

1) Family number: 97003 (US3601488A)

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Title: APPARATUS FOR CHECKING THE PROPER OPERATION OF A LASER TELEMETER

Abstract: 1,227,680. Lasers. COMPAGNIE GENERALE D'ELECTRICITE. 16 Sept., 1969 [27 Sept., 1968], No. 45646/69. Heading H1C. [Also in Division H4] A pulse-echo laser range-finder incorporating a photo-multiplier 16 is checked for correct operation by an AND circuit 40 having at least two inputs, one of which is connected to a circuit 8 which supplies a signal when the energy supplied by the laser pumping source is above a predetermined value and another of which is supplied with a signal when the output of a photodiode 15 (receiving a part of the emitted laser pulse) reaches a threshold. Another input to the AND gate occurs when a chronometer 20 reaches the range corresponding to an imaginary target and thereby energizes an electroluminescent diode 25; a fourth input is a signal from a comparator 30 to show that an actual echo pulse has arrived before the maximum capacity of the chronometer is reached. The output of the AND circuit may energize a lamp.

Classifications:

International (IPC 8-9): G01S17/10 G01S7/484

G01S7/497 (Advanced/Invention);

G01S17/00 G01S7/48 (Core/Invention)

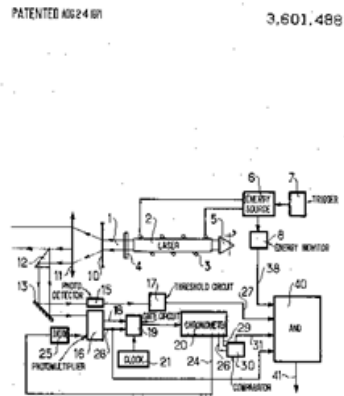
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CPC: G01S17/14 G01S7/484 G01S7/497

European: G01S17/10C G01S7/484 G01S7/497

US: 356/5.06 356/6

PatBase - US3601488_A



Family:

Publication number	Publication date	Application number	Application date
BE738902 A	19700316		19690916
CH493855 A	19700715	CH19690013883	19690915
DE1947558 A1	19700402	DE19691947558	19690919
FR1587762 A	19700327	FR19680168042	19680927
GB1227680 A	19710407		19690916
NL6914323 A	19700401	NL19690014323	19690922
SE368874 B	19740722	SE19690013130	19690924
US3601488 A	19710824	US19690861391	19690926

Priority:

FR19680168042 19680927

Probable Assignee: COMP GENERALE ELECTRICITE

Assignee(s): (std): COMP GENERALE ELECTRICITE

Assignee(s): COMPAGNIE GENERALE D ELECTRICITE ; GENERALE D ELECTRICITE COMP ; CIE GENERALE D ELECTRICITE FR

Inventor(s): (std): GUY RIPART ; RIPART G ; RIPART GUY

Inventor(s): RIPART G FR

2) Family number: 15199006 (US6463393B)

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Title: DEVICE FOR CALIBRATING DISTANCE-MEASURING APPARATUS

Abstract: A transmitter emits high-frequency modulated optical radiation which is reflected by an object and is received by a measurement receiver. Part of the transmitter radiation is decoupled as reference radiation and guided via a calibration path to a reference receiver whose electrical signals are fed to a frequency mixer. The frequency mixer and avalanche photodiodes acting as measurement receivers of the measuring radiation are interconnected directly via an electrical

connection line upon which a mixer frequency acts. As a result thereof, optoelectronic calibration which completely compensates for the temperature-dependent phase shifts of the avalanche photodiodes is possible. Additionally, the phase shifts generated in the reference and receiver signals by the temperature drifts of the transmitter compensate one another. The overall accuracy of the distance measurement can be increased, particularly for short measuring times and immediately after the apparatus has been switched on. Furthermore, in comparison with a successive mechanical calibration process, the measuring times are halved and advantages in terms of weight, cost, and reliability are afforded since a mechanical change-over device is dispensed with.

Classifications:

International (IPC 8-9): G01S17/32 G01S17/36 G01S7/48 G01S7/497 G02B13/18 G02B3/00 G02B3/06

G03B21/62 (Advanced/Invention);

G01S7/48 G01S7/497 (Advanced/Non-invention);

G01S17/00 G01S7/48 G02B13/18 G02B3/00 G02B3/02

G03B21/62 (Core/Invention)

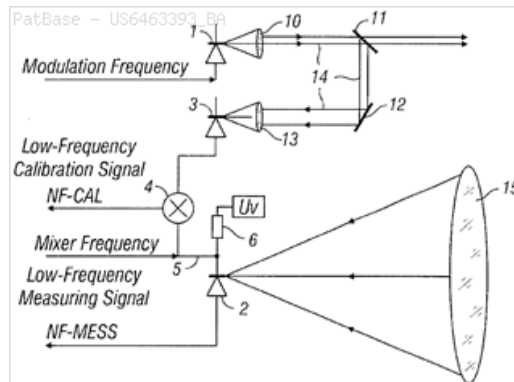
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G01S17/08 G01S17/32 G01S17/36 G01S7/48 G01S7/497

