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Dogwood Patent and Trademark Law
4801 Glenwood Avenue
Suite 200
Raleigh, NC 27612



**Courtesy Reminder for
Application Serial No: 17/417,739**

Attorney Docket No: 255/2 UTIL
Customer Number: 160172
Date of Electronic Notification: 01/30/2023

This is a courtesy reminder that new correspondence is available for this application. If you have not done so already, please review the correspondence. The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

An email notification regarding the correspondence was sent to the following email address(es) associated with your customer number:

ajohnson@dogwood-law.com

To view your correspondence online or update your email addresses, please visit us anytime at **<https://ppair-my.uspto.gov/pair/PrivatePair>**.

If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov or call 1-866-217-9197.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/417,739	03/07/2023	11596211	255/2 UTIL	1047

160172 7590 02/15/2023
Dogwood Patent and Trademark Law
4801 Glenwood Avenue
Suite 200
Raleigh, NC 27612

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 160 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 Patents Stakeholder Experience (OPSE), Stakeholder Support Division (SSD) at (571)-272-4200.

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

Paul T. James, Wrightsville Beach, NC;

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

Solbello, Inc., Vrightsville Beach, 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.

CERTIFICATION OF MICRO ENTITY STATUS (GROSS INCOME BASIS)					
Application Number or Control Number (if applicable): 17/417,739			Patent Number (if applicable):		
First Named Inventor: Paul T. James			Title of Invention: SELF-ADJUSTING SUN SHADE ASSEMBLY		
The applicant hereby certifies the following—					
(1) SMALL ENTITY REQUIREMENT – The applicant qualifies as a small entity as defined in 37 CFR 1.27. (2) APPLICATION FILING LIMIT – Neither the applicant nor the inventor nor a joint inventor has been named as the inventor or a joint inventor on more than four previously filed U.S. patent applications, excluding provisional applications and international applications under the Patent Cooperation Treaty (PCT) for which the basic national fee under 37 CFR 1.492(a) was not paid, and also excluding patent applications for which the applicant has assigned all ownership rights, or is obligated to assign all ownership rights, as a result of the applicant's previous employment. (3) GROSS INCOME LIMIT ON APPLICANTS AND INVENTORS – Neither the applicant nor the inventor nor a joint inventor, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986 (26 U.S.C. 61(a)), exceeding the "Maximum Qualifying Gross Income" reported on the USPTO Web site at http://www.uspto.gov/patents/law/micro_entity.jsp which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census. (4) GROSS INCOME LIMIT ON PARTIES WITH AN "OWNERSHIP INTEREST" – Neither the applicant nor the inventor nor a joint inventor has assigned, granted, or conveyed, nor is under an obligation by contract or law to assign, grant, or convey, a license or other ownership interest in the application concerned to an entity that, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986, exceeding the "Maximum Qualifying Gross Income" reported on the USPTO Web site at http://www.uspto.gov/patents/law/micro_entity.jsp which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.					
SIGNATURE by an authorized party set forth in 37 CFR 1.33(b)					
Signature		/Ashley D. Johnson/			
Name		Ashley D. Johnson			
Date		1/30/2023		Telephone	9195767612
				Registration No.	58482
☐		There is more than one inventor and I am one of the inventors who are jointly identified as the applicant. The required additional certification form(s) signed by the other joint inventor(s) are included with this form.			

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. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013). <https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf>

Routine uses of the information in this record may include disclosure to: 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law; 2) a Federal, state, local, or international agency, in response to its request; 3) a contractor of the USPTO having need for the information in order to perform a contract; 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record; 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record; 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations; 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals; 8) 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)); 9) the Office of Personnel Management (OPM) for personnel research purposes; and 9) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Additional Uses

Additional USPTO uses of the information in this record may include disclosure to: 1) the International Bureau of the World Intellectual Property Organization, if the record is related to an international application filed under the Patent Cooperation Treaty; 2) the public i) after publication of the application pursuant to 35 U.S.C. 122(b), ii) after issuance of a patent pursuant to 35 U.S.C. 151, iii) 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, or iv) without publication of the application or patent under the specific circumstances provided for by 37 CFR 1.14(a)(1)(v)-(vii); and/or 3) the National Archives and Records Administration, for inspection of records.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (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)

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.

160172 7590 01/30/2023
Dogwood Patent and Trademark Law
4801 Glenwood Avenue
Suite 200
Raleigh, NC 27612

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

Ashley D. Johnson	(Typed or printed name)
/Ashley D. Johnson/	(Signature)
January 30, 2023	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/417,739	06/23/2021	Paul T. James	255/2 UTIL	1047

TITLE OF INVENTION: SELF-ADJUSTING SUN SHADE ASSEMBLY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	MICRO	\$240	\$0.00	\$0.00	\$240	05/01/2023

EXAMINER	ART UNIT	CLASS-SUBCLASS
HAWK, NOAH CHANDLER	3636	135-098000

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/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or 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 Ashley D. Johnson
2 Dogwood Patent and Trademark Law
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 must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). 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. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

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

☒ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

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 /Ashley D. Johnson/

Date January 30, 2023

Typed or printed name Ashley D. Johnson

Registration No. _____

Electronic Patent Application Fee Transmittal

Application Number:	17417739			
Filing Date:	23-Jun-2021			
Title of Invention:	SELF-ADJUSTING SUN SHADE ASSEMBLY			
First Named Inventor/Applicant Name:	Paul T. James			
Filer:	Ashley Darden Johnson			
Attorney Docket Number:	255/2 UTIL			
Filed as Micro Entity				
Filing Fees for U.S. National Stage under 35 USC 371				
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 ISSUE FEE	3501	1	240	240

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				240

Electronic Acknowledgement Receipt

EFS ID:	47449477
Application Number:	17417739
International Application Number:	
Confirmation Number:	1047
Title of Invention:	SELF-ADJUSTING SUN SHADE ASSEMBLY
First Named Inventor/Applicant Name:	Paul T. James
Customer Number:	160172
Filer:	Ashley Darden Johnson
Filer Authorized By:	
Attorney Docket Number:	255/2 UTIL
Receipt Date:	30-JAN-2023
Filing Date:	23-JUN-2021
Time Stamp:	15:49:35
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$240
RAM confirmation Number	E20231TF50020839
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	Certification of Micro Entity (Gross Income Basis)	PJ_ME.pdf	183063	no	2
			3430f09cb6d8657a2ba0d4742914947035647061		
Warnings:					
Information:					
2	Issue Fee Payment (PTO-85B)	IFTM.pdf	816941	no	1
			5f643c683a2813be3f06a0d00c2e8909f0af5c12		
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	37540	no	2
			377297e787f01bea6384ab97a8eceed28a5bd51f		
Warnings:					
Information:					
Total Files Size (in bytes):			1037544		
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.					



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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NOTICE OF ALLOWANCE AND FEE(S) DUE

160172 7590 01/30/2023
Dogwood Patent and Trademark Law
4801 Glenwood Avenue
Suite 200
Raleigh, NC 27612

EXAMINER	
HAWK, NOAH CHANDLER	
ART UNIT	PAPER NUMBER
3636	

DATE MAILED: 01/30/2023

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/417,739	06/23/2021	Paul T. James	255/2 UTIL	1047

TITLE OF INVENTION: SELF-ADJUSTING SUN SHADE ASSEMBLY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	MICRO	\$240	\$0.00	\$0.00	\$240	05/01/2023

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 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted 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. 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

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (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)

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.

160172 7590 01/30/2023
Dogwood Patent and Trademark Law
4801 Glenwood Avenue
Suite 200
Raleigh, NC 27612

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 transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/417,739	06/23/2021	Paul T. James	255/2 UTIL	1047

TITLE OF INVENTION: SELF-ADJUSTING SUN SHADE ASSEMBLY

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	MICRO	\$240	\$0.00	\$0.00	\$240	05/01/2023

EXAMINER	ART UNIT	CLASS-SUBCLASS
HAWK, NOAH CHANDLER	3636	135-098000

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/AIA/122 or PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or 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,

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 must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). 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. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

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

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

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 _____

Date _____

Typed or printed name _____

Registration No. _____



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.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/417,739	06/23/2021	Paul T. James	255/2 UTIL	1047
160172	7590	01/30/2023	EXAMINER	
Dogwood Patent and Trademark Law 4801 Glenwood Avenue Suite 200 Raleigh, NC 27612			HAWK, NOAH CHANDLER	
			ART UNIT	PAPER NUMBER
			3636	

DATE MAILED: 01/30/2023

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 30 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:

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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. 17/417,739	Applicant(s) James, Paul T.	
	Examiner NOAH C HAWK	Art Unit 3636	AIA (FITF) Status Yes

-- 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 _____.
☐ 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 1-5,7 and 9-22. 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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/Noah Chandler Hawk/
Primary Examiner, Art Unit 3636

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Allowable Subject Matter

2. Claims 1-5, 7, and 9-22 are allowed.
3. The following is an examiner's statement of reasons for allowance: the prior art made of record has failed to suggest, either singly or in combination, a novel sun shade assembly including a mast with a bottom end having an anchor and a top end connected to a pivot cap, two ribs extending outwardly from the pivot cap to form a t-shaped support, a sail with a channel at one edge for receiving the ribs, a slider on the mast with support arms between the slider and the ribs, the slider moving up and down on the mast, and wherein the sail, ribs, slider, support arms, and pivot cap can rotate about the mast to orient the shade in response to the wind.
4. While Marcelli teaches a wind-oriented umbrella, there is no suggestion in this device to use a t-shaped support or to have the sail attached at a front edge to a pair of ribs. Schultes et al. teaches a single-sided canopy, but also fails to teach the two support arms and wind-orienting feature. Beatty, Parker, Crimi, Funston, Shires, Jenkins and Pilz et al. teach t-shaped canopy supports but fail to teach the wind-orientation. Cox teaches a wind-supported umbrella canopy.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NOAH CHANDLER HAWK whose telephone number is (571)272-1480. The examiner can normally be reached M-F 9am to 5:30pm.

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, David Dunn can be reached on 5712726670. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and <https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197

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(toll-free). If you would like assistance from a USPTO Customer Service

Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NOAH CHANDLER HAWK
Primary Examiner
Art Unit 3636

/Noah Chandler Hawk/
Primary Examiner, Art Unit 3636

<i>Notice of References Cited</i>	Application/Control No. 17/417,739		Applicant(s)/Patent Under Reexamination James, Paul T.	
	Examiner NOAH C HAWK		Art Unit 3636	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-3070107-A	12-1962	BEATTY JOHN W	E04H15/003	D30/118
*	B	US-3075536-A	01-1963	PARKER GEORGE B D	E04H15/003	D21/837
*	C	US-20120291830-A1	11-2012	Crimi; Charles	E04H15/58	135/117
*	D	US-20140041703-A1	02-2014	Funston; David	E04H15/54	135/121
*	E	US-20060278261-A1	12-2006	Marcelli; Fausto	A45B25/22	135/98
*	F	US-7406977-B1	08-2008	Shires; Henry C.	E04H15/26	135/121
*	G	US-9051756-B1	06-2015	Jenkins; John D.	E04H15/58	1/1
*	H	US-4433699-A	02-1984	Schultes; Tilmann	A45B23/00	135/117
*	I	US-6422252-B1	07-2002	Pilz; Helmut	A45B23/00	135/20.1
*	J	US-11219286-B2	01-2022	Cox; Brian	E04H15/58	1/1
	K					
	L					
	M					

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.

<i>Index of Claims</i> 	Application/Control No. 17/417,739	Applicant(s)/Patent Under Reexamination James, Paul T.
	Examiner NOAH C HAWK	Art Unit 3636

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

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM			DATE							
Final	Original	01/10/2023								
1	1	=								
2	2	=								
3	3	=								
4	4	=								
5	5	=								
	6	-								
6	7	=								
	8	-								
14	9	=								
7	10	=								
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11	14	=								
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15	16	=								
20	17	=								
16	18	=								
17	19	=								
18	20	=								
13	21	=								
19	22	=								

<i>Search Notes</i> 	Application/Control No. 17/417,739	Applicant(s)/Patent Under Reexamination James, Paul T.
	Examiner NOAH C HAWK	Art Unit 3636

CPC - Searched*		
Symbol	Date	Examiner
A45B 23/00	01/09/2023	NCH
E04H 15/44	01/09/2023	NCH

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* 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
Considered ISR filed with application	01/10/2023	NCH
Please see attached PE2E search history	01/10/2023	NCH
Performed inventor name search in DAV	01/10/2023	NCH

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
A45B	23/00, 2023/0093, 2025/105	01/10/2023	NCH
E04H	15/44, 15/005, 15/58	01/10/2023	NCH

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Issue Classification 	Application/Control No. 17/417,739	Applicant(s)/Patent Under Reexamination James, Paul T.
	Examiner NOAH C HAWK	Art Unit 3636

CPC						
Symbol					Type	Version
A45B	/	23	/	00	F	2013-01-01
A45B	/	25	/	02	I	2013-01-01
A45B	/	25	/	06	I	2013-01-01
A45B	/	25	/	10	I	2013-01-01
A45B	/	25	/	18	I	2013-01-01
A45B	/	2023	/	0093	A	2013-01-01
A45B	/	2025	/	105	A	2013-01-01

CPC Combination Sets				
Symbol	Type	Set	Ranking	Version
/				

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 20	
/Noah Chandler Hawk/ Primary Examiner, Art Unit 3636 (Primary Examiner) _____ (Date) 10 January 2023		O.G. Print Claim(s) 1	O.G. Print Figure 1, 10G

Issue Classification 	Application/Control No. 17/417,739	Applicant(s)/Patent Under Reexamination James, Paul T.	
	Examiner NOAH C HAWK	Art Unit 3636	

INTERNATIONAL CLASSIFICATION			
CLAIMED			
A45B	/	23	/ 00
	/		/

NON-CLAIMED			
	/		/

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/Noah Chandler Hawk/ Primary Examiner, Art Unit 3636 (Primary Examiner)	10 January 2023 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1, 10G

Issue Classification 	Application/Control No. 17/417,739	Applicant(s)/Patent Under Reexamination James, Paul T.
	Examiner NOAH C HAWK	Art Unit 3636

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
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2	2	10	13	19	22										
3	3	11	14												
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7	7	20	17												
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7	10	17	19												
8	11	18	20												

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 20	
/Noah Chandler Hawk/ Primary Examiner, Art Unit 3636 (Primary Examiner) _____ (Date) _____		10 January 2023	O.G. Print Claim(s) 1 O.G. Print Figure 1, 10G

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L227	2	"17417739"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB)	OR	ON	ON	2023/01/09 06:18 AM
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L240	11	(13/626429 11/029777 09/906640 06/319151 16/646797 11/147515 13/926979 13/459195 13/653725).APP.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2023/01/10 12:28 PM
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		"4836231" "4836232" "D359161" "D363597" "5871024" "D414878" "D443409").pn. OR ("11219286" "9512632" "6422252").urpn. AND (PGPB USPT USOC).dbnm.					
L242	1114	a45b2023/0093.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB)	OR	ON	ON	2023/01/10 02:52 PM
L243	173	a45b2025/105.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB)	OR	ON	ON	2023/01/10 02:53 PM
L244	214	242 AND wind	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB)	OR	ON	ON	2023/01/10 02:53 PM
L245	2528	e04h15/005,58.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB)	OR	ON	ON	2023/01/10 02:56 PM
L246	563	245 AND wind	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB)	OR	ON	ON	2023/01/10 02:56 PM
L247	383	246 AND (rotat\$4 pivot\$4 turn\$4 orient\$4)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; IBM_TDB)	OR	ON	ON	2023/01/10 02:57 PM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

PE2E SEARCH - Search History (Similarity Search)

No Similarity Results available

Bibliographic Data

Application No: 17/417,739

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☒ No ☐ Met After Allowance

Verified and Acknowledged: /Noah Chandler Hawk/

NCH

Examiner's Signature

Initials

Title:

SELF-ADJUSTING SUN SHADE ASSEMBLY

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
06/23/2021	135	3636	255/2 UTIL
RULE			

APPLICANTS

Solbello, Inc., Vrightsville Beach, NC, UNITED STATES

INVENTORS

Paul T. James, Wrightsville Beach, NC, UNITED STATES

CONTINUING DATA

This application is a 371 of PCT/US20/38920 06/22/2020

PCT/US20/38920 has PRO of 62892700 08/28/2019

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

02/28/2022

** MICRO ENTITY **

STATE OR COUNTRY

UNITED STATES

ADDRESS

Dogwood Patent and Trademark Law

4801 Glenwood Avenue

Suite 200

Raleigh, NC 27612

UNITED STATES

FILING FEE RECEIVED

\$415



UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/417,739	06/23/2021	Paul T. James	255/2 UTIL

CONFIRMATION NO. 1047

PUBLICATION NOTICE



OC000000134410648

160172
Dogwood Patent and Trademark Law
4801 Glenwood Avenue
Suite 200
Raleigh, NC 27612

Title:SELF-ADJUSTING SUN SHADE ASSEMBLY

Publication No.US-2022-0175098-A1

Publication Date:06/09/2022

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 Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, 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 <https://portal.uspto.gov/pair/PublicPair>. 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



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Alexandria, Virginia 22313-1450
www.uspto.gov

U.S. APPLICATION NO.	FIRST NAMED INVENTOR	ATTY. DOCKET NO.
17/417,739	Paul T. James	255/2 UTIL

160172
Dogwood Patent and Trademark Law
4801 Glenwood Avenue
Suite 200
Raleigh, NC 27612

INTERNATIONAL APPLICATION NO.	
PCT/US20/38920	
I.A. FILING DATE	PRIORITY DATE
06/22/2020	08/28/2019

CONFIRMATION NO. 1047
371 ACCEPTANCE LETTER



OC000000132133584

Date Mailed: 03/02/2022

NOTICE OF ACCEPTANCE OF APPLICATION UNDER 35 U.S.C 371 AND 37 CFR 1.495

The applicant is hereby advised that the United States Patent and Trademark Office, in its capacity as a Designated / Elected Office (37 CFR 1.495), has ACCEPTED the above identified international application for national patentability examination in the United States Patent and Trademark Office.

The United States Application Number assigned to the application is shown above. A Filing Receipt will be issued for the present application in due course. **THE DATE APPEARING ON THE FILING RECEIPT AS THE "FILING DATE or 371(c) DATE" IS THE DATE ON WHICH THE LAST OF THE 35 U.S.C. 371 (c)(1) and (c)(2) REQUIREMENTS HAS BEEN RECEIVED IN THE OFFICE. THIS DATE IS SHOWN BELOW.** The filing date of the above identified application is the international filing date of the international application (Article 11(3) and 35 U.S.C. 363)

06/23/2021
DATE OF RECEIPT OF 35 U.S.C.
371(c)(1) and (c)(2) REQUIREMENTS

The following items have been received:

- Copy of the International Application filed on 06/23/2021
- Copy of the International Search Report filed on 06/23/2021
- Preliminary Amendments filed on 11/19/2021
- Inventor's Oath or Declaration filed on 06/23/2021
- Request for Immediate Examination filed on 06/23/2021
- U.S. Basic National Fees filed on 06/23/2021
- Assignee Statement for PGPUB filed on 06/23/2021
- Authorize Access to Search Results filed on 06/23/2021
- Priority Documents filed on 06/23/2021
- Power of Attorney filed on 06/23/2021
- Authorization to Permit Access filed on 06/23/2021
- Application Data Sheet (37 CFR 1.76) filed on 06/23/2021

Applicant is reminded that any communications to the United States Patent and Trademark Office must be mailed to the address given in the heading and include the U.S. application no. shown above (37 CFR 1.5)

THUY T TA

Telephone: (571) 272-9462

MULTIPLE DEPENDENT CLAIM FEE CALCULATION SHEET Substitute for Form PTO-1360 (For use with Form PTO/SB/06)							Application Number 17417739		Filing Date					
							Applicant(s) Paul James							
							* May be used for additional claims or amendments							
CLAIMS	AS FILED		AFTER FIRST AMENDMENT		AFTER SECOND AMENDMENT				*		*		*	
	Indep	Depend	Indep	Depend	Indep	Depend				Indep	Depend	Indep	Depend	Indep
1	1		1					51						
2		1		1				52						
3		1		1				53						
4		1		1				54						
5		1		1				55						
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14		1		1				64						
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Total Indep	2		2		0									
Total Depend	18	↙	18	↙	0	↙								
Total Claims	20		20		0									



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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
17/417,739	06/23/2021		415	255/2 UTIL	20	2

CONFIRMATION NO. 1047

FILING RECEIPT

160172
Dogwood Patent and Trademark Law
4801 Glenwood Avenue
Suite 200
Raleigh, NC 27612



0000000132133583

Date Mailed: 03/02/2022

Receipt is acknowledged of this non-provisional utility 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 FIRST INVENTOR, 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 corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction 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 provided that the request is grantable.

Inventor(s)

Paul T. James, Wrightsville Beach, NC;

Applicant(s)

Solbello, Inc., Wrightsville Beach, NC;

Assignment For Published Patent Application

Solbello, Inc., Raleigh, NC

Power of Attorney: The patent practitioners associated with Customer Number 160172

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/US20/38920 06/22/2020
which claims benefit of 62/892,700 08/28/2019

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.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 02/28/2022

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 17/417,739**

Projected Publication Date: 06/09/2022

Non-Publication Request: No

Early Publication Request: No

**** MICRO ENTITY ****

Title

SELF-ADJUSTING SUN SHADE ASSEMBLY

Preliminary Class

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.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 17/417,739				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OR 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			N/A	80			
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A	135			
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A	200			
TOTAL CLAIMS (37 CFR 1.16(j))	20	minus 20 = *				x 25 =	0.00			
INDEPENDENT CLAIMS (37 CFR 1.16(h))	2	minus 3 = *				x 120 =	0.00			
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			
			TOTAL			TOTAL	415			
* If the difference in column 1 is less than zero, enter "0" in column 2.										
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	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 ADD'L FEE			TOTAL ADD'L FEE	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	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 ADD'L FEE			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 found in the appropriate box in column 1.										

Electronic Acknowledgement Receipt

EFS ID:	44324456
Application Number:	17417739
International Application Number:	
Confirmation Number:	1047
Title of Invention:	SELF-ADJUSTING SUN SHADE ASSEMBLY
First Named Inventor/Applicant Name:	Paul T. James
Customer Number:	160172
Filer:	Ashley Darden Johnson
Filer Authorized By:	
Attorney Docket Number:	255/2 UTIL
Receipt Date:	19-NOV-2021
Filing Date:	
Time Stamp:	10:23:35
Application Type:	U.S. National Stage under 35 USC 371

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	Preliminary Amendment	Prelim_Amendment.pdf	180132	no	7
			c28c5eb99bfbbaabd1b3fd15760bdcf262064288		

Warnings:

Information:	
Total Files Size (in bytes):	180132
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.	

