

Search history

Search [SP]: A method of determining the orientation and position of a drilling element that comprises the following steps: a) acquire images from 1: each of the cameras that make up a stereo vision system and store them in a memory register; b) calculating at least two centroids and at least two surface areas of a marking mechanism invariant to the rotation (3) of the images stored in step (a) by means of a computing unit (1c); c) extracting the intensity profile of the rotation-invariant marking mechanism (3) based on the result of step (b); d) calculating the phase of the intensity profile extracted in step (c); e) calculate central positions of the rotation invariant marking mechanism (3), with the phase value of the intensity profile calculated in step (d); f) determining orientation and position of the piercing end (6) of a drilling element (2) with the value of the center positions calculated in step (e). (Results 0)

Search IC=(G06T7 AND A61B) (Results 14767)

2:

Search SFT=(stereo and vision and drill) and IC=(G06T7 AND A61B) (Results 22)

3:

1) Family number: 58770027 (US2015085095A)

© PatBase

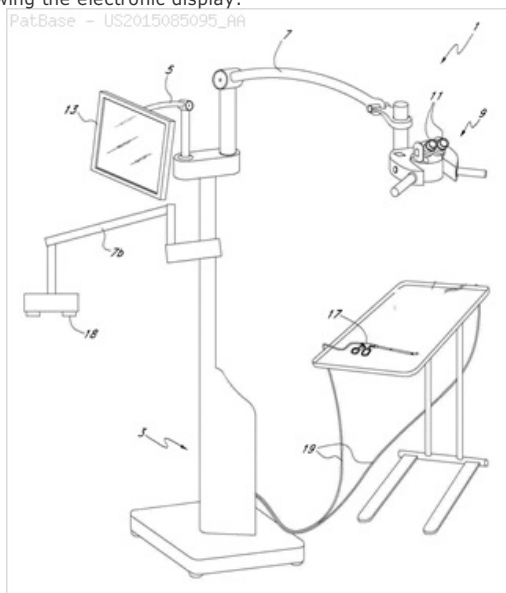
Title: SURGICAL VISUALIZATION SYSTEMS

Abstract: A medical apparatus is described for providing visualization of a surgical site. The medical apparatus includes an electronic display disposed within a display housing, the electronic display configured to produce a two-dimensional image. The medical apparatus includes a display optical system disposed within the display housing, the display optical system comprising a plurality of lens elements disposed along an optical path. The display optical system is configured to receive the two-dimensional image from the electronic display, produce a beam with a cross-section that remains substantially constant along the optical path, and produce a collimated beam exiting the opening in the display housing. The medical apparatus can also include an auxiliary video camera configured to provide an oblique view of a patient on the electronic display without requiring a surgeon to adjust their viewing angle through oculars viewing the electronic display.

Classifications:

International (IPC 8-9): A61B A61B1/00 A61B1/005 A61B1/04 A61B1/05 A61B1/06 A61B1/07 A61B1/313 A61B1/32 A61B17/02 A61B17/16 A61B17/34 A61B19/00 A61B34/00 A61B34/20 A61B5/044 A61B5/055 A61B6/03 A61B8/13 A61B90/00 A61B90/20 A61B90/25 A61B90/30 A61B90/50 G02B17/08 G02B21/00 G02B21/02 G02B21/04 G02B21/18 G02B21/20 G02B21/36 G02B23/24 G02B27/02 G03B35/18 G06T7/00 H04N13/02 H04N13/04 H04N5/225 H04N5/232 H04N5/235 H04N5/268 H04N5/33 H04N7/18 (Advanced/Invention); A61B1/005 A61B1/06 A61B1/07 A61B17/00 A61B34/20 A61B90/30 G02B13/06 (Advanced/Non-invention)
CPC: A61B50/13 G02B13/06 G02B23/2415 G02B23/2484 A61B2090/365 A61B2090/3933 A61B2090/3941 A61B2090/502 H04N7/183 A61B2576/00 A61B1/0005 A61B1/00193 A61B2560/0487 A61B2090/372 G02B27/00 A61B17/3421 G16H40/63 A61B1/00045 A61B2017/3445 A61B2034/2057 G02B21/20 G02B21/361 G02B21/368 G02B27/026 A61B1/00154 A61B1/051 A61B17/0218 A61B17/3423 G02B17/08 G02B21/362 G02B21/367 G02B27/022 A61B34/20 A61B90/25 A61B2017/00207 A61B2017/00216 A61B2017/00973 A61B2090/309 H04N5/2256 H04N5/23293 H04N5/2354 H04N5/332 H04N13/344 H04N13/398 H04N2005/2255 A61B2090/373 A61B17/0206 A61B17/1611 A61B90/20 A61B90/37 A61B2017/00535 A61B2034/2048 A61B2034/2051 A61B2034/2055 A61B2090/364 G02B21/0012 G02B21/16 G02B21/22 G06T7/30 A61B1/05 A61B5/055 A61B6/032 A61B8/13 G06T2207/10064 G06T2207/10068 G06T2207/10081 G06T2207/10132 G06T2207/20221 A61B1/005 A61B1/0676 A61B1/07 A61B1/3132 A61B90/361 A61B90/50 A61B2090/306 A61B2090/371

US: 1/1 345/629 348/65 348/77 359/613 359/641 600/109 600/111 600/411 600/427 600/437



Family:

Publication number	Publication date	Application number	Application date
EP3046458 A2	20160727	EP20140846410	20140919
EP3046458 A4	20170726	EP20140846410	20140919
EP3047326 A1	20160727	EP20140845427	20140919
EP3047326 A4	20170906	EP20140845427	20140919
EP3087424 A1	20161102	EP20140873324	20141223
EP3087424 A4	20170927	EP20140873324	20141223
EP3226799 A1	20171011	EP20150865454	20151204
EP3226799 A4	20180725	EP20150865454	20151204
EP3277152 A1	20180207	EP20160769809	20160325
EP3277152 A4	20181226	EP20160769809	20160325
EP3383247 A1	20181010	EP20160869253	20161123
EP3383247 A4	20190626	EP20160869253	20161123
HK1245050 A1	20180824	HK20180104463	20180404
HK1250471 A1	20181221	HK20180109912	20180801
JP2016536093 T2	20161124	JP20160544032T	20140919
JP2017507680 T2	20170323	JP20160542194T	20141223
JP2020000921 A2	20200109	JP20190165048	20190911
JP6521982 B2	20190529	JP20160544032T	20140919

US2015085095 AA	20150326	US20140491827	20140919
US2015141755 AA	20150521	US20140491935	20140919
US2015297311 AA	20151022	US20140581779	20141223
US2016220324 AA	20160804	US20150960276	20151204
US2017020627 AA	20170126	US20160081653	20160325
US2017143442 AA	20170525	US20160360565	20161123
US2019053700 AA	20190221	US20180042318	20180723
US10028651 BB	20180724	US20140491827	20140919
US10568499 BB	20200225	US20180042318	20180723
WO15042460 A1	20150326	WO2014US56643	20140919
WO15042460 A9	20150416	WO2014US56643	20140919
WO15042483 A2	20150326	WO2014US56681	20140919
WO15042483 A3	20150514	WO2014US56681	20140919
WO15100310 A1	20150702	WO2014US72121	20141223
WO16090336 A1	20160609	WO2015US64133	20151204
WO16154589 A1	20160929	WO2016US24330	20160325
WO17091704 A1	20170601	WO2016US63549	20161123

Priority:

US20130880808P	20130920	US20130920451P	20131223	US20130921051P	20131226
US20130921389P	20131227	US20130922068P	20131230	US20140923188P	20140102
US20140491827	20140919	US20140491935	20140919	WO2014US56643	20140919
WO2014US56681	20140919	US20140088470P	20141205	JP20160542194T	20141223
US20140581779	20141223	WO2014US72121	20141223	US20140098297P	20141230
US20150099422P	20150102	US20150138351P	20150325	US20150138919P	20150326
US20150183148P	20150622	US20150184222P	20150624	US20150184838P	20150625
US20150187796P	20150701	US20150260220P	20151125	US20150260221P	20151125
US20150960276	20151204	WO2015US64133	20151204	US20160081653	20160325
WO2016US24330	20160325	US20160399237P	20160923	US20160401781P	20160929
US20160360565	20161123	WO2016US63549	20161123	US20180042318	20180723

Probable Assignee: CAMPLEX INC

Assignee(s): (std): CAMPLEX INC

Inventor(s): (std): TESAR JOHN ; AUSTIN WILLIAM B

Agent(s): BRANTSANDPATENTS BVBA; ORIENTAL INTELLECTUAL PROPERTY SERVICES CO; FUJITA KAZUKO; KNOBBE MARTENS OLSON AND BEAR LLP; CHRISTENSEN MICHAEL R; ALTMAN DANIEL E

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

2) Family number: 53656071 (US2013108979A)

© PatBase

Title: SURGICAL LOCATION MONITORING SYSTEM AND METHOD

Abstract: The present invention involves a surgical hardware and software monitoring system and method which allows for surgical planning while the patient is available for surgery, for example while the patient is being prepared for surgery so that the system may model the surgical site. In one embodiment, the model may be used to track contemplated surgical procedures and warn the physician regarding possible boundary violations that would indicate an inappropriate location in a surgical procedure. In another embodiment, the hardware may track the movement of instruments during the procedure and in reference to the model to enhance observation of the procedure.

Classifications:

International (IPC 8-9): A61B1/00 A61B1/24 A61B10/02 A61B17/3211 A61B19/00 A61B34/00 A61B34/10 A61B34/20 A61B5/00 A61B5/05 A61B5/055 A61B5/06 A61B6/00 A61B6/02 A61B6/03 A61B6/12 A61B6/14 A61B8/08 A61B90/00 A61B90/30 A61B90/94 A61C1/00 A61C1/08 A61C19/00 A61C19/04 A61C3/02 A61C8/00 A61F2/02 B25B21/00 B25B23/14 B25B23/142 B25B23/147 B29C59/02 G01P3/44 G05B19/00 G05B23/00 G05D17/02 G06F17/30 G06F19/00 G06F7/00 G06F7/04 G06K19/077 G06T7/00 G08B29/00 G08C17/02 G08C19/00 H02H7/093 H02P25/14 H02P7/00 H04B1/00 H04B3/00 H04L29/02 H04L29/06 H04L29/08 H04Q1/00 H04Q9/00 H04W4/04 (Advanced/Invention); A61B1/00 A61B10/02 A61B17/00 A61B34/00 A61B34/10 A61B5/055 A61B6/03 A61B6/12 A61B6/14 A61B8/08 A61C1/00 A61C1/08 G06F19/00 G06F3/0484 G06F3/0488 H04L5/00 (Advanced/Non-invention)

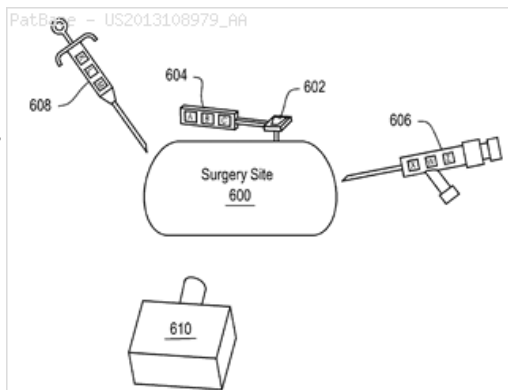
CPC: A61B1/24 A61B5/062 A61B5/72 A61B6/145 A61B6/52

A61B6/02 A61B6/467 A61B1/00 G06F19/321 A61B5/06 A61B2090/395 A61B2034/107 A61F2/02 A61B2010/045 A61B2090/373 A61F2250/0096 B29C59/02 G06T7/001 G06K19/07745 B29L2031/753 A61B34/10 A61B90/37 B29K2995/0025 G06T2207/30164 G06T2207/30204 A61B2090/3995 A61B2017/0046 A61C9/0046 A61B2017/00207 A61B2034/2057 A61B2034/256 A61C3/02 A61C19/04 A61B6/583 A61C1/084 A61B90/06 A61B90/36 A61B2034/102 A61B2090/061 H04L67/42 G06F19/3481 G06F3/0484 G06F3/0488 A61B6/481 G16H50/50 H04L5/0091 H04L63/107 H04L63/18 H04L67/12 H04L69/14 G06F16/248 G06F16/2428 A61B2034/2068 A61B90/94 A61B90/30 A61B90/361 A61B2034/2065 H04W4/022 H04W4/33 A61C2204/005 B25B21/00 B25B23/147 G01P3/44 A61B5/0088 A61B5/055 A61B5/064 A61B6/032 A61B6/12 A61B6/14 A61B10/0233 A61B34/20 A61B90/16 A61B90/39 A61B2017/00477 A61B2090/363 A61B2090/364 A61B2090/376 A61B2090/3937 A61B2090/3966 A61B2090/3983 A61B2090/3991 A61C1/0007 A61C1/082 A61B17/3211 A61B2090/3925 A61B2090/3954 A61B2034/2055 A61B8/0841 A61B34/25 A61B2034/254 A61C9/0053 A61C2201/002

US: 1/1 173/1 29/407.04 340/5.1 433/215 433/27 433/29 600/117 600/407 600/414 600/424 600/426 606/1 707/722 81/469

Family:

Publication number	Publication date	Application number	Application date
CA2852793 AA	20140416	CA20122852793	20121021
CA2852793 C	20170912	CA20122852793	20121021
CA2867534 AA	20140916	CA20132867534	20130327
CA2940092 AA	20160818	CA20152940092	20150311
CA2940092 C	20170926	CA20152940092	20150311



DE102012220482 A1	20140515	DE201210220482	20121109
DE502013010202 D1	20180621	DE201350010202T	20131108
DK2917799 T3	20180820	DK20130789284T	20131108
EP2770935 A1	20140903	EP20120798885	20121021
EP2830527 A1	20150204	EP20130716228	20130327
EP2917799 A1	20150916	EP20130789284	20131108
EP2917799 B1	20180523	EP20130789284	20131108
EP3116434 A2	20170118	EP20150747566	20150311
ES2684243 T3	20181002	ES20130789284T	20131108
JP2015508293 T2	20150319	JP20140537811T	20121021
JP2015533663 T2	20151126	JP20150541147T	20131108
JP2017074389 A2	20170420	JP20160228600	20161125
JP2017512609 T2	20170525	JP20160574521T	20150311
KR101731315 B1	20170511	KR20167028089	20150311
KR20140088167 A	20140709	KR20147013824	20121021
KR20160132931 A	20161121	KR20167028089	20150311
TR201811713 T4	20180921	TR20180011713T	20131108
US2013108979 AA	20130502	US20120571284	20120809
US2013131504 AA	20130523	US20130745762	20130119
US2013131505 AA	20130523	US20130745763	20130119
US2014043136 AA	20140213	US20120571285	20120809
US2014228675 AA	20140814	US20120822358	20121021
US2015132720 AA	20150514	US20150599149	20150116
US2015147714 AA	20150528	US20150598484	20150116
US2015182296 AA	20150702	US20150645927	20150312
US2015290784 AA	20151015	US20130440237	20131108
US2016135904 AA	20160519	US20160004653	20160122
US2016166174 AA	20160616	US20160048772	20160219
US2016220316 AA	20160804	US20160050140	20160222
US2016345917 AA	20161201	US20160236124	20160812
US2016367321 AA	20161222	US20160214379	20160719
US2017143431 AA	20170525	US20170415414	20170125
US2018004802 AA	20180104	US20170466616	20170322
US2018055579 AA	20180301	US20170788826	20171020
US2019336242 AA	20191107	US20190409835	20190512
US8938282 BB	20150120	US20120571284	20120809
US9452024 BB	20160927	US20150599149	20150116
US9538337 BB	20170103	US20120571285	20120809
US9554763 BB	20170131	US20130745762	20130119
US9566123 BB	20170214	US20150598484	20150116
US9585721 BB	20170307	US20150645927	20150312
US10464195 BB	20191105	US20130440237	20131108
WO13061318 A1	20130502	WO20121L00363	20121021
WO13144208 A1	20131003	WO2013EP56525	20130327
WO14025931 A1	20140213	WO2013US54018	20130807
WO14072450 A1	20140515	WO2013EP73340	20131108
WO15136537 A2	20150917	WO20151L50257	20150311
WO15136537 A3	20151217	WO20151L50257	20150311
WO16139149 A1	20160909	WO2016EP54110	20160226
WO17016947 A1	20170202	WO2016EP67258	20160720
WO17029203 A1	20170223	WO2016EP69185	20160811

Priority:

US20110533058P	20110909	US20110553056P	20111028	US20110553058P	20111028
US20120616718P	20120328	US20120616673P	20120328	US20120671861P	20120716
US20120571284	20120809	US20120571285	20120809	JP20140537811T	20121021
US20120822358	20121021	WO20121L00363	20121021	WO20121L00036	20121023
US20120724024P	20121108	DE201210220482	20121109	US20120713165	20121213
US20130745762	20130119	US20130745763	20130119	US20130822358	20130312
US20130803040P	20130318	WO2013EP56525	20130327	US20130865508P	20130813
EP20130789284	20131108	WO2013EP73340	20131108	WO2013EP73401	20131108
US20140598484	20140116	US20140938033P	20140210	US20140952832P	20140313
US20140226708	20140326	US20140562691	20141206	US20150599149	20150116
US20150598484	20150116	US20150613827	20150204	US20150127246P	20150302
WO20151L50257	20150311	US20150645927	20150312	US20150142194P	20150402
US20150196726P	20150724	US20150205393P	20150814	US20150252276P	20151106
US20160004653	20160122	US20160048772	20160219	US20160050140	20160222
US20160312318P	20160323	US20160214379	20160719	US20160236124	20160812
JP20160228600	20161125	US20170415414	20170125	US20170466996P	20170303
US20170466616	20170322	US20170788826	20171020	US20190409835	20190512

Probable Assignee: NAVIGATE SURGICAL TECHNOLOGIES INC

Assignee(s): (std): BECKETT MARTIN GREGORY ; DAON EHUD ; DAON EHUD UDI ; DAON UDI ; GENESYS TELECOMMUNICATIONS LABORATORIES INC ; MEDINA RODRIGUEZ ALVARO ANDRES ; GENESYS TELECOMM LAB INC ; NAVIDENT TECHNOLOGIES INC ; NAVIGATE SURGICAL TECHNOLOGIES INC ; NAVIGATE SURGICAL TECHNOLOGIES INC ; NAVIGATE SURGICAL TECH INC ; WALTERS ADAM ; RISTOCK HERBERT ; WAGNER VERMOEGENSVERWALTUNGS GMBH AND CO KG ; WAGNER VERMOEGENSVERWALTUNGS GMBH AND CO OE KG

Assignee(s): WAGNER VERMOEGENSVERWALTUNGS GMBH CO KG ; SOUNDBITE COMMUNICATIONS INC ; UTOPIA INC ; NAVIGATE SURGICAL TECHNOLOGIES INC1157 WEST 8TH STREETVANCOUVERB1V6H 1C5CA ; GENESYS TELECOMMUNICATION LABORATORIES INC ; GOLDMAN SACHS BANK USA ; JPMORGAN CHASE BANK NA COLLATERAL AGENT AS ; GENESYS TELECOMMUNICATIONS LABORATORIES INC GRANTOR AS ; DAON UDI1088 LILOOET ROADNORTH VANCOUVERB1V7J 2H8CA ; BECKETT MARTIN GREGORY1256 SCARBOROUGH ROADBOWEN ISLANDB1VON 1G1CA ; ANGELCOM INC ; BANK OF AMERICA NA COLLATERAL AGENT AS

Inventor(s): (std): DAON EHUD UDI ; DAON EHUD ; BECKETT MARTIN GREGORY ; DAON UDI ; PETEK VILI ; MEDINA RODRIGUEZ ALVARO ANDRES ; BECKETT MARTIN ; BOZEK DANIEL ; LINSSEL BERND ; ZIMMER

ANDREAS ; NEISS GUENTER ; ANDRES GUENTER ; WALTERS ADAM ; RISTOCK HERBERT ; EHUD DAON

Inventor(s): GUENTER ANDRES ; GUENTER NEISS ; ANDREAS ZIMMER ; BERND LINSEL ; DANIEL BOZEK ; BECKETT MARTIN GREGORY1256 SCARBOROUGH ROADBOWEN ISLANDB1V0N 1G1CA ; DAON UDI1088 LILOOET ROADNORTH VANCOUVERB1V7J 2H8CA

Agent(s): ROBIC; DOMPATENT VON KREISLER SELTING WERNER PARTNERSCHAFT VON PATENTANWALTEN U RECHTSANWALTEN MBB; THIBON LAURENT; VON KREISLER SELTING WERNER PARTNERSCHAFT VON PATENTANWALTEN U RECHTSANWALTEN MBB; DOMPATENT VON KREISLER SELTING WERNER PARTNERSCHAFT VON PATENT U RECHTSANWALTEN MBB; LINAGE RAFAEL; KOHNO TAKAO; UGUR GUERSAD YALCINER; BRANNON SOWERS AND CRACRAFT PC; KEVIN R; LEWIS ROCA ROTHGERBER CHRISTIE LLP; MAIER AND MAIER PLLC; PYERNIK RUTMAN ET AL; CHANG JOSEPHINE E; VON KREISLER SELTING WERNER; LAPIDOT ARIEL ET AL; CABINET BEAUMONT

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

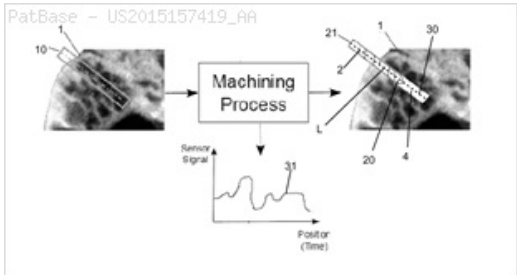
3) Family number: 55198110 (US2015157419A)

PatBase

Title: SYSTEM AND METHOD FOR ESTIMATING THE SPATIAL POSITION OF A TOOL WITHIN AN OBJECT

Abstract: The invention relates to a system for estimating the spatial position (pose) of a tool (2) within an object (1), particularly in the form of a human bone that is to be machined with said tool, comprising: a sensor (21) being designed to be coupled to said tool (2), which sensor (21) is further designed to generate an sensor output signal (31) upon machining of said object (1) along an actual trajectory (30), which sensor output signal (31) depends on a material property of said object along said actual trajectory (30), an analyzing means being designed to determine a correlation between said sensor output signal (31) upon machining said object (1) and a plurality of pre-determined candidate output signals (42), each candidate output signal (42) being generated in beforehand using said material property along an associated model trajectory (40) in a model of said object (1), and wherein said analyzing means is designed to estimate a spatial position of the tool (2) within the object (1) using the model trajectory (40) whose associated candidate output signal (42) has the highest correlation with the sensor output signal (31), for instance. The invention further relates to a method for estimating the pose of the tool (2), as well as a computer program product.

Classifications:
International (IPC 8-9): A61B19/00 A61B34/00 A61B34/10 A61B34/30 A61B90/00 G06T7/00 G06T7/73 (Advanced/Invention); A61B34/10 A61B90/00 (Advanced/Non-invention)
CPC: G06T2207/30241 G06T2207/30164 G06T2207/30196 G06T2207/10072 A61B34/25 A61B34/30 A61B2034/104 A61B2034/107 A61B2090/065 G06T7/74 A61B34/10
US: 1/1 382/103



Family:

Publication number	Publication date	Application number	Application date
AU2013265396 AA	20141218	AU20130265396	20130521
AU2013265396 BB	20170525	AU20130265396	20130521
CN104540467 A	20150422	CN201380026826	20130521
CN104540467 B	20171013	CN201380026826	20130521
DE602012011922 D1	20151217	DE201260011922T	20120521
EP2666428 A1	20131127	EP20120168772	20120521
EP2666428 B1	20151028	EP20120168772	20120521
US2015157419 AA	20150611	US20130402323	20130521
US2018085172 AA	20180329	US20170811674	20171113
US9814532 BB	20171114	US20130402323	20130521
US10342622 BB	20190709	US20170811674	20171113
WO13174801 A2	20131128	WO2013EP60389	20130521
WO13174801 A3	20140116	WO2013EP60389	20130521

Priority:
EP20120168772 20120521 WO2013EP60389 20130521 US20140402323 20141120
US20170811674 20171113

Probable Assignee: UNIVERSITAT BERN

Assignee(s): (std): BELL BRETT J ; BERN UNIV ; OF BERN UNIV ; UNIV BERN ; WEBER STEFAN ; WILLIAMSON TOM

Assignee(s): UNIVERSITAT BERN

Inventor(s): (std): WILLIAMSON TOM ; WEBER STEFAN ; BELL BRETT J

Agent(s): BALDWINS INTELLECTUAL PROPERTY; SCHULZ JUNGHANS PATENTANWALTE PARTGMBB; SCHULZ BEN JESKO; JMB DAVIS BEN DAVID; JD PATENT; FORMAN JULIAN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

4) Family number: 56828117 (US2015348320A)

PatBase

Title: DEVICE AND METHOD FOR SUBGINGIVAL MEASUREMENT

Abstract: A method for measuring regions of a tooth in a mouth including: measuring at least one surface point on a surface of the tooth with respect to an element mechanically coupled to said surface point; determining a location of at least one

visible reference mechanically coupled to said surface point with respect to said element; estimating a location of said surface point with respect to said visible reference. A device used for such measuring may include a main body comprising a final optical element of an imager which defines an optical field of view directed in a first direction; and a measurement element coupled to said main body extending generally in said first direction; where a tip of said measurement element is sized and shaped to be inserted between a tooth and adjacent gingiva; where said optical field of view is sized to image at least part of a tooth.

Classifications:

International (IPC 8-9): A61B1/247 A61C A61C13/00 A61C19/04

A61C9/00 G06K9/00 G06T15/08 G06T17/30 G06T7/00

H04N5/225 (Advanced/Invention);

A61C (Subclass/Invention)

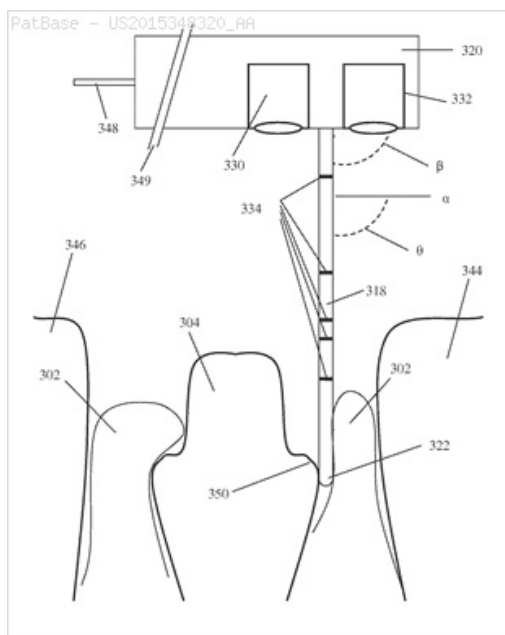
CPC: A61C9/0033 A61C9/0053 A61C9/0066 A61C13/0004

A61C19/04 A61C19/043 G06T7/30 G06T7/70 A61B1/247 A61C9/006

G06T7/0014 G06T15/08 G06T17/30 G06T2207/10028

G06T2207/30036 G06T2215/16 H04N5/225 H04N2005/2255

US: 1/1 382/128 433/30



Family:

Publication number	Publication date	Application number	Application date
CA2896210 AA	20150622	CA20132896210	20131224
CN104955418 A	20150930	CN201380071840	20131224
CN104955418 B	20171013	CN201380071840	20131224
EP2941220 A2	20151111	EP20130830124	20131224
IL239621 A0	20150831	IL20130239621	20131224
IL239621 A1	20190131	IL20130239621	20131224
IL264237 A0	20190228	IL20130264237	20131224
JP2016508754 T2	20160324	JP20150548888T	20131224
JP2018047299 A2	20180329	JP20170228103	20171128
JP6253665 B2	20171227	JP20150548888T	20131224
KR102050547 B1	20191202	KR20157020305	20131224
KR20150103133 A	20150909	KR20157020305	20131224
KR20190133300 A	20191202	KR20197034814	20131224
US2015348320 AA	20151203	US20130655286	20131224
US2017007377 AA	20170112	US20160274756	20160923
US9454846 BB	20160927	US20130655286	20131224
WO14102779 A2	20140703	WO20131L51059	20131224
WO14102779 A3	20141016	WO20131L51059	20131224

Priority:

US20120745744P	20121224	JP20150548888T	20131224	US20130655286	20131224
WO20131L51059	20131224	IL20150239621	20150624	US20150655286	20150624
US20160274756	20160923				

Probable Assignee: DENTLYTEC GPL LTD

Assignee(s): (std): BENNY PESACH ; BLANC ZACH LEHR ; DENTLYTEC G P L LTD ; YGAEL GRAD ; GEORGY MELAMED

Assignee(s): DENTLYTEC GPL LTD ; LEHR BLANC ZACH ; GRAD YGAEL ; PESACH BENNY ; MELAMED GEORGY

Inventor(s): (std): GEORGY MELAMED ; BENNY PESACH ; BLANC ZACH LEHR ; YGAEL GRAD ; PESACH BENNY ; LEHR BLANC ZACH ; GRAD YGAEL ; MELAMED GEORGY

Agent(s): SMART AND BIGGAR; NEDERLANDSCH OCTROOIBUREAU; GE EHRlich 1995 LTD; COOLEY LLP; G E EHRlich 1995 LTD ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

5) Family number: 66283122 (US2019000564A)

© PatBase

Title: SYSTEM AND METHOD FOR MEDICAL IMAGING

Abstract: The present disclosure provides a system and method for generating medical images. The method utilizes a novel algorithm to co-register Cone-Beam Computed Tomography (CBCT) volumes and additional imaging modalities, such as optical or RGB-D images.

Classifications:

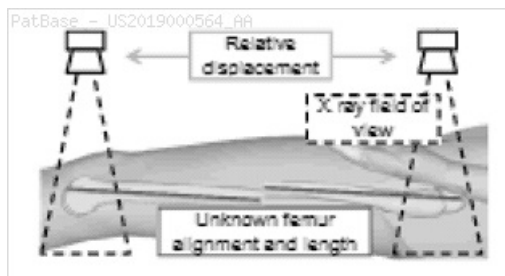
International (IPC 8-9): A61B34/20 A61B34/30 A61B5/00 A61B6/00

A61B6/03 A61B6/12 G06T7/521 G06T7/80

H04N13/254 (Advanced/Invention)

CPC: A61B6/032 A61B6/08 A61B6/4441 A61B34/20 A61B2090/3764

A61B6/5241 A61B6/5247 A61B6/12 A61B5/0077 H04N13/254
G06T7/521 G06T7/80 A61B34/30 A61B6/582 G06T2207/10024
G06T2207/10081 G06T2207/30004 A61B6/03 A61B6/4085
A61B6/505 A61B2034/2065
US: 1/1 600/424



Family:

Publication number	Publication date	Application number	Application date
US2019000564 AA	20190103	US20160067572	20161230
WO17117517 A1	20170706	WO2016US69458	20161230

Priority:

US20150273229P 20151230 US20160067572 20161230 WO2016US69458 20161230

Probable Assignee: UNIV JOHNS HOPKINS

Assignee(s): (std): UNIV JOHNS HOPKINS

Assignee(s): JOHNS HOPKINS UNIV

Inventor(s): (std): NAVAB NASSIR ; FUERST BERNHARD ; LEE SING CHUN ; FOTOUHIGHAZVINI MOHAMMADJAVAD

Agent(s): HAILE LISA A ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

6) Family number: 63040151 (US2016225192A)

© PatBase

Title: SURGEON HEAD-MOUNTED DISPLAY APPARATUSES

Abstract: An augmented reality surgical system includes a head mounted display (HMD) with a see-through display screen, a motion sensor, a camera, and computer equipment. The motion sensor outputs a head motion signal indicating measured movement of the HMD. The computer equipment computes the relative location and orientation of reference markers connected to the HMD and to the patient based on processing a video signal from the camera. The computer equipment generates a three dimensional anatomical model using patient data created by medical imaging equipment, and rotates and scales at least a portion of the three dimensional anatomical model based on the relative location and orientation of the reference markers, and further rotate at least a portion of the three dimensional anatomical model based on the head motion signal to track measured movement of the HMD. The rotated and scaled three dimensional anatomical model is displayed on the display screen.

