Empower Your Business with Our Innovative Technology

PHOTOVOLTAIC PLANT

Discover a unique opportunity to access a patented cutting-edge technology designed to revolutionize the waste treatment industry with the production of advanced biofuels.

With our patent, we are ready to offer you a license that will allow you to fully exploit this innovation and dominate the market

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Patent Overview

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Nature of the Patent

A patent is an exclusive right granted to an invention, which prevents others from exploiting it without authorization. It is a valid legal instrument to protect innovation.

Importance of Patent

The patent gives the owner control over the use of the invention and allows him to profit from it through the sale of licenses. It is essential to valorize and monetize innovation.

Sale of Licenses

Selling licenses allows third parties to use the patented invention in exchange for a fee. It is an effective way to expand the market and generate additional revenue.

Patent Registration Process

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Legal Protection

Once granted, a patent provides the owner with legal protection against unauthorized use of the invention by third parties. It is essential for defending intellectual property rights.

Patent Application

The process begins with filing a patent application with the relevant Patent Office. It is essential to provide a detailed description of the invention and meet the patentability requirements.

Examination and Concession

After filing, the Patent Office examines the invention for novelty and applicability. If it meets the criteria, the patent is granted, giving the owner exclusive rights.

Benefits for the Licensee:

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Exclusive Access

Get exclusive access to technology that has already been tested and validated, allowing you to build new plants with a significant competitive advantage

R&D Cost Savings

Drastically reduce development time and costs by accessing market-ready technology.

Revenue Increase

Our technology has the potential to expand the market share in the field of waste treatment through a green process.

Full Support

We offer technical support and consulting throughout the implementation process, ensuring a smooth transition.

Licensing Strategies

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Exclusive

Grant a single exclusive license to a selected partner, ensuring a high level of control and visibility on the market.

Non-Exclusive

Offer non-exclusive licenses to multiple parties, allowing for greater dissemination of the invention and greater revenue generation.

Sublicense

Allowing the license holder to grant sublicenses to third parties, further expanding the scope and use of the invention.

INVENTORS

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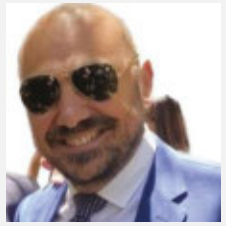

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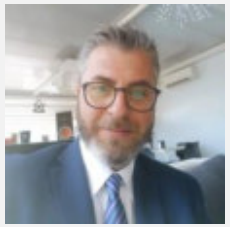
TUZZOLINO GAETANO
ENGINEER



CALOGERO GATTUSO
ENGINEER

ABSTRACT

Our patent includes an exclusive technology for the construction of photovoltaic systems in which, while maintaining the conventional structure of spaced arrays to avoid shading problems, efficiency and productivity are significantly increased compared to known photovoltaic systems.

VALIDATION OF EUROPEAN APPLICATION

COUNTRY	NUMBER	PRESENTATION DATE	GRANTING DATE	PATENT NUMBER
GERMANY	DE602015006043.1	13/02/2018		
FRANCE	EP3097592	30/11/2016		
UNITED KINGDOM	EP15707798.3	23/01/2015		
SPAIN	300263971	07/02/2018		
BELGIUM	100040496	22/01/2018		

ITALIAN PRIORITY

REQUEST N. TO2014A000050

PRESENTATION DATE:

23/01/2014

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PATENT N. 0001421866

INTERNATIONAL APPLICATION VALIDATION

COUNTRY	NUMBER	PRESENTATION DATE	GRANTING DATE	PATENT NUMBER
CHINA	10/10/2016	GRANTED	07/04/2020	ZL201580014692.8
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CERTIFICATES

ARCHIMEDE
SISTEMI INDUSTRIALI SRLS

ITALY

Ministero dello Sviluppo Economico
Direzione generale per la lotta alla contraffazione
Ufficio Italiano Brevetti e Marchi

ATTESTATO DI BREVETTO PER INVENZIONE INDUSTRIALE

N. 0001421866

Il presente brevetto viene concesso per l'invenzione della domanda sotto specificata:

num. domanda	anno	C.C.I.A.A.	data pres. domanda	classifica
000050	2014	TORINO	23/01/2014	H01L31 052

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Roma, 11/04/2016

IL DIRIGENTE
Dr.ssa Loredana Guglielmetti

- 1 di 1 -

EUROPE

Europäisches Patentamt
European Patent Office
Office européen des brevets

URKUNDE **CERTIFICATE** **CERTIFICAT**

Es wird hiermit bescheinigt, dass für die in der Patentschrift beschriebene Erfindung ein europäisches Patent für die in der Patentschrift bezeichneten Vertragstaaten erteilt worden ist.

It is hereby certified that a European patent has been granted in respect of the invention described in the patent specification for the Contracting States designated in the specification.

Il est certifié qu'un brevet européen a été délivré pour l'invention décrite dans le fascicule de brevet, pour les Etats contractants désignés dans le fascicule de brevet.

Europäisches Patent Nr. / European patent No. / Brevet européen n°
3097592

Patentinhaber / Proprietor of the patent / Titulaire du brevet

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Benoît Battistelli
Président des Europäischen Patentamts
President of the European Patent Office
Président de l'Office européen des brevets

CHINA

(19)中华人民共和国国家知识产权局

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H02S 20/10(2014.01)
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WO 2009105268 A2,2009.08.27,
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CN 103155172 A,2013.06.12,
CN 103516303 A,2014.01.15,
审查员 何大波

(54)发明名称
光伏设备
(57)摘要
本发明描述了一种光伏设备(1;1';1'';1'''),其包括设置在相对于彼此间隔开的列(2)中的多个光伏模块(PV),其中每列(2)光伏模块(PV)均具有相对于参考方向的第一指定倾斜角(α-1),光伏模块(PV)的每个列(2)与同其相邻地设置的移动式反射装置(RF)的列(4;4';4'')相关联,并且移动式反射装置(RF)的至少一个列(4;4';4'')位于光伏模块的接连的列(2)之间的空间内,每列移动式反射装置(RF)均具有相对于参考方向的第二指定倾斜角(α2),彼此相关联的光伏模块(PV)的列(2)以及移动式反射装置(RF)的列(4;4';4'')包括朝向彼此设置的各自的前侧表面(12,14;14'',并且每列移动式反射装置(RF)均能通过第二倾斜角(α2)的变化而定向,以便拦截入射太阳辐射(ISR),并朝向相关联的列(2)中的光伏模块(PV)反射太阳辐射(RSR)。

