

Search history

Search 1: swivel and panel and solar and tracker (Results 101)

1) Family number: 53189221 (US2014140755 AA)

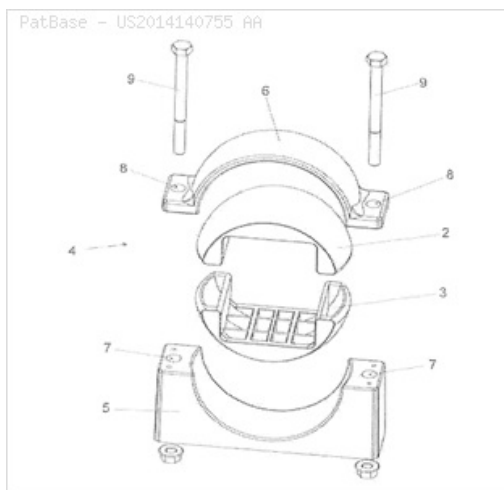
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Title: SWIVEL MOUNT FOR SOLAR TRACKER SHAFTS

Abstract: The present invention relates to a swivel mount for solar tracker shafts, comprising a clamp surrounding parts bracing a solar tracker shaft, wherein the parts bracing the solar tracker shaft externally have a spherical shape corresponding with a reciprocal inner shape of the clamp, such that the solar tracker shaft is axially retained by the clamp and can be oriented in any required spatial position.

Classifications:

International (IPC 8-9): F16C11/06 F16C23/04 F16D3/00 F24J2/52 F24J2/54 F24S20/70 F24S30/40 H01L31/042
CPC: F16C11/0695 F16C23/04 F16C23/043 F16C23/046 F16C33/046 F24S2025/019 F24S2030/15 F24S25/00 F24S25/12 F24S30/425 H01L31/042 Y02E10/47 Y02E10/50 Y10T403/32041
US: 1/1 403/57



Family:

Publication number	Publication date	Application number	Application date
DE602013046251 D1	20181129	DE201360046251T	20131122
EP2735817 A2	20140528	EP20130193963	20131122
EP2735817 A3	20141224	EP20130193963	20131122
EP2735817 B1	20181107	EP20130193963	20131122
EP2735817 B8	20190123	EP20130193963	20131122
ES2397777 AA	20130311	ES20120031808	20121122
ES2397777 BA	20131105	ES20120031808	20121122
ES2709659 T3	20190417	ES20130193963T	20131122
US2014140755 AA	20140522	US20130076390	20131111
US9303684 BB	20160405	US20130076390	20131111

Priority:

ES20120031808 20121122 EP20130193963 20131122

Probable Assignee: NCLAVE MFG SLU

Assignee(s): (std): GRUPO CLAVIJO ELT S L ; GRUPO CLAVIJO ELT S L ; NCLAVE MFG S L U

Assignee(s): GRUPO CLAVIJO ELT SL VIANA

Inventor(s): (std): CLAVIJO LUMBRERAS MIGUEL

Inventor(s): MIGUEL CLAVIJO LUMBRERAS

Agent(s): INTES DIDIER GERARD ANDRE; LUCAS AND MERCANTI LLP; VEIGA MIKEL

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

2) Family number: 65275372 (IN201741008685 A)

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Title: 3-AXIS SOLAR TRACKER

Abstract: The. present invention relates to an innovative, cost saving, multipurpose, - area saving, strong and stable, Ready-To-Assemble (RTA), modular construction, expandable in all four direction, best aesthetic look, highly productive, automatic and location specific 3-axis solar tracker apparatus, for automatically orienting a set of solar photovoltaic panels, mounted on such apparatus, towards the sun's position prevailing time to time, that the solar photovoltaic panel on which a plurality of solar cells are provided, can face the sun in such a way that the angle of incidence of the sun rays is perpendicular to the top surface of the solar cells for maximum most period of the day time (sunny time) and throughout the year to harvest maximum solar energy.

Classifications:
International (IPC 8-9): H02S20/00

Family:

Publication number	Publication date	Application number	Application date
IN201741008685 A	20170324	IN201741008685	20170314

Priority:

IN201741008685 20170314

Probable Assignee: S K RADHAKRISHNAN
Assignee(s): S K RADHAKRISHNAN
Inventor(s): S K RADHAKRISHNAN

3) Family number: 74155249 (US10277163 BA)

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Title: MAGNETIC PARKING FOR ROBOTIC CLEANER ON A SOLAR PANEL

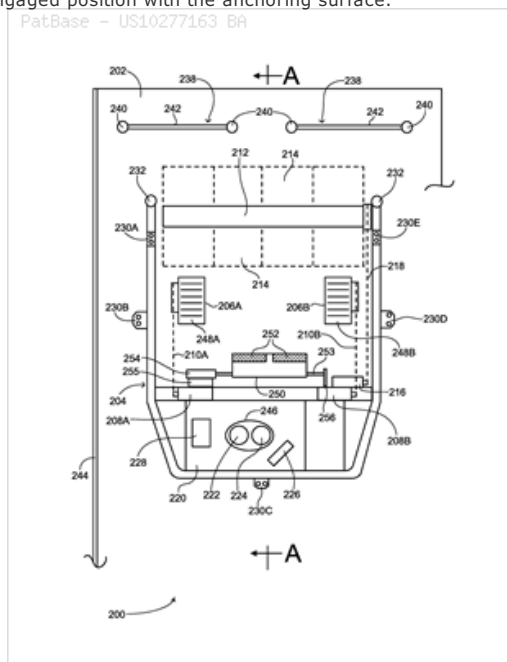
Abstract: Autonomous robotic cleaner (ARC) for cleaning solar panels having an anchoring mechanism including at least one rechargeable power source, at least one cleaning mechanism, a controller and an anchoring mechanism, the cleaning mechanism for cleaning dirt off of a surface of the solar panels, the controller for controlling a cleaning process of the ARC and the anchoring mechanism for magnetically anchoring the ARC to an anchoring surface coupled with a solar panel, the anchoring mechanism including an arm and a drive mechanism, the arm including at least one ferromagnetic end piece and the drive mechanism being coupled with the arm, wherein the drive mechanism moves the arm between a magnetically engaged position with the anchoring surface and a magnetically disengaged position with the anchoring surface.

Classifications:

International (IPC 8-9): B08B1/00 B08B1/02 B08B3/08 B08B5/02 B08B5/04 H02S40/10

CPC: B08B1/002 B08B1/005 B08B1/008 B08B13/00 B08B3/024 B08B3/08 B08B5/02 B08B5/04 F24S40/20 H02S40/10 Y02E10/40 Y02E10/50

PatBase - US10277163 BA



Family:

Publication number	Publication date	Application number	Application date
US10277163 BA	20190430	US20180032686	20180711
WO20012472 A1	20200116	WO2019150766	20190709

Priority:

US20180032686 20180711

Probable Assignee: EVERMORE UNITED S A

Assignee(s): (std): EVERMORE UNITED S A

Inventor(s): (std): MELLER ERAN ; MELLER MOSHE

Agent(s): BROWN RUDNICK LLP; KORAKH ELIAV 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 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

4) Family number: 48843631 (US2011209696 AA)

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Title: THREE POINT SOLAR TRACKING SYSTEM AND METHOD

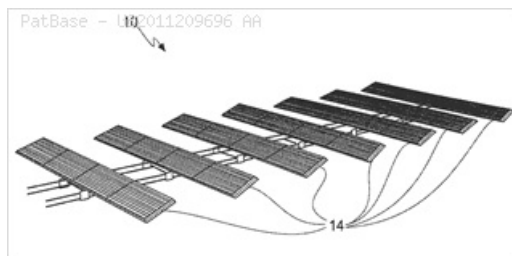
Abstract: A three point solar tracking system and method are provided.

Classifications:

International (IPC 8-9): E04D13/18 F24J2/38 F24S50/20 H01L31/052

CPC: F24S30/45 Y02E10/47

US: 126/600 136/246 136/246S



Family:

Publication number	Publication date	Application number	Application date
US2011209696 AA	20110901	US20100913375	20101027
WO11053659 A1	20110505	WO2010US54341	20101027

Priority:

US20090255317P 20091027 US20100913375 20101027

Probable Assignee: PURE MECHANICS INC

Assignee(s): (std): O ROURKE GREGORY M ; PURE MECHANICS INC

Inventor(s): (std): O ROURKE GREGORY M

Inventor(s): O'ROURKE GREGORY M

Agent(s): LOHSE TIMOTHY W

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 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 ZA ZM ZW

5) Family number: 50663174 (DE202011103307 U1)

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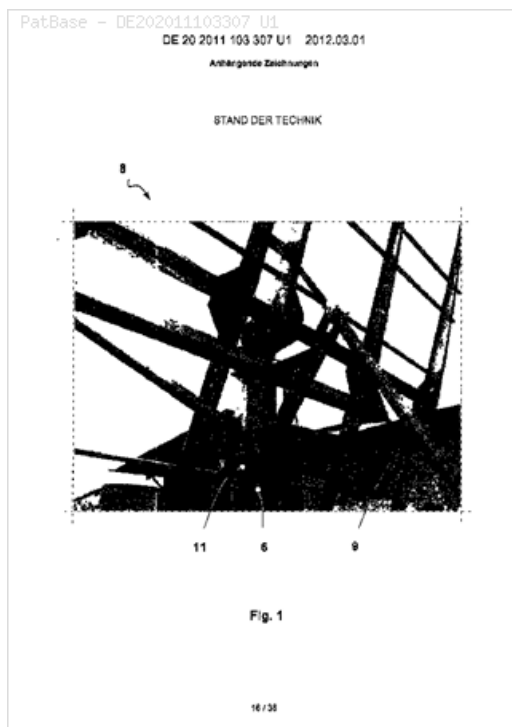
Title: DEVICE FOR ROTATION OF AN carrier structure MAIN AXLE FOR USE IN A FLAT WITH PLANAR ELEMENTS OR INVESTMENT designed. ESPECIALLY A SOLAR SYSTEM (Machine translation)

Abstract: Source: DE202011103307 U1 **Machine translation:** Device (10) for rotating a carrier structure (13) about a main axis (HA) for use in a with planar elements (2) or (2) surfaces equipped system, in particular to solar panels or PV modules as planar elements or surfaces, which consists of a fixed part and a variable part by means of the apparatus (10), wherein in particular, this device (10) plant in an axis, preferably in about a horizontal axis, to adjust the elevation angle and rotationally is suitable (O) changes, characterized in that the device (10) for rotation than at least one swivel unit (10), wherein each swivel unit (10) has two mutually concentric, annular structures (19; 21) which are mounted and the mutual relative adjustment with at least one drive (15) are coupled or coupleable.

Classifications:

International (IPC 8-9): F24J2/54

CPC: F24J2/54 F24S2030/134 F24S30/425 F24S30/452 Y02E10/47



Family:

Publication number	Publication date	Application number	Application date
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Priority:

DE201120103307U 20110606

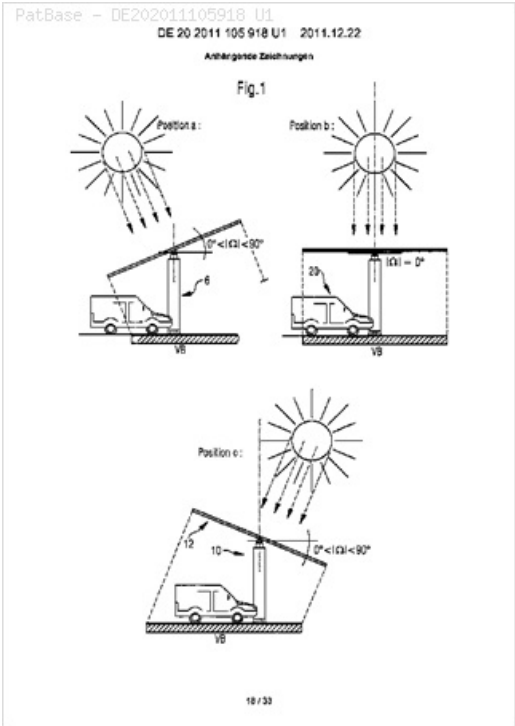
Probable Assignee: IMO HOLDING GMBH

Assignee(s): (std): IMO HOLDING GMBH

Title: DEVICE FOR ROTATION OF AN carrier structure MAIN AXLE FOR USE IN A PLANAR ELEMENTS OR SURFACES WITH FITTED SYSTEM, ESPECIALLY A SOLAR SYSTEM (Machine translation)

Abstract: Source: DE202011105918 U1 **Machine translation:** Device (10) for rotating a carrier structure (13) about a main axis (HA) for use in a with planar elements (2) or (2), preferably with solar panels equipped plant surfaces (2), wherein the system comprises a fixed part and a variable part by means of the apparatus (10), wherein in particular, this device (10) plant in an approximately horizontal axis to adjust a rotary motion and adapted by readjusting the elevation angle (O) of the worn planar elements (2) or (2) changes, the surfaces characterized in that the device (10) for rotation than at least one swivel unit (10), wherein each swivel unit (10) has two mutually concentric, annular structures (19; 21) which are mounted and the mutual relative adjustment coupled to at least one drive (15). Or.