Classifications:

International (IPC 8-9): A61B34/10 A61B90/00 G06F3/01

G06F3/0346 G06F3/16 G06T19/00 G06T19/20 G06T7/00

G09G5/12 (Advanced/Invention)

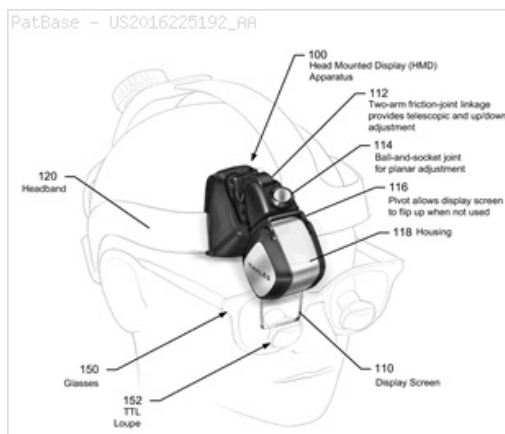
CPC: G06T19/006 G06F3/012 G06F3/0346 G06F3/017 A61B34/10

A61B90/37 G06T2207/30204 A61B2034/105 A61B2090/372

A61B2090/365 A61B2090/368 G06F3/011 G06T19/20 G06T2210/41

G06T2219/2016

US: 1/1 345/633



Family:

Publication number	Publication date	Application number	Application date
US2016225192 AA	20160804	US20160013594	20160202
US2018012413 AA	20180111	US20170699273	20170908
US2018012416 AA	20180111	US20170713839	20170925
US2018286136 AA	20181004	US20180000393	20180605
US10013808 BB	20180703	US20160013594	20160202
US10546423 BB	20200128	US20170699273	20170908
US10580217 BB	20200303	US20180000393	20180605

Priority:

US20150111379P 20150203 US20150181433P 20150618 US20150270895P 20151222
US20160013594 20160202 US20170699273 20170908 US20170713839 20170925
US20180000393 20180605

Probable Assignee: GLOBUS MEDICAL INC

Assignee(s): (std): GLOBUS MEDICAL INC ; THALES USA INC

Assignee(s): THALES

Inventor(s): (std): JAMES YANNICK ; CALLOWAY THOMAS ; JONES KENNETH MILTON ; POPOOLAPADE JOHN ; XING DONG MEI PEI ; BRUZY CHRISTOPHE ; GORGES SEBASTIEN ; JUTTEAU CHRISTIAN ; YARIN PAUL MICHAEL ;

7) Family number: 8490254 (WO9501757A1)

© PatBase

Title: ROBOTIC SYSTEM FOR CLOSE INSPECTION AND REMOTE TREATMENT OF MOVING PARTS

Abstract: A medical system to perform closed chest coronary artery bypass graft surgery on the beating heart by using virtual target image arrest; components of the system may be: a) thoracoscopic 3D video-imaging of the surgical target area and stereoscopic video display in operating spectacles; b) 3D video-tracking of beacons in the vicinity of the surgical target area or tracking by some other means; c) virtual target image arrest by real time image manipulation to minimize beacon movement; d) target motion compensated thoracoscopic robot arms with thoracoscopic surgical tools which track the moving target in real time; e) surgeon directed manipulation of robotic surgical tools with the surgeon's motions superimposed on the automated tracking motions; f) voice command control to switch virtual target arrest or automated tracking by robot arms on and off; g) voice command control to scale down the surgeon's movements by the robotic tools; h) voice command control of zoom module to magnify a specified part in the stereoscopic image.

Classifications:**International (IPC 8-9):** A61B17/00 A61B17/02 A61B19/00

G06T7/20 H04N13/00 (Advanced/Invention);

A61B17/00 A61B17/02 (Advanced/Non-invention);

A61B19/00 G06T7/20 H04N13/00 (Core/Invention);

A61B17/00 A61B17/02 (Core/Non-invention)

International (IPC 1-7): A61B19/00 G06T7/20**CPC:** A61B2017/00203 A61B2017/00243 A61B2017/00694

A61B2017/00699 A61B2017/00703 A61B2017/0243 G06T2207/10012

H04N2013/0085 H04N2013/0092 A61B34/30 A61B2090/502

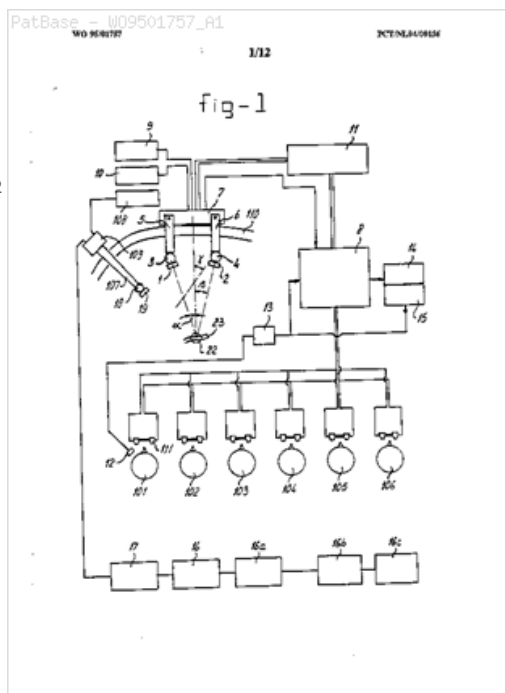
G06T7/246 A61B34/77 H04N13/10 H04N13/239

European: A61B19/22 G06T7/20C H04N13/02A2 K61B17/00C6

K61B17/00E1C K61B17/00Q4 K61B17/00Q4B K61B17/00Q4H

K61B17/02H2 K61B19/22P K61B19/26D S06T207/10012 T04N13/00P

T04N13/00X5 T04N13/00X9 T04N13/02A2

**Family:**

Publication number	Publication date	Application number	Application date
AU199474684 A1	19950206	AU19940074684	19940705
WO9501757 A1	19950119	WO1994NL00156	19940705

Priority:

US19930086846 19930707 WO1994NL00156 19940705

Probable Assignee: BORST CORNELIUS**Assignee(s):** (std): BORST CORNELIUS**Assignee(s):** CORNELIUS BORST**Inventor(s):** (std): BORST CORNELIUS**Inventor(s):** CORNELIUS BORST

Designated states: AM AT AU BB BE BF BG BJ BR BY CA CF CG CH CI CM CN CZ DE DK ES FI FR GA GB GE GN GR HU IE IT JP KE KG KP KR KZ LK LT LU LV MC MD MG ML MN MR MW NE NL NO NZ PL PT RO RU SD SE SI SK SN TD TG TJ TT UA US UZ VN

8) Family number: 63038265 (US2016220105A)

© PatBase

Title: DEVICE FOR VIEWING AN INTERIOR OF A MOUTH

Abstract: The viewing device for the interior of a mouth of a patient includes a penetrating ray emitter adapted to take a view of an inner portion located under an outer surface of an organ arranged in the mouth. There is a pair of augmented-reality glasses having an optical glass through which a user of the pair of glasses can see the interior of the mouth and a viewing camera adapted to take an image of what the user sees through the optical glass. A central unit correlates first images corresponding to those taken by the viewing camera with second images corresponding to those taken by the penetrating-ray emitter.

Classifications:**International (IPC 8-9):** A61B1/00 A61B1/04 A61B1/06 A61B1/24

A61B34/20 A61B5/00 A61B6/00 A61B6/02 A61B6/14 A61B8/00

A61B8/12 A61B90/00 A61C1/08 A61C19/00 A61C19/04 G02B27/01

G06F17/30 G06F19/00 G06F3/00 G06F3/01 G06F3/16 G06T19/00

G06T7/00 G06T7/32 G09G5/00 G10L15/22

H04N5/225 (Advanced/Invention);

A61B6/14 (Advanced/Non-invention)

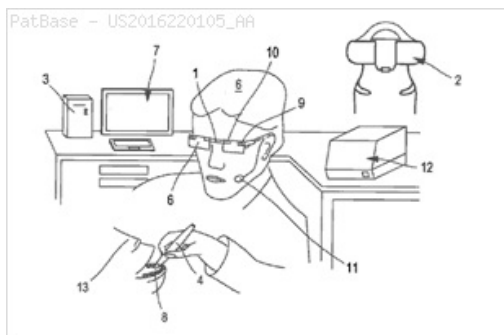
CPC: A61B1/24 G06T19/006 G06F3/012 G06F3/16

H04N5/2256 G06T7/0012 G02B27/0172 G10L15/22 A61B1/04

A61B1/00048 A61C1/088 A61C19/00 A61B1/0684 G06T2207/30036

G06T2219/2004 G02B2027/0138 G02B2027/0178 G02B2027/014

A61B5/0088 A61B5/6803 A61B5/7425 A61B6/022 A61B6/14
A61B6/145 A61B6/462 A61B6/463 A61B6/466 A61B6/5229
A61B8/12 A61B8/462 A61B34/20 A61B90/37 A61C1/082 A61C1/084
G06T7/32 A61B2562/17 A61B90/361 A61B2090/365
US: 1/1 345/633



Family:

Publication number	Publication date	Application number	Application date
■ CN107529968 A	20180102	CN201680020959	20160201
■ EP3253279 A1	20171213	EP20160707857	20160201
■ FR3032282 A1	20160805	FR20150050817	20150203
■ FR3032282 B1	20180914	FR20150050817	20150203
■ IN201717027709 A	20171006	IN201717027709	20170803
■ US2016220105 AA	20160804	US20160007010	20160126
■ US9877642 BB	20180130	US20160007010	20160126
■ WO16124847 A1	20160811	WO2016FR50206	20160201

Priority:

FR20150050817 20150203 US20160007010 20160126 WO2016FR50206 20160201

Probable Assignee: DURET FRANCOIS

Assignee(s): (std): DURET FRANCOIS

Assignee(s): FRANCOIS DURET

Inventor(s): (std): DURET FRANCOIS

Inventor(s): FRANCOIS DURET

Agent(s): RHEIN ALAIN; CABINET BREV AND SUD; ANDREW W; CRAFT CHU PLLC; LEMOINE JEAN SEBASTIEN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

9) Family number: 62794336 (US2016191887A)

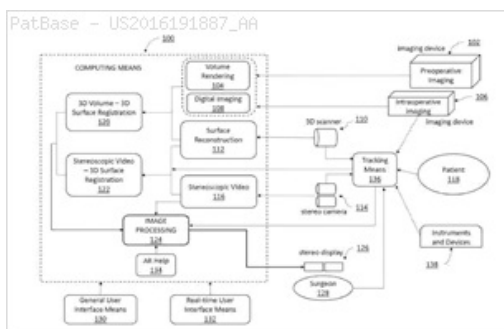
© PatBase

Title: IMAGE-GUIDED SURGERY WITH SURFACE RECONSTRUCTION AND AUGMENTED REALITY VISUALIZATION

Abstract: Embodiments disclose a real-time surgery method and apparatus for displaying a stereoscopic augmented view of a patient from a static or dynamic viewpoint of the surgeon, which employs real-time three-dimensional surface reconstruction for preoperative and intraoperative image registration. Stereoscopic cameras provide real-time images of the scene including the patient. A stereoscopic video display is used by the surgeon, who sees a graphical representation of the preoperative or intraoperative images blended with the video images in a stereoscopic manner through a see through display.

Classifications:

International (IPC 8-9): A61B34/10 A61B34/20 G02B27/01
G06F3/01 G06F3/03 G06F3/0484 G06T11/00 G06T15/00 G06T15/08
G06T19/00 G06T7/00 H04N13/00 H04N13/02 H04N13/111
H04N13/156 H04N13/239 H04N13/279 H04N13/296
H04N13/366 (Advanced/Invention);
A61B1/00 A61B90/00 G06F19/00 (Advanced/Non-invention)
CPC: H04N13/0011 H04N13/004 H04N13/0239 H04N13/0296
A61B34/10 A61B2034/2057 A61B2034/2065 A61B2090/371
G02B27/0172 G02B2027/0134 G02B2027/0138 G02B2027/014
G06F3/011 G06F3/017 G06F3/0304 G06F3/04845 G06F2203/04804
G06T19/006 G06T2210/41 H04N13/111 H04N13/156 H04N13/239
H04N13/279 H04N13/296 A61B1/00 A61B34/20 G06F19/00
H04N13/366
US: 1/1 348/47



Family:

Publication number	Publication date	Application number	Application date
■ US2016191887 AA	20160630	US20150753705	20150629
■ US2018262743 AA	20180913	US20180972649	20180507
■ US2019149797 AA	20190516	US20190250158	20190117
■ US2019246088 AA	20190808	US20190240937	20190107
■ US2019349559 AA	20191114	US20190518426	20190722
■ US2020053335 AA	20200213	US20190598697	20191010
■ US10154239 BB	20181211	US20150753705	20150629
■ US10194131 BB	20190129	US20180972649	20180507
■ US10326975 BB	20190618	US20190250158	20190117
■ US10511822 BB	20191217	US20190518426	20190722
■ US10594998 BA	20200317	US20190703739	20191204

Priority:

US20140097771P 20141230 US20150753705 20150629 US20180972649 20180507
US20190240937 20190107 US20190250158 20190117 US20190518426 20190722

Probable Assignee: ONPOINT MEDICAL INC**Assignee(s):** (std): CASAS CARLOS QUILES ; ONPOINT MEDICAL INC**Inventor(s):** (std): CASAS CARLOS QUILES**Agent(s):** GREENBERG TRAURIG LLP; SALEM NATALIE; SCHINDLER BARRY**10) Family number: 62973353** (US2016338803A)

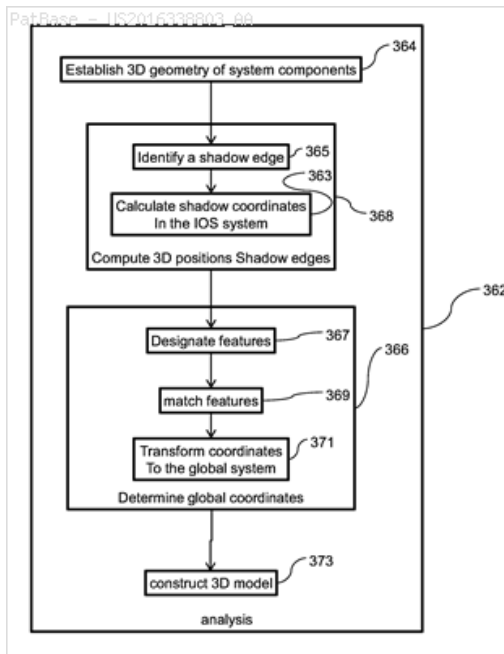
© PatBase

Title: SYSTEM, DEVICE, AND METHOD FOR DENTAL INTRAORAL SCANNING

Abstract: There is provided according to some embodiments, a system, device and method for a three dimensional (3D) intraoral scanning of at least a portion of a tooth. An intraoral scanner may include a shadow casting object extending between a light emitter and the portion of the tooth. An imaging module may image the portion of the tooth and/or the projected shadow of the shadow casting object. A method to construct a 3D model may include illuminating at least a portion of the tooth with a light emitter; casting a shadow on the portion of the tooth by an object located between the emitter and the tooth; imaging the portion of the tooth, including at least a part of the shadow; and determining a location of a point on the tooth and related to the shadow, using the image.

Classifications:

International (IPC 8-9): A61B1/045 A61B1/06 A61B1/24 A61B5/00 A61C19/04 A61C3/02 A61C9/00 G01B11/24 G01B11/25 G06K9/32 G06T1/00 G06T15/60 G06T15/80 G06T17/00 G06T7/00 G06T7/11 G06T7/13 G06T7/20 G06T7/73 H04N5/225 (Advanced/Invention)
CPC: G06T7/20 H04N5/2256 A61B1/06 A61B1/24 A61C3/02 G06T2207/10028 G06T2207/30036 H04N2005/2255 A61C9/006 G06T17/00 A61B5/0088 G01B11/25 A61B1/00009 A61B1/045 A61B1/0607 A61B1/0676 A61B5/682 A61B2562/0233 A61C1/088 A61C9/0053 A61C19/04 A61C9/008 G06T1/0007 G06T7/13 G06T7/74 G06T15/60 G06T2200/08 G06T2210/41 G06K9/3233 G06T7/0012 G06T7/11

US: 1/1 433/215**Family:**

Publication number	Publication date	Application number	Application date
EP3405092 A2	20181128	EP20170707964	20170118
US2016338803 AA	20161124	US20160115196	20160118
US2019192262 AA	20190627	US20180199954	20181126
US2020060550 AA	20200227	US20170071058	20170118
US10136970 BB	20181127	US20160115196	20160118
WO16113745 A1	20160721	WO2016150058	20160118
WO17125926 A2	20170727	WO2017150072	20170118
WO17125926 A3	20170928	WO2017150072	20170118

Priority:

US20150104835P 20150118	US20160115196 20160118	WO2016150058 20160118
US20160364681P 20160720	US20160115196 20160728	US20170071058 20170118
WO2017150072 20170118	US20180199954 20181126	

Probable Assignee: DENTLYTEC GPL LTD**Assignee(s):** (std): DENTLYTEC G P L LTD**Assignee(s):** DENTLYTEC GPL LTD ; DENTLYTEC GPL LTD**Inventor(s):** (std): PESACH BENNY ; RUEVENNY AMITAI**Agent(s):** DI GENNARO SERGIO; COOLEY LLP; EHRLICH GAL ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KH KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

11) Family number: 11839475 (US2004046736A)

© PatBase

Title: NOVEL MAN MACHINE INTERFACES AND APPLICATIONS

Abstract: Affordable methods and apparatus are disclosed for inputting position, attitude (orientation) or other object characteristic data to computers for the purpose of Computer Aided Design, Painting, Medicine, Teaching, Gaming, Toys, Simulations, Aids to the disabled, and internet or other experiences. Preferred embodiments of the invention utilize electro-optical sensors, and particularly TV Cameras, providing optically inputted data from specialized datum's on objects and/or natural features of objects. Objects can be both static and in motion, from which individual datum positions and movements

can be derived, also with respect to other objects both fixed and moving. Real-time photogrammetry is preferably used to determine relationships of portions of one or more datums with respect to a plurality of cameras or a single camera processed by a conventional PC.