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Paul T. James	)	Group Art Unit: Not Yet Assigned
	)	
Serial No.: 17/417,739	)	Examiner: Not Yet Assigned
	)	
Filed: June 23, 2021	)	Attorney Docket No.: 255/2 UTIL
	)	
Confirmation No.: 1047	)	

For: SELF-ADJUSTING SUN SHADE ASSEMBLY

* * * * *

PRELIMINARY AMENDMENT

Via EFS-Web

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

This paper is being submitted prior to the mail date of a first Official Action under 37 C.F.R. §1.104. Applicant respectfully requests that the instant Preliminary Amendment be entered in view of the Amendments and Remarks set forth herein.

IN THE CLAIMS:

Please make the following claim amendments:

1. (Currently Amended) A sun shade assembly comprising:
 - a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap;
 - a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge;
 - a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast;
 - at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast;
 - ~~a tension adjuster that adjusts rotation of the pivot cap about the mast;~~ and
 - an anchor operably connected to the second end of the mast;
 - wherein the pivot cap, ribs, slider, and support arms are configured to rotate about the mast in response to blowing of the wind.
2. (Original) The assembly of claim 1, wherein the pivot cap rotates about the mast at an angle of about 0-360 degrees.
3. (Original) The assembly of claim 1, wherein the ribs are configured at an angle of greater than 180 degrees relative to each other.
4. (Original) The assembly of claim 1, wherein one face of the pivot cap comprises a lock defined by a bridge comprising an opening and a slidable arm that moves to cover and expose the opening.
5. (Original) The assembly of claim 1, wherein the slider is configured as a collar that fits around the exterior circumference of the mast.

6. (Canceled).
7. (Original) The assembly of claim 1, wherein the anchor is releasably attached to the second end of the mast.
8. (Canceled).
9. (Currently Amended) The assembly of claim ~~[[1]]~~ 21, wherein the tension adjuster is configured to permit the pivot cap, slider, ribs, and support arms to freely rotate about the mast, not rotate about the mast, or any level of rotation therebetween.
10. (Original) The assembly of claim 1, wherein the sail channel comprises one or more apertures to facilitate insertion of the ribs into the channel.
11. (Original) The assembly of claim 1, wherein the sail channel comprises one or more apertures to allow direct contact between each rib and a corresponding support arm.
12. (Original) The assembly of claim 1, wherein the sail has a top face and a bottom face, and wherein the bottom face includes at least one conduit configured as a channel with an open mouth positioned adjacent to the channel, a closed back end, and a length parallel with the length of the sail.
13. (Original) The assembly of claim 1, wherein the sail has a top face and a bottom face and wherein at least one of the top or bottom faces comprises a coating.
14. (Original) The assembly of claim 1, wherein the sail has an opposed rear edge comprising an adjacent hem constructed from a durable material.
15. (Canceled) The assembly of claim 1, wherein the mast comprises at least one

handle for gripping the mast.

16. (Currently Amended) A method of using a sunshade, the method comprising:
positioning the anchor of a sun shade assembly in a support surface,
wherein the sun shade assembly comprises:

a pair of ribs defined by a first end and a second end, wherein the
first end of each rib is attached to a pivot cap;

a sail with a front edge comprising a channel sized and shaped to
house each rib such that the ribs extend across the edge;

a mast comprising a first end and a second end, wherein the first end
is operably connected to the pivot cap, wherein the pivot cap can freely
rotate about the mast;

at least one support arm with a first end and a second end, wherein
the first end of the support arm is attached to a rib and the second end of
the support arm is attached to a slider configured to move up and down the
mast;

~~a tension adjuster that adjusts rotation of the pivot cap about the
mast; and~~

an anchor operably connected to the second end of the mast;

~~adjusting the tension adjuster to achieve a desired amount of rotation of the
pivot cap, ribs, support arms, slider, and sail relative to the non-movable mast;~~

wherein the sun shade assembly self-adjusts in response to the blowing of
the wind.

17. (Currently Amended) The method of claim ~~[[16]]~~ 22, wherein the tension
adjuster can be adjusted to allow the pivot cap, slider, ribs, and support arms
to freely rotate about the mast, not rotate about the mast, or any level of rotation
therebetween.

18. (Original) The method of claim 16, wherein the sail has a top face and a bottom

face, and wherein the bottom face includes at least one conduit configured as a channel with an open mouth positioned adjacent to the channel, a closed back end, and a length parallel with the length of the sail.

19. (Original) The method of claim 16, wherein one face of the pivot cap comprises a lock defined by a bridge comprising an opening and a slidable arm that moves to cover and expose the opening.
20. (Original) The method of claim 16, wherein the sail has an opposed rear edge comprising an adjacent hem constructed from a durable material.
21. (New) The assembly of claim 1, further comprising a tension adjuster that adjusts rotation of the pivot cap about the mast.
22. (New) The method of claim 16, wherein the sunshade assembly further comprises a tension adjuster that adjusts rotation of the pivot cap about the mast, and
wherein the method further includes adjusting the tension adjuster to achieve a desired amount of rotation of the pivot cap, ribs, support arms, slider, and sail relative to the non-movable mast.

REMARKS

Claims 6 and 8 have been canceled. Applicant reserves the right to file one or more patent applications directed to the canceled subject matter.

New claims 21-22 have been added, as set forth below.

21. The assembly of claim 1, further comprising a tension adjuster that adjusts rotation of the pivot cap about the mast.

22. The method of claim 16, wherein the sunshade assembly further comprises a tension adjuster that adjusts rotation of the pivot cap about the mast, and wherein the method further includes adjusting the tension adjuster to achieve a desired amount of rotation of the pivot cap, ribs, support arms, slider, and sail relative to the non-movable mast.

Support for claims 21-22 can be found throughout the specification as filed, including particularly in independent claims 1 and 16 as originally filed. Further support can be found in Figs. 5a, 10f, and 10g. No new matter has been added.

CONCLUSION

Applicant respectfully requests that the amendments to the claims as set forth herein be entered. If any small matter should remain outstanding after the Patent Office has had an opportunity to review the above Remarks, the Patent Office is respectfully requested to telephone the undersigned attorney to resolve these matters and avoid the issuance of an Official Action.

Respectfully

Respectfully submitted,

Date: November 19, 2021

/Ashley D. Johnson/

Ashley D. Johnson

U.S. Patent Application Serial No. 17/417,739

Attorney for Applicant
Registration No. 58,482

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Customer No. 160172

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Application Number	Not Yet Assigned
Filing Date	Filed Herewith
First Named Inventor	Paul T. James
Title	SELF-ADJUSTING SUN SHADE ASSEMBLY
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	255/2 UTIL

SIGNATURE of Applicant or Patent Practitioner

Signature	/Ashley D. Johnson/	Date (Optional)	
Name	Ashley D. Johnson	Registration Number	58482
Title (if Applicant is a juristic entity)			
Applicant Name (if Applicant is a juristic entity)			

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160172

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

Paul T. James

- ☒ 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)
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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

Paul T. James

Date (Optional)

Name

Paul T. James

Title

Inventor

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Paul T. James

2. Name and address of receiving party(ies)

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Internal Address:

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of conveyance/Execution Date(s):

Execution Date(s) 6-22-2020

☒ Assignment

☐ Merger

☐ Security Agreement

☐ Change of Name

☐ Joint Research Agreement

☐ Government Interest Assignment

☐ Executive Order 9424, Confirmatory License

☐ Other

Street Address: 206 Causeway Dr. #279

City: Wrightsville Beach

State: NC

Country: US Zip: 28480

Additional name(s) & address(es) attached? ☐ Yes ☒ No

4. Application or patent number(s):

☐ This document serves as an Oath/Declaration (37 CFR 1.63).

A. Patent Application No.(s)

62/892,700

PCT/US20/38920

B. Patent No.(s)

Additional numbers attached? ☐ Yes ☒ No

5. Name and address to whom correspondence concerning document should be mailed:

Name: Ashley D. Johnson

Internal Address:

Street Address: 4801 Glenwood Ave, Ste 200

City: Raleigh

State: NC Zip: 27612

Phone Number:

Docket Number:

Email Address: ajohnson@dogwood-law.com

6. Total number of applications and patents involved:

2

7. Total fee (37 CFR 1.21(h) & 3.41) \$0

☐ Authorized to be charged to deposit account

☐ Enclosed

☐ None required (government interest not affecting title)

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/Ashley D. Johnson/
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6/23/2021
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1/17

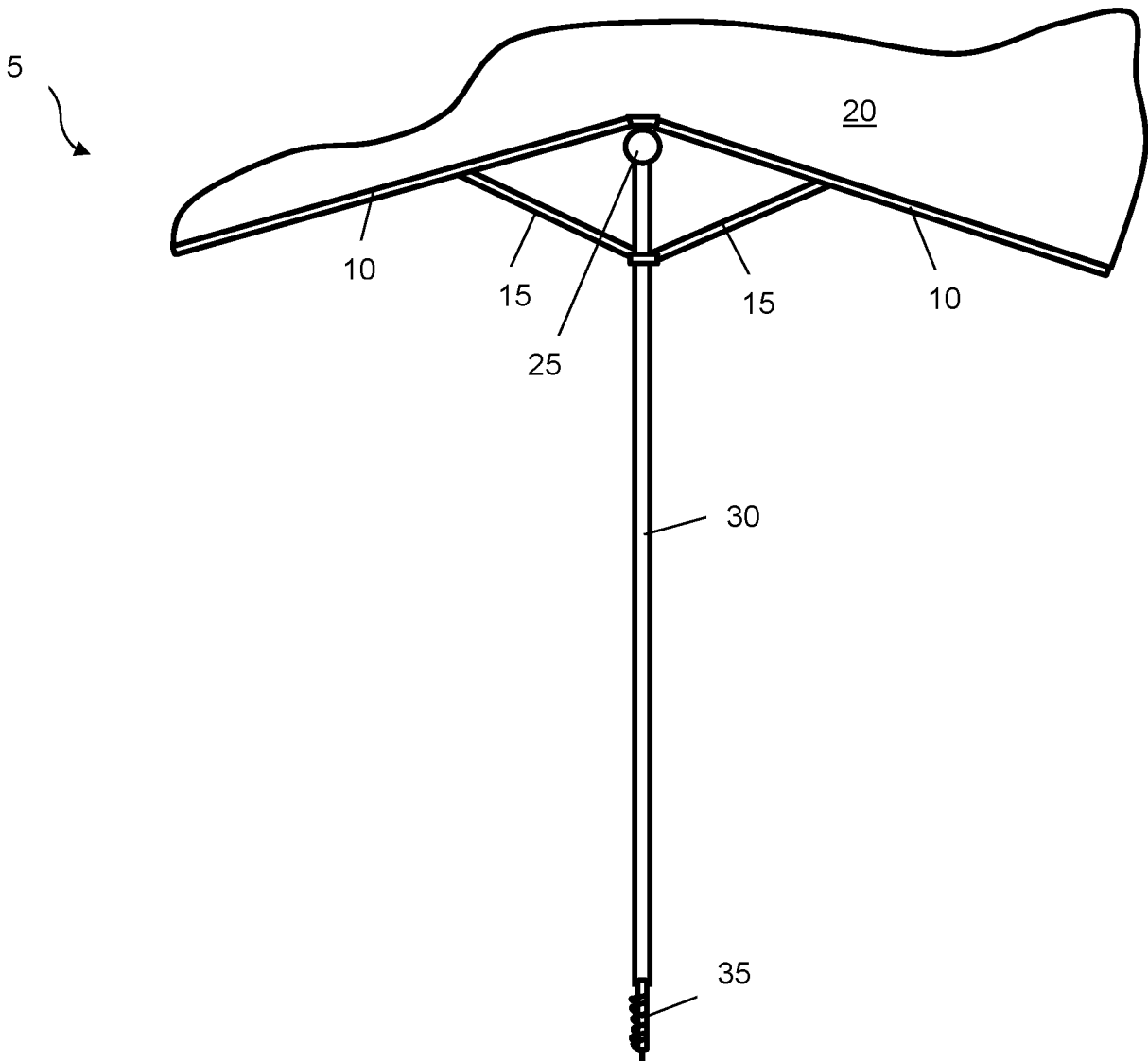


Fig. 1

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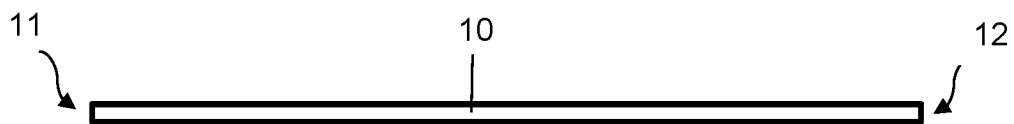


Fig. 2a

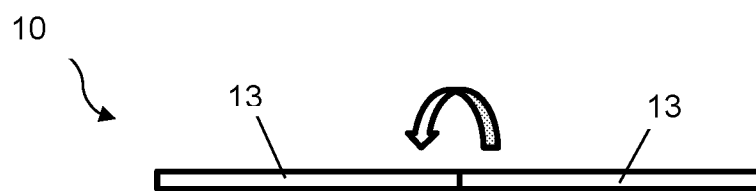


Fig. 2b



Fig. 2c

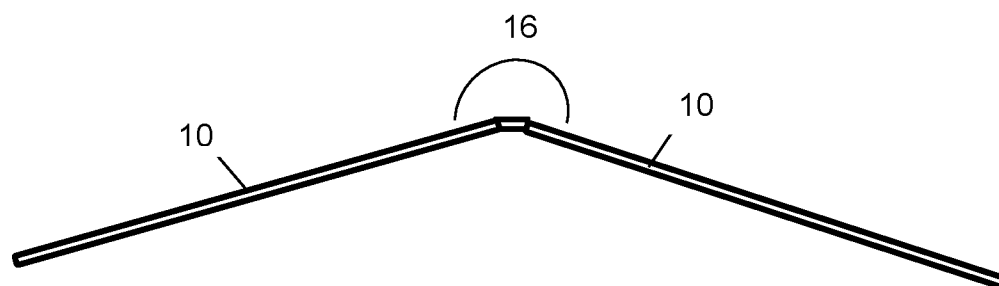


Fig. 2d

3/17

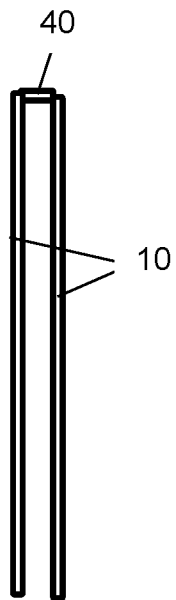


Fig. 2e

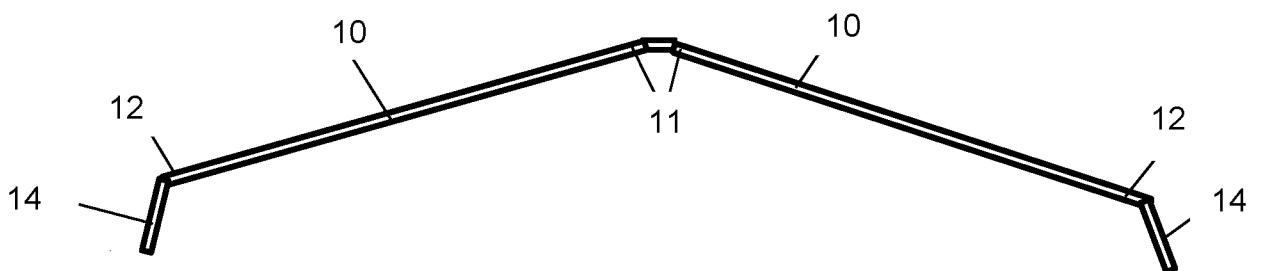


Fig. 2f

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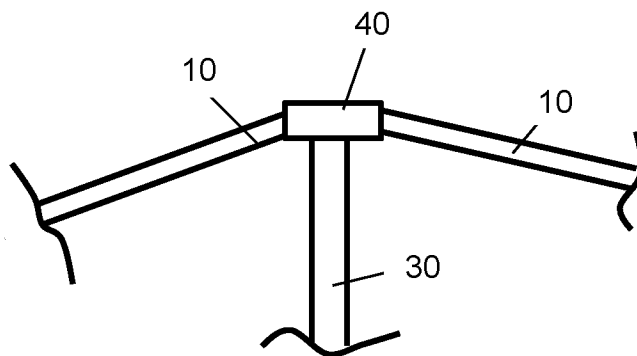


Fig. 3a

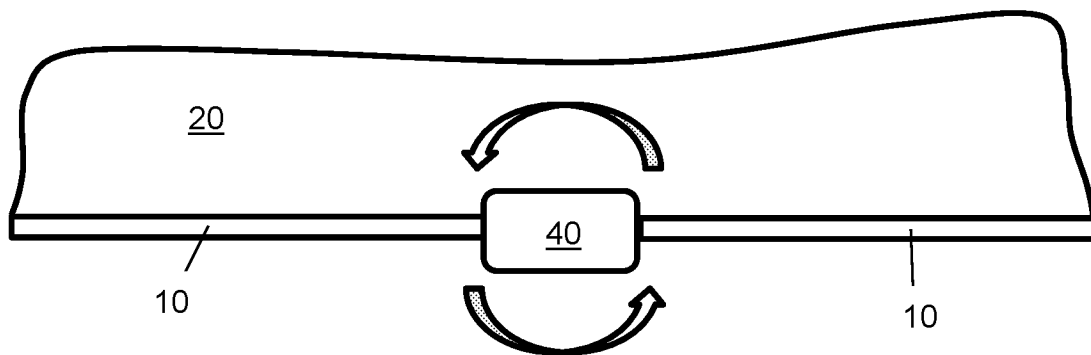


Fig. 3b

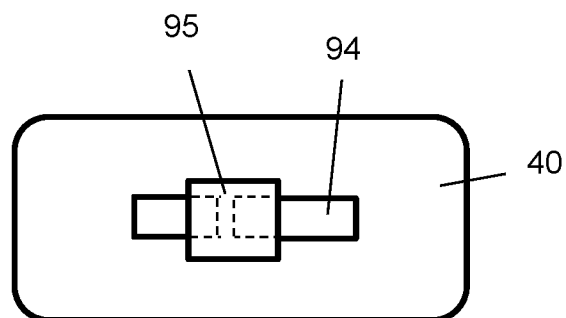


Fig. 3c

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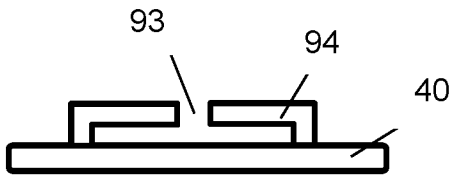


Fig. 3d

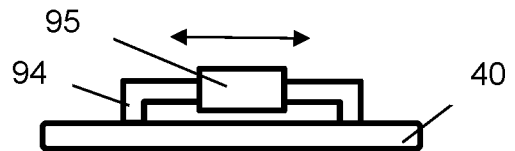


Fig. 3e

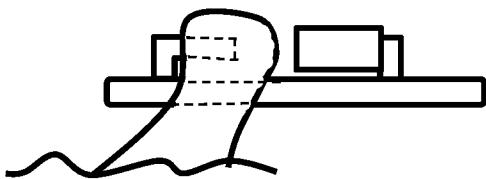


Fig. 3f

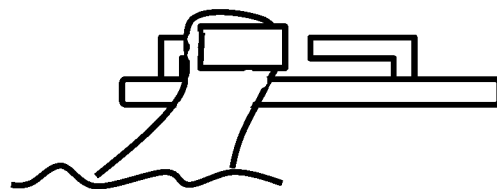


Fig. 3g

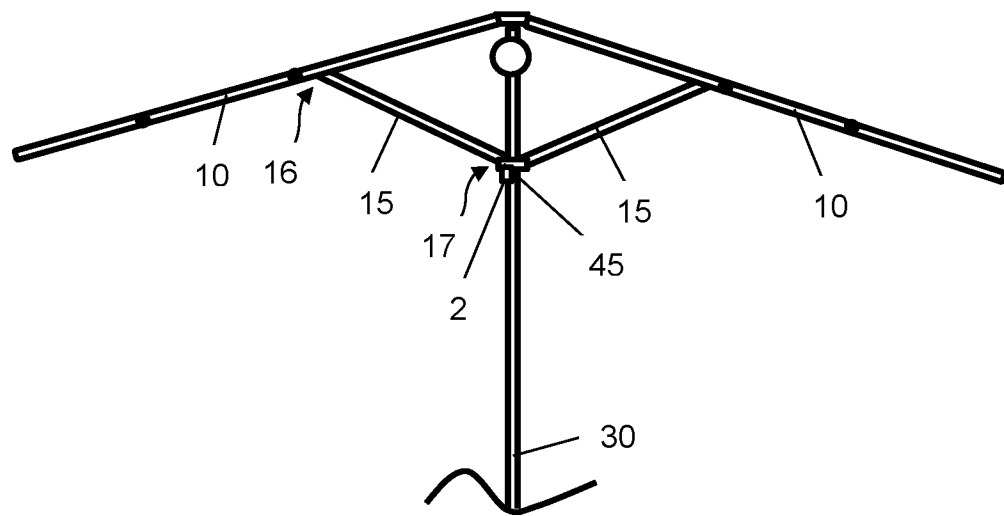


Fig. 4a

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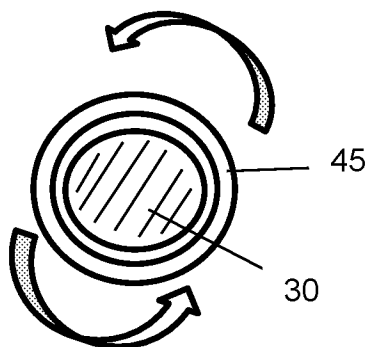


