

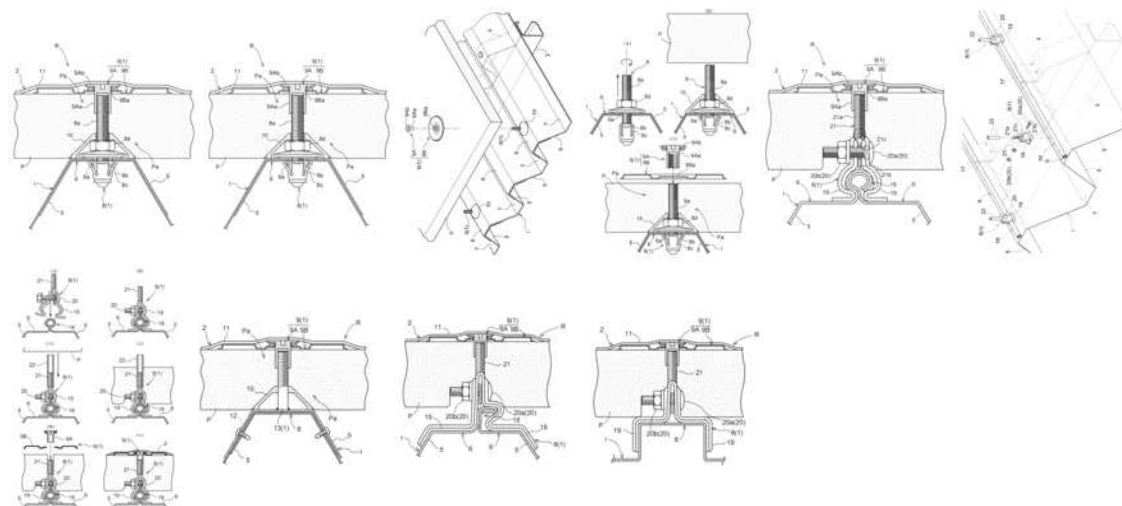
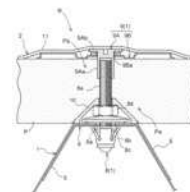
51 filtered results for ( (Tile AND panel)/TI/AB/IW/CLMS AND (adhesive)/KEYW/TI/AB/IW AND (insulat+)/TI/AB/IW/CLMS/DESC/ODES/OBJ/ADB/ICLM/KEYW/TX ) AND (E04D)/IPC - Collection: FAMPAT

| #  | Title                          | Publication number | 1st app. date | Applicant/Assignee | 1st publ. date | Publ. date |
|----|--------------------------------|--------------------|---------------|--------------------|----------------|------------|
| 1. | Method of heat-insulating roof | JP2007154652       | 2006-11-14    | YAMADE*            | 2007-06-21     | 2007-06-21 |

PROBLEM TO BE SOLVED: To surely fix a heat-insulating panel.

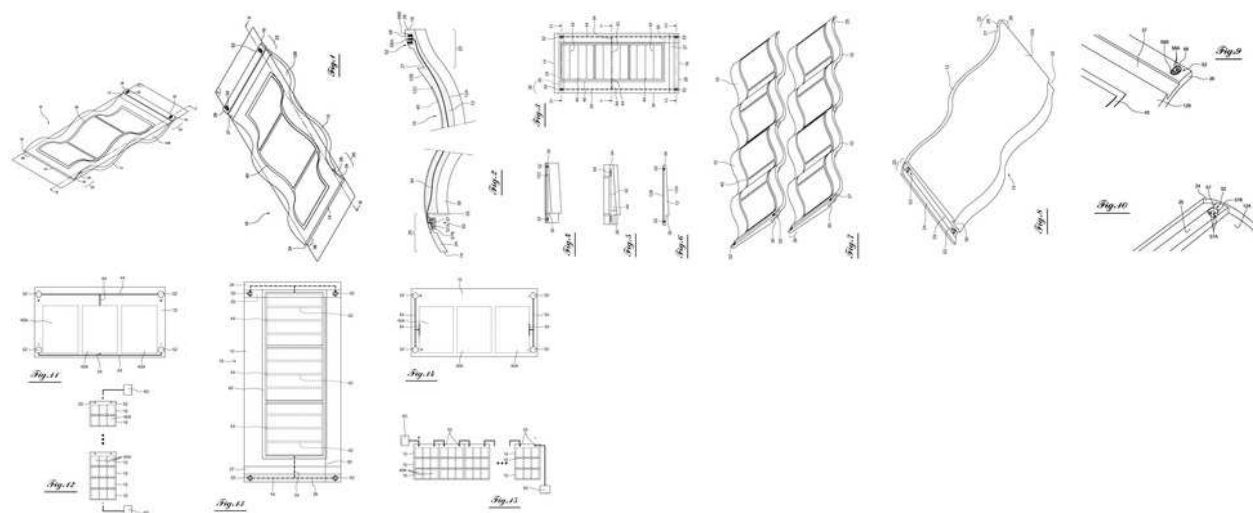
SOLUTION: The heat-insulating panel P is placed on a roof r formed of either of a deck plate roof, a corrugated roof, and a roof tile bar with the ridge parts 6 and bottom parts alternately arranged parallel with each other on the surface. The heat-insulating panel P is fixed to the roof r by using fixing fittings 1 to the roof r. A waterproof layer 2 is formed on the upper side of the panel. When the heat-insulating panel P is installed, the fixing fittings 1 are fitted to the ridge part 6 of the roof r in the upwardly projecting state beforehand, and the heat-insulating panel P is placed thereon. The heat-insulating panel P is pushed down so that the fixing fittings 1 are pierced in the heat-insulating panel P from the lower surface to the upper side.