CN 106464204 B

CERTIFICATES

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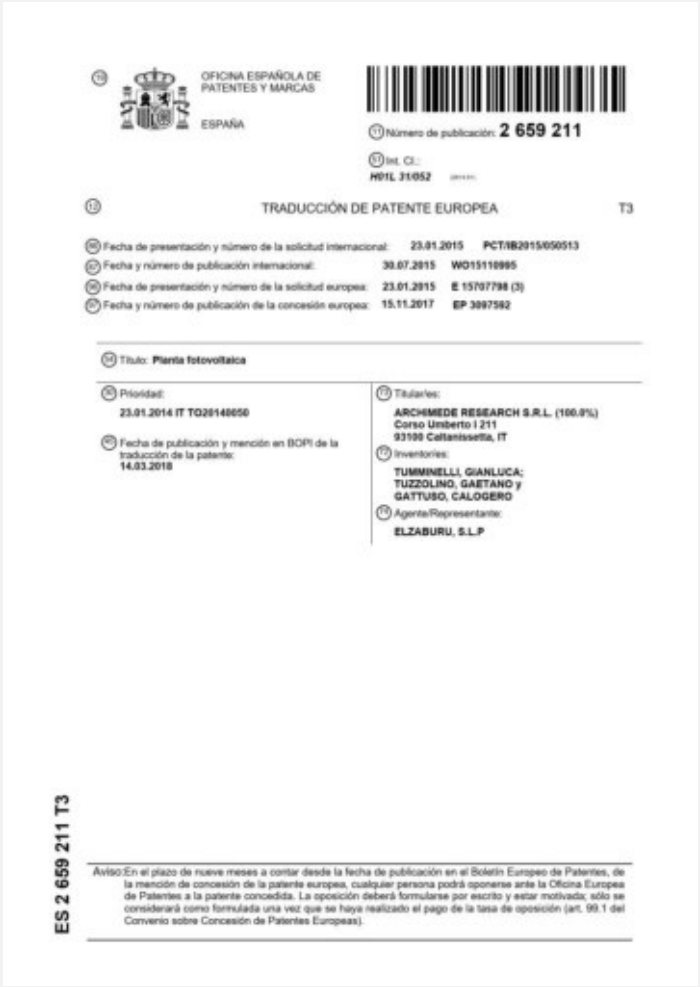
SPAIN



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ES 2 659 211 T3

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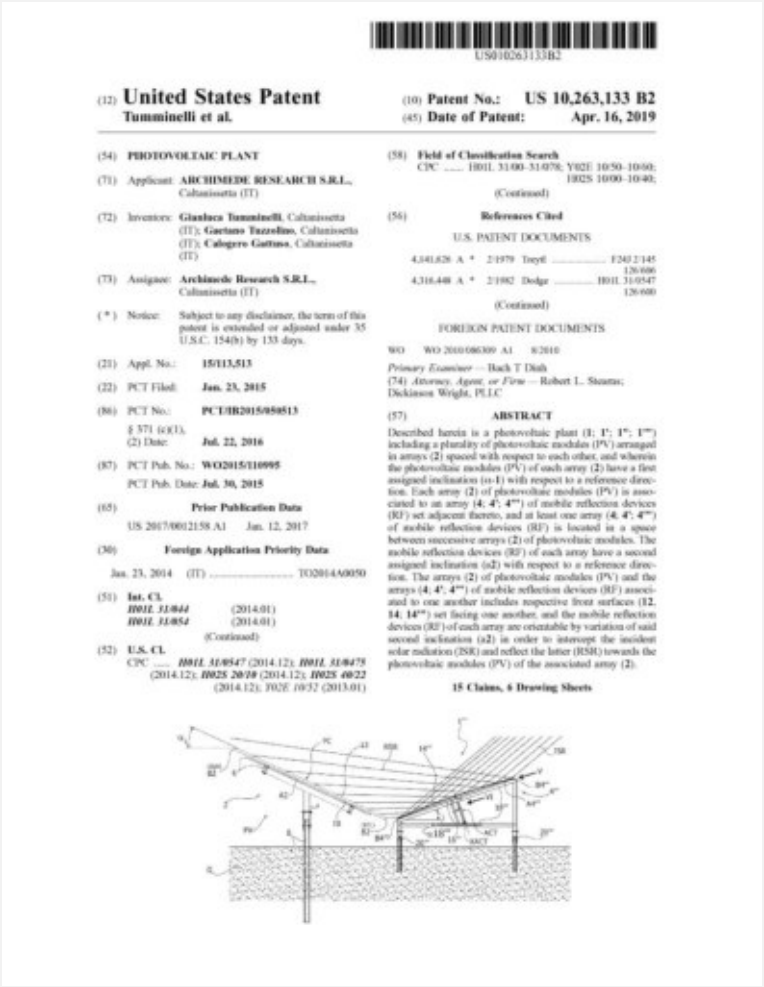
USA



US010263133B2

(12) **United States Patent**
Tumminelli et al.

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(45) **Date of Patent: Apr. 16, 2019**

(54) **PHOTOVOLTAIC PLANT**

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(73) Assignee: **Archimede Research S.R.L.**, Caltanissetta (IT)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 133 days.