CPC: G01S7/497

European: G01S7/497

US: 356/5.13 356/513 356/623 702/97



Family:

Publication number	Publication date	Application number	Application date
AT195588 E	20000915	AT19970911229T	19971017
AU199748678 A1	19980515	AU19970048678	19971017
AU719134 B2	20000504	AU19970048678	19971017
CN1134673 C	20040114	CN19971080833	19971017
CN1241261 A	20000112	CN19971080833	19971017
DE19643287 A1	19980423	DE19961043287	19961021
DE59702217 D1	20000921	DE19975002217	19971017
EP0932835 A1	19990804	EP19970911229	19971017
EP0932835 B1	20000816	EP19970911229	19971017
EP0932835 B2	20050309	EP19970911229	19971017
JP2000505901 T2	20000516	JP19980518944T	19971017
JP3161738 B2	20010425	JP19980518944	19971017
KR100484345 B1	20050420	KR19997003437	19971017
KR20000052660 A	20000825	KR19997003437	19971017
US6463393 BA	20021008	US19990284473	19990421
WO9818019 A1	19980430	WO1997EP05735	19971017

Priority:

DE19961043287 19961021

DE19975002217 19971017

WO1997EP05735 19971017

Probable Assignee: LEICA GEOSYSTEMS AG

Assignee(s): (std): GIGER KURT ; LEICA AG ; LEICA GEOSYSTEMS AG ; LEICA GLOBE SYSTEM AG ; MITAC TECHNOLOGY CORP

Assignee(s): LEICA GEOSYSTEMS AG HEERBRUGG ; LEICA AG HEERBRUGG CH

Inventor(s): (std): GIGER KURT ; GIGER K

Inventor(s): GIGER KURT RUETHI CH ; KURT GIGER ; K GIGER

Agent(s): PHILLIPS ORMONDE FITZPATRICK; FOLEY AND LARDNER

Designated states: AT AU BE CH CN DE DK ES FI FR GB GR IE IT JP KR LI LU MC NL PT SE US

3) Family number: 32540016 (US2006007422A)

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Title: SYSTEM AND METHOD FOR DETERMINING RANGE IN 3D IMAGING SYSTEMS

Abstract: A system and method of imaging an object. An array of detectors is mounted in an image plane. Each detector in the array of detectors is connected to a timing circuit having an interpolator, wherein the interpolator includes a first circuit which charges a first capacitor at a different rate than it discharges. An optical pulse is transmitted toward an object so that a portion of the optical pulse is reflected from the object as a reflected pulse and a first value representative of when the optical pulse was transmitted toward the object is recorded. The reflected pulse is detected at one or more detectors and a pulse characteristic of the pulse and a second value representative of when the reflected pulse arrived at the detector are recorded. Range to the object is then calculated as a function of the first and second values and the reflected pulse characteristic.

Classifications:

International (IPC 8-9): G01B11/00 G01C25/00 G01C3/06

G01C3/08 G01S G01S17/06 G01S17/08 G01S17/10 G01S17/89

G01S7/00 G01S7/486 G01S7/497 H01S3/10 (Advanced/Invention);

G01B11/00 G01C25/00 G01C3/06 G01C3/08 G01S17/00 G01S7/00

G01S7/48 H01S3/10 (Core/Invention)

CPC: G01S17/894 G01S7/4865 G01S7/4868 G01S7/497 G01S17/10

European: G01S17/10 G01S17/89 G01S7/486D G01S7/486E

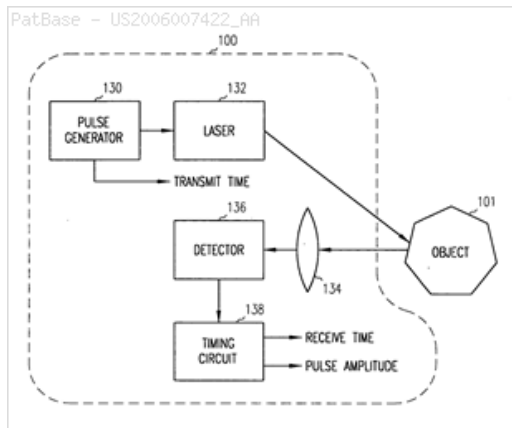
S01S7/497

US: 356/3.01 356/3.1 356/4.01 356/4.02 356/4.020S 356/4.1

356/5.01 356/5.010P 356/5.02 356/5.020S 356/5.04 356/5.040P

356/5.1 356/5.100S 356/50.1 356/50.2 372/25 372/25S 702/97

702/97P



Family:

Publication number	Publication date	Application number	Application date
CN101027574 A	20070829	CN200580029267	20050706
CN101027574 B	20111019	CN200580029267	20050706
CN102411144 A	20120411	CN201110240885	20050706
CN102411145 A	20120411	CN201110240920	20050706
CN102411146 A	20120411	CN201110240935	20050706
CN102426364 A	20120425	CN201110240938	20050706
CN102426364 B	20140101	CN201110240938	20050706
DE602005037301 D1	20130131	DE200560037301T	20050706
DE602005052653 D1	20171012	DE200560052653T	20050706
EP1782099 A2	20070509	EP20050764423	20050706
EP1782099 B1	20121205	EP20050764423	20050706
EP2348332 A2	20110727	EP20110162884	20050706
EP2348332 A3	20121205	EP20110162884	20050706
EP2348333 A2	20110727	EP20110162885	20050706
EP2348333 A3	20120530	EP20110162885	20050706
EP2357491 A2	20110817	EP20110162883	20050706
EP2357491 A3	20120516	EP20110162883	20050706
EP2357491 B1	20170830	EP20110162883	20050706
EP2357492 A2	20110817	EP20110162886	20050706
EP2357492 A3	20120530	EP20110162886	20050706
HK1160517 A1	20120921	HK20120100797	20120127
HK1161356 A1	20120824	HK20120100796	20120127
HK1161357 A1	20120824	HK20120101614	20120217
HK1161358 A1	20120824	HK20120101615	20120217
JP2008506115 T2	20080228	JP20070520459T	20050706
JP5325420 B2	20131023	JP20070520459T	20050706
US2006007422 AA	20060112	US20040886073	20040706
US2007252974 AA	20071101	US20070691256	20070326
US2009076758 AA	20090319	US20080272095	20081117
US7236235 BB	20070626	US20040886073	20040706
US7453553 BB	20081118	US20070691256	20070326
US8547532 BB	20131001	US20080272095	20081117
WO06014470 A2	20060209	WO2005US23922	20050706
WO06014470 A3	20060309	WO2005US23922	20050706

Priority:

US20040866073 20040614 US20040886073 20040706 EP20050764423 20050706
 EP20110162883 20050706 WO2005US23922 20050706 US20070691256 20070326
 US20080272095 20081117

Probable Assignee: TOPCON POSITIONING SYSTEMS INC

Assignee(s): (std): DIMSDALE ENGINEERING LLC ; DIMSDALE JERRY ; TOPCON POSITIONING SYSTEMS INC

Assignee(s): TOPCON POSITIONING SYSTEMS INC LIVERMORE ; VOXIS INC

Inventor(s): (std): JERRY DIMSDALE ; DIMSDALE JERRY ; DIMSDALE JERRY

Inventor(s): DIMSDALE JERRY OAKLAND

Agent(s): VOSSIUS AND PARTNER PATENTANWALTE RECHTSANWALTE MBB; KUHNEN AND WACKER PATENT U RECHTSANWALTSBUERO PARTG MBB; BERGQUIST KJELL GUNNAR; EKWALL PETER; KUHNEN AND WACKER; CHINA PATENT AGENT HK LTD; OSUGA YOSHIYUKI; SCHWEGMAN LUNDBERG WOESSNER AND KLUTH; SCHWEGMAN LUNDBERG AND WOESSNER PA; SCHWEGMAN LUNDBERG WOESSNER AND KLUTH PA

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 GW HR HU ID IE IL IN IS IT JP KE KG KM KP KR KZ LC LI LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SM SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

4) Family number: 1890020 (US4627723A)

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Title: OPTICAL RANGE SIMULATOR DEVICES

Abstract: An optical range simulator device (10) for testing the ranging function of a laser rangefinder (14) receives output

pulses from the rangefinder (14) and delivers these to an optical fibre delay line (11,12). The output of the delay line (11,12) and the input of the fibre delay line (11,12) are interconnected by an optical bridging means (15,17,22) which collects at least a portion of each pulse delivered by the output of the delay line (11,12) and recirculates that pulse portion to the input end of the delay line, the remaining portion of each pulse at the output end of the delay line (11,12) being returned to the rangefinder (14) so that for each output pulse received from the rangefinder (14) a simulator device (10) delivers a series of successively delayed return pulses to the rangefinder (14), these delayed return pulses being representative of ranges successively augmented by the range distance represented by the delay line (11,12).