Classifications:
International (IPC 8-9): F24J2/54
CPC: F24J2/54 F24S2030/134 F24S2030/137 F24S2030/15 F24S30/425 F24S30/452 Y02B10/20 Y02E10/47



Family:

Publication number	Publication date	Application number	Application date
DE202011105918 U1	20111222	DE201120105918U	20110606

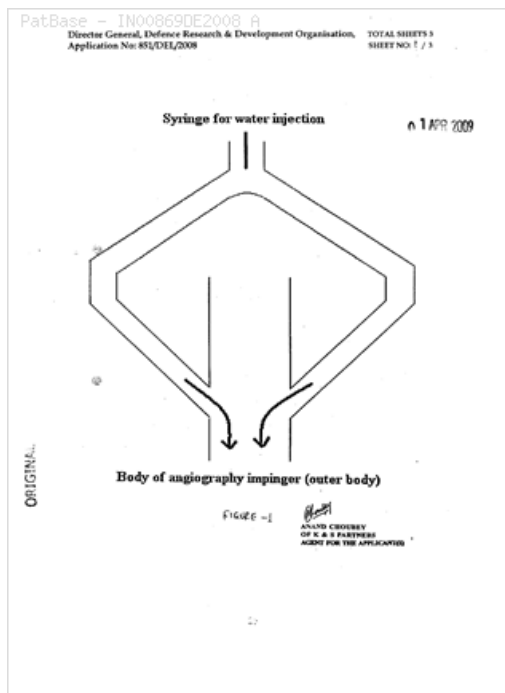
Priority:
DE201120105918U 20110606

Probable Assignee: IMO HOLDING GMBH
Assignee(s): (std): IMO HOLDING GMBH

Title: A NOVEL SYSTEM FOR GENERATING POWER FROM SOLAR ENERGY

Abstract: The present invention provides a novel Photovoltaic system to generate electricity from solar energy by using a novel diurnal threestep sun-tracker for making extended linear arrays of PV panels, suitably-spaced to avoid inter se shadows, to swivel with the sun as it travels across the horizon during the day for increasing their power generating efficiency and exploiting the response of PV panels to incident solar radiation at higher altitudes. The instant invention takes advantage of many suitably oriented natural mountain slopes or man-made structures including dams and forts already erected for other purposes and use for power generation by mounting the linear PV arrays on existing dams or forts thereby saving large tracts of expensive land. The said system is reliable, efficient, non-polluting, economic to install and maintain and cost effective to operate.

Classifications:
International (IPC 1-7): H01L



Family:

Publication number	Publication date	Application number	Application date
IN00869DE2008 A	20091009	IN2008DE00869	20080402

Probable Assignee: MOHAN CHANDRA
Assignee(s): MOHAN CHANDRA
Inventor(s): MOHAN CHANDRA

8) Family number: 35572583 (US2010095955 AA)

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Title: BIDIRECTIONAL SOLAR TRACKER

Abstract: The tracker is formed by a structure (3) bearing a platform (1) carrying the solar panels (2) that varies both the azimuth and elevation orientation thereof in order to track the sun. This movement is achieved by means of two actuators (4) connected respectively to fixed points (P1o, P2o) on the ground and other vertices (P1, P2) of the platform (1), thereby causing the platform to rotate around a central support point "O" of the same. The distances (D1, D2) between the points which join the actuators (4) have a one-to-one relation with the rotation angles (beta, a) of the platform (1) around both perpendicular axes: an oblique fixed axis (O-C1) and another axis (O-Az) that angularly varies the inclination thereof with respect to the first.

Classifications:

International (IPC 8-9): F24J2/00 F24J2/38 F24J2/40 F24J2/46

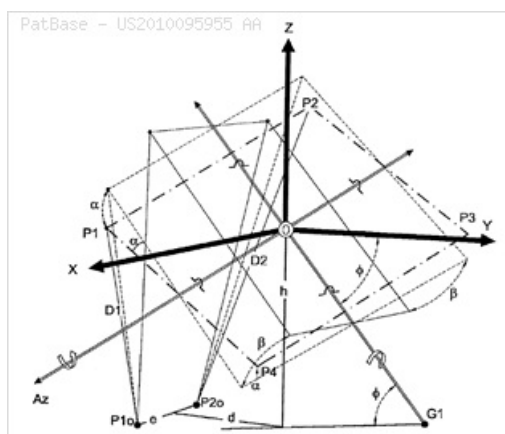
F24J2/54 F24S30/45 F24S50/20

International (IPC 1-7): F24J2/38 F24J2/54

CPC: F24S2030/115 F24S25/10 F24S30/455 Y02E10/47 Y02E10/40

F24S30/45 F24S50/20

US: 126/601 126/604 126/604S



Family:

Publication number	Publication date	Application number	Application date
AU2007343224 AA	20080717	AU20070343224	20071227
CA2673989 AA	20090626	CA20072673989	20071227
CN101680686 A	20100324	CN200780051890	20071227
EP2098806 A1	20090909	EP20070866386	20071227
ES2302469 AA	20080701	ES20060003326	20061229
ES2302469 BA	20090609	ES20060003326	20061229
ES1065292 UA	20070716	ES20070000819U	20070420
ES1065292 Y1	20071016	ES20070000819U	20070420
ES1065296 UA	20070716	ES20070000825U	20070420
ES1065296 Y1	20071016	ES20070000825U	20070420
ES2344492 AA	20100827	ES20070002164	20070802
ES2344492 BA	20110718	ES20070002164	20070802
IL199500 A0	20100328	IL20070199500	20071227

MA31114 B1	20100104	MA20090032122	20090727
MX2009006999 A1	20091209	MX20090006999	20071227
US2010095955 AA	20100422	US20070521143	20071227
WO08084121 A1	20080717	WO2007ES00761	20071227

Priority:

ES20060003326 20061229 ES20070000825U 20070420 ES20070000819U 20070420
ES20070002164 20070802 WO2007ES00761 20071227

Probable Assignee: HISPANOTRACKER SL

Assignee(s): (std): CARRASCO MARTINEZ CARLOS MARIA ; HISPANO TRAKER S L ; HISPANOTRACKER S L

Inventor(s): (std): CARRASCO MARTINEZ CARLOS MARIA ; MARIA CARRASCO MARTINEZ CARLOS ; MARTINEZ CARLOS MARIA CARRASCO

Inventor(s): CARLOS MARIA CARRASCO MARTINEZ

Agent(s): GRIFFITH HACK; MARKS AND CLERK; UNGRIA LOPEZ JAVIER; WENDEROTH LIND AND PONACK LLP

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 SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

9) Family number: 56731615 (US2014216522 AA)

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Title: HORIZONTAL BALANCED SOLAR TRACKER

Abstract: In an example, the present invention provides a solar tracker apparatus. In an example, the apparatus comprises a center of mass with an adjustable hanger assembly configured with a clam shell clamp assembly on the adjustable hanger assembly and a cylindrical torque tube comprising a plurality of torque tubes configured together in a continuous length from a first end to a second end such that the center of mass is aligned with a center of rotation of the cylindrical torque tubes to reduce a load of a drive motor operably coupled to the cylindrical torque tube. Further details of the present example, among others, can be found throughout the present specification and more particularly below.

Classifications:

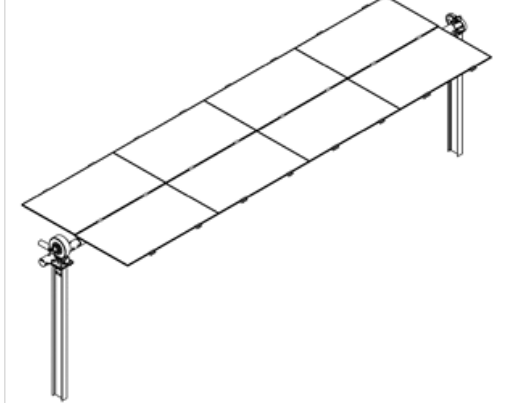
International (IPC 8-9): A47F5/00 E04G3/00 F16C11/00 F16C11/04 F16C23/10 F16C25/02 F16H19/08 F16L3/02 F16M13/02 F24J2/00 F24J2/12 F24J2/32 F24J2/38 F24J2/46 F24J2/52 F24J2/54 F24S10/95 F24S23/71 F24S25/10 F24S25/33 F24S25/65 F24S25/70 F24S30/00 F24S30/425 F24S50/20 G01S3/00 G01S3/786 G05D3/00 H01L31/042 H01L31/048 H01L31/052 H01L31/054 H02S20/00 H02S20/10 H02S20/30 H02S20/32

CPC: F24S2030/15 F24S25/10 F24S25/70 F24S30/425 H01L31/052 H02S20/00 H02S20/32 Y02E10/47 Y02E10/50 F16L3/02 F16M13/022 F24J2/523 F24J2/5264 F24J2/541 F24J2002/5482 F24J2002/5489 F24S2030/17 Y10T29/49826 Y10T29/49947 F16H19/08 F24S25/65 G01S3/7861 H02S20/10 F16C11/045 F16C23/10 F16C25/02 Y10T74/18792 F24S2025/6003 F24S2030/12 F24S25/33 H01L31/054 Y02E10/52 F24J2002/5444 H01L31/0522

US: 1/1 126/606 136/246 211/1.52 248/185.1 248/291.1 29/428 29/525.01 384/156 74/89.14 D13/102

Locarno class: 13/02

PatBase - US2014216522 AA



Family:

Publication number	Publication date	Application number	Application date
CL2015001578 A1	20160120	CL20150001578	20150609
CL57789 B	20190718	CL20150001578	20150609
CN104969464 A	20151007	CN201380072577	20131209
CN104969464 B	20180921	CN201380072577	20131209
CN204597865 U	20150826	CN201420826761U	20141223
CN204597866 U	20150826	CN201420827463U	20141223
CN204667195 U	20150923	CN201420853982U	20141226
CN204578443 U	20150819	CN201420858641U	20141230
CN205453610 U	20160810	CN201520550288U	20141223
CN109713991 A	20190503	CN201810948329	20131209
CN109713991 B	20200529	CN201810948329	20131209
DE112013005890 T5	20150910	DE201311005890T	20131209
IN04839DN2015 A	20151127	IN2015DN04839	20150604
IN201618025190 A	20160831	IN201618025190	20160722
JP2016504901 T2	20160212	JP20150545918T	20131209
JP2018042460 A2	20180315	JP20170216999	20171110
JP6592064 B2	20191016	JP20170216999	20171110
US2014216522 AA	20140807	US20130101273	20131209
US9905717 BB	20180227	US20130101273	20131209
US9466749 BA	20161011	US20140184656	20140219
US2015000721 AA	20150101	US20140489409	20140917
US9766319 BB	20170919	US20140489409	20140917
US10222446 BB	20190305	US20140489412	20140917
US2015000722 AA	20150101	US20140489412	20140917
US10008975 BB	20180626	US20140489416	20140917
US2015001356 AA	20150101	US20140489416	20140917
USD743881 S1	20151124	US20140508542F	20141107
USD804407 S1	20171205	US20150527987F	20150522
US2015288326 AA	20151008	US20150745301	20150619
US9923510 BB	20180320	US20150745301	20150619

US2016377325 AA	20161229	US20160261681	20160909
US9863667 BB	20180109	US20160261681	20160909
USD862379 S1	20191008	US20170624181F	20171030
US2017301814 AA	20171019	US20170640322	20170630
US2017336105 AA	20171123	US20170656974	20170721
US9970686 BB	20180515	US20170656974	20170721
US2018024222 AA	20180125	US20170694647	20170901
US10379193 BB	20190813	US20180234723	20181228
US2019212410 AA	20190711	US20180234723	20181228
US2018167025 AA	20180614	US20180890934	20180207
US2018224161 AA	20180809	US20180948960	20180409
US2019131920 AA	20190502	US20180974553	20180508
WO14093258 A1	20140619	WO2013US73948	20131209

Priority:

US20120735537P	20121012	US20120735537P	20121210	US20130780955P	20130313
US20130780947P	20130313	WO2013US73948	20131209	CN201380072577	20131209
JP20150545918T	20131209	US20130101273	20131209	US20140184656	20140219
US20140489412	20140917	US20140489416	20140917	US20140489409	20140917
US20140508542F	20141107	CN201420826761U	20141223	US20150527987F	20150522
IN2015DN04839	20150604	US20150745301	20150619	US20160261681	20160909
US20170640322	20170630	US20170656974	20170721	US20170694647	20170901
US20170624181F	20171030	US20180890934	20180207	US20180948960	20180409
US20180974553	20180508	US20180234723	20181228		

Probable Assignee: NEXTRACKER INC

Assignee(s): (std): NEXTRACKER INC ; NIKE STELLA KERR CO LTD ; SOLARIA CORP

Assignee(s): NIKE STELLA KERR CO

Inventor(s): (std): ALEXANDER W AO ; ALEXANDER W AU ; AU ALEXANDER W

Agent(s): CHO STEVE Y; ESTUDIO FEDERICO VILLASECA Y CIA; OGAWA PC; RICHARD T; SKIP LAW FIRM; WEBER ROSSELLI AND CANNON LLP

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 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

10) Family number: 56254125 (US2014105673 AA)

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Title: BALL BEARING TRACKER ASSEMBLY

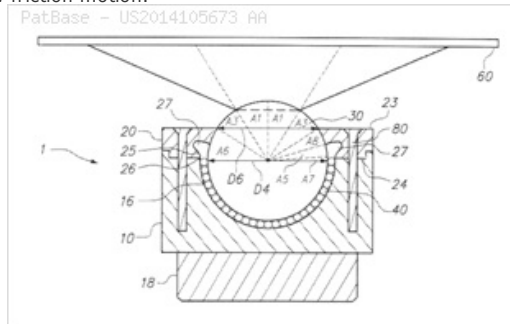
Abstract: A low friction ball bearing tracker assembly for use in spatial object, particularly solar tracking, the assembly including a housing, having a base and top cover affixed to the housing, the housing further including a spherical chamber for receiving a rounded orb and ball bearings sufficient to surround at least fifty percent of the surface area of the orb, for allowing the orb to swivel, and translate, while tracking the spatial object, the orb being affixed to a solid shaft having an oval cross section, such as an ellipse, with major and minor axes, whereby the solid shaft holds a plate for retaining an array of panels, the top cover of the assembly further including a recessed channel along the inner circumference of the top cover to accommodate additional ball bearings to allow additional range of low friction motion.

Classifications:

International (IPC 8-9): F16C11/00 F16C11/06 F16C19/02 F24J2/38 F24J2/54 F24S50/20 H02S20/32

CPC: F24S2030/17 F24S30/40 F24S30/48 Y02E10/47 Y02E10/50 Y10T403/32737

US: 1/1 403/135



Family:

Publication number	Publication date	Application number	Application date
US2014105673 AA	20140417	US20130053470	20131014
US9182153 BB	20151110	US20130053470	20131014
WO14062849 A1	20140424	WO2013US65314	20131016

Priority:

US20120714745P	20121017	US20130053470	20131014
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Probable Assignee: MOORE LUANNE

Assignee(s): (std): MOORE LUANNE

Inventor(s): (std): MOORE LUANNE

Agent(s): JACQUELINE; JACQUELINE TADROS PA; TADROS JACQUELINE

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 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

Title: WATERLESS CLEANING SYSTEM AND METHOD FOR SOLAR TRACKERS USING AN AUTONOMOUS ROBOT

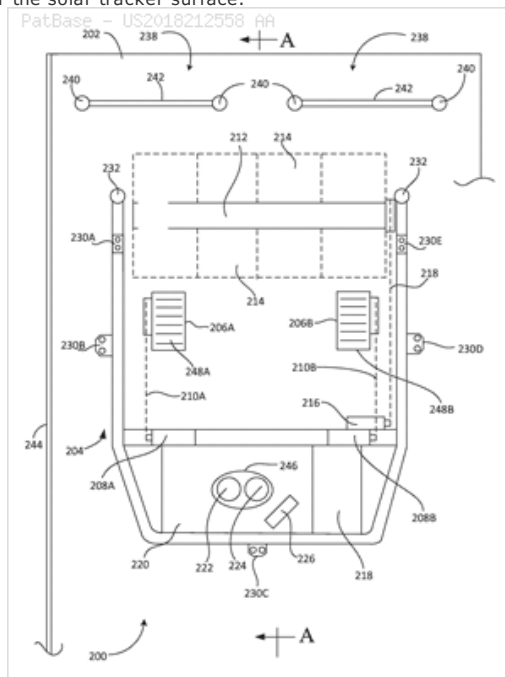
Abstract: Solar tracker waterless cleaning system for cleaning solar tracker solar panels, the solar tracker being able to be positioned at a pre-determined angle, the system including a docking station and an autonomous robotic cleaner (ARC), the ARC including at least one rechargeable power source, at least one cleaning cylinder and a controller, the controller including a 6-axis motion sensor, the 6-axis motion sensor including an accelerometer and an electronic gyroscope, the docking station including at least one electrical connector for recharging the power source, the cleaning cylinder for cleaning dirt off of the solar tracker without water, the 6-axis motion sensor for determining an angle of the solar tracker and a heading of the ARC, wherein the ARC anchors in the docking station and cleans the solar tracker positioned at the pre-determined angle and wherein the 6-axis motion sensor is used for navigating the ARC over the solar tracker surface.

Classifications:

International (IPC 8-9): A46B13/02 A47L A47L5/22 B08B1/00 B08B1/04 B08B5/02 B25J5/00 B60L11/18 F24J F24J2/10 F24S23/70 F24S40/20 G01S3/786 G01W1/02 G05D1/02 H02J H02J7/35 H02S H02S20/32 H02S40/10 H02S40/36 H02S40/38

CPC: A46B13/02 B08B1/00 B08B1/001 B08B1/002 B08B1/04 B25J5/007 F24S2030/136 F24S30/425 F24S40/20 G01S3/7861 G01W1/02 G05D1/0219 G05D1/0225 G05D1/027 G05D2201/0203 G05D2201/0215 H02S10/00 H02S20/32 H02S40/10 H02S40/36 H02S40/38 Y02E10/47 Y02E10/50 B08B5/02 B60L15/10 B60L15/20 B60L2200/40 B60L53/14 B60L53/30 G05D1/0212 Y02E10/40 Y02T10/64 Y02T10/70 Y02T10/7072 Y02T10/72 Y02T90/12 Y02T90/14 B08B1/005 B08B1/008 G01S19/14 G05D1/0282

US: 1/1 134/6



Family:

Publication number	Publication date	Application number	Application date
AU2018211923 AA	20190815	AU20180211923	20180125
CL2019002097 A1	20200131	CL20190002097	20190726
ES2727008 AB	20191011	ES20190090063	20180125
ES2727008 R1	20200122	ES20190090063	20180125
IL268297 A0	20190926	IL20180268297	20180125
MX2019008879 A1	20191030	MX20190008879	20180125
US10498287 BB	20191203	US20170727055	20171006
US2018212558 AA	20180726	US20170727055	20171006
US10498288 BB	20191203	US20170826976	20171130
US2018212559 AA	20180726	US20170826976	20171130
US10797636 BB	20201006	US20190523564	20190726
US2020021239 AA	20200116	US20190523564	20190726
WO18140595 A1	20180802	WO2018US15221	20180125
ZA201905455 A	20200527	ZA20190005455	20190819

Priority:

US20170450584P 20170126 US20170470342P 20170313 US20170475968 20170331
 US20170727055 20171006 US20170826976 20171130 WO2018US15221 20180125
 US20190523564 20190726

Probable Assignee: EVERMORE UNITED SA

Assignee(s): (std): ECOPPIA SCIENT LTD ; EVERMORE UNITED S A ; MELLER ERAN ; MELLER MOSHE

Assignee(s): ECOPPIA SCIENTIFIC LTD

Inventor(s): (std): ERAN MELLER ; MELLER ERAN ; MELLER MOSHE ; MOSHE MELLER

Agent(s): ANGEL PONS PONS; BROWN RUDNICK LLP; ESTUDIO CAREY LTDA; TOSTI ROBERT J; WRAYS PTY LTD

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

Title: A SMARTPHONE ENABLED, LOCATION NEUTRAL, MOBILE SOLAR TRACKER HAVING A PLURALITY OF SERVOMOTORS

Abstract: A smart phone enabled, location neutral, mobile solar tracker having a plurality of servo motors The titled invention describes a solar tracker operating with a plurality of servomotors in its mechanical assembly and is smartphone assisted for communication with a programmable chip. Its pair of digital angle protractors measure and feed error message in respect of the angle of the solar tracker with the sun to the programmable chip, enabling the tracker to correct the error. The mechanical assembly of the solar tracker employs at least two servomotors for east-west movement of the solar tracker. The present invention is capable of operating in any location, is conveniently mobile and requires no change in its settings for its speedy operability, thereby freeing the solar tracker of the drawbacks of the earlier works.

Classifications:
International (IPC 8-9): H02S20/00

Family:

Publication number	Publication date	Application number	Application date
IN201921023195 A	20190726	IN201921023195	20190612

Priority:

IN201921023195 20190612

Probable Assignee: SHINDE SACHIN VINAYAK

Assignee(s): KANNAN KAVIPRABHU ; SHINDE SACHIN VINAYAK

Inventor(s): KANNAN KAVIPRABHU

13) Family number: 73433759 (WO19043612 A1)

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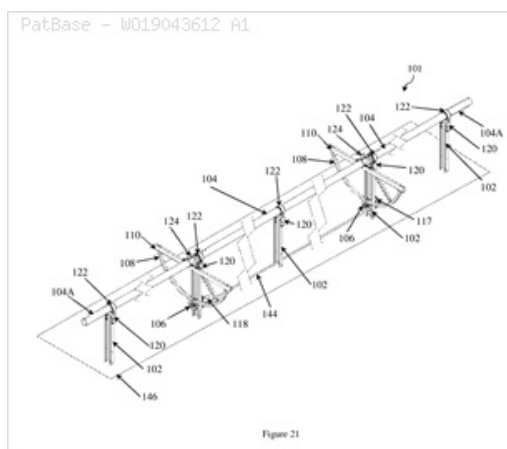
Title: A SOLAR TRACKING DISPLACEMENT APPARATUS

Abstract: The present disclosure envisages a solar tracking displacement apparatus (101). The apparatus (101) comprises a plurality of vertical posts (102), a plurality of torque tube 5 segments (104A), and a plurality of displacement units (115). The plurality of vertical posts (102) is arranged in a spaced apart configuration. The plurality of torque tube segments (104A) is fitted across the upper extremities of the vertical posts (102). The plurality of displacement units (115) is coupled with the torque tube segments (104A) in one to one relationship and configured to rotationally displace the torque tube segments (104A) about 0 their longitudinal axis in a controlled manner. The apparatus (101) is economical and eliminates the use of expensive electromechanical actuators, slew drives or hydraulic cylinders for the drive and oil filled dampers to keep the apparatus (101) safe from torsional galloping.

Classifications:

International (IPC 8-9): F23G5/00 F23G7/00 F24S50/20

CPC: F24S2030/12 F24S2030/133 F24S2030/14 F24S25/12 F24S25/65 F24S30/425 Y02E10/47



Family:

Publication number	Publication date	Application number	Application date
IN201721030771 A	20191220	IN201721030771	20170830
WO19043612 A1	20190307	WO20181B56623	20180830

Priority:

IN201721030771 20170830

Probable Assignee: SCORPIUS TRACKERS PRIVATE LTD

Assignee(s): (std): SCORPIUS TRACKERS PRIVATE LTD

Assignee(s): SCORPIUS TRACKERS PVT LTD

Inventor(s): (std): SHAH KIRAN

Agent(s): DEWAN MOHAN

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

14) Family number: 41727602 (WO08043869 A1)

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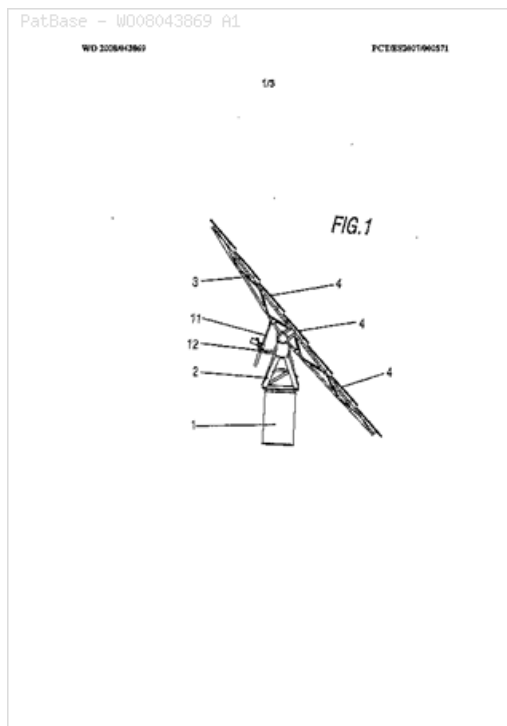
Title: IMPROVED SOLAR TRACKER

Abstract: The invention relates to a solar tracker for tracking the sun's path along two axes, including: a tubular post (1) anchored to a footing, an intermediate supporting element (2) coupled to the post and formed by a lattice structure, and a grid (3) attached to the intermediate supporting element (2) and consisting of a plurality of separated rows of photovoltaic panels (4), said grid being formed by lattice girders. According to the invention, the photovoltaic panels (4) and the grid (3) are attached to one another using two purlins (5) and one of the two facing segments of the purlins (5) is inclined in respect of the other, said purlins (5) being arranged so as to define an upper purlin and a lower purlin. Moreover, the height of one of the purlins (5) is greater than that of the other such that the rows of photovoltaic panels (4) are separated from one another and a space is formed therebetween.

Classifications:

International (IPC 8-9): F24J2/00 F24J2/54

CPC: F24S2030/134 F24S25/10 F24S30/452 Y02E10/47



Family:

Publication number	Publication date	Application number	Application date
ES2296546 AA	20080416	ES20060002589	20061011
ES2296546 BA	20090216	ES20060002589	20061011
WO08043869 A1	20080417	WO2007ES00571	20071009
WO08043869 A8	20100805	WO2007ES00571	20071009

Priority:

ES20060002589 20061011

Probable Assignee: ALTERNATIVAS RIOJANAS EOLICAS

Assignee(s): (std): ALTERNATIVAS RIOJANAS EOLICAS ; SAENZ LOPEZ JOAQUIN ; SAENZ LOPEZ RAUL

Assignee(s): ALTERNATIVAS RIOJANAS EOLICAS Y SOLARES S L

Inventor(s): (std): SAENZ LOPEZ JOAQUIN ; SAENZ LOPEZ RAUL ; SANEZ LOPEZ JOAQUIN

Inventor(s): JOAQUIN SAENZ LOPEZ ; RAUL SAENZ LOPEZ

Agent(s): ISERN JARA NURIA

Designated states: AE AG AL AM 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 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 SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

15) Family number: 50541126 (DE202011103199 U1)

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Title: DEVICE FOR ROTATION OF AN carrier structure MAIN AXLE FOR USE IN A PLANAR ELEMENTS OR SURFACES WITH FITTED SYSTEM, ESPECIALLY A SOLAR SYSTEM (Machine translation)

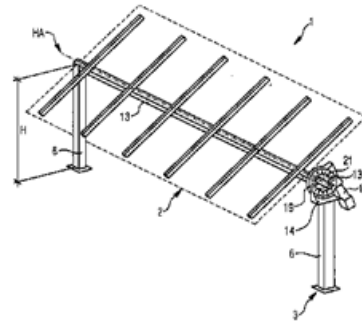
Abstract: Source: DE202011103199 U1 **Machine translation:** Device (10) for rotating a carrier structure (13) about a main axis (HA) for use in a with planar elements (2) or (2) surfaces equipped system, in particular to solar panels or PV modules as planar elements or surfaces, which consists of a fixed part and a variable part by means of the apparatus (10), wherein in particular, this device (10) plant in an axis, preferably in about a horizontal axis, to adjust the elevation angle and rotationally is suitable (O) changes, characterized in that the device (10) for rotation than at least one swivel unit (10), wherein each swivel unit (10) has two mutually concentric, annular structures (19; 21) which are mounted and the mutual relative adjustment with at least one drive (15) are coupled or coupleable.

