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PN - [CN206786617U](#) U 20171222
PR - CN20172389000U 20170414
AP - CN20172389000U 20170414
DT - I
PA - TIANJIN SHIDAI JOIN YOUNG OPTOELECTRONIC TECH CO LTD
TI - It shines **solar** tree to encircle rotation type
AB - The utility model discloses an it shines **solar** tree to encircle rotation type, including the fixed plate, butt **joint** portion, semicircular notch, the mounting **panel**, the arc slide rail, the slider device, which comprises a fixing plate and i, the motor, the output shaft, gear and rack, two fixed plate butt **joint** middle parts all are equipped with semicircular notch, fixed plate butt **joint** middle part bilateral symmetry is equipped with butt **joint** portion, the semicircular notch periphery is equipped with the mounting **panel** that the arc set up, including a motor, an end cap, a controller, and a **cover** plate, arc slide rail end to end on two mounting panels, be equipped with a plurality of end to end's the curved LED banks of one -tenth in the arc slide rail, LED banks lower extreme is fixed with the slider device, the fixed motor that is equipped with on the fixed plate in the arc slide rail outside, the motor upper end is equipped with vertical output shaft, output shaft upper end transmission is connected with the gear, be equipped with with gear **engaged** with the rack on the LED banks lateral wall, a plurality of LED banks are multi -colored lamp group. The utility model discloses simple **structure**, convenient to use shines the tree color and constantly changes according to the tree is regional, and is effectual, rich and varied according to the tree.

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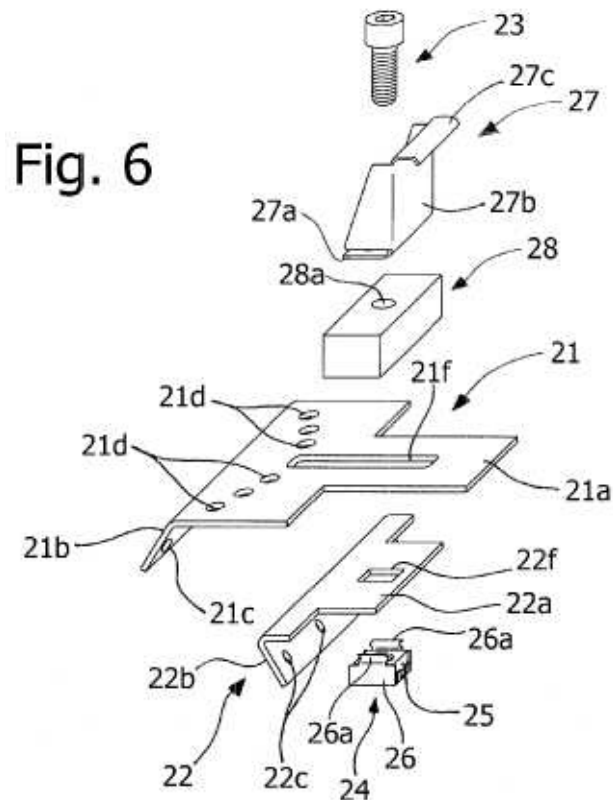
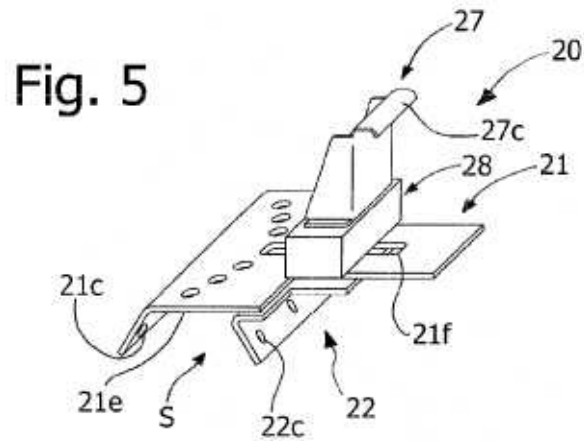
PN - [CN204886807U](#) U 20151216
PR - CN20152465989U 20150702
AP - CN20152465989U 20150702
DT - I
PA - QINGHAI PANGU NEW ENERGY TECHNOLOGY CO LTD
TI - Intelligence rotation regulation's **solar** cell **panel** mounting **structure**
AB - The utility model discloses an intelligence rotation regulation's **solar** cell **panel** mounting **structure**, it includes the fixed stay base, the movable mounting board, the activity support post, movable connecting rod, the articulated seat of mounting **panel** lower extreme is installed to movable mounting backboard face, the articulated seat in mounting **panel** upper end, activity support post upper end hinge is adorned in the articulated seat in mounting **panel** upper end, terminal surface spiral shell dress internal tooth torus under the activity support post, the inside base holding intracavity of fixed stay base inlays dress rotary driving servo motor, a controller, rotary driving servo motor's power output shaft **cover** card and internal tooth torus **engaged** with drive gear, the activity hinge **joint** seat is installed to activity support post surface, the movable connecting rod both ends are adorned in the articulated seat of the mounting **panel** lower extreme of corresponding side through the pivot hinge respectively, the activity hinge **joint** seat, dress wireless communication module is joined in marriage to the controller. Through the **structure** design, the utility model has the advantages of novel in design, intelligent degree is high, degree of automation is high, adjust convenient and fast just can effectively improve the light energy transformation rate.