Classifications:

International (IPC 8-9): G01C3/00 G01S17/10

G01S7/497 (Advanced/Invention);

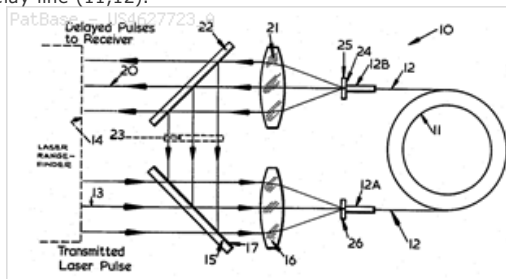
G01C3/00 G01S17/00 G01S7/48 (Core/Invention)

International (IPC 1-7): G01C25/00 G01C3/00 G01C3/08 G01D G01J1/00 G01S17/08 G01S17/10 G01S7/40 G01S7/48 G02B27/00

CPC: G01S7/4972 G01S17/10 G01S7/497

European: G01S17/10 G01S7/497

US: 356/4.02 356/5 356/6 434/4



Family:

Publication number	Publication date	Application number	Application date
DE3418298 A1	19841213	DE19843418298	19840517
FR2546307 A1	19841123	FR19840007782	19840518
FR2546307 B3	19850913	FR19840007782	19840518
GB2141891 A1	19850103	GB19840003899	19840214
GB2141891 B2	19860910	GB19840003899	19840214
GB8403899 A0	19840321	GB19840003899	19840214
IN160789 A	19870808	IN1984MA00362	19840518
IN167192 A	19900915	IN1987MA00100	19870213
IT1179671 A	19870916	IT19840067494	19840517
IT8467494 A0	19840517	IT19840067494	19840517
NL8401482 A	19841217	NL19840001482	19840509
NO841991 A	19841120	NO19840001991	19840518
NO841991 L	19841120	NO19840001991	19840518
SE459127 B	19890605	SE19840002647	19840516
SE8402647 A	19841120	SE19840002647D	19840516
SE8402647 A0	19840516	SE19840002647	19840516
SE8402647 L	19841120	SE19840002647	19840516
US4627723 A	19861209	US19840608411	19840509
YU86684 A	19861031	YU19840000866	19840518

Priority:

GB19830013875 19830519

GB19840003899 19840214

IN1984MA00362 19840518

IN1987MA00100 19870213

Probable Assignee: BARR AND STROUD LTD

Assignee(s): (std): BAAR AND STROUD LTD ; BARR AND STROUD LTD

Assignee(s): BARR STROUD LTD ; BARR AND STROUD LIMITED TE GLASGOW GROOT BRITTANNIE ; BARR AND STROUD TE GLASGOW GROOT BRITTANNIE LTD ; BARR AND STROUD ; BARR AND STROUD CAXTON STREET ANNIESLAND GLASGOW G13 1HZ SCOTLAND A BRITISH CO LTD ; BARR AND STROUD LIMITED

Inventor(s): (std): FRENCH TIMOTHY OWEN ; CARLESS DEREK RUSSELL ; AULT REGINALD ALBERT ; DARLOW MICHAEL BENJAMIN ; FRENCH TIMOTHY O ; CARLESS DEREK R ; AULT REGINALD A ; DARLOW MICHAEL B ; FRENCH T O ; CARLESS D R ; AULT R A ; DARLOW M B ; CARLESS DEREK RUSSEL ; REGINALD ALBERT AULT ; TIMOTHY OWEN FRENCH ; DEREK RUSSELL CARLESS

Inventor(s): 1 T O FRENCH ; 2 D R CARLESS ; 3 R A AULT ; 4 M B DARLOW ; OWEN FRENCH TIMOTHY ; ALBERT AULT REGINALD ; BENJAMIN DARLOW MICHAEL ; RUSSELL CARLESS DEREK ; TIMOTHY OWEN FRENCH DEREK RUSSELL CARLESS REGINALD ; MICHAEL BENJAMIN DARLOW ; TIMOTHY OWEN FRENCH DEREK RUSSELL CARLESS REGINALD ALBERT AULT ET MICHAEL BENJAMIN DARLOW ; AULT RA ; DARLOW MB ; FRENCH TO ; CARLESS DR ; D R CARLESS ; T O FRENCH ; R A AULT ; M B DARLOW

5) Family number: 28207051 (US2004025563A)

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Title: MANUAL APPLIANCE FOR CONTACTLESS DISTANCE MEASUREMENT

Abstract: The invention has disclosed a handheld device for contactless distance measurement, having a housing (11) with a housing front (15) pointing in the measuring direction (17) and a housing back (16) oriented away from it, having a linear first measuring stop (21) that is embodied on the housing back (16) oriented away from the measuring direction (17) and that lies in a reference plane for the distance measurement, and having means disposed on the housing back (16) for producing a flat second measuring stop (22) that is aligned at right angles to the measuring direction and points away from the measuring direction (17). In order to achieve a structurally simple embodiment of the second measuring stop (22) that also makes it possible to provide the housing (11) with a third flat measuring stop, which points in the measuring direction and is intended for another measuring task, the means for producing the second measuring stop (22) have a pivoting wedge (24) supported on the housing (11) in pivoting fashion, whose one wedge surface (241) supports the second measuring stop (22).