Classifications:

International (IPC 8-9): F24J2/54

CPC: F24S25/16 F24S25/617 F24S30/425 Y02E10/47

Fig. 1



8 / 15

Family:

Publication number	Publication date	Application number	Application date
DE202011103199 U1	20120209	DE201120103199U	20110606

Priority:

DE201120103199U 20110606

Probable Assignee:

IMO HOLDING GMBH

Assignee(s): (std):

IMO HOLDING GMBH

16) Family number: 35572277 (ES1065025 UA)

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Title: CUNA FOR SOLAR FOLLOWERS IMPROVED (MACHINE-TRANSLATION BY GOOGLE TRANSLATE, NOT LEGALLY BINDING)

Abstract: Cradle for improved solar trackers characterized by having a frame (2) to which are attached by its lower part on both sides larger sheets (3) which in turn have two separate holes (4) facing each other, for letting the joint pin of the cradle (1) pass with the base (5) of the solar tracker and provide the tilting movement of the cradle (1) which is controlled by the pistons (8) arranged between the base (5) and the cradle (1), incorporating two hooks (6) attached to the frame (2) by tubes (7) arranged parallel and equidistant to the midpoint of the frame (2), joined perpendicular to the sides of the frame (2). (Machine-translation by Google Translate, not legally binding)

Classifications:

International (IPC 8-9): F24J2/00 F24J2/52

CPC: Y02E10/47

ES 1 065 025 U

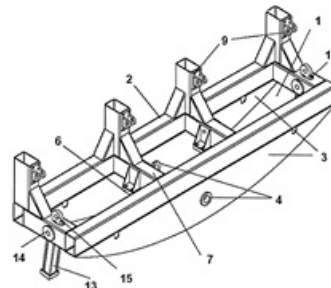


FIGURA núm. 1

5

Family:

Publication number	Publication date	Application number	Application date
ES1065025 UA	20070601	ES20070000523U	20070309
ES1065025 Y1	20080316	ES20070000523U	20070309

Priority:

ES20070000523U 20070309

Probable Assignee: SIST HIDRAULICO SOLAR S L

Assignee(s): (std): PENALONGA TEIJEIRO LUIS J ; SIST HIDRAULICO SOLAR S L

Assignee(s): SISTEMA HIDRAULICO SOLAR S L

Inventor(s): (std): PENALONGA TEIJEIRO LUIS J

17) Family number: 64422640 (ES2593911 AA)

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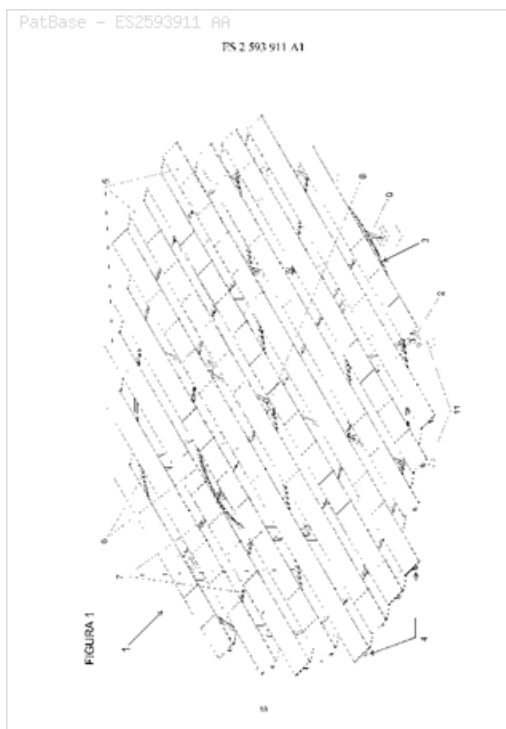
Title: AUTOMATIC SWIVEL MECHANISM OF CIRCULAR AND RADIAL STRUCTURE. (MACHINE-TRANSLATION BY GOOGLE TRANSLATE, NOT LEGALLY BINDING)

Abstract: Automatic rotating mechanism circular and radial structure. It is an automatic rotary mechanism (1) of solar tracking that supports surfaces of apparatuses (5) and that orients them in any direction, preferably in the direction of sunlight, its movement being controlled automatically by a control system. The automatic rotating mechanism (1) has a horizontal platform shape that is composed of two parts, a base structure (3) of circular and radial shape that provides rigidity and stability to the whole due to its reduced height and large surface, and an auxiliary structure (4) that supports the apparatuses (5) forming longitudinal rows and rests on the base structure (3). The base structure (3) is formed by double t or h profiles. The straight profiles (7) make up the spokes and the curved profiles (9) form the circular bearing tracks (6). The profiles (7) and (9) are joined together by pressure connectors (45), (55) and (58) for quick installation and do not require that the profiles have holes for their connection, providing a stable connection and safe. The base structure (3) is supported by the rolled supports (2), (8) and (10) that allow its automatic rotary movement, leveling and control as well as providing stability, resistance and safety. The auxiliary structure (4) is formed by omega profiles (61) which are arranged longitudinally forming rows, support profiles (62) that fix the apparatuses (5) and tensioners (63) joining rows of apparatuses. The auxiliary structure (4) is joined to the base structure (3) by connectors (65). (Machine-translation by Google Translate, not legally binding)

Classifications:

International (IPC 8-9): F24J2/54 H02S20/32

CPC: F24S30/422 H02S20/32 Y02E10/47 Y02E10/50



Family:

Publication number	Publication date	Application number	Application date
ES2593911 AA	20161214	ES20150030806	20150609
ES2593911 BA	20170920	ES20150030806	20150609

Priority:

ES20150030806 20150609

Probable Assignee: GARCIA MORATA JUAN

Assignee(s): (std): GARCIA MORATA JUAN ; GARCIA MORATA LORENA ; MORATA BEDOYA LUCIA

Assignee(s): JUAN GARCIA MORATA ; LORENA GARCIA MORATA ; LUCIA MORATA BEDOYA

Inventor(s): (std): GARCIA PORTERO GREGORIO

Inventor(s): GREGORIO GARCIA PORTERO

18) Family number: 31396653 (ES2219184 AA)

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Title: SOLAR FOLLOWER, HAS PICKUP PART PROVIDED WITH SOLAR PADDLES ON SURFACE, WHERE SUPPORT BEAM IS CONNECTED WITH PANELS AND PERPENDICULAR BEAMS THAT ARE BEAMS MAINTAINED BETWEEN BEAM TILTING SUPPORT AND PANELS WITH RESPECT TO REVOLVING BASE ; SOLAR FOLLOWER, HAS PICKUP PART PROVIDED WITH SOLAR PADDLES ON SURFACE, WHERE SUPPORT BEAM IS CONNECTED WITH PANELS AND PERPENDICULAR BEAMS

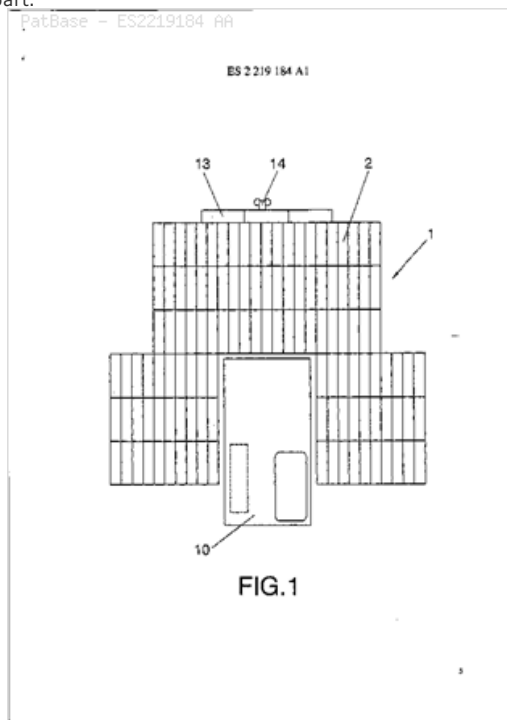
Abstract: The follower has a pickup part provided with solar paddles e.g. photovoltaic panels or thermal panels, on a surface. A support beam (3) is connected with panels and perpendicular beams (4). The perpendicular beams are maintained between a beam tilting support (5) and the panels with respect to a revolving base. A tower (10) is provided with command beam structures (12) that control movement direction of the pickup part.

Classifications:

International (IPC 8-9): F24J2/00 F24J2/38 F24J2/54 F24S30/40 F24S50/20

International (IPC 1-7): F24J2/38

CPC: F24S30/40 F24S50/20 Y02E10/47



Family:

Publication number	Publication date	Application number	Application date
ES2219184 AA	20041116	ES20030001106	20030513
ES2219184 BA	20060116	ES20030001106	20030513

Priority:

ES20030001106 20030513

Probable Assignee: INSTALACIONES Y MONTAJES ELECT

Assignee(s): (std): INSTALACIONES Y MONTAJES ELECT ; INSTALACIONES Y MONTAJES ELECTRICOS DEL VALLE AGUA

Assignee(s): INSTALACIONES Y MONTAJES ELECTRICOS DEL VALLE AGUAYO S A

Inventor(s): (std): GARAY OLALDE OSCAR ; PEREZ RAMBLA JUAN JOSE

19) Family number: 34984585 (ES1064278 UA)

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Title: MONOPOSTE SOLAR FOLLOWER (MACHINE-TRANSLATION BY GOOGLE TRANSLATE, NOT LEGALLY BINDING)

Abstract: Solar tracker monoposte; of the type comprising a post mounts an equipped panel holder upper structure moving along two axes to adjust the azimuthal position and inclination, and said movement being controlled by a microcontroller associated with an astronomical clock for positioning the panels at all perpendicular moment sun in cooperation with an anemometer that disables this movement and / or positioning the panels in a protective position in case of excessive wind; characterized in that the rotating support of the panel carrier structure comprises a rotatable support azimuthally provided with a brake blocker wind buffeting dimanando of said support a plurality of arms diverging at the ends of which crossbeams are pivotally mounted, being inserted in said articulations respective working pistons simultaneously in order to give all the same inclination crossbars; being mounted on said crosspieces and by u-bolts belts which press against both sides of the panels holding them and allowing its expansion movements; while the anchor post is implemented by a circumferential array of vertical frames connected by rings perimeter soldiers whose upper ends are threaded to receive and secure by nuts a lower flange of the tubular post, and while their lower ends are bent radially towards the outside to be embedded with the central section of the reinforcement in a concrete footing. (Machine-translation by Google Translate, not legally binding)

Classifications:

International (IPC 8-9): F24J2/38 F24J2/54 F24S50/20 H02S20/32

CPC: Y02E10/47 Y02E10/50

ES 1 064 278 U

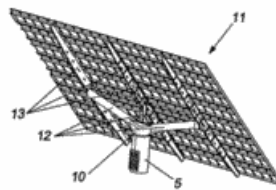


FIG. 1

x

Family:

Publication number	Publication date	Application number	Application date
ES1064278 UA	20070216	ES20060002649U	20061207

Priority:

ES20060002649U 20061207

Probable Assignee:

TALLERES CLAVIJO S L

Assignee(s): (std):

TALLERES CLAVIJO S L

Inventor(s): (std):

CLAVIJO LUMBRERAS RUBEN

20) Family number: 68414431 (ES2651916 AA)

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Title: ROTATING SUPPORT FOR SOLAR FOLLOWING AXIS AND SOLAR FOLLOWER (MACHINE-TRANSLATION BY GOOGLE TRANSLATE, NOT LEGALLY BINDING)

Abstract: Rotating support for solar tracker shaft and solar tracker, the support comprising a first clamp (300) having an inner surface with a first spherical shape and comprising a lower base part (301) and an upper part (302), a second clamp (310), housed in the first clamp (300), which is adapted to receive the shaft (340), and having an outer surface with a second spherical shape facing the first spherical shape, such that the shaft (340) it is retained axially in the second clamp (310) with the possibility of being oriented in any spatial position, and a joining profile (320) of the first clamp (300) to a support post (330), wherein the first clamp (300) has a tightening band (303) for attaching the lower base part (301) to the upper part (302), and where the lower base part (301) has a lower part (301'') that is housed in the profile of union (320). (Machine-translation by Google Translate, not legally binding)

Classifications:

International (IPC 8-9): F16C 19/00 F24S 25/70 F24S 30/425

CPC: F16C 19/00 F24S 30/425 Y02E 10/47

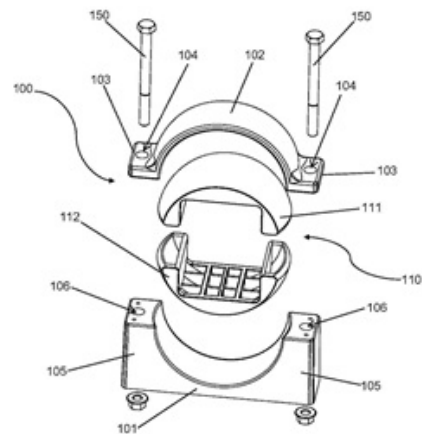


FIG. 1

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Family:

Publication number	Publication date	Application number	Application date
ES2651916 AA	20180130	ES20160031048	20160729
ES2651916 BA	20181015	ES20160031048	20160729

Priority:

ES20160031048 20160729

Probable Assignee:

GRUPO CLAVIJO ELT S L

Assignee(s): (std):

GRUPO CLAVIJO ELT S L ; NCLAVE MFG S L U

Inventor(s): (std):

CLAVIJO LUMBRERAS MIGUEL

Inventor(s):

MIGUEL CLAVIJO LUMBRERAS

Agent(s):

VEIGA MIKEL

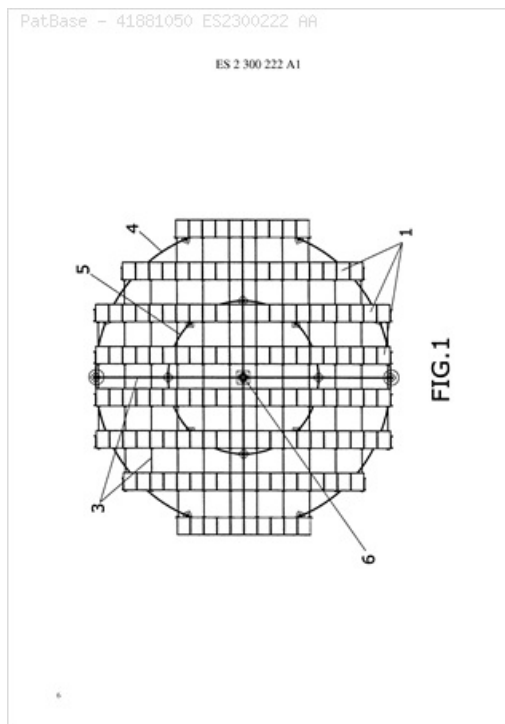
21) Family number: 41881050 (ES2300222 AA)

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Title: SOLAR TRACKER HAS SERIES OF SOLAR PANELS GROUPED IN ROWS AND ARRANGED IN PARALLEL ON ROTATING STRUCTURE AND SUPPORT PANELS, WHICH TURN OVER FIXED ROLLING STRUCTURE ; SOLAR TRACKER HAS SERIES OF SOLAR PANELS GROUPED IN ROWS AND ARRANGED IN PARALLEL ON ROTATING STRUCTURE AND SUPPORT PANELS, WHICH TURN OVER FIXED ROLLING STRUCTURE

Abstract: The solar tracker has a series of solar panels grouped in rows and arranged in parallel on a rotating structure and support panels, which turn over a fixed rolling structure. The fixed rolling structure consists a circular guide that is fixed to the ground through a few leveling pillars, where the rotating structure and support panels rotates on a central pillar and a guide wheel on the rails. The former level of support is diametrically opposite.

Classifications:**International (IPC 8-9):** F24J2/00 F24J2/54**CPC:** F24S2030/145 F24S30/422 F24S30/452 Y02E10/47



Family:

Publication number	Publication date	Application number	Application date
ES2300222 AA	20080601	ES20070001760	20070625
ES2300222 BA	20090806	ES20070001760	20070625

Priority:

ES20070001760 20070625

Probable Assignee: MAC PUAR SERVICIOS IND S L

Assignee(s): (std): MAC PUAR SERVICIOS IND S L

Assignee(s): MAC PUAR SERVICIOS INDUSTRIALES S L

Inventor(s): (std): BARRANCO PAULANO MANUEL ; SANCHEZ CEPILLO DIEGO IVAN

Inventor(s): DIEGO IVAN SANCHEZ CEPILLO ; MANUEL BARRANCO PAULANO

22) Family number: 75836907 (US2019280642 AA)

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Title: MECHANICAL SOLAR TRACKER

Abstract: In embodiments, a mechanical solar tracker disclosed herein includes a frame, an elevation cam with an elevation cam surface attached to the frame, and a rotation drive mechanically coupled to the frame. A collector carriage is coupled to the rotation drive and configured to rotate circumferentially around a vertical axis. Also, a collector is connected to the collector carriage and a hinge is coupled between the collector and the collector carriage wherein the hinge is configured to rotate the collector about a horizontal plane at a pivot point. Additionally, a cam follower is coupled between the collector and the elevation cam and the cam follower is configured to translate, based on a surface input from the elevation cam surface, rotation of the collector about the pivot point to track the sun's direction, by tracing the elevation cam surface with the cam follower.

Classifications:

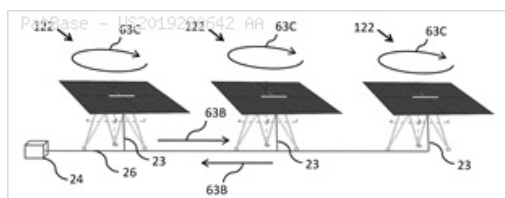
International (IPC 8-9): F16H25/14 F16H53/06 F24S30/00

F24S30/458 H02S20/32

CPC: F24S2030/137 F24S2030/14 F24S2030/16 F24S30/452

F24S30/458 H02S20/32 Y02E10/47 Y02E10/50 F16H25/14 F16H53/06

F24S2030/145 F24S50/20



Family:

Publication number	Publication date	Application number	Application date
US10700634 BB	20200630	US20180913672	20180306
US2019280642 AA	20190912	US20180913672	20180306
US2020228053 AA	20200716	US20200791331	20200214

Priority:

US20180913672 20180306 US20200791331 20200214

Probable Assignee: UTAH STATE UNIV

Assignee(s): (std): FLANN NICHOLAS SIMON ; UNIV UTAH STATE ; UTAH STATE UNIV

Inventor(s): (std): FLANN NICHOLAS SIMON

23) Family number: 72876041 (US2019158013 AA)

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Title: TRANSPORTABLE AND MULTI CONFIGURABLE, MODULAR POWER PLATFORMS

Abstract: Support platforms for one or more solar panels and systems and methods for securing support platforms are provided. In one embodiment, a frame of a support platform includes a plurality of support legs, each leg including a shoe plate. One or more toggle anchors with rod and/or cable are provided that include an anchor portion and a toggle portion pivotally coupled to the anchor portion, and a rod and/or cable is coupled to the toggle portion. Each anchor is driven into the ground with a driving rod such that an exposed end of the rod and/or cable extends from the ground. The driving rod is removed, and the rod and/or cable is pulled to deploy the anchor, and which the anchor is pull tested and measured in real time soil conditions whereupon the exposed end is coupled to the shoe plate of one of the support legs to apply a desired tensile force between the exposed end and the anchor to secure the support leg and, consequently, the support platform relative to the ground.

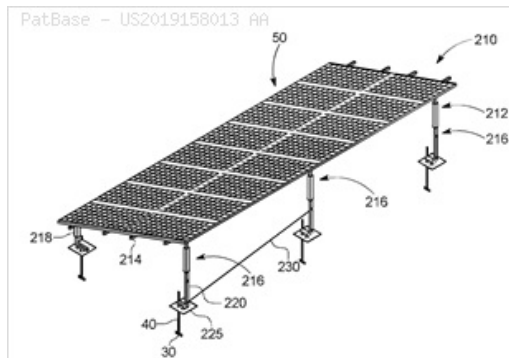
Classifications:

International (IPC 8-9): E04D13/18 F24S25/00 F24S25/12

F24S25/617 F24S25/65 F24S25/70 G08C17/02 H02S20/10 H02S20/30 H02S30/10 H02S40/32 H02S40/38

CPC: F24S2025/014 F24S2025/019 F24S25/12 F24S25/617 F24S25/65 F24S25/70 H02S20/10 H02S20/30 H02S30/10 H02S40/32 H02S40/38 Y02E10/47 Y02E10/50

US: 1/1



Family:

Publication number	Publication date	Application number	Application date
AU2018299914 AA	20190502	AU20180299914	20180709
CA3069510 AA	20200109	CA20183069510	20180709
JP2020529181 T2	20201001	JP20190521692T	20180709
US10622938 BB	20200414	US20180030774	20180709
US2019158013 AA	20190523	US20180030774	20180709
US2020313606 AA	20201001	US20200847480	20200413
WO19014148 A2	20190117	WO2018US41330	20180709
WO19014148 A3	20190404	WO2018US41330	20180709

Priority:

US20170530782P 20170710 WO2018US41330 20180709 US20180030774 20180709
US20200847480 20200413

Probable Assignee: NUANCE ENERGY GROUP INC

Assignee(s): (std): BOGUESS BRIAN C ; NUANCE ENERGY GROUP INC

Assignee(s): KLANG GREGG ALAN ; RYAN JAMES ; STEVENS JONO

Inventor(s): (std): BOGUESS BRIAN C ; KLANG GREGG ALAN ; RYAN JAMES ; STEVENS JONO

Agent(s): ENGLISH WILLIAM A; SMART AND BIGGAR LLP; SPRUSON AND FERGUSON; VISTA IP LAW GROUP LLP

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

24) Family number: 52609030 (ES2393732 AA)

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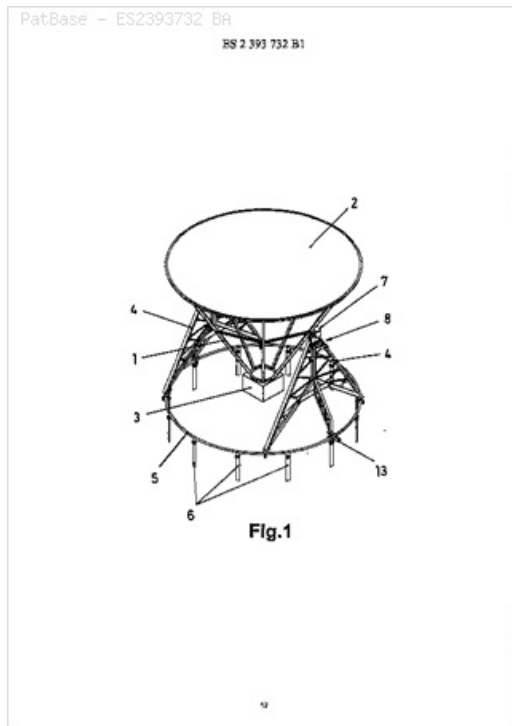
Title: SOLAR FOLLOWER FOR SOLAR RADIATION CAPTORS. (MACHINE-TRANSLATION BY GOOGLE TRANSLATE, NOT LEGALLY BINDING)

Abstract: Solar tracker for solar radiation collectors, formed by a carrier structure (1) that incorporates a means (2) collector of solar radiation, said carrier structure (1) in tilting assembly, by means of couplings (7) of rotation located in a transverse line that passes through the center of mass of the same, on a supporting structure that is supported by rolling couplings abrazantes on a rail (5) circular. (Machine-translation by Google Translate, not legally binding)

Classifications:

International (IPC 8-9): F24J2/54 H01L31/042 H02S20/32

CPC: F24S30/452 H02S20/00 Y02E10/47 Y02E10/50



Family:

Publication number	Publication date	Application number	Application date
ES2393732 AA	20121227	ES20110000588	20110526
ES2393732 BA	20130926	ES20110000588	20110526

Priority:

ES20110000588 20110526

Probable Assignee:

GRUPO CLAVIJO ELT S L

Assignee(s): (std):

GRUPO CLAVIJO ELT S L

Inventor(s): (std):

CLAVIJO LUMBRERAS MIGUEL

Inventor(s):

MIGUEL CLAVIJO LUMBRERAS

Agent(s):

BUCETA LUIS

25) Family number: 65092150 (IN201621041480 A)

© PatBase

Title: TRACKING MECHANISM ASSEMBLY FOR CONCENTRATED SOLAR THERMAL DEVICE

Abstract: The present invention discloses a tracking mechanism assembly for concentrated solar thermal device wherein the parabolic shaped reflecting mirrors rotates with the rotation of bull gear. A paired sensors have been added at an angle of 66 degrees centigrade of each other, wherein the sensors on heating transmits temperature difference in form of signal/input to the PLC for PV Panel to give current in required direction to the BLDC geared motor for rotation of the parabolic shaped reflecting mirror. Another sensor is mounted on the collector tube which signals the PLC of PV Panel to stop functioning when the temperature exceeds the predetermined safe temperature point and gives an audio alarm of the emergency. The new assembly has been designed to have self-corrective mechanism to maintain precise focus continuously in variable environmental condition.

Classifications:

International (IPC 8-9): F24J2/38

Family:

Publication number	Publication date	Application number	Application date
IN201621041480 A	20170303	IN201621041480	20161205

Priority:

IN201621041480 20161205

Probable Assignee: MAHARASHTRA INDIA MAHARASHTRA INDIA

Assignee(s):

KAPADIA CYRUS SAVAK ; MAHARASHTRA INDIA MAHARASHTRA INDIA

Inventor(s):

KAPADIA CYRUS SAVAK

26) Family number: 34362866 (US2007074753 AA)

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Title: SHAPE MEMORY ALLOY MOTOR AS INCORPOATED INTO SOLAR TRACKING MECHANISM

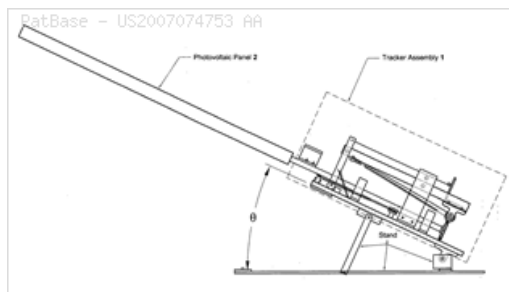
Abstract: The present invention provides a motor driven by shape memory alloys for use in a variety of applications. In the disclosed embodiment, the motor is used to drive a photovoltaic panel so that the panel may remain in appropriate alignment with the sun throughout the day. In such a configuration, the motor assembly relies upon the intrinsic properties of shape memory alloys, in conjunction with a spring assembly, in order to generate sufficient torque in order to rotate the photovoltaic panel. In order to control the orientation of the panel, the system relies upon a sun tracking mechanism which includes an analog sensor circuit, a plurality of phototransistors and a power source. Accordingly, the device is able to rotate the photovoltaic panel in discrete and precise increments as the day progresses.