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PN - [CA2850051](#) A1 20130404
PNFP - CA2850051 C 20160628
PR - KR20110008641U 20110927; WO2011KR10078 20111226
AP - CA20112850051 20111226
DT - I
CCI - [E04D3/352](#) ; [E04D3/355](#) ; [F24S25/615](#) ; [F24S25/10](#) ; [F24S25/636](#)
CUI - [E04D3/362](#) ; [E04D13/00](#) ; [F24S25/00](#)
CQI - [E04D3/35](#)

- CCA - [Y02B10/20](#) ; [Y02B10/12](#) ; [Y02E10/47](#)
- PA - (A1)
IK CORP [KR]; ISOLAR CO LTD [KR]
- (C)
IK CORP [KR]; I-SOLAR ENERGY CO LTD [KR]
- TI - (A1 C)
SOLAR LIGHT ROOF PANEL ABUTMENT STRUCTURE
- AB - (A1)
A roof **panel** abutment **structure** is disclosed. The **structure** comprises: a roof **structure**; a first roof **panel** having one end **coupled** to the roof **structure**, the one end formed in a shape in which a recess is inserted between a pair of ridges on a cross-section thereof; a bolt fastened to the recess portion to fix the first roof **panel** to the roof **structure**; a second roof **panel** having an opposite end thereof **coupled** to one end of the first roof **panel**; a base; and a wing portion connected to both sides of the base, wherein the base is fixed to the recess portion by means of the fastening of the bolt, and the wing portion is **coupled** to both sides of a T slot. The roof **panel** abutment **structure** further comprises: a first adapter enabling the bolt to perform the function of grasping the T slot; a second adapter formed in a shape corresponding to the shape of the T slot; a clamp installed such that a bottom is **coupled** to the second adapter; and a **solar** light module **panel coupled** to the clamp and installed to **cover** the roof **panel**. The roof **panel** abutment has increased strength, and even if a portion of the roof **panel** is deformed, the upper **panel** is not disengaged so as to maintain the abutment **structure**.
- (C)
A roof **panel** abutment **structure** comprising: a roof frame; a roof **panel** which has one end being fastened on the roof frame and having two ridges and a recess between them in section and the other end of said roof **panel** having a wide ridge and being operable for **covering** two ridges and a recess of an adjacent roof **panel** said other end of said roof **panel** having a T groove with an inverted T shape and being operable for facing the recess of the adjacent roof **panel**; a bolt being fastened at the recess of said roof **panel** to fix it on the roof frame; an adaptor having a base fastened at the recess of said roof **panel** by said bolt and a pair of wings extending upward from two ends of the base and being operable for engaging side walls of a T groove of an adjacent roof **panel**; a clamp having a lower portion of which is fastened to the T groove of the roof **panel**; and a **solar panel engaged** with the upper portion of the clamp and **covering** the roof **panel**.