Classifications:

International (IPC 8-9): G01B21/16 G01C3/00 G01D11/24

G01S17/08 G01S7/481 (Advanced/Invention);

G01B21/16 G01C3/00 G01D11/24 G01S17/00

G01S7/481 (Core/Invention)

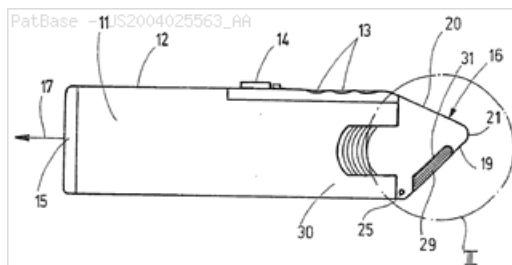
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G01C15/00 G01C25/00 G01C3/00 G01C3/02 G01D11/24 G01S7/481

CPC: G01C3/00 G01D11/24 G01S7/4813 G01S17/08

European: G01C3/00 G01D11/24 G01S17/08 G01S7/481B2

US: 356/3 356/3S 73/1.79 73/1.790P 73/17.9



Family:

Publication number	Publication date	Application number	Application date
DE10142166 A1	20030320	DE20011042166	20010829
EP1423659 A1	20040602	EP20020750782	20020608
JP2005504285 T2	20050210	JP20030531120T	20020608
US2004025563 AA	20040212	US20030399918	20030416
US6912888 BB	20050705	US20030399918	20030416
WO03027610 A1	20030403	WO2002DE02093	20020608

Priority:

DE20011042166 20010829 WO2002DE02093 20020608

Probable Assignee: ROBERT BOSCH GMBH

Assignee(s): (std): BOSCH GMBH ROBERT ; STIERLE JOERG ; WOLF PETER

Assignee(s): ROBERT BOSCH GMBH

Inventor(s): (std): WOLF PETER ; STIERLE JOERG

Agent(s): STRIKER MICHAEL J; MICHAEL J

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT JP LI LU MC NL PT SE TR US

6) Family number: 23660059 (JP2002228482A)

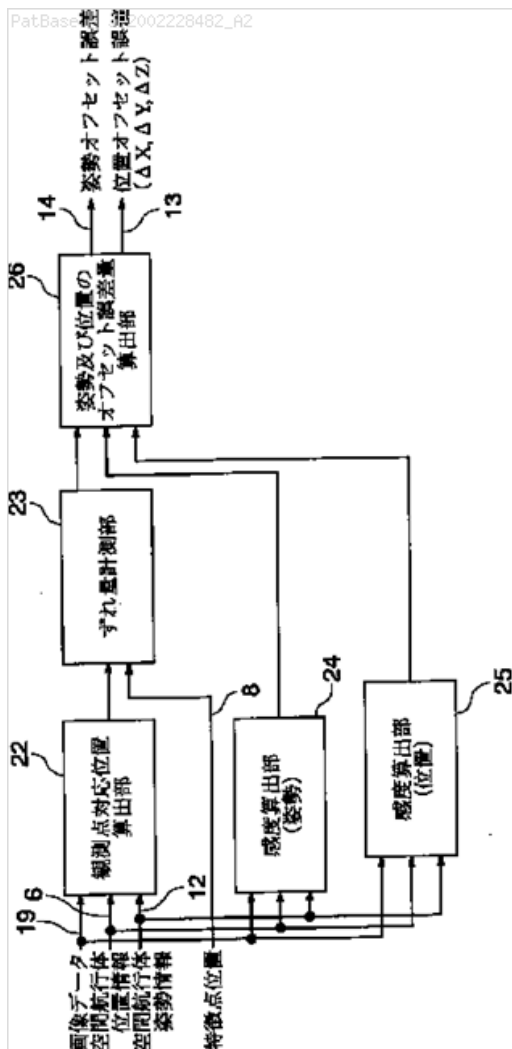
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Title: APPARATUS AND METHOD FOR CALCULATING NAVIGATION

Abstract: PROBLEM TO BE SOLVED: To obtain an apparatus and a method for calculating a navigation capable of being applied to accurate imaging of all sensors at a high speed.SOLUTION: The apparatus for calculating the navigation comprises an observing point corresponding position calculator 22 inputting image data 19 of an imaging unit carried at a space navigator, position information 6 of the navigator, attitude information 12 and a sight line direction of the imaging unit to calculate positions of N pieces of observing positions in the case including offset errors, a deviating amount measuring unit 23 for measuring a deviating amount of a position of the observing point actually measured on the globe from the observing point calculated by the calculator 22, an error amount calculator 26 for calculating attitude and position offset errors by solving the offset error amounts of position 3 components of the navigator and attitude 3 components of the measured deviation amounts via simultaneous equations by expressing the offset error amounts in a linear sum of the deviating amounts, and attitude and position sensitivity calculating means 24, 25 for calculating sensitivities to become coefficients of respective items of the linear sum.

