



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/700,436	03/13/2018	9917546	6445-007	4042

24112 7590 02/21/2018
COATS & BENNETT, PLLC
1400 Crescent Green, Suite 300
Cary, NC 27518

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 173 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Rovshan Sade, Raleigh, NC;

The United States represents the largest, most dynamic marketplace in the world and is an unparalleled location for business investment, innovation, and commercialization of new technologies. The USA offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to encourage and facilitate business investment. To learn more about why the USA is the best country in the world to develop technology, manufacture products, and grow your business, visit SelectUSA.gov.

IR103 (Rev. 10/09)

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax **(571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

24112 7590 11/08/2017
COATS & BENNETT, PLLC
1400 Crescent Green, Suite 300
Cary, NC 27518

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/700,436	04/30/2015	Rovshan Sade	6445-007	4042

TITLE OF INVENTION: SOLAR TRACKER

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	02/08/2018

EXAMINER	ART UNIT	CLASS-SUBCLASS
SAVANI, AVINASH A	3749	126-600000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1. **COATS & BENNETT, PLLC**

2. _____

3. _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☒ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number **18-1167** (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature **/David E. Bennett, Reg. No. 32,194/**

Date **January 29, 2018**

Typed or printed name **David E. Bennett**

Registration No. **32,194**

Page 2 of 3

Electronic Patent Application Fee Transmittal				
Application Number:		14700436		
Filing Date:		30-Apr-2015		
Title of Invention:		SOLAR TRACKER		
First Named Inventor/Applicant Name:		Rovshan Sade		
Filer:		David E. Bennett/Leslie Ruckdeschel		
Attorney Docket Number:		6445-007		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
UTILITY APPL ISSUE FEE	2501	1	480	480

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				480

Electronic Acknowledgement Receipt	
EFS ID:	31631226
Application Number:	14700436
International Application Number:	
Confirmation Number:	4042
Title of Invention:	SOLAR TRACKER
First Named Inventor/Applicant Name:	Rovshan Sade
Customer Number:	24112
Filer:	David E. Bennett/Leslie Ruckdeschel
Filer Authorized By:	David E. Bennett
Attorney Docket Number:	6445-007
Receipt Date:	29-JAN-2018
Filing Date:	30-APR-2015
Time Stamp:	14:09:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	EFT
Payment was successfully received in RAM	\$480
RAM confirmation Number	013018INTEFSW14102500
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	Issue_Fee_Transmittal.pdf	1148620	no	1
			a24bc21e7aa9aad26d7370461a6b33fa75b4828d		
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30250	no	2
			5ded84909e1725dc91a58e82699be4bbfca385ba		
Warnings:					
Information:					
Total Files Size (in bytes):			1178870		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

24112 7590 11/08/2017
COATS & BENNETT, PLLC
1400 Crescent Green, Suite 300
Cary, NC 27518

EXAMINER

SAVANI, AVINASH A

ART UNIT

PAPER NUMBER

3749

DATE MAILED: 11/08/2017

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/700,436	04/30/2015	Rovshan Sade	6445-007	4042

TITLE OF INVENTION: SOLAR TRACKER

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$480	\$0	\$0	\$480	02/08/2018

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

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Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax **(571)-273-2885**

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CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

24112 7590 11/08/2017
COATS & BENNETT, PLLC
1400 Crescent Green, Suite 300
Cary, NC 27518

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(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/700,436	04/30/2015	Rovshan Sade	6445-007	4042

TITLE OF INVENTION: SOLAR TRACKER

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EXAMINER	ART UNIT	CLASS-SUBCLASS
SAVANI, AVINASH A	3749	126-600000

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2. For printing on the patent front page, list

- (1) The names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The director is hereby authorized to charge the required fee(s), any deficiency, or credits any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ Applicant certifying micro entity status. See 37 CFR 1.29
- ☐ Applicant asserting small entity status. See 37 CFR 1.27
- ☐ Applicant changing to regular undiscounted fee status.

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NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/700,436	04/30/2015	Rovshan Sade	6445-007	4042
24112 7590 11/08/2017 COATS & BENNETT, PLLC 1400 Crescent Green, Suite 300 Cary, NC 27518			EXAMINER SAVANI, AVINASH A	
			ART UNIT	PAPER NUMBER
			3749	

DATE MAILED: 11/08/2017

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 14/700,436 Examiner AVINASH SAVANI	Applicant(s) SADE, ROVSHAN Art Unit 3749 AIA (First Inventor to File) Status No
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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 10/27/2017.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1, 3, 4, 12 and 16. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some *c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date ____ 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date ____	5. ☐ Examiner's Amendment/Comment 6. ☐ Examiner's Statement of Reasons for Allowance 7. ☐ Other ____
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/AVINASH SAVANI/ Primary Examiner, Art Unit 3749	
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L5	245	solar and base and frame and panel and actuat\$3 and bracket and ballast	US-PGPUB; USPAT; USOCR	OR	ON	2017/11/03 11:39
S2	18	solar and (frame same (rotat\$4 with panel) same bracket same (central or spine))	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 12:47
S3	27	("20040195487" "20090134291" "20090293861" "20100071684" "20100313878" "2061336" "2859745" "3106201" "4063963" "4178913" "4203427" "4226256" "4644933" "5632480" "5633891" "5916047" "6105316" "6494445" "6563040" "6616278" "7884279" "7898212" "8492645" "8707949").PN. OR ("9057546").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 12:48
S4	22	("4235222" "5622078").PN. OR ("7240674").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:01
S5	3	("6058930" "7240674" "7554030").PN. OR ("8136518").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:03
S6	87	(solar near5 track\$3) same (panel with bracket)	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:04
S7	19	("20020066473" "20040025931" "20040055632" "20060151022" "20070204860" "20070240278" "20070295382" "20080163864" "20090038672" "20090223510" "20090241994" "20090266353" "20090288679" "20090288691" "20100000570" "4119863" "4297990" "4432341" "5191875").PN. OR ("9016292").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:06
S8	28	("20060118105" "20060118162" "20070039610" "20070051401" "20070215199" "20070235266" "20080000514" "20080224107" "20090165841" "3611453" "3613659" "4129360" "4145021" "4291677" "4297521" "4351319" "4421943" "4649899" "4700690" "5613244" "5632823" "5961738" "6037535" "6423895" "6796246").PN. OR	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:31

		("8469022").URPN.				
S9	13	(solar with track\$3) same (removable with panel)	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:34
S10	41	126/627.cds.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:41
S11	22	(solar with frame) and ((removable with panel) same bracket)	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:46
S12	2816	136/246.cds.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 14:10
S13	117	136/246.cds. and (bracket same panel same solar)	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 14:10
S14	60	("4211211" "4441143" "4630791" "5121307" "5149188" "5172711" "5317145" "6060658" "6106970" "6123067" "6455767").PN. OR ("6930237").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 14:43
S15	69	("4223174" "4864317" "5317145").PN. OR ("6123067").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 14:49
S16	1	14/700436	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/11 08:57
S17	27	("2061336" "20090134291" "4063963" "6105316" "20090293861" "4178913" "5633891" "6494445" "7898212" "20100071684" "4644933" "8707949" "5632480" "6563040" "6616278" "2859745" "20040195487" "20100313878" "3106201" "4203427" "8492645" "4226256" "5916047" "7884279").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/12 08:44
S18	4	12/830907	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/12 09:11
S19	1	14/700413	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/12 09:17
S20	350	f16m11/06.cpc.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/12 09:43
S21	50	(solar with frame) same channel same beam	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/07/25 14:43

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	6	solar and base and frame and panel and spine and actuat\$3 and bracket and slot and ballast	USPAT	OR	ON	2017/11/03 11:39
L2	12	solar and base and frame and panel and spine and actuat\$3 and bracket and slot	USPAT	OR	ON	2017/11/03 11:39
L3	6	solar and base and frame and panel and spine and actuat\$3 and bracket and ballast	USPAT	OR	ON	2017/11/03 11:39
L4	97	solar and base and frame and panel and actuat\$3 and bracket and ballast	USPAT	OR	ON	2017/11/03 11:39

11/ 3/ 2017 11:43:30 AM**C:\ Users\ asavani\ Documents\ EAST\ Workspaces\ 14700436SlrTrckr.wsp**

OK TO ENTER: /A.A.S/

11/03/2017

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Rovshan Sade	)	
	)	
Serial No.: 14/700,436	)	
	)	Examiner: Avinash A. Savani
Filed: April 30, 2015	)	
	)	Group Art Unit: 3749
For: Solar Tracker	)	
	)	Confirmation No.: 4042
Docket No: 6445-007	)	
	)	

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

27 October 2017

AFTER FINAL RESPONSE

This paper is being filed in response to the Final Office Action mailed 27 July 2017.

Reconsideration is respectfully requested in light of the amendments and/or remarks below.

The Office is hereby authorized to charge any fees required for entry of this paper to Deposit

Account 18-1167.

Issue Classification 	Application/Control No. 14700436	Applicant(s)/Patent Under Reexamination SADE, ROVSHAN
	Examiner AVINASH SAVANI	Art Unit 3749

US ORIGINAL CLASSIFICATION						INTERNATIONAL CLASSIFICATION																
CLASS			SUBCLASS			CLAIMED					NON-CLAIMED											
126			627			F	1	6	M	11 / 06 (2006.01.01)												
CROSS REFERENCE(S)																						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																					
136	246																					

NONE		Total Claims Allowed:	
		4	
(Assistant Examiner)	(Date)		
/AVINASH SAVANI/ Primary Examiner.Art Unit 3749	11/03/2017	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Issue Classification 	Application/Control No. 14700436	Applicant(s)/Patent Under Reexamination SADE, ROVSHAN
	Examiner AVINASH SAVANI	Art Unit 3749

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1														
	2														
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
	11														
	12														
	13														
	14														
	15														
	16														

NONE		Total Claims Allowed:	
		4	
(Assistant Examiner)	(Date)	O.G. Print Claim(s)	O.G. Print Figure
/AVINASH SAVANI/ Primary Examiner.Art Unit 3749	11/03/2017	1	1
(Primary Examiner)	(Date)		

Search Notes 	Application/Control No. 14700436	Applicant(s)/Patent Under Reexamination SADE, ROVSHAN
	Examiner AVINASH SAVANI	Art Unit 3749

CPC- SEARCHED		
Symbol	Date	Examiner
F16M11/06	1/12/2017	AAS

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
126	627	1/12/2017	AAS
136	246	1/12/2017	AAS

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES		
Search Notes	Date	Examiner
see EAST search history	1/12/2017, 7/25/2017, 11/3/2017	AAS
inventor search	1/12/2017	AAS

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner
	see EAST L1-L4	11/3/2017	AAS

	/AVINASH SAVANI/ Primary Examiner.Art Unit 3749
--	--

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 14/700,436		Filing Date 04/30/2015		☐ To be Mailed	
ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO										
APPLICATION AS FILED – PART I										
(Column 1) (Column 2)										
FOR		NUMBER FILED		NUMBER EXTRA		RATE (\$)		FEE (\$)		
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A		N/A		N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (j), or (m))		N/A		N/A		N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A		N/A		N/A				
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =		*		X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =		*		X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.						TOTAL				
APPLICATION AS AMENDED – PART II										
(Column 1) (Column 2) (Column 3)										
AMENDMENT	10/27/2017	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	* 5	Minus	** 20	= 0	X \$40 =		0		
	Independent (37 CFR 1.16(h))	* 2	Minus	***4	= 0	X \$210 =		0		
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
TOTAL ADD'L FEE						0				
(Column 1) (Column 2) (Column 3)										
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =				
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =				
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
TOTAL ADD'L FEE										
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Rovshan Sade	)	
	)	
Serial No.: 14/700,436	)	
	)	Examiner: Avinash A. Savani
Filed: April 30, 2015	)	
	)	Group Art Unit: 3749
For: Solar Tracker	)	
	)	Confirmation No.: 4042
Docket No: 6445-007	)	
	)	

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

27 October 2017

AFTER FINAL RESPONSE

This paper is being filed in response to the Final Office Action mailed 27 July 2017.
Reconsideration is respectfully requested in light of the amendments and/or remarks below.
The Office is hereby authorized to charge any fees required for entry of this paper to Deposit
Account 18-1167.