Fig. 4b

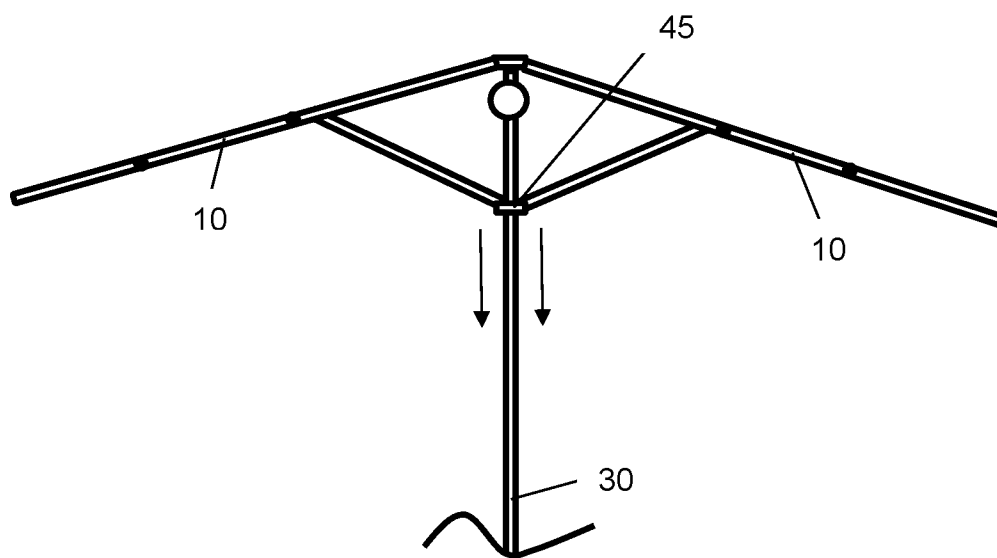


Fig. 4c

7/17

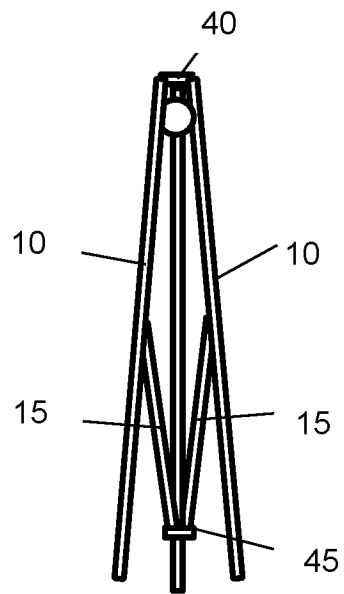


Fig. 4d

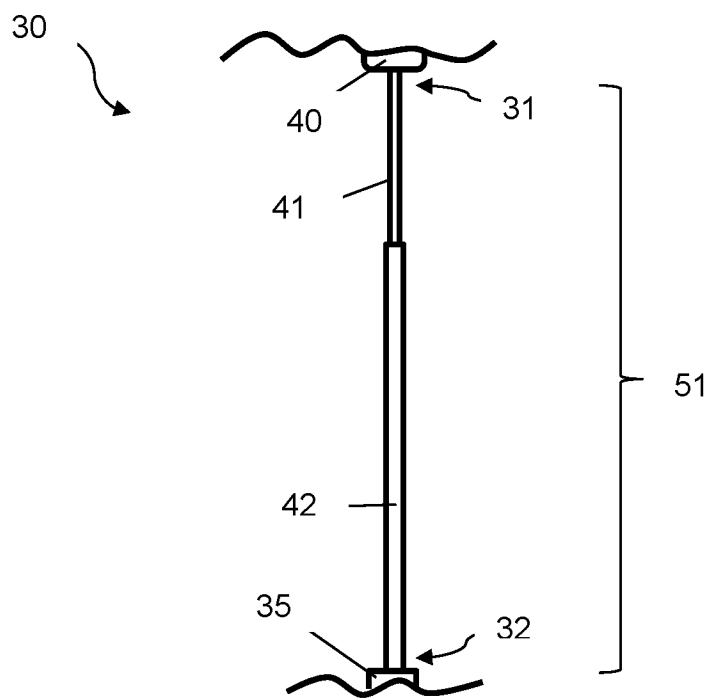


Fig. 5a

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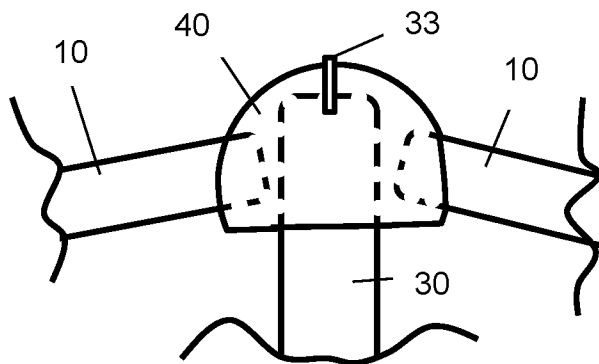


Fig. 5b

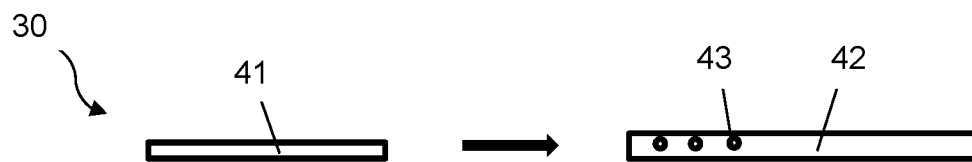


Fig. 5c



Fig. 5d

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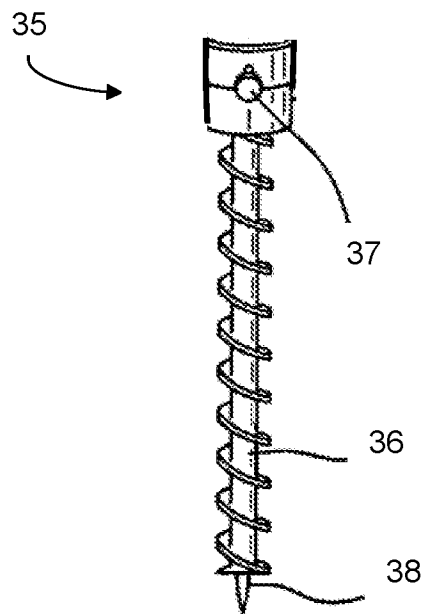


Fig. 6

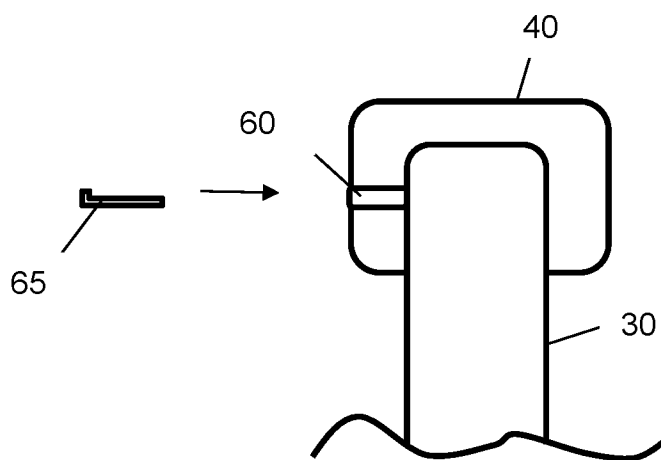


Fig. 7a

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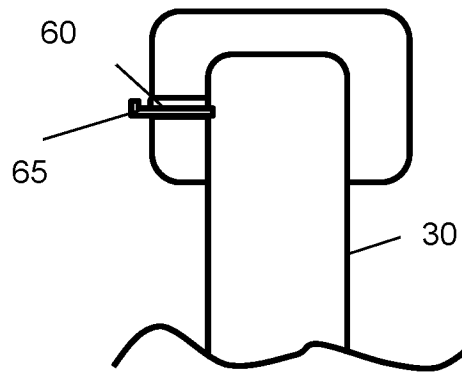


Fig. 7b

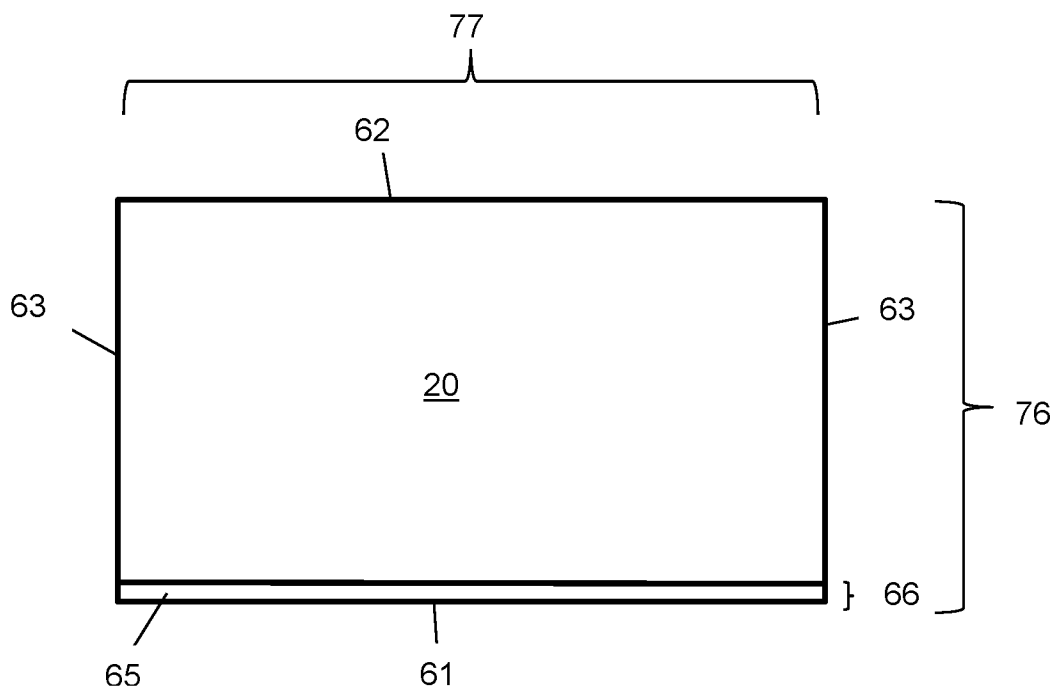


Fig. 8a

11/17

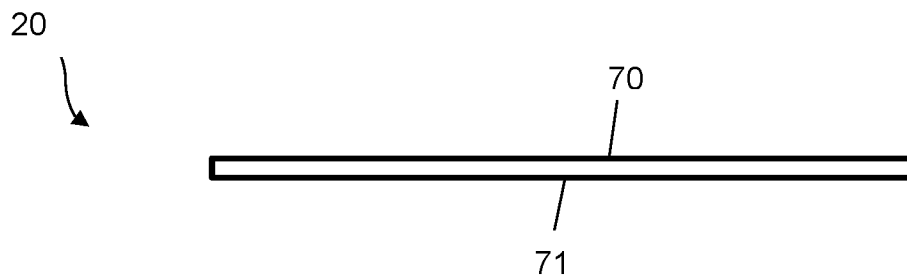


Fig. 8b

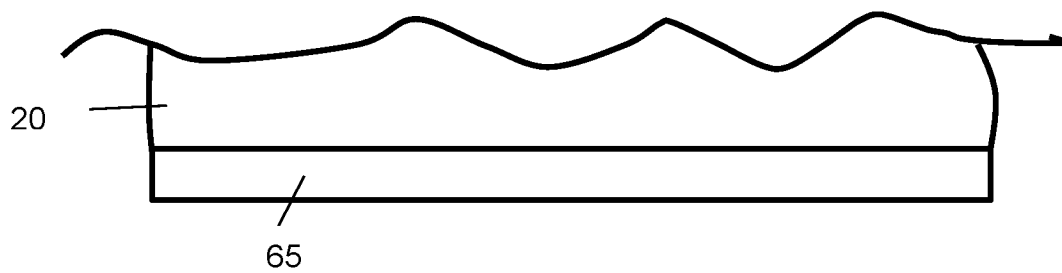


Fig. 8c

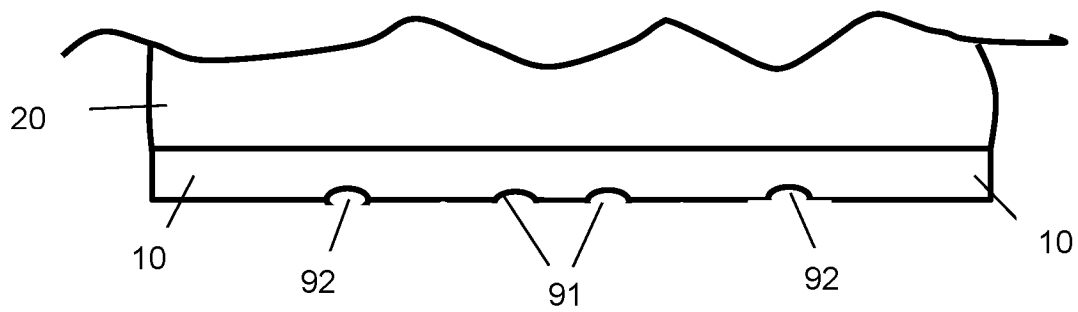


Fig. 8d

12/17

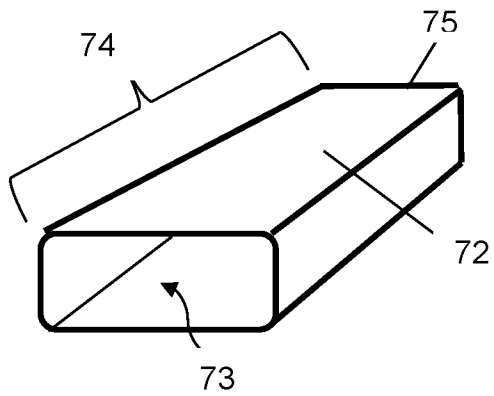


Fig. 8e

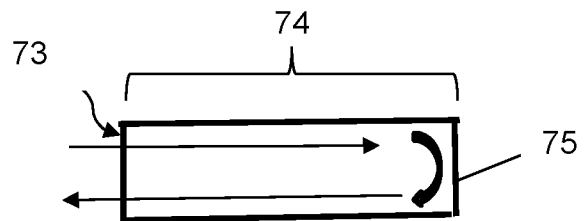


Fig. 8f

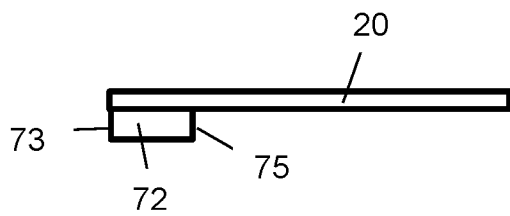


Fig. 8g

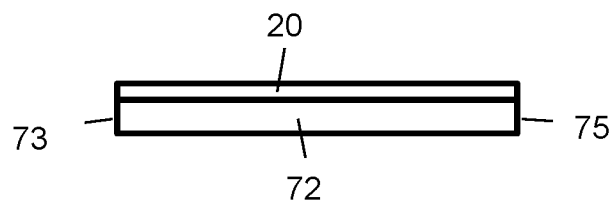


Fig. 8h

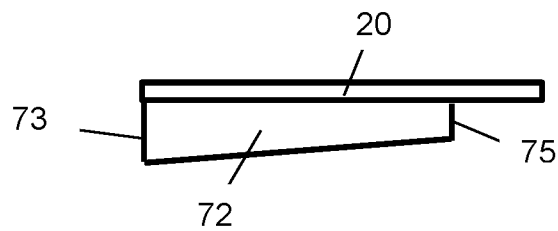


Fig. 8i

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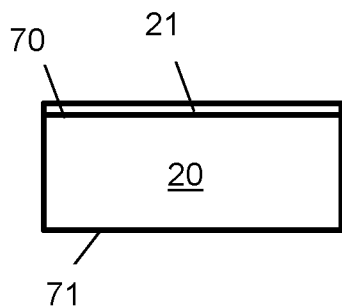


Fig. 9a

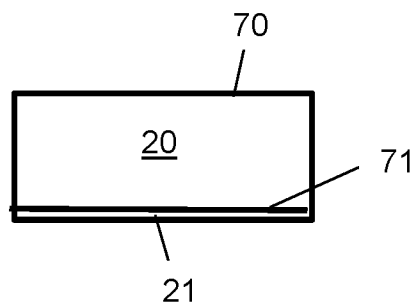


Fig. 9b

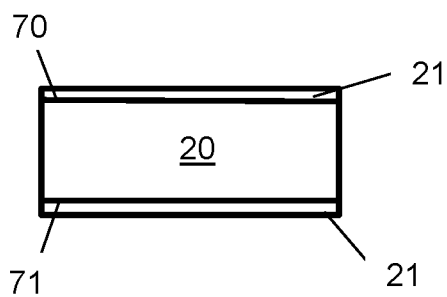


Fig. 9c

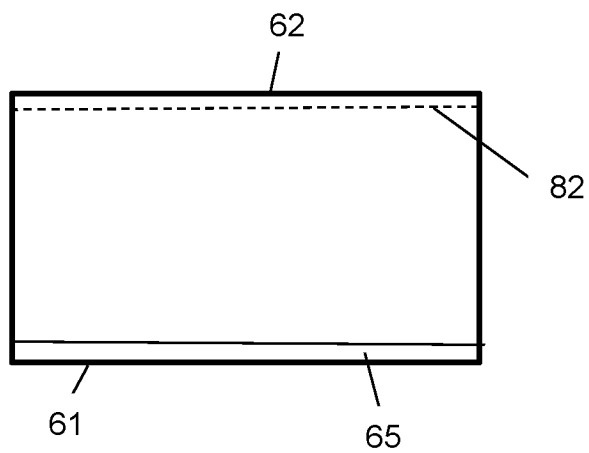


Fig. 9d

14/17

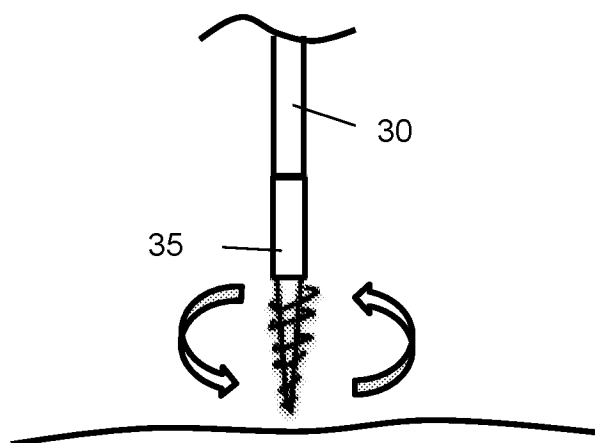


Fig. 10a

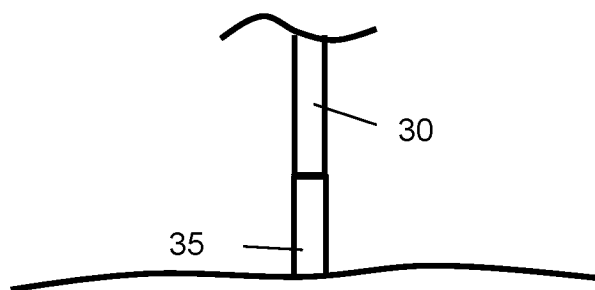


Fig. 10b

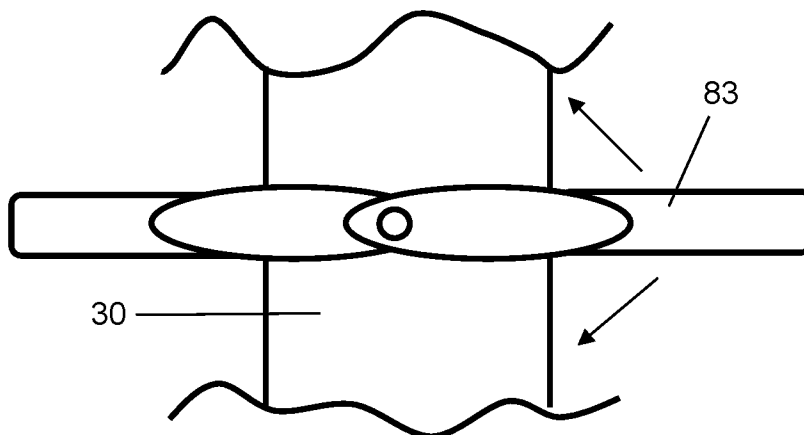


Fig. 10c

15/17

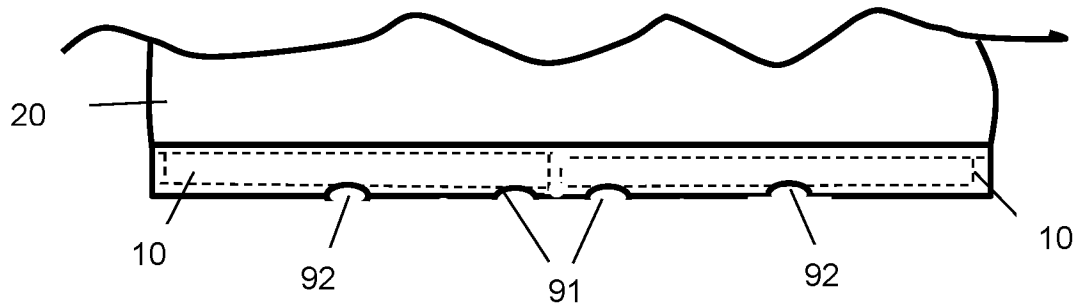


Fig. 10d

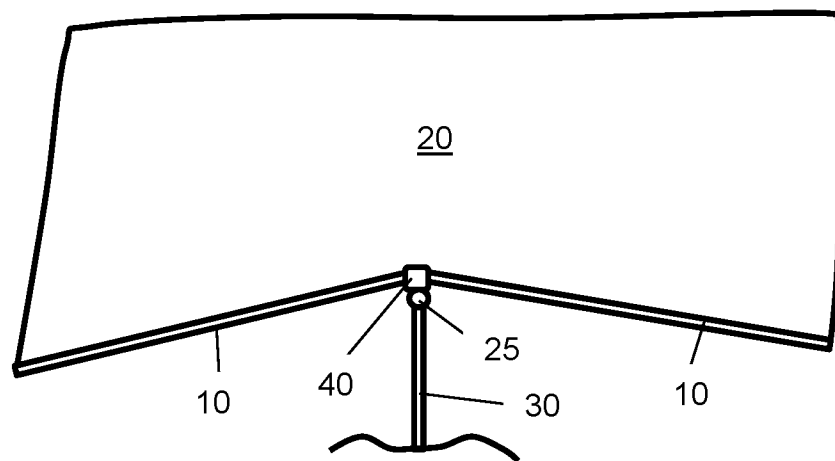


Fig. 10e

16/17

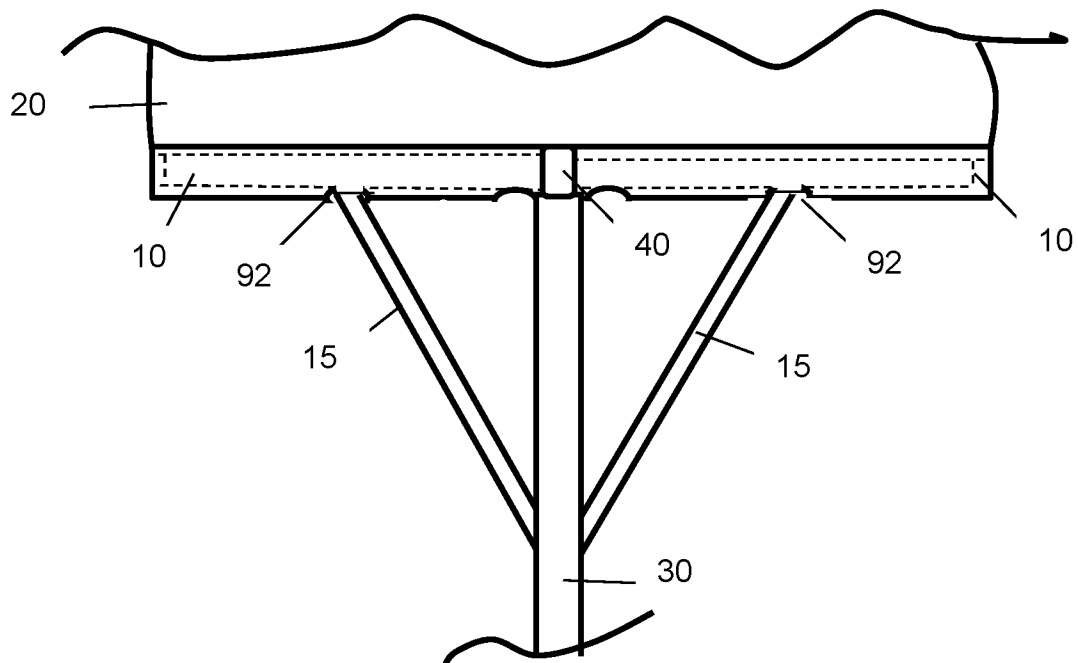


Fig. 10f

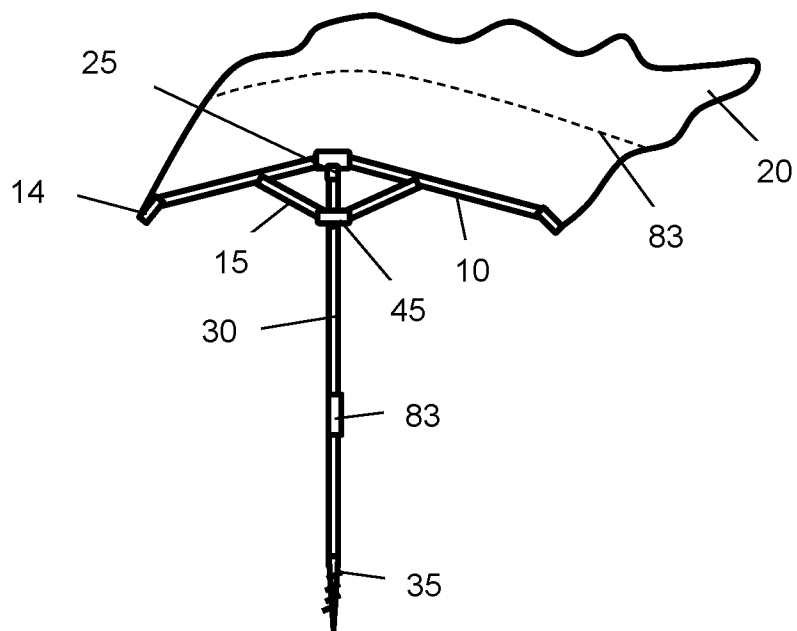


Fig. 10g

17/17

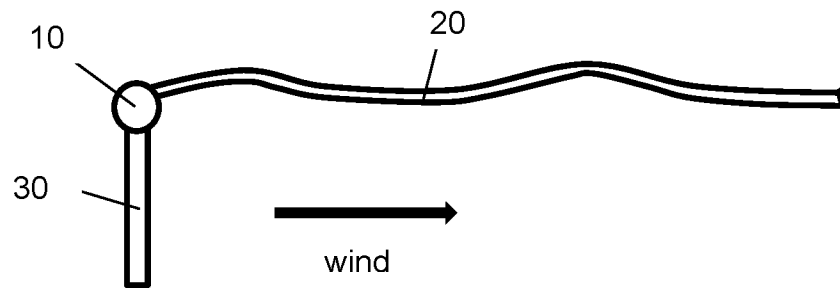


Fig. 10h

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A SUBMISSION UNDER 35 U.S.C. 371		Attorney Docket No. 255/2 UTIL
		U.S. Application No. (if known, see 37 CFR 1.5)
International Application No. PCT/US20/38920	International Filing Date June 22, 2020	Priority Date Claimed August 28, 2019
Title of Invention SELF-ADJUSTING SUN SHADE ASSEMBLY		
First Named Inventor JAMES, Paul T.		
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information. 1. ☒ This is an express request to begin national examination procedures (35 U.S.C. 371(f)). NOTE: The express request under 35 U.S.C. 371(f) will not be effective unless the requirements under 35 U.S.C. 371(c)(1), (2), and (4) for payment of the basic national fee, copy of the International Application and English translation thereof (if required), and the oath or declaration of the inventor(s) have been received. 2. ☒ A copy of the International Application (35 U.S.C. 371(c)(2)) is attached hereto (not required if the International Application was previously communicated by the International Bureau or was filed in the United States Receiving Office (RO/US)). 3. An English language translation of the International Application (35 U.S.C. 371(c)(2)) a. ☐ is attached hereto. b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4). 4. An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)) a. ☒ is attached. b. ☐ was previously filed in the international phase under PCT Rule 4.17(iv). Items 5 to 8 below concern amendments made in the international phase. <u>PCT Article 19 and 34 amendments</u> 5. ☐ Amendments to the claims under PCT Article 19 are attached (not required if communicated by the International Bureau) (35 U.S.C. 371(c)(3)). 6. ☐ English translation of the PCT Article 19 amendment is attached (35 U.S.C. 371(c)(3)). 7. ☐ English translation of annexes (Article 19 and/or 34 amendments only) of the International Preliminary Examination Report is attached (35 U.S.C. 371(c)(5)). <u>Cancellation of amendments made in the international phase</u> 8a. ☐ Do not enter the amendment made in the international phase under PCT Article 19. 8b. ☐ Do not enter the amendment made in the international phase under PCT Article 34. NOTE: A proper amendment made in English under Article 19 or 34 will be entered in the U.S. national phase application absent a clear instruction from applicant not to enter the amendment(s). The following items 9 to 17 concern a document(s) or information included. 9. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98. 10. ☐ A preliminary amendment. 11. ☒ An Application Data Sheet under 37 CFR 1.76. 12. ☐ A substitute specification. NOTE: A substitute specification cannot include claims. See 37 CFR 1.125(b). 13. ☒ A power of attorney and/or change of address letter. 14. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.3 and 37 CFR 1.821-1.825 (not required if sequence listing in text format was indicated on the PCT Request as part of the International Application and the sequence listing was published as part of the international application). 15. ☐ Assignment papers (cover sheet and document(s)). Name of Assignee: _____ 16. ☐ 37 CFR 3.73(c) Statement (when there is an Assignee). _____		

This collection of information is required by 37 CFR 1.414 and 1.491-1.492. 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 15 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: Mail Stop PCT, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 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.

U.S. APPLN. No. (if known – see 37 CFR 1.5)		INTERNATIONAL APPLICATION No.		ATTORNEY DOCKET No.	
17. ☐ Other items or information:					
The following fees have been submitted.					CALCULATIONS
18. ☒ Basic national fee (37 CFR 1.492(a)) \$320					\$320
19. ☒ Examination fee (37 CFR 1.492(c))					\$800
- If the written opinion prepared by ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4)..... \$0 - All other situations \$800					
20. ☒ Search fee (37 CFR 1.492(b))					\$140
- If the written opinion prepared by ISA/US or the international preliminary examination report prepared by IPEA/US indicates all claims satisfy provisions of PCT Article 33(1)-(4)..... \$0 - Search fee (37 CFR 1.445(a)(2)) has been paid on the international application to the USPTO as an International Searching Authority \$140 - International Search Report prepared by an ISA other than the US and provided to the Office or previously communicated to the US by the IB..... \$540 - All other situations \$700					
TOTAL OF 18, 19, and 20 =					\$1260
☐ Additional fee for specification and drawings filed in paper over 100 sheets (excluding sequence listing in compliance with 37 CFR 1.821(c) or (e) in an electronic medium or computer program listing in an electronic medium) (37 CFR 1.492(j)). Fee for each additional 50 sheets of paper or fraction thereof \$420					\$
Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof (round up to a whole number)		RATE	
- 100 =	/ 50 =			x \$420	
Surcharge for furnishing any of the search fee, examination fee, or the oath or declaration after the date of commencement of the national stage (37 CFR 1.492(h))..... \$160					\$
CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE		
Total claims	20 - 20 =		x \$100		\$
Independent claims	3 - 3 =		x \$480		\$
MULTIPLE DEPENDENT CLAIM(S) (if applicable)			+ \$860		\$
Fee for submission of Sequence Listing text file of 300 MB to 800 MB (37 CFR 1.21(o)(1))..... \$1,060					\$
Fee for submission of Sequence Listing text file of more than 800 MB (37 CFR 1.21(o)(2))..... \$10,500					\$
Processing fee for furnishing the English translation later than 30 months from the earliest claimed priority date (37 CFR 1.492(i))..... \$140 +					\$
TOTAL OF ABOVE CALCULATIONS =					\$ 1260
☐ Applicant asserts small entity status. See 37 CFR 1.27. Fees above are reduced by 1/3.					
☒ Applicant certifies micro entity status. See 37 CFR 1.29. Fees above are reduced by 3/4. Applicant must attach form PTO/SB/15A or B or equivalent.					
TOTAL NATIONAL FEE =					\$315
Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31)..... \$50.00 per property +					\$50
TOTAL FEES ENCLOSED =					\$345

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.

- a. ☐ A check in the amount of \$_____ to cover the above fees is enclosed.
- b. ☐ Please charge my Deposit Account No. _____ in the amount of \$_____ to cover the above fees.
- c. ☐ The Director is hereby authorized to charge additional fees which may be required, or credit any overpayment, to Deposit Account No. _____ as follows:
- i. ☐ any required fee.
- ii. ☐ any required fee except for excess claims fees required under 37 CFR 1.492(d) and (e) and multiple dependent claim fee required under 37 CFR 1.492(f).
- d. ☒ Fees are to be charged to a credit card. **WARNING:** Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038. The PTO-2038 should only be mailed or faxed to the USPTO. However, when paying the basic national fee, the PTO-2038 may NOT be faxed to the USPTO.

ADVISORY: If filing by EFS-Web, do NOT attach the PTO-2038 form as a PDF along with your EFS-Web submission. Please be advised that this is not recommended and by doing so your credit card information may be displayed via PAIR. To protect your information, it is recommended to pay fees online by using the electronic payment method.

NOTE: Where an appropriate time limit under 37 CFR 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the International Application to pending status.

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

- ☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013, and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE 1: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

NOTE 2: A U.S. national stage application may not claim priority to the international application of which it is the national phase. The filing date of a U.S. national stage application is the international filing date. See 35 U.S.C. 363.

Correspondence Address

- ☒ The address associated with Customer Number: 160172 OR ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country				Telephone	
Email					

Signature	/Ashley D. Johnson/	Date	6/23/2021
Name (Print/Type)	Ashley D. Johnson	Registration No. (Attorney/Agent)	58482

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.

ASSIGNMENT OF RIGHTS

WHEREAS, the undersigned, **Paul T. James**, (hereinafter "Assignor") has invented certain new and useful improvements described in the application(s) identified in Table 1.

AND, WHEREAS, **Solbello, Inc.**, having a place of business at 206 Causeway Dr. #279, Wrightsville Beach, NC 28480 (hereinafter "Assignee"), has acquired an interest in the application(s) identified in Table 1 by and through an employment or other agreement between Assignor and Assignee.

However, in the avoidance of doubt and as confirmation of the already acquired interest by Assignee, NOW, THEREFORE, To Whom It May Concern, be it known that for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor has assigned and by these presents does hereby sell, assign, transfer, and convey unto the Assignee, its successors and assigns, his entire right, title and interest in and to the invention(s) and application(s), including the right to sue for past infringements and any other prior occurring rights, provided any such rights exist, and in and to any and all domestic and foreign patent applications filed on the invention, and in and to any and all continuations, continuations-in-part, or divisions thereof, and in and to any and all Letters Patent of the United States of America, and all foreign countries or reissues thereof which may be granted therefore or thereon, for the full end of the term for which said Letters Patent may be granted, together with his right to claim the priority of said application(s) in all foreign countries in accordance with the International Convention, the same to be held and enjoyed by said Assignee, its successors and assigns, as fully and entirely as the same would have been held and enjoyed by Assignor if this assignment and sale had not been made. Assignor further assigns to Assignee the right to claim entitlement and/or priority to any applications that entitlement or priority may be claimed for this or any later filed application, including the assignment of any provisionals or other priority documents to which the inventions claim priority to. The assignment of the right to claim entitlement and/or priority is executed *nunc pro tunc* and

is considered effective as of the filing date of the earliest application to which priority and/or entitlement is claimed.

Assignor hereby requests that said Letters Patent be issued in accordance with the assignment.

Assignor further covenants and agrees that, at the time of the execution and delivery of these present, Assignor possesses full title to the invention and applications above-mentioned, and that he has the unencumbered right and authority to make this assignment.

Assignor further covenants and agrees, and likewise binds his heirs, legal representatives and assigns, to promptly communicate to Assignee or its representatives any facts known to him relating to said invention, to testify in any legal proceedings involving said invention, to execute any additional papers that may be requested to confirm the right of the Assignee, its representatives, successors, and assigns to secure patent or similar protection for the invention in all countries and to vest in the Assignee complete title to the invention and Letters Patent, without further compensation, but at the expense of said Assignee, its successors, assigns and other legal representatives.

TABLE 1

Application No.	Filing Date	Title
62/892,700	8/28/2019	Unbrello, the Self-Adjusting Shade-Umbrella Alternative
PCT/US20/38920	6/22/2020	SELF-ADJUSTING SUN SHADE ASSEMBLY

Executed: 6/22/2020

DocuSigned by:

Paul T. James

AD9DB33065E048F...

Paul T. James (Assignor)

Electronic Patent Application Fee Transmittal

Application Number:

Filing Date:

Title of Invention:

SELF-ADJUSTING SUN SHADE ASSEMBLY

First Named Inventor/Applicant Name:

Paul T. James

Filer:

Ashley Darden Johnson

Attorney Docket Number:

255/2 UTIL

Filed as Micro Entity

Filing Fees for U.S. National Stage under 35 USC 371

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
NATIONAL STAGE FEE	3631	1	80	80
NATL STAGE SEARCH FEE - REPORT PROVIDED	3642	1	135	135
NATIONAL STAGE EXAM - ALL OTHER CASES	3633	1	200	200

Pages:

Claims:

Miscellaneous-Filing:

Petition:

Patent-Appeals-and-Interference:

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				415

Electronic Acknowledgement Receipt

EFS ID:	43073221
Application Number:	17417739
International Application Number:	PCT/US20/38920
Confirmation Number:	1047
Title of Invention:	SELF-ADJUSTING SUN SHADE ASSEMBLY
First Named Inventor/Applicant Name:	Paul T. James
Customer Number:	160172
Filer:	Ashley Darden Johnson
Filer Authorized By:	
Attorney Docket Number:	255/2 UTIL
Receipt Date:	23-JUN-2021
Filing Date:	
Time Stamp:	21:00:02
Application Type:	U.S. National Stage under 35 USC 371

Payment information:

Submitted with Payment	yes
Payment Type	CARD
Payment was successfully received in RAM	\$415
RAM confirmation Number	E20216ML00154879
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_PJ.pdf	1256010	no	8
			76bca26efa92d6ce7490e467e0afc628cfc9f5a		
Warnings:					
Information:					
2	Oath or Declaration filed	DEC_PJ.pdf	301217	no	2
			91c42545775f142fad139edddabe79cbb0f2091e		
Warnings:					
The PDF file has been signed with a digital signature and the legal effect of the document will be based on the contents of the file not the digital signature.					
Information:					
3	Certification of Micro Entity (Gross Income Basis)	MES_PJ.pdf	462226	no	2
			a14ad3323c52a97f986399591199878b2cff921c		
Warnings:					
The PDF file has been signed with a digital signature and the legal effect of the document will be based on the contents of the file not the digital signature.					
Information:					
4	Power of Attorney	POA_PJ.pdf	1113097	no	4
			98ecc6ee4213156f9b1e9527c660e00cb2834ddc		
Warnings:					
The PDF file has been signed with a digital signature and the legal effect of the document will be based on the contents of the file not the digital signature.					
Information:					
5	Assignee showing of ownership per 37 CFR 3.73	Solbello_A_CS.pdf	711293	no	1
			0d63a814e63a313db47327a31795d92a61b9cb78		
Warnings:					
Information:					

6	Drawings-only black and white line drawings	Solbello_figs.pdf	432963	no	17
			c1e6337cc5d57741061d637d200564af12e2e033		
Warnings:					
Information:					
7	Specification	Solbello_final.pdf	312239	no	25
			377e11901178de197dbf0180c0a72a8993915b5d		
Warnings:					
Information:					
8	Transmittal Letter	Transmittal_PJ.pdf	318239	no	4
			096585561f083c207645f30e231b3ea83c32cb23		
Warnings:					
Information:					
9	Assignee showing of ownership per 37 CFR 3.73	Assignment.pdf	259125	no	2
			47412ae0ae248b69ea4abe635ef0f03712323432		
Warnings:					
The PDF file has been signed with a digital signature and the legal effect of the document will be based on the contents of the file not the digital signature.					
Information:					
10	Fee Worksheet (SB06)	fee-info.pdf	34934	no	2
			83543455529e29aa257464da2a8488a710b76562		
Warnings:					
Information:					
Total Files Size (in bytes):			5201343		

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.

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.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	255/2 UTIL
		Application Number	
Title of Invention	SELF-ADJUSTING SUN SHADE ASSEMBLY		
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.			

Secrecy Order 37 CFR 5.2:

☐	Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)
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Inventor Information:

Inventor	1				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Paul	T.	James			
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service						
City	Wrightsville Beach	State/Province	NC	Country of Residence	US	
Mailing Address of Inventor:						
Address 1	PO Box 279					
Address 2						
City	Wrightsville Beach	State/Province	NC			
Postal Code	28480	Country	US			
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button. Add						

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence information of this application.			
Customer Number	160172		
Email Address	ajohnson@dogwood-law.com		Add Email Remove Email

Application Information:

Title of the Invention	SELF-ADJUSTING SUN SHADE ASSEMBLY		
Attorney Docket Number	255/2 UTIL	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	17	Suggested Figure for Publication (if any)	1

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	255/2 UTIL
		Application Number	
Title of Invention	SELF-ADJUSTING SUN SHADE ASSEMBLY		

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

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

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	160172		

Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	a 371 of international	PCT/US20/38920	2020-06-22

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	255/2 UTIL
		Application Number	
Title of Invention	SELF-ADJUSTING SUN SHADE ASSEMBLY		
Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
PCT/US20/38920	Claims benefit of provisional	62892700	2019-08-28
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			Add

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

			Remove
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)
Additional Foreign Priority Data may be generated within this form by selecting the Add button.			Add

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	255/2 UTIL
		Application Number	
Title of Invention	SELF-ADJUSTING SUN SHADE ASSEMBLY		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

☐ A. Applicant **DOES NOT** authorize the USPTO to permit a participating foreign IP office access to the instant application-as-filed. If this box is checked, the USPTO will not be providing a participating foreign IP office with any documents and information identified in subsection 1A above.

☐ B. Applicant **DOES NOT** authorize the USPTO to transmit to the EPO any search results from the instant patent application. If this box is checked, the USPTO will not be providing the EPO with search results from the instant application.

NOTE: Once the application has published or is otherwise publicly available, the USPTO may provide access to the application in accordance with 37 CFR 1.14.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	255/2 UTIL
		Application Number	
Title of Invention	SELF-ADJUSTING SUN SHADE ASSEMBLY		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.

Applicant	1	Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section. Clear		
☒ Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:		
Name of the Deceased or Legally Incapacitated Inventor:		
If the Applicant is an Organization check here. ☒		
Organization Name	Solbello, Inc.	
Mailing Address Information For Applicant:		
Address 1	206 Causeway Dr. #279	
Address 2		
City	Wrightsville Beach	State/Province
Country	US	Postal Code
Phone Number		Fax Number
Email Address		
Additional Applicant Data may be generated within this form by selecting the Add button. Add		

Assignee Information including Non-Applicant Assignee Information:

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	255/2 UTIL
		Application Number	
Title of Invention	SELF-ADJUSTING SUN SHADE ASSEMBLY		

Assignee	1		
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.			
			Remove
If the Assignee or Non-Applicant Assignee is an Organization check here.			☒
Organization Name	Solbello, Inc.		
Mailing Address Information For Assignee including Non-Applicant Assignee:			
Address 1	206 Causeway Dr. #279		
Address 2			
City	Raleigh	State/Province	NC
Country ⁱ	US	Postal Code	28480
Phone Number		Fax Number	
Email Address			
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.			Add

Signature:

NOTE: This Application Data Sheet must be signed in accordance with 37 CFR 1.33(b). However, if this Application Data Sheet is submitted with the **INITIAL** filing of the application and either box A or B is **not** checked in subsection 2 of the "Authorization or Opt-Out of Authorization to Permit Access" section, then this form must also be signed in accordance with 37 CFR 1.14(c).

This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/Ashley D. Johnson/		Date (YYYY-MM-DD)	2021-06-23
First Name	Ashley	Last Name	Johnson	Registration Number
				58482
Additional Signature may be generated within this form by selecting the Add button.				Add

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	255/2 UTIL
		Application Number	
Title of Invention	SELF-ADJUSTING SUN SHADE ASSEMBLY		

This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet 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.

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

**Title of
Invention**

SELF-ADJUSTING SUN SHADE ASSEMBLY

As the below named inventor, I hereby declare that:

This declaration
is directed to:

☒

The attached application, or

☐

United States application or PCT international application number _____
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 this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

WARNING:

Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.

LEGAL NAME OF INVENTOR

Inventor: Paul T. James

DocuSigned by:

Date (Optional) : _____

Signature:

Paul T. James

AD9DB35003E040F...

Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 1 minute 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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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.

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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.

TITLE
SELF-ADJUSTING SUN SHADE ASSEMBLY

CROSS REFERENCE TO RELATED APPLICATIONS

5 The present application claims the benefit of U.S. Provisional Patent Application No. 62/892,700, filed August 28, 2019, the entire content of which is incorporated by reference herein.

TECHNICAL FIELD

10 The presently disclosed subject matter is directed to a self-adjusting sun shade assembly and to methods of making and the using the same.

BACKGROUND

15 Beach umbrellas are used to create an area shaded from the sunlight beneath the umbrella canopy. They are particularly useful at the beach where there is generally a lack of trees or roofed structures to provide shade. Because the skin of the beachgoer is largely exposed at the beach, there is a greater need to provide protection from harmful ultraviolet rays, which may cause sunburn or melanomas. Many beachgoers also require some form of shade to minimize heat discomfort. The shade and shelter provided by a beach umbrella is also useful in protecting the user's valuables and shielding perishable items from direct sunlight. Conventional beach umbrellas include a single central support pole with a pointed lower end that is inserted directly into the sand. Conventional umbrellas further include an overhead fabric covering attached to the support pole. However, the main problem with the canopy design of traditional umbrellas is that the position of the umbrella constantly shifts in response to wind gusts. As a result, the user must frequently readjust the umbrella to compensate for the shifts in movement. In addition, conventional umbrellas can easily tip over or be blown down the beach where they can cause hassle to the owner as well as injury to other beachgoers. Conventional umbrellas are also prone to wind breakage. It would therefore be beneficial to provide an umbrella with improved stability in response to the wind blowing. It would further be

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beneficial if the umbrella self-adjusted to the wind to prevent or reduce the likelihood of tipping over.

SUMMARY

In some embodiments, the presently disclosed subject matter is directed to a sun shade assembly (e.g., an assembly that provides shade from the sun). The assembly comprises a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap. The assembly further includes a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge. The assembly includes a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast. The assembly comprises at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast. The assembly comprises a tension adjuster that adjusts rotation of the pivot cap about the mast. The assembly comprises an anchor operably connected to the second end of the mast. The pivot cap, ribs, slider, and support arms are configured to rotate about the mast in response to blowing of the wind.

In some embodiments, the pivot cap rotates about the mast at an angle of about 0-360 degrees. In some embodiments, the pivot cap rotates about a top end of the mast (e.g., is configured to rotate about the top end of the mast).

In some embodiments, the ribs are configured at an angle of greater than 180 degrees relative to each other.

In some embodiments, one face of the pivot cap comprises a lock defined by a bridge comprising an opening and a slidable arm that moves to cover and expose the opening. A portion of sail material can be locked in between the bridge and slidable arm to lock it into position.

In some embodiments, the slider is configured as a collar that fits around the exterior circumference of the mast.

In some embodiments, the mast length is adjustable.

In some embodiments, the anchor is releasably attached to the second end of the mast.

In some embodiments, the anchor comprises an auger. The term “auger” refers to a member in which a spiral vane or multiple parallel vanes are provided about the perimeter of a shaft.

In some embodiments, the tension adjuster is configured to permit the pivot cap, slider, ribs, and support arms to freely rotate about the mast, not rotate about the mast, or any level of rotation therebetween. The pivot cap, slider, ribs, and support arms rotate as a single, attached unit.

In some embodiments, the sail channel comprises one or more apertures to facilitate insertion of the ribs into the channel.

In some embodiments, the sail channel comprises one or more apertures to allow direct contact between each rib and a corresponding support arm.

In some embodiments, the sail has a top face and a bottom face, and wherein the bottom face includes at least one conduit configured as a channel with an open mouth positioned adjacent to the channel, a closed back end, and a length parallel with the length of the sail.

In some embodiments, the sail has a top face and a bottom face and wherein at least one of the top or bottom faces comprises a coating.

In some embodiments, the sail has an opposed rear edge comprising an adjacent hem constructed from a durable material.

In some embodiments, the mast comprises at least one handle.

In some embodiments, the presently disclosed subject matter is directed to a method of using a sunshade. Particularly, the method comprises positioning the anchor of a sun shade assembly in a support surface. The sun shade assembly comprises: a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap; a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge; a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast; at least one support arm with a first end

and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast; a tension adjuster that adjusts rotation of the pivot cap about the mast; and an anchor operably connected to the second end of the mast. The method further includes adjusting the tension adjuster to achieve a desired amount of rotation of the pivot cap, ribs, support arms, slider, and sail relative to the non-movable mast. The sun shade assembly self-adjusts in response to the blowing of the wind.

In some embodiments, the tension adjuster can be adjusted to allow the pivot cap, slider, ribs, and support arms to freely rotate about the mast, not rotate about the mast, or any level of rotation therebetween.

In some embodiments, the sail has a top face and a bottom face, and wherein the bottom face includes at least one conduit configured as a channel with an open mouth positioned adjacent to the channel, a closed back end, and a length parallel with the length of the sail.

In some embodiments, one face of the pivot cap comprises a lock defined by a bridge comprising an opening and a slidable arm that moves to cover and expose the opening.

In some embodiments, the sail has an opposed rear edge comprising an adjacent hem constructed from a durable material.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a front plan view of an sun shade assembly in accordance with some embodiments of the presently disclosed subject matter.

5 Fig. 2a is a front plan view of an assembly rib in accordance with some embodiments of the presently disclosed subject matter.

Figs. 2b and 2c are front plan views illustrating the folding of a rib in accordance with some embodiments of the presently disclosed subject matter.

10 Fig. 2d is a front plan view illustrating the angle of separation of two ribs in accordance with some embodiments of the presently disclosed subject matter.

Fig. 2e is a front plan view of folded ribs separated by a pivot cap in accordance with some embodiments of the presently disclosed subject matter.

Fig. 2f is a front plan view illustrating ribs comprising extension in accordance with some embodiments of the presently disclosed subject matter.

5 Fig. 3a is a front plan view of a pivot cap in accordance with some embodiments of the presently disclosed subject matter.

Fig. 3b is a top plan view of a pivot cap in use in accordance with some embodiments of the presently disclosed subject matter.

10 Fig. 3c is a top plan view of a pivot cap comprising a bridge and sliding arm in accordance with some embodiments of the presently disclosed subject matter.

Figs. 3d-3g are side plan view of a pivot cap bridge and arm in use in accordance with some embodiments of the presently disclosed subject matter.

Fig. 4a is a top plan view of a slider configured around a mast in accordance with some embodiments of the presently disclosed subject matter.

15 Fig. 4b is a front plan view of a mast comprising a slider in accordance with some embodiments of the presently disclosed subject matter.

Figs. 4c-4d are front plan views illustrating use of a slider to adjust the position of one or more support arms in accordance with some embodiments of the presently disclosed subject matter.

20 Fig. 5a is a front plan view of a mast in accordance with some embodiments of the presently disclosed subject matter.

Fig. 5b is a front plan view of a pivot cap Fig. 6a is a front plan view of a mast in accordance with some embodiments of the presently disclosed subject matter.

25 Figs. 5c and 5d are side plan views illustrating a telescoping mast in accordance with some embodiments of the presently disclosed subject matter.

Fig. 6 is a perspective view of an anchor in accordance with some embodiments of the presently disclosed subject matter.

Figs. 7a and 7b are cross-sectional views of a tension adjuster in use in accordance with some embodiments of the presently disclosed subject matter.

Fig. 8a is a top plan view of a sail in accordance with some embodiments of the presently disclosed subject matter.

Fig. 8b is a front plan view of a sail in accordance with some embodiments of the presently disclosed subject matter.

5 Fig. 8c is a fragmentary top plan view of a sail channel in accordance with some embodiments of the presently disclosed subject matter.

Fig. 8d is a fragmentary top plan view of a sail channel comprising a plurality of apertures in accordance with some embodiments of the presently disclosed subject matter.

10 Fig. 8e is a perspective view illustrating a sail conduit in accordance with some embodiments of the presently disclosed subject matter.

Fig. 8f is a side plan view of a sail conduit in accordance with some embodiments of the presently disclosed subject matter.

15 Figs. 8g-8i are side plan views of sail conduits in accordance with some embodiments of the presently disclosed subject matter.

Figs. 9a-9c are cross-sectional views of sail coating arrangements in accordance with some embodiments of the presently disclosed subject matter.

20 Fig. 9d is a top plan view of a sail with a rear hem in accordance with some embodiments of the presently disclosed subject matter.

Figs. 10a and 10b illustrate one method of inserting an anchor into a support surface in accordance with some embodiments of the presently disclosed subject matter.

Fig. 10c is a front plan view of mast handles in accordance with some embodiments of the presently disclosed subject matter.

25 Fig. 10d is a fragmentary top plan view of a sail channel comprising ribs in accordance with some embodiments of the presently disclosed subject matter.

Fig. 10e is a front plan view of a sail positioned on ribs and a mast in accordance with some embodiments of the presently disclosed subject matter.

30 Fig. 10f is a front plan view of an assembly with side arms attached to the mast and ribs in accordance with some embodiments of the presently disclosed subject matter.

Fig. 10g is a front plan view of an assembly with a sail extended in the direction of the wind in accordance with some embodiments of the presently disclosed subject matter.

Fig. 10h is a side plan view of a sail extended in the direction of the wind in accordance with some embodiments of the presently disclosed subject matter.

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DETAILED DESCRIPTION

The presently disclosed subject matter is introduced with sufficient details to provide an understanding of one or more particular embodiments of broader inventive subject matters. The descriptions expound upon and exemplify features of those
10 embodiments without limiting the inventive subject matters to the explicitly described embodiments and features. Considerations in view of these descriptions will likely give rise to additional and similar embodiments and features without departing from the scope of the presently disclosed subject matter.

Unless defined otherwise, all technical and scientific terms used herein have the
15 same meaning as commonly understood to one of ordinary skill in the art to which the presently disclosed subject matter pertains. Although any methods, devices, and materials similar or equivalent to those described herein can be used in the practice or testing of the presently disclosed subject matter, representative methods, devices, and materials are now described.

Following long-standing patent law convention, the terms "a", "an", and "the" refer
20 to "one or more" when used in the subject specification, including the claims. Thus, for example, reference to "a device" can include a plurality of such devices, and so forth. It will be further understood that the terms "comprises," "comprising," "includes," and/or "including" when used herein specify the presence of stated features, integers, steps,
25 operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

Unless otherwise indicated, all numbers expressing quantities of components, conditions, and so forth used in the specification and claims are to be understood as being
30 modified in all instances by the term "about". Accordingly, unless indicated to the

contrary, the numerical parameters set forth in the instant specification and attached claims are approximations that can vary depending upon the desired properties sought to be obtained by the presently disclosed subject matter.

As used herein, the term "about", when referring to a value or to an amount of mass, weight, time, volume, concentration, and/or percentage can encompass variations of, in some embodiments +/-20%, in some embodiments +/-10%, in some embodiments +/-5%, in some embodiments +/-1%, in some embodiments +/-0.5%, and in some embodiments +/-0.1%, from the specified amount, as such variations are appropriate in the disclosed packages and methods.

As used herein, the term "and/or" includes any and all combinations of one or more of the associated listed items.

Relative terms such as "below" or "above" or "upper" or "lower" or "horizontal" or "vertical" may be used herein to describe a relationship of one element, layer, or region to another element, layer, or region as illustrated in the drawing figures. It will be understood that these terms and those discussed above are intended to encompass different orientations of the device in addition to the orientation depicted in the drawing figures.

The embodiments set forth below represent the necessary information to enable those skilled in the art to practice the embodiments and illustrate the best mode of practicing the embodiments. Upon reading the following description in light of the accompanying drawing figures, those skilled in the art will understand the concepts of the disclosure and will recognize applications of these concepts not particularly addressed herein. It should be understood that these concepts and applications fall within the scope of the disclosure and the accompanying claims.

Fig. 1 illustrates one embodiment of sun shade assembly **5**. Particularly, the assembly includes sail **20** that releasably attaches to a pair of ribs **10**, providing shade to the user. At least one support arm **15** can be used to reinforce ribs **10**. Mast **30** provides height to the assembly and includes anchor **35** that allows the assembly to be secured into a support surface (e.g., sand). The ribs and support arms rotate about the mast, thereby self-adjusting the direction of sail **20** in response to the wind blowing, as described

in more detail below. The assembly further includes tension adjuster **25** that can be tightened or loosed to control the rotation of the ribs and support arms in response to wind conditions.

Fig. 2a illustrates one embodiment of rib **10**. As shown, the rib includes first end **11** and second end **12**. In some embodiments, the ribs can each include one or more joints **13** that can be folded, allowing the ribs to be easily stored when not in use, as illustrated in Figs. 2b and 2c. Any mechanism can be used to fold the ribs, such as (but not limited to) hinges, joints, and the like. For example, a living hinge, a barrel hinge, spring hinge, butterfly hinge, flag hinge, H hinge, or any other pivotable member can be used.

The term “living hinge” refers to a hinge integrally formed with two opposite portions of the same material. The term “barrel hinge” refers to a sectional barrel secured by a pivot. The term “spring hinge” refers to a spring-loaded hinge that applies force to secure the hinge in an open or closed configuration. “Butterfly hinge” refers to dovetail or parliament hinges. The term “flag hinge” refers to hinges that can be taken apart with a fixed pin on one leaf, manufactured in a right-hand or left-hand configuration. An “H hinge” refers to a hinge shaped like an “H.”

However, in some embodiments, the ribs are non-foldable and remain in the fully extended state, even during storage.

The ribs can be slightly offset relative to each other (e.g., are not 180 degrees apart). The offset nature allows the ribs to compensate for stretching of the sail. For example, in some embodiments, the angle **16** between ribs **10** can be about 180-300 degrees, as shown in Fig. 2d. Thus, the angle between ribs **10** can be at least/no more than about 180, 185, 190, 195, 200, 205, 210, 215, 220, 225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 285, or 290 degrees. It should be appreciated that angle **16** is not limited and can be larger or smaller than the range set forth herein. The ribs can be fully folded, such as in a storage position, as shown in Fig. 2e.

In some embodiments, rib **10** can include extension **14** as shown in Fig. 2f. The extensions provide a decorative look the assembly when the sail is attached. Each extension can be attached to rib second end **12** using any desired method (e.g., adhesive,

welding, clips, clamps, hinges, screws, bolts, magnets, etc.). It should be appreciated that extension **14** is optional.

Ribs **10** can have any desired length. For example, suitable lengths can include (but are not limited to) about 3-10 feet. Thus, the ribs can have a length of at least about 5 (or no more than about) 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, or 10 feet. However, the presently disclosed subject matter is not limited the length of each rib can be larger or smaller than the range given herein.

The ribs are joined using pivot cap **40**, as illustrated in Fig. 3a. The pivot cap joins ribs **10** and enables rotation of the ribs about mast **30**. Thus, the pivot cap can freely rotate about the mast in response to wind conditions, as discussed in more detail below and as shown in Fig. 3b. The ribs can rotate in a clockwise or counterclockwise direction, depending on the wind direction. It should be appreciated that the ribs can join to pivot cap **40** using any mechanism (e.g., screws, bolts, clips, hinges, welding, adhesive, magnets, and the like).

In some embodiments, one face of pivot cap **40** includes bridge **94** comprising opening **93** and slidable arm **95** that can be used to releasably lock the sail into proper position, as shown in Figs. 3c-3e. Particularly, a portion of the sail can be inserted into opening **94**. Arm **95** can then be slid to trap the portion of the sail over the bridge, as shown in Figs. 3f and 3g. Thus, a portion of the sail is trapped between the bridge and the arm. To release the sail, the arm can be slid to expose opening **93**, thereby allowing the sail to be removed. The term "bridge" refers to any device that has a raised portion with an opening configured therein. In some embodiments, the arm can fully surround at least a segment of the raised bridge portion.

As shown in Fig. 4a, the assembly can include one or more support arms **15** that provide stability to the ribs, allowing the assembly to support the sail even in high wind conditions. Each support arm includes first end **16** attached to rib **10** and second end **17** attached to slider **45**. The support arms can be attached to the rib and slider using any known mechanism, such as the use of adhesives, welding, magnets, mechanical elements (screws, bolts, clips), and the like. In some embodiments, the support arms are

hingedly attached to the ribs and/or slider to allow for easy transitioning between positions.

Slider **45** can move along mast **30** to fold or unfold the ribs and support arms. In some embodiments, the slider can be configured as a collar that fits about the outer
5 circumference of mast **30**, as shown in Fig. 4b. The inner circumference of slider **45** is therefore at least slightly larger than the outer circumference of mast **30**. In this way, the slider and support arms can rotate freely about the mast. Particularly, the mast remains in a stationary position, while the slider (and attached support arms and ribs) rotate in response to the wind blowing. The slider can rotate in any direction (e.g., clockwise and
10 counterclockwise).

The slider can include retention element **2** to keep it from sliding down the length of the mast. The retention element can include any device that retains the slider in a desired position on the mast, such as (but not limited to) a removable ledge with an outer circumference larger than the inner circumference of the slider, clips, pins, clasps, and
15 the like. The retention element therefore locks the slider at a desired location along the mast. In this way, the ribs and support arms can be maintained in the open configuration without the slider slipping to a lower position. Likewise, the slider can also be locked in a lower “storage” configuration along the mast (or any location therebetween).

The slider can also be used to fold the ribs and support arms, such as when the
20 assembly is transitioned to a storage configuration (e.g., not in use). When the slider is in an upper position on the mast, the support arms and ribs are unfolded outward and thus sail **20** is unfolded, as shown in Fig. 4a. When the slider moves to a lower position on the mast, the support arms and ribs are folded to the storage position, as shown in Figs 4c and 4d. Therefore, the slider can travel on the mast in an upward direction to
25 extend the ribs and support arms to a fully open configuration. The slider can also move downward along the mast to transition the ribs and support arms into a folded position.

Ribs **10** and support arms **15** can have any desired cross-sectional shape. For example, the ribs and support arms can be configured with a circular, oval, square, rectangular, triangular, pentagonal, hexagonal, octagonal, heart, diamond, or abstract
30 cross-sectional shape.

As set forth above, assembly **5** comprises mast **30** that reinforces ribs **10** and support arms **15**, as well as provides height to the assembly, as shown in Fig. 5a. The mast further provides a base about which the ribs can rotate via pivot cap **40**. The mast includes first end **31** operatively attached to pivot cap **40** and second end **32** attached to anchor **35**. The mast can be permanently or releasably attached to the pivot cap and/or anchor.

The pivot cap is attached to mast first end **31** using any known method. For example, a screw, bolt, or other element **33** can be threaded through the pivot cap, extending into the mast as shown in Fig. 5b. In this way, the pivot cap attaches to the mast and still can rotate freely in a clockwise or counterclockwise direction. The pivot cap can have any desired shape and is not limited to the embodiment shown in Fig. 5b. Attachment of the pivot cap to the mast is further not limited.

Mast **30** includes length **51** that in some embodiments can be adjusted as desired by the user. For example, the mast can include telescoping inner and outer tubes **41**, **42**. The term “telescoping” refers to a mechanical action of at least two longitudinal bodies of congruent cross-sections sliding relative to each other along a common longitudinal axis. As shown in Figs. 5c-5d, inner tube **41** can be at least partially slidably disposed into the interior of outer tube **42**. Specifically, the diameter of the outer tube is larger than the diameter of the inner tube such that the inner tube can be housed within the interior of the outer tube. The mast can include any number of telescoping tubes. A locking pin can pass through one or more holes **43** configured in the outer tube to hold the mast at the desired length. Alternatively, the inner and outer tubes can cooperate with a locking screw to secure the mast height. It should be appreciated that the length of the mast can be locked using any known element, such as friction fit, screw fit, snap-fit, screws, bolts, and the like.

It should further be appreciated that the length of the mast can be adjusted using any known mechanism and is not limited to a telescoping arrangement. For example, the mast can include a plurality of segments that can be added or removed as desired to achieve a suitable height. In other embodiments, the length of mast **30** is not adjustable.

Mast **30** can have any desired cross-sectional shape. For example, the mast can be configured with a circular, oval, square, rectangular, triangular, pentagonal, hexagonal, octagonal, heart, diamond, or abstract cross-sectional shape.

5 Second end **32** of the mast is operatively connected to anchor **35**. The term “anchor” broadly refers to any element that provides weight and/or a mechanism by which to secure assembly **5** into a support surface (e.g., sand). The anchor can be permanently attached to mast **30** using adhesives, welding, and the like. Alternatively, the anchor can be releasably attached to the mast using any of a wide variety of mechanical elements (e.g., screw knob **37**). A releasably attached anchor allows for the replacement of the
10 anchor depending on use conditions (e.g., beach sand versus grass or rock).

Fig. 6 illustrates one embodiment of anchor **35** comprising auger **36** that can be configured as any type of spike, helical corkscrew, or shaft optionally having a threaded portion capable of being turned and embedding itself into a support surface (e.g., sand at a beach). Lower end **38** of the auger can be configured as a spike or pointed end to
15 initiate insertion of the anchor into the support surface. Because auger **36** is inserted into a support surface, it does not rotate and remains in the inserted position until the user desires to remove it. Likewise, the mast does not rotate in response to wind conditions due to its attachment to the anchor.

The disclosed assembly further includes tension adjuster **25** that allows a user to
20 adjust the tension on the pivot cap relative to the mast easily and safely. In this way, a user can alter the amount of rotation ribs **10**, support arms **15** and slider **45** have about mast **30** in response to wind conditions. The tension adjuster can be generally located adjacent to the pivot cap. The tension adjuster is also attached to mast **30** using any known mechanism (e.g., screws, bolts, clips, etc.).

25 As described above, the pivot cap (and attached ribs, slider, and support arms) can freely rotate about the mast in response to the wind blowing. The tension adjuster can be tightened as desired by the user (e.g., when the wind is shifting back and forth) to stop or limit rotation of the pivot cap (and ribs, support arm, and slider) about the mast to maintain a more balanced assembly. For example, in some embodiments, the tension
30 adjuster can be loosened to allow the pivot cap, ribs, support arms, and slider to freely

rotate (e.g., 360 degrees) about the mast. In other embodiments, the pivot cap, ribs, slider, and support arms have a more limited freedom to rotate (e.g., it takes a stronger gust of wind to rotate). In some embodiments, the tension adjuster can be fully tightened such that the ribs, slider, and support arms cannot rotate relative to the mast.

5 Tension adjuster **25** can have any desired configuration that allows a user to control the level of movement of the tension cap relative to the mast. For example, in some embodiments, the tension adjuster can include passageway **60** with actuator **65** (e.g., lever or screw) capable of contacting pivot cap **40**, as shown in Figs. 7a and 7b. Adjusting the actuator through the passageway will increase or decrease the tension on
10 the pivot cap. Specifically, if the actuator is tightened to fully contact the pivot cap, the pivot cap will be incapable of moving relative to the mast. Alternatively, if the actuator is loosened such that it does not fully contact or press against the mast, the pivot cap is free to rotate. Any degree of actuator tightening can therefore adjust the level of pivot cap rotation.

15 The tension adjuster can have any known configuration and is not limited to the embodiment described above. For example, the tension adjuster can apply a force parallel, at an angle, or perpendicular to the tension it creates. The force can be generated by any known method, such as fixed displacement, stretching/compression of a spring, changing the volume of a gas, hydraulic pressure, or gravity. Tension adjuster
20 **25** can therefore include any device that applies a force to create or maintain tension.

 Further, actuator **65** can have any known configuration, such as (but not limited to) a lever, wrench, key, screw, handle, knob, bolt, and the like.

 The ribs, mast, support arms, pivot cap, tension adjuster, and anchor can be constructed from any desired material, such as (but not limited to) metal (e.g., aluminum,
25 steel, brass, stainless steel, copper), plastic, wood, stone, or combinations thereof. In some embodiments, each element is constructed from the same material. In other embodiments, one element can be constructed from a material that differs from at least one other element.

Assembly **5** further includes sail **20** that cooperates with ribs **10**. As shown in Figs. 8a and 8b, the sail can include front edge **61**, rear edge **62**, and a pair of side edges **63**. The sail further includes top face **70** and bottom face **71**.

Front edge **61** comprises channel **65** sized and shaped to house each rib **10**, as shown in Figs. 8c. The front edge can be a straight edge, a curved edge, or have any known configuration. The ribs can be removed from channels **65** if desired by the user (e.g., to repair the sail or replace with a new sail). Channels **65** can be formed in the sail using any known method. For example, in some embodiments, the channel can be formed through sewing, welding, and the like. Such methods are well known in the art.

In some embodiments, each channel includes one or more apertures. For example, each channel can include apertures **91** sized and shaped to allow each rib to be inserted into channel **65**. The channel can further include one or more apertures **92** sized and shaped to allow each support arm to connect with the appropriate rib, as shown in Fig. 8d. Apertures **91**, **92** can have any desired size and/or shape so long as they allow for insertion of a rib and/or connection of a support arm with a rib (e.g., through one or more screws, clips, and/or the like). Further, apertures **91**, **92** can be positioned at any suitable position in the channel.

Optionally, bottom face **71** of the sail can include at least one closed conduit **72** that provides a passageway for the flow of the wind during use. Fig. 8e illustrates one embodiment of conduit **72** comprising open mouth **73** positioned adjacent to the sail front edge, length **74** and closed end **75**. Fig 8f illustrates the flow of wind (represented by the arrows) as it enters open mouth **73**, hits closed end **75** and then exits the open mouth. Conduit **72** provides added support for the sail, preventing or reducing excess flapping in the wind.

In some embodiments, the length of the conduit is the same as the length of the sail (i.e., the conduit extends the full length of the sail). In other embodiments, the conduit is configured to be shorter than the length of the sail, as shown in Figs. 8g and 8h. In some embodiments, the thickness of the conduit can taper as it reaches closed end **75**, as shown in Fig. 8i.

The conduit can have any cross-sectional shape, such as (but not limited to) square, rectangular, circular, oval, triangular, and the like.

In some embodiments, the sail can be formed as a single portion of material. In other embodiments, the sail can be constructed from two or more pieces of material joined
5 together, such as by welding or sewing.

The sail can be configured in any desired shape, such as square, rectangular, rounded, oval, triangular, pentagonal, abstract, and the like. In some embodiments, the sail can include at least one straight edge to accommodate the channel.

The sail can further have any desired dimensions, such as length **77** and/or width
10 **76** of about 3-20 feet (e.g., at least/no more than about 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, or 20 feet). In some embodiments, the sail can have an area of about 10-100 ft² (e.g., at least/no more than about 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, or 100 ft²). However, the sail can be configured with dimensions outside the range given above. The term “length” refers to the distance in the
15 longitudinal direction. The term “width” refers to the dimension perpendicular to the length.

Sail **20** can have any desired thickness, such as about 1 inch or less. Thus, the sail can have a thickness of about 1, 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2, 0.1, 0.01, 0.001 inches or less. However, the presently disclosed subject matter is not limited and the sail
20 can have thickness of greater or less than the range given above.

Sail **20** can be constructed from any desired lightweight material. The term “lightweight material” refers to any material that is able to be lifted and carried by the wind (e.g., a wind speed of at least about 2-3 mph). Suitable materials can therefore include (but are not limited to) nylon, polyester, vinyl, rayon, canvas, acrylic fabric, cotton, or
25 combinations thereof.

In some embodiments, the material(s) used to construct the sail can have a UPF (ultraviolet protection coefficient) rating of about 30 or more in accordance with ASTM D6544, incorporated by reference herein.

As shown in the cross-sectional views of Figs. 9a-9c, sail **20** can include coating
30 **21** to reduce the noise level when the sail is moving in the wind. The coating can be

positioned on the sail top and/or bottom surfaces. The coating can span the entire top and/or bottom surface or only a portion thereof.

In addition to coating **21**, the sail can optionally be calendared and/or treated with the application of heat/pressure to aid in the reduction of noise. The term “calendaring” refers to a method of passing the sail between calendar rolls at high temperature and/or pressure.

Coating **21** can comprise any material that would serve to reduce the amount of noise and/or movement of sail **20**. Suitable materials can therefore include (but are not limited to) urethane polyurethane, plastic (e.g., polyethylene), or combinations thereof.

Coating **21** can have any thickness, such as about 0.0001 inches to about 0.1 inches. In some embodiments, the coating can impart a waterproof or water-resistant quality to sail **20**. The term “waterproof” refers to a material that is impervious to water. The term “water-resistant” refers to the ability of a material to resist the entry of water to some degree but not entirely.

In some embodiments, sail **20** can include hem **82** sewn or otherwise applied at or adjacent to rear edge **62**, as shown in Fig. 9d. Hem **82** can be sewn with a durable material (e.g., monofilament nylon thread) to reduce the pliability of the sail, which aids in noise reduction and in the reduction of excess flapping in the wind. In some embodiments, hem **82** is in addition to any rear edge hem used to construct the sail (e.g., the rear edge can include an additional hem). It should be appreciated that hem **82** can be configured at any desired location.

In use, the disclosed umbrella assembly can be used to provide shade to one or more users. Anchor **35** is positioned in a support surface, such as sand at the beach. The anchor can be inserted into the ground using a twisting motion, which allows the auger to be easily buried, as shown in Figs. 10a and 10b. In some embodiments, the mast can be manually rotated to insert the auger into the ground. In other embodiments, mast **30** can include one or more handles **83** that fold out to aid in screwing the auger into the ground, as illustrated in Fig. 10c. In some embodiments, handles **83** can rotate up and down, flush with the mast as shown by the arrows. Thus, the handles fold into the mast when not in use and can be easily folded out when desired to insert the auger into

a support surface. It should be appreciated that the handles can have any desired configuration.

5 Mast **30** can then be extended to a desired length to accommodate one or more users and their belongings. For example, inner and outer tubes **41** and **42** can be adjusted as needed to a desired length. In other embodiments, the mast is of a single length and need only be positioned and attached to the anchor.

10 Ribs **10** can then be inserted into channel **65** of the sail. In some embodiments, each rib is inserted into channel aperture **91** for proper placement in the channel. It should be appreciated that aperture **91** can be positioned at any location in channel **65**. For example, in some embodiments, each aperture **91** is positioned adjacent to the center of the channel (e.g., about 1-10 inches from the center point of the channel). Once the ribs are inserted into channel **65**, apertures **92** are properly positioned to allow support arms **15** to be attached to the ribs, as shown in Fig 10d. Particularly, the apertures provide an opening in the sail to allow the support arms to directly attach to the ribs. In this way, the support arms can be easily attached to the ribs.

20 The sail can then be secured into position via bridge **94** and arm **95** on the pivot cap, as shown in Fig 10e. For example, in some embodiments, the portion of the sail positioned between apertures **91** can be inserted into the bridge opening, and the arm then slid over to trap the sail material in position. In this way, the sail does not significantly shift out of proper position during use.

The support arms can then be attached to the ribs through channel apertures **92**, as shown in Fig. 10f. Any known mechanism to secure the support arms to the ribs can be used. It should be appreciated that the opposing side of the support arms are secured to mast **30**.

25 It should be appreciated that the steps included above can be performed in any order.

If desired by the user, the tension adjuster can be set to lock the position of the ribs (e.g., no movement relative to the mast) or to limit movement. As the wind blows, the sail will move in response, blowing and extending outward providing shade to the

user, as shown in Figs. 10g and 10h. In some embodiments, the sail requires a wind speed of at least 2-3 miles per hour to flap or extend into the wind.

Because the support can rotate and adjust in response to the wind, the assembly has a reduced likelihood of falling over as a result heavy winds and/or when the wind shifts directions. Specifically, when the wind shifts direction, the sail will self-adjust (e.g. the pivot cap, ribs, sail, support arm, and slider rotate about the non-movable mast in response to the wind blowing and changing direction). In addition, because the sail rotates relative to the mast it prevents loosening the auger position and thereby causing failure of the assembly.

The disclosed assembly therefore offers many advantages over prior art systems. For example, because the sail consistently blows in response to the wind, the user's views are not blocked as is common with prior art umbrellas. As a result, users can keep an eye on children and the water at all times.

Further, the disclosed assembly allows the wind to self-adjust the direction of ribs **10** and sail **20**, saving the user the time and hassle of manually adjusting the assembly.

In addition, the assembly frame is designed to not fall over if the wind stops or changes direction by more than 90 degrees.

The frame of the assembly (e.g. mast) does not catch the wind. If the mast falls over, it typically falls straight to the ground and does not tumble down the beach.

The disclosed assembly is capable of being quickly assembled. Users can easily set up the umbrella assembly in about 40 seconds or less. Likewise, the assembly can be quickly and easily disassembled in about 40 seconds or less.

Current assemblies commonly make use of sandbags, requiring users to fill the bags with sand to weigh down the umbrella, which is messy, time consuming, and can be hazardous if no shovel is available. Further, if wet sand is used, it is even more difficult to fill the bags.

Assembly **5** comprises a single mast, so it is universally permitted on beaches where tents are not.

The mast is typically not in the middle of the umbrella sitting area, thereby providing adding convenience to the user.

The disclosed assembly is quiet compared to other umbrellas and sun shades. Specifically, sail **20** does not loudly flap in the wind. Rather the sail stays extended by consistently floating in the direction of the wind.

5 Further, the disclosed system acts as an effective seagull deterrent. Because the sail is constantly changing directions in response to the wind, birds are deterred and tend to keep their distance.

As described above, although several embodiments of the present invention have been described for illustrative purposes, those skilled in the art will appreciate that various modifications, additions, and substitutions are possible without departing from the scope
10 and spirit of the invention as disclosed in the accompanying claims.

CLAIMS

What is claimed is:

1. A sun shade assembly comprising:
 - a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap;
 - a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge;
 - a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast;
 - at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast;
 - a tension adjuster that adjusts rotation of the pivot cap about the mast; and
 - an anchor operably connected to the second end of the mast;
 - wherein the pivot cap, ribs, slider, and support arms are configured to rotate about the mast in response to blowing of the wind.
2. The assembly of claim 1, wherein the pivot cap rotates about the mast at an angle of about 0-360 degrees.
3. The assembly of claim 1, wherein the ribs are configured at an angle of greater than 180 degrees relative to each other.
4. The assembly of claim 1, wherein one face of the pivot cap comprises a lock defined by a bridge comprising an opening and a slidable arm that moves to cover and expose the opening.
5. The assembly of claim 1, wherein the slider is configured as a collar that fits around the exterior circumference of the mast.

6. The assembly of claim 1, wherein the mast length is adjustable.
7. The assembly of claim 1, wherein the anchor is releasably attached to the second end of the mast.
8. The assembly of claim 1, wherein the anchor comprises an auger.
9. The assembly of claim 1, wherein the tension adjuster is configured to permit the pivot cap, slider, ribs, and support arms to freely rotate about the mast, not rotate about the mast, or any level of rotation therebetween.
10. The assembly of claim 1, wherein the sail channel comprises one or more apertures to facilitate insertion of the ribs into the channel.
11. The assembly of claim 1, wherein the sail channel comprises one or more apertures to allow direct contact between each rib and a corresponding support arm.
12. The assembly of claim 1, wherein the sail has a top face and a bottom face, and wherein the bottom face includes at least one conduit configured as a channel with an open mouth positioned adjacent to the channel, a closed back end, and a length parallel with the length of the sail.
13. The assembly of claim 1, wherein the sail has a top face and a bottom face and wherein at least one of the top or bottom faces comprises a coating.
14. The assembly of claim 1, wherein the sail has an opposed rear edge comprising an adjacent hem constructed from a durable material.
15. The assembly of claim 1, wherein the mast comprises at least one handle for gripping the mast.
16. A method of using a sunshade, the method comprising:

positioning the anchor of a sun shade assembly in a support surface, wherein the sun shade assembly comprises:

a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap;

a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge;

a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast;

at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast;

a tension adjuster that adjusts rotation of the pivot cap about the mast; and

an anchor operably connected to the second end of the mast;

adjusting the tension adjuster to achieve a desired amount of rotation of the pivot cap, ribs, support arms, slider, and sail relative to the non-movable mast;

wherein the sun shade assembly self-adjusts in response to the blowing of the wind.

17. The method of claim 16, wherein the tension adjuster can be adjusted to allow the pivot cap, slider, ribs, and support arms to freely rotate about the mast, not rotate about the mast, or any level of rotation therebetween.

18. The method of claim 16, wherein the sail has a top face and a bottom face, and wherein the bottom face includes at least one conduit configured as a channel with an open mouth positioned adjacent to the channel, a closed back end, and a length parallel with the length of the sail.

19. The method of claim 16, wherein one face of the pivot cap comprises a lock defined by a bridge comprising an opening and a slidable arm that moves to cover and expose the opening.
20. The method of claim 16, wherein the sail has an opposed rear edge comprising an adjacent hem constructed from a durable material.

ABSTRACT

The presently disclosed subject matter is directed to a sun shade assembly. Particularly, the assembly includes a sail that releasably attaches to a pair of ribs, providing shade to the user. At least one support arm can be used to reinforce the ribs. A mast provides height to the assembly and includes an anchor that allows the assembly to be secured into a support surface (e.g., sand). The ribs and support arms rotate about the mast, thereby self-adjusting the direction of sail in response to the wind blowing. The assembly further includes a tension adjuster that can be tightened or loosed to control the rotation of the ribs and support arms in response to wind conditions.

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CERTIFICATION OF MICRO ENTITY STATUS (GROSS INCOME BASIS)

Application Number or Control Number (if applicable): Not Yet Assigned	Patent Number (if applicable): Not Yet Assigned
First Named Inventor: Paul T. James	Title of Invention: SELF-ADJUSTING SUN SHADE ASSEMBLY

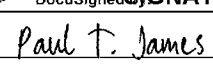
The applicant hereby certifies the following—

- (1) **SMALL ENTITY REQUIREMENT** – The applicant qualifies as a small entity as defined in 37 CFR 1.27.

- (2) **APPLICATION FILING LIMIT** – Neither the applicant nor the inventor nor a joint inventor has been named as the inventor or a joint inventor on more than four previously filed U.S. patent applications, excluding provisional applications and international applications under the Patent Cooperation Treaty (PCT) for which the basic national fee under 37 CFR 1.492(a) was not paid, and also excluding patent applications for which the applicant has assigned all ownership rights, or is obligated to assign all ownership rights, as a result of the applicant's previous employment.

- (3) **GROSS INCOME LIMIT ON APPLICANTS AND INVENTORS** – Neither the applicant nor the inventor nor a joint inventor, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986 (26 U.S.C. 61(a)), exceeding the "Maximum Qualifying Gross Income" reported on the USPTO Web site at http://www.uspto.gov/patents/law/micro_entity.jsp which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.

- (4) **GROSS INCOME LIMIT ON PARTIES WITH AN "OWNERSHIP INTEREST"** – Neither the applicant nor the inventor nor a joint inventor has assigned, granted, or conveyed, nor is under an obligation by contract or law to assign, grant, or convey, a license or other ownership interest in the application concerned to an entity that, in the calendar year preceding the calendar year in which the applicable fee is being paid, had a gross income, as defined in section 61(a) of the Internal Revenue Code of 1986, exceeding the "Maximum Qualifying Gross Income" reported on the USPTO Web site at http://www.uspto.gov/patents/law/micro_entity.jsp which is equal to three times the median household income for that preceding calendar year, as most recently reported by the Bureau of the Census.

SIGNATURE by an authorized party set forth in 37 CFR 1.33(b)				
Signature				
Name	Paul T. James			
Date	6-23-2021	Telephone	919-576-7612	Registration No.
☐	There is more than one inventor and I am one of the inventors who are jointly identified as the applicant. The required additional certification form(s) signed by the other joint inventor(s) are included with this form.			

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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.
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Application Number: 17417739

Document Date: 06/23/2021

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Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded in PALM, and no paper documents or physical media exist. The TIFF images in the IFW record were created from the original documents that are stored in SCORE.

- Drawing

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- USPTO employees may access SCORE content via DAV or via the SCORE web page.
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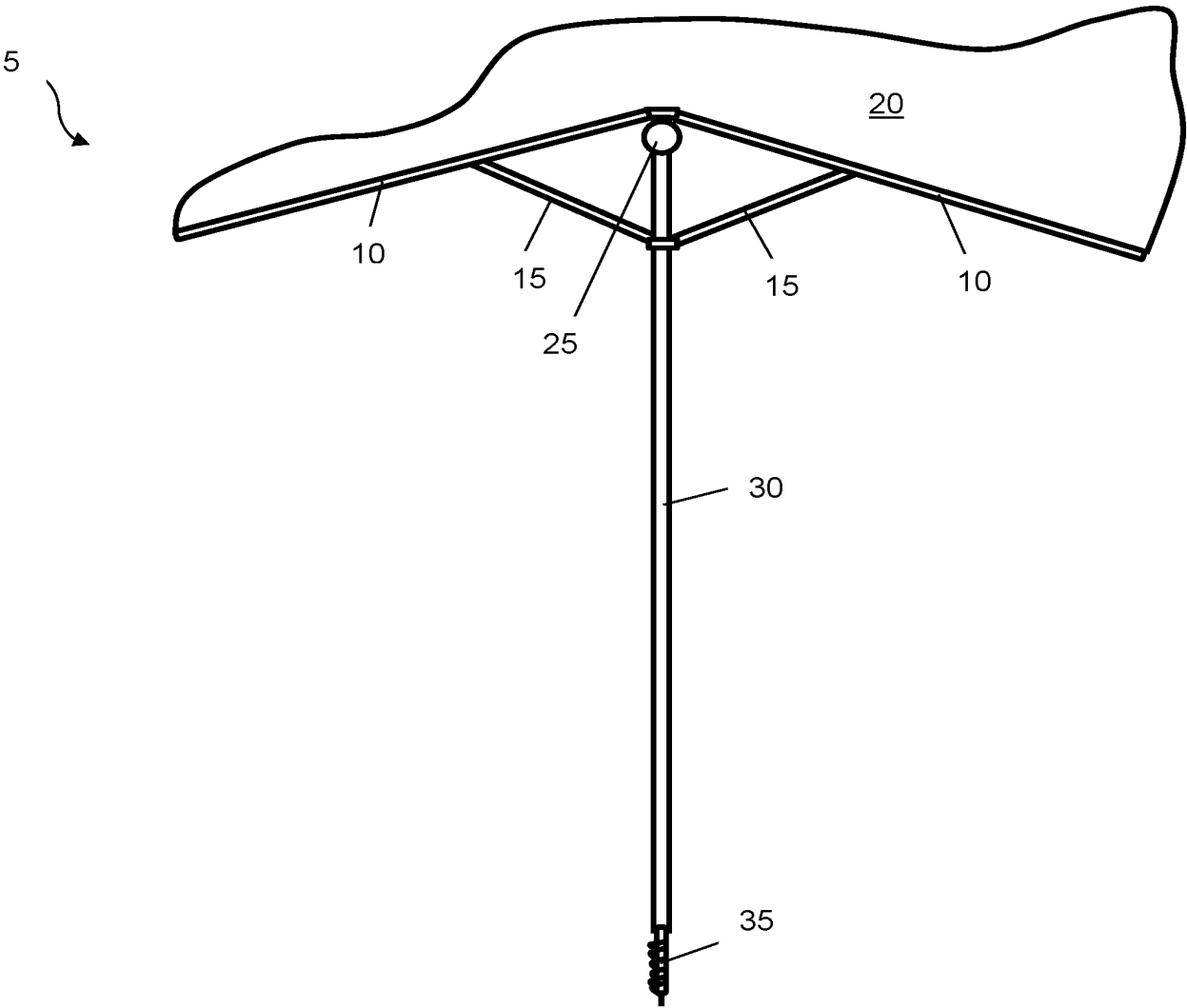


Fig. 1

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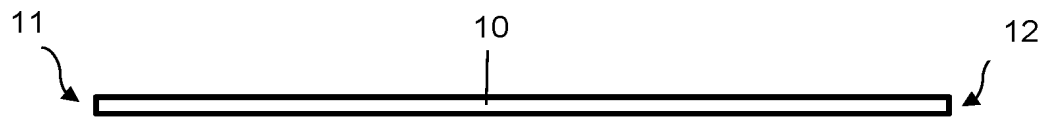


Fig. 2a

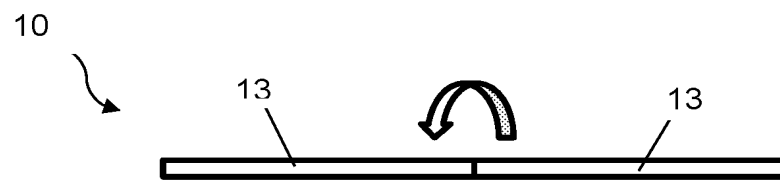


Fig. 2b



Fig. 2c

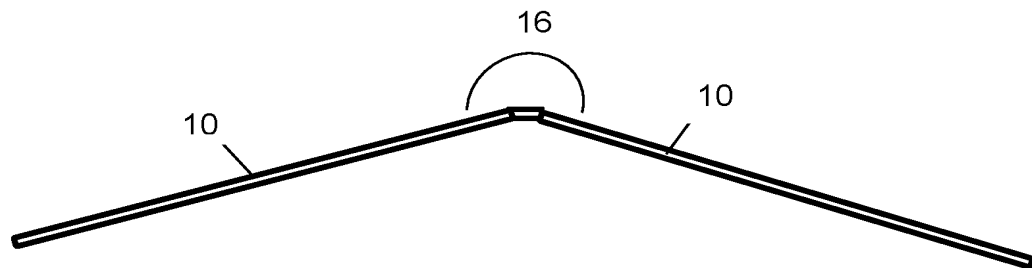


Fig. 2d

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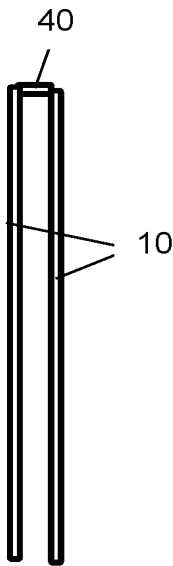


Fig. 2e

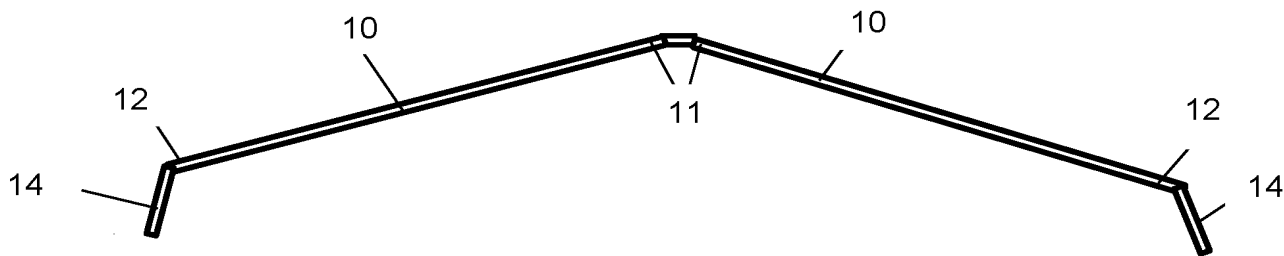


Fig. 2f

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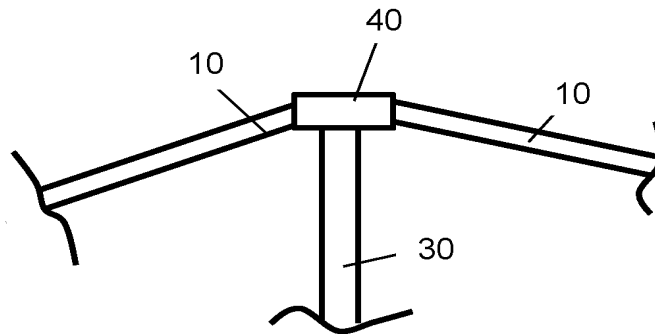


Fig. 3a

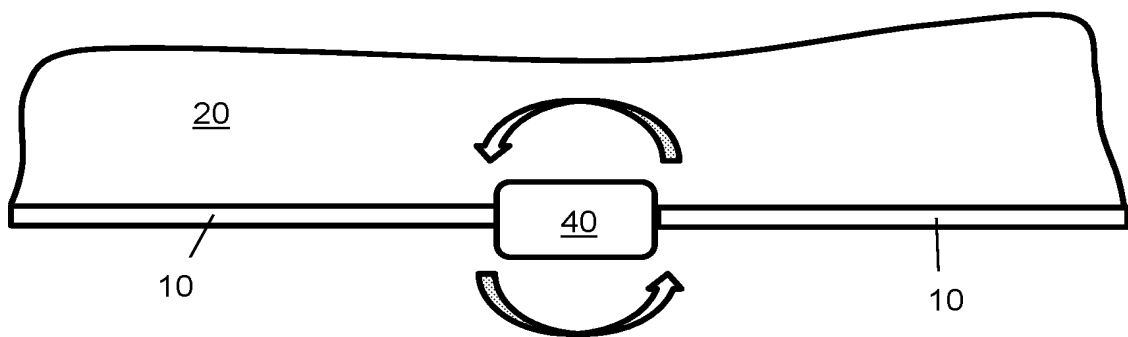


Fig. 3b

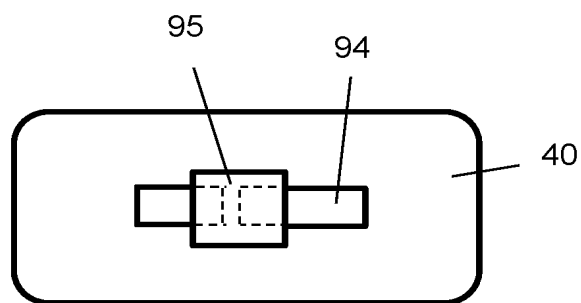


Fig. 3c

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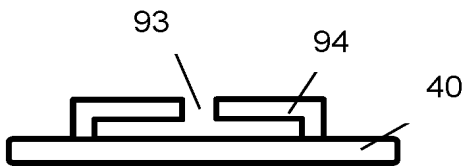


Fig. 3d

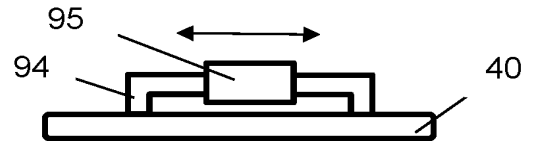


Fig. 3e

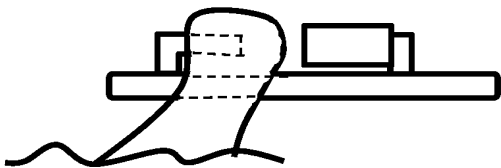


Fig. 3f

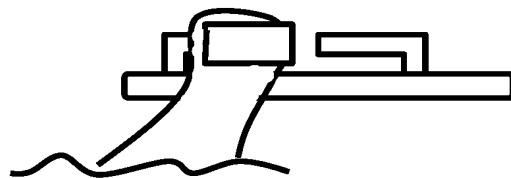


Fig. 3g

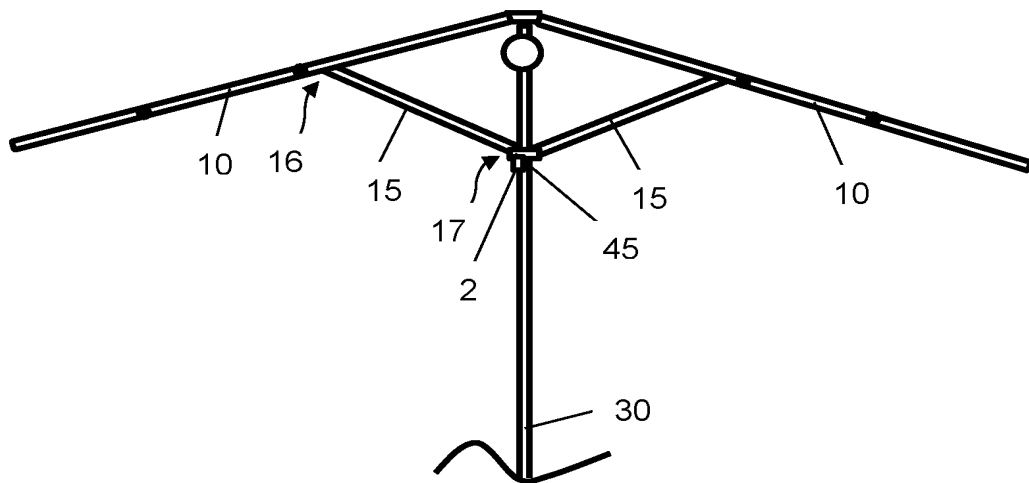


Fig. 4a

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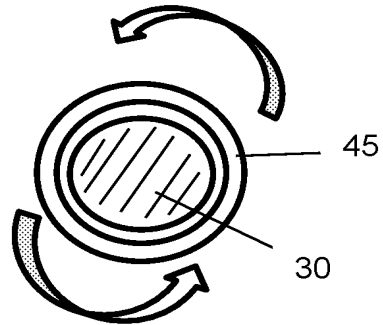


Fig. 4b

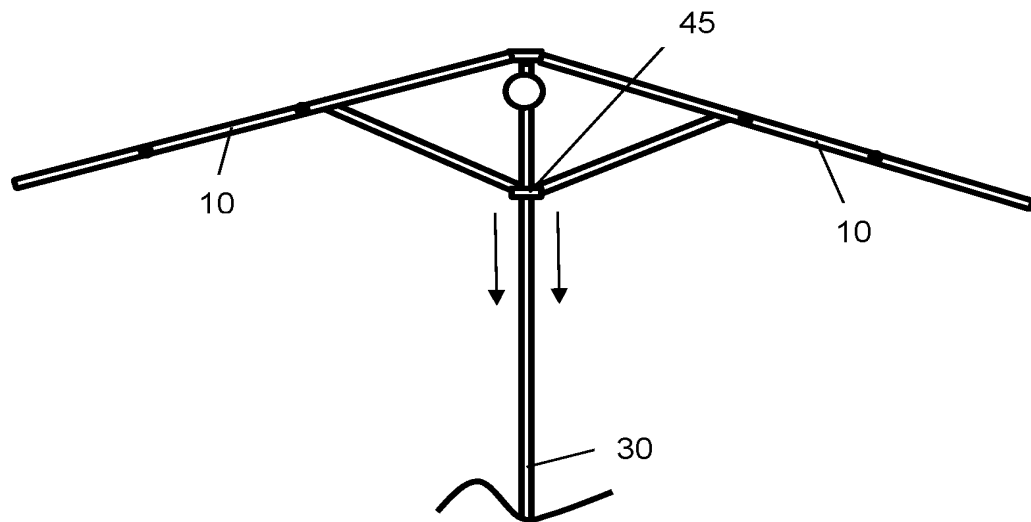


Fig. 4c

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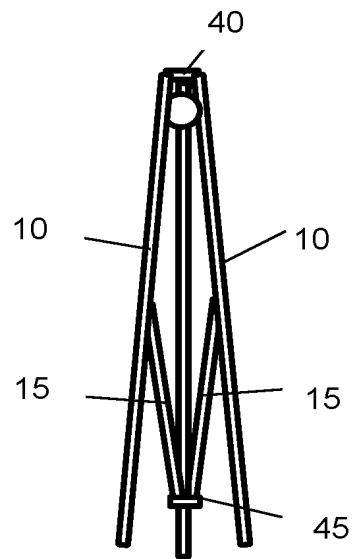


Fig. 4d

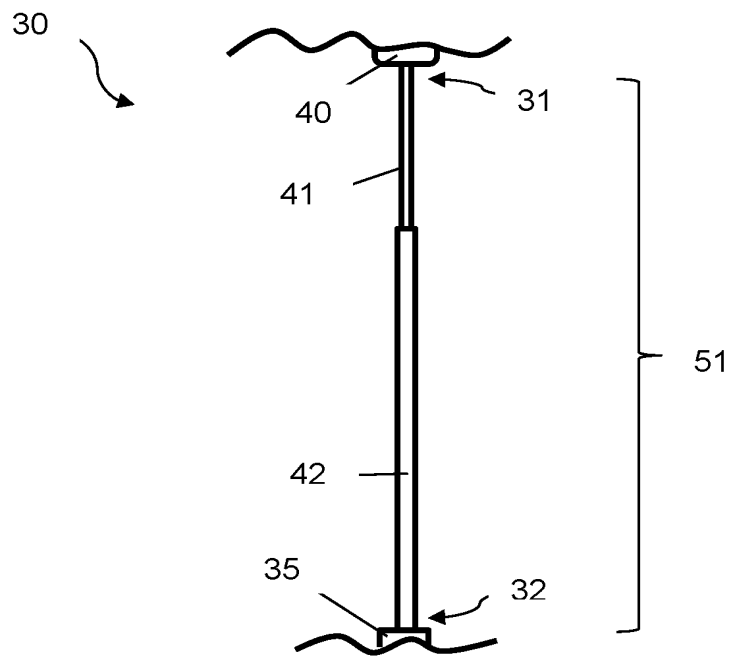


Fig. 5a

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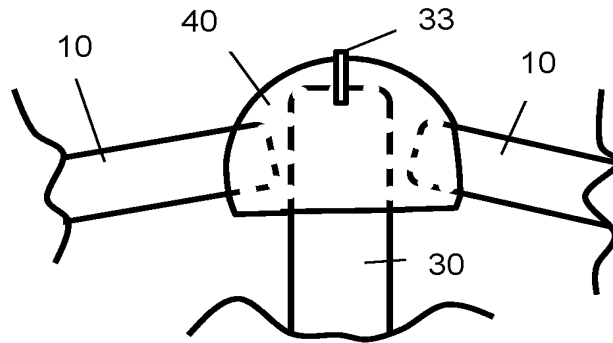


Fig. 5b

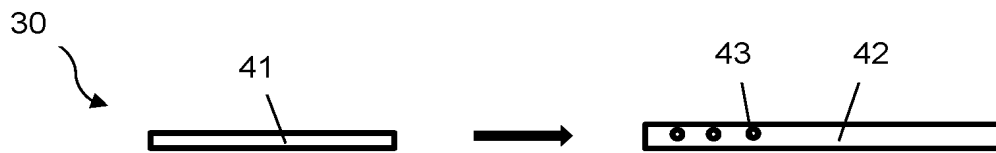


Fig. 5c



Fig. 5d

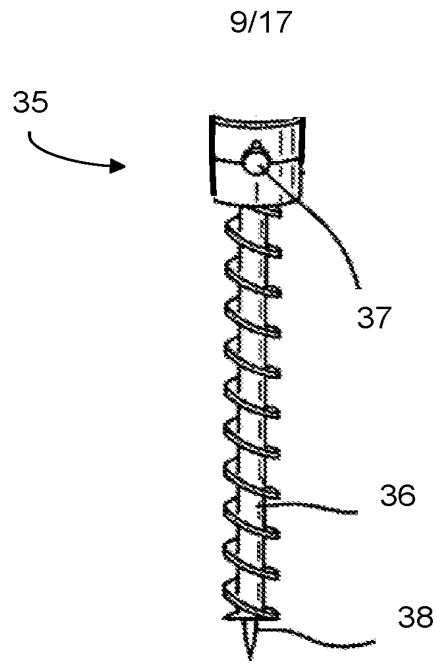


Fig. 6

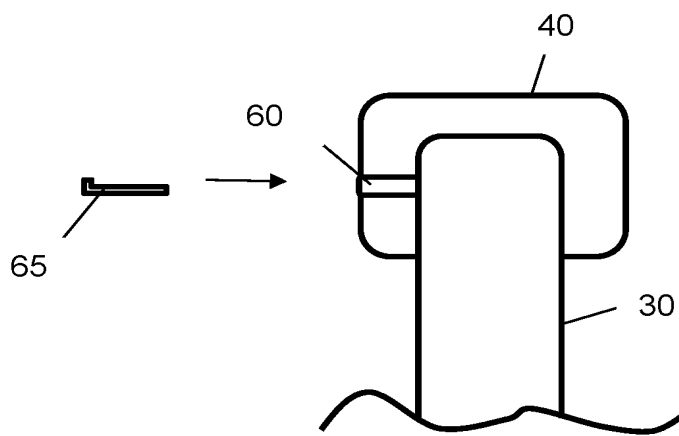


Fig. 7a

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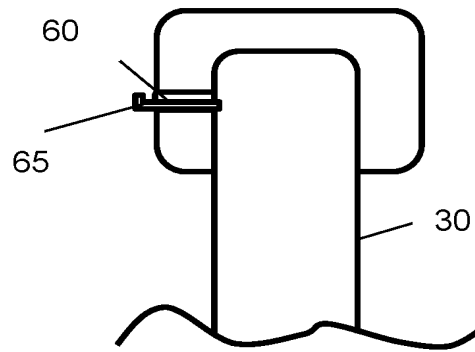


Fig. 7b

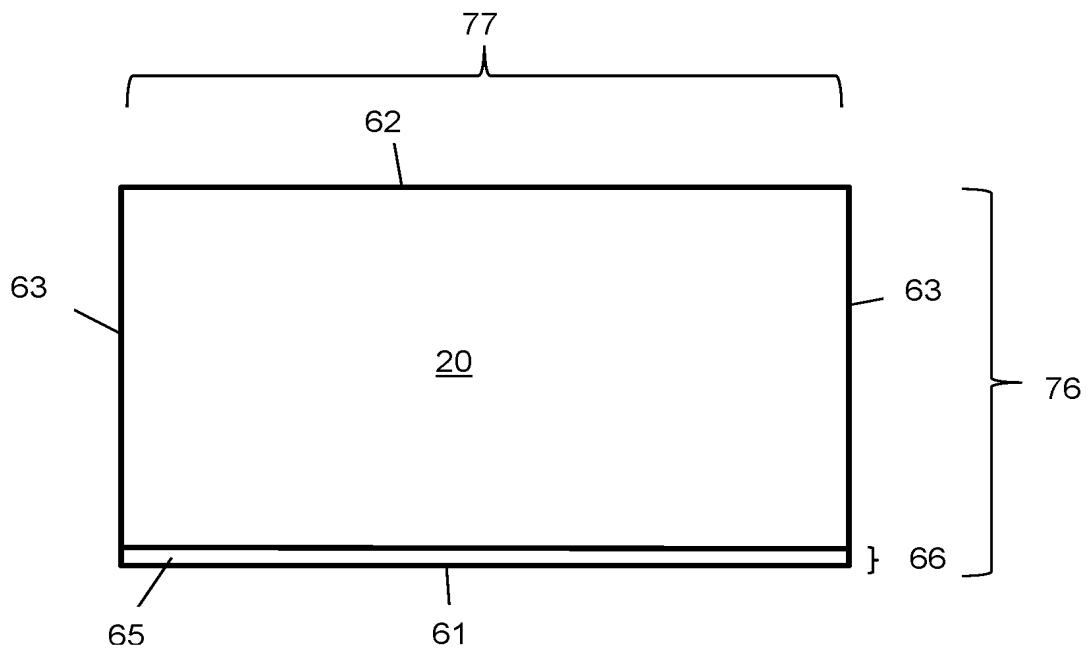


Fig. 8a

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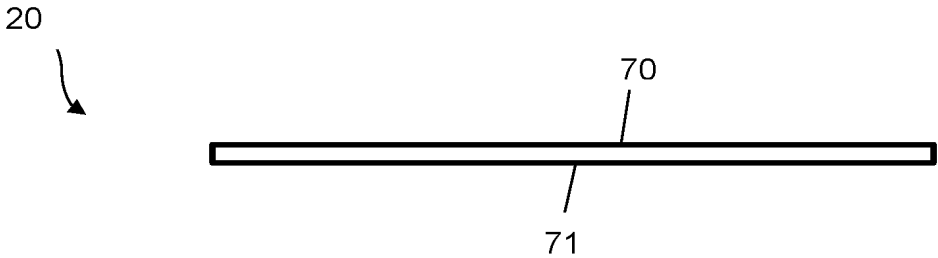


Fig. 8b

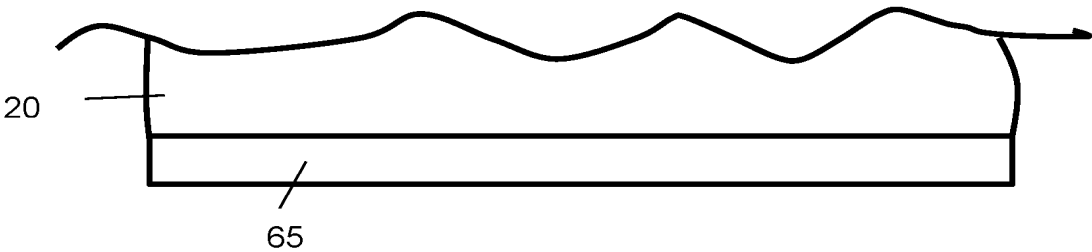


Fig. 8c

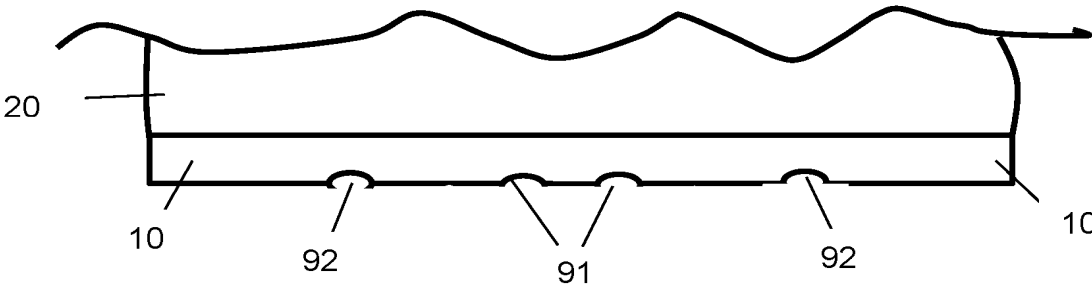


Fig. 8d

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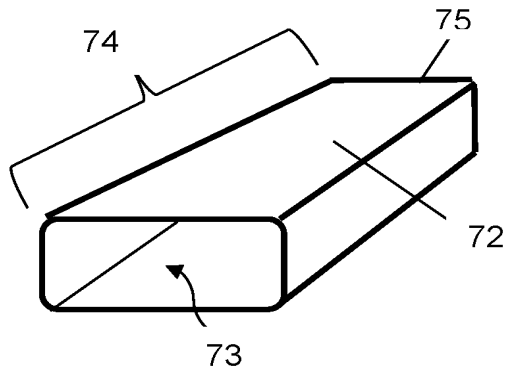


Fig. 8e

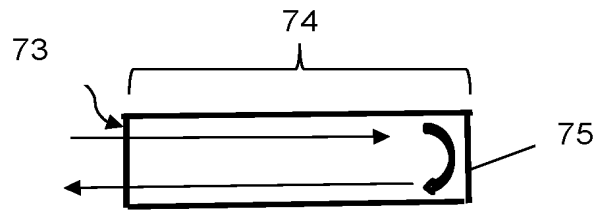


Fig. 8f

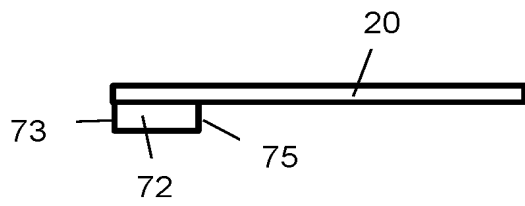


Fig. 8g

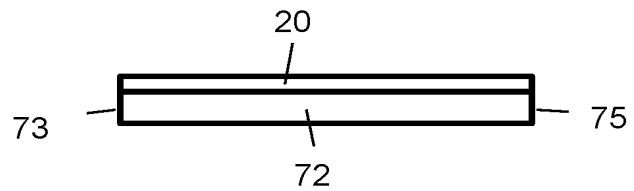


Fig. 8h

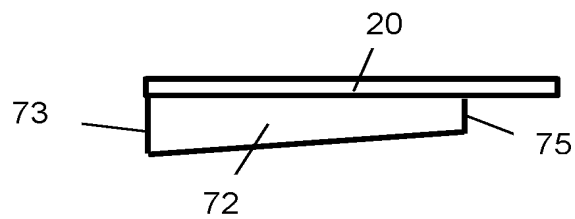


Fig. 8i

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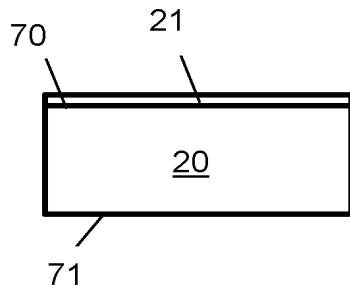