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H01L 31/044 (2014.01)
H01L 31/054 (2014.01)
(Continued)

(52) **U.S. Cl.**
CPC ***H01L 31/0547*** (2014.12); ***H01L 31/0475*** (2014.12); ***H02S 20/10*** (2014.12); ***H02S 40/22*** (2014.12); *Y02E 10/52* (2013.01)

(58) **Field of Classification Search**
CPC H01L 31/00–31/078; Y02E 10/50–10/60; H02S 10/00–10/40;
(Continued)

(56) **References Cited**

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Primary Examiner — Bach T Dinh
(74) *Attorney, Agent, or Firm* — Robert L. Stearns; Dickinson Wright, PLLC

(57) **ABSTRACT**

Described herein is a photovoltaic plant (1; 1'; 1''; 1''') including a plurality of photovoltaic modules (PV) arranged in arrays (2) spaced with respect to each other, and wherein the photovoltaic modules (PV) of each array (2) have a first assigned inclination (α1) with respect to a reference direction. Each array (2) of photovoltaic modules (PV) is associated to an array (4; 4'; 4''') of mobile reflection devices (RF) set adjacent thereto, and at least one array (4; 4'; 4''') of mobile reflection devices (RF) is located in a space between successive arrays (2) of photovoltaic modules. The mobile reflection devices (RF) of each array have a second assigned inclination (α2) with respect to a reference direction. The arrays (2) of photovoltaic modules (PV) and the arrays (4; 4'; 4''') of mobile reflection devices (RF) associated to one another includes respective front surfaces (12, 14; 14''') set facing one another, and the mobile reflection devices (RF) of each array are orientable by variation of said second inclination (α2) in order to intercept the incident solar radiation (ISR) and reflect the latter (RSR) towards the photovoltaic modules (PV) of the associated array (2).

15 Claims, 6 Drawing Sheets

PATENT DESCRIPTION

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The purpose of the invention is achieved by a photovoltaic system having the characteristics outlined in one or more of the following claims, which form an integral part of the technical teaching provided here in relation to the invention. Specifically, the purpose of the invention is achieved by a photovoltaic system including a plurality of photovoltaic modules arranged in arrays spaced apart from each other, and in which the photovoltaic modules of each array have a first assigned inclination relative to a reference direction. The photovoltaic system is characterized by the fact that each array of photovoltaic modules is associated with an adjacent array of mobile reflection devices, and in which at least one array of mobile reflection devices is positioned in the space between successive arrays of photovoltaic modules. The mobile reflection devices of each array have a second inclination relative to a reference direction, and the arrays of photovoltaic modules and the associated arrays of mobile reflection devices include respective front surfaces arranged facing each other. The mobile reflection devices of each array are adjustable by varying said second inclination to intercept incoming solar radiation and reflect it towards the photovoltaic modules of the associated array.

PATENT DRAWINGS

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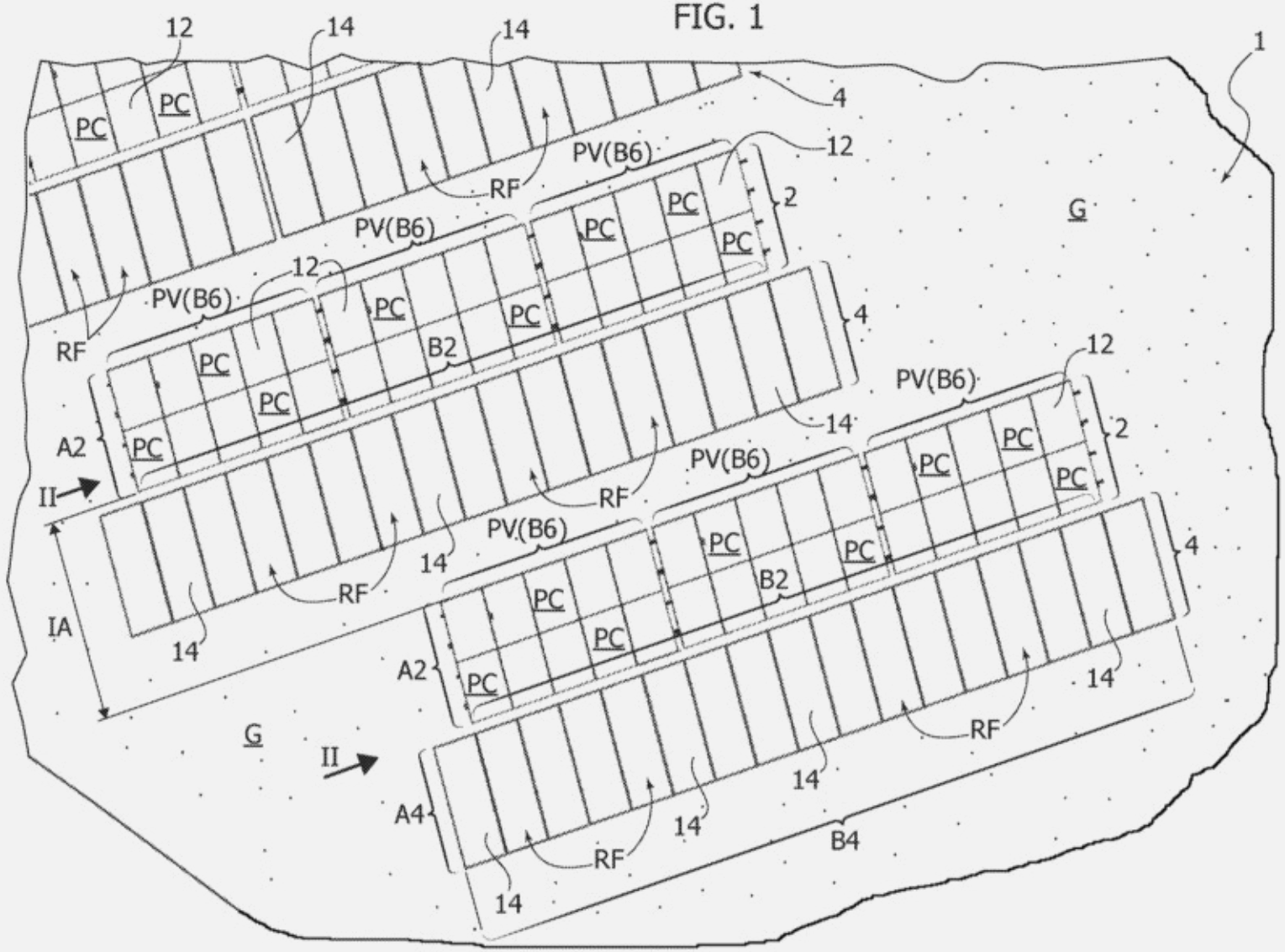
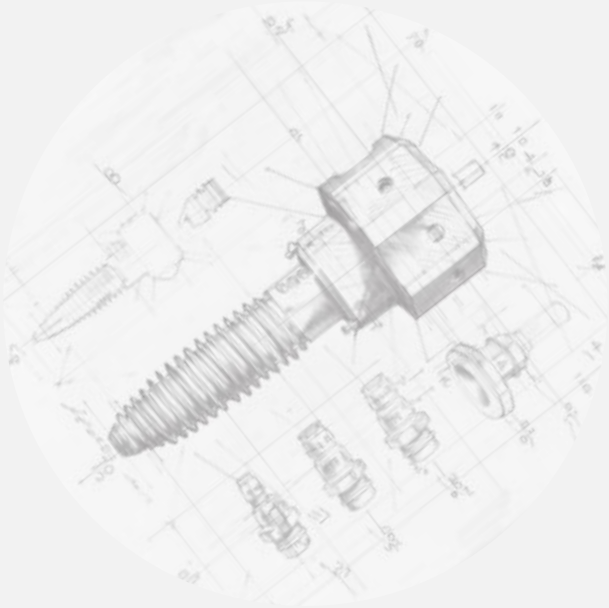
FIG. 1