Classifications:

International (IPC 8-9): B64G1/24 G01C21/04 G01C21/24 G01C25/00 G01S17/88 G01S17/89 (Advanced/Invention); B64G1/24 G01C21/04 G01C21/24 G01C25/00 G01S17/00 (Core/Invention)
International (IPC 1-7): B64G1/24 G01C21/04 G01C21/24 G01C25/00 G01S17/88



Family:

Publication number	Publication date	Application number	Application date
JP2002228482 A2	20020814	JP20010025612	20010201
JP4046476 B2	20080213	JP20010025612	20010201

Priority:

JP20010025612 20010201

Probable Assignee: MITSUBISHI ELECTRIC CORP
Assignee(s): (std): MITSUBISHI ELECTRIC CORP
Assignee(s): MITSUBISHI DENKI KABUSHIKI KAISHA
Inventor(s): (std): KAWABATA KIYOSUKE

7) Family number: 1547127 (US4167328A)

Title: Passive optical range simulator device

Abstract: An improved passive optical range simulator device used to test the ranging function of the optical radar ranger system by input to a coil of optical fiber having a mirror at its inner terminus that permits such coil to act as an optical delay medium. Improvement resides in inclusion of a partial mirror at the input end of the optical fiber coil to present multiple "target echo" reflections of the laser pulses back to the optical radar ranger system undergoing test.

Classifications:

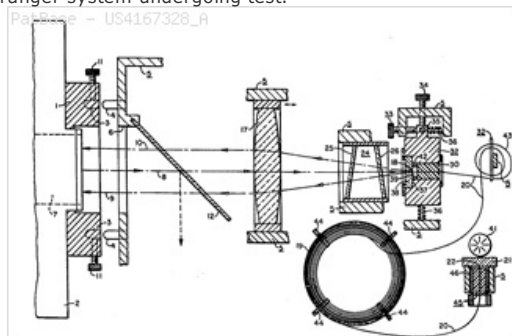
International (IPC 8-9): G01C3/08 G01J1/02 G01S1/70 G01S17/02 G01S7/40 G01S7/48 G01S7/497 G02B27/00 (Advanced/Invention); G01S17/00 G01S7/48 G02B27/00 (Core/Invention)

International (IPC 1-7): F41G G01C25/00 G01C3/02 G01C3/08 G01J1/02 G01M11/00 G01S1/70 G01S7/40 G01S7/48 G01S9/62 G02B27/00 G02B5/16 G02F1/00 G03B27/10 G06G

CPC: G01S17/02 G01S7/497 G01S7/4972

European: G01S17/02 G01S7/497 S01S7/497A

US: 356/243.8 356/4.02 356/5 385/12 385/33



Family:

Publication number	Publication date	Application number	Application date
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BE864643 A	19780907	BE19780185730	19780307
CA1109142 A1	19810915	CA19780298139	19780303
CA1114049 A1	19811208	CA19780310909	19780908
DE2809812 A1	19780914	DE19782809812	19780307
DK99178 A	19780908	DK19780000991	19780306
ES467514 A1	19790901	ES19780467514	19780302
GB1572148 A	19800723	GB19780008956	19780307
GR64458 B	19800324	GR19780155619	19780306
IL54201 A1	19801130	IL19780054201	19780306
JP1263126 C3	19850516	JP19780025099	19780307
JP53110865 A2	19780927	JP19780025099	19780307
JP59041545 B4	19841008	JP19780025099	19780307
NL7802432 A	19780911	NL19780002432	19780306
NO145358 B	19811123	NO19780000765	19780306
NO145358 C	19820303	NO19780000765	19780306
NO780765 A	19780908	NO19780000765	19780306
NO780765 L	19780908	NO19780000765	19780306
US4167328 A	19790911	US19770837067	19770928
US4189233 A	19800219	US19770775061	19770307

Priority:

US19770775061 19770307 US19770837067 19770928 CA19780298139 19780303
CA19780310909 19780908

Probable Assignee: NORTHROP GRUMMAN CORP

Assignee(s): (std): WESTINGHOUSE ELECTRIC CORP ; WESTINGHOUSE ELECTRIC CO

Assignee(s): WESTINGHOUSE ELECTRIC TE PITTSBURGH PENNSYLVANIE VER ST V AM CORP ; WESTINGHOUSE ELECTRIC TE PITTSBURGH PENNSYLVANIE VERSTVAM CORP ; WESTINGHOUSE ELECTRIC ; CROSS MICHAEL A ; HURT FRED S ; NORTHROP GRUMMAN CORP

Inventor(s): (std): CROSS M A ; CROSS MICHAEL A ; CROSS MICHAEL ARCHER ; FURETSUDO SHIERUTON HAATO ; HURT FRED S ; HURT FRED SHELTON ; MAIKERU AASAA KUROSU ; HURT F S

