/0058261	12/2006	Sugihara et al.	N/A	N/A
2007/0100325	12/2006	Jutras et al.	N/A	N/A
2007/0183041	12/2006	McCloy et al.	N/A	N/A
2007/0233371	12/2006	Stoschek et al.	N/A	N/A
2007/0273610	12/2006	Baillot	N/A	N/A
2008/0002809	12/2007	Bodduluri	N/A	N/A
2008/0007645	12/2007	McCutchen	N/A	N/A
2008/0035266	12/2007	Danziger	N/A	N/A
2008/0085033	12/2007	Haven et al.	N/A	N/A
2008/0159612	12/2007	Fu et al.	N/A	N/A
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2008/0262812	12/2007	Arata et al.	N/A	N/A
2008/0287728	12/2007	Mostafavi et al.	N/A	N/A
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2009/0300540	12/2008	Russell	N/A	N/A
2010/0076305	12/2009	Maier-Hein et al.	N/A	N/A
2010/0094308	12/2009	Tatsumi et al.	N/A	N/A
2010/0106010	12/2009	Rubner et al.	N/A	N/A
2010/0114110	12/2009	Taft et al.	N/A	N/A
2010/0138939	12/2009	Bentzon et al.	N/A	N/A
2010/0149073	12/2009	Chaum et al.	N/A	N/A
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2010/0266220	12/2009	Zagorchev et al.	N/A	N/A
2010/0274124	12/2009	Jascob et al.	N/A	N/A
2011/0004259	12/2010	Stallings et al.	N/A	N/A
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2011/0105895	12/2010	Kornblau et al.	N/A	N/A
2011/0125159	12/2010	Hanson et al.	N/A	N/A
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2011/0245625	12/2010	Trovato et al.	N/A	N/A
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2012/0201421	12/2011	Hartmann et al.	N/A	N/A
2012/0216411	12/2011	Wevers et al.	N/A	N/A
2012/0224260	12/2011	Healy et al.	N/A	N/A
2012/0238609	12/2011	Srivastava et al.	N/A	N/A
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2012/0289777	12/2011	Chopra et al.	N/A	N/A
2012/0306850	12/2011	Balan et al.	N/A	N/A
2012/0320100	12/2011	Machida et al.	N/A	N/A
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2013/0009853	12/2012	Hesselink et al.	N/A	N/A
2013/0038632	12/2012	Dillavou et al.	N/A	N/A
2013/0050258	12/2012	Liu et al.	N/A	N/A
2013/0050833	12/2012	Lewis et al.	N/A	N/A
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2013/0190602	12/2012	Liao et al.	N/A	N/A
2013/0195338	12/2012	Xu et al.	N/A	N/A
2013/0209953	12/2012	Arlinsky et al.	N/A	N/A
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2013/0300637	12/2012	Smits et al.	N/A	N/A
2013/0300760	12/2012	Sugano et al.	N/A	N/A
2013/0342571	12/2012	Kinnebrew et al.	N/A	N/A
2013/0345718 2014/0031668	12/2012 12/2013	Crawford et al. Mobasser et al.	N/A N/A	N/A
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2014/0114173	12/2013	Bar-Tal et al.	N/A	N/A
2014/0142426	12/2013	Razzaque et al.	N/A	N/A
2014/0168261	12/2013	Margolis et al.	N/A	N/A
2014/0176661	12/2013	Smurro et al.	N/A	N/A
2014/0177023	12/2013	Gao et al.	N/A	N/A
2014/0189508	12/2013	Granchi et al.	N/A	N/A
2014/0198129	12/2013	Liu et al.	N/A	N/A
2014/0218291	12/2013	Kirk	N/A	N/A
2014/0240484	12/2013	Kodama et al.	N/A	N/A
2014/0243614	12/2013	Rothberg et al.	N/A	N/A
2014/0256429	12/2013	Kobayashi et al.	N/A	N/A
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2014/0275760	12/2013	Lee et al.	N/A	N/A
2014/0285404	12/2013	Takano et al.	N/A	N/A
2014/0285429	12/2013	Simmons	N/A	N/A
2014/0288413	12/2013	Hwang et al.	N/A	N/A
2014/0300632	12/2013	Laor	N/A	N/A
2014/0300967	12/2013	Tilleman et al.	N/A	N/A
2014/0301624	12/2013	Barckow et al.	N/A	N/A
2014/0303491	12/2013	Shekhar et al.	N/A	N/A
2014/0320399	12/2013	Kim et al.	N/A	N/A
2014/0333899	12/2013	Smithwick	N/A	N/A
2014/0336461	12/2013	Reiter et al.	N/A	N/A
2014/0340286	12/2013	Machida et al.	N/A	N/A
2014/0361956	12/2013	Mikhailov et al.	N/A	N/A
2014/0371728	12/2013	Vaughn	N/A	N/A
2015/0005772	12/2014	Anglin et al.	N/A	N/A
2015/0018672	12/2014	Blumhofer et al.	N/A	N/A
2015/0031985	12/2014	Reddy et al.	N/A	N/A
2015/0043798	12/2014	Carrell et al.	N/A	N/A
2015/0070347	12/2014	Hofmann et al.	N/A	N/A
2015/0084990	12/2014	Laor	N/A	N/A
2015/0148847	12/2014	Moskowitz et al.	N/A	N/A
2015/0150641	12/2014	Daon et al.	N/A	N/A
2015/0182293	12/2014	Yang et al.	N/A	N/A
2015/0192776	12/2014	Lee et al.	N/A	N/A
2015/0209119	12/2014	Theodore et al.	N/A	N/A
2015/0230873	12/2014	Kubiak et al.	N/A	N/A
2015/0230893	12/2014	Huwais	N/A	N/A
2015/0261922	12/2014	Nawana et al.	N/A	N/A
2015/0277123	12/2014	Chaum et al.	N/A	N/A
2015/0282735	12/2014	Rossner	N/A	N/A
2015/0287188	12/2014	Gazit et al.	N/A	N/A

2015/0287236	12/2014	Winne et al.	N/A	N/A
2015/0297314	12/2014	Fowler et al.	N/A	N/A
2015/0305828	12/2014	Park et al.	N/A	N/A
2015/0310668	12/2014	Ellerbrock	N/A	N/A
2015/0338652	12/2014	Lim et al.	N/A	N/A
2015/0338653	12/2014	Subramaniam et al.	N/A	N/A
2015/0350517	12/2014	Duret et al.	N/A	N/A
2015/0351863	12/2014	Plassky et al.	N/A	N/A
2015/0363978	12/2014	Maimone et al.	N/A	N/A
2015/0366620	12/2014	Cameron et al.	N/A	N/A
2016/0015878	12/2015	Graham et al.	N/A	N/A
2016/0022287	12/2015	Nehls	N/A	N/A
2016/0030131	12/2015	Yang et al.	N/A	N/A
2016/0054571	12/2015	Tazbaz et al.	N/A	N/A
2016/0086380	12/2015	Vayser et al.	N/A	N/A
2016/0103318	12/2015	Du et al.	N/A	N/A
2016/0125603	12/2015	Tanji	N/A	N/A
2016/0133051	12/2015	Aonuma et al.	N/A	N/A
2016/0143699	12/2015	Tanji	N/A	N/A
2016/0153004	12/2015	Zhang et al.	N/A	N/A
2016/0163045	12/2015	Penney et al.	N/A	N/A
2016/0175064	12/2015	Steinle et al.	N/A	N/A
2016/0178910	12/2015	Giudicelli et al.	N/A	N/A
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2016/0223822	12/2015	Harrison et al.	N/A	N/A
2016/0228033	12/2015	Rossner	N/A	N/A
2016/0246059	12/2015	Halpin et al.	N/A	N/A
2016/0249989	12/2015	Devam et al.	N/A	N/A
2016/0256223	12/2015	Haimerl et al.	N/A	N/A
2016/0275684	12/2015	Elenbaas et al.	N/A	N/A
2016/0297315	12/2015	Gonzalez et al.	N/A	N/A
2016/0302870	12/2015	Wilkinson et al.	N/A	N/A
2016/0324580	12/2015	Esterberg	N/A	N/A
2016/0324583	12/2015	Kheradpir et al.	N/A	N/A
2016/0339337	12/2015	Ellsworth et al.	N/A	N/A
2017/0014119	12/2016	Capote et al.	N/A	N/A
2017/0024634	12/2016	Miao et al.	N/A	N/A
2017/0027650	12/2016	Merck et al.	N/A	N/A
2017/0031163	12/2016	Gao et al.	N/A	N/A
2017/0031179	12/2016	Guillot et al.	N/A	N/A
2017/0045742	12/2016	Greenhalgh et al.	N/A	N/A
2017/0065364	12/2016	Schuh et al.	N/A	N/A
2017/0068119	12/2016	Antaki et al.	N/A	N/A
2017/0076501	12/2016	Jagga et al.	N/A	N/A
2017/0086941	12/2016	Marti et al.	N/A	N/A
2017/0112586	12/2016	Dhupar	N/A	N/A
2017/0164919	12/2016	Lavallee et al.	N/A	N/A
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2017/0172755	12/2016	Suh et al.	N/A	N/A
2017/0178375	12/2016	Benishti et al.	N/A	N/A

2017/0239015 12/2016 Sela et al. N/A N/A 2017/0251904 12/2016 Crawford et al. N/A N/A N/A 2017/0251909 12/2016 Yang et al. N/A N/A N/A 2017/025526 12/2016 Yang et al. N/A N/A N/A 2017/025826 12/2016 Lang N/A N/A N/A 2017/025826 12/2016 Lang N/A N/A N/A 2017/0281283 12/2016 Amanatullah et al. N/A N/A N/A 2017/0312032 12/2016 Han et al. N/A N/A N/A 2017/032950 12/2016 Salcedo et al. N/A N/A N/A 2017/0348055 12/2016 Joshi et al. N/A N/A N/A 2017/0348061 12/2016 Joshi et al. N/A N/A N/A 2017/0366773 12/2016 Mahfouz N/A N/A N/A 2017/0367766 12/2016 Mahfouz N/A N/A N/A 2017/0367771 12/2016 Tako et al. N/A N/A N/A 2018/003981 12/2017 Urey N/A N/A N/A 2018/003981 12/2017 Guoyi N/A N/A C067T/80 2018/0021597 12/2017 Berlinger et al. N/A N/A 2018/003684 12/2017 Barnes et al. N/A N/A N/A 2018/003684 12/2017 Daon et al. N/A N/A N/A 2018/003684 12/2017 Daon et al. N/A N/A N/A 2018/0078316 12/2017 Schaewe et al. N/A N/A N/A 2018/0078316 12/2017 Schaewe et al. N/A N/A N/A 2018/0092667 12/2017 Heigl et al. N/A N/A N/A 2018/0092669 12/2017 Garcia et al. N/A N/A N/A 2018/0153201 12/2017 Garcia et al. N/A N/A N/A 2018/0153007 12/2017 Garcia et al. N/A	2017/0220224	12/2016	Kodali et al.	N/A	N/A
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2017/0252109	2017/0245944	12/2016	Crawford et al.	N/A	
2017/0258526	2017/0251900	12/2016	Hansen et al.	N/A	N/A
2017/0258526	2017/0252109	12/2016	Yang et al.	N/A	N/A
2017/0312032	2017/0258526	12/2016	•	N/A	N/A
2017/0322950 12/2016	2017/0281283	12/2016	Siegler et al.	N/A	N/A
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2017/0367771 12/2016 Tako et al. N/A N/A 2018/0003981 12/2017 Urey N/A N/A 2018/0018791 12/2017 Urey N/A N/A 2018/0021597 12/2017 Berlinger et al. N/A N/A 2018/0028266 12/2017 Barnes et al. N/A N/A 2018/0036884 12/2017 Chen et al. N/A N/A 2018/0049622 12/2017 Daon et al. N/A N/A 2018/0049622 12/2017 Schaewe et al. N/A N/A 2018/0078316 12/2017 Schaewe et al. N/A N/A 2018/0082480 12/2017 Heigl et al. N/A N/A 2018/0082698 12/2017 Chopra et al. N/A N/A	2017/0366773	12/2016	Kiraly et al.	N/A	N/A
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2019/0038365	12/2018	Soper et al.	N/A	N/A
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2019/0080515	12/2018	Geri et al.	N/A	N/A
2019/0105116	12/2018	Johnson et al.	N/A	N/A
2019/0130792	12/2018	Rios et al.	N/A	N/A
2019/0142519	12/2018	Siemionow et al.	N/A	N/A
2019/0144443	12/2018	Jackson et al.	N/A	N/A
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2019/0200894	12/2018	Jung et al.	N/A	N/A
2019/0201106	12/2018	Siemionow et al.	N/A	N/A
2019/0205606	12/2018	Zhou et al.	N/A	N/A
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2020/0229877	12/2019	Siemionow et al.	N/A	N/A
2020/0237256	12/2019	Farshad et al.	N/A	N/A
2020/0237459	12/2019	Racheli et al.	N/A	N/A
2020/0237880	12/2019	Kent et al.	N/A	N/A
2020/0242280	12/2019	Pavloff et al.	N/A	N/A
2020/0246074	12/2019	Ang	N/A	N/A
2020/0246081	12/2019	Johnson et al.	N/A	N/A
2020/0264451	12/2019	Blum et al.	N/A	N/A
2020/0265273	12/2019	Wei et al.	N/A	N/A
2020/0275988	12/2019	Johnson et al.	N/A	N/A
2020/0281554	12/2019	Trini et al.	N/A	N/A
2020/0286222	12/2019	Essenreiter et al.	N/A	N/A
2020/0288075	12/2019	Bonin et al.	N/A	N/A
2020/0294233	12/2019	Merlet	N/A	N/A
2020/0297427	12/2019	Cameron et al.	N/A	N/A
2020/0305980	12/2019	Lang	N/A	N/A
2020/0315734	12/2019	El Amm	N/A	N/A
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2020/0323460	12/2019	Busza et al.	N/A	N/A
2020/0323609	12/2019	Johnson et al.	N/A	N/A
2020/0327721	12/2019	Siemionow et al.	N/A	N/A
2020/0330179	12/2019	Ton	N/A	N/A
2020/0337780	12/2019	Winkler et al.	N/A	N/A
2020/0341283	12/2019	McCracken et al.	N/A	N/A
2020/0352655	12/2019	Freese	N/A	N/A
2020/0355927	12/2019	Marcellin-Dibon et al.	N/A	N/A
2020/0360091	12/2019	Murray et al.	N/A	N/A
2020/0360105	12/2019	Frey et al.	N/A	N/A
2020/0375666	12/2019	Stephen	N/A	N/A
2020/0377493	12/2019	Heiser et al.	N/A	N/A
2020/0377956	12/2019	Vogelstein et al.	N/A	N/A
2020/0388075	12/2019	Kazanzides	N/A	A61B
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2024/0307101 12/2023 Gera et al. N/A N/A 2024/0312012 12/2023 Li et al. N/A N/A 2024/0341853 12/2023 Gibby et al. N/A N/A 2024/0341861 12/2023 Wolf et al. N/A N/A 2024/0341910 12/2023 Wolf et al. N/A N/A 2024/0341911 12/2023 Elimelech et al. N/A N/A 2024/0355098 12/2023 Liu et al. N/A N/A 2024/0374314 12/2023 Frey et al. N/A N/A 2024/0377640 12/2023 Asaban et al. N/A N/A		12/2023	Nett et al.		N/A
2024/0312012 12/2023 Li et al. N/A N/A 2024/0341853 12/2023 Gibby et al. N/A N/A 2024/0341861 12/2023 Wolf et al. N/A N/A 2024/0341910 12/2023 Wolf et al. N/A N/A 2024/0341911 12/2023 Elimelech et al. N/A N/A 2024/0355098 12/2023 Liu et al. N/A N/A 2024/0374314 12/2023 Frey et al. N/A N/A 2024/0377640 12/2023 Asaban et al. N/A N/A					
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2024/0341861 12/2023 Wolf et al. N/A N/A 2024/0341910 12/2023 Wolf et al. N/A N/A 2024/0341911 12/2023 Elimelech et al. N/A N/A 2024/0355098 12/2023 Liu et al. N/A N/A 2024/0374314 12/2023 Frey et al. N/A N/A 2024/0377640 12/2023 Asaban et al. N/A N/A					
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2024/0377640 12/2023 Asaban et al. N/A N/A					
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2024/0378708 12/2023 Kim et al. N/A N/A					
	2024/0378708	12/2023	Kim et al.	N/A	N/A

2024/0382283	12/2023	Kuhnert et al.	N/A	N/A
2024/0386572	12/2023	Barasofsky et al.	N/A	N/A
2024/0386682	12/2023	Cvetko et al.	N/A	N/A
2024/0394883	12/2023	Liao et al.	N/A	N/A
2024/0394985	12/2023	Hanlon et al.	N/A	N/A
2024/0404065	12/2023	Gibbons et al.	N/A	N/A
2024/0404106	12/2023	Wu et al.	N/A	N/A
2024/0420337	12/2023	Li et al.	N/A	N/A
2024/0420592	12/2023	Stone et al.	N/A	N/A
2024/0423724	12/2023	Wolf et al.	N/A	N/A
2024/0423750	12/2023	Elimelech et al.	N/A	N/A
2025/0020931	12/2024	Gera et al.	N/A	N/A
2025/0049534	12/2024	Elimelech et al.	N/A	N/A

FOREIGN PATENT DOCUMENTS Application

Patent No.	Application Date	Country	CPC
3022448	12/2017	CA	N/A
3034314	12/2017	CA	N/A
101379412	12/2008	CN	N/A
102740784	12/2011	CN	N/A
102740789	12/2011	CN	N/A
103106348	12/2012	CN	N/A
103945780	12/2013	CN	N/A
105310756	12/2015	CN	N/A
109199563	12/2018	CN	N/A
111915696	12/2019	CN	N/A
112489047	12/2020	CN	N/A
202004011567	12/2003	DE	N/A
102004011567	12/2004	DE	N/A
102014008153	12/2013	DE	N/A
202022103168	12/2021	DE	N/A
0933096	12/1998	EP	N/A
1640750	12/2005	EP	N/A
1757974	12/2006	EP	N/A
2119397	12/2008	EP	N/A
2134847	12/2008	EP	N/A
2557998	12/2012	EP	N/A
2823463	12/2014	EP	N/A
2868277	12/2014	EP	N/A
2891966	12/2014	EP	N/A
2963616	12/2015	EP	N/A
3028258	12/2015	EP	N/A
3034607	12/2015	EP	N/A
3037038	12/2015	EP	N/A
3069318	12/2015	EP	N/A
3076660	12/2015	EP	N/A
3121789	12/2016	EP	N/A
3123970	12/2016	EP	N/A
2654749	12/2016	EP	N/A

3175815	12/2016	EP	N/A
3216416	12/2016	EP	N/A
2032039	12/2016	EP	N/A
3224376	12/2016	EP	N/A
3247297	12/2016	EP	N/A
3256213	12/2016	EP	N/A
3306567	12/2017	EP	N/A
3320874	12/2017	EP	N/A
2030193	12/2017	EP	N/A
2225723	12/2018	EP	N/A
2619622	12/2018	EP	N/A
2892558	12/2018	EP	N/A
3494903	12/2018	EP	N/A
2635299	12/2018	EP	N/A
3505050	12/2018	EP	N/A
2875149	12/2018	EP	N/A
3593227	12/2019	EP	N/A
3634294	12/2019	EP	N/A
3206583	12/2019	EP	N/A
3711700	12/2019	EP	N/A
2625845	12/2020	EP	N/A
3789965	12/2020	EP	N/A
3858280	12/2020	EP	N/A
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4287120	12/2022	EP	N/A
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3814984	12/2023	EP	N/A
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3752981	12/2023	EP	N/A
4375948	12/2023	EP	N/A
4383203	12/2023	EP	N/A
4459543	12/2023	EP	N/A
4292045	12/2023	EP	N/A
4298604	12/2023	EP	N/A
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262864	12/2018	IL	N/A
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2008-507361 12/2008 JP N/A 2009-514571 12/2008 JP N/A 2021-525186 12/2020 JP N/A 10-2014-0120155 12/2002 WO N/A 2006/002559 12/2005 WO N/A 2006/002559 12/2006 WO N/A 2007/115826 12/2006 WO N/A 2008/103383 12/2007 WO N/A 2010/067267 12/2009 WO N/A 2010/067267 12/2009 WO N/A 2012/061537 12/2011 WO N/A 2012/101286 12/2011 WO N/A 2014/01448 12/2012 WO N/A 2014/024188 12/2013 WO N/A 2014/024188 12/2013 WO N/A 2014/125789 12/2013 WO N/A 2014/125789 12/2013 WO N/A 2014/167563 12/2014 WO N/A	2005-246059	12/2004	JP	N/A
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2023/047355 12/2022 WO N/A 2023/072887 12/2022 WO N/A 2023/088986 12/2022 WO N/A 2023/158878 12/2022 WO N/A 2023/159104 12/2022 WO N/A 2023/161848 12/2022 WO N/A 2023/163933 12/2022 WO N/A 2023/175244 12/2022 WO N/A 2023/186996 12/2022 WO N/A 2023/202909 12/2022 WO N/A 2023/205212 12/2022 WO N/A 2023/205896 12/2022 WO N/A 2023/209014 12/2022 WO N/A 2023/229415 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/018368 12/2023 WO N/A	2023/021451	12/2022	WO	N/A
2023/072887 12/2022 WO N/A 2023/088986 12/2022 WO N/A 2023/158878 12/2022 WO N/A 2023/159104 12/2022 WO N/A 2023/161848 12/2022 WO N/A 2023/163933 12/2022 WO N/A 2023/175244 12/2022 WO N/A 2023/186996 12/2022 WO N/A 2023/2025099 12/2022 WO N/A 2023/205212 12/2022 WO N/A 2023/205896 12/2022 WO N/A 2023/229415 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/00140 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/046760 12/2023 WO N/A 2024/052136 12/2023 WO N/A	2023/026229	12/2022	WO	N/A
2023/088986 12/2022 WO N/A 2023/158878 12/2022 WO N/A 2023/159104 12/2022 WO N/A 2023/161848 12/2022 WO N/A 2023/163933 12/2022 WO N/A 2023/175244 12/2022 WO N/A 2023/186996 12/2022 WO N/A 2023/202909 12/2022 WO N/A 2023/205212 12/2022 WO N/A 2023/205896 12/2022 WO N/A 2023/229415 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/047355	12/2022	WO	N/A
2023/158878 12/2022 WO N/A 2023/159104 12/2022 WO N/A 2023/161848 12/2022 WO N/A 2023/163933 12/2022 WO N/A 2023/175244 12/2022 WO N/A 2023/208696 12/2022 WO N/A 2023/205212 12/2022 WO N/A 2023/205896 12/2022 WO N/A 2023/209014 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/072887	12/2022	WO	N/A
2023/159104 12/2022 WO N/A 2023/161848 12/2022 WO N/A 2023/163933 12/2022 WO N/A 2023/175244 12/2022 WO N/A 2023/186996 12/2022 WO N/A 2023/202909 12/2022 WO N/A 2023/205212 12/2022 WO N/A 2023/205896 12/2022 WO N/A 2023/209014 12/2022 WO N/A 2023/229415 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/088986	12/2022	WO	N/A
2023/161848 12/2022 WO N/A 2023/163933 12/2022 WO N/A 2023/175244 12/2022 WO N/A 2023/186996 12/2022 WO N/A 2023/202909 12/2022 WO N/A 2023/205212 12/2022 WO N/A 2023/205896 12/2022 WO N/A 2023/209014 12/2022 WO N/A 2023/229415 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/158878	12/2022	WO	N/A
2023/163933 12/2022 WO N/A 2023/175244 12/2022 WO N/A 2023/186996 12/2022 WO N/A 2023/202909 12/2022 WO N/A 2023/205212 12/2022 WO N/A 2023/205896 12/2022 WO N/A 2023/209014 12/2022 WO N/A 2023/229415 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/046760 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/159104	12/2022	WO	N/A
2023/175244 12/2022 WO N/A 2023/186996 12/2022 WO N/A 2023/202909 12/2022 WO N/A 2023/205212 12/2022 WO N/A 2023/205896 12/2022 WO N/A 2023/209014 12/2022 WO N/A 2023/229415 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/161848	12/2022	WO	N/A
2023/186996 12/2022 WO N/A 2023/202909 12/2022 WO N/A 2023/205212 12/2022 WO N/A 2023/205896 12/2022 WO N/A 2023/209014 12/2022 WO N/A 2023/229415 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/163933	12/2022	WO	N/A
2023/202909 12/2022 WO N/A 2023/205212 12/2022 WO N/A 2023/205896 12/2022 WO N/A 2023/209014 12/2022 WO N/A 2023/229415 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/175244	12/2022	WO	N/A
2023/205212 12/2022 WO N/A 2023/205896 12/2022 WO N/A 2023/209014 12/2022 WO N/A 2023/229415 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/046760 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/186996	12/2022	WO	N/A
2023/205896 12/2022 WO N/A 2023/209014 12/2022 WO N/A 2023/229415 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/046760 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/202909	12/2022	WO	N/A
2023/209014 12/2022 WO N/A 2023/229415 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/046760 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/205212	12/2022	WO	N/A
2023/229415 12/2022 WO N/A 2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/046760 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/205896	12/2022	WO	N/A
2023/232492 12/2022 WO N/A 2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/046760 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/209014	12/2022	WO	N/A
2023/240912 12/2022 WO N/A 2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/046760 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/229415	12/2022	WO	N/A
2024/001140 12/2023 WO N/A 2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/046760 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/232492	12/2022	WO	N/A
2024/002620 12/2023 WO N/A 2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/046760 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2023/240912	12/2022	WO	N/A
2024/013642 12/2023 WO N/A 2024/018368 12/2023 WO N/A 2024/046760 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2024/001140	12/2023	WO	N/A
2024/018368 12/2023 WO N/A 2024/046760 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2024/002620	12/2023	WO	N/A
2024/046760 12/2023 WO N/A 2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2024/013642	12/2023	WO	N/A
2024/052136 12/2023 WO N/A 2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2024/018368	12/2023	WO	N/A
2024/077077 12/2023 WO N/A 2024/121060 12/2023 WO N/A	2024/046760	12/2023	WO	N/A
2024/121060 12/2023 WO N/A	2024/052136	12/2023	WO	N/A
	2024/077077	12/2023	WO	N/A
2024/132609 12/2023 WO N/A		12/2023	WO	N/A
	2024/132609	12/2023	WO	N/A

2024/145341	12/2023	WO	N/A
2024/160896	12/2023	WO	N/A
2024/165508	12/2023	WO	N/A
2024/173251	12/2023	WO	N/A
2024/186811	12/2023	WO	N/A
2024/226797	12/2023	WO	N/A
2024/251344	12/2023	WO	N/A

OTHER PUBLICATIONS

- U.S. Appl. No. 18/780,095, filed Jul. 22, 2024, Mirroring in Image Guided Surgery. cited by applicant
- U.S. Appl. No. 16/200,144, filed Nov. 26, 2018, now U.S. Pat. No. 11,766,296, Sep. 26, 2023, Tracking Systen for Image-Guided Surgery. cited by applicant
- U.S. Appl. No. 18/470,809, filed Sep. 20, 2023, now U.S. Pat. No. 11,980,429, May 14, 2024, Tracking Methods for Image-Guided Surgery. cited by applicant
- U.S. Appl. No. 18/631,877, filed Apr. 10, 2024, Tracking Systems and Methods for Image-Guided Surgery. cited by applicant
- U.S. Appl. No. 17/015,199, filed Sep. 9, 2020, Universal Tool Adapter. cited by applicant
- U.S. Appl. No. 18/598,965, filed Mar. 7, 2024, Universal Tool Adapter for Image Guided Surgery. cited by applicant
- U.S. Appl. No. 18/044,380, filed Mar. 8, 2023, Universal Tool Adapter for Image-Guided Surgery. cited by applicant
- U.S. Appl. No. 16/901,026, filed Jun. 15, 2020, now U.S. Pat. No. 11,389,252, Jul. 19, 2022, Rotating Marker for Image Guided Surgery. cited by applicant
- U.S. Appl. No. 18/008,980, filed Dec. 8, 2022, Rotating Marker. cited by applicant
- U.S. Appl. No. 17/368,859, filed Jul. 7, 2021, now U.S. Pat. No. 11,896,445, Feb. 13, 2024, Iliac Pin and Adapter. cited by applicant
- U.S. Appl. No. 18/437,898, filed Feb. 9, 2024, Iliac Pin and Adapter. cited by applicant
- U.S. Appl. No. 18/576,516, filed Jan. 4, 2024, Iliac Pin and Adapter. cited by applicant
- U.S. Appl. No. 17/388,064, filed Jul. 29, 2021, Rotating Marker and Adapter for Image-Guided Surgery. cited by applicant
- U.S. Appl. No. 18/291,731, filed Jan. 24, 2024, Rotating Marker and Adapter for Image-Guided Surgery. cited by applicant
- U.S. Appl. No. 18/930,558, filed Oct. 29, 2024, Rotating Marker and Adapter for Image-Guided Surgery. cited by applicant
- U.S. Appl. No. 18/365,844, filed Aug. 4, 2023, Augmented-Reality Surgical System Using Depth Sensing. cited by applicant
- U.S. Appl. No. 18/683,676, filed Feb. 14, 2024, Stereoscopic Display and Digital Loupe for Augemented-Reality Near-Eye Display. cited by applicant
- U.S. Appl. No. 18/683,680, filed Feb. 14, 2024, Augmented-Reality Assistance for Osteotomy and Discectomy. cited by applicant
- U.S. Appl. No. 18/684,756, filed Feb. 19, 2024, Registration and Registration Validation in Image-Guided Surgery. cited by applicant
- U.S. Appl. No. 18/693,338, filed Mar. 19, 2024, Surgical Planning and Display. cited by applicant U.S. Appl. No. 18/365,566, filed Aug. 4, 2023, Systems for Medical Image Visualization. cited by applicant
- U.S. Appl. No. 18/399,253, filed Dec. 28, 2023, Methods for Medical Image Visualization. cited by applicant
- U.S. Appl. No. 18/857,558, filed Oct. 17, 2024, Reduction of Jitter in Virtual Presentation. cited by applicant