PATENT DRAWINGS

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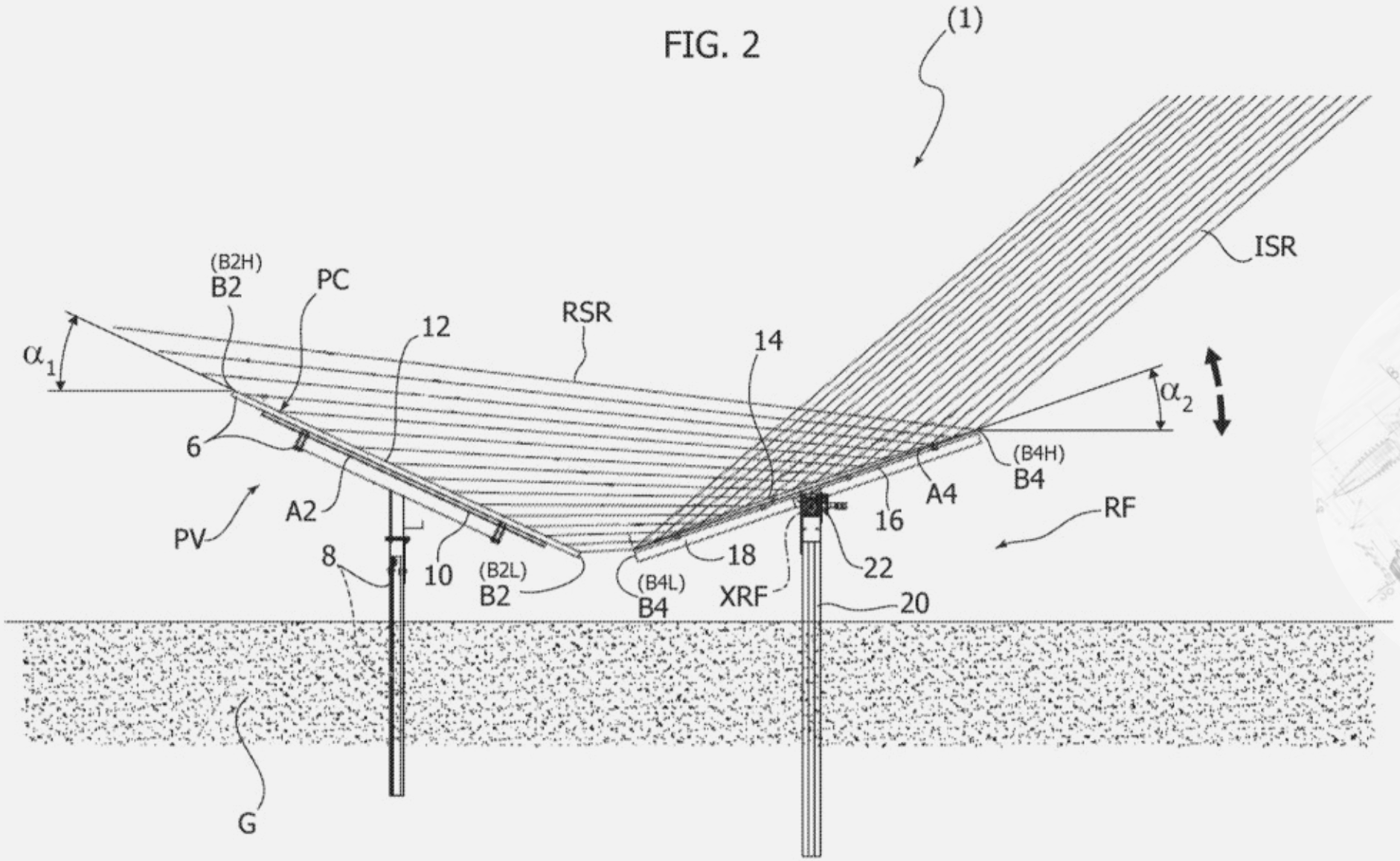
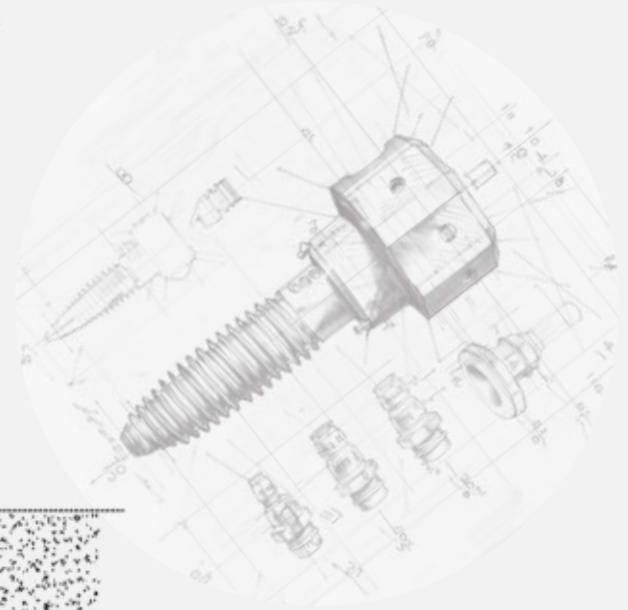
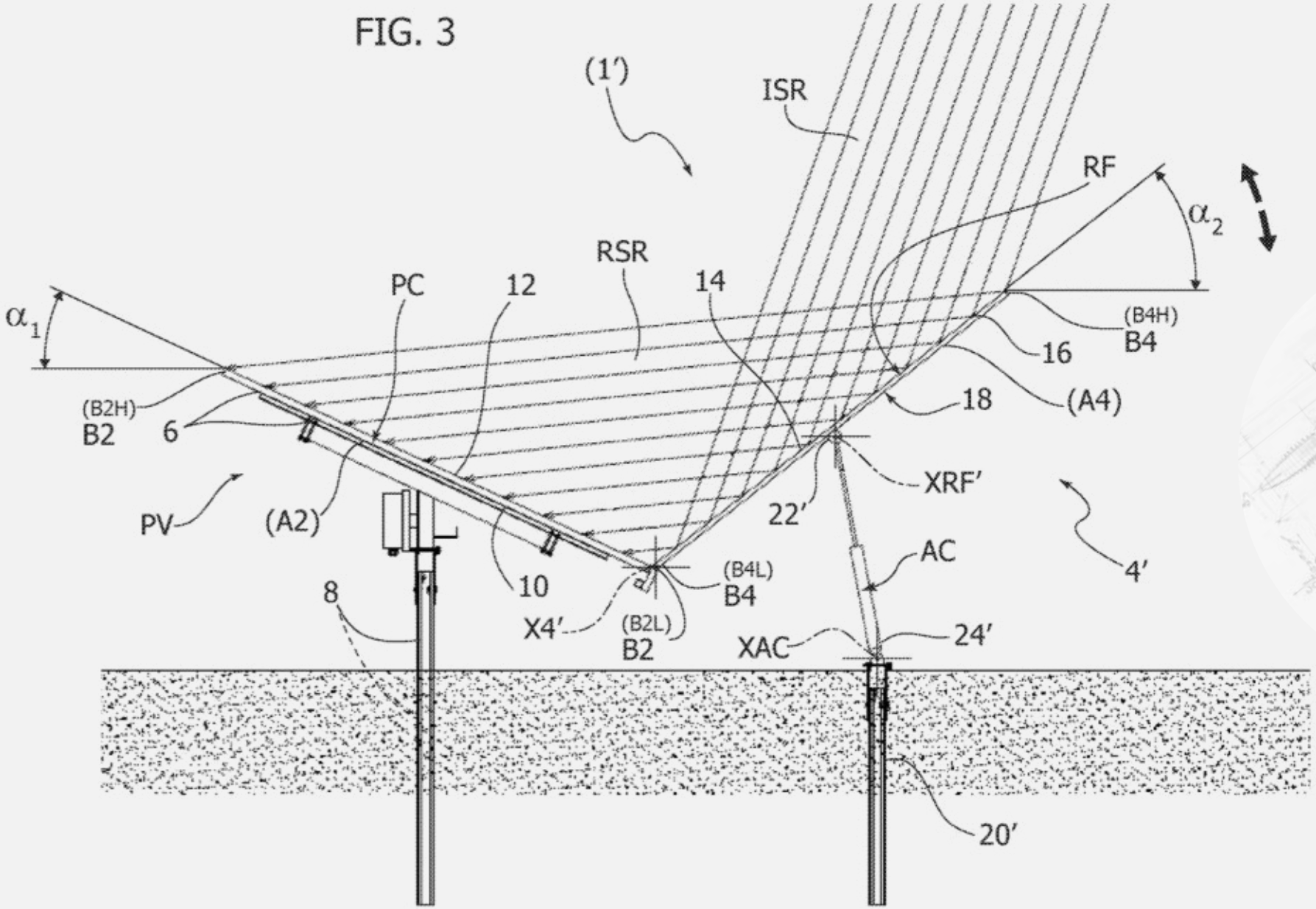
FIG. 2