CLAIMS LISTING

1. (Previously Presented) A support structure for solar tracker comprising:
 - a support frame;
 - a panel assembly rotatably mounted to said support frame and configured to support one or more solar panels, said panel assembly including:
 - a central spine rotatably mounted to the support frame; and
 - a plurality of panel carriers fixed relative to the central spine and extending outwardly from both sides of said central spine for supporting said solar panels;
 - an actuator assembly for rotating the panel assembly to track the movement of the sun.
 - a mounting assembly for rotatably mounting the panel assembly to the support frame, said mounting assembly comprising:
 - a mounting member configured to be rotatably connected to said support frame;
 - and
 - an open-ended slot in said mounting member configured to receive the central spine of the panel assembly.
2. (Cancelled)
3. (Original) The solar tracker of claim 1 further comprising:
 - a base forming an open pan for containing a ballast material; and
 - a ballast material contained within the open pan.

4. (Original) The solar tracker of claim 1 further comprising:
a base having one or more base beams that rest on an underlying support surface;
and
one or more ballast containers configured to straddle at least one of the base beams for
containing a ballast material to hold said solar tracker in place.
- 5-11. (Cancelled)
12. (Currently Amended) A solar system comprising:
a base comprising one or more base beams that rest on an underlying support surface;
a support frame mounted to said base;
a panel assembly rotatably mounted to said support frame, said panel assembly
including a plurality of solar panels, said panel assembly comprising:
a central spine rotatably mounted to the support frame; and
a plurality of panel carriers extending outwardly from said spine for supporting
said solar panels;
an actuator assembly for rotating the panel assembly to track the movement of the sun;
and;
a mounting assembly for rotatably mounting the panel assembly to the support frame,
said mounting assembly comprising:
a mounting bracket configured to be pivotally connected to said support frame;
and
a slot in said mounting fork configured to receive the spine of the panel
assembly.
one or more ballast containers configured to straddle at least one of the base beams for
containing a ballast material to hold said solar tracker in place, wherein the

ballast containers comprise a bottom, side walls and an open top, and wherein the bottom has a channel formed therein to allow passage of one of said base beams through the ballast container.

13. (Cancelled)

14. (Cancelled)

15. (Cancelled)

16. (Original) The solar tracker of claim 12 wherein the panel assembly is mounted to rotate about an inclined rotational axis lying in a plane perpendicular to the base such that the rotation of the panel assembly tracks changes in the azimuth of the sun.

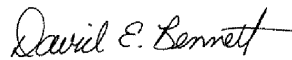
REMARKS

Claims Amendments

Applicant acknowledges with appreciation the indication that claims 1, 3 and 4 are allowed and that claim 15 is allowable if rewritten in independent form. Accordingly, Applicant has amended independent claim 12 to incorporate the limitations of claim 15 and all intervening claims. Claims 13-15 have been canceled.

For the forgoing reason, it is respectfully urged that the present application is in condition for allowance and notice to such effect is respectfully requested.

Respectfully submitted,
COATS & BENNETT, P.L.L.C.



Dated: 27 October 2017

David E. Bennett
Registration No.: 32,194
Telephone: (919) 854-1844

Electronic Acknowledgement Receipt	
EFS ID:	30780606
Application Number:	14700436
International Application Number:	
Confirmation Number:	4042
Title of Invention:	Solar Tracker
First Named Inventor/Applicant Name:	Rovshan Sade
Customer Number:	24112
Filer:	David E. Bennett/Karen Nelson
Filer Authorized By:	David E. Bennett
Attorney Docket Number:	6445-007
Receipt Date:	27-OCT-2017
Filing Date:	30-APR-2015
Time Stamp:	11:49:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		6445-007_Response_to_FOA.pdf	25494 6006199603e9f65653035f05c52f84f076a48bb7	yes	5

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Response After Final Action	1	1
	Claims	2	4
	Applicant Arguments/Remarks Made in an Amendment	5	5
Warnings:			
Information:			
Total Files Size (in bytes):		25494	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.			



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/700,436	04/30/2015	Rovshan Sade	6445-007	4042
24112 7590 07/27/2017 COATS & BENNETT, PLLC 1400 Crescent Green, Suite 300 Cary, NC 27518			EXAMINER SAVANI, AVINASH A	
			ART UNIT 3749	PAPER NUMBER
			MAIL DATE 07/27/2017	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 14/700,436	Applicant(s) SADE, ROVSHAN	
	Examiner AVINASH SAVANI	Art Unit 3749	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 5/15/2017.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☒ Claim(s) 1, 3, 4 and 12-16 is/are pending in the application.
5a) Of the above claim(s) ____ is/are withdrawn from consideration.

6) ☒ Claim(s) 1, 3 and 4 is/are allowed.

7) ☒ Claim(s) 12-14 and 16 is/are rejected.

8) ☒ Claim(s) 15 is/are objected to.

9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10) ☐ The specification is objected to by the Examiner.

11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some** c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____.

3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.

4) ☐ Other: ____.

1. The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

Status of Claims

1. The following action is in response to the applicant's Amendment dated 5/15/2017, that was in response to the Office action dated 1/17/2017. Claims 1, 3, 4 and 12-16 are pending, claim 1 has been amended, while claims 2 and 5-11 have been cancelled.

Response to Arguments

2. Applicant's arguments regarding claims 12-14 and 16 filed 5/15/2017 have been fully considered but they are not persuasive. The reasons for the applicant's remarks not being persuasive are given below.
3. The applicant respectfully submits the Warrick in view of Hawley do not teach the invention as claimed, specifically Hawley does not teach a channel to accommodate a beam. The examiner respectfully disagrees and would like to point the applicant's attention to element 30 which has a channel defined by elements 31 therein allowing passage of a beam 32 therethrough. For these reasons the applicant's remarks are not persuasive and the previous rejection will be maintained.

Claim Rejections - 35 USC § 103

1. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the

time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under pre-AIA 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating

obviousness or nonobviousness.

3. Claims 2, 3, 12-14 and 16 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Warrick [6123067], further in view of Hawley [4226256].

4. Regarding claims 2 and 3, Warrick discloses the invention as substantially claimed, however does not disclose the ballast container as claimed. Hawley makes up for the deficiencies of Warrick by teaching a solar assembly having a base (15) containing ballast material (20) [see FIG, col 2, line 4-55]. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the invention of Warrick with the teachings of Hawley because Hawley provides a base that is easily transportable and securable because of a fillable supporting base.

5. Regarding claims 12-14 and 16, Warrick discloses the invention as substantially claimed however does not disclose the ballast portion [reference to claim 1]. Hawley makes up for the deficiencies of Warrick by teaching a solar assembly having a base (15) containing ballast material (20) [see FIG, col 2, line 4-55]. It would have been obvious to

a person of ordinary skill in the art at the time of the invention to modify the invention of Warrick with the teachings of Hawley because Hawley provides a base that is easily transportable and securable because of a fillable supporting base.

6. Claims 5-7 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Hawley [4226256], further in view of Warrick [6123067].

7. With respect to claim 5, Hawley disclose: A solar tracker comprising: a base (15) forming an open base pan; a ballast material (20) contained in the base pan; a support frame (5) mounted to said base; a panel assembly (1, 2, 13) rotatably mounted to said support frame [col 2, line 4-54]; however does not disclose the actuator. Warrick makes up for the deficiencies of Warrick by teaching an actuator assembly (26) for rotating the panel assembly to track the movement of the sun [see FIG 3, col 4, line 12-58]. Hawley further teaches a central spine (31) as claimed. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the apparatus of Hawley with the teachings of Warrick because Warrick provides a manner in which to more effectively convert solar energy by tracking the sun.

Allowable Subject Matter

8. Claims 4, 8 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 1, 3 and 4 are allowed.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AVINASH SAVANI whose telephone number is (571)270-3762. The examiner can normally be reached on Monday- Thursday, 7am-5pm: EST.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Huson can be reached on 571-272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AVINASH SAVANI/
Primary Examiner, Art Unit 3749

7/25/2017

<i>Index of Claims</i> 	Application/Control No. 14700436	Applicant(s)/Patent Under Reexamination SADE, ROVSHAN
	Examiner AVINASH SAVANI	Art Unit 3749

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant										☐ CPA										☐ T.D.										☐ R.1.47									
CLAIM		DATE																																					
Final	Original	01/12/2017	07/25/2017																																				
	1	✓	=																																				
	2	✓	-																																				
	3	✓	=																																				
	4	O	=																																				
	5	✓	-																																				
	6	✓	-																																				
	7	✓	-																																				
	8	O	-																																				
	9	✓	-																																				
	10	✓	-																																				
	11	✓	-																																				
	12	✓	✓																																				
	13	✓	✓																																				
	14	✓	✓																																				
	15	O	O																																				
	16	✓	✓																																				

Search Notes 	Application/Control No. 14700436	Applicant(s)/Patent Under Reexamination SADE, ROVSHAN
	Examiner AVINASH SAVANI	Art Unit 3749

CPC- SEARCHED		
Symbol	Date	Examiner
F16M11/06	1/12/2017	AAS

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
126	627	1/12/2017	AAS
136	246	1/12/2017	AAS

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

SEARCH NOTES		
Search Notes	Date	Examiner
see EAST search history	1/12/2017, 7/25/2017	AAS
inventor search	1/12/2017	AAS

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

	/AVINASH SAVANI/ Primary Examiner.Art Unit 3749
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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L3	50	(solar with frame) same channel same beam	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/07/25 14:43
S2	18	solar and (frame same (rotat\$4 with panel) same bracket same (central or spine))	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 12:47
S3	27	("20040195487" "20090134291" "20090293861" "20100071684" "20100313878" "2061336" "2859745" "3106201" "4063963" "4178913" "4203427" "4226256" "4644933" "5632480" "5633891" "5916047" "6105316" "6494445" "6563040" "6616278" "7884279" "7898212" "8492645" "8707949").PN. OR ("9057546").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 12:48
S4	22	("4235222" "5622078").PN. OR ("7240674").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:01
S5	3	("6058930" "7240674" "7554030").PN. OR ("8136518").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:03
S6	87	(solar near5 track\$3) same (panel with bracket)	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:04
S7	19	("20020066473" "20040025931" "20040055632" "20060151022" "20070204860" "20070240278" "20070295382" "20080163864" "20090038672" "20090223510" "20090241994" "20090266353" "20090288679" "20090288691" "20100000570" "4119863" "4297990" "4432341" "5191875").PN. OR ("9016292").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:06
S8	28	("20060118105" "20060118162" "20070039610" "20070051401" "20070215199" "20070235266" "20080000514" "20080224107" "20090165841" "3611453" "3613659" "4129360" "4145021" "4291677" "4297521" "4351319" "4421943" "4649899" "4700690" "5613244" "5632823" "5961738" "6037535" "6423895" "6796246").PN. OR	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:31

		("8469022").URPN.				
S9	13	(solar with track\$3) same (removable with panel)	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:34
S10	41	126/627.cds.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:41
S11	22	(solar with frame) and ((removable with panel) same bracket)	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:46
S12	2816	136/246.cds.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 14:10
S13	117	136/246.cds. and (bracket same panel same solar)	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 14:10
S14	60	("4211211" "4441143" "4630791" "5121307" "5149188" "5172711" "5317145" "6060658" "6106970" "6123067" "6455767").PN. OR ("6930237").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 14:43
S15	69	("4223174" "4864317" "5317145").PN. OR ("6123067").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 14:49
S16	1	14/700436	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/11 08:57
S17	27	("2061336" "20090134291" "4063963" "6105316" "20090293861" "4178913" "5633891" "6494445" "7898212" "20100071684" "4644933" "8707949" "5632480" "6563040" "6616278" "2859745" "20040195487" "20100313878" "3106201" "4203427" "8492645" "4226256" "5916047" "7884279").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/12 08:44
S18	4	12/830907	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/12 09:11
S19	1	14/700413	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/12 09:17
S20	350	f16m11/06.cpc.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/12 09:43

EAST Search History (Interference)

< This search history is empty >

7/ 25/ 2017 2:43:12 PM

C:\Users\asavani\Documents\EAST\Workspaces\14700436SlrTrckr.wsp

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Rovshan Sade	)	
	)	
Serial No.: 14/700,436	)	
	)	Examiner: Avinash A. Savani
Filed: April 30, 2015	)	
	)	Group Art Unit: 3749
For: Solar Tracker	)	
	)	
Attorney's Docket No: 6445-007	)	
	)	

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

15 May 2017

RESPONSE TO NON-FINAL OFFICE ACTION

This paper is being filed in response to the Office Action mailed January 17, 2017. The fee of \$100 for a one month time extension is submitted herewith. Reconsideration is respectfully requested in light of the amendments and remarks below. The Office is hereby authorized to charge any additional fees required for entry of this paper to Deposit Account 18-1167.