Inventor(s): S HURT FRED ; FURETSUDO SHERUTON HAATO ; A CROSS MICHAEL

Agent(s): MCCONNELL AND FOX; REINHOLD COHN AND PARTNERS

8) Family number: 29292258 (JP58088613A)

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Title: MEASURING METHOD FOR POSITION AND ATTITUDE ANGLE AT CALIBRATION POINT FOR RUN LOCUS RECORDING OF MOTORCAR

Abstract: PURPOSE:To measure the passing position and attitude angle of a car at a calibration point on real-time basis in the car by adding simple marks on a running surface of the car and providing the car with a simple detecting means. CONSTITUTION:At a calibration point on a running surface of a car, a calibration point mark 3 is provided on the road surface 1 between edge bricks. This calibration point mark 3 consists of a rectangular mark 4 at right angles to the bricks 2, a trapezoidal mark 5 which is parallel to said rectangular mark 4, but not constant in width, and a parallelogram mark 6 arranged in parallel to the slanting side of said trapezoidal mark. Then, a mark detecting means provided on the car measures the time when the car passes through the parallel straight- line part and unparallel straight-line part, and the passing position and attitude angle of the car at the calibration point are measured on the basis of said time and mark size.

Classifications:

International (IPC 8-9): G01C21/00 G01C21/04 G01C25/00 G01S17/88 G08G1/00 (Advanced/Invention); G01C21/00 G01C21/04 G01C25/00 G01S17/00 G08G1/00 (Core/Invention)

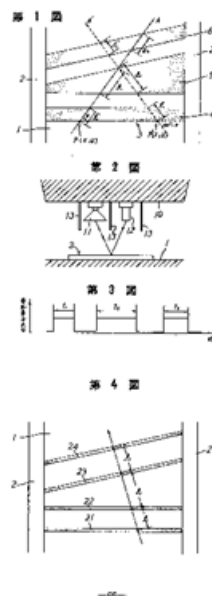
International (IPC 1-7): G01C21/00 G01S17/88 G08G1/00

CPC: G01C25/00

European: G01C25/00

PatBase - JP58088613_A2

特開昭 58- 46813(4)



Family:

Publication number	Publication date	Application number	Application date
JP1690504 C3	19920827	JP19810188229	19811124
JP3046761 B1	19910717	JP19810188229	19811124
JP3046761 B4	19910717	JP19810188229	19811124
JP58088613 A2	19830526	JP19810188229	19811124

Priority:

JP19810188229 19811124

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Inventor(s): (std): TABEI SABUROU ; TABEI SABURO ; TSUGAWA SADAYUKI

9) Family number: 15364279 (US6336062B)

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Title: ATTITUDE ANGLE SENSOR CORRECTING APPARATUS FOR AN ARTIFICIAL SATELLITE

Abstract: An attitude angle sensor correcting apparatus for an artificial satellite of the present invention includes a satellite attitude estimator. The satellite attitude estimator reads geographical image data out of an image data memory, produces a GCP (Ground Control Point) position included in the image data by stereo image measurement, and then estimates the instantaneous satellite attitude angle on the basis of a relation between the measured GCP position and a true GCP position. An attitude angle sensor data corrector corrects measured attitude angle data with estimated satellite attitude data output from the satellite attitude estimator and corresponding in time to the measured attitude angle data. The attitude angle sensor data corrector outputs an estimated satellite attitude signal.

Classifications:

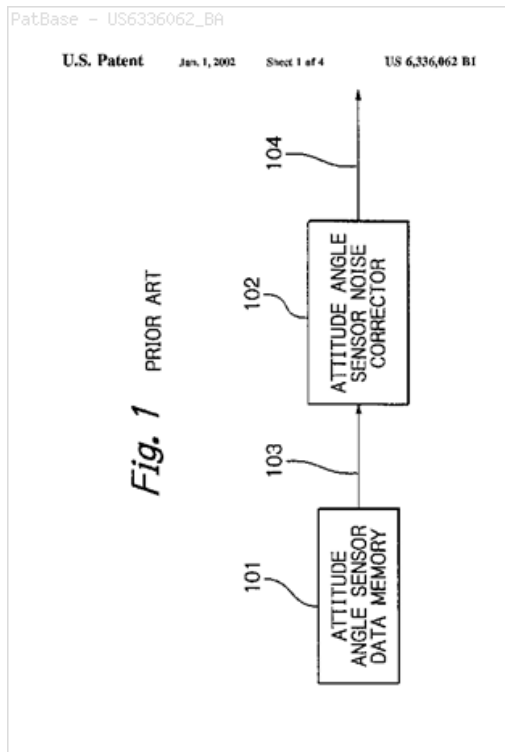
International (IPC 8-9): B64G1/36 G01C1/00 G01C15/00 G01C21/24 G01C25/00 G01S17/02 (Advanced/Invention); B64G1/10 B64G1/66 (Advanced/Non-invention); B64G1/36 G01C1/00 G01C15/00 G01C21/24 G01C25/00 G01S17/00 (Core/Invention); B64G1/00 B64G1/66 (Core/Non-invention)