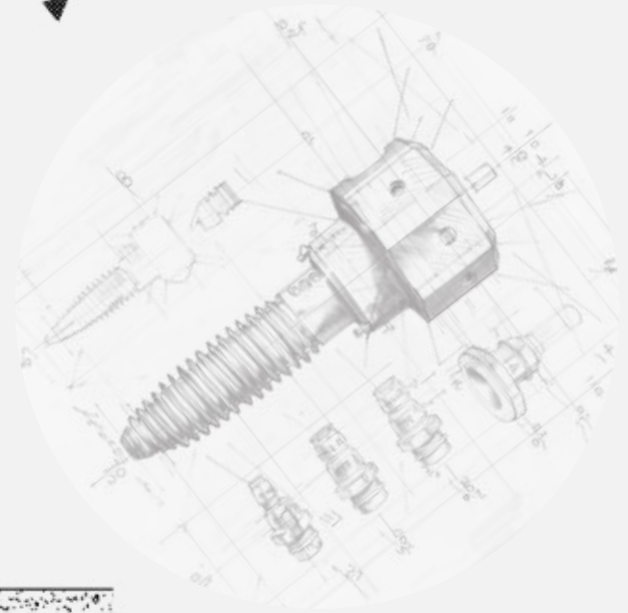




PATENT DRAWINGS

FIG. 3





PATENT DRAWINGS

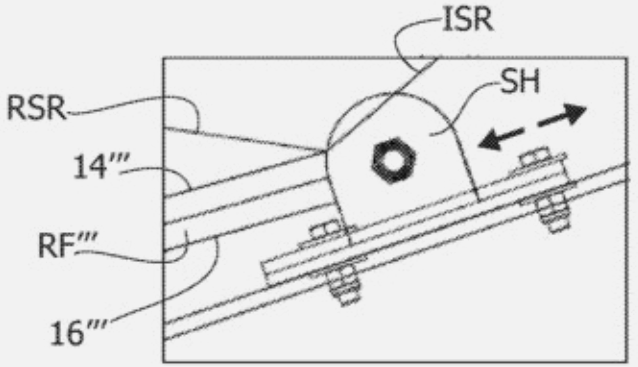
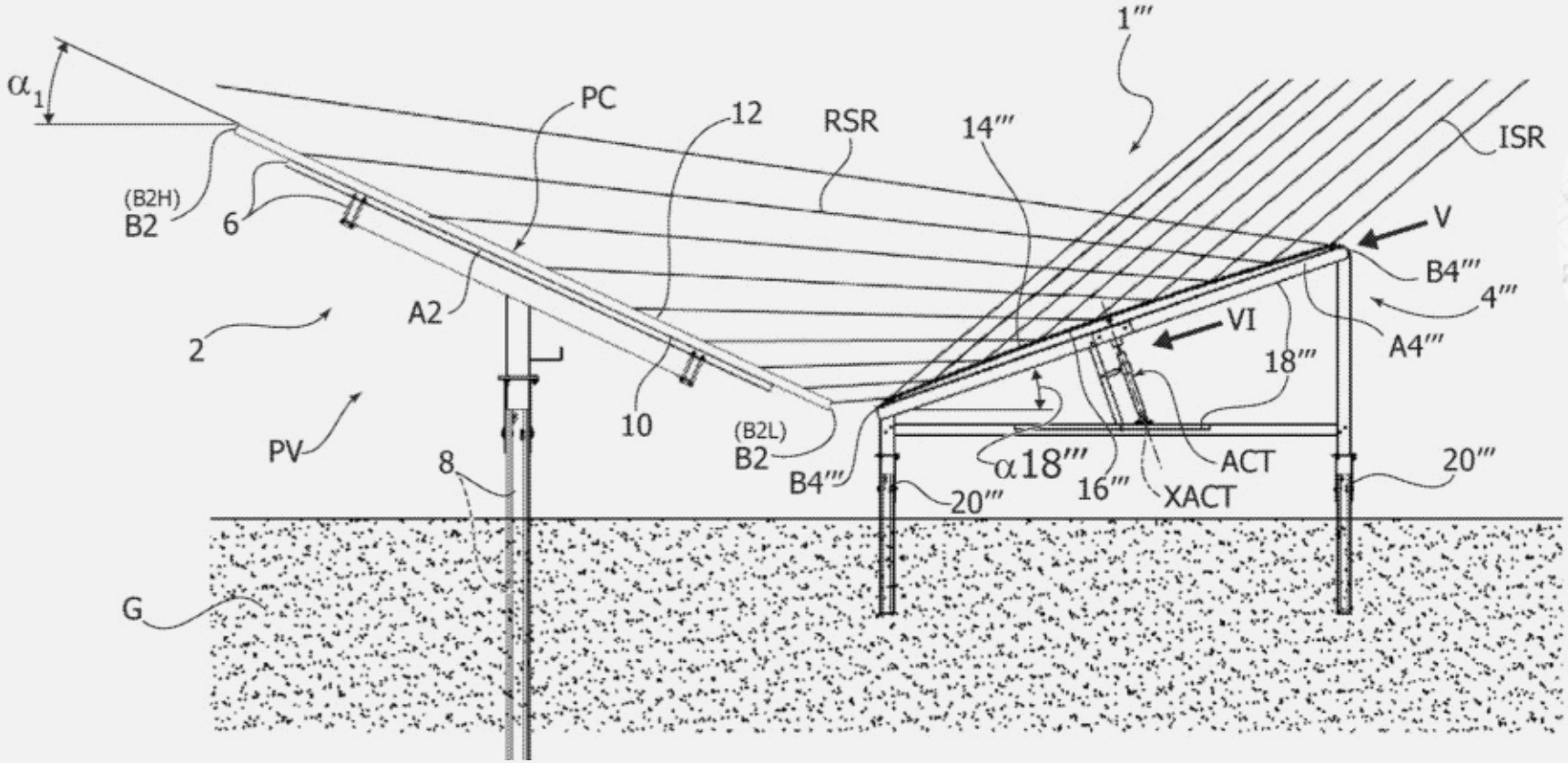
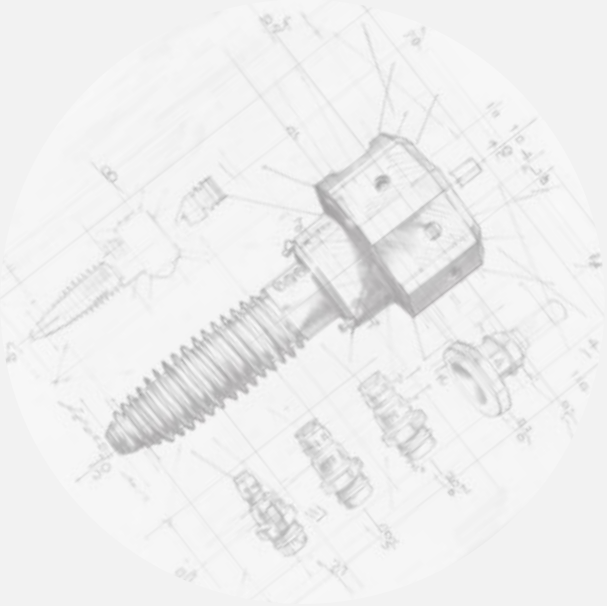