Classifications:

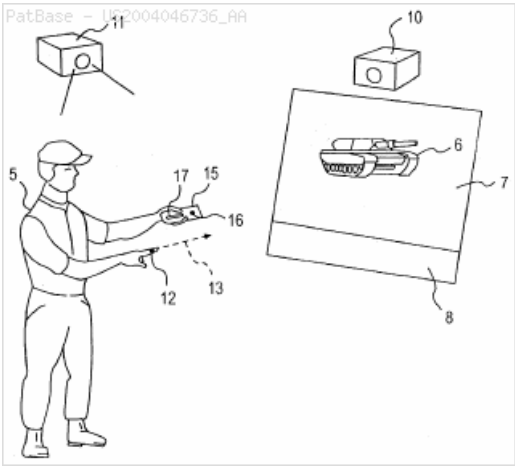
International (IPC 8-9): A61B3/02 A61B5/11 A61B5/12 A61B6/00 A63B24/00 A63B71/00 A63F13/00 A63F13/02 A63F13/04 A63F13/06 A63F13/219 A63F3/00 A63F3/02 A63F7/02 A63F9/24 B60K B60K1/00 B60K35/00 B60K37/02 B60K37/06 B60Q1/00 B60R11/02 G01C21/36 G01D1/00 G01D13/00 G01F G01F1/708 G01S5/16 G05B G05B11/01 G05B15/00 G05B19/042 G06F G06F15/00 G06F15/16 G06F17/00 G06F17/30 G06F19/00 G06F3/00 G06F3/01 G06F3/03 G06F3/033 G06F3/0354 G06F3/038 G06F3/041 G06F3/042 G06F3/043 G06F3/045 G06F3/048 G06F3/0484 G06F3/0488 G06K11/06 G06K9/00 G06M11/04 G06T17/40 G06T7/00 G08B21/00 G08B6/00 G08C21/00 G09G5/00 G09G5/08 G09G5/10 G10H1/00 G10L21/00 H04B3/36 H04N5/225 H04N5/64 H04N7/18 H04N9/31 H04Q9/00 (Advanced/Invention); A63F9/24 B60R11/00 G06F3/041 (Advanced/Non-invention); A63B71/00 A63F3/02 A63F7/02 B60K37/04 B60Q1/00 G01D1/00 G01S5/00 G05B11/01 G05B15/00 G06F15/00 G06F15/16 G06F17/00 G06F17/30 G06F19/00 G06F3/033 G06F3/041 G06F3/048 G06K9/00 G06M11/00 G09G5/00 G09G5/08 G10L21/00 H04N5/225 H04N5/64 H04N7/18 H04N9/31 (Core/Invention); A63F9/24 G06F3/041 (Core/Non-invention); B60K (Subclass/Invention)

International (IPC 1-7): A63F9/24 B60K1/00 G06F19/00 G06K9/00 G09G5/00 G09G5/08

CPC: A63F7/027 A63F2003/00974 A63F2009/243 A63F2009/2457 G06F3/0423 G06F2203/0381 H04N9/3129 G06F2203/04808 Y10S128/92 Y10S128/921 Y10S128/922 A63F2300/8023 G06F3/01 G06K9/00335 G06K9/2018 G06T2207/10021 G06T2207/30196 G06T2207/30204 A63B24/0062 A63B71/06 A63B24/0075 G06F19/3475 G06F19/3481 G06Q30/06 G06T2219/2016 Y10S482/90 Y10S482/901 G06F3/042 G01C21/365 G01C21/265 G06F2203/04109 G06F3/012 G06F3/014 A63F13/213 A63F13/803 A63F13/428 A63F13/2145 A63F2300/30 A63F2300/308 A63F2300/8011 G07F17/3297 A63F3/00643 A63F7/0005 A63F2009/0012 A63F2009/2419 A63F2009/2433 A63F2250/50 A63F2300/1068 G06F2203/04101 G01C21/3664 G06F3/0312 G06F3/03545 G06F3/04847 G06F3/0488 G06F2203/04108 G06F2203/04809 G06T7/246 G06T7/593 G06T7/73 G06F3/016 G16H40/63 G16H50/50 G16H20/30 A63F13/00 B60K2370/126 B60K2370/143 B60K2370/1438 B60K2370/145 B60K2370/152 B60K2370/155 B60K2370/122 B60K2370/1868 B60K2370/21 B60K2370/774 B60K2370/736 B60K2370/11 B60K2370/334 B60K2370/146 B60K2370/148 B60K2370/55 B60R11/02 B60R11/0235 B60R2011/0005 B60R2011/0007 B60R2011/0012 B60R2011/0028 B60R2011/0029 B60R2011/0042 B60R2011/0094 G06F3/0426 B60K2370/111 B60K2370/133 B60K2370/1468 B60K2370/1472 B60K2370/1476 B60K2370/197 B60K2370/341 B60K2370/566 A47L15/0063 F24C7/082 G01F23/292 G05B19/0423 G05B2219/23031 G05B2219/2643 G05B2219/31048 H05B6/6435 H05B2213/04 B33Y50/00 G06F3/0304 G06F30/15 G06F2113/12 G06T19/20 G06T2219/2021 A63F13/02 A63F13/04 A63F13/06 A63F13/10 A63F2300/1043 A63F2300/1062 A63F2300/1075 A63F2300/1081 A63F2300/1087 A63F2300/1093 A63F2300/6045 A63F2300/69 G01S5/16 G06F3/011 G06F3/017 G06F3/0325 G06F3/0346 G06F3/038 G06F3/0425 G06F3/0428 G06F19/3418 G10H1/0008 G10H2220/321 A63F13/245 B60K35/00 B60K37/02 B60K37/06 G06F3/0416 G06F3/0421 G06F3/04883 G06F3/04886

European: A63B71/06 A63F13/00 A63F13/02 A63F13/04 A63F13/06 A63F13/10 A63F3/00E A63F7/02P1 B60K35/00 B60K37/02 B60K37/06 B60R11/02 B60R11/02E2 G01C21/26C G01C21/36 G01C21/36G7 G01C21/36K G01F23/292 G01S5/16 G05B19/042N G06F17/50V G06F19/34A G06F19/34H G06F19/34M G06F19/34N G06F3/00B8 G06F3/00B8G G06F3/01 G06F3/01B G06F3/01F G06F3/01G G06F3/033D G06F3/033Z2 G06F3/033Z8E G06F3/0346 G06F3/0354N G06F3/038 G06F3/03H G06F3/03H2 G06F3/03H6 G06F3/041T G06F3/042 G06F3/042B G06F3/042B4 G06F3/042C G06F3/042C1 G06F3/042P G06F3/0484P G06F3/0488 G06F3/0488G G06F3/0488T G06K9/00G G06K9/20C G06Q30/06 G06T19/00 G06T19/00R G06T7/00P1 G06T7/00R7S G06T7/20C G07F17/32P10 G10H1/00M H04N9/31B K63B24/00H K63F250/50 K63F3/00E K63F3/00Q5 K63F300/10M K63F300/10S K63F300/10T K63F300/10T1 K63F300/10V K63F300/10X K63F300/10X1 K63F300/30 K63F300/30M K63F300/60N K63F300/69 K63F300/80B K63F300/80E K63F7/00B K63F9/00D2 K63F9/24N2B K63F9/24N3 K63F9/24N3A1 K63F9/24N3B K63F9/24P2S L60K350/10J3 L60K350/10J5 L60K350/10J5D L60K350/10N1 L60K350/10N4 L60K350/20C L60K350/90A L60K350/92L3 L60K350/96A L60R11/00P1A L60R11/00P1B L60R11/00P1F L60R11/00P1L L60R11/00P1M L60R11/00R L60R11/00T S05B219/23031 S05B219/2643 S05B219/31048 S06F19/34C S06F19/34H S06F19/34M S06F203/0381 S06F203/04101 S06F203/04108 S06F203/04109 S06F203/04808 S06F203/04809 S06F217/32 S06T207/10021 S06T207/30196 S06T207/30204 S10H220/321

US: 1/1 116/205 116/205S 128/920 128/921 128/922 178/18.01 178/18.09 273/237 273/274 307/10.1 340/407.1 340/407.100P 340/407.2 340/407.200P 340/425.5 340/425.500P 345/156 345/156P 345/156S 345/157 345/157P 345/158 345/158P 345/161 345/173 345/173P 345/173S 345/174 345/174P 345/175 345/175P 345/175S 345/177 345/177P 345/184 345/184S 345/419 345/419 345/690 345/7 345/7S 348/143 348/169 348/207.1 348/207.100S 348/373 348/373P 348/744 348/744P 348/744S 348/77 348/77S 348/837 348/837S 348/E5.024 348/E5.128 348/E5.137 348/E50.24S 348/E51.28S 348/E51.37S 348/E7.085 348/E70.85S 348/E9.025 348/E9.026 348/E90.25S 348/E90.26S 358/1.12 382/103 382/103P 382/104 382/107 382/154 382/176 382/181 382/312 463/1 463/10 463/16 463/31 463/31P 463/32 463/34 463/36 463/36P 463/36S 463/37 463/4 463/5 463/7 463/8 482/5 482/8 482/8P 482/9 482/900 482/901 600/476 600/558 600/559 600/595 700/17 700/18 700/19 700/20 700/83 702/127 704/275 704/275S 704/E21.001 704/E21.001S 707/802 707/802S 707/E17.044 707/E17.044S 709/206 709/206S 715/702 715/702S 715/709 715/744 715/745 715/764 715/764P 715/788 715/789 715/810 715/811 715/833 715/833S 715/863 715/865



Family:

Publication number	Publication date	Application number	Application date
AU2010249515 AA	20101125	AU20100249515	20100519
AU2010249515 AA	20120119	AU20100249515	20100519
CN102498442 A	20120613	CN201080028358	20100519
DE602004050237 D1	20161215	DE200460050237T	20040331
EP1626877 A2	20060222	EP20040759053	20040331
EP1626877 A4	20110810	EP20040759053	20040331
EP2213501 A2	20100804	EP20100003820	20040331
EP2213501 A3	20120509	EP20100003820	20040331
EP2433188 A2	20120328	EP20100725928	20100519
EP2581248 A1	20130417	EP20130150499	20040331
EP2581248 B1	20161102	EP20130150499	20040331
HK1168914 A1	20130111	HK20120109654	20120928
HK1183849 A1	20140110	HK20130110918	20130925
HK1183849 B	20170901	HK20130110918	20130925
JP2012527847 T2	20121108	JP20120512012T	20100519
KR20120011892 A	20120208	KR20117030372	20100519
US2004046736 AA	20040311	US20030622812	20030721
US2005064936 AA	20050324	US20040934762	20040907
US2005129273 AA	20050616	US20040893534	20040719
US2005276448 AA	20051215	US20050184076	20050719
US2006202953 AA	20060914	US20060429305	20060508

US2006267963 AA	20061130	US20060495666	20060731
US2008024463 AA	20080131	US20070832134	20070801
US2008088587 AA	20080417	US20070852690	20070910
US2008122786 AA	20080529	US20070980716	20071031
US2008122799 AA	20080529	US20070980715	20071031
US2008122805 AA	20080529	US20070980718	20071031
US2008125289 AA	20080529	US20070980717	20071031
US2008129704 AA	20080605	US20070980701	20071031
US2008129707 AA	20080605	US20070980722	20071031
US2008132332 AA	20080605	US20070980714	20071031
US2008144886 AA	20080619	US20070980710	20071031
US2008211779 AA	20080904	US20070980721	20071031
US2009233769 AA	20090917	US20090358404	20090123
US2009267921 AA	20091029	US20090500968	20090710
US2009273563 AA	20091105	US20090500978	20090710
US2009273574 AA	20091105	US20090500951	20090710
US2009273575 AA	20091105	US20090500984	20090710
US2009300531 AA	20091203	US20090500973	20090710
US2009322499 AA	20091231	US20090500925	20090710
US2010182136 AA	20100722	US20100748657	20100329
US2010182137 AA	20100722	US20100748670	20100329
US2010182236 AA	20100722	US20100748665	20100329
US2010190610 AA	20100729	US20100754285	20100405
US2010194976 AA	20100805	US20100719433	20100308
US2010201893 AA	20100812	US20100715097	20100301
US2010231506 AA	20100916	US20090468401	20090519
US2010231547 AA	20100916	US20100748666	20100329
US2010277412 AA	20101104	US20100834281	20100712
US2011018830 AA	20110127	US20100897056	20101004
US2011018831 AA	20110127	US20100897061	20101004
US2011018832 AA	20110127	US20100897079	20101004
US2011032089 AA	20110210	US20100897072	20101004
US2011032203 AA	20110210	US20100897068	20101004
US2011032204 AA	20110210	US20100897075	20101004
US2011037725 AA	20110217	US20100897077	20101004
US2011074724 AA	20110331	US20100964123	20101209
US2011170746 AA	20110714	US20110051698	20110318
US2012218181 AA	20120830	US20120461954	20120502
US2012277594 AA	20121101	US20120544180	20120709
US2012287072 AA	20121115	US20120556019	20120723
US2013009900 AA	20130110	US20120620299	20120914
US2013057594 AA	20130307	US20120613679	20120913
US2013176206 AA	20130711	US20120714755	20121214
US2013190135 AA	20130725	US20120668351	20121105
US2013215014 AA	20130822	US20130850602	20130326
US2013241823 AA	20130919	US20130866839	20130419
US2013267318 AA	20131010	US20130849150	20130322
US5982352 A	19991109	US19950496908	19950629
US6008800 A	19991228	US19940290516	19940815
US6720949 BA	20040413	US19980138285	19980821
US6766036 BA	20040720	US20000612225	20000707
US7042440 BB	20060509	US20030622812	20030721
US7079114 BA	20060718	US20030424975	20030429
US7084859 BA	20060801	US20010789538	20010222
US7084859 C1	20110517	US20010789538	20010222
US7098891 BA	20060829	US19990435854	19991108
US7328119 BA	20080205	US20050118774	20050502
US7401783 BB	20080722	US20040893534	20040719
US7466843 BB	20081216	US20050184076	20050719
US7489303 BA	20090210	US20030611814	20030702
US7671851 BA	20100302	US20050319807	20051229
US7675504 BA	20100309	US20060371224	20060309
US7693584 BB	20100406	US20070980717	20071031
US7714849 BB	20100511	US20060495666	20060731
US7756297 BB	20100713	US20070980710	20071031
US7933431 BB	20110426	US20100834281	20100712
US7973773 BB	20110705	US20070980701	20071031
US8013843 BB	20110906	US20100897056	20101004
US8040328 BB	20111018	US20070980718	20071031
US8044941 BB	20111025	US20100897075	20101004
US8068100 BB	20111129	US20100964123	20101209
US8072440 BB	20111206	US20100897072	20101004
US8083588 BB	20111227	US20070980714	20071031
US8111239 BB	20120207	US20060429305	20060508
US8194924 BB	20120605	US20110051698	20110318
US8228305 BB	20120724	US20090500973	20090710
US8287374 BB	20121016	US20040934762	20040907
US8306635 BB	20121106	US20090358404	20090123
US8405604 BB	20130326	US20070980716	20071031
US8427449 BB	20130423	US20120556019	20120723

US8482534 BB	20130709	US20090500968	20090710
US8482535 BB	20130709	US20090500978	20090710
US8538562 BB	20130917	US20100754285	20100405
US8576199 BA	20131105	US20070878024	20070720
US8610674 BB	20131217	US20090500984	20090710
US8665245 BB	20140304	US20100715097	20100301
US8892219 BB	20141118	US20120668351	20121105
US9513744 BB	20161206	US20070980721	20071031
US9758042 BB	20170912	US20120620299	20120914
WO04091956 A2	20041028	WO2004US09701	20040331
WO04091956 A3	20071213	WO2004US09701	20040331
WO10135478 A2	20101125	WO2010US35488	20100519
WO10135478 A3	20110224	WO2010US35488	20100519