- U.S. Appl. No. 18/398,837, filed Dec. 28, 2023, now U.S. Pat. No. 12,044,858, Jul. 23, 2024, Adjustable Augmented Reality Eyewear for Image-Guided Medical Intervention. cited by applicant U.S. Appl. No. 18/399,433, filed Dec. 28, 2023, now U.S. Pat. No. 12,044,856, Jul. 23, 2024, Configurable Augmented Reality Eyewear for Image-Guided Medical Intervention. cited by applicant
- U.S. Appl. No. 18/772,578, filed Jul. 15, 2024, Augmented Reality Eyewear for Image-Guided Medical Intervention. cited by applicant
- U.S. Appl. No. 35/508,942, filed Feb. 13, 2020, now U.S. Pat. No. D. 930,162, Sep. 7, 2021, Medical Headset. cited by applicant
- U.S. Appl. No. 15/896,102, filed Feb. 14, 2018, now U.S. Pat. No. 10,134,166, Nov. 20, 2018, Combining Video-Based and Optic-Based Augmented Reality in a Near Eye Display. cited by applicant
- U.S. Appl. No. 16/159,740, filed Oct. 15, 2018, now U.S. Pat. No. 10,382,748, Aug. 13, 2019, Combining Video-Based and Optic-Based Augmented Reality in a Near Eye Display. cited by applicant
- U.S. Appl. No. 16/419,023, filed May 22, 2019, now U.S. Pat. No. 11,750,794, Sep. 5, 2023, Combining Video-Based and Optic-Based Augmented Reality in a Near Eye Display. cited by applicant
- U.S. Appl. No. 18/352,158, filed Jul. 13, 2023, Combining Video-Based and Optic-Based Augmented Reality in a Near Eye Display. cited by applicant
- U.S. Appl. No. 18/365,643, filed Aug. 4, 2023, now U.S. Pat. No. 12,069,233, Aug. 20, 2024, Head-Mounted Augmented Reality Near Eye Display Device. cited by applicant
- U.S. Appl. No. 18/365,650, filed Aug. 4, 2023, now U.S. Pat. No. 12,063,345, Aug. 13, 2024, Systems for Facilitating Augmented Reality-Assisted Medical Procedures. cited by applicant U.S. Appl. No. 15/127,423, filed Sep. 20, 2016, now U.S. Pat. No. 9,928,629, Mar. 27, 2018, Combining Video-Based and Optic-Based Augmented Reality in a Near Eye Display. cited by applicant
- U.S. Appl. No. 16/120,480, filed Sep. 4, 2018, now U.S. Pat. No. 10,835,296, Nov. 17, 2020, Spinous Process Clamp. cited by applicant
- U.S. Appl. No. 17/067,831, filed Oct. 12, 2020, Spinous Process Clamp. cited by applicant
- U.S. Appl. No. 18/030,072, filed Apr. 4, 2023, Spinous Process Clamp. cited by applicant
- U.S. Appl. No. 18/365,590, filed Aug. 4, 2023, now U.S. Pat. No. 11,980,508, May 14, 2024,
- Registration of a Fiducial Marker for an Augmented Reality System. cited by applicant
- U.S. Appl. No. 18/365,571, filed Aug. 4, 2023, now U.S. Pat. No. 11,974,887, May 7, 2024, Registration Marker for an Augmented Reality System. cited by applicant
- U.S. Appl. No. 18/632,588, filed Apr. 11, 2024, Registration of a Fiducial Marker for an Augmented Reality System. cited by applicant
- U.S. Appl. No. 17/045,766, filed Oct. 7, 2020, now. U.S. Pat. No. 11,980,507, May 14, 2024, Registration of a Fiducial Marker for an Augmented Reality System. cited by applicant U.S. Appl. No. 16/199,281, filed Nov. 26, 2018, now. U.S. Pat. No. 10,939,977, Mar. 9, 2021,
- Positioning Marker. cited by applicant
- U.S. Appl. No. 16/524,258, filed Jul. 29, 2019, now. U.S. Pat. No. 11,980,506, May 14, 2024, Fiducial Marker. cited by applicant
- U.S. Appl. No. 18/631,804, filed Apr. 10, 2024, Fiducial Marker. cited by applicant
- U.S. Appl. No. 17/585,629, filed Jan. 27, 2022, Fiducial Marker. cited by applicant
- U.S. Appl. No. 16/724,297, filed Dec. 22, 2019, now. U.S. Pat. No. 11,382,712, Jul. 12, 2022, Mirroring in Image Guided Surgery. cited by applicant
- U.S. Appl. No. 17/827,710, filed May 29, 2022, now. U.S. Pat. No. 11,801,115, Oct. 31, 2023, Mirroring in Image Guided Surgery. cited by applicant
- U.S. Appl. No. 18/352,181, filed Jul. 13, 2023, Mirroring in Image Guided Surgery. cited by

applicant

U.S. Appl. No. 18/400,739, filed Dec. 29, 2023, now. U.S. Pat. No. 12,076,196, Sep. 3, 2024, Mirroring in Image Guided Surgery. cited by applicant

U.S. Appl. No. 16/200,144, filed Nov. 26, 2018, now U.S. Pat. No. 11,766,296, Sep. 26, 2023, Tracking System for Image-Guided Surgery. cited by applicant

U.S. Appl. No. 18/631,877, filed Apr. 10, 2024, Tracking Systems amd Methods for Image-Guided Surgery. cited by applicant

U.S. Appl. No. 18/683,676, filed Feb. 14, 2024, Stereoscopic Display and Digital Loupe for Augmented-Reality Near-Eye Display. cited by applicant

16 Augmented Reality Glasses of 2021 (with Features), in Back to News, Dated May 6, 2022, accessed at https://web.archive.org/web/20221127195438/https://circuitstream.com/blog/16-augmented-reality-glasses-of-2021-with-features-breakdowns/. cited by applicant

Everysight, Installing your RX Adaptor, accessed Mar. 13, 2024 at

https://support.everysight.com/hc/en-us/articles/115000984571-Installing-your-RX-Adaptor. cited by applicant

Everysight, Raptor User Manual, copyright 2017, in 46 pages. cited by applicant Frames Direct, InSpatialRx Prescription Insert, Prescription Insert for Magic Leap 1, accessed Mar. 8, 2024 at https://www.framesdirect.com/inspatialrx-prescription-insert. html. cited by applicant Reddit, Notice on Prescription Lenses for Nreal Glasses, accessed Mar. 13, 2024 at https://www.reddit.com/r/nreal/comments/x1fte5/notice_on_prescription_lenses_for_nreal_glasses/. cited by applicant

Vuzix Blades, Prescription Lens Installation Guide, copyright 2020. cited by applicant Augmedics Ltd., 510k Clearance Summary for Augmedics' xvision Spine system, dated Dec. 20, 2019 in 11 pages. cited by applicant

Medtronic Navigation, Inc., StealthStation™ S8 System Manual in 82 pages, Revision 2, Copyright 2018. cited by applicant

Novarad Healthcare IT and Imaging, OpenSight English: See 3D Medical Images Using Augmented Reality, dated Mar. 9, 2018, accessed via YouTube on Mar. 11, 2025 at https://www.youtube.com/watch?v=M3yY_b8jT54. cited by applicant

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATION (1) This application is a continuation of U.S. patent application Ser. No. 17/827,710, filed May 29, 2022, which is a continuation of U.S. patent application Ser. No. 16/724,297, filed Dec. 22, 2019 (now U.S. Pat. No. 11,382,712), each of which is incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

(1) This invention relates generally to an augmented reality system, and specifically to correct image projection when it is used in image guided surgery.

BACKGROUND

(2) Correct imaging is important in image guided surgery, and a number of systems are known in the art for producing correct imaging.

- (3) U.S. Pat. Nos. 7,630,753 and 9,757,087, to Simon et al., describe a surgical instrument navigation system that allows a surgeon to invert the three-dimensional perspective of the instrument to match their perspective of the actual instrument.
- (4) U.S. Pat. No. 9,538,962, to Hannaford et al., describes a system for providing networked communications. The system includes a plurality of head-mountable devices, each in communication with a control system via a communication network.
- (5) U.S. Pat. No. 9,710,968, to Dillavou et al., describes a system for role designation with multiple sources.
- (6) U.S. Pat. No. 9,886,552, to Dillavou et al., describes a method for image registration that includes rendering a common field of interest that reflects a presence of a plurality of elements. At least one of the elements is a remote element located remotely from another of the elements.
- (7) U.S. Pat. No. 9,940,750, to Dillavou et al., describes a method for role negotiation that can comprise rendering a common field of interest that reflects a presence of a plurality of elements. At least one of the elements is a remote element located remotely from another of the elements.
- (8) U.S. Pat. No. 9,959,629, to Dillavou et al., describes a method for managing spatiotemporal uncertainty in image processing. The method can comprise determining motion from a first image to a second image.
- (9) U.S. Pat. No. 10,194,131, to Casas, describes a real-time surgery method for displaying a stereoscopic augmented view of a patient from a static or dynamic viewpoint of the surgeon. The method employs real-time three-dimensional surface reconstruction for preoperative and intraoperative image registration.
- (10) US Patent Application 2011/0216060, to Weising et al., describes a method for controlling a view of a virtual scene with a portable device. A signal is received and the portable device is synchronized to make the location of the portable device a reference point in a three-dimensional (3D) space.
- (11) US Patent Application 2017/0027650, to Merck et al., describes receiving data characterizing a mother video feed acquired by an endoscopic video capture device. The mother video feed can be for characterizing an operative field within a patient.
- (12) US Patent Application 2017/0251900, to Hansen et al., describes a depiction system for generating a real time correlated depiction of movements of a surgical tool for uses in minimally invasive surgery.
- (13) US Patent Application 2017/0367771, to Tako et al., describes a virtual reality surgical navigation method that includes a step of receiving data indicative of a surgeon's current head position, including a direction of view and angle of view of the surgeon.
- (14) US Patent Application 2018/0247128, to Alvi et al., describes a system for accessing a surgical dataset including surgical data collected during performance of a surgical procedure. The surgical data can include video data of the surgical procedure.
- (15) Documents incorporated by reference in the present patent application are to be considered an integral part of the application except that, to the extent that any terms are defined in these incorporated documents in a manner that conflicts with definitions made explicitly or implicitly in the present specification, only the definitions in the present specification should be considered. SUMMARY
- (16) An embodiment of the present invention provides an imaging system, consisting of: a head-mounted display configured to be worn by an operator of the system; a marker configured to be attached to a human subject and defining a plane when attached to the human subject, the marker having optically reflective elements disposed on the marker and on opposing sides of the plane in a non-symmetrical arrangement with respect to the plane; a memory configured to store a graphical representation of a tool used in a procedure performed by the operator on the human subject, and an image of anatomy of the human subject; a camera attached to the display and configured to acquire an input image of the marker and of the tool; and a processor configured to analyze the input image

so as to identify the plane and to identify a side of the plane wherein the camera is located, and to render to the display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a point of view in the identified side of the plane.