Classifications:

International (IPC 8-9): F01B29/00 F03G7/06 F16H1/16 F16H21/44 F24J2/38 F24J2/54 F24J3/00 F24S50/20 G01C21/02 G01C21/24 G01J1/20 H01L25/00 H01L31/00 H01L31/042 H02N10/00 H02N11/00 H02N6/00

CPC: F24S2030/11 F24S2030/134 F24S2030/16 F24S25/70 F24S30/455 F24S50/20 G01S3/7861 H01L2924/0002 H02S20/32 Y02E10/47 Y02E10/50 Y10T74/18888 Y10T74/19828

US: 126/573 126/577 126/581 126/605 126/606 126/607 136/243 136/246 136/246S 192/48.92 250/203.4 310/306 310/306S 318/117 318/117P 353/3 60/527 74/425 74/99.00RP 74/99R

**Family:**

Publication number	Publication date	Application number	Application date
US2007074753 AA	20070405	US20050236695	20050927
US7692091 BB	20100406	US20050236695	20050927
US2009315489 AA	20091224	US20090583464	20090822
US8316840 BB	20121127	US20090583464	20090822
US2009314279 AA	20091224	US20090583469	20090822
US8692173 BB	20140408	US20090583469	20090822
US2011232419 AA	20110929	US20110134088	20110527
US8307818 BB	20121113	US20110134088	20110527
WO07040578 A1	20070412	WO2005US47507	20051229

Priority:

US20050236695 20050927 US20090583469 20090822 US20090583464 20090822
US20110134088 20110527

Probable Assignee: ALTAII KARIM

Assignee(s): (std): ALTAII KARIM ; ALTALI KARIM ; BENJAMIN THOMAS ; KARIM ALTAII ; THOMAS BENJAMIN

Inventor(s): (std): ALTAII KARIM ; ALTALI KARIM ; BENJAMIN THOMAS ; KARIM ALTAII ; THOMAS BENJAMIN

Agent(s): ANTHONY; GOODMAN ALLEN AND FILETTI PLLC; IPCL GOURP PLC; IPCL GROUP PLC

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 KN KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NA NE NG NI 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

27) Family number: 53000388 (US2014182578 AA)

© PatBase

Title: SOLAR CONCENTRATORS, METHOD OF MANUFACTURING AND USES THEREOF

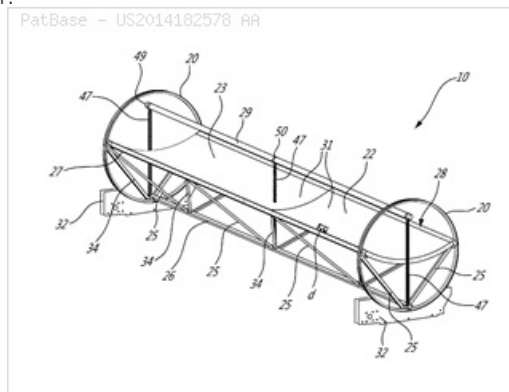
Abstract: A solar concentrator comprising at least one rigid parabolic self-supporting solar collector comprising at least one parabolic reflector and at least one heat collector rigidly supported above a reflective surface of the parabolic reflector; and a positioning unit configured for positioning the solar collector into an operation position for reception of solar beams by the parabolic reflector, and into a rest position in which the reflective surface of said parabolic reflector and the heat collector are at least partly under cover of a back surface of the parabolic reflector.

Classifications:

International (IPC 8-9): F24J F24J2/06 F24J2/14 F24J2/24 F24J2/30 F24J2/34 F24J2/36 F24J2/38 F24J2/54 F24S10/30 F24S10/70 F24S23/00 F24S23/74 F24S50/20 F28D F28D1/02 F28D20/00 F28D7/16 F28F F28F1/10 G02B G02B7/198

CPC: F24S2030/11 F24S2030/15 F24S2080/09 F24S23/74 F24S23/82 F24S30/425 F28D20/021 F28D2020/0078 F28D7/0041 F28F1/16 G02B7/183 Y02E10/47 Y02E60/14 Y02E70/30 F24J2/30 F24S10/70 F24S20/20 F28D1/02 F28D7/16 F28F1/10 F28F2255/16 Y02E10/44 F24J2/06 F24J2/36 F24J2/54 F24S50/20 F24S70/20 G02B7/198 Y02P80/20 F24S10/45 F24S2023/86 F24S2030/145 Y02B10/20 Y02E10/40

US: 126/600

**Family:**

Publication number	Publication date	Application number	Application date
CA2748537 AA	20130204	CA20112748537	20110804
CA2748632 AA	20130204	CA20112748632	20110804
CA2748635 AA	20130204	CA20112748635	20110804
CA2843780 AA	20140131	CA20122843780	20120803
CA2843780 C	20150203	CA20122843780	20120803
CA2843819 AA	20140129	CA20122843819	20120803
EP2739916 A1	20140611	EP20120820787	20120803
EP2739916 A4	20150311	EP20120820787	20120803
US2014182578 AA	20140703	US20120237008	20120803
WO13016828 A1	20130207	WO2012CA50531	20120803
WO13016829 A1	20130207	WO2012CA50532	20120803
ZA201400785 A	20141223	ZA20140000785	20140203

Priority:

CA20112748537 20110804 CA20112748632 20110804 CA20112748635 20110804

Probable Assignee: 6637418 CANADA INC CARRYING ON BUSINESS RACKAM AS

Assignee(s): (std): 6637418 CANADA INC CARRYING ON BUSINESS AS RACKAM ; 6637418 CANADA INC CARRYING ON BUSINESS RACKAM AS ; BARIBEAU STEPHANE ; CHAGNON MATHIEU ; FORTIN JACQUES ALEXANDRE

Inventor(s): (std): BARIBEAU STEPHANE ; CHAGNON MATHIEU ; FORTIN JACQUES ALEXANDRE

Inventor(s): FORTIN JACQUES

Agent(s): GOUDREAU GAGE DUBUC ; NA ; REGIMBEAU

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 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

28) Family number: 79597021 (WO20129091 A1)

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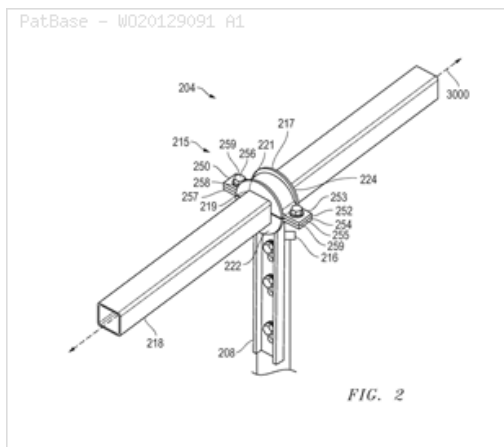
Title: BEARING ASSEMBLY FOR TRACKER ASSEMBLY AND METHODS OF MAKING AND USING THE SAME

Abstract: A bearing assembly for a tracker assembly of a power generation structure including an adaptor configured to be fixed to and rotatable with a rail; and a housing adapted to support the adaptor, where the adaptor is configured to rotate relative to the housing, and where a low friction material is present at an interface between an exterior surface of adaptor and an interior surface of housing.

Classifications:

International (IPC 8-9): A61M5/31 B61F5/14 F16C17/02 F16C33/20 F16C33/58 F24S30/425 F24S50/20 H02S20/32

CPC: F24S30/425 F24S50/20 H02S20/32 Y02E10/47 Y02E10/50



Family:

Publication number	Publication date	Application number	Application date
IN201841048811 A	20200626	IN201841048811	20181222
WO20129091 A1	20200625	WO2019IN50947	20191222

Priority:

IN201841048811 20181222

Probable Assignee: SAINT GOBAIN SA

Assignee(s): (std): SAINT GOBAIN PERFORMANCE PLASTICS CORP ; SASIDHARAN AKHILESAN

Assignee(s): SAINT GOBAIN SA

Inventor(s): (std): DINKAR SUMI ; LUKAS PLIOSKA ; SASIDHARAN AKHILESAN ; TALLAM SASI KIRAN ; VAYA VALCARCE JUAN

Inventor(s): AKHILESAN SASIDHARAN ; SASI KIRAN TALLAM ; SUMI DINKAR

Agent(s): KUMAR S GIRIRAJ

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

29) Family number: 34679090 (ES1061938 UA)

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Title: FOLLOWER LINEAR PLOT FOR PHOTOVOLTAIC INSTALLATION. (MACHINE-TRANSLATION BY GOOGLE TRANSLATE, NOT LEGALLY BINDING)

Abstract: Linear solar tracker for photovoltaic system that combines several solar panels (1), each of which has an average seasonal variation of inclination of the panel and an axis of rotation for east-west orientation time provided with means coupling a mechanical transmission drive permissible set of all panels aligned, characterized in that each of the panels (1) supports in the anterior-inferior area on a support (2) articulated on the base, while in the rear zone supports in an adjustable telescopic support (3), which allows to modify the inclination of the panel for seasonal adjustment, both brackets (2-3) joined at the top by means of a shaft (4) being, on which supports and turning the panel (1) varying its east-west orientation under the drive of a connecting rod (5) extending below the panel, being different links (5) of the various panels (1) mechanically connected by a bar or the like (6) which is moved by a cylinder (7) located at one end of the installation. (Machine-translation by Google Translate, not legally binding)

Classifications:

International (IPC 8-9): H01L31/042

CPC: F24S30/40 Y02E10/47

Fig. 1

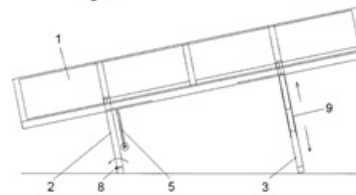
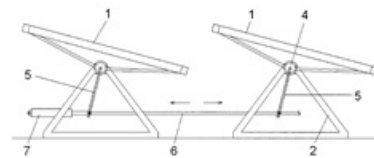


Fig. 2



5

Family:

Publication number	Publication date	Application number	Application date
ES1061938 UA	20060416	ES20060000135U	20060120
ES1061938 Y1	20060716	ES20060000135U	20060120

Priority:

ES20060000135U 20060120

Probable Assignee:

RIVAS GARCIA CESAREO

Assignee(s): (std):

RIVAS GARCIA CESAREO

Inventor(s): (std):

RIVAS GARCIA CESAREO

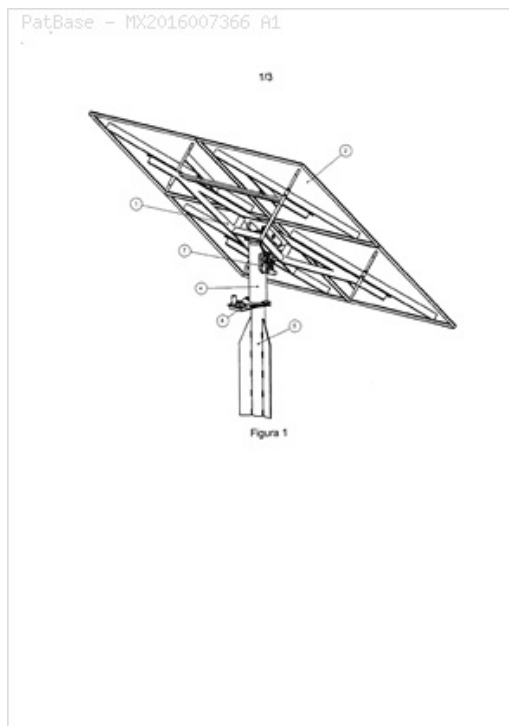
30) Family number: 68419093 (MX2016007366 A1)

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Title: TWO-AXIS SOLAR TRACKER DRIVEN BY CHAIN MECHANISMS WITH GUIDED GEOMETRY.

Abstract: The present invention is related to the field of devices for collecting solar energy, since is composed by a two-axis solar tracker driven by chain mechanisms with guided geometry. Said solar tracker comprises a structure that moves over two axes of rotation and photovoltaic solar panels or reflective surfaces (mirrors), thus affording the installation for its use as a heliostat. Said structure possesses a cylindrical type joint, which attaches to the upper section of the main post. Said section rotates in a vertical axis concentric to the main post, which fixes on the ground. The structure is connected at two points (one on each side of the shaft), with a chain to effect movement on the lift shaft. The lifting motion mechanism drives the chain and mounts on top of the main post, which rotates along the axis thereof. The tracker composes of low-cost and straightforward devices, thus contributing to reduce manufacturing costs without sacrificing accuracy, performance, and durability.

Classifications:**CPC:** Y02B10/20



Family:

Publication number	Publication date	Application number	Application date
MX2016007366 A1	20171129	MX20160007366	20160530

Priority:

MX20160007366 20160530

Probable Assignee: UNIV DE SONORA

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

Assignee(s): UNIVERSIDAD DE SONORA

Inventor(s): (std): CUITLAHUAC IRIARTE CORNEJO ; PABLO SOSA FLORES ; RAMIRO ALBERTO CALLEJA VALDEZ ; RICARDO PEREZ ENCISO ; RODOLFO PEON ANAYA

31) Family number: 30513902 (US2005284467 AA)

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Title: SOLAR TRACKING APPARATUS

Abstract: A solar tracking apparatus which is movable from a morning position to an evening position, the apparatus comprising a support means to which a solar device can be supported, a cylinder, the cylinder including a ram which is extendable from and retractable into the cylinder, an expansion chamber which forms part of or which is in fluid connection with the cylinder, a liquid in the cylinder and the expansion chamber, the liquid having a boiling point which is greater than the maximum operating temperature of the cylinder and the expansion chamber, a return means to cause the apparatus to be returned to the morning position, and rotation means associated with the ram to rotate the apparatus from the morning position to the evening position upon extension of the ram.