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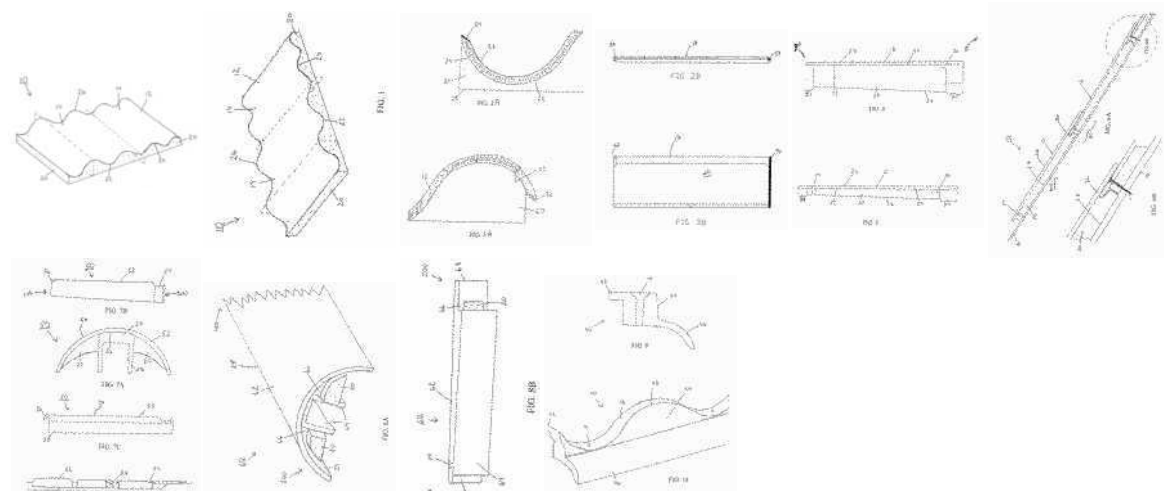
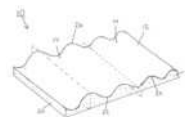
|    |                        |           |            |                                                                                |            |            |
|----|------------------------|-----------|------------|--------------------------------------------------------------------------------|------------|------------|
| 2. | Photovoltaic roof tile | FR2947099 | 2009-06-17 | ALEXANDRA AZULAI<br>ALEXANDRE AZOULAY<br>CYNEG Y HOLDINGS FRANCE<br>SUPERDOME* | 2010-12-24 | 2010-12-24 |
|----|------------------------|-----------|------------|--------------------------------------------------------------------------------|------------|------------|

The invention relates to a photovoltaic tile for a roof comprising a plurality of said tiles, at least two adjacent tiles of which at least partially overlap each other, including a body (12) having overlapping edges constituting a top edge (20) and a bottom edge (22), the top edge (20) being formed so as to cover the bottom edge (22) of at least one of the adjacent tiles, a photovoltaic layer (40), and electrical connectors (52) which are connected to the photovoltaic layer (40) by means of electrical conductors (54). The electrical connectors (52) are provided in assembly elements (57, 58) by nesting, said assembly elements being provided on the overlapping edges (20, 22) so as to enable said overlapping edges to be mutually positioned during the placement of two of the adjacent tiles (10) and the electrical contact of the electrical connectors (52) with each other. The invention also relates a method for manufacturing such tile.



3. Concrete tile system and method of manufacture WO2007044775 2006-10-10 Damon Stone;STONE DAMON 2007-04-19 2007-04-19

**Tile panel** assemblies and systems of manufacturing and installing said **tile** panels. The **tile** panels of the subject invention can be used as a covering for walls, roofs, siding, etc. on a variety of structures. In one embodiment, the tiles are manufactured of a lightweight concrete having sufficient strength to withstand extreme weather and wind conditions, as well as normal handling or foot traffic required for installation and maintenance. In a further embodiment, the tiles of the subject invention comprise **insulation**, preferably foam, affixed thereto. The **tile** panels are constructed so as to present an overlapping configuration and selectively interlocking systems that provide resistance to negative pressure wind uplifting and enhanced **insulation** properties. Also disclosed is a **tile** bracket apparatus that can secure the leading edge of a **tile** to prevent wind-uplift.

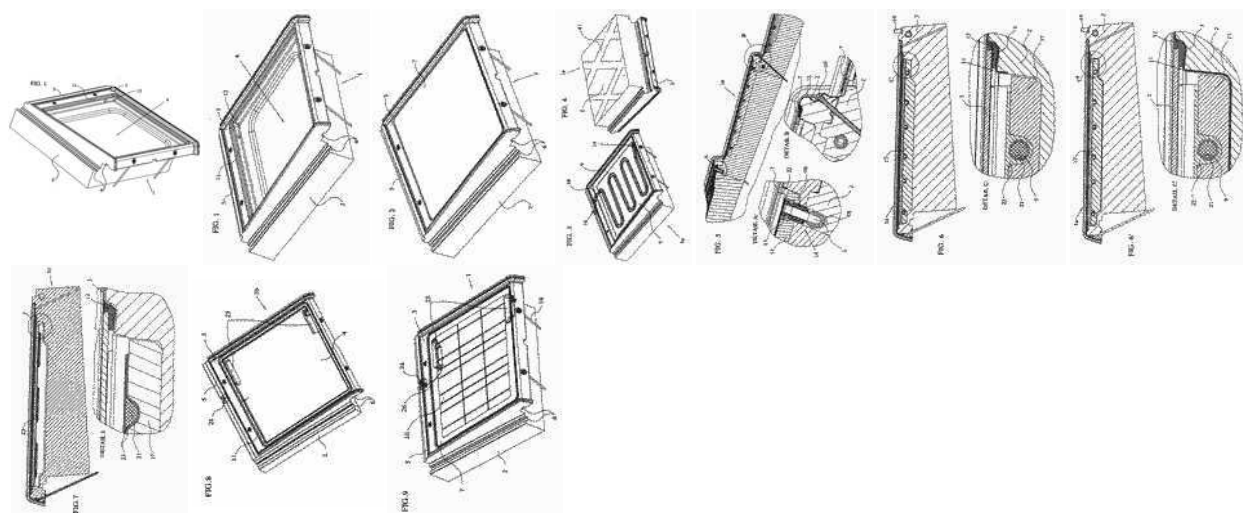


4. Pan tile/roofing tile/facade element with integrated solar module WO2010139435 2010-05-28 BAYER MATERIALSCIENCE\* 2010-12-09 2010-12-09

The present invention relates to a pan **tile**, a roofing **tile** or facade element having a photovoltaic solar element and a method for producing such a pan **tile**/roofing **tile**/facade element.

5. Roof tile AT506953 2008-07-29 DEUTSCH WOLFGANG FRIEDRICH DEUTSCH METALLWERK GES M B H\* 2010-01-15 2010-01-15

The **tile** (1) has a metallic, weather-proof outer layer (3) partially covering a cover surface of the **tile** and forming a roof layer at a roofing bond. The outer layer consists of foam plastic, and an **insulating** body (2) thermally **insulates** the roof bonding. The body forms a trough (4) on a side aligned to the cover surface of the **tile**. The outer layer is in the shape of a frame and uncovers a central region of the **tile**. A pipe line or a recess for a fluid is arranged in the trough, and a transparent plate e.g. glass plate, composite **panel** and plastic plate, is arranged at the region. An independent claim is also included for a method for manufacturing a roof **tile**.