FIG. 5A

FIG. 5





PATENT DRAWINGS

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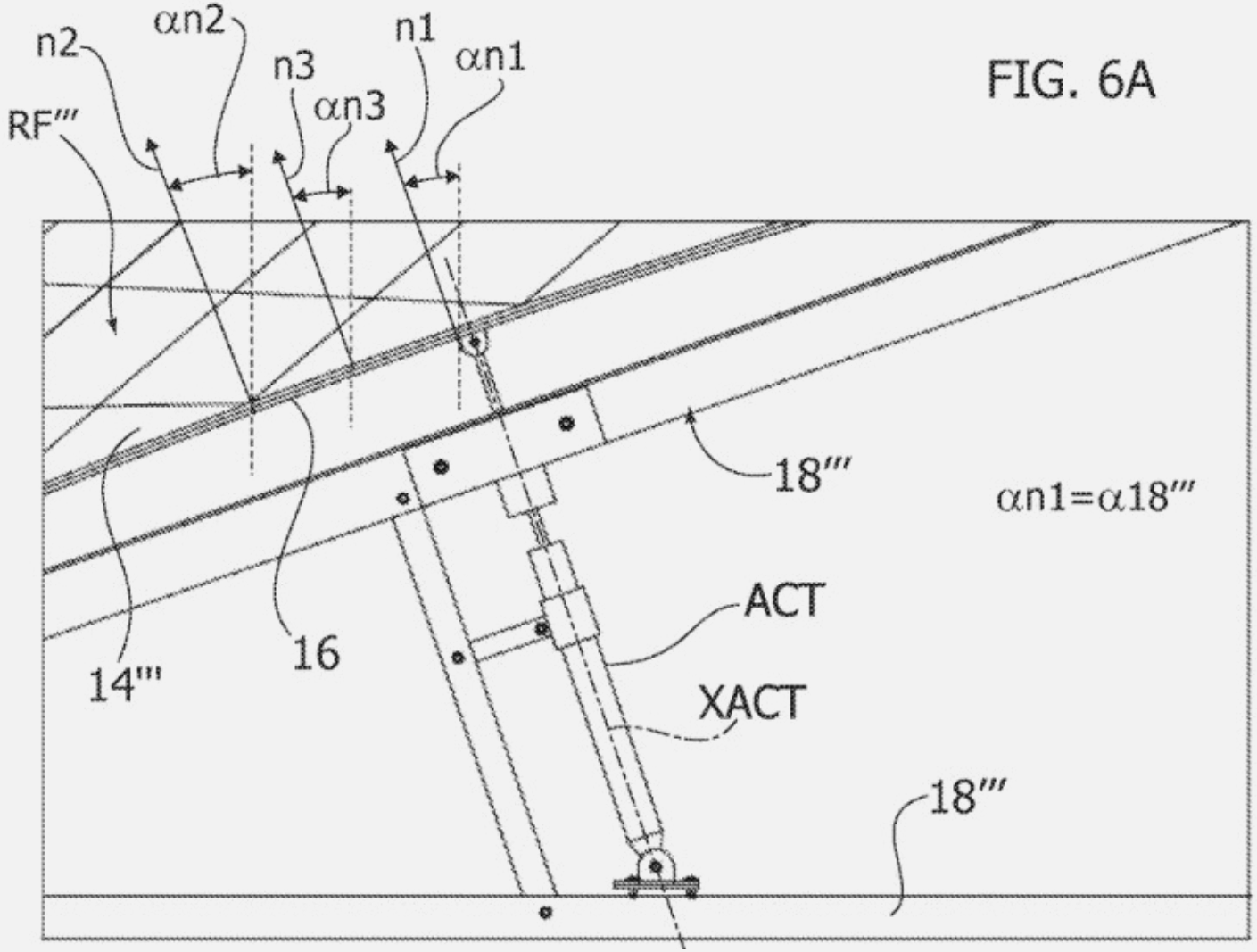
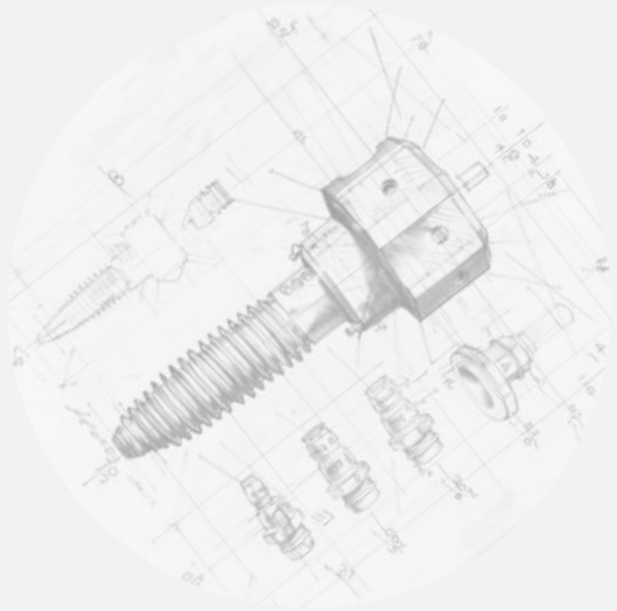