PN - [EP2455684](#) A2 20120523
 PNFP - EP2455684 A3 20120801
 PR - IT2010TO00178U 20101119
 AP - EP20110189563 20111117
 DT - *; Rep
 CT - || STSE (A3)
[DE202010005612U](#) U1 20100902
 [XY] (BAUR JAN HENRIK [DE])
 [X] 1,5-9,11-13
 * paragraph [0020] -
 paragraph [0022]; figures 1-3 *
 [Y] 10;
[US2008302928](#) A1 20081211
 [Y] (HADDOCK ROBERT M M [US])
 [Y] 10
 * paragraph [0033]; figure 6 *;
[DE202009003862U](#) U1 20090610
 [X] (MOUNTING SYSTEMS GMBH [DE])
 [X] 1,5-9,11,13
 * paragraph [0024] -
 paragraph [0035]; figures 1-5 *;
[DE202010001238U](#) U1 20100422
 [X] (VM EDELSTAHLTECHNIK GMBH [DE])
 [X] 1,2,4-9,13
 * paragraph [0016] -
 paragraph [0017]; figures 1-4 *;
[JP2007284956](#) A 20071101
 [X] (KYOCERA CORP)
 [X] 1
 * abstract *;
[JPH11172861](#) A 19990629
 [A] (SEKISUI CHEMICAL CO LTD)
 [A] 1-15
 * abstract *
 CCI - [H02S20/23](#) ; [F24S25/615](#) ;
[F24S25/636](#)
 CCA - [Y02B10/20](#) ; [Y02B10/12](#) ; [Y02E10/47](#)
 PA - (A2 A3)
 RUFFA GIAN LUCA [IT]; VAUDANO
 MASSIMO [IT]
 TI - (A2 A3)
 Device for anchoring **solar** panels
 on building **coverings**
 AB - (A2)
 Described herein is a device for
 anchoring **solar** panels to
 building **coverings** that have
 longitudinal ribs in relief, which
 are substantially parallel and
 trapezoidal. the device (20)
 comprises a first bracket (21), a
 second bracket (22), and a
 retention member (27) **engageable**
 with the **structure** of a **solar panel**,
 where at least one of the two
 brackets (21, 22) is prearranged for
 fixing to a **covering** of a building
 via mechanical joining members -
 such as rivets, screws or the like



- **engaged** in through holes of the **covering**. The brackets (21, 22) each include a first portion (21a, 22a) and a second portion (21b, 22b) set with respect to one another substantially to form a V. The brackets (21, 22) are configured for mutual **coupling** at the respective first portions (21a, 22a), with the corresponding second portions (21b, 22b) set substantially facing, parallel and divergent with respect to one another, so that the brackets (21, 22) define between one another a substantially trapezoidal seat (S), designed to receive at least one top region of a trapezoidal rib. The brackets (21, 22) can be secured mutually in a plurality of different positions to enable variation of the distance between the second portions (21b, 22b) and hence adapt the width of the trapezoidal seat (S) to the width of a trapezoidal rib.

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PN - [JPH06136895](#) A 19940517

PNFP - JPH0696897B B2 19941130

PR - JP19920288834 19921027

AP - JP19920288834 19921027

DT - I

CCI - [F24S25/632](#) ; [F24S25/35](#) ; [F24S25/20](#) ; [F24S25/67](#)

CCA - [Y02B10/20](#) ; [Y02E10/47](#) ; [F24S2025/022](#) ; [F24S2020/13](#)