6. Composite cement panel

WO2008143591

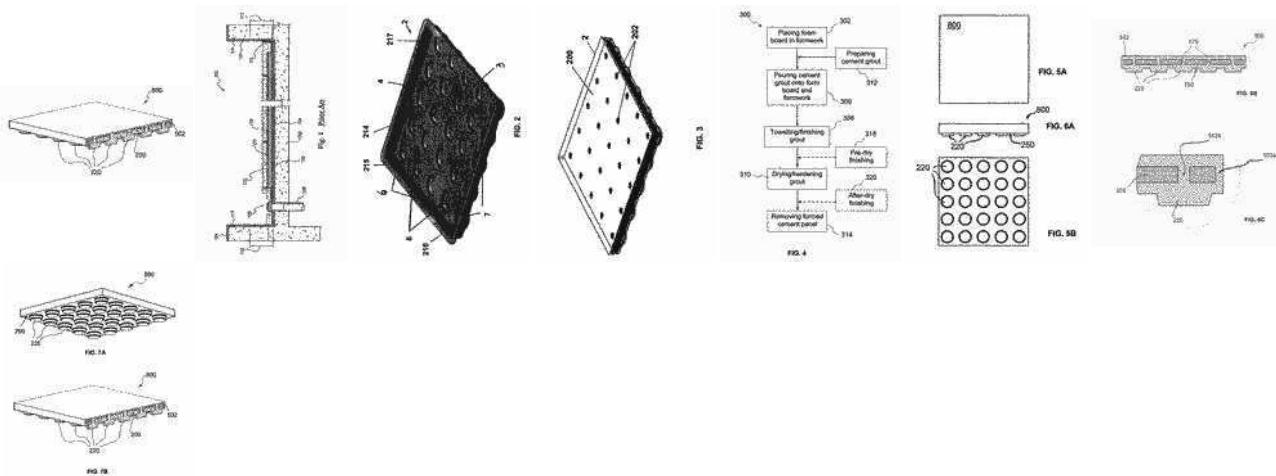
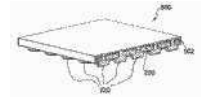
2007-05-18

JAMES LIM JEE KENG  
JEE KENG JAMES LIM  
LIM JEE  
LIM JEE KENG JAMES\*

2008-11-27

2008-11-27

This invention relates to a composite **panel** for a rooftop surface having a core material board having a top surface and a bottom surface with a plurality of openings through said core material board extending from said top surface to said bottom surface; a rigid outer shell of solid material that encapsulates said core material board; a plurality of supports of said solid material wherein each of said plurality of supports extends through one of said plurality of openings in said core material board; and a plurality of legs on a portion of said rigid outer shell covering said bottom surface of core board material.



7. Water-proof heat retaining panel

CN201521062

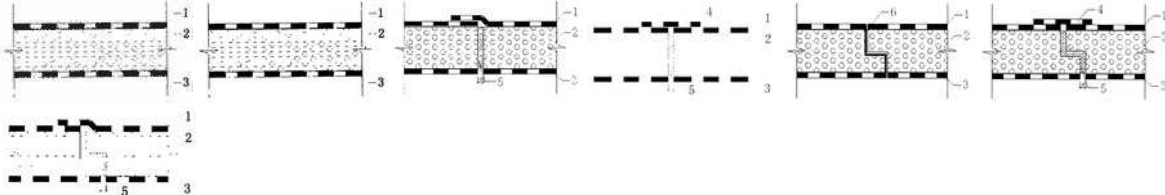
2009-09-24

SHENZHEN ZHUOBAO TECHNOLOGY\*

2010-07-07

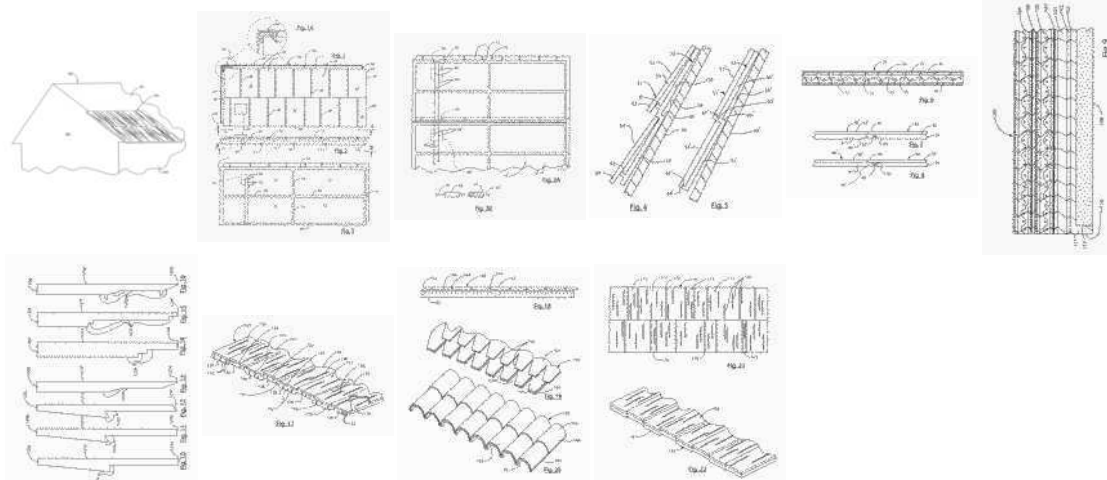
2010-07-07

The utility model relates to roof engineering plates, in particular to a water-proof heat retaining integrated **panel** which consists of a plurality of sub water-proof heat retaining panels. Each sub water-proof heat retaining **panel** comprises an upper surface layer, a heat retaining layer and a bonding layer or the bonding and water-proof layer, wherein the upper surface layer is made of roof materials; and the heat retaining layer and a bonding layer or the bonding and water-proof layer are arranged below the upper surface layer in sequence. In the utility model, a water-proof layer and the heat retaining layer in the traditional roof engineering are combined into the water-proof heat retaining integrated **panel** which is installed by one-time operation on site. The water-proof heat retaining integrated **panel** integrates the heat retaining layer and bonding and water-proof layer, and eliminates a water emerging layer between the heat retaining layer and the water-proof layer on the one hand, eliminates a water emerging layer between the plates and a base layer on the other hand as the selected bonding layer and the base layer can be bonded tightly. As all possible water emerging channels are eliminated, water can emerge from neither the integrated **panel** nor the space between the integrated **panel** and the base layer, thus ensuring the water-proof reliability.



9. **Panel for use as exterior covering for roofing or siding and building structure having same** CA2714448 2009-09-10 CERTAINTED\* 2011-03-09 2011-03-09

A building **panel** of the roofing or siding type is disclosed, as well as a building structure having such roofing or siding panels, in which the panels are comprised of two different types of building materials. The composite **panel** includes at least one layer of synthetic polymeric building material, having adhesively secured thereto at least one layer of asphalt based building material, with outer, upper surfaces of the **panel**, that would be weather-exposed in the installed condition on a building structure being comprised of the asphalt based building material, and with the synthetic polymeric layer(s) of polymeric building material being weather-protected in the installed condition on a building structure.