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A support structure for solar tracker comprising:
 - a support frame;
 - a panel assembly rotatably mounted to said support frame and configured to support one or more solar panels, said panel assembly including:
 - a central spine rotatably mounted to the support frame; and
 - a plurality of panel carriers fixed relative to the central spine and extending outwardly from both sides of said central spine for supporting said solar panels;
 - an actuator assembly for rotating the panel assembly to track the movement of the sun.
 - a mounting assembly for rotatably mounting the panel assembly to the support frame,
 - said mounting assembly comprising:
 - a mounting member configured to be rotatably connected to said support frame;
 - and
 - an open-ended slot in said mounting member configured to receive the central spine of the panel assembly.
2. (Cancelled)
3. (Original) The solar tracker of claim 1 further comprising:
 - a base forming an open pan for containing a ballast material; and
 - a ballast material contained within the open pan.

4. (Original) The solar tracker of claim 1 further comprising:
a base having one or more base beams that rest on an underlying support surface;
and
one or more ballast containers configured to straddle at least one of the base beams for
containing a ballast material to hold said solar tracker in place.
- 5-11. (Cancelled)
12. (Original) A solar system comprising:
a base comprising one or more base beams that rest on an underlying support surface;
a support frame mounted to said base;
a panel assembly mounted to said support frame, said panel assembly including a
plurality of solar panels; and
one or more ballast containers configured to straddle at least one of the base beams for
containing a ballast material to hold said solar tracker in place, wherein the
ballast containers comprise a bottom, side walls and an open top, and wherein
the bottom has a channel formed therein to allow passage of one of said base
beams through the ballast container.
13. (Original) The solar system of claim 12 said panel assembly is rotatably mounted to said
frame and further comprising an actuator assembly for rotating the panel assembly to track the
movement of the sun.
14. (Original) The solar tracker of claim 13 wherein the panel assembly comprises a central
spine rotatably mounted to the support frame; and a plurality of panel carriers extending
outwardly from said spine for supporting said solar panels.

15. (Original) The solar tracker assembly of claim 14 including a mounting assembly for rotatably mounting the panel assembly to the support frame, said mounting assembly comprising:

- a mounting bracket configured to be pivotally connected to said support frame; and
- a slot in said mounting fork configured to receive the spine of the panel assembly.

16. (Original) The solar tracker of claim 12 wherein the panel assembly is mounted to rotate about an inclined rotational axis lying in a plane perpendicular to the base such that the rotation of the panel assembly tracks changes in the azimuth of the sun.

REMARKS

In response to the official Office Action dated January 17, 2017, Applicant has amended claim 1. Claims 2 and 5-11 have been cancelled. Applicant respectfully submits that the claims as presently presented are allowable over the prior art and reconsideration of the application is therefore respectfully requested.

Claim 1 is directed to a solar tracker comprising a support frame, a panel assembly configured to support one or more solar panels, and a mounting assembly for rotatably mounting the panel assembly to the support frame. The panel assembly includes a central spine and a plurality of panel carriers extending outwardly from both sides of the central spine for supporting said solar panels. The mounting assembly includes a mounting member configured to be rotatably connected to said support frame. The mounting member includes an open-ended slot to receive the central spine of the panel assembly.

Claim 1 has been rejected under 35 U.S.C. §102 as being anticipated by Warrick (U.S. 6,123,067). Applicant respectfully submits that Warrick fails to disclose all of the limitations of claim 1. In particular, Warrick fails to teach a panel assembly having a “central spine” and a plurality of panel carriers “fixed relative to the central spine and extending outwardly from both sides of the central spine for supporting said solar panels.” Further, Warrick fails to disclose “a mounting member configured to be rotatably connected to said support frame” and including “an open-ended slot configured to receive the central spine of the panel assembly.” Accordingly, it is submitted that claim 1 is allowable.

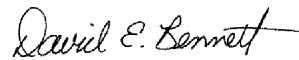
Claim 12 is directed to a solar tracker comprising a base comprising one or more base beams that rest on an underlying support surface, a support frame mounted to the base, a panel assembly including a plurality of solar panels mounted to the support frame, and one or more ballast containers configured to straddle at least one of the base beams for containing a ballast material.

Claim 12 has been rejected under 35 U.S.C. §103(a) as being obvious over Warrick in view of Hawley (US 4,226,256). Applicant respectfully submits that Warrick and Hawley fail to disclose all of the limitations of claim 12. The examiner acknowledges that Warrick does not disclose ballast containers as recited in the claim, but relies on Hawley as disclosing these elements. Hawley, however, does not disclose a ballast container with a channel in the bottom surface thereof as recited in claim 12. Rather, the base plate (12) in Hawley has a flat bottom and is attached to the base frame by flanges (17) that extend upward at each lateral edge of the base plate (12). Accordingly, it is submitted that claim 12 is allowable.

The remaining claims depend either directly or indirectly from claims 1 and 12 and are believed to be allowable for the same reasons. For the forgoing reasons, it is respectfully submitted that the application is in condition for allowance and notice to such effect is respectfully requested.

Respectfully submitted,

COATS & BENNETT, P.L.L.C.



Dated: 15 May 2017

David E. Bennett
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Telephone: (919) 854-1844
Facsimile: (919) 854-2084

Electronic Patent Application Fee Transmittal				
Application Number:		14700436		
Filing Date:		30-Apr-2015		
Title of Invention:		Solar Tracker		
First Named Inventor/Applicant Name:		Rovshan Sade		
Filer:		David E. Bennett/Karen Nelson		
Attorney Docket Number:		6445-007		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension - 1 month with \$0 paid	2251	1	100	100
Miscellaneous:				
Total in USD (\$)				100

Electronic Acknowledgement Receipt	
EFS ID:	29205399
Application Number:	14700436
International Application Number:	
Confirmation Number:	4042
Title of Invention:	Solar Tracker
First Named Inventor/Applicant Name:	Rovshan Sade
Customer Number:	24112
Filer:	David E. Bennett/Karen Nelson
Filer Authorized By:	David E. Bennett
Attorney Docket Number:	6445-007
Receipt Date:	15-MAY-2017
Filing Date:	30-APR-2015
Time Stamp:	12:09:18
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	EFT
Payment was successfully received in RAM	\$ 100
RAM confirmation Number	051517INTEFSW12101800
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		6445-007_Response_to_OA.pdf	31457	yes	6
			493c23042f962023cea01aafcd83cd3345c24162		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	4	
	Applicant Arguments/Remarks Made in an Amendment		5	6	
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	29882	no	2
			d63bbefb6ccf5b8d3f1445e7a1b7362c65da894a		
Warnings:					
Information:					
Total Files Size (in bytes):			61339		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 14/700,436		Filing Date 04/30/2015		☐ To be Mailed	
ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO										
APPLICATION AS FILED – PART I										
(Column 1)		(Column 2)								
FOR	NUMBER FILED	NUMBER EXTRA			RATE (\$)	FEE (\$)				
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A			N/A					
☐ SEARCH FEE (37 CFR 1.16(k), (j), or (m))	N/A	N/A			N/A					
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A			N/A					
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*			X \$ =					
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*			X \$ =					
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.					TOTAL					
APPLICATION AS AMENDED – PART II										
(Column 1)		(Column 2)		(Column 3)						
AMENDMENT	05/15/2017	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)			
	Total (37 CFR 1.16(i))	* 8	Minus	** 20	= 0	X \$40 =	0			
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 4	= 0	X \$210 =	0			
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE	0			
(Column 1)		(Column 2)		(Column 3)						
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)			
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =				
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =				
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
						TOTAL ADD'L FEE				
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/700,436	04/30/2015	Rovshan Sade	6445-007	4042
24112 7590 01/17/2017 COATS & BENNETT, PLLC 1400 Crescent Green, Suite 300 Cary, NC 27518			EXAMINER SAVANI, AVINASH A	
			ART UNIT 3749	PAPER NUMBER
			MAIL DATE 01/17/2017	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 14/700,436	Applicant(s) SADE, ROVSHAN	
	Examiner AVINASH SAVANI	Art Unit 3749	AIA (First Inventor to File) Status No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 4/30/2015.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☒ Claim(s) 1-16 is/are pending in the application.
5a) Of the above claim(s) ____ is/are withdrawn from consideration.

6) ☐ Claim(s) ____ is/are allowed.

7) ☒ Claim(s) 1-3, 5-7, 9-14 and 16 is/are rejected.

8) ☒ Claim(s) 4, 8 and 15 is/are objected to.

9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

10) ☐ The specification is objected to by the Examiner.

11) ☒ The drawing(s) filed on 4/30/2015 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a) ☐ All b) ☐ Some** c) ☐ None of the:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____.

3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.

4) ☐ Other: ____.

1. The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

Claim Rejections - 35 USC § 102

2. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

3. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim(s) 1 is/are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Warrick [6123067].
5. With respect to claim 1, Warrick discloses: A support structure for solar tracker comprising: a support frame (16);
6. a panel assembly (14) rotatably mounted to said support frame and configured to support one or more solar panels (24), said panel assembly including: a central spine (31) rotatably mounted to the support frame; and a plurality of panel carriers (20) extending outwardly from said central spine for supporting said solar panels;

7. an actuator assembly (26) for rotating the panel assembly to track the movement of the sun [see FIG 3, col 4, line 12-58].

8. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (**pre-AIPA** 35 U.S.C. 102(e)).

9. Claim(s) 9-11 is/are rejected under pre-AIA 35 U.S.C. 102(e) as being anticipated by Cowan et al [20100071684].

10. With respect to claim 9, Cowan discloses: A solar system comprising:

11. a base (12) having first and second sections configurable in a deployed position and a storage position [see FIGs 2 and 4], said base forming an open pan (22) for containing a ballast material in the deployed position and forming a carrier having an internal compartment in the storage position [see FIG 4];

12. a support frame (16) removably mounted to said base, said support frame including one or more frame members (58, 62) configured to be contained in the internal compartment of the base when the base is configured in a storage position; and
13. a panel assembly (18) configured to be removably mounted to said support frame [paragraph 0042-0046]. There is also a central spine (46) and the solar collector fits in said base member.

Claim Rejections - 35 USC § 103

14. The following is a quotation of pre-AIA 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

15. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under pre-AIA 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating

obviousness or nonobviousness.

16. Claims 2, 3, 12-14 and 16 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Warrick [6123067], further in view of Hawley [4226256].

17. Regarding claims 2 and 3, Warrick discloses the invention as substantially claimed, however does not disclose the ballast container as claimed. Hawley makes up for the deficiencies of Warrick by teaching a solar assembly having a base (15) containing ballast material (20) [see FIG, col 2, line 4-55]. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the invention of Warrick with the teachings of Hawley because Hawley provides a base that is easily transportable and securable because of a fillable supporting base.

18. Regarding claims 12-14 and 16, Warrick discloses the invention as substantially claimed however does not disclose the ballast portion [reference to claim 1]. Hawley makes up for the deficiencies of Warrick by teaching a solar assembly having a base (15) containing ballast material (20) [see FIG, col 2, line 4-55]. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the invention of Warrick with the teachings of Hawley because Hawley provides a base that is easily transportable and securable because of a fillable supporting base.

19. Claims 5-7 is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Hawley [4226256], further in view of Warrick [6123067].

20. With respect to claim 5, Hawley disclose: A solar tracker comprising: a base (15) forming an open base pan; a ballast material (20) contained in the base pan; a support frame (5) mounted to said base; a panel assembly (1, 2, 13) rotatably mounted to said support frame [col 2, line 4-54]; however does not disclose the actuator. Warrick makes up for the deficiencies of Warrick by teaching an actuator assembly (26) for rotating the panel assembly to track the movement of the sun [see FIG 3, col 4, line 12-58]. Hawley

further teaches a central spine (31) as claimed. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify the apparatus of Hawley with the teachings of Warrick because Warrick provides a manner in which to more effectively convert solar energy by tracking the sun.