Priority:

US19920946588	19920918	US19920496908	19920918	US19940290516	19940815
US19950496908	19950629	US19970056639P	19970822	US19970059561P	19970919
US19980138285	19980821	US19990142777P	19990708	US19990435854	19991108
US20000183807P	20000222	US20000142777P	20000222	US20000187396P	20000307
US20000187397P	20000307	US20000612225	20000707	US20000183807P	20000926
US20000234934P	20000926	US20000239618P	20001011	US20000246344P	20001107
US20010789538	20010222	US20010799797	20010304	US20010799797	20010307
US20010974250	20011010	US20020376353P	20020429	US20020393130P	20020703
US20030458434P	20030331	US20030424975	20030429	US20030611814	20030702
US20030622812	20030721	US20030499890P	20030904	US20030502271P	20030912
US20040539578P	20040129	EP20040759053	20040331	EP20130150499	20040331
WO2004US09701	20040331	US20040893534	20040719	US20040591213P	20040727
US20040598446P	20040804	US20040934762	20040907	US20040639799P	20041229
US20050045131	20050131	US20050650554P	20050208	US20050660328P	20050311
US20050118774	20050502	US20050684959P	20050527	US20050184076	20050719
US20050272868	20051115	US20050319807	20051229	US20060349350	20060208
US20060371224	20060309	US20060429305	20060508	US20060439442	20060524
US20060495666	20060731	US20060835072P	20060803	US20060844082P	20060913
US20070878024	20070720	US20070832134	20070801	US20070852690	20070910
US20070980716	20071031	US20070980715	20071031	US20070980701	20071031
US20070980714	20071031	US20070980710	20071031	US20070980717	20071031
US20070980718	20071031	US20070980722	20071031	US20070980721	20071031
US20080022991P	20080123	US20080054643P	20080520	US20090358404	20090123
US20090468401	20090519	US20090500968	20090710	US20090500984	20090710
US20090500978	20090710	US20090500973	20090710	US20090500925	20090710
US20090500951	20090710	US20100715097	20100301	US20100719433	20100308
US20100748657	20100329	US20100748670	20100329	US20100748665	20100329
US20100748666	20100329	US20100754285	20100405	WO2010US35488	20100519
US20100834281	20100712	US20100897056	20101004	US20100897061	20101004
US20100897079	20101004	US20100897072	20101004	US20100897068	20101004
US20100897075	20101004	US20100897077	20101004	US20100964123	20101209
US20110051698	20110318	US20110506212P	20110711	US20120461954	20120502
US20120544180	20120709	US20120556019	20120723	US20120613679	20120913
US20120620299	20120914	US20120668351	20121105	US20120714755	20121214
US20130849150	20130322	US20130850602	20130326	US20130866839	20130419

Probable Assignee: GESTURE TECHNOLOGY PARTNERS LLC

Assignee(s): (std): PRYOR TIMOTHY R ; SMITH PETER ; PRYOR MARIE C ; PRYOR TIMOTHY ; SMITH PETER H ; MOTION GAMES LLC ; APPLE INC

Assignee(s): GESTURE TECHNOLOGY PARTNERS LLC ; APPLE INC CUPERTINO ; INCASA HEALTH LLC ; TACTILE FEEDBACK TECHNOLOGY LLC ; PSTP TECHNOLOGIES LLC

Inventor(s): (std): PRYOR MARIE C ; PRYOR TIMOTHY ; PRYOR TIMOTHY R ; SMITH PETER ; SMITH PETER H

Inventor(s): PRYOR TIMOTHY R TECUMSEH

Agent(s): FREEHILLS PATENT AND TRADE MARK ATTORNEYS; FREEHILLS PATENT ATTORNEYS; HERBERT SMITH FREEHILLS; FREEHILLS PATENT ATTORNEY S; FPA PATENT ATTORNEYS PTY LTD; BARDEHLE PAGENBERG PARTNERSCHAFT MBB PATENTANWAELTE RECHTSANWAELTE; CALDERBANK THOMAS ROGER; LANG JOHANNES; BARTON RUSSELL GLEN; MARKS AND CLERK; NORTON ROSE FULBRIGHT HONG KONG; STITES AND HARBISON PLLC; WARNER NORCROSS AND JUDD LLP; APPLE C O MORRISON AND FOERSTER LLP LOS ANGELES; WARNER NORCROSS AND JUDD LLP,INTELLECTUAL PROPERTY GROUP; WARNER NORCROSS AND JUDD LLP INTELLECTUAL PROPERTY GROUP; DOUGLAS E; ROSS F; HUNT JR ROSS F; JACKSON DOUGLAS E; MORRISON AND FOERSTER LLP; KUBOTA GLENN M ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

12) Family number: 75754488 (US2018279993A)

© PatBase

Title: MEDICAL IMAGING SYSTEMS USING ROBOTIC ACTUATORS AND RELATED METHODS

Abstract: Methods may be provided to operate an imaging system using a contact imaging probe to generate imaging of a body. A robotic actuator may be controlled to position the contact imaging probe at a first location on a surface of the body such that the contact imaging probe is in a first radial alignment with an imaging isocenter. The robotic actuator may then be controlled to position the contact imaging probe at a second location on the surface of the body such that the contact imaging probe is in a second radial alignment with the imaging isocenter. Moreover, the first and second radial alignments may be different.

Classifications:

International (IPC 8-9): A61B34/30 A61B8/00 A61B8/08 A61B8/14

A61B90/50 G06T7/30 G06T7/66 (Advanced/Invention)

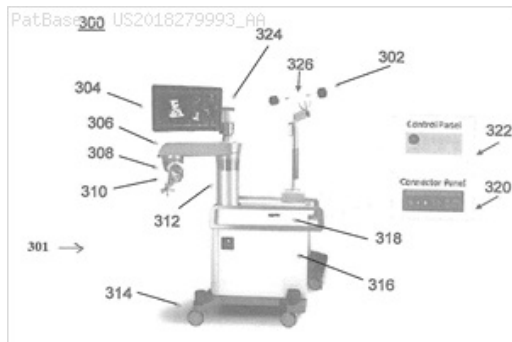
CPC: A61B8/4218 A61B8/4263 G06T7/30 G06T7/66 A61B8/54

A61B8/14 A61B2034/2057 A61B34/30 A61B90/50 G06T2207/10136

G06T2207/20221 G06T2207/30004 A61B8/5207 A61B8/4254

A61B8/483 A61B17/1757 A61B17/7082 A61B34/32 A61B2034/107

A61B2034/2065 A61B2034/2072 A61B2090/365 A61B2090/376



Family:

Publication number	Publication date	Application number	Application date
US2018279993 AA	20181004	US20180002223	20180607

Priority:

US20120662702P	20120621	US20130800527P	20130315	US20130924505	20130621
US20130062707	20131024	US20160095883	20160411	US20160157444	20160518
US20170609334	20170531	US20180002223	20180607		

Probable Assignee: GLOBUS MEDICAL INC
Assignee(s): (std): GLOBUS MEDICAL INC
Inventor(s): (std): CRAWFORD NEIL R ; JOHNSON NORBERT

13) Family number: 30560556 (US2002007510A)

© PatBase

Title: SMART BATHROOM FIXTURES AND SYSTEMS

Abstract: Image sensors, processors, and control systems facilitate automatic sensor operated bathroom fixtures, systems for controlling bathroom fixtures, and methods of bathroom fixture design, control, and management, as well as the control and management of hygiene and water resources. The networked plumbing systems also help facility managers and law enforcement personnel monitor the operation of various bathrooms in a facility or at remote facilities. Image sensors are used for controlling several showers, faucets, urinals, or water closets in large bathroom complexes. Image based intelligent bathroom fixtures and systems help enhance the privacy of users by ensuring that law abiding users need not be disturbed by police foot patrols into the restroom areas, or by security guards entering simply to make inspections. An aquionics bathroom control system of the invention maintains the cleanliness, safety, security, and privacy of the occupants in a smart bathroom environment. Additionally, in some embodiments, a bathroom facility of the invention may be used for mass decontamination during times of emergency for processing victims of a nuclear, biological, or chemical incident. Once ubiquitously installed for routine control of fixtures, the apparatus facilitates a secondary usage such as monitoring by triage staff, medical personnel, decontamination officers, or law enforcement officers during times of terrorist consequence management.

Classifications:

International (IPC 8-9): A45C1/06 A45C13/18 A47K3/28 A61B5/00

A61F2/14 A61H33/00 A63F13/80 A63F9/00 A63F9/24 A63H30/04 B62D1/00 B64F1/36 E03C1/05 E03D3/00 E03D5/10 E03D9/00 E04H1/12 E05B47/00 E05B65/00 G02B23/12 G02B27/00 G02B27/01 G02B27/18 G02B27/20 G02C1/00 G02C11/00 G02C11/04 G02C11/06 G02C7/02 G02C7/04 G02C7/10 G02C9/00 G02F1/01 G03B1/00 G03B13/02 G03B13/04 G03B13/06 G03B13/16 G03B15/02 G03B15/05 G03B15/08 G03B17/18 G03B17/48 G03B17/56 G03B19/00 G03B29/00 G03B33/08 G03B43/00 G03B7/00 G04G21/04 G04G9/00 G04G99/00 G05B11/16 G05B19/00 G05B23/00 G05B23/02 G05D1/00 G05D7/06 G06F1/16 G06F17/00 G06F19/00 G06F3/00 G06F3/01 G06F3/02 G06F7/00 G06F7/04 G06K19/00 G06K9/00 G06K9/36 G06T1/00 G06T5/50 G06T7/00 G07C9/00 G07F7/02 G07F7/12 G07G1/00 G07G1/12 G08B13/00 G08B13/196 G08B15/00 G08B19/00 G08B21/00 G08B21/02 G08B21/08 G08B23/00 G08B25/00 G08B29/00 G08C19/00 G09G3/00 G09G3/32 G09G5/00 G21F9/00 H04B1/00 H04B3/00 H04L12/16 H04L9/14 H04L9/28 H04L9/32 H04N5/00 H04N5/222 H04N5/225 H04N5/232 H04N5/243 H04N5/247 H04N5/30 H04N5/335 H04N5/77 H04N7/00 H04N7/14 H04N7/15 H04N7/18 H04N9/12 H04Q1/00 H04Q9/00 H04R1/40 H04R25/00 (Advanced/Invention); A63H30/04 G02B27/00 G06T1/00 H04N5/92 H04N7/15 (Advanced/Non-invention); A45C1/00 A45C13/00 A47K3/28 A61B5/00 A61F2/14 A63F9/00 A63H30/00 B62D1/00 B64F1/00 E03D3/00 E03D5/00 E03D9/00 E04H1/12 E05B47/00 E05B65/00 G02B27/00 G02B27/01 G02B27/18 G02B27/20 G02C1/00 G02C11/00 G02C11/04 G02C11/06 G02C7/02 G02C7/04 G02C7/10 G02C9/00 G02F1/01 G03B1/00 G03B13/02 G03B13/04 G03B13/06 G03B13/16 G03B15/02 G03B15/05 G03B15/08 G03B17/48 G03B17/56 G03B19/00 G03B29/00 G03B33/08 G05B11/16 G05B19/00 G05B23/00 G05D1/00 G05D7/06 G06F1/16 G06F17/00 G06F19/00 G06F3/00 G06F3/01 G06F3/02 G06F7/00 G06F7/04 G06K19/00 G06K9/00 G06K9/36 G06T1/00 G06T5/50 G06T7/00 G07C9/00 G07F7/02 G07F7/12 G07G1/00 G07G1/12 G08B13/00 G08B13/196 G08B15/00 G08B19/00 G08B21/00 G08B21/02 G08B21/08 G08B23/00 G08B25/00 G08B29/00 G08C19/00 G09G3/32 G09G5/00 H04B1/00 H04B3/00 H04L12/16 H04L9/14 H04L9/28 H04L9/32 H04N5/00 H04N5/222 H04N5/225 H04N5/232 H04N5/243 H04N5/247 H04N5/30 H04N5/77 H04N7/00 H04N7/14 H04N7/15 H04N7/18 H04N9/12 H04Q1/00 H04Q9/00 H04R1/40 H04R25/00 (Core/Invention); A63H30/00 (Core/Non-invention)

International (IPC 1-7): A45C1/06 A45C13/18 A47K3/28 A61B5/00 A61F2/14 A61H33/00 A63F9/00 A63F9/24 B62D1/00 B64F1/36 E03C1/05 E03D3/00 E03D5/10 E03D9/00 E05B47/00 E05B65/00 G02B23/12 G02B27/00 G02B27/01 G02B27/18 G02B27/20 G02C1/00 G02C11/00 G02C11/04 G02C11/06 G02C7/02 G02C7/04 G02C7/10 G02C9/00 G02F1/01 G03B1/00 G03B13/02 G03B13/04 G03B13/06 G03B13/16 G03B15/02 G03B15/05 G03B15/08 G03B17/48 G03B17/56 G03B19/00 G03B29/00 G03B33/08 G05B11/16 G05B19/00 G05B23/00 G05D1/00 G05D7/06 G06F1/16 G06F17/00 G06F19/00 G06F3/00 G06F3/01 G06F3/02 G06F7/00 G06F7/04 G06K19/00 G06K9/00 G06K9/36 G06T1/00 G06T5/50 G06T7/00 G07C9/00 G07F7/02 G07F7/12 G07G1/00 G07G1/12 G08B13/00 G08B13/196 G08B15/00 G08B19/00 G08B21/00 G08B21/02 G08B21/08 G08B23/00 G08B25/00 G08B29/00 G08C19/00 G09G3/32 G09G5/00 H04B1/00 H04B3/00 H04L12/16 H04L9/14 H04L9/28 H04L9/32 H04N5/00 H04N5/222 H04N5/225 H04N5/232 H04N5/243 H04N5/247 H04N5/30 H04N5/77 H04N7/00 H04N7/14 H04N7/15 H04N7/18 H04N9/12 H04Q1/00 H04Q9/00 H04R1/40 H04R25/00

CPC: G06F1/16 G06F1/1626 G06F1/163 G06F1/1632 G06F1/1686 G06F2200/1632 H04N5/772 H04N5/9206 H04N7/141 H04N7/15 G08B13/19613 G08B13/19643 G08B13/19669 G08B13/19686 G08B13/19619 G08B13/19621 G08B13/1966 G08B15/001 H04N7/183 G02B5/30 G02B27/0172 G02B27/0173 G02B27/0138 H04N5/2251 H04N7/185 G06Q20/343 G07F7/02 G07G1/0081 G07G1/12 G02B27/0134 G06F3/0386 G06Q10/101 G06Q30/0641 H04N7/18 E03C1/057 E03D5/105 E03C1/05 G02B27/0101 G02B27/0118 G02B27/0178 H04N5/332 A47K3/286 E04H1/1277 G21F9/001 G05D1/0016 G05D1/0038

G05D2201/0214 G03B15/02 G03B15/05 G03B15/08 G03B29/00 G03B33/08 G08C19/00 H04N5/232 G06T5/50 G06F1/16
H04N5/222 H04N9/12 G02C11/00 G02C11/04 G03B13/06 G02C7/02 G02C9/00 G03B13/04 G09G3/00 G09G3/32 G03B13/02
H04N5/77 G02B27/18 G02B27/20 G03B17/48 G03B17/56 H04N5/243 G03B19/00 A45C1/06 A45C13/18 E05B47/00
E05B65/00 H04N7/00 G02C7/04 G02B27/00 G02F1/01 G02C7/10 G02C11/06 H04R1/40 H04N5/247 E03D5/10 G05B11/16
G05D7/06 G09G2380/02 G02B2027/014 G08B21/245 A47K2210/00 B62D1/00 E03D9/002 G04G21/04 G04G9/0064
G04R20/02 H04N7/142 H04N7/147 H04R25/407 G02B27/017 H04N5/23293 G06T2207/10144 G06T2207/20221 H04N5/225
G16H10/60 G16H40/63 G06F3/011 A63H30/04 G02B27/01 G07F7/08 G07F7/12 H04N5/2355 G07C9/257
European: A47K3/28C3 A63H30/04 B62D1/00 B64F1/36C E03C1/05 E03C1/05D2 E03D5/10B E03D9/00D E04H1/12F
G02B27/01 G02B27/01A G02B27/01C G02B27/01C1 G04G21/04 G04G9/00F G05D1/00C G05D1/00C1 G05D1/00C5
G06F1/16P3 G06F1/16P5 G06F1/16P6 G06F1/16P9D5S G06F1/16P9P2 G06F19/00A G06F19/32C G06F3/00B8 G06F3/01B
G06F3/038L G06Q10/101 G06Q20/343 G06Q30/0641 G07C9/00B6D4 G07F7/02 G07F7/08 G07F7/12 G07G1/00C2P G07G1/12
G08B13/196A5 G08B13/196C1 G08B13/196C2 G08B13/196L1D G08B13/196N3 G08B13/196S2 G08B13/196U4 G08B15/00B
G08B15/00C G08B21/24H G21F9/00B H04N5/225C H04N5/232V H04N5/235N H04N5/33D H04N5/77B H04N7/14A
H04N7/14A2 H04N7/14A3 H04N7/15 H04N7/18 H04N7/18D H04N7/18D2 K47K210/00 K63H30/04 S02B27/01A10
S02B27/01A4 S02B27/01A9A S02B27/01C3 S02B5/30 S05D201/0214 S06F19/34A S06F200/1632 T04N5/92N6
US: 235/380 235/382 340/3.3 340/3.300P 340/33 340/5.3 340/5.300P 340/5.53 340/5.530S 340/5.81 340/5.810S 340/53
345/7 345/8 345/8P 345/8S 345/9 348/115 348/143 348/143P 348/207 348/207.1 348/211 348/E7.087 348/E70.87S 396/374
396/374P 396/661 396/661P 4/300 4/300P 702/187 702/187P
Locarno class: 00/43