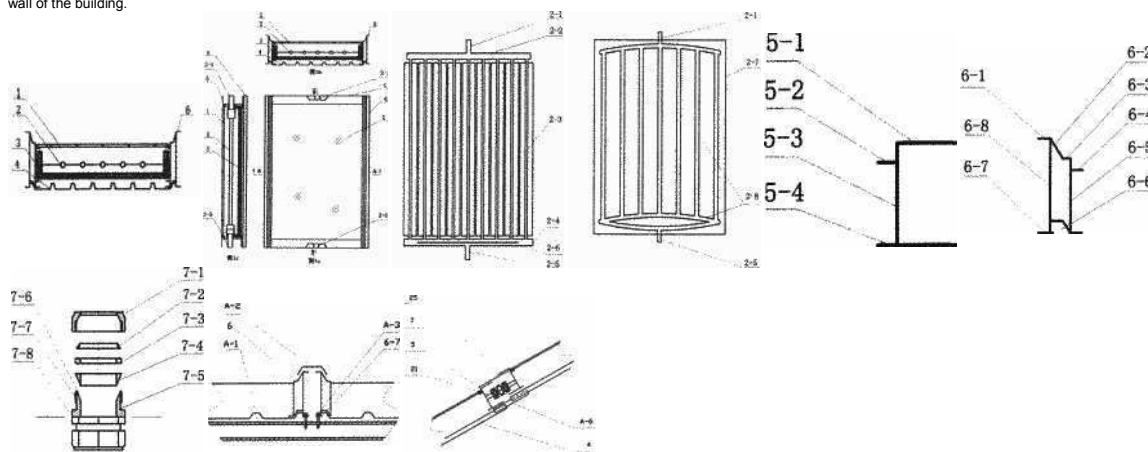
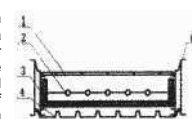
10. **Composite insulating brick** CN201062398 2007-03-28 YUAN JINLIAN 2008-05-21 2008-05-21

The utility model discloses a compound thermal **insulation** brick, which aims to provide the compound thermal **insulation** brick with good thermal **insulation** effect, thin thickness, light weight, and decorating art; the utility model comprises a thermal **insulation** plate, a cement mortar layer is arranged above the thermal **insulation** plate; a decorating layer is arranged above the cement mortar layer; the utility model is architectural engineering material, which is applied to a variety of buildings.



11. **Solar water heating tile** CN201305960 2007-12-25 Yan Kun 2009-09-09 2009-09-09

The utility model relates to solar water heating **tile**, which is a solar heat collector module, and consists of a lighting cover plate, a heat collecting plate core, a heat preservation heat screening layer, a lower waterproof **tile**, a transverse rim sectional material and a longitudinal rim sectional material. The heat collecting plate core is only provided with a water inlet pipe and a water outlet pipe; a top edge, a notched sloping surface and a notched bottom edge of each longitudinal rim sectional material and the lighting cover plate form a groove-shaped **tile** shape and form a first waterproof layer; two groove edges of the lower waterproof **tile** extend into and are fixed inside a **tile**-embedding groove on the bottom of the longitudinal rim sectional material, which can collect all possible water and form the lower waterproof layer; the outer side on the bottom of the longitudinal rim sectional material is provided with a plane which extends to be provided with a fixed edge, so that the solar water heating **tile** can be fixed on the purlines of the roof through self-tapping screws. The solar water heating **tile** resolves the integration difficulty of the solar heat collector and the building, and not only has the solar heat collecting function, but also can be used as a waterproof heat screening **tile**, and can realize the industrialized production, and can be widely applied to the sloping roofing and the outer wall of the building.



12. Roofing tile with weather durable coloring CA2619392

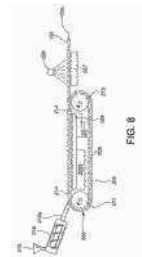
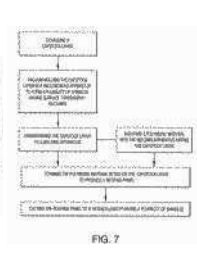
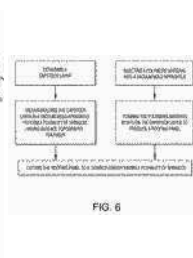
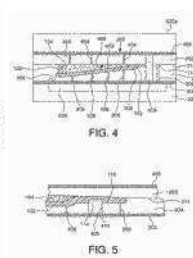
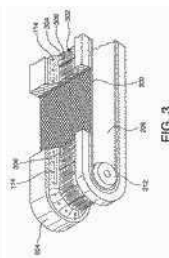
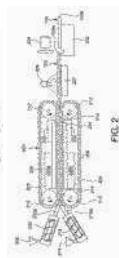
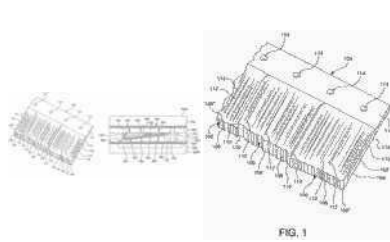
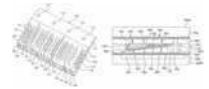
2007-02-05

CERTAINTED\*

2008-08-05

2008-08-05

A synthetic roofing material for a roofing tile and a method of extruding a resinous polymeric precursor of an exterior polymeric sheet for one or more roofing tiles; and applying a weather durable coloring matter on a surface of the precursor, wherein the coloring matter comprises one or more pigment colors in a variegated surface coloration pattern, which simulates a distinctive coloration of a natural material. The precursor is impressed with surface topography features and a surface roughness that simulate the surface features of the natural material.



13. Fiberglass tyre asphalt tile thermal insulation composite board

CN201116386

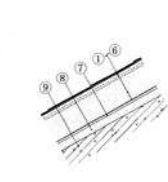
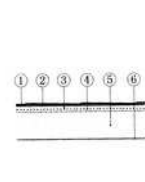
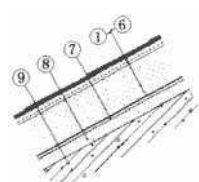
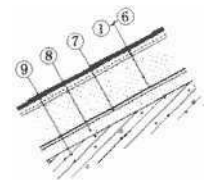
2007-06-12

LIU RUOYI, LIU WENGUO, CAI QIN;Liu Rui

2008-09-17

2008-09-17

A fiber glass based asphalt shingle thermal insulation composite plate for a building pitched roofing, which integrates a flame-retarded polyphenylene plate, a polyphenylene plate covering layer and a fiber glass based asphalt shingle by a preformed method. Sticking the composite plates on pitched roofing accomplishes external thermal insulation of building pitched roofing and water resistance of fiber glass based asphalt shingle roofing. The plane size of the composite plate can be voluntarily preformed and cut according to requirements, and the tiling construction order is not limited.