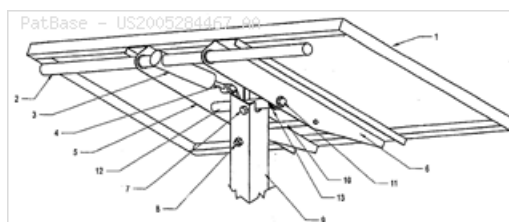
Classifications:

International (ipc 8-9): F24J2/00 F24J2/38 F24J2/40 F24J2/52 F24J2/54 F24S50/20 G01S3/78 G01S3/786

International (ipc 1-7): F24J002/38 F24J002/52 F24J2/38 F24J2/40 F24J2/52 H01L35/00 H01L37/00

CPC: F24S2030/115 F24S30/425 H02S20/32 Y02E10/47 Y02E10/50 F24S25/10 F24S30/452 F24S30/455 F24S50/20 G01S3/7861

US: 126/573 126/573S 126/580 126/583 126/600 126/604 136/206 136/206S



Family:

Publication number	Publication date	Application number	Application date
AU2002100817 AD	20030306	AU20020100817	20021017
AU2003203512 AA	20041021	AU20030203512	20030401
AU2003254387 AA	20040504	AU20030254387	20030825
AU2003254387 BB	20061116	AU20030254387	20030825
US2005284467 AA	20051229	US20030531781	20030825
US7240674 BB	20070710	US20030531781	20030825
WO04036124 A1	20040429	WO2003AU01080	20030825

Priority:

AU20020100817 20021017 AU20030203512 20030401 AU20030254387 20030825
WO2003AU01080 20030825

Probable Assignee: PORTASOL TRACKERS PTY LTD ACN 131 729 792

Assignee(s): (std): MICHAEL PATTERSON ; PATTERSON MICHAEL ; PATTERSON MICHAEL T ; PATTERSON MICHAEL TERRENCE ; PORTASOL TRACKERS PTY LTD

Assignee(s): GEDDES CHRIS ; JONES LES ; PATTERSON MICHAEL TERRENCE MR ; PATTERSON MIKE ; PORTASOL TRACKERS PTY LTD ACN 131 729 792

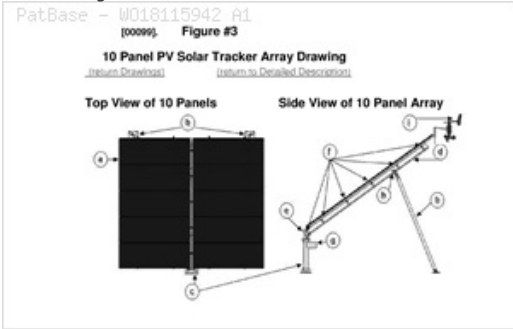
Inventor(s): (std): PATTERSON MICHAEL T ; PATTERSON MICHAEL TERRENCE
Inventor(s): GEDDES CHRIS ; JONES LES ; MICHAEL TERRENCE PATTERSON ; PATTERSON MICHAEL ; PATTERSON MIKE
Agent(s): CULLENS PATENT AND TRADE MARK ATTORNEYS; CULLENS PTY LTD; HOFFMAN WASSON AND GITLER PC; HOFFMAN WASSON AND GITLER PC CRYSTAL CENTER 2 SUITE 522; JONES LES; PATTERSON MICHAEL TERRENCE MR; SPRUSON AND FERGUSON
Designated states: AE AG AL AM AT AU AZ BA BB BE BF BG BJ BR BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DZ EC EE ES FI FR GA GB GD GE GH GM GN GQ GR GW HR HU ID IE IL IN IS IT JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MC MD MG MK ML MN MR MW MX MZ NE NI NL NO NZ OM PG PH PL PT RO RU SC SD SE SG SI SK SL SN SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

32) Family number: 70247525 (WO18115942 A1) © PatBase

Title: UNIVERSAL MOUNT TRIPOD SOLAR TRACKER SYSTEM

Abstract: In this Disclosure, the Inventor Calvin H. Woosnam, describes in detail the unique features of a Roof Top Single Axis or optionally Dual Axis Photo Voltaic Array Tracker System. The primary design defines a stepper motor gearbox designed with electronic position tracking feedback system as well as a weather responsive set of sensors system which can instruct an included control system to either position the solar panel array in a decreasing wind load position during high winds, and or also provide de-icing and snow collection on the photo voltaic panel array thereby in both cases keeping the alternate energy source active and safe while always collecting and converting solar energy to electricity. He also describes a Infrared tracking option that can target through cloud coverage to pinpoint target the sun's position insuring maximum solar ray detection and conversion to electrical output. The Inventor also discloses a effective way to eliminate ice or snow buildup which might cause structural or operational problems. The design also shows how a mixture of metal or composite components allowing weight to be kept down so that this Roof Top Single or Dual Axis Solar Tracker System can be applied to almost any sloped or flat horizontal roof, within most city, state, and even national area's building codes and where the sun angle reception is available the majority of the daylight hours. The Inventor also claims his system design incorporating a Direct Current Power Management System will increase in most cases, the energy absorption in areas of minimal sunlight maximizing energy output because of said described single or dual axis tracking systems with the addition of the Infrared Targeting Detector for pinpoint tracking. Thus optimizing electrical power output of an already minimally productive location and ability to maximize through constant perpendicular tracking of the Array to the Suns position. The Inventor also claims that by the incorporation of multiple installations using his design where excess power is constantly being injected back into the Grid for common use he has now created a Distributed Power Processing model. The Inventor has also described within this disclosure methods for most mounting of using this Tripod Tracker System on both ground mounts where weight is not problem and a roof top rail system that evenly distributes the weight securely attaching to these rails while removing the need for individual ballast weight normally needed to secure against wind loading.

Classifications:
International (IPC 8-9): H02S20/32 H02S40/12
CPC: F24S2030/11 F24S30/428 F24S40/20 H02S20/32 H02S40/12 Y02B10/20 Y02E10/47 Y02E10/50



Family:

Publication number	Publication date	Application number	Application date
IN201917029460 A	20191011	IN201917029460	20190722
WO18115942 A1	20180628	WO20161B57954	20161222

Priority: WO20161B57954 20161222
Probable Assignee: WOOSNAM CALVIN HENRY
Assignee(s): (std): WOOSNAM CALVIN HENRY
Inventor(s): (std): WOOSNAM CALVIN HENRY
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

33) Family number: 63050403 (US2016261224 AA) © PatBase

Title: FLUIDIC ACTUATOR SYSTEM AND METHOD

Abstract: A pneumatically actuated solar panel array system that includes a plurality of separate actuator assemblies that each have a top plate and bottom plate and a first and second bellows that each extend between and are coupled to the top and bottom plates at a respective top head and bottom head, the first and second bellows being configured to be separately pneumatically inflated, where the pneumatic inflation expands the bellows along a length. The pneumatically actuated solar panel array system can also include a plurality of solar panels coupled to the actuator assemblies with the solar panels being configured to be actuated based on inflation of one or more bellows associated with the plurality of actuator assemblies.

Classifications:
International (IPC 8-9): F15B15/10 H02S20/30 H02S20/32
CPC: F15B15/10 H02S20/30 H02S20/32 Y02E10/50
US: 1/1 136/246



Family:

Publication number	Publication date	Application number	Application date
AU2016211175 AA	20170720	AU20160211175	20160130
AU2016211175 BB	20181115	AU20160211175	20160130
AU2019200962 AA	20190228	AU20190200962	20190212
AU2019200962 BB	20200702	AU20190200962	20190212
AU2020239824 AA	20201029	AU20200239824	20200927
BR112017016461 A2	20180619	BR20171116461	20160130
CL2017001939 A1	20180309	CL20170001939	20170728
CL60792 B	20201022	CL20170001939	20170728
CN107251414 A	20171013	CN201680006209	20160130
CN111900918 A	20201106	CN202010822726	20160130
CO20170008389 A2	20171031	CO20170008389	20170816
EP3251207 A1	20171206	EP20160744255	20160130
EP3251207 A4	20181219	EP20160744255	20160130
EP3251207 B1	20200805	EP20160744255	20160130
EP3736974 A1	20201111	EP20200182460	20160130
MX2017009859 A1	20180426	MX20170009859	20160130
MX367676 B	20190830	MX20170009859	20160130
MX2019010280 A1	20191021	MX20190010280	20170728
PE15052017 A1	20171020	PE20170001275	20160130
PE20171505 A1	20171020	PE20170001275	20160130
PT3251207 T	20200910	PT20160744255T	20160130
US10135388 BB	20181120	US20160012715	20160201
US2016261224 AA	20160908	US20160012715	20160201
US10601366 BB	20200324	US20180134844	20180918
US2019020303 AA	20190117	US20180134844	20180918
US2020220492 AA	20200709	US20200818346	20200313
WO16123592 A1	20160804	WO2016US15857	20160130

Priority:

US20150110275P	20150130	WO2016US15857	20160130	AU20160211175	20160130
CN201680006209	20160130	EP20160744255	20160130	US20160012715	20160201
US20180134844	20180918	AU20190200962	20190212	US20200818346	20200313
AU20200239824	20200927				

Probable Assignee: SUNFOLDING INC

Assignee(s): (std): SUNFOLDING INC

Assignee(s): SILICON VALLEY BANK ; US DEPARTMENT OF ENERGY

Inventor(s): (std): BASEL LOUIS HONG ; BETTS KYLE DOUGLAS ; BRENT RIDLEY ; ERIC PRESTON LIEN SUAN ; ERICA LIN ; ERICKSON JOSHUA ; GRIFFITH SAUL THOMAS ; JAMES DYLAN MCBRIDE ; JEFFREY LAMB ; JOSHUA ERICKSON ; KYLE DOUGLAS BETTS ; LAMB JEFFREY ; LEILA MARCIA MADRONE ; LIEN SUAN ERIC PRESTON ; LIN ERICA ; LOUIS HONG BASEL ; LYNN PETER STURT ; MADRONE LEILA MARCIA ; MCBRIDE JAMES DYLAN ; PETER STURT LYNN ; RIDLEY BRENT ; ROMANIN VINCENT DOMENIC ; SAUL THOMAS GRIFFITH ; SUAN ERIC PRESTON LIEN ; VINCENT DOMENIC ROMANIN

Agent(s): ADAMS DYLAN O ET AL; CAROLINA MERCEDES DAZA MONTALVO; D YOUNG AND CO LLP; DAVIES COLLISON CAVE PTY LTD; DAVIS WRIGHT TREMAINE LLP; ESTUDIO CLARKE MODET AND CO CHILE LIMITADA; ESTUDIO CLARKE MODET U0026 CO CHILE LIMITADA

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

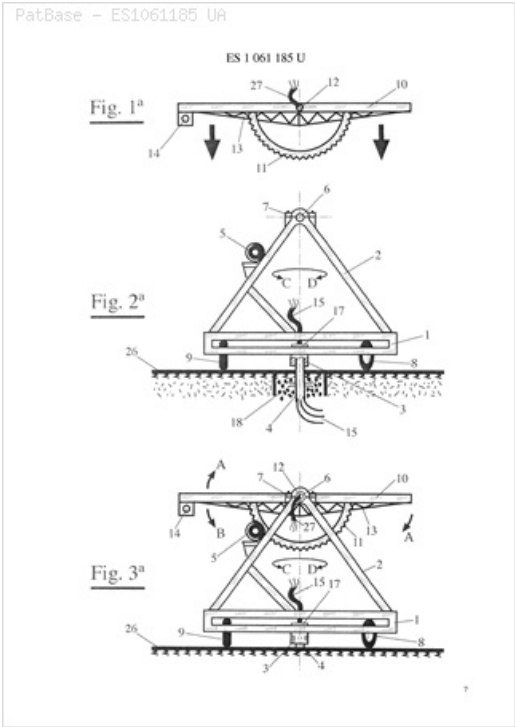
34) Family number: 34678365 (ES1061185 UA)

© PatBase

Title: PERFECTED SOLAR FOLLOWER (MACHINE-TRANSLATION BY GOOGLE TRANSLATE, NOT LEGALLY BINDING)

Abstract: A perfected solar tracker, of mechanical type, with a variable angle panel surface, composed of collector plates attached to a rotating support, said panel being perpendicular to the sun's rays along the entire day path of the sun, characterized in that it is constituted the assembly of the tracker frame on a tubular shaft (4) fixed and anchored to the relevant terrain (26) by means of a concrete shoe (18). (Machine-translation by Google Translate, not legally binding)

Classifications:
International (IPC 8-9): F24J2/00 F24J2/54
International (IPC 1-7): F24J2/54
CPC: F24S30/452 Y02E10/47



Family:

Publication number	Publication date	Application number	Application date
ES1061185 UA	20060116	ES20050001622U	20050701
ES1061185 Y	20061001	ES20050001622U	20050701
ES1061185 Y1	20061001	ES20050001622U	20050701

Priority:

ES20050001622U 20050701

Probable Assignee: SOTEL S L

Assignee(s): (std): SOTEL S L

Inventor(s): (std): GARCIA RODRIGUEZ VICTOR ; MENDOZA ALESON JOSE ALFONSO

35) Family number: 61267167 (US2015375876 AA)

© PatBase

Title: THREE DIMENSIONAL IMAGING ARRANGEMENT

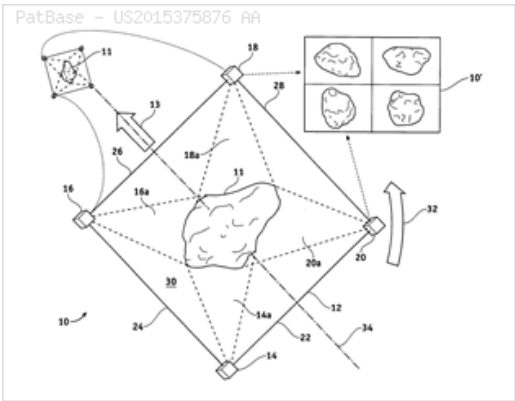
Abstract: A spacecraft arrangement having sensors for providing the three dimensional imaging of space object to be imaged and having a plurality of spaced apart nodes defining an open imaging area therebetween through which imaging area the space object to be imaged passes.