Allowable Subject Matter

21. Claims 4, 8 and 15 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Double Patenting

22. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(l)(1) - 706.02(l)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

23. Claims 1 and 2 together and claims 5 and 8 together are rejected on the ground of nonstatutory double patenting as being unpatentable over claim 1 of U.S. Patent No. 9057546. Although the claims at issue are not identical, they are not patentably distinct from each other because the patent claims anticipate the application claims. The scope

of the claims overlap, and although are considered broader together, the patent claims fully anticipate the claimed subject matter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AVINASH SAVANI whose telephone number is (571)270-3762. The examiner can normally be reached on Monday- Thursday, 7am-5pm: EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Greg Huson can be reached on 571-272-4887. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/AVINASH SAVANI/
Primary Examiner, Art Unit 3749

1/12/2017

Notice of References Cited	Application/Control No. 14/700,436		Applicant(s)/Patent Under Reexamination SADE, ROVSHAN	
	Examiner AVINASH SAVANI		Art Unit 3749	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-4,119,863 A	10-1978	Kelly; Donald A.	F03D3/02	136/246
*	B	US-4,226,256 A	10-1980	Hawley; Wilbur W.	F24J2/5233	126/569
*	C	US-4,644,933 A	02-1987	Gregory; Samuel T.	F24J2/06	126/601
*	D	US-5,114,101 A	05-1992	Stern; Theodore G.	B64G1/222	126/600
*	E	US-5,228,924 A	07-1993	Barker; James M.	F24J2/541	136/246
*	F	US-6,123,067 A	09-2000	Warrick; James C.	F24J2/38	126/593
*	G	US-6,563,040 B2	05-2003	Hayden; Herbert T.	F24J2/5232	126/600
*	H	US-6,930,237 B2	08-2005	Mattiuzzo; Gilberto	F24J2/523	136/244
*	I	US-2010/0071684 A1	03-2010	COWAN; Jody L.	F24J2/38	126/605
*	J	US-2010/0212659 A1	08-2010	Carpoff; Jeffrey Paul	F24J2/5233	126/627
*	K	US-2011/0174295 A1	07-2011	Clavijo Lumbreras; Ruben	F24J2/542	126/605
*	L	US-9,016,292 B1	04-2015	Schneider; Matthew N.	F24J2/30	134/104.2
	M	US-				

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Receipt date: 02/18/2016

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	14700436
	Filing Date	2015-04-30
	First Named Inventor	Rovshan Sade
	Art Unit	3749
	Examiner Name	Avinash A. Savani
	Attorney Docket Number	6445-007

U.S.PATENTS							Remove	
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NON-PATENT LITERATURE DOCUMENTS							Remove	
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EFS Web 2.1.17

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /A.A.S/

Receipt date: 02/18/2016

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	14700436
Filing Date	2015-04-30
First Named Inventor	Rovshan Sade
Art Unit	3749
Examiner Name	Avinash A. Savani
Attorney Docket Number	6445-007

1	RAYTRACKER, INC., "Solar tracking you can count on", brochure, 2009-01-01, pp. 1-6, posted online 2015-03-28, retrieved on 2016-02-17, retrieved from internet: http://documents.mx/documents/raytrackerbrochure.html
If you wish to add additional non-patent literature document citation information please click the Add button Add	
EXAMINER SIGNATURE	
Examiner Signature	/AVINASH A SAVANI/
Date Considered	01/12/2017
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.	
¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.	

Receipt date: 02/18/2016

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT
(Not for submission under 37 CFR 1.99)**

Application Number	14700436
Filing Date	2015-04-30
First Named Inventor	Rovshan Sade
Art Unit	3749
Examiner Name	Avinash A. Savani
Attorney Docket Number	6445-007

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/David E. Bennett, Reg. No. 32194/	Date (YYYY-MM-DD)	2016-02-18
Name/Print	David Bennett	Registration Number	32194

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

<i>Index of Claims</i> 	Application/Control No. 14700436	Applicant(s)/Patent Under Reexamination SADE, ROVSHAN
	Examiner AVINASH SAVANI	Art Unit 3749

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM			DATE							
Final	Original	01/12/2017								
	1	✓								
	2	✓								
	3	✓								
	4	O								
	5	✓								
	6	✓								
	7	✓								
	8	O								
	9	✓								
	10	✓								
	11	✓								
	12	✓								
	13	✓								
	14	✓								
	15	O								
	16	✓								



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BIB DATA SHEET

CONFIRMATION NO. 4042

SERIAL NUMBER 14/700,436	FILING or 371(c) DATE 04/30/2015 RULE	CLASS 126	GROUP ART UNIT 3749	ATTORNEY DOCKET NO. 6445-007		
APPLICANTS INVENTORS Rovshan Sade, Raleigh, NC; ** CONTINUING DATA ***** This application is a CON of 12/830,907 07/06/2010 PAT 9057546 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 05/07/2015						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and Acknowledged <u>/AVINASH A SAVANI/</u> Examiner's Signature		☐ Met after Allowance <u>/A.A.S./</u> Initials	STATE OR COUNTRY NC	SHEETS DRAWINGS 9	TOTAL CLAIMS 16	INDEPENDENT CLAIMS 4
ADDRESS COATS & BENNETT, PLLC 1400 Crescent Green, Suite 300 Cary, NC 27518 UNITED STATES						
TITLE Solar Tracker						
FILING FEE RECEIVED 940	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			☐ All Fees		
				☐ 1.16 Fees (Filing)		
				☐ 1.17 Fees (Processing Ext. of time)		
				☐ 1.18 Fees (Issue)		
				☐ Other _____		
			☐ Credit			

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L7	27	("2061336" "20090134291" "4063963" "6105316" "20090293861" "4178913" "5633891" "6494445" "7898212" "20100071684" "4644933" "8707949" "5632480" "6563040" "6616278" "2859745" "20040195487" "20100313878" "3106201" "4203427" "8492645" "4226256" "5916047" "7884279").PN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/12 08:44
L8	4	12/830907	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/12 09:11
L9	1	14/700413	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/12 09:17
L10	350	f16m11/06.cpc.	US-PGPUB; USPAT; USOCR	ADJ	ON	2017/01/12 09:43
S2	18	solar and (frame same (rotat\$4 with panel) same bracket same (central or spine))	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 12:47
S3	27	("20040195487" "20090134291" "20090293861" "20100071684" "20100313878" "2061336" "2859745" "3106201" "4063963" "4178913" "4203427" "4226256" "4644933" "5632480" "5633891" "5916047" "6105316" "6494445" "6563040" "6616278" "7884279" "7898212" "8492645" "8707949").PN. OR ("9057546").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 12:48
S4	22	("4235222" "5622078").PN. OR ("7240674").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:01
S5	3	("6058930" "7240674" "7554030").PN. OR ("8136518").URPN.	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:03
S6	87	(solar near5 track\$3) same (panel with bracket)	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:04
S7	19	("20020066473" "20040025931" "20040055632" "20060151022" "20070204860" "20070240278" "20070295382" "20080163864"	US-PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:06

		"20090038672" "20090223510" "20090241994" "20090266353" "20090288679" "20090288691" "20100000570" "4119863" "4297990" "4432341" "5191875").PN. OR ("9016292").URPN.				
S8	28	("20060118105" "20060118162" "20070039610" "20070051401" "20070215199" "20070235266" "20080000514" "20080224107" "20090165841" "3611453" "3613659" "4129360" "4145021" "4291677" "4297521" "4351319" "4421943" "4649899" "4700690" "5613244" "5632823" "5961738" "6037535" "6423895" "6796246").PN. OR ("8469022").URPN.	US- PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:31
S9	13	(solar with track\$3) same (removable with panel)	US- PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:34
S10	41	126/627.ccls.	US- PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:41
S11	22	(solar with frame) and ((removable with panel) same bracket)	US- PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 13:46
S12	2816	136/246.ccls.	US- PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 14:10
S13	117	136/246.ccls. and (bracket same panel same solar)	US- PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 14:10
S14	60	("4211211" "4441143" "4630791" "5121307" "5149188" "5172711" "5317145" "6060658" "6106970" "6123067" "6455767").PN. OR ("6930237").URPN.	US- PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 14:43
S15	69	("4223174" "4864317" "5317145").PN. OR ("6123067").URPN.	US- PGPUB; USPAT; USOCR	ADJ	ON	2016/12/01 14:49
S16	1	14/700436	US- PGPUB; USPAT; USOCR	ADJ	ON	2017/01/11 08:57

EAST Search History (Interference)

< This search history is empty >

1/ 12/ 2017 9:47:54 AM**C:\Users\asavani\Documents\EAST\Workspaces\14700436SlrTrckr.wsp**

Search Notes 	Application/Control No. 14700436	Applicant(s)/Patent Under Reexamination SADE, ROVSHAN
	Examiner AVINASH SAVANI	Art Unit 3749

CPC- SEARCHED		
Symbol	Date	Examiner
F16M11/06	1/12/2017	AAS

CPC COMBINATION SETS - SEARCHED		
Symbol	Date	Examiner

US CLASSIFICATION SEARCHED			
Class	Subclass	Date	Examiner
126	627	1/12/2017	AAS
136	246	1/12/2017	AAS

SEARCH NOTES		
Search Notes	Date	Examiner
see EAST search history	1/12/2017	AAS
inventor search	1/12/2017	AAS

INTERFERENCE SEARCH			
US Class/ CPC Symbol	US Subclass / CPC Group	Date	Examiner

	/AVINASH SAVANI/ Primary Examiner.Art Unit 3749
--	--

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	14700436
	Filing Date	2015-04-30
	First Named Inventor	Rovshan Sade
	Art Unit	3749
	Examiner Name	Avinash A. Savani
	Attorney Docket Number	6445-007

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
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If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
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Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
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If you wish to add additional Foreign Patent Document citation information please click the Add button								Add
NON-PATENT LITERATURE DOCUMENTS								Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.						T ⁵

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		14700436
	Filing Date		2015-04-30
	First Named Inventor	Rovshan Sade	
	Art Unit	3749	
	Examiner Name	Avinash A. Savani	
	Attorney Docket Number	6445-007	

1	RAYTRACKER, INC., "Solar tracking you can count on", brochure, 2009-01-01, pp. 1-6, posted online 2015-03-28, retrieved on 2016-02-17, retrieved from internet: http://documents.mx/documents/raytrackerbrochure.html		
If you wish to add additional non-patent literature document citation information please click the Add button Add			
EXAMINER SIGNATURE			
Examiner Signature			Date Considered
*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.			
¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.			

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	14700436
	Filing Date	2015-04-30
	First Named Inventor	Rovshan Sade
	Art Unit	3749
	Examiner Name	Avinash A. Savani
	Attorney Docket Number	6445-007

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/David E. Bennett, Reg. No. 32194/	Date (YYYY-MM-DD)	2016-02-18
Name/Print	David Bennett	Registration Number	32194

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of Sade	)	
	)	
Serial No.: 14/700436	)	Examiner: Avinash A. Savani
	)	
Filed: April 30, 2015	)	Group Art Unit: 3749
	)	
For: Solar Tracker	)	Confirmation No.: 4042
	)	
Attorney's Docket No: 6445-007	)	
	)	

MS AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

18 February 2016

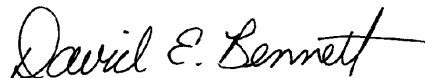
INFORMATION DISCLOSURE STATEMENT

In accordance with 37 C.F.R. 1.56, counsel wishes to make of record the attached items of information for the Examiner's consideration in connection with this application. Also attached is Form PTO/SB/08A for the Examiner's convenience in making such consideration of record. Inclusion herein of any particular item of information is not to be construed as an admission that same is prior art. Each item of information contained in the information disclosure statement:

- ☐ was first cited in any communication from a patent office in a counterpart foreign or international application or from the Office, and this communication was not received by an individual designated in §1.56(c) more than thirty days prior to the filing of the information disclosure statement; or
- ☐ is a communication that was issued by a patent office in a counterpart foreign or international application or by the Office, and this communication was not received by any individual designated in § 1.56(c) more than thirty days prior to the filing of the information disclosure statement
- ☒ No statement re Patent Term Adjustment (PTA).

The Commissioner is hereby authorized to charge any fees that may be required or credit any overpayment to Deposit Account 18-1167.

Respectfully submitted,
COATS & BENNETT, P.L.L.C.



Dated: 18 February 2016

David E. Bennett
Registration No.: 32,194
Telephone: (919) 854-1844

Electronic Acknowledgement Receipt	
EFS ID:	24954107
Application Number:	14700436
International Application Number:	
Confirmation Number:	4042
Title of Invention:	Solar Tracker
First Named Inventor/Applicant Name:	Rovshan Sade
Customer Number:	24112
Filer:	David E. Bennett/Katya Fox
Filer Authorized By:	David E. Bennett
Attorney Docket Number:	6445-007
Receipt Date:	18-FEB-2016
Filing Date:	30-APR-2015
Time Stamp:	16:19:08
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	IDS.pdf	612267 32bc5cdce8866fc00c6d42a32d696d815c6b82a8	no	4
Warnings:					
Information:					

A U.S. Patent Number Citation or a U.S. Publication Number Citation is required in the Information Disclosure Statement (IDS) form for autoloading of data into USPTO systems. You may remove the form to add the required data in order to correct the Informational Message if you are citing U.S. References. If you chose not to include U.S. References, the image of the form will be processed and be made available within the Image File Wrapper (IFW) system. However, no data will be extracted from this form. Any additional data such as Foreign Patent Documents or Non Patent Literature will be manually reviewed and keyed into USPTO systems.