FIG. 6A



PATENT DRAWINGS

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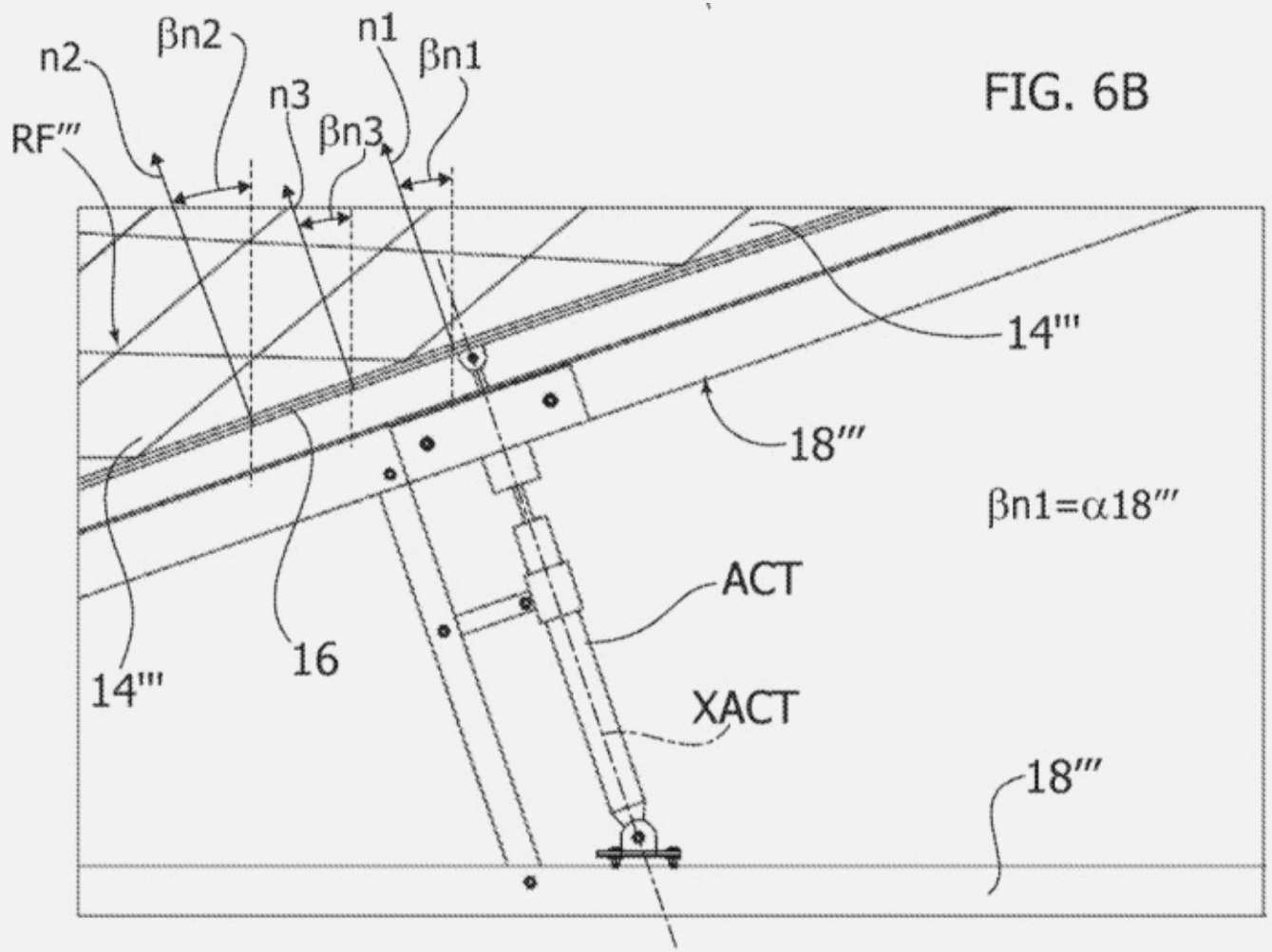
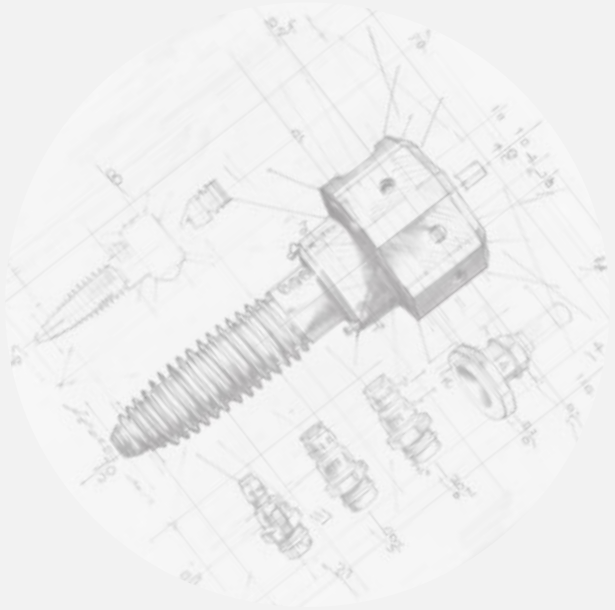