14. Metallic face layer water proof tile

CN201047138

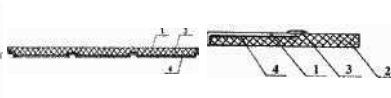
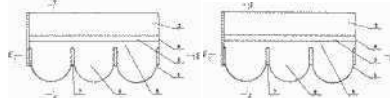
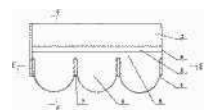
2007-06-21

XIAO JUN\*

2008-04-16

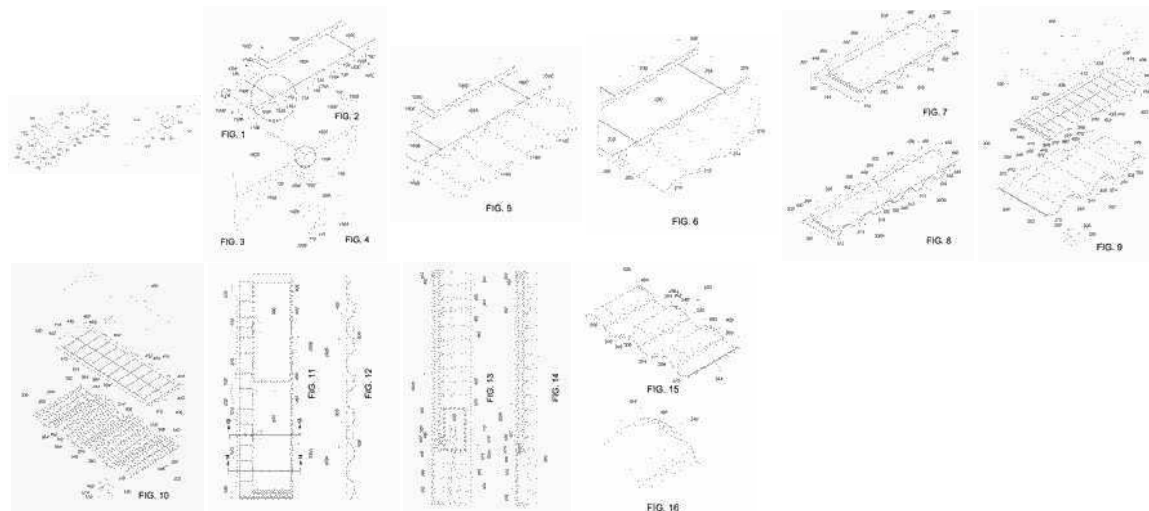
2008-04-16

The utility model discloses a waterproofing tile with metal face layers, comprising a sheet metal and a waterproofing layer, and is characterized in that the utility model consists of a metal face layer of a foil, a waterproofing flexible tyre base, a double-sided self-adhered edge sealing tape and cementing compound, wherein, the metal face layer is firmly bound with the waterproofing flexible tyre base by the cementing compound, the back area of the flexible tyre base is bigger than that of the metal face layer, at the position where the back end of the metal face layer is combined with the back of the flexible tyre base the double-sided self-adhered edge sealing tape straddles the two sides of the back edge of the metal face layer; and the tile consists of a simple tile and a tile ridge. The waterproofing tile with metal face layers consists of more than two siamesed tiles, wherein, a concave strip neutralized between the simple tile at the front-end is a tile groove, the front-end of the simple tile protrudes forward and takes the shape of an arc, the tile groove condensed backward and is positioned at the back of the arc, and the end face and periphery of the simple tile and the tile ridge are encapsulated with a metal face layer front edge, and moreover, the utility model has the advantages of low cost, simple and convenient construction, light weight, strong wind resistance, excellent waterproofness, high monolithic strength and durable service, thus being suitable for different roofs.



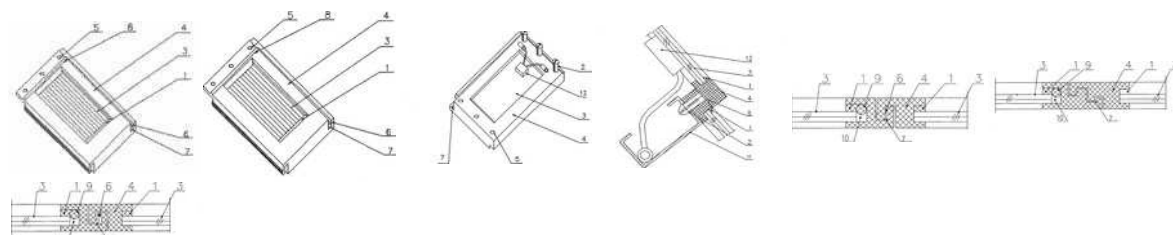
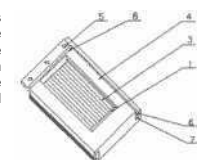
15. **Profile roof tile with integrated photovoltaic module** US20080000174 2007-01-05 LUMETA\* 2008-01-03 2008-01-03

A roofing module (800) provides weather protection generates electrical power. The module (800) comprises a base (802) having a plurality of curved crests (820, 822, 824) and curved pans (830, 832, 834). The crests (820, 822, 824) and pans (830, 832, 834) have contours sized and shaped to match the size and shape of the contours and pans of conventional clay or concrete S-tiles to enable the base to interlock with the conventional clay or concrete S-tiles. The base (802) is made from lightweight plastic material. Each crest of the base includes a depressed portion (840, 842, 844). A photovoltaic **panel** (806, 804) is positioned in the depressed portions of at least two curved crests and span across at least one curved pan between the at least two curved crests.



16. **Functional tile** CN201202230 2008-05-30 WEIHAI BLUE STAR TERRY PHOTOELECTRIC\* 2009-03-04 2009-03-04

The utility model relates to an energy-saving building material, in particular to a functional **tile** which is used in building roofs and can generate electricity. The functional **tile** is characterized in that a photovoltaic cell **panel** is arranged in a side frame, a connection box is arranged on the photovoltaic cell **panel**, a cable and a plug or a socket are arranged on the connection box, a pin hole is arranged on one end of the side frame, a pin column is arranged on the other end, negative and positive grooves which are mutually connected are respectively arranged on two sides of the side frame, the functional **tile** is applied in the building roofs, which not only has good wind shielding, rain retaining and heat **insulating** functions, but also can permeate gentle and elegant light into rooms, and electric energy which is demanded by living and work also can be generated, the building roofs are comprehensively utilized to transform hot sunshine into energy, and the utility model has the advantages of convenient installation, solid connection, strong wind and rain resisting ability and long service life, is beneficial for protecting environment and preventing global warming, and the like.

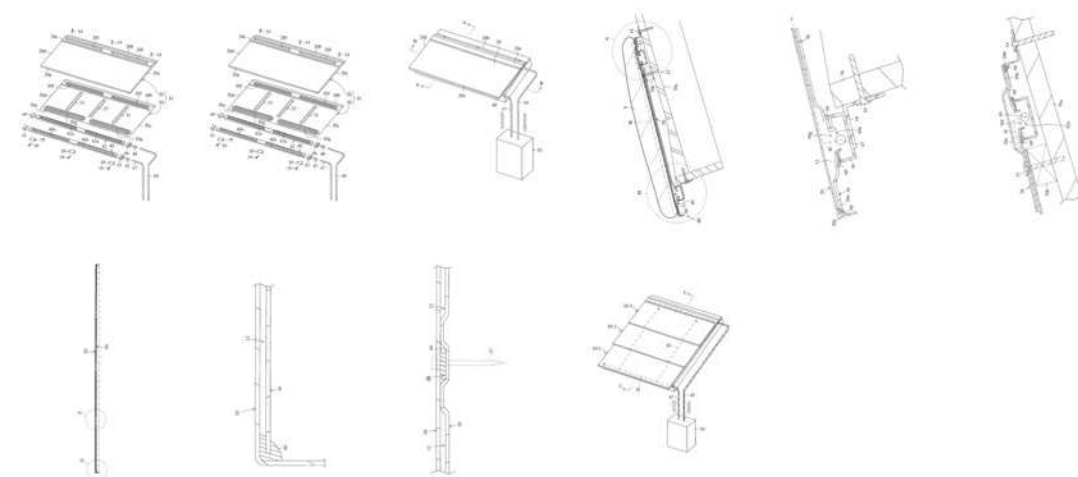
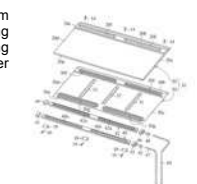


17. **Snow melting roof tiles and snow melting roof structure** JP2007239381 2006-03-10 PRESS KOGYO\* 2007-09-20 2007-09-20

**PROBLEM TO BE SOLVED:** To provide snow melting roof tiles capable of offering good workability through which warm water mixed with an antifreeze agent or the like can be circulated.

**SOLUTION:** A snow melting roof **tile** 10 comprises an outer **panel** 20 on which snow is accumulated in contact with the **panel**, and an inner **panel** 30 arranged separately from and underneath the outer **panel** 20. A liquid passage 12 is formed in a gap created between the outer **panel** 20 and the inner **panel** 30; and warm water or the like for melting snow is circulated through the liquid passage 12. The warm water circulating through the liquid passage 12 contains an antifreeze agent and/or rustproof component. By flowing the warm water through the liquid passage 12, heat of the warm water is transmitted to the outer **panel** 20 and the **panel** 20 is heated (also, the heat is transmitted to the inner **panel** 30). Therefore, snow accumulated on the upper surface of the outer **panel** 20 can be melted.

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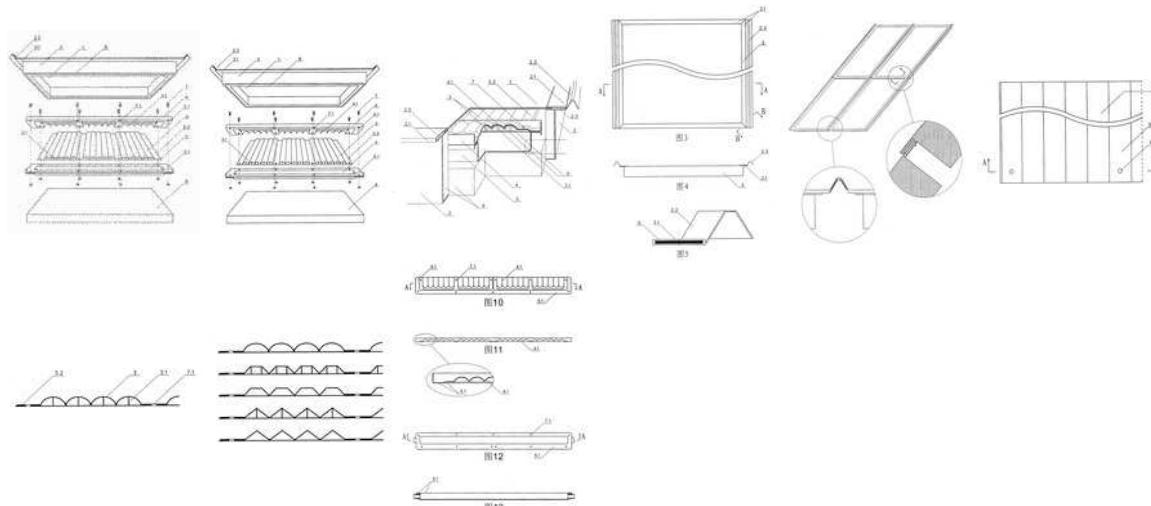
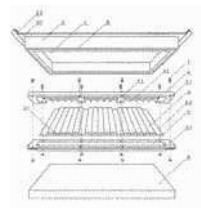
18. Aluminum alloy non-welding and roof tile solar heat collector CN101353923

2008-08-19

FAN DONGJIE

2009-01-28 2009-01-28

The invention discloses an aluminum alloy welding-free and roofing-tile solar collector, wherein, a collecting board is integrated with a heat-exchanging container; the solar collector is a section material with a semi-circle and tubular-shaped transect, the upper part of which is cambered and the lower part of which is flat, and connected with a plurality of aluminum alloy pipes which are connected with each other in parallel; the sunny side of the solar collector is coated with a selective heat absorption coating; water pipes which are arranged at the two sides of the solar collector and connected with the pipe section material are metal water pipes that are divided into an upper part and a lower part and has a pipe section material interface; the pipe section material and the water pipe are connected firmly by bolts and sealed by a sealant, and the upper part and the lower part of the water pipe are connected firmly by the bolts and sealed by the sealant; a glass cover plate is arranged on the pipe section material and the water pipe; a thermal insulation layer is arranged below the pipe section material and the water pipe; borders enclose the solar collector into a sealed whole at the periphery and extend out of regulas in all directions on the plane of the glass cover plate; the regulas on the left and right rise upwards so that the solar collection has the function of a large insulation roofing tile. The solar collector has the advantages of high heat collection efficiency, low price and long service life, basically requiring no maintenance, and being integrated with buildings and beneficial to scale production.