2	Non Patent Literature	RAYTRACKER.pdf	1476691 d0d0cb0777d1b6d278f09e0db69ad8d43b 1421e7	no	6
Warnings:					
Information:					
3	Transmittal Letter	IDS_Cover_Letter.pdf	22351 fe5b900086866fdcc8f8da33920b35be34 d41f1	no	1
Warnings:					
Information:					
Total Files Size (in bytes):			2111309		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
14/700,436	04/30/2015	Rovshan Sade	6445-007

CONFIRMATION NO. 4042

PUBLICATION NOTICE

24112
COATS & BENNETT, PLLC
1400 Crescent Green, Suite 300
Cary, NC 27518



0000000076989637

Title:Solar Tracker

Publication No.US-2015-0236637-A1

Publication Date:08/20/2015

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 14/700,436	
APPLICATION AS FILED - PART I							
(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	70		N/A	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	300		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	360		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	16	minus 20 = *	x 40 =	0.00			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4	minus 3 = *	x 210 =	210			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	940		TOTAL	
APPLICATION AS AMENDED - PART II							
AMENDMENT A	(Column 1)	(Column 2)	(Column 3)	SMALL ENTITY		OTHER THAN SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(j))	*	Minus **	x	=	x	=
	Independent (37 CFR 1.16(h))	*	Minus ***	x	=	x	=
	Application Size Fee (37 CFR 1.16(s))						
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
			TOTAL		TOTAL		
			ADD'L FEE		ADD'L FEE		
AMENDMENT B	(Column 1)	(Column 2)	(Column 3)	SMALL ENTITY		OTHER THAN SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)	RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(j))	*	Minus **	x	=	x	=
	Independent (37 CFR 1.16(h))	*	Minus ***	x	=	x	=
	Application Size Fee (37 CFR 1.16(s))						
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						
			TOTAL		TOTAL		
			ADD'L FEE		ADD'L FEE		
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.							



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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
14/700,436	04/30/2015	2878	940	6445-007	16	4

CONFIRMATION NO. 4042

FILING RECEIPT



OC000000075069026

24112
COATS & BENNETT, PLLC
1400 Crescent Green, Suite 300
Cary, NC 27518

Date Mailed: 05/08/2015

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

Rovshan Sade, Raleigh, NC;

Applicant(s)

Rovshan Sade, Raleigh, NC;

Power of Attorney: The patent practitioners associated with Customer Number 24112**Domestic Priority data as claimed by applicant**

This application is a CON of 12/830,907 07/06/2010

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.*Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.***If Required, Foreign Filing License Granted:** 05/07/2015

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 14/700,436**

Projected Publication Date: 08/20/2015**Non-Publication Request:** No**Early Publication Request:** No**** SMALL ENTITY ****

page 1 of 3

Title

Solar Tracker

Preliminary Class

250

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No**PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES**

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6445-007
		Application Number	
Title of Invention	Solar Tracker		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

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Application Information:

Title of the Invention	Solar Tracker		
Attorney Docket Number	6445-007	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	12	Suggested Figure for Publication (if any)	
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Title of Invention	Solar Tracker		

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For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

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	Continuation of	12830907	2010-07-06
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6445-007
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Title of Invention	Solar Tracker		

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6445-007
		Application Number	
Title of Invention	Solar Tracker		

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	6445-007
		Application Number	
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Title of Invention	Solar Tracker		

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SOLAR TRACKER

CROSS-REFERENCE TO RELATED APPLICATIONS

[001] This application is a Continuation and claims priority to co-pending U.S. Patent Application No. 12/830,907, filed on July 6, 2010, the contents of which is incorporated by reference herein.

BACKGROUND

[002] The present invention relates generally to solar panels for generating solar energy and, more particularly, to a free-standing solar tracker with a rotating panel assembly to track the movement of the sun during the day.

[003] Photovoltaic panels, or solar panels, have been used for a long time in commercial and residential applications. A solar panel typically comprises a plurality of photovoltaic cells, also known as solar cells, that convert sunlight into electricity. In most commercial or residential applications, a large array of solar panels is needed to generate enough energy to have any practical effect. Thus, the use of solar panels requires a relatively large amount of open space exposed to direct sunlight. Most often, solar panels are mounted on the roofs of homes and buildings. In most installations, the solar panels are mounted in a fixed position to maximize the exposure when the sun is at its peak.

[004] Conventional solar systems have not gained widespread acceptance for a number of reasons, including the cost of the solar systems, the availability of adequate space, and aesthetic reasons. Conventional solar systems typically cost more than other available energy sources. The added expense of solar systems is an impediment to adoption of solar systems. Also, many people who are willing to pay the extra cost of a solar system may not be able to do so because they lack adequate space exposed to

the sun. Others may consider solar panels mounted on the roofs of homes to be aesthetically unappealing. Concerns over the aesthetics of the solar panels are another impediment to adoption of solar systems.

[005] Therefore, there is a continuing need for a solar system that is relatively inexpensive, that can be deployed in a relatively small area, and overcome concerns regarding aesthetics of the solar panels.

SUMMARY

[006] The present invention provides a free-standing solar tracker that can be used for both residential and commercial applications. The solar tracker comprises a base, a support frame, a panel assembly including one or more solar panels, and an actuator to rotate the solar panel to track the movement of the sun. The solar tracker is designed to be free-standing and requires no foundation. When the solar tracker is deployed, the base forms a pan to contain a ballast material for holding the base in place. Thus, the solar tracker can be easily moved to a site with adequate exposure to the sun.

[007] The solar tracker is designed to be relatively inexpensive to build and operate. Additionally, the ability to track the movement of the sun significantly increases the output of the solar panel assembly, thus increasing the user's return on the investment in the solar system. The free-standing support enables the solar tracker to be deployed in any location with adequate exposure. Also, the ability to deploy the solar tracker in any desired location means that the solar tracker can be deployed in locations that will not detract from the appearance of the owner's home or building.

BRIEF DESCRIPTION OF THE DRAWINGS

- [008] Fig. 1 is perspective views of a solar tracker according to a first exemplary embodiment of the invention with its solar panel in a first rotational position.
- [009] Fig. 2 is perspective views of a solar tracker according to the first exemplary embodiment of the invention with its solar panel in a second rotational position.
- [010] Fig. 3 is a front elevation of the solar tracker.
- [011] Fig. 4 is a side elevation of the solar tracker.
- [012] Figs. 5 and 6 illustrate the mounting of the panel assembly to the support frame.
- [013] Fig. 7 illustrates the actuator assembly and mounting of the panel assembly to the support frame.
- [014] Fig. 8 illustrates the base of the solar tracker with disassembled components of a support frame and panel assembly stored inside the base.
- [015] Fig. 9 illustrates the base of the solar tracker closed to contain the disassembled components of a support frame and panel assembly.
- [016] Fig. 10 illustrates a second embodiment of the solar tracker.
- [017] Fig. 11 illustrates a third embodiment of the solar tracker.

DETAILED DESCRIPTION

[018] Referring now to the drawings, a solar tracker 10 according to the present invention is shown. The solar tracker 10 generally comprises a base 20, support frame 40, panel assembly 60, and actuator assembly 90 for rotating the panel assembly 60 to follow the azimuth of the sun as it moves across the sky. The solar tracker 10 is designed to be free-standing and requires no foundation. Thus, the solar tracker 10 can be easily moved between sites. The base 20 of the solar tracker is designed to serve as

a "suitcase" to contain most of the components of the solar tracker 10, making it easier to transport the solar tracker 10 to a location where the solar tracker is installed.

[019] The base 12 of the solar tracker 10 is formed in two sections 22 that are connected to one another by a hinge 24. The base sections 22 are movable between an open or deployed position (Figs. 1-5) and a closed or storage position (Fig. 56). Each section 22 comprises a pair of side members 26 and a pair of end members 28 forming a generally-rectangular frame. The side members and end members may be constructed of a metal tubing, metal channel, or metal beam. A bottom sheet 30 made of a sheet metal is fixedly attached to the frame such as by welding to form an open pan in the deployed position. Separators 32 are spaced longitudinally between the end members 28 and extend between the side members 26. The separators 32 may be inserted into tracks or channels (not shown) in the side members 26 so that the separators can be removed. In a preferred embodiment, the separators 32 are formed of a sheet metal and extend approximately two-thirds the height of the side members 26. The separators 32 prevent the ballast material from shifting and help maintain the ballast material evenly distributed over the pan formed by the base 20. In use, the base sections 22 are unfolded so that they lie side-by-side. The base sections 22 can then be bolted together in the open position or may be held together by the hinge 24.

[020] The support frame 40 mounts to the base 20. The support frame 40 comprises front frame 42 and a rear frame 52. The front frame 42 comprises a pair of legs 44, a gusset plate 46, and a strut 50, which may be made of metal and removably connected together by bolts and nuts, or other suitable fasteners. The legs 44 may be made of rigid material, such as a metal angle. The legs 44 extend upwardly at an angle from the one end of the base 20. The lower ends of the legs 44 are bolted or otherwise secured to respective end members 28 of the base 20. The upper end of the legs 44 are

connected by a gusset plate 46, which may be made of a metal plate. The gusset plate 46 provides rigidity to the frame 42, as well as provides a surface for mounting the panel assembly 60 as hereinafter described. Strut 50 is made of a rigid material, such as a metal angle, and provides lateral stability for the front frame 42. The strut 50 is connected at the lower end to the side members 26 of the base 20, and at the upper end to the gusset plate 46 of the frame 42.

[021] The rear frame 50 includes a pair of legs 52, gusset plate 52, and strut 56, which may be made of metal and removably connected together by bolts and nuts, or other suitable fasteners. The legs 52 extend upwardly at an angle from respective end members 28 of the base 20. The lower ends of the legs 52 are bolted or otherwise secured to the end members 28, while the upper ends of the legs 52 are connected by the gusset plate 54, which may be made of a metal plate. Strut 56 extends between the base 20 and gusset plate 54 to provide lateral stability to the rear frame 52. It may be noted that the rear frame 50 is tilted at a slight angle relative to the base 20, whereas the front frame 42 is perpendicular to the base 20. The exact orientation of the frames 42, 50, however, is not material. Depending on the size of the frame 42, reinforcing members 58 may be provided to interconnect the legs 52 at spaced locations.

[022] The panel assembly 60 comprises a plurality of solar panels 62 and a panel support frame 64 to support the solar panels. The panel support frame 64 comprises a central spine 66, a pair of laterally-spaced side members 68, and a plurality of longitudinally-spaced panel carriers 70, which can be removably connected by bolts and nuts, or other fasteners. The panel carriers 80 include an inner end and an outer end. The inner end connects to the spine 66 and while the side member 78 connect to the outer ends of the panel carriers 70. The spine 66 in the exemplary embodiment is made from a metal tube, while the side members 68 and panel carriers are made of a metal

channel. The panel carriers 70 taper from the inner end to the outer end. The side members 68 are spaced from the spine 66 so that the inner ends of the solar panels rest on a top surface of the spine 66, while the outer ends of the solar panels rest on a top surface of the side members 68. The panel carriers 70 are longitudinally-spaced so that the side edges of the solar panels 62 rest on the top surfaces of respective wing member 70. The solar panel 62 can be removably secured to the panel support frame 64 by bolts, screws, clamps, or other mechanical fastening devices.

[023] The panel assembly 60 is rotatably mounted to the support frame 40 so as to rotate about a single, inclined axis. Fig. 5 shows a first mounting assembly 80 for securing the lower end of the panel assembly 60 to the front support frame 42. The first mounting assembly 80 comprises a connecting plate 82, L-shaped mounting brackets 84, bearing 86, and a pivot member 88. The connecting plate 82 is bolted, welded, or otherwise secured to the gusset plate 46 of the front frame 42. The connecting plate 82 is bent at a slight angle to provide the desired tilt for the rotational axis of the panel assembly 60. Mounting brackets 84 are bolted or welded to the spine 66 of the panel support frame 64. The upper end of connecting plate 82 and bearing 86 are disposed between the brackets 84. Pivot member 88, such as a bolt, passes through the mounting brackets 84, connecting plate 82, and bearing 86, and is secured by a conventional nut threaded onto the end of the pivot member 88.