International (IPC 1-7): A23C9/14 A62B7/04 B64G1/36 G01C1/00 G01C15/00 G01C21/00 G01C21/02 G01C21/24 G01C25/00 G01S17/02 G05D1/08 G06F1/740 G06F17/40

CPC: B64G1/1021 B64G1/365 B64G1/66 B64G2001/245

European: B64G1/36C L64G1/10C L64G1/24C L64G1/66

US: 244/158 244/171 348/117 701/13 701/14



Family:

Publication number	Publication date	Application number	Application date
DE60003381 D1	20030724	DE20006003381T	20001208
DE60003381 D1	20030724	DE20006003381	20001208
DE60003381 T2	20040519	DE20006003381T	20001208
EP1106505 A2	20010613	EP20000126967	20001208
EP1106505 A3	20020814	EP20000126967	20001208
EP1106505 B1	20030618	EP20000126967	20001208
JP2001165694 A2	20010622	JP19990352397	19991210
JP3428539 B2	20030722	JP19990352397	19991210
US6336062 BA	20020101	US20000731028	20001207

Priority:

JP19990352397 19991210 JP19990352397 19991210

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Inventor(s): (std): YAMASHITA TOSHIAKI

Inventor(s): TOSHIAKI YAMASHITA

Agent(s): SUGHRUE MION PLLC

Designated states: AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

10) Family number: 67075287 (US2017276485A)

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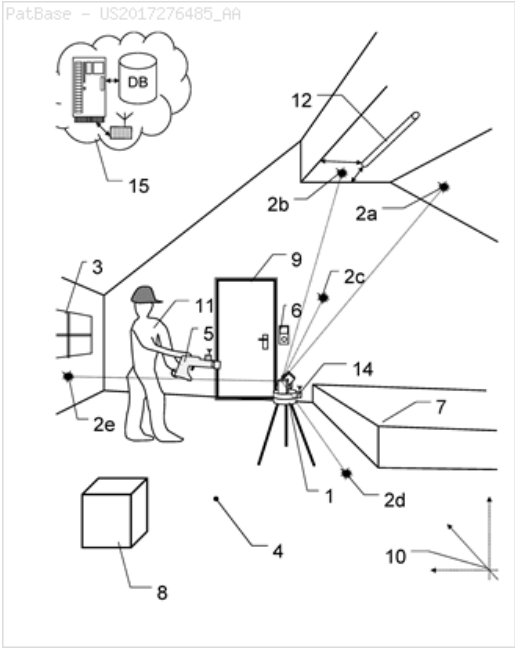
Title: CONSTRUCTION SITE REFERENCING

Abstract: A method of automated spatial worksite referencing of a networked electronic measuring device with awareness

of a rough location information of itself at a worksite location. The method includes querying a database for construction plan information about the rough location and its vicinity and about an actual work progress, computing an actual-state nominal spatial information at the rough location and its vicinity, automatically determining of a fine location of the networked electronic measuring device at the worksite location, by at least one iteration of: automatically determining a measurement point in the vicinity and measuring the measurement point using measurement functionality of the device, and then automatically assimilating the measurement point to the actual-state nominal spatial information and thereby determining the fine location information. When a desired level of accuracy of the determined fine location is not reached, performed another iteration with another additional measurement point is performed.

Classifications:

International (IPC 8-9): B25H1/00 G01C15/00 G01C15/02 G01C21/00 G01C21/20 G01C25/00 G01C3/00 G01S11/12 G01S17/00 G01S17/06 G01S19/48 G01S5/00 G01S5/02 G01S5/04 H04L29/06 (Advanced/Invention)
CPC: G01C15/002 G01C15/02 G01S5/04 B25H1/0092 G01C3/00 G01C15/00 G01C21/20 G01C21/206 G01S5/02 G01S5/0263 G01S17/06 G01S19/48 G01S5/00 G01S11/12 G01C25/00 H04L65/1069
US: 1/1 702/95



Family:

Publication number	Publication date	Application number	Application date
■ CN107218933 A	20170929	CN201710174074	20170322
■ CN107218933 B	20191126	CN201710174074	20170322
■ DE602016005854 D1	20181025	DE201660005854T	20160322
■ EP3222969 A1	20170927	EP20160161769	20160322
■ EP3222969 B1	20180926	EP20160161769	20160322
■ US2017276485 AA	20170928	US20170466720	20170322
■ US10571273 BB	20200225	US20170466720	20170322

Priority:

EP20160161769 20160322

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Agent(s): KAMINSKI HARMANN PATENTANWALTE AG; GYAJA CHRISTOPH BENJAMIN; KAMINSKI HARMANN; MASCHOFF BRENNAN

Designated states: AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR