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(54) Title (EN): METHOD AND SYSTEM APPARATUS FOR VERTICAL INSTALLATION OF SOLAR CELL PANEL

(54) Title (FR): PROCÉDÉ ET APPAREIL DE SYSTÈME POUR L'INSTALLATION VERTICALE D'UN PANNEAU DE CELLULES SOLAIRES

(54) Title (KO): 솔라셀 패널의 종방향 설치 방법과 시스템 장치

(57) Abstract:

(EN): The present invention relates to a method and a system apparatus for installing a large number of solar cell panels on a mountain slope. More specifically, there is a problem in that the conventional method for installing a solar cell panel for solar photovoltaic power generation on the ground requires a large area of land and a country having a small area of land cannot construct a solar photovoltaic power plant that can replace a nuclear power plant, and therefore the present invention provides a system apparatus and a method for installing a plurality of solar cell panels in multiple levels in a vertical direction by using an abandoned mountain slope, whereby the present invention relates to an effective method for constructing a large scale solar photovoltaic power generation plant in an abandoned mountain area by increasing land use efficiency, and a system apparatus for applying the method. In addition, provided is a technique which improves solar light condensing efficiency by arbitrarily varying a reflective surface for each frame in a 360 degree direction by means of variable length connecting means between each corner of a solar cell panel frame and a rail; which is stable against strong winds by binding the four axes of the panel; in which maintenance of the panel is simple by lifting the panel with an electric winch between the rails to mount the same or lowering the panel to release the same; and which semi-permanently improves the lifetime of a solar photovoltaic power generation system by replacing the panel.

(FR): La présente invention concerne un procédé et un appareil de système permettant d'installer un grand nombre de panneaux de cellules solaires à flanc de montagne. Plus spécifiquement, il existe un problème selon lequel le procédé classique d'installation d'un panneau de cellules solaires pour la production d'énergie photovoltaïque solaire par terre nécessite un grand territoire et un pays ayant un petit territoire ne peut pas construire d'installation d'énergie photovoltaïque solaire qui peut remplacer une centrale nucléaire, et, par conséquent, la présente invention concerne un appareil de système et un procédé permettant d'installer une pluralité de panneaux de cellules solaires sur de multiples niveaux dans une direction verticale à l'aide d'un flanc de montagne abandonné. La présente invention propose ainsi un procédé efficace permettant de construire une installation de production d'énergie photovoltaïque solaire à grande échelle sur un flanc de montagne abandonné par augmentation de l'efficacité d'utilisation du terrain, et un appareil de système permettant d'appliquer le procédé. De plus, l'invention concerne une technique qui améliore l'efficacité de condensation de lumière solaire par variation arbitraire d'une surface réfléchissante pour chaque cadre dans une direction de 360 degrés à l'aide d'un moyen de liaison à longueur variable entre chaque coin d'un cadre de panneau de cellule

solaire et un rail; qui est stable face à des vents forts en liant les quatre axes du panneau; dans laquelle l'entretien du panneau est simple par soulèvement du panneau au moyen d'un treuil électrique entre les rails pour le monter ou par abaissement du panneau pour le relâcher; et qui améliore de manière semi-permanente la durée de vie d'un système de production d'énergie photovoltaïque solaire en remplaçant le panneau.

(KO): 본 발명은 산비탈경사지에 대량의 솔라셀 패널을 설치하는 방법과 시스템장치에 관한 것으로, 더욱 상세하게는 지상에서 태양광 발전을 위한 솔라셀 패널을 설치하는 기존의 방법은 넓은 토지가 필요하며 국토의 면적이 좁은 국가에서 원전을 대체할 수 있는 태양광발전소를 건립할 수 없는 문제점이 있으므로 본 발명은 버려진 산비탈 경사지를 이용하여 다수개의 솔라셀 패널을 상하 종방향으로 다단 설치하는 시스템 장치와 방법을 제공함으로써 토지 이용효율을 높여, 버려진 산지에 대규모 태양광발전소를 건립하는 효과적인 방법과 그 응용 시스템장치에 관한 것이다. 아울러, 솔라셀 패널 프레임의 각 코너와 레일 간에 길이 가변형 연결수단으로 프레임별 반사면을 360도 방향으로 임의 가변 하여 태양광 집광효율을 향상시키고 패널의 4축을 결속하여 강풍에 안전하며, 레일간의 사이에서 전동 원치로 패널을 끌어올려 거치하거나 끌어내려 해제하여 패널의 보수유지가 간단하며 패널교체로 태양광 발전시스템의 수명을 반영구적으로 향상시키는 기술을 제공한다.

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