FIG. 6B



Known technique and general technical problem

The technique currently adopted for constructing photovoltaic systems involves the installation of a plurality of arrays of photovoltaic modules, each arranged with an assigned inclination relative to a reference direction (e.g., horizontal or the ground) so as to capture solar radiation in a normal or nearly normal direction for the greatest possible number of hours. Solutions can be provided in which all the photovoltaic modules in the same array have the same assigned inclination or have inclinations that vary to some extent to maximize the absorption of energy from solar radiation. However, installing photovoltaic modules with an assigned inclination means that they are mostly detached from the ground, resulting in shadows of varying lengths depending on the inclination of the sun's rays. This requires arranging the arrays of photovoltaic modules with wide, unobstructed corridors between them to avoid having the photovoltaic modules of one array cast their shadow on the photovoltaic modules of the adjacent array, thereby reducing their efficiency and decreasing the productivity of the system.

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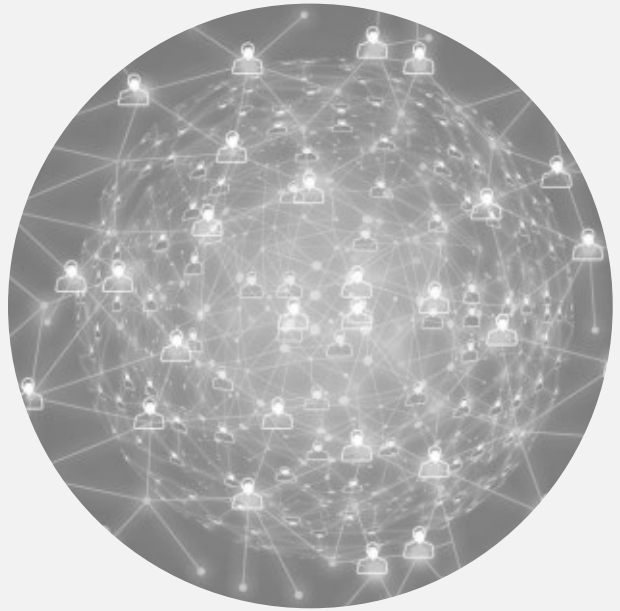

Known technique and general technical problem

While on the one hand this minimizes the shading phenomenon mentioned above, on the other hand, it results in a significant disadvantage in terms of land use: in other words, the arrangement of wide open corridors between the rows of photovoltaic modules drastically reduces the portion of land that can be used for the installation of photovoltaic modules in relation to the total surface area of the land on which the plant is located, with obvious economic disadvantages. In other words, a considerable portion of the land—the area constituted by the corridors between the rows—remains essentially unused and unproductive as it is solely intended to receive the shadows of the photovoltaic modules from one row.

Field of Application

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The invention was developed with particular reference to existing photovoltaic systems where the plant's producibility is to be increased. Depending on the orography of the land where the photovoltaic system is installed and its geometric regularity, an increase in the plant's producibility could be obtained from a minimum of 25% to a maximum of 40%.

The technology developed in-house involves the installation of an array of reflectors placed in front of an array of photovoltaic modules.

By exploiting the physical principles of reflection, the solar radiation incident on the reflecting surface will be projected onto the photovoltaic modules. This, overlapping with the incident solar radiation, already present, on the modules, will increase their average value, consequently increasing the production of electrical energy.

Interested Potential Users

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- EPC Photovoltaic systems
- O&M Photovoltaic systems
- Renewable investors with existing systems to be made more efficient
- Tracker and tracking factories
- Inverter and electrical equipment factories

Conclusions

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Summary of Key Points

Patenting and licensing offer unique opportunities to leverage innovation and generate revenue. Maximizing the benefits of an effective licensing strategy is critical.

Action for the Valorization

To fully capitalize on patent and licensing, it is essential to develop and implement a targeted strategy, taking advantage of the various opportunities offered by the market.

Maximize Profits

Optimizing the use of patents and licenses allows you to maximize profits and effectiveness on the market, ensuring a competitive advantage.