FI - E04D13/18; E04D3/40&Y; H01L31/04&R; H02S20/22; H02S20/23&A

FT - 2E107/AA04; 2E107/BB01; 2E107/CC00; 2E107/DD07; 2E108/AA02; 2E108/AS03; 2E108/AS04; 2E108/AZ01; 2E108/BN01; 2E108/CC09; 2E108/DD05; 2E108/DD18; 2E108/DF05; 2E108/DF11; 2E108/DF18; 2E108/ER07; 2E108/FF11; 2E108/FG04; 2E108/FG11; 2E108/FG13; 2E108/GG05; 2E108/GG06; 2E108/GG15; 2E108/GG16; 2E108/GG20; 2E108/KK04; 2E108/LL01; 2E108/MM00; 2E108/NN07; 5F051/BA03; 5F051/BA18; 5F051/JA02; 5F051/JA03; 5F051/JA08; 5F051/JA09; 5F051/KA07; 5F151/BA03; 5F151/BA18; 5F151/JA02; 5F151/JA03; 5F151/JA09; 5F151/JA12; 5F151/JA13; 5F151/KA07

PA - (A)
GANTAN BEAUTY KOGYO KK

TI - (A)
DETACHABLY ATTACHING **STRUCTURE** FOR **SOLAR BATTERY PANEL**

AB - (A)
PURPOSE:To contrive **solar** battery panels to be constructed to be fitted on a bed from a water lower-side or from a water upper-side, and contrive the pertinent panels only to be maintained separately and removably on the **solar** battery panels. CONSTITUTION: Retaining rails 8 are fixed to be laid on the exterior bed of a building, to be set orthogonally to the water flow direction, at the effective length intervals of **solar** battery panels 9, and the **solar** battery panels 9 are permitted to slide on a water lower-side, and engaging sections 16 near the water lower-side of the panels are removably **engaged** with the **engaged** sections 12 of the retaining rails. Then, till the engaging sections 16 mounted on the mounting face sections 10 of the retaining rails and along the mounting face sections are removed from the **engaged** sections 12, **solar** battery **panel** water lower-end sections 9b on a water upper-side are put together on **solar** cell **panel** water upper-end sections 9a on the water lower-side movable to the water upper-side, and spaces between the **solar** battery panels to be adjacently

arranged to the left and right are closed to be **covered** with **joint covers** 25 by means of fixtures.

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- PN - [JP2000345670](#) A 20001212
- PNFP - JP4311817B B2 20090812
- PR - JP19990158918 19990607
- AP - JP19990158918 19990607
- DT - I
- CCA - [Y02E10/50](#) ; [Y02B10/12](#)
- FI - E04D13/18; E04D3/38&D; H01L31/04&R; H02S20/25
- FT - 2E108/AZ01; 2E108/BB01; 2E108/BN01; 2E108/DF05; 2E108/DF11; 2E108/DF18; 2E108/GG16; 2E108/KK01; 2E108/LL01; 2E108/MM00; 2E108/NN07; 5F051/BA03; 5F051/BA18; 5F051/JA02; 5F051/JA09; 5F151/BA03; 5F151/BA18; 5F151/JA02; 5F151/JA13
- PA - (A)
DAIWA HOUSE IND
- TI - (A)
JOINT SEAL STRUCTURE BETWEEN ROOF PANELS HAVING SOLAR CELL
- AB - (A)
PROBLEM TO BE SOLVED: To provide a **joint** seal **structure** between roof panels capable of reducing the number of components, with excellent execution property, showing the depth of a **joint** part small, and making the error of the roof panels less conspicuous.
SOLUTION: A fitting frame 4 of a **solar** cell module 3 is installed on a side edge of a roof **panel** body 2. The fitting frame 4 is formed groove-like in section, and a groove side plate part 4a on the side edge side is formed lower than a groove side plate part 4b on the center side. An **engagement** part 4c of the **solar** cell module 3 is provided on the groove side plate part 4b on the center side. A **joint cover** 10 is provided between the groove side plate 4b, 4b on the center side in the adjacent fitting frames 4, 4 of the roof panels 1, 1 continuous each other. The **joint cover** 10 is located below the level of the **solar** cell.