Family:

Publication number	Publication date	Application number	Application date
AT241245 E	20030615	AT19990910052T	19990325
AT242573 E	20030615	AT19990908727T	19990325
AU199928239 A1	19991018	AU19990028239	19990325
AU199929174 A1	19991018	AU19990029174	19990325
CA2228403 AA	19990802	CA19982228403	19980202
CA2233047 AA	19990802	CA19982233047	19980325
CA2233047 C	20000926	CA19982233047	19980325
CA2235030 AA	19990802	CA19982235030	19980414
CA2237939 AA	19980828	CA19982237939	19980629
CA2237939 C	19990921	CA19982237939	19980629
CA2247649 AA	19981127	CA19982247649	19981013
CA2247649 C	20000725	CA19982247649	19981013
CA2248473 AA	19981229	CA19982248473	19981029
CA2248473 C	20000725	CA19982248473	19981029
CA2249976 AA	19981222	CA19982249976	19981015
CA2249976 C	19991102	CA19982249976	19981015
CA2256918 AA	19990802	CA19982256918	19981224
CA2256918 C	20011016	CA19982256918	19981224
CA2256920 AA	19990802	CA19982256920	19981229
CA2256922 AA	19990802	CA19982256922	19981231
CA2256922 C	20030107	CA19982256922	19981231
CA2261376 AA	19990802	CA19992261376	19990201
CA2264973 AA	19990915	CA19992264973	19990315
CA2267877 AA	19991014	CA19992267877	19990401
CA2275784 AA	19991229	CA19992275784	19990629
CA2275784 C	20001024	CA19992275784	19990629
CA2275798 AA	19991229	CA19992275798	19990629
CA2275798 C	20001024	CA19992275798	19990629
CA2280022 AA	20010128	CA19992280022	19990728
CA2280420 AA	20000413	CA19992280420	19990812
CA2280425 AA	20000413	CA19992280425	19990816
CA2280425 C	20011009	CA19992280425	19990816
CA2290765 AA	19981127	CA19982290765	19981013
CA2290765 C	20000725	CA19982290765	19981013
CA2295378 AA	20000630	CA19992295378	19991229
CA2295448 AA	20000630	CA19992295448	19991231
CA2297344 AA	20000801	CA20002297344	20000131
CA2300435 AA	20000528	CA20002300435	20000228
CA2303611 AA	20001001	CA20002303611	20000403
CA2309868 AA	20001229	CA20002309868	20000530
CA2310114 AA	19990802	CA19982310114	19980325
CA2313693 AA	20010128	CA20002313693	20000719
CA2316098 AA	20010212	CA20002316098	20000802
CA2316473 AA	20010128	CA20002316473	20000724
CA2351660 AA	20020202	CA20012351660	20010626
CA2354113 AA	20020202	CA20012354113	20010710
CA2354114 AA	20020124	CA20012354114	20010716
CA2357681 AA	20021226	CA20012357681	20010829
CA2357697 AA	20021226	CA20012357697	20010829
CA2358900 AA	19990802	CA19982358900	19981224
CA2360051 AA	20021226	CA20012360051	20011010
CA2362895 AA	20021226	CA20012362895	20011113
CA2364080 AA	20021226	CA20012364080	20011205
CA2414397 AA	20030802	CA20022414397	20021231
DE69908108 D1	20030626	DE19996008108	19990325
DE69908574 D1	20030710	DE19996008574	19990325
EP1064783 A1	20010103	EP19990908727	19990325
EP1064783 B1	20030604	EP19990908727	19990325
EP1066717 A1	20010110	EP19990910052	19990325
EP1066717 B1	20030521	EP19990910052	19990325
GB200203423 A0	20020403	GB20020003423	19990202
GB2334591 A1	19990825	GB19990002328	19990202

GB2334591 B2	20020605	GB19990002328	19990202
GB2370958 A1	20020710	GB20020003423	19990202
GB2370958 B2	20021009	GB20020003423	19990202
GB9902328 A0	19990324	GB19990002328	19990202
JP2002508635 T2	20020319	JP20000538502T	19990325
JP2002508636 T2	20020319	JP20000538503T	19990325
US2002007510 AA	20020124	US20010944429	20010904
US2002030637 AA	20020314	US20010987768	20011115
US2002057915 AA	20020516	US20010945879	20010905
US2002085843 AA	20020704	US20010953684	20010918
US2002105410 AA	20020808	US20010978233	20011016
US2002198685 AA	20021226	US20020145309	20020515
US2003034874 AA	20030220	US20010944442	20010904
US2003043268 AA	20030306	US20010944430	20010904
US6307526 BA	20011023	US19980172599	19981015
US6446862 BA	20020910	US19990480929	19991231
US6614408 BA	20030902	US19990275775	19990325
WO9949655 A1	19990930	WO1999CA00248	19990325
WO9949656 A1	19990930	WO1999CA00249	19990325

Priority:

CA19982228403 19980202	CA19982233047 19980315	CA19982233047 19980325
CA19982310114 19980325	CA19982235030 19980414	CA19982237939 19980629
CA19982247649 19981013	CA19982290765 19981013	CA19982249976 19981015
US19980172599 19981015	CA19982248473 19981029	CA19982358900 19981224
CA19982256918 19981224	CA19982256920 19981229	CA19982256922 19981231
CA19992261376 19990201	GB19990002328 19990202	CA19992264973 19990315
US19990275775 19990325	WO1999CA00248 19990325	WO1999CA00249 19990325
CA19992267877 19990401	CA19992275784 19990629	CA19992275798 19990629
CA19992280022 19990728	CA19992280420 19990812	CA19992280425 19990816
US19990422559 19991021	US19990421937 19991021	US19990421938 19991021
US19990422790 19991022	US19990422791 19991022	US19990422795 19991022
CA19992247649 19991221	CA19992295378 19991229	CA19992295448 19991231
US19990480930 19991231	US19990480929 19991231	US20000480929 20000111
US20000480930 20000111	CA20002297344 20000131	CA20002300435 20000228
CA20002303611 20000403	CA20002309868 20000530	CA20002233047 20000711
CA20002313693 20000719	CA20002316473 20000724	CA20002316098 20000802
CA20002316098 20000829	CA20012351660 20010626	CA20012354113 20010710
CA20012354114 20010716	CA20012357697 20010829	CA20012357681 20010829
US20010944430 20010904	CA20012360051 20011010	CA20012362895 20011113
CA20012364080 20011205	CA20022351660 20020202	CA20022414397 20021231

Probable Assignee: MANN WILLIAM S G

Assignee(s): (std): MANN W S G ; MANN W STEPHAN G ; MANN W STEPHEN G ; STEPHEN G MANN W ; MANN W STEVE G ; MANN WILLIAM S G ; MANN WILLIAM STEPHEN GEORGE ; MANN STEVE

Assignee(s): W STEPHEN G MANN ; MANN W ; WILLIAM STEPHEN GEORGE MANN

Inventor(s): (std): MANN STEVE ; MANN W STEPHEN G ; MANN W STEVE G ; MANN STEVE G ; MANN WILLIAM STEPHEN GEORGE ; W STEPHEN G MANN

Inventor(s): W STEVE G MANN ; MANN W ; WILLIAM STEPHEN GEORGE MANN

Agent(s): SMART AND BIGGAR; NA; CROWELL AND MORING LLP

Designated states: AL AM AT AU AZ BA BB BE BF BG BJ BR BY CF CG CH CI CM CN CU CY CZ DE DK EE ES FI FR GA GB GD GE GH GM GN GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LI LK LR LS LT LU LV MC MD MG MK ML MN MR MW MX NE NL NO NZ PL PT RO RU SD SE SG SI SK SL SN SZ TD TG TJ TM TR TT UA UG UZ VN YU ZW

14) Family number: 56395591 (US2014126767A)

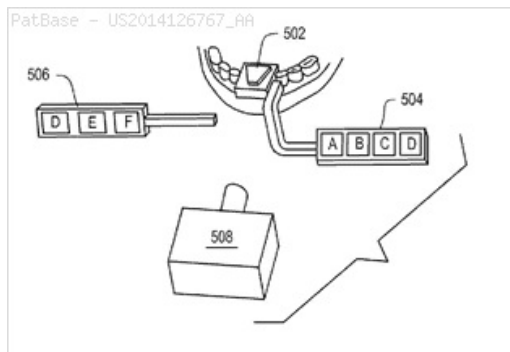
© PatBase

Title: SYSTEM AND METHOD FOR DETERMINING THE THREE-DIMENSIONAL LOCATION AND ORIENTATION OF IDENTIFICATION MARKERS

Abstract: A three-dimensional position and orientation tracking system comprises one or more pattern tags, each comprising a plurality of contrasting portions, a tracker for obtaining image information about the pattern tags, a database with geometric information describing patterns on pattern tags; and a controller for receiving and processing the image information from the tracker, accessing the database to retrieve geometric information, and comparing the image information with the geometric information. The contrasting portions are arranged in a rotationally asymmetric pattern and at least one of the contrasting portions on a pattern tag has a perimeter that has a mathematically describable curved section. The perimeter of the contrasting portion may comprise a conic section, including for example an ellipse or a circle. The tracking system can be implemented in a surgical monitoring system in which the pattern tags are attached to tracking markers or are themselves tracking markers.

Classifications:

International (IPC 8-9): A61B19/00 A61B34/00 A61B34/20 A61B6/00 A61B6/14 A61B90/00 A61B90/90 A61C1/08 A61C19/00 A61C19/04 G06K9/00 G06K9/32 G06Q50/22 G06T7/00 G06T7/20 G06T7/60 (Advanced/Invention); A61B19/00 (Advanced/Non-invention)
CPC: A61B6/03 A61B6/0492 A61B6/12 A61B6/14 A61B6/5294 A61B10/0233 A61C9/0053 G06T7/20 G06T7/60 G06T2200/04 G06T2207/30036 G06T2207/30052 A61B2560/0475 A61B2090/367 A61B2090/378 A61B6/563 G06T7/11 G06T7/74 G06K9/00624 A61B90/94 A61B2090/3966 G06K2209/057 A61B34/20 A61B90/39 A61B2034/2055 A61B2034/2065 A61B2090/3937 A61B2090/3983 G06K9/00201 G06K2009/3225 G06K2209/055 G06T7/251 G06T2207/10016 G06T2207/30208 Y10S128/922 Y10S128/923 A61C1/082 A61C19/04
US: 1/1 128/922 128/923 382/103 382/128 382/153 382/154 600/407 600/424



Family:

Publication number	Publication date	Application number	Application date
CA2891036 AA	20150507	CA20132891036	20131108
CA2891036 C	20170314	CA20132891036	20131108
CA2938359 AA	20160729	CA20152938359	20150209
EP2922489 A1	20150930	EP20130792296	20131108
EP3104802 A1	20161221	EP20150703774	20150209
JP2016505176 T2	20160218	JP20150541159T	20131108
JP5972475 B2	20160817	JP20150541159T	20131108
KR101561657 B1	20151020	KR20157015075	20131108
KR20150072455 A	20150629	KR20157015075	20131108
US2014126767 AA	20140508	US20120713165	20121213
US2015119685 AA	20150430	US20140562691	20141206
US2015150641 AA	20150604	US20150613827	20150204
US2016078627 AA	20160317	US20150953385	20151129
US8908918 BB	20141209	US20120713165	20121213
US9198737 BB	20151201	US20140562691	20141206
US9336597 BB	20160510	US20150953385	20151129
WO14072472 A1	20140515	WO2013EP73401	20131108
WO15118157 A1	20150813	WO2015EP52664	20150209

Priority:

US20110553058P	20111028	US20120616718P	20120328	US20120571284	20120809
WO2012IL00363	20121021	US20120724024P	20121108	US20120713165	20121213
US20130822358	20130312	WO2012IL00363	20131021	WO2013EP73401	20131108
US20140938033P	20140210	US20140562691	20141206	US20150599149	20150116
US20150613827	20150204	WO2015EP52664	20150209	US20150953385	20151129

Probable Assignee: NAVIGATE SURGICAL TECHNOLOGIES INC

Assignee(s): (std): BECKETT MARTIN GREGORY ; DAON EHUD UDI ; NAVIDENT TECHNOLOGIES INC ; NAVIGATE SURGICAL TECH INC ; NAVIGATE SURGICAL TECHNOLOGIES INC ; NAVIGATE SURGICAL TECHNOLOGIES INC

Inventor(s): (std): BECKETT MARTIN GREGORY ; DAON EHUD ; DAON EHUD UDI

Agent(s): ROBIC ; THIBON LAURENT ; BRANNON SOWERS AND CRACRAFT PC ; KEVIN R ; CABINET BEAUMONT

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

15) Family number: 43762645 (US2011102549A)

© PatBase

Title: THREE-DIMENSIONAL DIGITAL MAGNIFIER OPERATION SUPPORTING SYSTEM

Abstract: The simulation regarding the state change of the subject in a real space provides a system which represents impacts to three-dimensional computer graphics caused by changes of state of three-dimensional computer graphics composed and fixed to subject, and state of image taking space by simulation, surface polygon model and similar surface polygon model 1 is selected, according to shape pattern, from surface polygon model 2 measures, in a three-dimensional way, subject image existing in the same space, a tracking process is performed on the computer graphics, following to the relative position change of the position changes of the subject and the camera caused in real three-dimensional space, subjects in the visual field of the camera and virtual three-dimensional computer graphics image is unified and displayed by displaying computer graphics image having the same relative position change on the image.

Classifications:

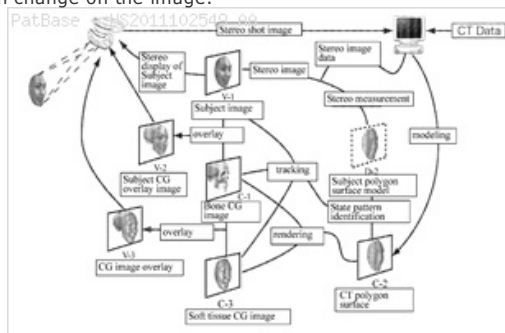
International (ipc 8-9): A61B17/24 A61B19/00 A61B6/14 A61B9/00 A61C13/38 A61C19/04 G06K9/00 G06T19/00 G06T7/00 H04N13/00 H04N13/02 (Advanced/Invention); A61B17/24 A61B19/00 A61B6/14 A61C19/04 (Advanced/Non-invention); A61B19/00 A61C19/04 (Core/Invention)

International (ipc 1-7): A61B19/00 A61C19/04

CPC: A61B6/506 A61B9/36 A61B2090/365 A61B2090/371 A61C1/084 G06T7/33 G06T19/00 G06T2200/08 G06T2207/10012 G06T2207/10081 G06T2207/10088 G06T2207/30036

European: A61B19/52 A61C1/08F1 K61B19/52L2

US: 348/42 348/46 348/46P 348/E13.074 348/E13.074S 348/E5.055 348/E50.55S 382/128 382/154



Family:

Publication number	Publication date	Application number	Application date
CA2727585 AA	20101210	CA20092727585	20090323
CA2727585 C	20180925	CA20092727585	20090323
CN102036616 A	20110427	CN200980118615	20090323
CN102036616 B	20150513	CN200980118615	20090323
EP2269533 A1	20110105	EP20090723316	20090323
EP2269533 A4	20160608	EP20090723316	20090323
IN02245MN2010 A	20110722	IN2010MN02245	20101021
JP2009116663 A1	20110721	JP20090513502T	20090323
JP5390377 B1	20140115	JP20090513502T	20090323
JP5390377 B2	20140115	JP20090513502T	20090323
KR101189550 B1	20121011	KR20107023470	20090323
KR20100139049 A	20101231	KR20107023470	20090323
US2011102549 AA	20110505	US20090933678	20090323
US8253778 BB	20120828	US20090933678	20090323
WO09116663 A1	20090924	WO2009JP55643	20090323

Priority:

JP20080074173 20080321 WO2009JP55643 20090303 JP20090513502 20090323
WO2009JP55643 20090323

Probable Assignee: TAKAHASHI ATSUSHI

Assignee(s): (std): ATSUSHI TAKAHASHI ; TAKAHASHI ATSUSHI

Inventor(s): (std): TAKAHASHI ATSUSHI ; ATSUSHI TAKAHASHI

Agent(s): SMART AND BIGGAR; PULIERI GIANLUCA ANTONIO; MURAMATSU YOSHIHITO

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

16) Family number: 72570649 (US2019133693A)

© PatBase

Title: SURGICAL NAVIGATION OF THE HIP USING FLUOROSCOPY AND TRACKING SENSORS

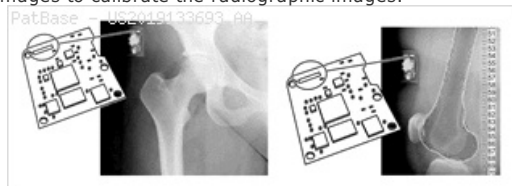
Abstract: A method of tracking motion of a body part, the method comprising: (a) gathering motion data from a body part repositioned within a range of motion, the body part having mounted thereto a motion sensor; (b) gathering a plurality of radiographic images taken of the body part while the body part is in different positions within the range of motion, the plurality of radiographic images having the body part and the motion sensor within a field of view; and, (c) constructing a virtual three dimensional model of the body part from the plurality of radiographic images using a structure of the motion sensor identifiable within at least two of the plurality of radiographic images to calibrate the radiographic images.

Classifications:

International (ipc 8-9): A61B34/10 A61B34/20 A61B5/11 A61B6/00 G06T17/00 G06T19/20 G06T7/20 (Advanced/Invention)

CPC: A61B6/0492 A61B6/487 A61B6/505 A61B6/5229 A61B6/5241 A61B6/582 A61B5/1114 A61B5/11 A61B34/25 A61B2090/364 A61B2090/367 A61B2090/3966 G06K9/6202 G06T17/00 G06T19/20 A61B2560/0223 A61B2034/2051 A61B2034/105 A61B2034/107 A61B2034/108 A61B2034/104 G06T2219/2004 G06T2219/2016 G06K2209/05 A61B34/20 A61B6/12 A61B34/10 A61B2034/2048 A61B2034/2065 G06T2210/41 G06T7/579 G06T2207/10016 G06T2207/10116 G06T2207/30008

US: 1/1



Family:

Publication number	Publication date	Application number	Application date
EP3618715 A1	20200311	EP20180821593	20180619
US2019133693 AA	20190509	US20180012718	20180619
WO18236936 A1	20181227	WO2018US38371	20180619

Priority:

US20170521582P 20170619 US20170575905P 20171023 US20180617383P 20180115
US20180012718 20180619 WO2018US38371 20180619

Probable Assignee: TECHMAH MEDICAL LLC

Assignee(s): (std): MAHFOUZ MOHAMED R ; TECHMAH MEDICAL LLC

Inventor(s): (std): MAHFOUZ MOHAMED R

Agent(s): HGF LTD; WILLIS RYAN

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

17) Family number: 68414666 (US2018028063A)

© PatBase

Title: INTRAORAL SCANNER WITH DENTAL DIAGNOSTICS CAPABILITIES

Abstract: Methods and apparatuses for generating a model of a subject's teeth. Described herein are intraoral scanning methods and apparatuses for generating a three-dimensional model of a subject's intraoral region (e.g., teeth) including both surface features and internal features. These methods and apparatuses may be used for identifying and evaluating lesions, caries and cracks in the teeth. Any of these methods and apparatuses may use minimum scattering coefficients and/or segmentation to form a volumetric model of the teeth.

Classifications:

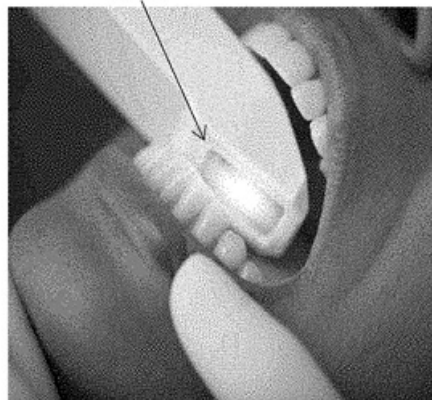
International (ipc 8-9): A61B1/00 A61B1/045 A61B1/06 A61B1/24 A61B5/00 A61B6/14 A61C1/08 A61C13/00 A61C19/04 A61C7/00 A61C9/00 G06F16/9535 G06F17/30 G06Q50/00 G06T15/08 G06T17/00 G06T7/55 G06T7/73 G07C9/00 H02J7/00 H04N13/02 H04N13/221 H04N13/246 H04N13/254 H04N13/257 H04N13/271 H04W12/06 H04W84/12 (Advanced/Invention);

A61B6/14 A61C13/00 A61C13/34 (Advanced/Non-invention)

CPC: G06F17/30867 A61B1/0638 A61B1/00045 A61B1/00016 A61C19/04 A61C1/088 G06T2200/04 G06T2207/10048 A61B1/24 A61B5/0062 A61B5/0086 A61B5/0088 A61B2560/0223 A61C9/0053 G06Q50/01 G06T7/55 G06T17/00 G06T2207/30036 G06T2210/41 H04N13/254 H04N13/271 G06T15/08 A61B5/7203 A61B5/7435 G06F16/9535 G06T7/75 G06T2207/30244 H04N13/221 H04N13/246 H04N13/257 A61B1/00009 A61B1/00172 A61B1/00186 A61B1/0646 A61B6/145 G06T19/00 G06T2200/24 A61B5/0066 A61B5/4547 A61C7/002 A61C13/0004 A61C13/0019 A61C13/34 A61B1/00193 A61B5/0059 A61B5/1079

US: 1/1 348/45 433/29 433/29

2801

**Family:**

Publication number	Publication date	Application number	Application date
AU2017302364 AA	20190103	AU20170302364	20170727
CA3030676 AA	20190110	CA20173030676	20170727
CN107661159 A	20180206	CN201710625351	20170727
CN208942463 U	20190607	CN201720922787U	20170727
DE202017007142 U1	20200212	DE201720007142U	20170727
EP3490439 A1	20190605	EP20170835309	20170727
EP3578131 A1	20191211	EP20190185299	20170727
JP2019523064 T2	20190822	JP20190503915T	20170727
KR20190022941 A	20190306	KR20197005819	20170727
US2018028063 AA	20180201	US20170662234	20170727
US2018028064 AA	20180201	US20170662250	20170727
US2018028065 AA	20180201	US20170672248	20170808
US2019076026 AA	20190314	US20180188262	20181112
US2019095539 AA	20190328	US20180198488	20181121
US2019231490 AA	20190801	US20190258516	20190125
US2019231491 AA	20190801	US20190258523	20190125
US2019231492 AA	20190801	US20190258527	20190125
US2019258690 AA	20190822	US20190370646	20190329
US2019269485 AA	20190905	US20190410949	20190513
US2020074008 AA	20200305	US20180118262	20180830
US10123706 BB	20181113	US20170662234	20170727
US10380212 BB	20190813	US20170662250	20170727
US10390913 BB	20190827	US20190258516	20190125
US10507087 BB	20191217	US20190410949	20190513
US10509838 BB	20191217	US20190370646	20190329
US10528636 BB	20200107	US20170672248	20170808
US10585958 BB	20200310	US20180198488	20181121
WO18022940 A1	20180201	WO2017US44253	20170727
WO18022940 A9	20181129	WO2017US44253	20170727
WO19147984 A1	20190801	WO2019US15219	20190125

Priority:

US20160367607P 20160727	US20170477387P 20170327	US20170517467P 20170609
EP20170835309 20170727	US20170662234 20170727	US20170662250 20170727
WO2017US44253 20170727	US20170672248 20170808	US20180622798P 20180126
US20180758503P 20181109	US20180188262 20181112	US20180198488 20181121
US20190258523 20190125	US20190258527 20190125	US20190258516 20190125
US20190370646 20190329	US20190410949 20190513	

Probable Assignee: ALIGN TECHNOLOGY INC

Assignee(s): (std): ALIGN TECH INC ; ALIGN TECHNOLOGY INC ; ATIYA YOSSEF ; AYAL SHAI ; MOSHE MAAYAN ; ELBAZ GILAD ; KOPELMAN AVI ; SAPHIER OFER ; LAMPERT EREZ ; LENOVO SINGAPORE PTE LTD

Inventor(s): (std): AYAL SHAI ; MOSHE MAAYAN ; ELBAZ GILAD ; ATIYA YOSSEF ; KOPELMAN AVI ; SAPHIER OFER ; LAMPERT EREZ ; SABINA MICHAEL ; KUO ERIC ; WEISS ASSAF ; MALKA DORON ; NIZARD ELIAHOU FRANKLIN ; TISHEL IDO ; GILLARD ELBAZ ; EREZ LAMBERT ; YUSUF ALLATIA ; ARVEY KOPELMAN ; OFER SAFIRE ; MAYA MOSE ; CHAILLY AYYAR ; NIZARD ELIAHOU ; DELANEY MARK PATRICK ; PETERSON NATHAN J ; MESE JOHN CARL ; VANBLON RUSSELL SPEIGHT

Agent(s): PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD; SMART AND BIGGAR; BROOKES IP; SHAY GLENN LLP; SHOOP RICHARD D ET AL

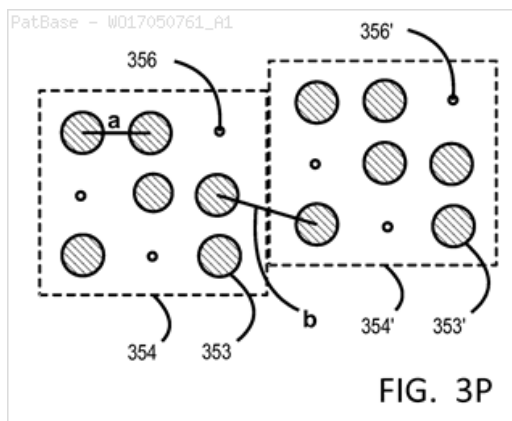
Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

Abstract: A three-dimensional tracking system comprises tracking markers having at least one undemarcated pattern composed of a plurality of contrasting portions arranged in a rotationally asymmetric pattern, a tracker for obtaining image information about the markers, a database with geometric information describing patterns on the markers; and a controller for receiving and processing the image information about the markers from the tracker, accessing the database to retrieve the geometric information, and comparing the image information to the geometric information. At least one of the contrasting portions on a marker may have a perimeter that has a mathematically describable curved section that may comprise a conic section. More than one pattern may be employed on a marker, one pattern being used to identify the marker, including for example an ellipse or a circle. The patterns may be on pattern tags attached to the markers and the markers may have a three-dimensionally shaped surface.

Classifications:

International (IPC 8-9): A61B34/20 A61B5/06 A61B90/00 A61C1/08 G06T7/00 G06T7/20 (Advanced/Invention)

CPC: G06T7/20 A61B5/064 A61B34/20 A61B90/39 A61B2034/2055 A61B2034/2065 A61B2090/3937 A61B2090/3966 A61B2090/3983 A61C1/082 G06T7/248 G06T7/70 G06T7/74 G06T2207/30204 G06T2207/30208 A61C2201/005 A61B2090/363 A61B2090/3991



Family:

Publication number	Publication date	Application number	Application date
WO17050761 A1	20170330	WO2016EP72301	20160920

Priority:

US20150221468P 20150921

Probable Assignee: NAVIGATE SURGICAL TECH INC

Assignee(s): (std): BECKETT MARTIN GREGORY ; DAON EHUD UDI ; NAVIGATE SURGICAL TECH INC

Assignee(s): NAVIGATE SURGICAL TECHNOLOGIES INC

Inventor(s): (std): DAON EHUD UDI ; BECKETT MARTIN GREGORY

Agent(s): THIBON LAURENT

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

19) Family number: 32123848 (US2005168437A)

© PatBase

Title: PROCESSING POSE DATA DERIVED FROM THE POSE OF AN ELONGATE OBJECT

Abstract: An apparatus and method for processing pose data derived from a pose of an elongate object such as, for example, a jotting implement, a pointer, a robotic arm or a cane. The elongate object has a tip contacting a plane surface with one or more invariant features. The pose of the elongate object is measured optically from on-board by an optical measuring system with the aid of the invariant feature. The pose is used for preparing a corresponding pose data and a subset of the pose data is identified and transmitted to an application such as a user application, where the subset can serve as command data or input data. Since the elongate object moves while its tip is contacting the surface the pose is measured periodically at sufficiently frequent measurement times t_i to describe the motion at a desired temporal resolution. The subset can include all or a portion of the orientation data that describe the orientation of the elongate object in space and/or position data of the tip on the surface. The position can be a relative position of the tip with respect to any feature or its previous position, or an absolute position in world coordinates. The subset can also contain a mix of orientation and position data.

Classifications:

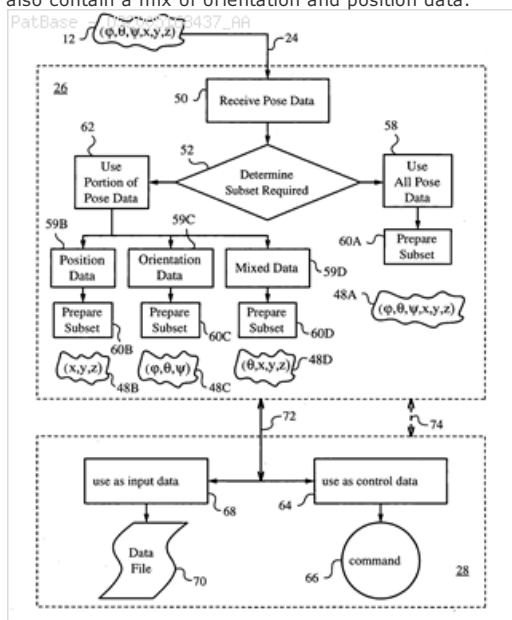
International (IPC 8-9): A61B5/117 A63F13/20 A63F13/211 A63F13/213 A63F13/428 A63F13/812 G01B11/00 G01B11/26 G01B21/04 G01C9/00 G01S17/42 G02B27/01 G06F1/16 G06F17/00 G06F19/00 G06F3/00 G06F3/01 G06F3/03 G06F3/033 G06F3/0346 G06F3/0354 G06F3/038 G06F3/041 G06F3/042 G06F3/0481 G06F3/0484 G06K11/06 G06K9/00 G06K9/22 G06T1/20 G06T15/00 G06T19/00 G06T7/00 G06T7/73 G08C19/00 G09G5/00 G09G5/08 H04N13/04 H04N5/232 (Advanced/Invention); G06F17/00 G06F3/00 G06F3/033 (Advanced/Non-invention); G01B11/26 G06F3/03 G06F3/033 G06F3/041 G06K9/00 G06T15/00 G09G5/00 (Core/Invention); G06F3/033 (Core/Non-invention)

International (IPC 1-7): G09G5/00

CPC: G01B21/04 G02B2027/0178 G06F3/01 A63F13/20 G06T2207/30241 G06F3/0428 G06F3/0325 G06F3/0423 G06F3/0425 G01B11/002 G01B11/03 G06F3/0346 G06F3/04815 G06K9/22 A63F13/211 A63F13/213 A63F13/428 A63F13/812 G06F3/0317 G06F3/04845 G06F2203/04806 G06T7/73 G06F3/017 G06F3/03545 G06F3/012 G06F3/014 G06F3/016 G06F2203/0331 G06F2203/0383 G06F2203/04807 G06F3/038 A63F13/26 A63F13/92 G06F1/1686 G06F3/005 G06F3/011 G06F3/0304 G06F3/14 H04N13/344 G02B27/0172 G02B2027/0134 G02B2027/014 G06F1/163 G06T1/20 G06T19/006 H04N5/232