- (17) In a disclosed embodiment the plane makes an angle between $+20^{\circ}$ and -20° with a sagittal plane of the human subject. Alternatively, the plane makes an angle between $+20^{\circ}$ and -20° with an axial plane of the human subject.
- (18) In a further disclosed embodiment the marker has a two-dimensional surface which makes an angle between $+20^{\circ}$ and -20° with a frontal plane of the human subject.
- (19) In a yet further disclosed embodiment the marker defines a further plane and the optically reflective elements are disposed on opposing sides of the further plane in a non-symmetrical arrangement with respect to the further plane, and the processor is configured to analyze the input image so as to identify the further plane and to identify a side of the further plane wherein the camera is located, and to render to the display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a point of view in the identified side of the further plane. Typically, the plane and the further plane are orthogonal to each other. (20) In an alternative embodiment the camera is located at a vertical height above the marker, and the processor is configured: to ascertain the vertical height in response to the acquired input image of the marker; to calculate a pair of planes, each of the pair having a preset acute angle to the identified plane and defining a first acute-angled wedge region and a second acute-angled wedge region to the identified plane; and when the display moves so that the point of view crosses the first acute-angled wedge region and the second acute-angled wedge region, or begins within the first acute-angled wedge region and crosses the second acute-angled wedge region, while the camera remains at the vertical height, to render to the display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from the point of view of a region opposite the identified side.
- (21) Typically the preset acute angle is less than or equal to 10°.
- (22) In a further alternative embodiment the camera is located at a vertical height above the marker, and the processor is configured: to ascertain the vertical height in response to the acquired input image of the marker; and when the display moves so that the vertical height changes, to render unchanged to the display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon.
- (23) There is further provided, according to an embodiment of the present invention, an imaging system, consisting of: a first head-mounted display configured to be worn by a first operator of the system; a second head-mounted display configured to be worn by a second operator of the system; a marker configured to be attached to a human subject and defining a plane when attached to the human subject, the marker having optically reflective elements disposed on the marker and on opposing sides of the plane in a non-symmetrical arrangement with respect to the plane; a memory configured to store a graphical representation of a tool used in a procedure performed by the first operator on the human subject, and an image of anatomy of the human subject; a first camera attached to the first display and configured to acquire a first input image of the marker and of the tool; a second camera attached to the second display and configured to acquire a second input image of the marker and of the tool; and a processor configured to: analyze the first input image so as to identify the plane and to identify a first side of the plane wherein the first camera is located, and to render to the first display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a first point of view in the identified first side of the plane, and analyze the second input image so as to identify the plane and to identify a second side of the plane wherein the second camera is located, and to render to the second display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a second point of view in the identified second side of the plane.

- (24) There is further provided, according to an embodiment of the present invention, a method, consisting of: providing a head-mounted display configured to be worn by an operator of an imaging system; attaching a marker to a human subject, the marker defining a plane when attached, the marker having optically reflective elements disposed on the marker and on opposing sides of the plane in a non-symmetrical arrangement with respect to the plane; storing in a memory a graphical representation of a tool used in a procedure performed by the operator on the human subject, and storing an image of anatomy of the human subject in the memory; attaching a camera to the display; acquiring an input image of the marker and of the tool with the camera; and analyzing the input image so as to identify the plane and to identify a side of the plane wherein the camera is located, and to render to the display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a point of view in the identified side of the plane.
- (25) The present disclosure will be more fully understood from the following detailed description of the embodiments thereof, taken together with the drawings. A brief description of the drawings follows.

Description

BRIEF DESCRIPTION OF THE DRAWINGS

- (1) FIG. **1** is a schematic illustration of an initial preparatory stage of a medical procedure, according to an embodiment of the present invention;
- (2) FIGS. **2**, **3**, and **4** are schematic depictions of entities used in the initial stage, according to an embodiment of the present invention;
- (3) FIG. **5** is a flowchart of steps performed to register a patient marker with the anatomy of a patient during the initial preparatory stage;
- (4) FIG. **6** is a schematic illustration of a subsequent stage of the procedure, according to an embodiment of the present invention;
- (5) FIG. **7** is a flowchart of steps performed during the subsequent stage, according to an embodiment of the present invention;
- (6) FIG. **8** shows schematic figures illustrating images generated in the subsequent stage, according to an embodiment of the present invention;
- (7) FIG. 9 is a schematic top-down view of a surface of a marker used in the procedure; and
- (8) FIG. **10** is a schematic illustration of the subsequent stage of the procedure when there are two operators for the procedure, according to an embodiment of the present invention.

DETAILED DESCRIPTION OF EMBODIMENTS

Overview

- (9) A head-mounted display, for a medical procedure that implements an imaging system, such as an augmented reality system, in the display, typically needs to access stored computerized tomography (CT) files of the anatomy of a human subject. The display is worn by an operator of the system, and the accessed files are presented to the operator as scanned planes of the subject in the display. However, for the presentation to be correctly oriented, it is necessary to know the position of the operator with respect to the subject.
- (10) Embodiments of the present invention provide an imaging system that determines the operator position automatically, and so displays an image of the patient anatomy, and of a tool used in the procedure, automatically.
- (11) In addition to a head-mounted display (HMD) that is worn by an operator of the system, the system comprises a marker that is attached to the human subject. The marker defines a plane of asymmetry when attached to the human subject, since the marker has optically reflective elements disposed on the marker and on opposing sides of the plane in a non-symmetrical arrangement with

respect to the plane. The plane of asymmetry is typically approximately parallel to one of the main anatomical planes of the human subject.

(12) In the imaging system a memory stores a graphical representation of a tool used in the procedure performed by the operator, and the memory also stores an image of the anatomy of the human subject. A camera is attached to the HMD, and acquires an input image of the marker and of the tool. A processor analyzes the input image so as to identify the plane and to identify a side of the plane wherein the camera is located. The processor then renders to the display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a point of view in the identified side of the plane.

DETAILED DESCRIPTION

- (13) In the following, all directional references (e.g., upper, lower, upward, downward, left, right, top, bottom, above, below, vertical, and horizontal) are only used for identification purposes to aid the reader's understanding of the present invention, and do not create limitations, particularly as to the position, or use of embodiments of the invention.
- (14) In the description, like elements in the drawings are identified by like numerals, and like elements are differentiated as necessary by appending a letter to the identifying numeral.
- (15) Reference is now made to FIGS. **1**, **2**, **3**, and **4**, which are diagrams according to an embodiment of the present invention. FIG. **1** is a schematic illustration of an initial preparatory stage of a medical procedure using an imaging system **20**, and FIGS. **2**, **3**, and **4** are schematic depictions of entities used in the initial stage. The medical procedure exemplified here is performed on the back of a human subject **22**, herein also termed patient **22**, and during the initial stage of the procedure an operator **26** of system also herein termed medical professional **26** makes an incision **24** into the patient's back. The professional inserts a spinous process clamp **30** into the incision, so that opposing jaws of the clamp are located on opposite sides of the spinous processes. The professional then slides the clamp over the vertebral laminas, and adjusts the clamp to grip one or more spinous processes, selected by the professional, of the patient. Clamp **30** is described below with reference to FIG. **4**, and a clamp such as clamp **30** is described in more detail in U.S. Patent Application 2019/0175228 which is incorporated herein by reference.
- (16) Clamp **30** acts as a support for a patient marker **38**, which is attached rigidly to the clamp. During substantially all of the procedure, i.e., during the initial, as well as the subsequent stages, patient marker **38** is used as a fiducial for patient **30**, since because of its rigid connection to the patient, any movement of the patient is reflected in a corresponding motion of the patient marker. In order to operate as such a fiducial, in embodiments of the present invention, in the initial stage of the procedure marker **38** is registered with the anatomy of patient **30**, herein assumed to comprise the skeleton of the patient, as is described herein.
- (17) During the procedure medical professional **26** wears a head-mounted display (HMD) **64** which is configured to present stored images, that are aligned with patient **22**, to professional **26**. HMD **64** is described further below.
- (18) As is also described below, in serving as a fiducial, marker **38** performs two functions: a first function wherein the marker is used to maintain registration between frames of reference of the head-mounted display and the patient's anatomy, and a second function wherein the marker is used to ascertain where the medical professional is located with respect to the patient. Thus, for the second function, the marker provides a location of the medical professional as being on a left side or a right side of the patient, or on an upper side or a lower side of the patient.
- (19) An augmented reality head-mounted display such as HMD **64** is described in more detail in U.S. Patent Application 2017/0178375 which is incorporated herein by reference.
- (20) During the initial stage of the procedure, a registration marker **40** is placed on the patient's back, and is used to implement the registration of patient marker **38** with the anatomy of patient **30**. In contrast to patient marker **38**, registration marker **40** is typically only used during the initial stage of the procedure, i.e., for the registration of the patient marker **38**, and once the registration

- has been performed, for the subsequent procedure stages the registration marker may be removed from the patient's back. As will be apparent from the following description, only registration marker **40** is subject to fluoroscopy, and patient marker **38** is not subject to fluoroscopy.
- (21) Also during the initial stage of the procedure, a camera **42**, fixedly attached to head-mounted display **64**, is used to image the registration marker and the patient marker. Camera **42** typically operates in the visible and/or near-visible spectrum, i.e., at wavelengths of approximately 300 nm-900 nm.
- (22) A processing system **28** is coupled, by cables and/or wirelessly, to camera **42**. System **28** comprises a computer processor **32**, a memory **33** comprising stored images **35** that include images **304**, **308**, and **324**, described below, a screen **34**, and an input device **36** such as a pointing device. The system is configured to analyze the images acquired by the camera, as is described further below. Other functions of system **28** are also described below.
- (23) In order to operate, HMD **64** is coupled to processor **32** of system **28**, or alternatively HMD **64** has its own dedicated processor which performs similar functions to those performed by processor **32**. When HMD **64** is operative it presents stored images, that are aligned with patient **22**, to professional **26**.
- (24) FIGS. **2** and **3** are respectively schematic perspective and cross-sectional views of registration marker **40**, which is assumed to define a registration marker frame of reference **50**, herein assumed to comprise an orthogonal set of xyz axes. Marker **40** is formed from a solid substrate **44**, which is opaque to light in the visible and near-visible spectrum, and which is transparent to fluoroscopic radiation. Substrate **44** is typically formed from a hard plastic, such as polycarbonate, but any other solid material which is opaque to light and transparent to fluoroscopic radiation may be used in embodiments of the present invention.
- (25) In the illustrated embodiment of marker **40**, substrate **44** is formed as a rectangular parallelepiped **46**, upon which is mounted a pillar **48**.
- (26) A plurality of optically reflective, but radiotransparent, discrete elements **54** are disposed on substrate **44**. Elements **54** are hereinbelow, by way of example, assumed to comprise discs, and are also referred to herein as discs **54**. It is understood that said optically reflective and radiotransparent elements may be of different shapes and/or sizes.
- (27) Some of the plurality of discs **54** are fixedly attached, typically by cementing, to a two-dimensional (2D) surface **52** of parallelepiped **46**. These discs **54** are formed in a generally rectangular 2D pattern on surface **52**. In addition, an optically reflective disc **54** is also cemented onto pillar **48**, so that there is in totality a three-dimensional (3D) array of discs **54** disposed on the substrate. The 3D array of discs **54** are distributed on 2D surface **52**, and on pillar **48**, so that when marker **40** is illuminated and imaged by camera **50** the discs are easily distinguished from substrate **44**. Furthermore, as explained in more detail below, the arrangement of discs **54** are configured to enable processor **32** to unambiguously determine the orientation and position of frame of reference **50** from the marker image.
- (28) The distributed discs **54** are herein assumed to comprise an optical component **56** of marker **40** that forms an optical pattern **58** for the marker. In a particular aspect of the invention optical pattern **58**, comprising the distribution of discs **54**, is implemented so that the pattern has no axis of symmetry and no plane of symmetry. The absence of both an axis and a plane of symmetry in the pattern ensures that the unambiguous determination of the orientation and position of the frame of reference of marker **40** is possible from the marker image for multiple different orientations and positions of the marker, the positions being typically within a region approximately 20 cm from the patient marker.
- (29) The description above of optical pattern **58** assumes that discs **54** are configured in three dimensions. However, as long as the pattern has no axis of symmetry and no plane of symmetry, the discs forming the pattern may be arranged in only two dimensions, for example, absent the disc on pillar **48**. Thus, pattern **58** may be formed in at least two dimensions, i.e., in the case of discs **54**,

- as a two-dimensional array of the discs or as a three-dimensional array of the discs.
- (30) It will be understood that the requirement for discs **54** to be arranged to form a pattern having an absence of both an axis and a plane of symmetry may be achieved using discs of substantially the same size and shape, wherein locations of the discs are selected so that the locations are arranged to have the absence of both an axis and a plane of symmetry. The described pattern is hereinbelow referred to as a unique optical pattern.
- (31) Alternatively, the unique optical pattern may be achieved using discs of different sizes and/or shapes. In this case, the locations of the discs may also satisfy the requirement, but this is not a necessity.
- (32) A multiplicity of radiopaque elements **60** are disposed in substrate **44** by being embedded in a distribution within parallelepiped **46**. The distribution of elements **60** is arranged in a two dimensional radiopaque pattern **62** such that, as for the pattern of discs **54**, the radiopaque pattern has no axis of symmetry and no plane of symmetry. Because substrate **44** is radiotransparent, and because of the absence of both an axis and a plane of symmetry in radiopaque pattern **62**, a fluoroscopic, typically computerized tomography (CT), scan of the radiopaque elements of marker **40** enables the orientation and position of frame of reference **50** to be unambiguously determined by processor **32** from the fluoroscopic scan. In one embodiment elements **60** comprise spheres which are distributed in a 2D generally rectangular 2D pattern that is substantially the same as the rectangular pattern of discs **54** on surface **52**.
- (33) The description above of elements **60** assumes that they are arranged in a radiopaque pattern of two dimensions. However, as long as the pattern has no axis of symmetry and no plane of symmetry, the elements forming the pattern may also be arranged in three dimensions, for example, by incorporation of a radiopaque element **60**A, substantially similar to elements **60**, in pillar **48**. Thus, pattern **62** may also be formed in at least two dimensions, i.e., in the case of elements **60** and **60**A, as a two-dimensional array of elements **60** or as a three-dimensional array of elements **60** and **60**A.
- (34) As for discs **54**, it will be understood that the requirement for elements **60** to be arranged to form a pattern having an absence of both an axis and a plane of symmetry may be achieved using elements of substantially the same size and shape, wherein locations of the elements are selected so that the locations are arranged to have the absence of both an axis and a plane of symmetry. The described pattern is hereinbelow referred to as a unique radiopaque pattern.
- (35) Alternatively, the unique radiopaque pattern may be achieved using elements of different sizes and/or shapes. In this case, the locations of the elements may also satisfy the requirement, but this is not a necessity.
- (36) The X-ray wavelengths of the CT scan are assumed to be in a range of 0.01-10 nm.
- (37) The above description of marker **40** assumes that discs **54** and elements **60** have different functionalities—the discs being optically reflective and radiotransparent, and the elements being radiopaque. In an alternative embodiment of marker **40** at least some of discs **54** are configured to have dual functionality by being optically reflective and radiopaque. As for the embodiment described above, in the alternative embodiment discs **54** are configured and distributed on substrate **44** so that an optical image of marker **40** provides an unambiguous determination of the orientation and position of frame of reference **50**, and a fluoroscopic scan of the marker also provides an unambiguous determination of the orientation and position of the frame of reference.
- (38) The physical construction of the illustrated embodiment of marker **40**, as a pillar attached to a rectangular parallelepiped, comprising an array of discs **54** and an array of elements **60**, is but one example of possible physical constructions of the marker that enables an unambiguous determination of the marker's position and orientation from a camera image and from a fluoroscopic scan. In a disclosed embodiment, rather than marker **40** comprising pillar **48** mounted on substrate **44**, an indentation (in place of the pillar) is formed within the substrate, and a disc **54** is located on a surface of the indentation.

- (39) Other suitable constructions for marker **40** are also considered to be within the scope of the present invention.
- (40) For example, the substrate of marker **40**, rather than being formed from a parallelepiped with a pillar or an indentation, may be formed as substantially any conveniently shaped solid object that is opaque to light in the visible and near-visible spectrum and which is transparent to fluoroscopic radiation.
- (41) In addition, rather than the optical component of marker **40** being comprised of a plurality of discs **54** arranged in a particular pattern, the component may comprise any array or pattern of optical elements that is attached to the substrate, that is diffusely and/or specularly reflective, and that is configured to have the absence of axes and planes of symmetry described above, so that when imaged in visible or near-visible light an unambiguous determination of the marker's position and orientation may be made.
- (42) Referring to FIG. **4**, patient marker **38** is assumed to define a patient marker frame of reference **100**, assumed to comprise an orthogonal set of xyz axes. In the embodiment illustrated in FIG. **4** marker **38** comprises a rectangular parallelepiped substrate **102** to which is attached a tongue **104** used to fixedly connect the substrate to clamp **30**. A center **103** of an upper surface of substrate **102** acts as an origin of the xyz axes.
- (43) The connection to clamp **30** is by a removable screw **112**, and the patient marker connects in a predetermined fixed spatial relationship to the clamp using holes **114** which align with studs **116** of the clamp. Substrate **102** comprises a solid opaque material, and may be formed from any convenient material such as polyimide plastic.
- (44) A plurality of optically reflective discs **106**, generally similar to discs **54**, are attached, typically by cementing, to an upper 2D surface **110** of substrate **102**. Discs **106**, also referred to herein as reflectors **106**, are formed in a generally rectangular 2D pattern on surface **110**. Discs **106** are distributed so that when illuminated and imaged by camera **42** they are easily distinguished from substrate **102**.
- (45) In addition, discs **106** are distributed with respect to an xz plane **120** and a yz plane **122** through origin **103**. xz plane **120** and yz plane **122** are planes of asymmetry. Thus, discs **106** are arranged non-symmetrically with respect to xz plane **120**, so that the distribution of the discs on one side of plane **120** do not mirror (through the plane) the discs on the opposing side of the plane. In addition, discs **106** are arranged non-symmetrically with respect to yz plane **122**, so that the distribution of the discs on one side of plane **122** do not mirror the discs on the opposing side of the plane.
- (46) In FIG. **4** discs **106** are shown as being distributed on sides of a rectangle, however, it will be understood that this is but one example for the positioning of the discs on surface **110**. Other distributions of discs **106**, providing that they define planes of asymmetry as described above, are also assumed to be comprised within the scope of the present invention.
- (47) Furthermore, it will be appreciated that the physical construction of patient marker **38** described above is by way of example. Thus, embodiments of the present invention comprise any patient marker formed of any conveniently shaped solid opaque substrate to which is attached an optical pattern, the pattern defining planes of asymmetry as described above.
- (48) FIG. **5** is a flowchart of steps performed to register patient marker **38** with the anatomy of patient **22** during the initial preparatory stage of a medical procedure illustrated in FIG. **1**, according to an embodiment of the present invention. While the following description assumes, for simplicity, a CT scan, other types of fluoroscopic imaging are also considered to be within the scope of the present invention.
- (49) In an initial step **150**, medical professional **26** makes an incision in the back of patient **22**, inserts spinous clamp **30** into the patient, and then clamps the clamp to one or more of the processes of the patient.
- (50) In a patient marker step 152, the medical professional attaches patient marker 38 to spinous

- clamp **30**, ensuring that the marker is rigidly attached to the clamp. Marker **38** is attached to clamp **30** so that surface **110**, corresponding to the xy plane of the xyz axes, is approximately parallel to a frontal plane of patient **22**, xz plane of asymmetry **120** is approximately parallel to a sagittal plane of the patient, and so that yz plane of asymmetry **122** is approximately parallel to an axial plane of the patient. As used herein, the term "approximately parallel" as applied to two planes indicates that the planes subtend an angle within a range of $\pm 20^{\circ}$ to each other.
- (51) In a registration marker step **154**, the professional places registration marker **40** on the skin of the back of the patient, typically as close to the patient's spine as is convenient.
- (52) In a camera step **156**, professional **26** adjusts his/her position so that camera **42**, attached to head-mounted display **64** images the registration marker and the patient marker. Professional **26** adjusts their position so that the images formed by camera **42** of the registration marker and of the patient marker are clear images, i.e., that neither marker occludes the other. Typically processor **32** of processing system **28** is configured to verify the acceptability of the two marker images, and if necessary the professional may use and communicate with system **28** to adjust, in an iterative manner, their position and/or that of the registration marker until system **28** provides an indication to the professional that acceptable images are being generated.
- (53) Once acceptable images are being generated, a camera image of the two markers is acquired, and is provided to processing system **28**.
- (54) In a fluoroscopic scan step **158**, a CT scan of patient **22**, in the vicinity of marker **40** is performed, and processing system **28** acquires the scan. The scan may be performed by inserting patient **22** into a CT scanning system so that marker **40** is scanned. The insertion may be implemented by bringing the CT scanning system to patient **22**, or by transporting the patient to the system. In either case, marker **40** remains in the marker's position of step **156**.
- (55) In a scan analysis step **160**, processor **32** analysis the CT scan acquired in step **158**, the scan comprising an image of radiopaque elements **60** and of the anatomy of patient **22**.
- (56) From the acquired image, processor **32** calculates the position and orientation of registration marker frame of reference **50**, and registers the frame of reference with the anatomy of the patient. The registration typically comprises a set of vectors P between selected points on registration marker **40** and selected vertebrae of patient **22**. In one embodiment, the registration comprises using a 4×4 homogenous transformation, comprising a 3×3 rotation and a 1×3 translation, that transforms a point in the space of patient **22** to a point in registration marker frame of reference **50**.
- (57) In a camera image analysis step **162**, processor **32** analyzes the camera image of patient marker **38** and registration marker **40** acquired in step **156**. From the acquired image, processor **32** calculates the position and orientation of registration marker frame of reference **50**, and the position and orientation of patient marker frame of reference **100**. Once the processor has calculated the positions and orientations of the two frames of reference, it formulates a registration of the two frames of reference as a set of vectors Q describing the transformation of the registration marker frame of reference to the patient marker frame of reference.
- (58) In a concluding analysis step **164**, the processor adds the two sets of vectors found in steps **160** and **162** to formulate a registration set of vectors R between the patient marker frame of reference **36** and the patient anatomy, as shown in equation (1):

 $R = P + Q \tag{1}$

- (59) FIG. **6** illustrates a subsequent stage of the medical procedure, FIG. **7** is a flowchart of steps performed during the subsequent stage, and FIG. **8** shows schematic figures illustrating images generated in the subsequent stage, according to an embodiment of the present invention. In the subsequent stage registration marker **40** has been removed from the back of patient **22**, and medical professional **26** operates on the patient using a surgical tool **190**. The tool is tracked by the HMD processor, by having identifying reflectors **194**, generally similar to reflectors **106**, attached to the tool.
- (60) In an initial step 200 of the flowchart of FIG. 7, the HMD projects visible or invisible light to

- patient marker **38** and tool **190**. Camera **42** acquires images of reflectors **106** of the marker, of reflectors **194** of tool **190** and of patient **22** and tool **190**.
- (61) The flowchart then branches into two paths, a first path **202** and a second path **204**. Processor **32** implements steps of both paths substantially simultaneously.
- (62) In first path **202**, in a three-dimensional (3D) image retrieval step **210**, processor **32** retrieves a 3D stored patient anatomy image of patient **22**, typically comprising a CT image of the patient, from stored images **35**. The processor also retrieves a stored virtual image, also herein termed a stored representation, of tool **190** from the stored images.
- (63) In a 3D image presentation step **214**, the processor presents aligned 3D images of the patient anatomy and of the virtual tool image in the head mounted display.
- (64) The position of the virtual tool image is determined from reflectors **194**. In order to ensure that the anatomy image and the virtual tool image, projected by the display, align with the anatomy of patient **22** and with the actual tool image, the processor determines the position and orientation of frame of reference **100** of the patient marker from the acquired images of reflectors **106**. The processor applies the registration set of vectors R, found in step **164** of the flowchart of FIG. **5**, to the position and orientation of the marker frame of reference, so as to effect the alignment. (65) In second path **204**, in a plane identification step **220**, processor **32** analyzes the images of reflectors **106** acquired by camera **42** to identify the position and orientation of xz plane of asymmetry **120** and yz plane of asymmetry **122**. From the images the processor also calculates and stores the height of camera **42** above the xy plane.
- (66) From the identified positions and orientations of the planes the processor determines on which side of the planes camera **42** resides. Each plane has two sides, and it will be understood that the two planes divide the volume around marker **38** into four regions, the camera residing in one of four regions.
- (67) In a tool reflector step **224** the processor analyzes the images of reflectors **194** to find the position and orientation of tool **190**.
- (68) In an image retrieval step **228** the processor retrieves a stored virtual image of the tool. The processor also retrieves, from the stored 2D images, images of the patient anatomy at the tool position, and parallel to the axial and sagittal planes of the patient.
- (69) In an image presentation step **232**, the processor uses the retrieved images to generate a combined image of the patient anatomy with a representation of the tool superimposed on the patient anatomy, from a point of view of the camera, i.e., from a point of view in the plane sides identified in step **220**.
- (70) The processor presents the combined image in HMD **64** for viewing by professional **26**.
- (71) By presenting images in HMD **64** according to the point of view of camera **42**, embodiments of the present invention present correctly oriented images to operator **26**, who is wearing the HMD. It will also be understood that the correct orientation is determined according to the position of the operator **26** with respect to the patient, i.e., whether the operator is to the left or right of the patient, and whether the operator is on a lower or upper side of the patient.
- (72) FIG. **8** shows schematic illustrations of images generated in step **232**, according to an embodiment of the present invention.
- (73) A diagram **300** illustrates an image **304**A of tool **190** superimposed on an image **308**A of the patient anatomy, from a point of view in a left side of a sagittal plane of patient **22**, and a diagram **312** illustrates an image **304**B of tool **190** superimposed on an image **308**B of the patient anatomy, from a point of view in a right side of the patient sagittal plane. The two diagrams are mirror images of each other, and use a stored image **304** of tool **190**. The two diagrams also use a stored image **308** of the patient anatomy that is parallel to the patient sagittal plane at an identified position of tool **190**.
- (74) A diagram **320** illustrates an image **304**C of tool **190** superimposed on an image **324**A of the patient anatomy, from a point of view in a lower side of an axial plane of patient **22**, and a diagram

- **330** illustrates an image **304**D of tool **190** superimposed on an image **324**B of the patient anatomy, from a point of view in an upper side of the patient axial plane. As for diagrams **300**, **312**, the two diagrams **320**, **330** are mirror images of each other, and use stored image **304** of tool **190**. Diagrams **320**, **330** use a stored image **324** of the patient anatomy that is parallel to the patient axial plane at the identified position of tool **190**.
- (75) Returning to the flowchart of FIG. **7**, it will be appreciated that professional **26** may select which images, referred to in steps **214** and **232**, are rendered for viewing in the head-mounted display. Thus the professional may view either the 3D images of step **214**, or the 2D images of step **232**, or both images simultaneously.
- (76) FIG. **9** is a schematic top-down view of surface **110** of marker **38**, showing the x, y, and z axes of the marker, as well as xz plane **120** and yz plane **122**.
- (77) As operator **26** moves from one side of xz plane **120** to the other side, then following on from step **232** of the flowchart of FIG. **7** together with the diagrams of FIG. **8**, the images presented to the operator are mirror images of each other. The mirroring is also true when the operator moves from one side of yz plane **122** to the other side.
- (78) A disclosed embodiment of the present invention places a limitation on the mirroring described above when moving from one side of a plane to another, in order to reduce jitter in the presented images when the operator is close to the plane. In order to reduce jitter, the processor constructs transition regions around xz plane **120** and other transition regions around yz plane **122**. The following description is for the transition region around xz plane **120** and to the right of yz plane **122**.
- (79) Processor **32** constructs a first plane **402** containing and terminating at the z axis, and at an angle $+\theta$ from xz plane **120**, and a second plane **404** containing and terminating at the z axis, and at $-\theta$ from xz plane **120**. In one embodiment $\theta \le 10^\circ$. The two planes form respective wedge-shaped regions **412**, **414** with xz plane **120**, and these two wedge-shaped regions comprise the transition region around xz plane **120** and to the right of yz plane **122**.
- (80) If the movement across xz plane **120** includes both wedge-shaped regions being crossed, by the HMD and the attached camera of the operator, or begins from within one of the wedge-shaped regions and crosses the other one, then the mirroring as described above is implemented.
- (81) However, if the movement across the xz plane does not comply with the movements above, e.g., the movement only crosses one wedge-shaped region and stops in the other region, or only moves between wedge-shaped regions, then no mirroring is implemented.
- (82) For a transition region around xz plane **120** and to the left of yz plane **122**, the processor constructs two planes making angles $\pm \theta$ with the xz plane, generally similar to planes **402** and **404**, so as to form two more wedge-shaped regions terminating at the z axis and to the left of the yz plane.
- (83) The processor constructs the same type of transition regions for yz plane **122**. Thus, for a transition region around yz plane **122** and above xz plane **120**, the processor constructs two planes making angles A with the yz plane, generally similar to planes **402** and **404**, so as to form two wedge-shaped regions terminating at the z axis and above the xz plane.
- (84) Similarly, for a transition region around yz plane **122** and below the xz plane, the processor constructs two planes making angles A with the yz plane, generally similar to planes **402** and **404**, so as to form two wedge-shaped regions terminating at the z axis and below the xz plane.
- (85) There are thus a total of four transition regions distributed symmetrically about the z-axis, each transition region comprising two wedge-shaped regions.
- (86) As for the movement for the illustrated transition region, if movement across either of planes **120** or **122** includes both wedge-shaped regions being crossed, by the HMD and the attached camera of the operator, or begins from within one of the wedge-shaped regions and crosses the other one, then the mirroring is implemented.
- (87) However, if the movement across either of the planes does not comply with the movements

above, then no mirroring is implemented, i.e., mirroring is precluded.