Classifications:

International (IPC 8-9): B64G1/10 B64G1/22 B64G1/24 B64G1/26 B64G1/36 B64G1/64 B64G1/66 B64G3/00 H03K3/01

CPC: B64G1/10 B64G1/1085 B64G1/222 B64G1/242 B64G1/26 B64G1/36 B64G1/361 B64G1/64 B64G1/648 B64G1/66 B64G3/00

US: 244/158.4 1/1



Family:

Publication number	Publication date	Application number	Application date
US2015375876 AA	20151231	US20140120788	20140627
US9499285 BB	20161122	US20140120788	20140627

Priority:

US20130957310P 20130628

US20140120788 20140627

Probable Assignee:

NXTRAC

Assignee(s): (std):

GARBER DARREN D

Assignee(s):

NXTRAC

Inventor(s): (std):

GARBER DARREN D

Title: MULTIPLEXING SOLAR LIGHT CHAMBER

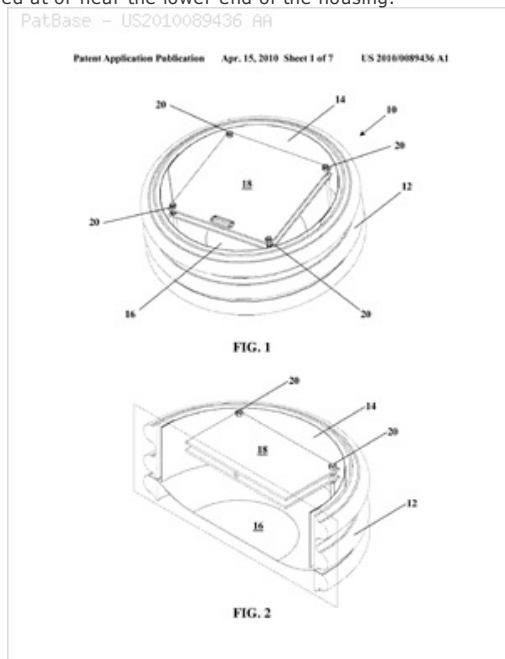
Abstract: Described is a light chamber for amplifying solar radiation for purposes of generating electricity using photovoltaic panels. The light chamber includes a housing; a photovoltaic panel disposed within the housing; a dome lens affixed to the upper end of the housing; a fresnel lens disposed between the dome lens and the photovoltaic panel; a reflector disposed around the inner surface of the housing; and another reflector disposed at or near the lower end of the housing.

Classifications:

International (IPC 8-9): G02B17/00 G02B17/08 H01L31/048 H01L31/052

CPC: H01L31/0543 H01L31/0547 Y02E10/52

US: 136/246 136/251 359/730 359/730S



Family:

Publication number	Publication date	Application number	Application date
US2010089436 AA	20100415	US20090574180	20091006
US8664514 BB	20140304	US20090574180	20091006

Priority:

US20080104951P 20081013 US20090574180 20091006

Probable Assignee: WATTERS GEORGE M III

Assignee(s): (std): WATTERS GEORGE M

Assignee(s): WATTERS GEORGE M III ; WATTERS JASON V

Inventor(s): (std): WATTERS GEORGE M

Agent(s): INTELLECTUAL PROPERTY DEPT DEWITT ROSS AND STEVENS SC

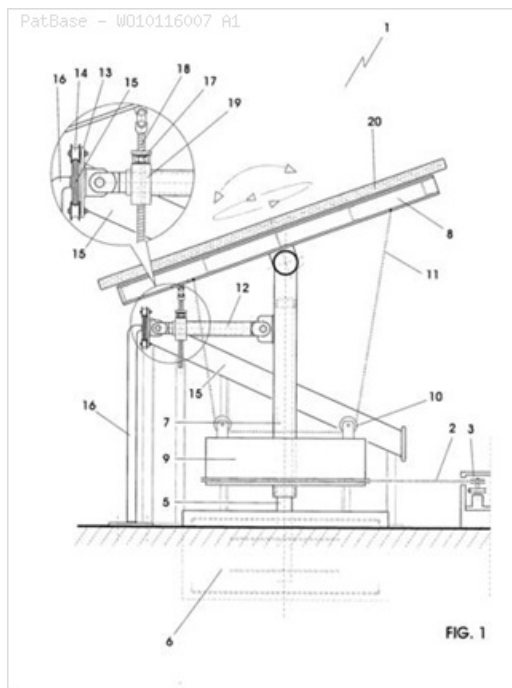
Title: SET OF SELF-ADJUSTING SOLAR TRACKERS SUITABLE FOR BEING DIRECTED BY A SINGLE MOTOR

Abstract: The invention relates to a set of solar trackers arranged parallel to one another, connected by pulling ropes to a single channel which has, at one of the ends thereof, a motor with an electronic circuit for programming the tasks to be performed. Each solar tracker has a mast secured by foundations sheathed in a jacket supported by top and bottom bearings to enable the rotation thereof. The jacket is anchored to the centre of the beam structure which carries the panel of solar cells or heat concentrators. A concrete circular stabiliser provides a supporting and stabilising base for the structure, using a set of pulleys for said purpose. A telescopic arm is attached at one end by welding to the jacket of the mast and, at the other end, to a vertical plate with wheels inserted in a circular double rail. The solar tracker is provided with a ratchet system to ensure vertical tilting of the beam structure, enabling the structure to adapt to the path of the sun.

Classifications:

International (IPC 8-9): F24J2/52 F24J2/54

CPC: F24S2030/133 F24S2030/136 F24S2030/137 F24S30/452 Y02E10/47



Family:

Publication number	Publication date	Application number	Application date
WO10116007 A1	20101014	WO2009ES00604	20091231

Priority:

ES20090000956 20090407

Probable Assignee: PASALODOS CABRERO ANTONIO

Assignee(s): (std): PASALODOS CABRERO ANTONIO

Inventor(s): (std): PASALODOS CABRERO ANTONIO

Agent(s): HERRERA DAVILA ALVARO

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 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 ZA ZM ZW

38) Family number: 52390077 (DE202012102154 U1)

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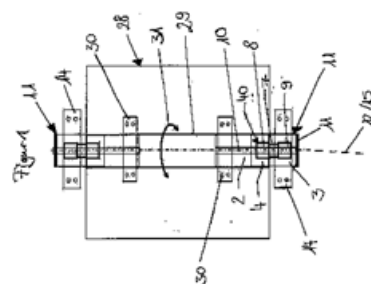
Title: ADJUSTING FOR A SOLAR TRACKER, SOLAR PANEL, SOLAR PANEL SOLAR MIRROR OR RELATED TO FOLLOW THE SUN 20 (Machine translation)

Abstract: Source: DE202012102154 U1 **Machine translation:** Adjusting device for a solar tracker (35), solar module (28), solar mirrors and solar panels to track the sun's position, or the like - a motor (2), - a stator (3), - a rotor (4), and - a rotating sliding member (40, 27); characterized by a uniaxial structure.

Classifications:

International (IPC 8-9): F16M11/18

CPC: F24S2030/10 F24S30/452 F24S30/455 H02S20/00 H02S20/32 Y02E10/47 Y02E10/50



8/14

Family:

Publication number	Publication date	Application number	Application date
DE202012102154 U1	20121129	DE201220102154U	20120612

Priority:

DE201220102154U 20120612

Probable Assignee:

KOKINETICS GMBH

Assignee(s): (std):

KOKINETICS GMBH

39) Family number: 52530991 (EP2532989 A1)

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Title: ASSEMBLY WITH A SUPPORT STRUCTURE THAT CAN BE ADJUSTED AROUND A SINGLE HORIZONTAL AXIS FOR HOLDING ONE OR MORE SOLAR PANELS, PHOTOVOLTAIC MODULES OR THE LIKE

Abstract: The device i.e. swivel unit (10), has two concentric annular structures supported together and coupled with a drive such that the structures are mutually displaceable with respect to each other, where the device is directly or indirectly secured or fastened at an assembly device. A receiving structure (12) i.e. flat solar energy receiver, is fixedly coupled with a rod, which is connected with an associated horizontal push rod, by a rotatably mounted joint, where a carrier structure is directly or indirectly secured or fastened at the receiving structure. An independent claim is also included for a method for rotating a carrier structure around a major axis, for use in a solar panel system and a photovoltaic system.

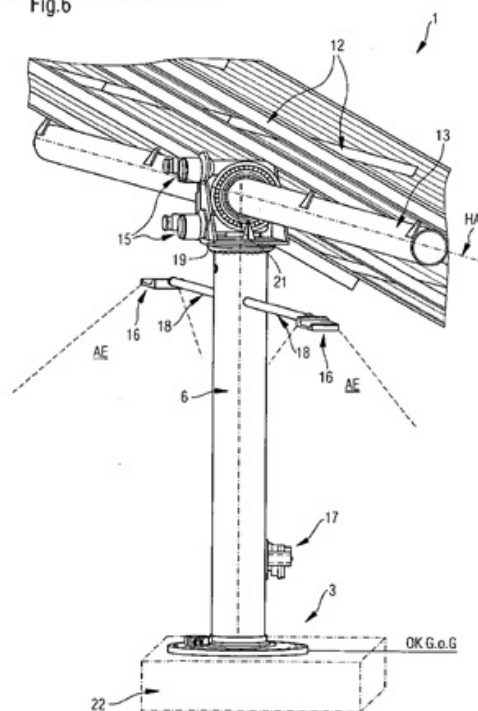
Classifications:

International (IPC 8-9): F24J2/54 H01L31/042

CPC: F24S2030/12 F24S2030/131 F24S2030/134 F24S2030/136
F24S25/12 F24S30/425 H02S20/23 H02S20/24 H02S30/20
Y02B10/10 Y02E10/47 Y02E10/50

PatBase - EP2532989 A1

Fig.6



Family:

Publication number	Publication date	Application number	Application date
DE102011103724 A1	20121206	DE201110103724	20110606
DE502012000679 D1	20140703	DE201250000679T	20120606
EP2532989 A1	20121212	EP20120004326	20120606
EP2532989 B1	20140514	EP20120004326	20120606
ES2492697 T3	20140910	ES20120004326T	20120606

Priority:

DE201110103724 20110606 EP20120004326 20120606

Probable Assignee: IMO HOLDING GMBH

Assignee(s): (std): IMO HOLDING GMBH

Inventor(s): (std): BUETTEL KONRAD ; DIETZ VOLKER ; FRANK HUBERTUS ; NIEF RICHARD ; RUS ERICH ; RUSS ERICH

Agent(s): DE ELZABURU ALBERTO; KUECHLER STEFAN; KUECHLER STEFAN T DIPL ING UNIV

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

40) Family number: 47907405 (EP2275754 A2)

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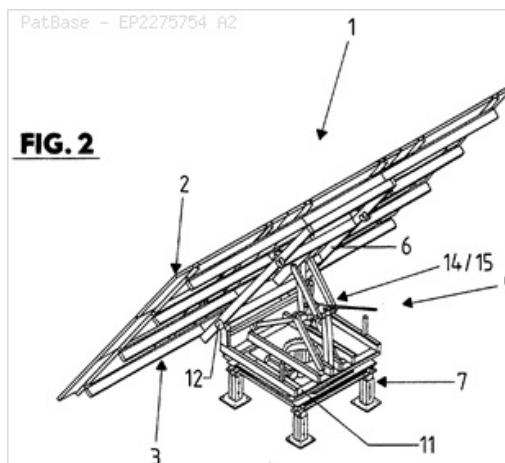
Title: TRACKING UNIT AND SOLAR COLLECTOR OR PHOTOVOLTAICS UNIT

Abstract: The unit has a frame (7) fixed on an underground, and a drive unit (14) for rotating and/or pivoting a support frame (6) relative to the frame. The support frame is pivotably provided in the frame around a vertical axis and a horizontal axis that is oriented perpendicular to the vertical axis. A horizontal pivot axis is provided in an area of a side of the support frame arranged parallel to the pivot axis. The support frame is tiltably provided in a support element that is rotatably or tiltably supported in the frame around a vertical pivot axis.

Classifications:

International (IPC 8-9): F24J2/54 H01L31/04

CPC: F24S2030/132 F24S2030/135 F24S30/452 Y02E10/47

**Family:**

Publication number	Publication date	Application number	Application date
DE102009022876 A1	20101230	DE200910022876	20090527
EP2275754 A2	20110119	EP20100003240	20100326

Priority:

DE200910022876 20090527

Probable Assignee: HISTA ELEKTRO ANLAGENBAU GMBH

Assignee(s): (std): HISTA ELEKTRO ANLAGENBAU GMBH

Inventor(s): (std): WAGNER FRANZ

Agent(s): GRAF HELMUT

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