European: G01B11/00D G01B11/03 G01B21/02 G01B21/04 G06F3/01B G06F3/0346 G06F3/0354N G06F3/03H G06F3/03H3 G06F3/03H6 G06F3/042B G06F3/042B4 G06F3/042C G06F3/042P G06F3/0481E G06K9/22 G06T7/00P1

US: 1/1 178/18.01 178/18.09 235/472.01 345/156 345/156P 345/156S 345/157 345/157S 345/166 345/173 345/173S 345/175



Family:

Publication number	Publication date	Application number	Application date
CA2553960 AA	20060725	CA20052553960	20050127
CA2553960 C	20150421	CA20052553960	20050127
CN101107649 A	20080116	CN200580003400	20050127
EP1738348 A2	20070103	EP20050712893	20050127
EP1738348 A4	20080917	EP20050712893	20050127
JP2007525663 T2	20070906	JP20060551639T	20050127
JP4809778 B2	20111109	JP20060551639T	20050127
KR101101091 B1	20111230	KR20067017451	20050127
KR20070017321 A	20070209	KR20067017451	20050127
US2005168437 AA	20050804	US20040769484	20040130
US2007211239 AA	20070913	US20060591403	20061031
US2010001998 AA	20100107	US20090584402	20090903
US2010013860 AA	20100121	US20090586226	20090918
US2011227915 AA	20110922	US20110134006	20110525
US2012038549 AA	20120216	US20110199239	20110822
US2014145930 AA	20140529	US20130889748	20130508
US2015170421 AA	20150618	US20140551367	20141124
US2016098095 AA	20160407	US20150965544	20151210
US2016252965 AA	20160901	US20160992748	20160111
US2016267720 AA	20160915	US20160165955	20160526
US2018217673 AA	20180802	US20180914797	20180307
US7729515 BB	20100601	US20060591403	20061031
US7826641 BB	20101102	US20090584402	20090903
US7961909 BB	20110614	US20090586226	20090918
US8542219 BB	20130924	US20040769484	20040130
US8553935 BB	20131008	US20110134006	20110525
US8553935 K1	20200224	US20110134006	20110525
US8897494 BB	20141125	US20130889748	20130508
US9229540 BB	20160105	US20110199239	20110822
US9235934 BB	20160112	US20140551367	20141124
US9939911 BB	20180410	US20160992748	20160111
US10191559 BB	20190129	US20180914797	20180307
WO05074653 A2	20050818	WO2005US03616	20050127
WO05074653 A3	20070322	WO2005US03616	20050127
WO07102857 A2	20070913	WO2006US44434	20061114
WO07102857 A3	20080417	WO2006US44434	20061114

Priority:

US20040769484 20040130	WO2005US03616 20050127	US20060780937P 20060308
US20060591403 20061031	US20090584402 20090903	US20090586226 20090918
US20090586484 20091208	US20110134006 20110525	US20110199239 20110822
US20130889748 20130508	US20140551367 20141124	US20150965544 20151210
US20160992748 20160111	US20160922748 20160111	US20160165955 20160526
US20180914797 20180307		

Probable Assignee: ELECTRONIC SCRIPTING PRODUCTS INC

Assignee(s): (std): ALBOSZTA MAREK ; CARL STEWART R ; ELECTRONIC SCRIPTING PRODUCTS ; ELECTRONIC SCRIPTING PRODUCTS INC ; ELECTRONIC SCRIPTING PRUDUCTS INC ; GONZALEZ BANOS HECTOR H ; MANDELLA MICHAEL J ; HAWKS TIMOTHY J ; ZHANG GUANGHUA G

Inventor(s): (std): ALBOSZTA MAREK ; HAWKS TIMOTHY J ; GONZALEZ BANOS HECTOR H ; ZHANG GUANGHUA G ; MANDELLA MICHAEL J ; CARL STEWART R

Inventor(s): MANDELLA MICHAEL ; CARL STEWART ; GONZALEZ BANOS HECTOR ; ZHANG GUANGHUA

Agent(s): BERESKIN AND PARR; BERESKIN AND PARR LLP SENCRL SRL; ESPI; LUMEN INTELLECTUAL PROPERTY SERVICES INC; ELECTRONIC SCRIPTING PRODUCTS INC; MAREK; CHRISTOPHER P; CHRISTOPHER P MAIORANA PC; ALBOSZTA MAREK

Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD MG MK ML MN MR MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

20) Family number: 63677875 (US2018071032A)

© PatBase

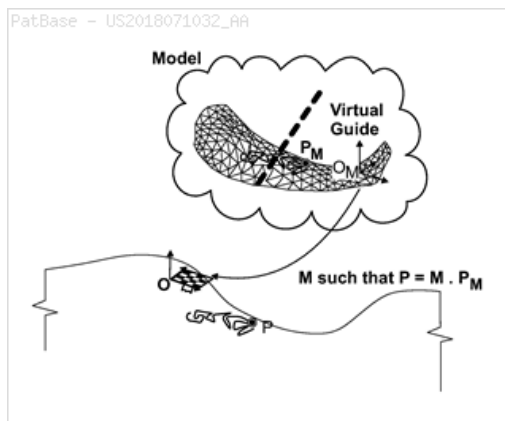
Title: METHODS AND SYSTEMS FOR COMPUTER-AIDED SURGERY USING INTRA-OPERATIVE VIDEO ACQUIRED BY A FREE MOVING CAMERA

Abstract: Disclosed is a concept for computer-assisted procedures of surgery and diagnosis that target rigid, non-deformable anatomical parts such as bone, tissue, or teeth. The disclosure describes attaching small visual markers to instruments and anatomy of interest (e.g. bone surface), with each marker having a printed known pattern for detection and unique identification in images acquired by a free-moving camera, and a geometry that enables estimating its rotation and translation with respect to the camera using solely image processing techniques.

Classifications:

International (IPC 8-9): A61B19/00 A61B34/00 A61B34/10 A61B34/20 A61B34/30 A61B5/05 A61B90/00 G06F19/00 G06F3/03 G06F3/033 G06F3/042 G06T19/00 G06T7/50 G06T7/62 G06T7/73 G06T7/80 G09G5/00 G16H50/50 H04N13/02 H04N13/221 H04N13/246 (Advanced/Invention); A61B34/30 A61B90/00 (Advanced/Non-invention) CPC: A61B34/20 A61B34/30 A61B2034/2057 A61B2034/2065

A61B2090/3983 A61B2034/2055 G06F3/0321 G16H50/50
H04N13/221 H04N13/246 A61B34/10 A61B34/25 A61B90/361
A61B2034/301 A61B2034/302 A61B2090/365 A61B2090/3937
A61B2090/3945 A61B2090/3991 G06T7/50 G06T7/62 G06T7/73
G06T7/85 G06T19/006 G06T2207/30208 G06T2207/30244
G06T2219/004 G16H20/30 G16H30/20 G16H20/40 G16H30/40
G06F19/321 G06F19/3481
US: 1/1 348/50



Family:

Publication number	Publication date	Application number	Application date
EP3273854 A1	20180131	EP20160769785	20160325
EP3273854 A4	20181205	EP20160769785	20160325
US2018071032 AA	20180315	US20160561666	20160325
US10499996 BB	20191210	US20160561666	20160325
WO16154557 A1	20160929	WO2016US24262	20160325

Priority:

US20150138529P 20150326 US20150255513P 20151115 WO2016US24262 20160325
US20160561666 20160325

Probable Assignee: UNIV DE COIMBRA

Assignee(s): (std): UNIV DE COIMBRA

Assignee(s): UNIVERSIDADE DE COIMBRA

Inventor(s): (std): DE ALMEIDA BARRETO JOAO PEDRO

Agent(s): DO NASCIMENTO GOMES RUI; GREENBERG TRAUIG LLP; DYKEMAN DAVID J; GIROUX JONATHAN E

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR
CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID
IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN
MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG
SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

21) Family number: 67366958 (US2017312031A)

© PatBase

Title: METHOD FOR AUGMENTING A SURGICAL FIELD WITH VIRTUAL GUIDANCE CONTENT

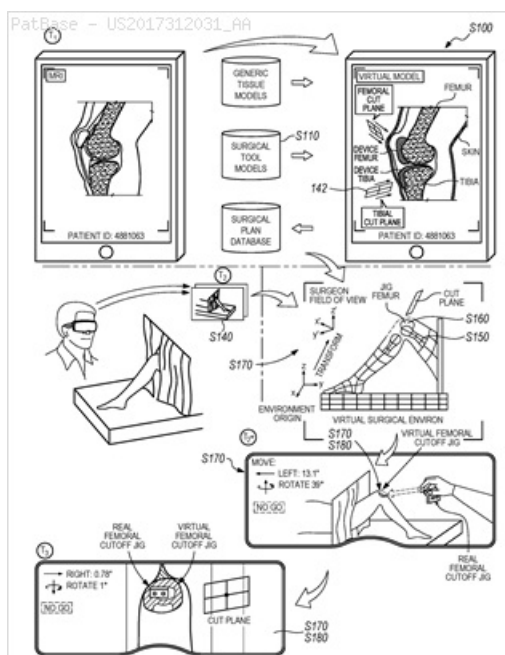
Abstract: One variation of a method for augmenting a surgical field with virtual guidance content includes: accessing a scan representing a tissue of a patient; combining the scan with a generic virtual anatomical model to define a custom virtual anatomical model of the tissue; defining a cut trajectory along an intersection between a virtual model of a surgical implant and the custom virtual anatomical model of the tissue; aligning a virtual cut surface to the cut trajectory to locate the virtual model of the surgical guide relative to the custom virtual anatomical model; accessing an image of a surgical field; detecting the tissue in the image; aligning the custom virtual anatomical model to the tissue detected in the image; defining a target real location for a real surgical guide in the surgical field; and generating a frame depicting the target real location of the surgical guide in the surgical field.

Classifications:

International (ipc 8-9): A61B17/16 A61B17/17 A61B17/32
A61B17/56 A61B34/10 A61B34/20 A61B5/00 A61B90/00 A61F2/46
G02B27/01 G06T19/00 G06T19/20 G06T7/00 G06T7/33 G09B23/28
G09B23/30 G09B5/02 (Advanced/Invention)

CPC: G06T7/0012 A61B17/16 G06T7/75 G06T2207/10072
G06T2207/30052 G06T2207/10116 G06T2207/30008 G06T2210/41
A61F2/46 A61F2002/4633 A61B2034/105 A61B2034/108
G02B27/017 A61B5/0037 A61B5/4528 G06T19/20 G06T2219/2004
A61B5/7425 A61B5/0064 A61B17/1703 A61B17/175 A61B17/1764
A61B90/37 A61B2034/104 A61B5/055 A61B2034/2065
A61B2090/365 G06F3/011 G09B23/285 G02B2027/0141 A61B17/155
A61B17/157 A61B34/10 A61B2034/102 A61B2034/107 G06T19/006
G09B23/28 G09B23/30 A61B34/20 A61B2034/101 G09B5/02
A61B90/361 A61B2090/371 A61B2090/372 A61B2090/395
A61B2090/502 A61B2090/364 G06T7/33 A61B2090/373
G06T2207/10088 A61B34/25 A61B2034/254 A61B2034/256

US: 1/1 345/419



Family:

Publication number	Publication date	Application number	Application date
--------------------	------------------	--------------------	------------------

US2017312031 AA	20171102	US20170499046	20170427
US2017312032 AA	20171102	US20170594623	20170514
US2019231432 AA	20190801	US20190238500	20190102
US2019231433 AA	20190801	US20190238504	20190102
US2020038112 AA	20200206	US20190588926	20190930
US10194990 BB	20190205	US20170499046	20170427
WO18200767 A1	20181101	WO2018US29506	20180426

Priority:

US20160328330P	20160427	US20160363022P	20160715	US20170499046	20170427
US20170594623	20170514	US20180612895P	20180102	US20180612901P	20180102
US20190238504	20190102	US20190238500	20190102	US20190588926	20190930

Probable Assignee: ARTHROLOGY CONSULTING LLC

Assignee(s): (std): ARTHROLOGY CONSULTING LLC

Inventor(s): (std): BOERK IAN ; HEGMANN SARAH M ; AMANATULLAH DEREK ; HASEL MATTHEW L ; BORK IAN ; HEGMANN SARAH ; HASEL MATTHEW

Agent(s): RUN8 PATENT GROUP LLC ; MILLER PETER ; FLAKE ALEXANDER R

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DJ DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JO JP KE KG KH KM KN KP KR KW KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

22) Family number: 57412960 (US2016022374A)

© PatBase

Title: ON-BOARD TOOL TRACKING SYSTEM AND METHODS OF COMPUTER ASSISTED SURGERY

Abstract: A number of improvements are provided relating to computer aided surgery utilizing an on tool tracking system. The various improvements relate generally to both the methods used during computer aided surgery and the devices used during such procedures. Other improvements relate to the structure of the tools used during a procedure and how the tools can be controlled using the OTT device. Still other improvements relate to methods of providing feedback during a procedure to improve either the efficiency or quality, or both, for a procedure including the rate of and type of data processed depending upon a CAS mode.

Classifications:

International (IPC 8-9): A61B17/14 A61B17/15 A61B17/16

A61B17/17 A61B17/56 A61B17/88 A61B17/90 A61B19/00

A61B34/00 A61B34/10 A61B34/20 A61B90/00 G06T

G06T7/20 (Advanced/Invention);

A61B17/00 A61B34/10 A61B34/20 (Advanced/Non-invention);

G06T (Subclass/Invention)

CPC: A61B2017/00477 A61B17/142 A61B17/16 A61B34/20

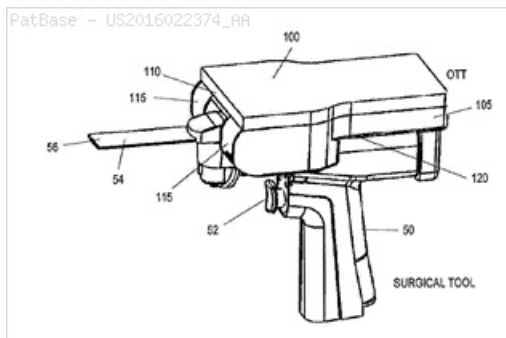
A61B90/13 A61B2017/00017 A61B2017/00123 A61B2017/00367

A61B2017/00734 A61B2034/105 A61B2034/2051 A61B2034/2055

A61B2090/0807 A61B2090/363 A61B2090/371 A61B2090/372

A61B2090/3983 A61B17/17

US: 606/96



Family:

Publication number	Publication date	Application number	Application date
AU2014228789 AA	20151029	AU20140228789	20140314
CA2909168 AA	20151008	CA20142909168	20140314
CN105358085 A	20160224	CN201480028512	20140314
EP2973407 A1	20160120	EP20140765274	20140314
EP2973407 A4	20170222	EP20140765274	20140314
HK1220794 A1	20170512	HK20160108708	20160720
IN09691DN2015 A	20160304	IN2015DN09691	20151015
JP2016513564 T2	20160516	JP20160503063T	20140314
JP2018153688 A2	20181004	JP20180108690	20180606
US2016022374 AA	20160128	US20140776755	20140314
US2019290297 AA	20190926	US20180167419	20181022
US10105149 BB	20181023	US20140776755	20140314
WO14144780 A1	20140918	WO2014US29334	20140314

Priority:

US20130799656P	20130315	US20130842526	20130315	JP20160503063T	20140314
US20140776755	20140314	WO2014US29334	20140314	US20150776755	20150915
JP20180108690	20180606	US20180167419	20181022		

Probable Assignee: UNIV NEBRASKA

Assignee(s): (std): TRAK SURGICAL INC ; BOARD OF UNIV OF NEBRASKA ; UNIV NEBRASKA

Assignee(s): BOARD OF UNIVERSITY OF NEBRASKA ; SAUNDERS DAVID SCOTT ; HAIDER HANI ; AL SHAWI IBRAHIM ; BARRERA OSVALDO ANDRES ; BOARD OF NEBRASKA UNIV ; BOARD OF REGENTS OF THE UNIV OF NEBRASKA

Inventor(s): (std): SAUNDERS DAVID SCOTT ; AL SHAWI IBRAHIM ; BARRERA OSVALDO ANDRES ; HAIDER HANI ; HANI HAIDER ; IBRAHIM AL SHAWI ; OSVALDO ANDRES BARRERA ; DAVID SCOTT SAUNDERS

Agent(s): PIZZEYS PATENT AND TRADE MARK ATTORNEYS; PIZZEYS PATENT AND TRADE MARK ATTORNEYS PTY LTD; FETHERSTONHAUGH AND CO; BOOTH CATHERINE LOUISE; HK PAT IP LTD; ONDA MAKOTO; ONDA HIRONORI; SHAY GLENN LLP; BUCKINGHAM DAVID K ET AL

Designated states: AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KH KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