[024] Figs. 6 and 7 shows a second mounting assembly 90 for mounting the upper end of the panel support frame 64 to the rear support frame 50. The second mounting assembly 90 comprises a connecting plate 92, a pair of mounting forks 94, a bearing 96, and a pivot member 98. Connecting plate 92 is secured by bolts or other mechanical fasteners to the gusset plate 56 of the rear support frame 50. The mounting forks 94 include a slot 95 to receive the spine 66 of the panel support frame 64. The mounting

forks 94 may be permanently fixed to the spine 66 by welding. Bearing 96 is disposed between the lower end of the mounting forks 94. Pivot member 98 extends through the mounting forks 94, upper end of connecting plate 92, and bearing 96, and is secured in place by a nut threaded onto the end of the pivot member 98.

[025] Pivot member 88 on the first mounting assembly 80 and pivot member 98 on the second mounting assembly 90 are co-axially aligned along the axis and rotation of the panel assembly 60. The rotational axis inclines upwardly from front to rear in a plane perpendicular to the base 20. The rotational axis is aligned when deployed so that the plane of the rotational axis aligns with the sun at the highest altitude. Thus, the panel assembly 60 can rotate to track the path of the sun as the sun travels across the sky during the day.

[026] Actuator assembly 100, shown in Fig. 7, comprises a pivot arm 102, fluid cylinder 104, and control unit 106. Pivot arm 102 is connected at one end to the spine 66 of the panel support frame 64. Pivot arm 102 extends outward from the spine 66. Fluid cylinder 104 is connected at one end to the pivot arm 102 and the opposite end to the front Frame. Control unit 106 is mounted to the front Frame and controls operation of the fluid cylinder 104. The extension of the fluid cylinder 104 rotates the panel assembly 60 in a first direction, while retraction of the fluid cylinder 104 rotates the panel assembly 60 in the opposite direction. The control unit 106 preferably includes a processor and associated memory for controlling the rotation of the panel assembly 60. The control unit 106 may store ephemeris data in memory that gives the position of the sun in the sky at different times of the day. Alternatively, the position of the sun in the sky at different times of day may be calculated based on formulas that model the sun's movement. As the azimuth of the sun changes, the control unit 106 rotates the panel assembly 60 to minimize as much as possible the angle of incidence of the sun rays on

the solar panels 62. It is noted that the panel assembly 60 rotates about a single axis that follows the azimuth of the sun. Those skilled in the art will appreciate that it is also possible to change the angle of inclination of the solar panels to track changes in the altitude of the sun.

[027] As previously noted, the solar tracker 10 is designed so that most of the components can be disassembled and packaged in the base 20. Fig. 8 shows the base 20 with the base sections 22 folded open. Fig. 9 shows the panel carriers 70 stored in one of the base sections 22. Components of the support frame 40 may, likewise, be disposed in one of the base sections. Essentially all of the components, with the exception of the spine 66 and solar panels 62, will fit inside the base sections 22. The base sections 22 can then be folded to a closed position as shown in Fig. 9 to form a suitcase with a compartment containing most of the solar tracker components.

[028] Fig. 10 shows a second embodiment of the solar tracker. This embodiment is the same as the first embodiment except for the construction of the base, which is designated by reference number 120 in this embodiment. The base 120 comprises an I-shaped frame having center beam 122 and a pair of end beam 124. The end beams 124 may be secured to the center beam 122 by bolting, welding, or other suitable means.

[029] The base 120 is designed to lie on a flat surface. The base 120 is held in place by specially-designed ballast containers 130 that contain a ballast material, such as sand, gravel, water, etc. In the exemplary embodiment shown in Fig. 6, the ballast containers 130 comprise open containers having a bottom 132, side walls 134, and open top 136. A channel 138 is formed in the bottom 132 of the ballast containers 130 so that the center beam 122 of the base 120 can pass through the ballast containers 130 as shown in Fig. 10. Thus, the ballast containers 130 effectively straddle the center beam

122 of the base 120. Once the ballast containers 130 are placed on the center beam 122 as shown in Fig. 100, the ballast containers 130 can be filled with a ballast material (e.g., gravel, sand, water, etc) to hold the base 120 in place.

[030] While the embodiment shown in Fig. 6 contains the ballast material in open ballast containers 130, those skilled in the art will appreciate that closed ballast containers 130 could also be used. For example, the ballast container 130 may comprise a closed container with a fill hole for filling the ballast container 130 with water or other fluid. The ballast container 130 could be formed with handle or other features for carrying the ballast containers 130. The ballast containers 130 may also have features for stacking and/or nesting the ballast containers 130.

[031] Fig. 11 shows a third embodiment of the solar tracker. Like, the previous embodiment the base 120 comprises an I-shaped frame having center beam 122 and a pair of end beams 124. The end beams 124 may be secured to the center beam 122 by bolting, welding, or other suitable means. In the illustrated embodiment, the center beam 122 and end beams are metal tubes. Those skilled in the art will appreciate that the center beam 122 and end beams 124 may also comprise metal channels, metal I-beams, or other structural members.

[032] The base 120 is designed to lie on a flat surface. The base 120 is held in place by anchor members 140 that are embedded in the ground or other support surface. Anchor brackets 142 connect the anchor members to the end beams 124 of the base 120.

[033] The present invention provides a free-standing solar tracker 10 that can be easily transported to a desired location and installed. The solar tracker assembly 10 is designed to be free-standing and does not require any foundation. The solar tracker 10 rests on the surface of the ground and is held in place by ballast material. If desired, the

solar tracker assembly 10 may be placed on a concrete pad, but there is no need in most instances to fasten the solar tracker to the concrete pad. However, those skilled in the art will appreciate that tie-down straps or other securing devices could be used in conjunction with the ballast material, particularly where very high winds are expected. The base of the solar tracker assembly is designed to serve as a "suitcase" for transporting the components of the solar tracker 10. As noted previously, most of the components of the solar tracker, with the exception of the spine 66 and solar panels 72, can be packaged within the base 20 for transportation and storage.

[034] The present invention may, of course, be carried out in other specific ways than those herein set forth without departing from the scope and essential characteristics of the invention. The present embodiments are, therefore, to be considered in all respects as illustrative and not restrictive, and all changes coming within the meaning and equivalency range of the appended claims are intended to be embraced therein.

CLAIMS

What is claimed is:

1. A support structure for solar tracker comprising:
 - a support frame;
 - a panel assembly rotatably mounted to said support frame and configured to support one or more solar panels, said panel assembly including:
 - a central spine rotatably mounted to the support frame; and
 - a plurality of panel carriers extending outwardly from said central spine for supporting said solar panels;
 - an actuator assembly for rotating the panel assembly to track the movement of the sun.
2. The solar tracker assembly of claim 1 further comprising a mounting assembly for rotatably mounting the panel assembly to the support frame, said mounting assembly comprising:
 - a mounting member configured to be rotatably connected to said support frame;
 - and
 - a slot in said mounting member configured to receive the central spine of the panel assembly.
3. The solar tracker of claim 1 further comprising:
 - a base forming an open pan for containing a ballast material; and
 - a ballast material contained within the open pan.
4. The solar tracker of claim 1 further comprising:

a base having one or more base beams that rest on an underlying support surface; and
one or more ballast containers configured to straddle at least one of the base beams for containing a ballast material to hold said solar tracker in place.

5. A solar tracker comprising:
 - a base forming an open base pan;
 - a ballast material contained in the base pan;
 - a support frame mounted to said base;
 - a panel assembly rotatably mounted to said support frame; and
 - an actuator assembly for rotating the panel assembly to track the movement of the sun.
6. The solar tracker of claim 5 wherein the panel assembly comprises a panel support frame and a plurality of solar panel mounted to said panel support frame.
7. The solar tracker of claim 6 wherein the panel assembly comprises:
 - a central spine rotatably mounted to the support frame; and
 - a plurality of panel carriers extending outwardly from said spine for supporting said solar panels.
8. The solar tracker assembly of claim 5 including a mounting assembly for rotatably mounting the panel assembly to the support frame, said mounting assembly comprising:
 - a mounting fork configured to be pivotally connected to said support frame; and

a slot in said mounting fork configured to receive the spine of the panel assembly.

9. A solar system comprising:
 - a base having first and second sections configurable in a deployed position and a storage position, said base forming an open pan for containing a ballast material in the deployed position and forming a carrier having an internal compartment in the storage position;
 - a support frame removably mounted to said base, said support frame including one or more frame members configured to be contained in the internal compartment of the base when the base is configured in a storage position; and
 - a panel assembly configured to be removably mounted to said support frame.
10. The solar system of claim 12 wherein the panel assembly comprises a central spine rotatably mounted to the support frame; and a plurality of panel carriers extending outwardly from said spine for supporting said solar panels.
11. The solar system of claim 13 wherein panel carriers are removably connected to the spine and are configured to fit inside said internal compartment of said base when said base is in the storage position.
12. A solar system comprising:
 - a base comprising one or more base beams that rest on an underlying support surface;

a support frame mounted to said base;
a panel assembly mounted to said support frame, said panel assembly including
a plurality of solar panels; and
one or more ballast containers configured to straddle at least one of the base
beams for containing a ballast material to hold said solar tracker in place,
wherein the ballast containers comprise a bottom, side walls and an open
top, and wherein the bottom has a channel formed therein to allow
passage of one of said base beams through the ballast container.

13. (Original) The solar system of claim 12 said panel assembly is rotatably
mounted to said frame and further comprising an actuator assembly for rotating the
panel assembly to track the movement of the sun.

14. (Original) The solar tracker of claim 13 wherein the panel assembly comprises a
central spine rotatably mounted to the support frame; and a plurality of panel carriers
extending outwardly from said spine for supporting said solar panels.

15. (Original) The solar tracker assembly of claim 14 including a mounting assembly
for rotatably mounting the panel assembly to the support frame, said mounting assembly
comprising:

a mounting bracket configured to be pivotally connected to said support frame;
and
a slot in said mounting fork configured to receive the spine of the panel
assembly.

16. The solar tracker of claim 12 wherein the panel assembly is mounted to rotate about an inclined rotational axis lying in a plane perpendicular to the base such that the rotation of the panel assembly tracks changes in the azimuth of the sun.

ABSTRACT

A free-standing solar tracker comprises a base, a support frame, a panel assembly comprising one or more solar panels, and an actuator to rotate the panel assembly to track the movement of the sun. The solar tracker is designed to be free-standing and requires no foundation. When the solar tracker is deployed, the base forms a pan to contain a ballast material for holding the base in place. The base of the solar tracker is designed to serve as a "suitcase" to contain most of the components of the solar tracker, making it easier to transport the solar tracker 10 to a location where the solar tracker is installed.

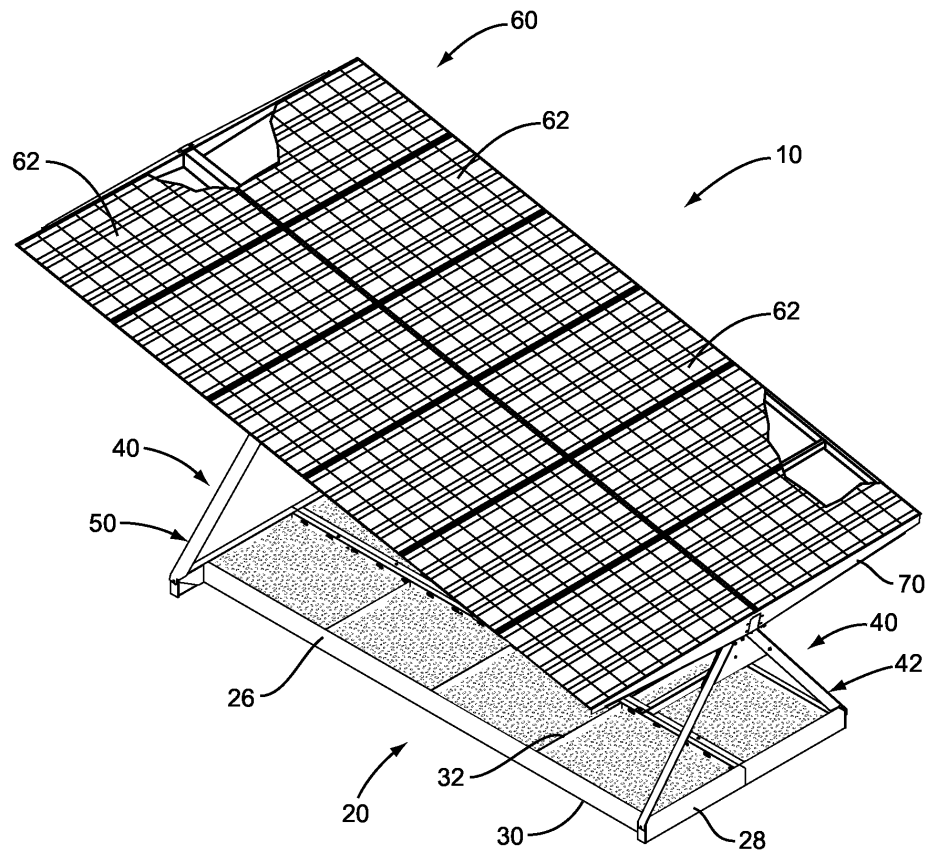


FIG. 1

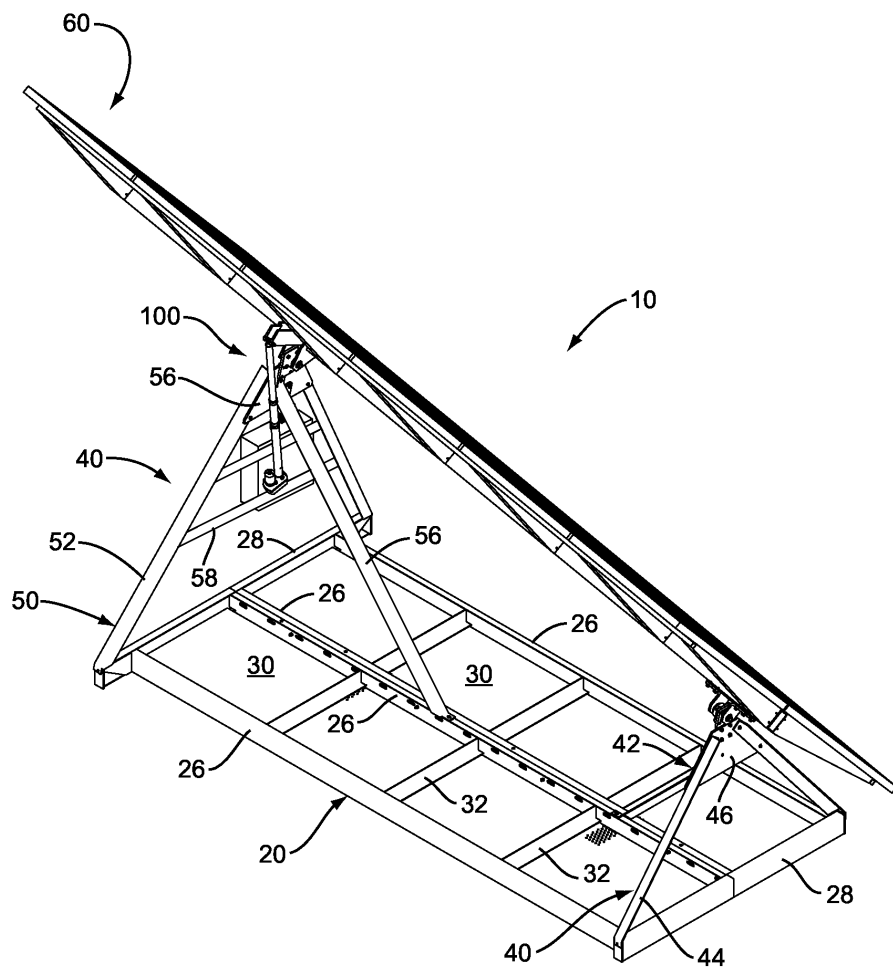


FIG. 2

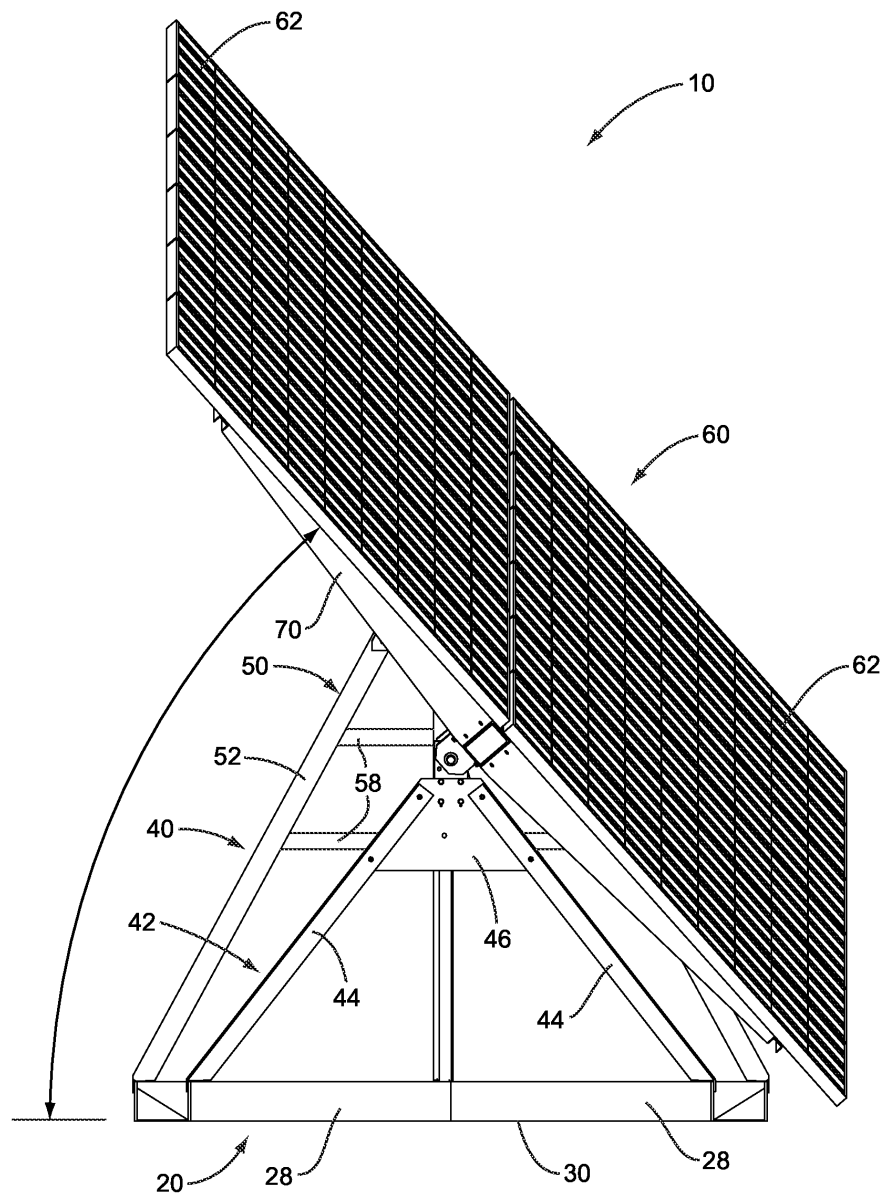


FIG. 3

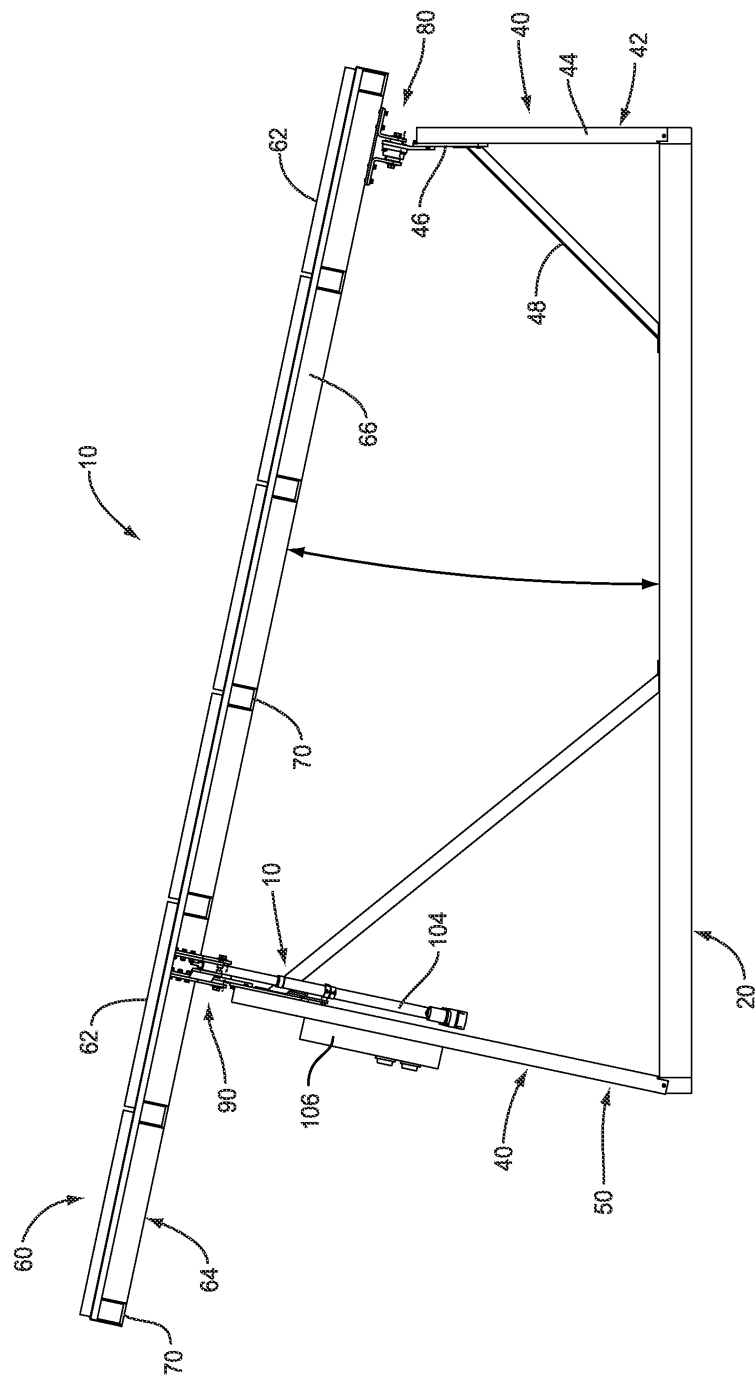


FIG. 4

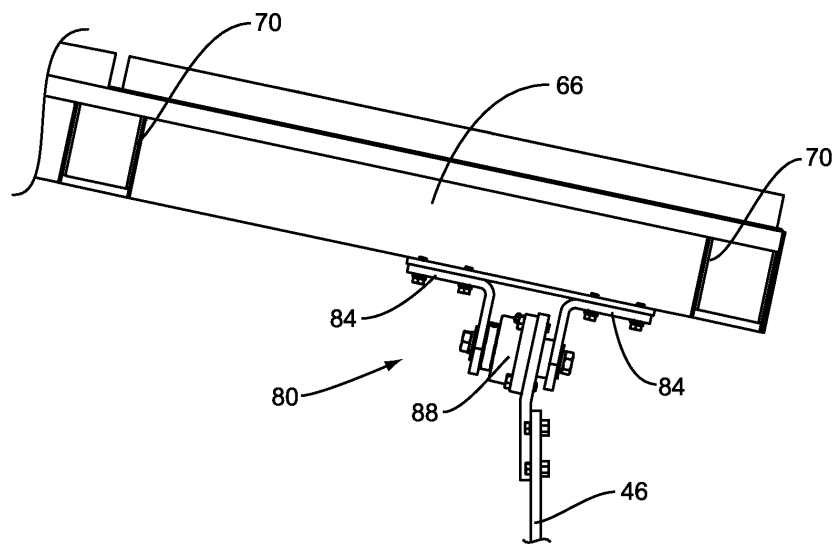


FIG. 5

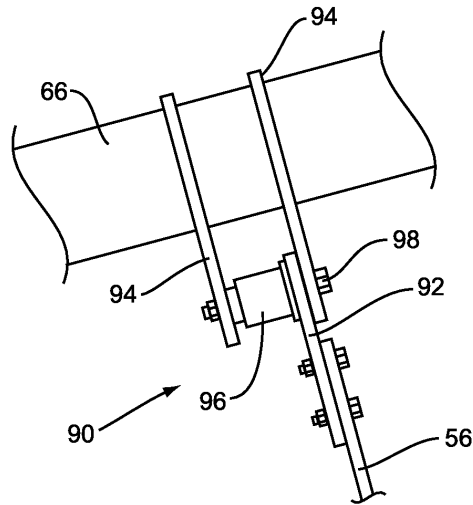


FIG. 6

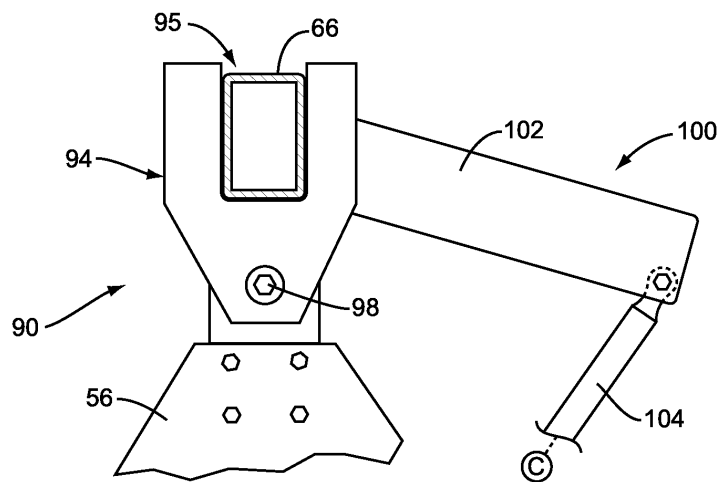


FIG. 7

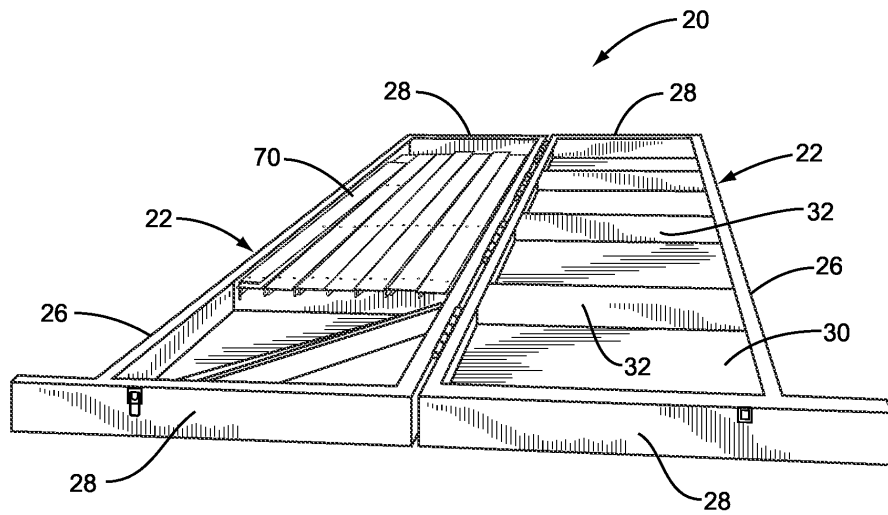


FIG. 8

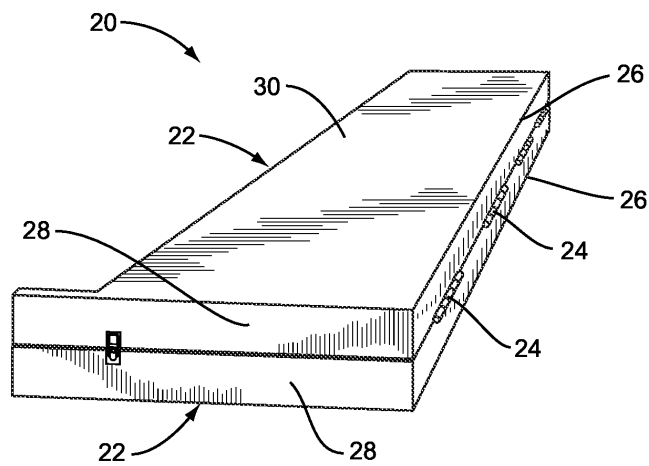


FIG. 9

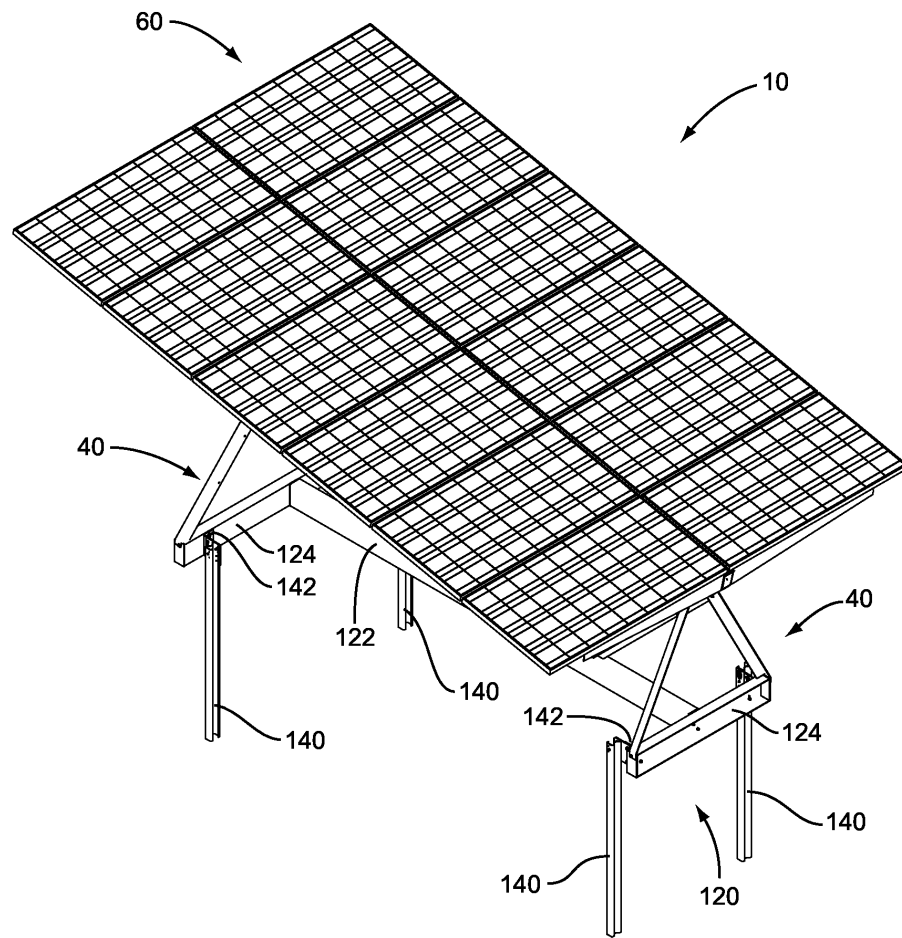


FIG. 11

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention: **SOLAR TRACKER**

As the below named inventor, I hereby declare that:

This declaration is directed to:

- ☒ The attached application, or
☐ United States application number _____ filed on _____
or PCT international application _____ filed on _____

The above-identified application was made or authorized to be made by me.

I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.

I hereby acknowledge that any willful false statement made in the declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

I hereby state that I have reviewed and understand the contents of the above-identified application, including the claims.

I hereby acknowledge the duty to disclose information which is material to patentability as defined in 37 C.F.R. 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

LEGAL NAME OF INVENTOR:

Inventor: Mr. Rovshan Sade

Signature: Rovshan Sade Date: 04/30/2015

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		Solar Tracker		
First Named Inventor/Applicant Name:		Rovshan Sade		
Filer:		David E. Bennett/Donna Donovan		
Attorney Docket Number:		6445-007		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	70	70
Utility Search Fee	2111	1	300	300
Utility Examination Fee	2311	1	360	360
Pages:				
Claims:				
Independent Claims in Excess of 3	2201	1	210	210
Miscellaneous-Filing:				
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				940

Electronic Acknowledgement Receipt	
EFS ID:	22216430
Application Number:	14700436
International Application Number:	
Confirmation Number:	4042
Title of Invention:	Solar Tracker
First Named Inventor/Applicant Name:	Rovshan Sade
Customer Number:	24112
Filer:	David E. Bennett/Donna Donovan
Filer Authorized By:	David E. Bennett
Attorney Docket Number:	6445-007
Receipt Date:	30-APR-2015
Filing Date:	
Time Stamp:	13:20:38
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Electronic Funds Transfer
Payment was successfully received in RAM	\$ 940
RAM confirmation Number	13204
Deposit Account	
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows:	

File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	ADS.pdf	1289234	no	7
			5f8667ab49c7f4786ea1ddd8a9475ebc00770ddd		
Warnings:					
Information:					
2		Application.pdf	55486	yes	16
			16f88ac92f22a088a870907c4aac5da39d80fbc2		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	10	
	Claims		11	15	
	Abstract		16	16	
Warnings:					
Information:					
3	Drawings-only black and white line drawings	Drawings.pdf	1505716	no	9
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Warnings:					
Information:					
4	Oath or Declaration filed	Declaration.pdf	311365	no	1
			b26043e72396806a9d44016fa190aac51e09708b		
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	36259	no	2
			87821e13884ae4ed155c160e17c1ee2632592b23		
Warnings:					
Information:					
Total Files Size (in bytes):			3198060		

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

NOTE: This form is to be submitted with the Power of Attorney by Applicant form (PTO/AIA/82B) to identify the application to which the Power of Attorney is directed, in accordance with 37 CFR 1.5, unless the application number and filing date are identified in the Power of Attorney by Applicant form. If neither form PTO/AIA/82A nor form PTO/AIA/82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	14/700,436