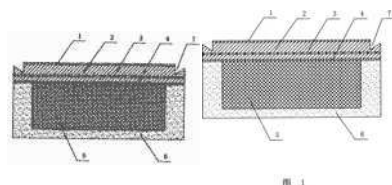
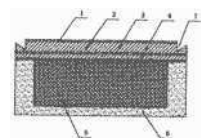
19. Water-proof and thermal insulating roofing clad plate CN2931636

2006-02-27

LIU JIANYUN

2007-08-08 2007-08-08

The utility model discloses a waterproof heatproof heat-preservation roofing composite plate, comprising a waterproof layer, a heat-preservation layer and a heat-preservation plaster layer, wherein the heat-preservation plaster layer is arranged at the periphery of the heat-preservation layer, one surface of the waterproof layer is adhered on the heat-preservation layer. The heat-preservation layer is adhered by dilation polyphenyl plate with low heat conduction coefficient, and the heat-preservation plaster layer is vibrated by polymer cement glue, dilation perlite, rock wool, and alkali-proof glass fibre net. The roofing composite plate adopts a dilation polyphenyl plate with low heat conduction coefficient as the heatproof heat-preservation layer, thereby heat-preservation effect is good. The arrangement of the heat-preservation plaster layer increases the intensity of the heat-preservation layer, a V-shaped waterproof groove is provided at the connecting slot of the composite plate periphery, thereby better waterproof effect can be achieved, and the roofing self-weight load is correspondingly decreased for over fifty percent.



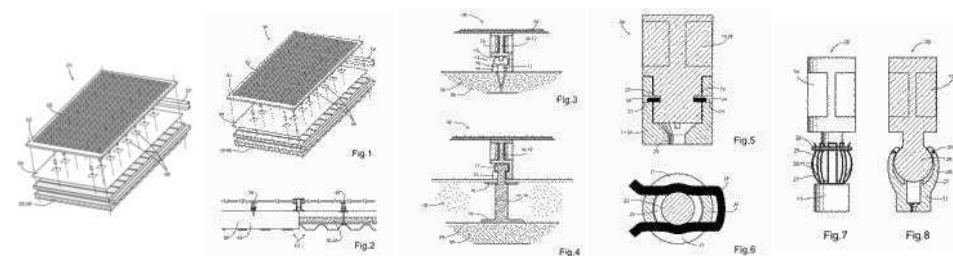
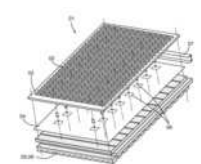
20. Photovoltaic module with a wind suction protection CA2653800

2008-02-21

SOLON\*

2009-08-21 2009-08-21

The module has a photovoltaic panel (2) with a set of solar cell rows, which is firmly and detachably connected with a substrate e.g. facing tile, by connectors. The connectors are spaced apart each other and distributed over a surface of the panel. The connectors are formed as a two-piece wind suction protector (8) whose height is adapted to a preset distance between the panel and substrate. Upper and lower parts (10, 11) of the protector are firmly connected with the panel and substrate, respectively. The upper and lower parts are firmly and detachably connected with each other. An independent claim is also included for a method for manufacturing a photovoltaic module.



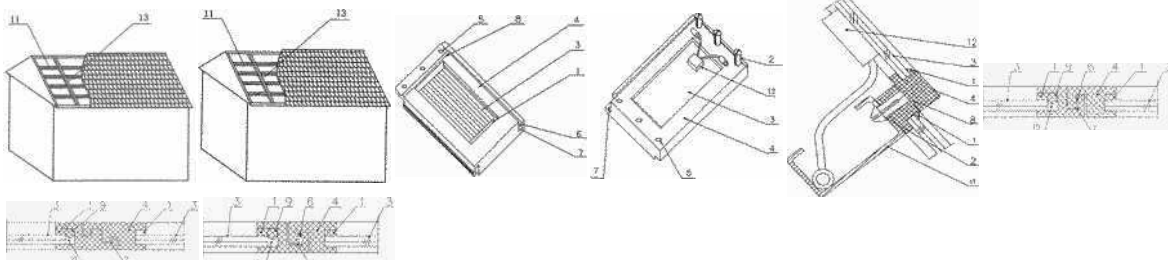
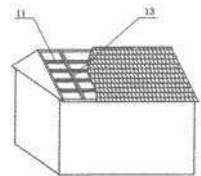
21. Solar photovoltaic roof and function tile CN101591946

2008-05-30

WEIHAI BLUE STAR TERRY PHOTOELECTRIC\*

2009-12-02 2009-12-02

The invention relates to an energy-saving building and building materials, in particular to a solar photovoltaic roof and a function tile. The solar photovoltaic roof is characterized in that a support rod is a hollow rod with an opening arranged at one side and is provided with a plurality of solar photovoltaic generation block function tiles, the side faces of two adjacent function tiles are in cutting graftage by adopting a female groove and a male groove, parallel surfaces of the two adjacent function tiles are connected through a connecting column which is connected with the support rod, a side frame is arranged on each function tile and is internally provided with a photovoltaic cell panel, the photovoltaic cell panel is connected with a terminal box which is provided with a cable and a plug or a socket, a pin hole is arranged at one end of the side frame, a pin column is arranged at the other end of the side frame, and a female groove and a male groove which are mutually connected are respectively connected with both sides of the side frame. The invention is applied to the building roof, has favorable functions of keeping out wind and rain and heat insulation, can enable gentle lights to penetrate through being emitted indoors, can generate power needed by life and work, comprehensively utilizes the building roof to convert broiling sunlight to energy, and has the advantages of convenient installation, firm connection, strong wind and rain resisting ability, long service life, environmental protection, prevention of global warming, and the like.



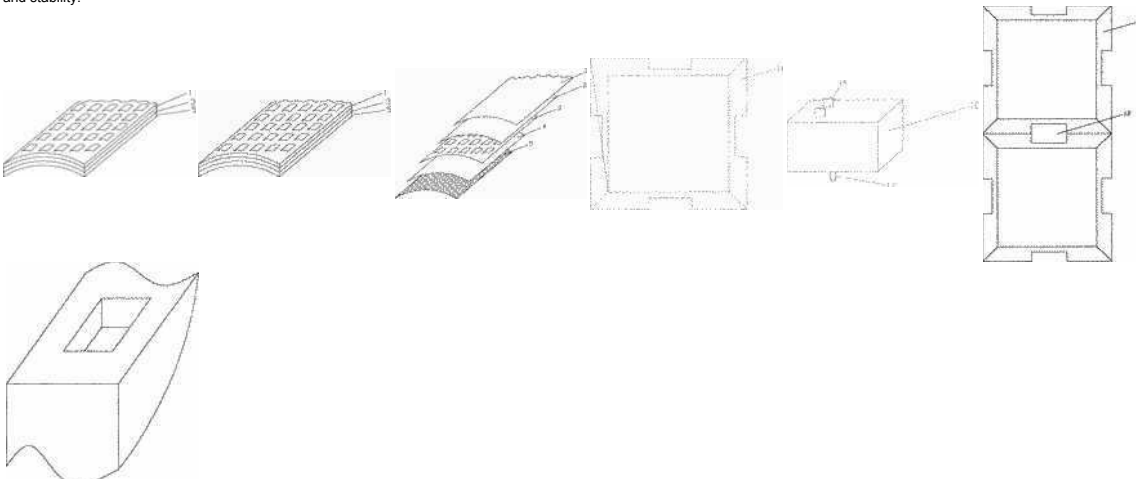
22. Construcstional tile board capable of utilizing solar energy to generate power CN201546389

2009-11-20

DALIAN SENGU NEW ENERGY POWER TECHNOLOGY\*

2010-08-11 2010-08-11

A construcstional tile board capable of utilizing solar energy to generate power comprises low-iron toughened glass and a solar battery cell series-parallel connection group mounted on the lower layer of the low-iron toughened glass. A PET board is installed on the lower layer of the solar battery cell series-parallel connection group, the solar battery cell series-parallel connection group is adhered with the low-iron toughened glass and the PET board via PVB materials, and thin stainless steel frames are mounted on the outside of the overall device. The construcstional ceramic tile board uses the PVB materials with strong adhesion, tenacity and elasticity as an adhesive agent, improves shock absorbing and impact resistant capabilities, ensures zero crack of the overall tile board assembly, and overcomes shortcomings that a traditional device is easy to be aged and yellow. By utilizing the PET materials with excellent physical and chemical properties within a comparatively wide temperature range as a lower bottom board, the construcstional ceramic tile board improves physical and chemical properties, is environmental-friendly, economical and healthy, and meets current building integrated photovoltaic design requirements. Besides, by utilizing the thin stainless steel frames, the construcstional ceramic tile board prolongs service life, and increases wear-resistant and corrosion-resistant properties and stability.



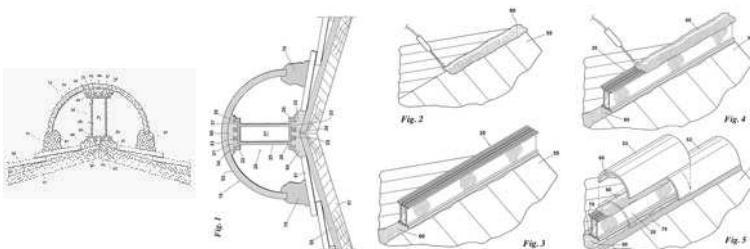
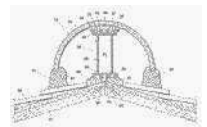
23. Ridge tile or solar panel attachment system for a roof US8104231

2009-12-21

GRABOSKI TIMOTHY MICHAEL

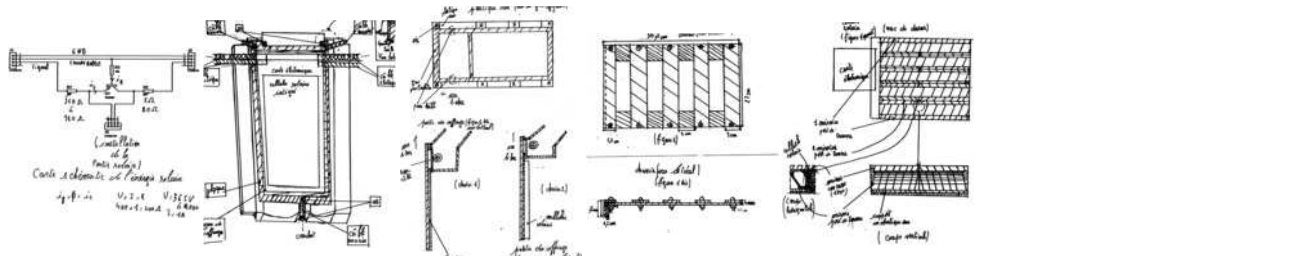
2012-01-31 2012-01-31

An improved solar panel attachment system for a roof and method for its use include a pedestal that has a plurality of protrusions and keyways located along its bottom wall surface and extending along the length of the pedestal. The pedestal is placed into a paddy of foam adhesive laid along a roof underlayment and the keyways receive and engage with the expanding adhesive for bonding the pedestal directly to the roof without the need for mechanical fastening. The protrusions provide spacing between the bottom wall surface and the roof so that an adequate amount of foam adhesive resides between these wall surfaces and those structures. Attaching means are secured to the top wall surface so that the pedestal may be used to securely mount (or secure) a solar panel or other object to a roof.



24. [Electric energy generating device for use in solar roof tile of individual dwelling, has electric energy generating board to receive electricity generating part, solar panel and wind turbine device](#) FR2967432 2010-11-15 NGUYEN KHOA VINH 2012-05-18 2012-05-18

The device has a rigid plastic plate arranged on an upper part of the device. An electronic control board and an electricity generating part are arranged on the plastic plate. A stainless steel frame supports a mass upto 110 kg on entire part of a surface of the generating part. An electric energy generating board receives the electricity generating part, a solar panel and a wind turbine device. The electronic control board controls a short-circuit system of the generating part via a bipolar transistor and three resistors to control current provided by the generating part.



25. [Roof structure, fixture for solar cell module, and method for installing solar cell module](#) WO2011099462 2010-02-13 KANEKA\* 2011-08-18 2011-08-18

It is an object to develop a roof structure having a high water interception, being safe from leaking of rain, and ensuring a certain level of mounting strength even in breaking of one piece of roof members. Solar cell modules (10) are mounted on a fundamental roof structure (3) with slate tiles (roof member) (2) via eaves-side mounting brackets (eaves-side clamps) (5) and intermediate mounting brackets (clamps) (6). The intermediate mounting brackets (6) each are attached to an end portion of a "specific roof member" so that a lower plate (72) is positioned between the "specific roof member" and an "underlying roof member". The lower plate (72) is fixed by a screw or the like driven in a hole (100). The "specific roof member" is arranged over the "underlying roof member" in which the screw is driven, thereby protecting an attaching hole (12) from rainwater seepage. An upper plate 73 overlaps the "specific roof member" with a fastening element (117, 118, 119) driven in the attaching hole (12). An "overlying roof member" is arranged over the "specific roof member", thereby also protecting the attaching hole (12) from rainwater seepage.