- (88) Another disclosed embodiment of the present invention places another limitation on the mirroring described above. In this embodiment, when the operator moves to look over patient 22, mirroring is also precluded. To preclude mirroring for this embodiment, the processor checks if the camera height, measured in step 220 of the flowchart of FIG. 7 has changed, as is the case if operator 26 moves her/his head to look over patient 22. I.e., if the camera height changes, no mirroring is implemented regardless of whether the xz plane or the yz plane have been crossed. (89) FIG. 10 is a schematic illustration of the subsequent stage of the procedure, when two operators use an imaging system 320, according to an embodiment of the present invention. Apart from the differences described below, the operation of system 320 is generally similar to that of system 20 (FIGS. 1-9), and elements indicated by the same reference numerals in both systems 20 and 320 are generally similar in construction and in function.
- (90) In contrast to system **20**, system **320** is used by operator **26** and a second operator **326**. Second operator **326** wears an HMD **364**, and a camera **342** is fixedly attached to the HMD. HMD **364** and camera **342** are respectively substantially similar in construction and function to HMD **64** and camera **42**. However, camera **342** is typically not used to perform the registration described in the flowchart of FIG. **5**, since this is provided by camera **42**.
- (91) Images generated in HMD **364** are substantially as described in the flowchart of FIG. **7**. Thus, images presented in HMD **364** are oriented according to the point of view of camera **342**, i.e., according to whether operator **326** is to the left or right of patient **22**, and according to whether the operator is on the lower or upper side of the patient.
- (92) It will be understood that by presenting images in a head-mounted display according to the point of view of the camera attached to the display, embodiments of the present invention present correctly oriented images to a wearer of the head-mounted display. It will also be understood that the correct orientation is determined according to the position of the wearer of the HMD with respect to the patient, i.e., whether the wearer is to the left or right of the patient, and whether the wearer is on a lower or upper side of the patient.
- (93) It will be further understood that for cases where there is more than one HMD, each being worn by a respective wearer, embodiments of the present invention operate simultaneously and independently to present correctly oriented images to each wearer, according to the position of the respective wearer with respect to the patient. A wearer on the right side of the patient and a wearer on the left side of the patient are presented with mirror images based on anatomy images parallel to the patient sagittal plane; similarly a wearer on the lower side of the patient and a wearer on the upper side of the patient are presented with mirror images based on anatomy images parallel to the patient axial plane.
- (94) It will thus be appreciated that the embodiments described above are cited by way of example, and that the present invention is not limited to what has been particularly shown and described hereinabove. Rather, the scope of the present invention includes both combinations and subcombinations of the various features described hereinabove, as well as variations and modifications thereof which would occur to persons skilled in the art upon reading the foregoing description and which are not disclosed in the prior art.

Claims

1. An imaging system, comprising: a first head-mounted display; a second head-mounted display; a patient marker configured to be attached to a human subject and defining a first plane and a second plane, the patient marker comprising optically reflective elements disposed on opposing sides of the first plane in a non-symmetrical arrangement with respect to the first plane and on opposing sides of the second plane in a non-symmetrical arrangement with respect to the second plane, wherein the patient marker is configured such that, when attached to the human subject, the first

plane will make an angle between $+20^{\circ}$ and -20° with a sagittal plane of the human subject, and the second plane will make an angle between $+20^{\circ}$ and -20° with an axial plane of the human subject; a memory configured to store a graphical representation of a tool used in a procedure performed by a wearer of the first head-mounted display on the human subject, and an image of anatomy of the human subject; a first camera attached to the first head-mounted display and configured to acquire a first input image of the patient marker and of the tool; a second camera attached to the second head-mounted display and configured to acquire a second input image of the patient marker and of the tool; and one or more processors configured to: analyze the first input image to identify the first plane and the second plane, and to identify at least one of: whether the first camera is located on a first side or second side of the first plane, or whether the first camera is located on a first side or second side of the second plane; render to the first head-mounted display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a point of view based on the analysis of the first input image; analyze the second input image to identify the first plane and the second plane, and to identify at least one of: whether the second camera is located on the first side or second side of the first plane, or whether the second camera is located on the first side or second side of the second plane; and render to the second head-mounted display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a point of view based on the analysis of the second input image.

- 2. The imaging system of claim 1, wherein the first plane is orthogonal to the second plane.
- 3. The imaging system of claim 1, wherein the patient marker comprises a substrate, and the optically reflective elements are disposed on an upper surface of the substrate.
- 4. The imaging system of claim 3, wherein the patient marker further comprises a plurality of radiopaque elements disposed in the substrate on opposing sides of the first plane in a non-symmetrical arrangement with respect to the first plane and on opposing sides of the second plane in a non-symmetrical arrangement with respect to the second plane.
- 5. The imaging system of claim 1, wherein the image of the anatomy of the human subject is a two-dimensional image.
- 6. The imaging system of claim 1, wherein: the tool comprises a reflector attached thereto, a position of the tool in the image rendered to the first head-mounted display is based on detection of a position of the reflector in the analysis of the first input image, and a position of the tool in the image rendered to the second head-mounted display is based on detection of a position of the reflector in the analysis of the second input image.
- 7. The imaging system of claim 1, wherein the one or more processors are further configured to: analyze additional input images acquired by the first camera to identity if the first camera has moved to a different side than identified from the analysis of the first input image; and analyze additional input images acquired by the second camera to identity if the second camera has moved to a different side than identified from the analysis of the second input image.
- 8. The imaging system of claim 7, wherein the one or more processors are further configured to: detect that the first camera has moved to a different side than identified from the analysis of the first input image; and responsive to the detection, render to the first head-mounted display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a point of view based on the detection.
- 9. The imaging system of claim 7, wherein the one or more processors are further configured to: detect that the second camera has moved to a different side than identified from the analysis of the second input image; and responsive to the detection, render to the second head-mounted display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a point of view based on the detection.
- 10. An imaging system, comprising: a first head-mounted display; a second head-mounted display; a first camera attached to the first head-mounted display and configured to acquire a first input

image of a patient marker attached to a human subject and of a tool used in a procedure performed by a wearer of the first head-mounted display on the human subject, the patient marker comprising optically reflective elements disposed on opposing sides of a first plane in a non-symmetrical arrangement with respect to the first plane, wherein the first plane is configured to make an angle between +20° and -20° with a sagittal plane of the human subject, and on opposing sides of a second plane in a non-symmetrical arrangement with respect to the second plane, wherein the second plane is configured to make an angle between +20° and -20° with an axial plane of the human subject; a second camera attached to the second head-mounted display and configured to acquire a second input image of the patient marker and of the tool; a memory configured to store a graphical representation of the tool, and an image of anatomy of the human subject; and one or more processors configured to: analyze the first input image to identify the first plane and the second plane, and to identify at least one of: whether the first camera is located on a first side or second side of the first plane, or whether the first camera is located on a first side or second side of the second plane; render to the first head-mounted display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a point of view based on the analysis of the first input image; analyze the second input image to identify the first plane and the second plane, and to identify at least one of: whether the second camera is located on the first side or second side of the first plane, or whether the second camera is located on the first side or second side of the second plane; and render to the second head-mounted display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a point of view based on the analysis of the second input image.

- 11. The imaging system of claim 10, wherein the first plane is orthogonal to the second plane.
- 12. The imaging system of claim 10, wherein the patient marker comprises a substrate, and the optically reflective elements are disposed on an upper surface of the substrate.
- 13. The imaging system of claim 12, wherein the patient marker further comprises a plurality of radiopaque elements disposed in the substrate on opposing sides of the first plane in a non-symmetrical arrangement with respect to the first plane and on opposing sides of the second plane in a non-symmetrical arrangement with respect to the second plane.
- 14. The imaging system of claim 10, wherein the image of the anatomy of the human subject is a two-dimensional image.
- 15. The imaging system of claim 10, wherein: the tool comprises a reflector attached thereto, a position of the tool in the image rendered to the first head-mounted display is based on detection of a position of the reflector in the analysis of the first input image, and a position of the tool in the image rendered to the second head-mounted display is based on detection of a position of the reflector in the analysis of the second input image.
- 16. The imaging system of claim 10, wherein the one or more processors are further configured to: analyze additional input images acquired by the first camera to identity if the first camera has moved to a different side than identified from the analysis of the first input image; and analyze additional input images acquired by the second camera to identity if the second camera has moved to a different side than identified from the analysis of the second input image.
- 17. The imaging system of claim 16, wherein the one or more processors are further configured to: detect that the first camera has moved to a different side than identified from the analysis of the first input image; and responsive to the detection, render to the first head-mounted display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a point of view based on the detection.
- 18. The imaging system of claim 16, wherein the one or more processors are further configured to: detect that the second camera has moved to a different side than identified from the analysis of the second input image; and responsive to the detection, render to the second head-mounted display the image of the anatomy of the human subject with the graphical representation of the tool superimposed thereon from a point of view based on the detection.