Filing Date	August 30, 2015
First Named Inventor	Rovshan Sade
Title	Solar Tracker
Art Unit	
Examiner Name	
Attorney Docket Number	6445-007

SIGNATURE of Applicant or Patent Practitioner			
Signature	/David E. Bennett, Reg. No. 32,194/	Date (Optional)	04-30-2015
Name	David E. Bennett	Registration Number	32,194
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			
NOTE: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. If more than one applicant, use multiple forms.			
☐ *Total of _____ forms are submitted.			

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

POWER OF ATTORNEY BY APPLICANT

I hereby revoke all previous powers of attorney given in the application identified in either the attached transmittal letter or the boxes below.

Application Number	Filing Date
14/700,436	April 30, 2015

(Note: The boxes above may be left blank if information is provided on form PTO/AIA/82A.)

- ☒ I hereby appoint the Patent Practitioner(s) associated with the following Customer Number as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above:

24112

OR

- ☐ I hereby appoint Practitioner(s) named in the attached list (form PTO/AIA/82C) as my/our attorney(s) or agent(s), and to transact all business in the United States Patent and Trademark Office connected therewith for the patent application referenced in the attached transmittal letter (form PTO/AIA/82A) or identified above. (Note: Complete form PTO/AIA/82C.)

Please recognize or change the correspondence address for the application identified in the attached transmittal letter to:

- ☒ The address associated with the above-mentioned Customer Number

OR

- ☐ The address associated with Customer Number:

OR

Firm or Individual Name				
Address				
City	State	Zip		
Country				
Telephone	Email			

I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

--

- ☒ Inventor or Joint Inventor (title not required below)
- ☐ Legal Representative of a Deceased or Legally Incapacitated Inventor (title not required below)
- ☐ Assignee or Person to Whom the Inventor is Under an Obligation to Assign (provide signer's title if applicant is a juristic entity)
- ☐ Person Who Otherwise Shows Sufficient Proprietary Interest (e.g., a petition under 37 CFR 1.46(b)(2) was granted in the application or is concurrently being filed with this document) (provide signer's title if applicant is a juristic entity)

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied below) is authorized to act on behalf of the applicant (e.g., where the applicant is a juristic entity).

Signature	<i>Rovshan Sade</i>	Date (Optional)	
Name	Rovshan Sade		
Title			

NOTE: Signature - This form must be signed by the applicant in accordance with 37 CFR 1.33. See 37 CFR 1.4 for signature requirements and certifications. If more than one applicant, use multiple forms.

- ☒ Total of 1 forms are submitted.

This collection of information is required by 37 CFR 1.131, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Electronic Acknowledgement Receipt	
EFS ID:	22216765
Application Number:	14700436
International Application Number:	
Confirmation Number:	4042
Title of Invention:	Solar Tracker
First Named Inventor/Applicant Name:	Rovshan Sade
Customer Number:	24112
Filer:	David E. Bennett/Donna Donovan
Filer Authorized By:	David E. Bennett
Attorney Docket Number:	6445-007
Receipt Date:	30-APR-2015
Filing Date:	
Time Stamp:	13:31:09
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	Power_of_Attorney.pdf	870764 4190bc4fd2745857a7c1bba725cee8dee1f069a3	no	2
Warnings:					
Information:					

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National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.