Fig. 9a

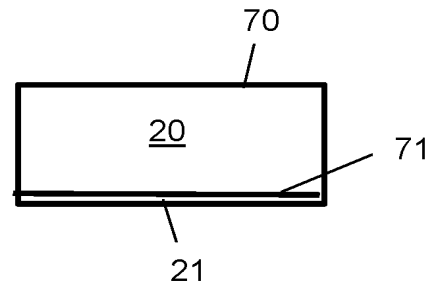


Fig. 9b

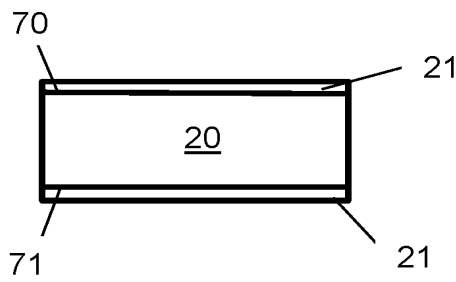


Fig. 9c

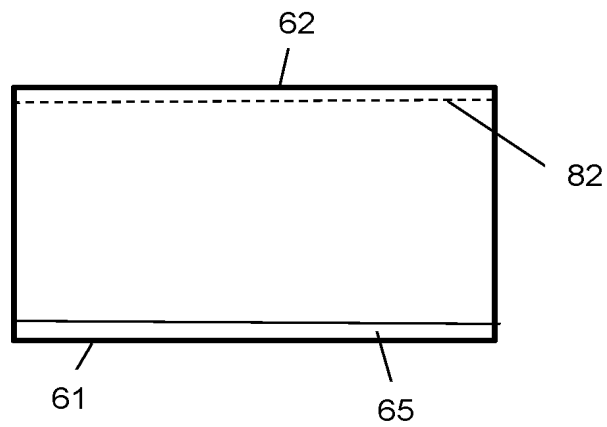


Fig. 9d

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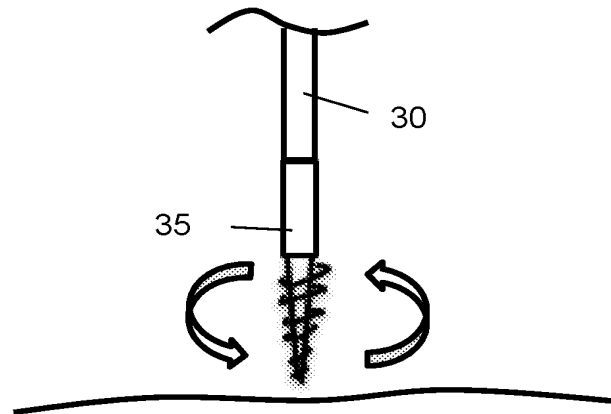


Fig. 10a

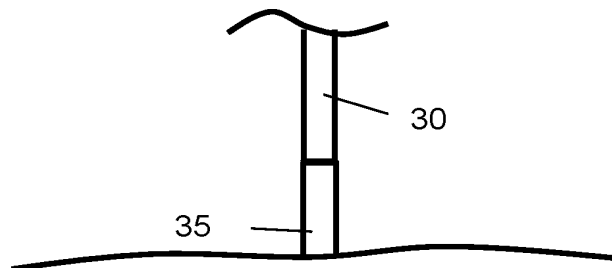


Fig. 10b

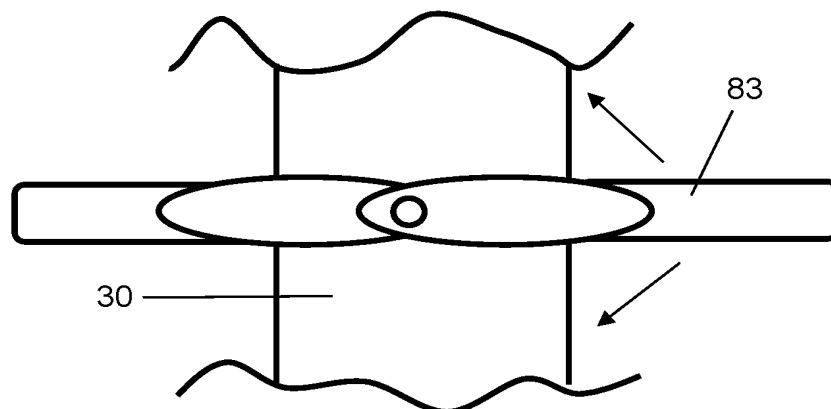


Fig. 10c

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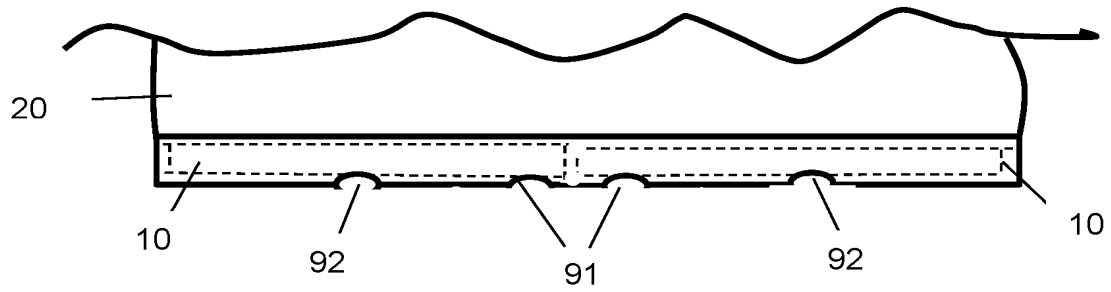


Fig. 10d

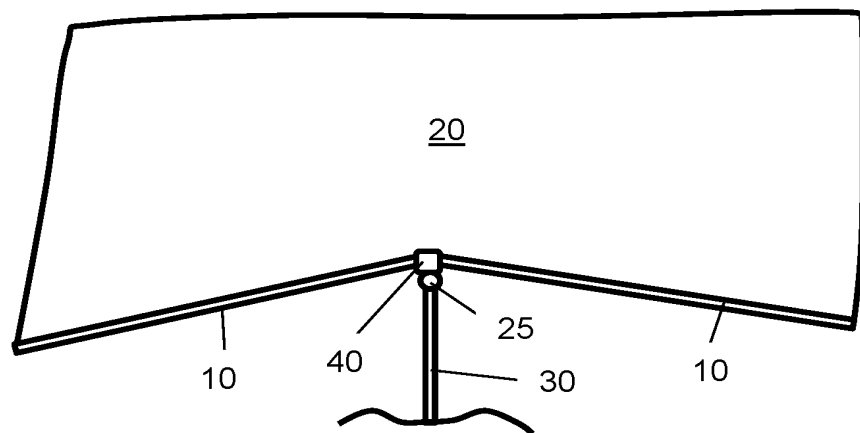


Fig. 10e

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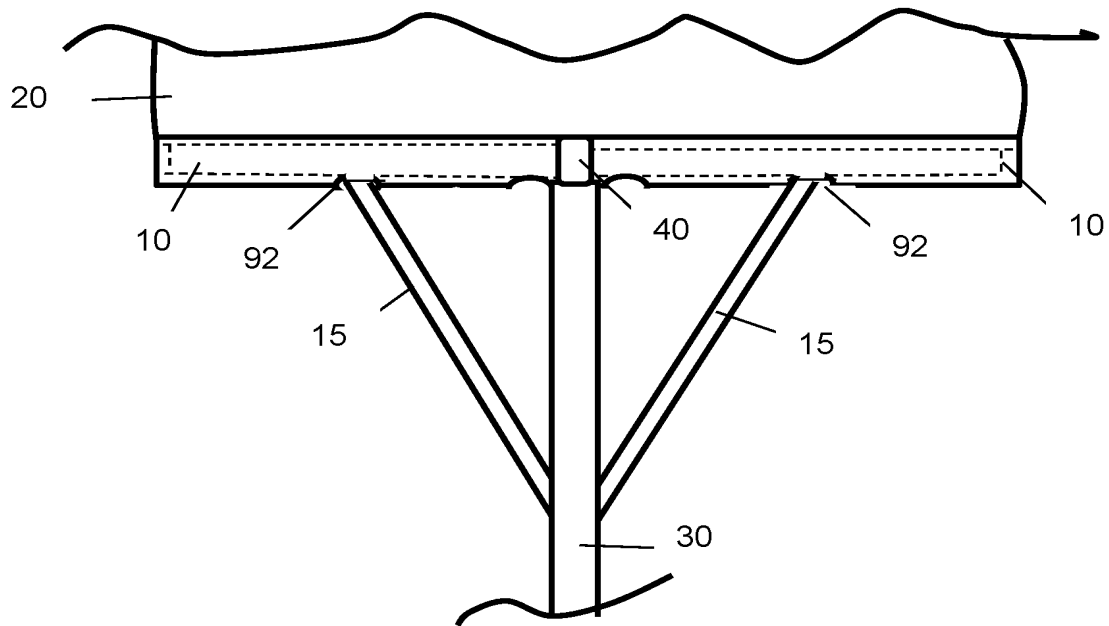


Fig. 10f

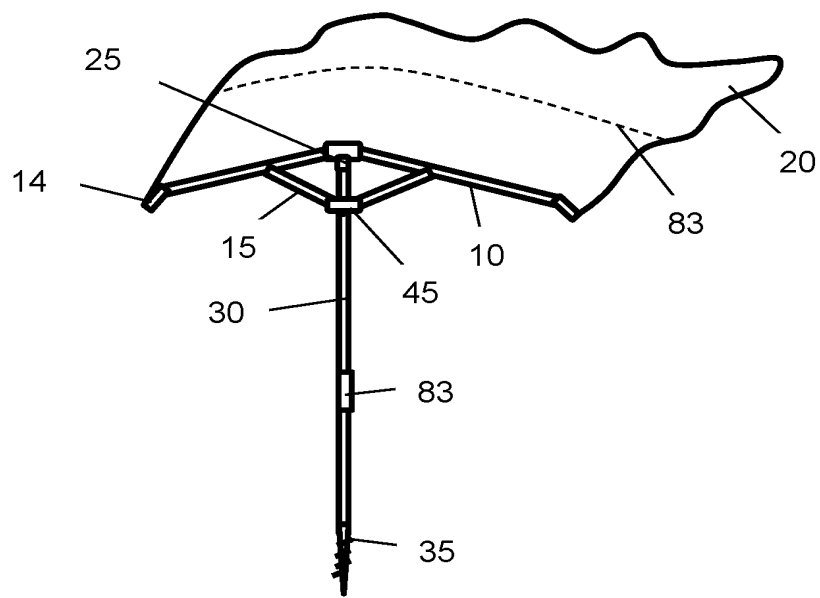


Fig. 10g

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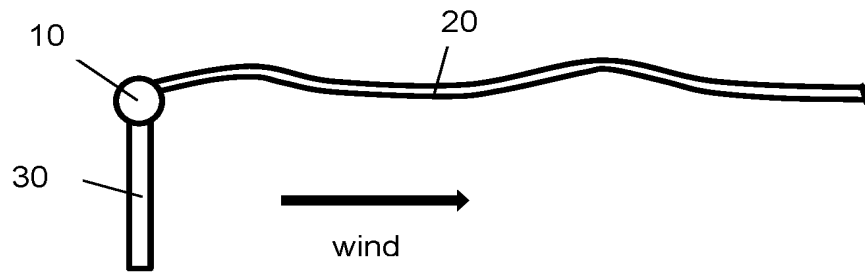


Fig. 10h

TITLE
SELF-ADJUSTING SUN SHADE ASSEMBLY

CROSS REFERENCE TO RELATED APPLICATIONS

5 The present application claims the benefit of U.S. Provisional Patent Application No. 62/892,700, filed August 28, 2019, the entire content of which is incorporated by reference herein.

TECHNICAL FIELD

10 The presently disclosed subject matter is directed to a self-adjusting sun shade assembly and to methods of making and the using the same.

BACKGROUND

15 Beach umbrellas are used to create an area shaded from the sunlight beneath the umbrella canopy. They are particularly useful at the beach where there is generally a lack of trees or roofed structures to provide shade. Because the skin of the beachgoer is largely exposed at the beach, there is a greater need to provide protection from harmful ultraviolet rays, which may cause sunburn or melanomas. Many beachgoers also require some form of shade to minimize heat discomfort. The shade and shelter provided by a beach umbrella is also useful in protecting the user's valuables and shielding perishable items from direct sunlight. Conventional beach umbrellas include a single central support pole with a pointed lower end that is inserted directly into the sand. Conventional umbrellas further include an overhead fabric covering attached to the support pole. However, the main problem with the canopy design of traditional umbrellas is that the position of the umbrella constantly shifts in response to wind gusts. As a result, the user must frequently readjust the umbrella to compensate for the shifts in movement. In addition, conventional umbrellas can easily tip over or be blown down the beach where they can cause hassle to the owner as well as injury to other beachgoers. Conventional umbrellas are also prone to wind breakage. It would therefore be beneficial to provide an umbrella with improved stability in response to the wind blowing. It would further be

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beneficial if the umbrella self-adjusted to the wind to prevent or reduce the likelihood of tipping over.

SUMMARY

In some embodiments, the presently disclosed subject matter is directed to a sun shade assembly (e.g., an assembly that provides shade from the sun). The assembly comprises a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap. The assembly further includes a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge. The assembly includes a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast. The assembly comprises at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast. The assembly comprises a tension adjuster that adjusts rotation of the pivot cap about the mast. The assembly comprises an anchor operably connected to the second end of the mast. The pivot cap, ribs, slider, and support arms are configured to rotate about the mast in response to blowing of the wind.

In some embodiments, the pivot cap rotates about the mast at an angle of about 0-360 degrees. In some embodiments, the pivot cap rotates about a top end of the mast (e.g., is configured to rotate about the top end of the mast).

In some embodiments, the ribs are configured at an angle of greater than 180 degrees relative to each other.

In some embodiments, one face of the pivot cap comprises a lock defined by a bridge comprising an opening and a slidable arm that moves to cover and expose the opening. A portion of sail material can be locked in between the bridge and slidable arm to lock it into position.

In some embodiments, the slider is configured as a collar that fits around the exterior circumference of the mast.

In some embodiments, the mast length is adjustable.

In some embodiments, the anchor is releasably attached to the second end of the mast.

In some embodiments, the anchor comprises an auger. The term “auger” refers to a member in which a spiral vane or multiple parallel vanes are provided about the perimeter of a shaft.

In some embodiments, the tension adjuster is configured to permit the pivot cap, slider, ribs, and support arms to freely rotate about the mast, not rotate about the mast, or any level of rotation therebetween. The pivot cap, slider, ribs, and support arms rotate as a single, attached unit.

In some embodiments, the sail channel comprises one or more apertures to facilitate insertion of the ribs into the channel.

In some embodiments, the sail channel comprises one or more apertures to allow direct contact between each rib and a corresponding support arm.

In some embodiments, the sail has a top face and a bottom face, and wherein the bottom face includes at least one conduit configured as a channel with an open mouth positioned adjacent to the channel, a closed back end, and a length parallel with the length of the sail.

In some embodiments, the sail has a top face and a bottom face and wherein at least one of the top or bottom faces comprises a coating.

In some embodiments, the sail has an opposed rear edge comprising an adjacent hem constructed from a durable material.

In some embodiments, the mast comprises at least one handle.

In some embodiments, the presently disclosed subject matter is directed to a method of using a sunshade. Particularly, the method comprises positioning the anchor of a sun shade assembly in a support surface. The sun shade assembly comprises: a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap; a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge; a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast; at least one support arm with a first end

and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast; a tension adjuster that adjusts rotation of the pivot cap about the mast; and an anchor operably connected to the second end of the mast. The method further includes adjusting the tension adjuster to achieve a desired amount of rotation of the pivot cap, ribs, support arms, slider, and sail relative to the non-movable mast. The sun shade assembly self-adjusts in response to the blowing of the wind.

In some embodiments, the tension adjuster can be adjusted to allow the pivot cap, slider, ribs, and support arms to freely rotate about the mast, not rotate about the mast, or any level of rotation therebetween.

In some embodiments, the sail has a top face and a bottom face, and wherein the bottom face includes at least one conduit configured as a channel with an open mouth positioned adjacent to the channel, a closed back end, and a length parallel with the length of the sail.

In some embodiments, one face of the pivot cap comprises a lock defined by a bridge comprising an opening and a slidable arm that moves to cover and expose the opening.

In some embodiments, the sail has an opposed rear edge comprising an adjacent hem constructed from a durable material.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a front plan view of an sun shade assembly in accordance with some embodiments of the presently disclosed subject matter.

5 Fig. 2a is a front plan view of an assembly rib in accordance with some embodiments of the presently disclosed subject matter.

Figs. 2b and 2c are front plan views illustrating the folding of a rib in accordance with some embodiments of the presently disclosed subject matter.

10 Fig. 2d is a front plan view illustrating the angle of separation of two ribs in accordance with some embodiments of the presently disclosed subject matter.

Fig. 2e is a front plan view of folded ribs separated by a pivot cap in accordance with some embodiments of the presently disclosed subject matter.

Fig. 2f is a front plan view illustrating ribs comprising extension in accordance with some embodiments of the presently disclosed subject matter.

5 Fig. 3a is a front plan view of a pivot cap in accordance with some embodiments of the presently disclosed subject matter.

Fig. 3b is a top plan view of a pivot cap in use in accordance with some embodiments of the presently disclosed subject matter.

10 Fig. 3c is a top plan view of a pivot cap comprising a bridge and sliding arm in accordance with some embodiments of the presently disclosed subject matter.

Figs. 3d-3g are side plan view of a pivot cap bridge and arm in use in accordance with some embodiments of the presently disclosed subject matter.

Fig. 4a is a top plan view of a slider configured around a mast in accordance with some embodiments of the presently disclosed subject matter.

15 Fig. 4b is a front plan view of a mast comprising a slider in accordance with some embodiments of the presently disclosed subject matter.

Figs. 4c-4d are front plan views illustrating use of a slider to adjust the position of one or more support arms in accordance with some embodiments of the presently disclosed subject matter.

20 Fig. 5a is a front plan view of a mast in accordance with some embodiments of the presently disclosed subject matter.

Fig. 5b is a front plan view of a pivot cap Fig. 6a is a front plan view of a mast in accordance with some embodiments of the presently disclosed subject matter.

25 Figs. 5c and 5d are side plan views illustrating a telescoping mast in accordance with some embodiments of the presently disclosed subject matter.

Fig. 6 is a perspective view of an anchor in accordance with some embodiments of the presently disclosed subject matter.

Figs. 7a and 7b are cross-sectional views of a tension adjuster in use in accordance with some embodiments of the presently disclosed subject matter.

Fig. 8a is a top plan view of a sail in accordance with some embodiments of the presently disclosed subject matter.

Fig. 8b is a front plan view of a sail in accordance with some embodiments of the presently disclosed subject matter.

5 Fig. 8c is a fragmentary top plan view of a sail channel in accordance with some embodiments of the presently disclosed subject matter.

Fig. 8d is a fragmentary top plan view of a sail channel comprising a plurality of apertures in accordance with some embodiments of the presently disclosed subject matter.

10 Fig. 8e is a perspective view illustrating a sail conduit in accordance with some embodiments of the presently disclosed subject matter.

Fig. 8f is a side plan view of a sail conduit in accordance with some embodiments of the presently disclosed subject matter.

15 Figs. 8g-8i are side plan views of sail conduits in accordance with some embodiments of the presently disclosed subject matter.

Figs. 9a-9c are cross-sectional views of sail coating arrangements in accordance with some embodiments of the presently disclosed subject matter.

20 Fig. 9d is a top plan view of a sail with a rear hem in accordance with some embodiments of the presently disclosed subject matter.

Figs. 10a and 10b illustrate one method of inserting an anchor into a support surface in accordance with some embodiments of the presently disclosed subject matter.

Fig. 10c is a front plan view of mast handles in accordance with some embodiments of the presently disclosed subject matter.

25 Fig. 10d is a fragmentary top plan view of a sail channel comprising ribs in accordance with some embodiments of the presently disclosed subject matter.

Fig. 10e is a front plan view of a sail positioned on ribs and a mast in accordance with some embodiments of the presently disclosed subject matter.

30 Fig. 10f is a front plan view of an assembly with side arms attached to the mast and ribs in accordance with some embodiments of the presently disclosed subject matter.

Fig. 10g is a front plan view of an assembly with a sail extended in the direction of the wind in accordance with some embodiments of the presently disclosed subject matter.

Fig. 10h is a side plan view of a sail extended in the direction of the wind in accordance with some embodiments of the presently disclosed subject matter.

5

DETAILED DESCRIPTION

The presently disclosed subject matter is introduced with sufficient details to provide an understanding of one or more particular embodiments of broader inventive subject matters. The descriptions expound upon and exemplify features of those
10 embodiments without limiting the inventive subject matters to the explicitly described embodiments and features. Considerations in view of these descriptions will likely give rise to additional and similar embodiments and features without departing from the scope of the presently disclosed subject matter.

Unless defined otherwise, all technical and scientific terms used herein have the
15 same meaning as commonly understood to one of ordinary skill in the art to which the presently disclosed subject matter pertains. Although any methods, devices, and materials similar or equivalent to those described herein can be used in the practice or testing of the presently disclosed subject matter, representative methods, devices, and materials are now described.

20 Following long-standing patent law convention, the terms "a", "an", and "the" refer to "one or more" when used in the subject specification, including the claims. Thus, for example, reference to "a device" can include a plurality of such devices, and so forth. It will be further understood that the terms "comprises," "comprising," "includes," and/or "including" when used herein specify the presence of stated features, integers, steps,
25 operations, elements, and/or components, but do not preclude the presence or addition of one or more other features, integers, steps, operations, elements, components, and/or groups thereof.

Unless otherwise indicated, all numbers expressing quantities of components, conditions, and so forth used in the specification and claims are to be understood as being
30 modified in all instances by the term "about". Accordingly, unless indicated to the

contrary, the numerical parameters set forth in the instant specification and attached claims are approximations that can vary depending upon the desired properties sought to be obtained by the presently disclosed subject matter.

As used herein, the term "about", when referring to a value or to an amount of mass, weight, time, volume, concentration, and/or percentage can encompass variations of, in some embodiments +/-20%, in some embodiments +/-10%, in some embodiments +/-5%, in some embodiments +/-1%, in some embodiments +/-0.5%, and in some embodiments +/-0.1%, from the specified amount, as such variations are appropriate in the disclosed packages and methods.

As used herein, the term "and/or" includes any and all combinations of one or more of the associated listed items.

Relative terms such as "below" or "above" or "upper" or "lower" or "horizontal" or "vertical" may be used herein to describe a relationship of one element, layer, or region to another element, layer, or region as illustrated in the drawing figures. It will be understood that these terms and those discussed above are intended to encompass different orientations of the device in addition to the orientation depicted in the drawing figures.

The embodiments set forth below represent the necessary information to enable those skilled in the art to practice the embodiments and illustrate the best mode of practicing the embodiments. Upon reading the following description in light of the accompanying drawing figures, those skilled in the art will understand the concepts of the disclosure and will recognize applications of these concepts not particularly addressed herein. It should be understood that these concepts and applications fall within the scope of the disclosure and the accompanying claims.

Fig. 1 illustrates one embodiment of sun shade assembly **5**. Particularly, the assembly includes sail **20** that releasably attaches to a pair of ribs **10**, providing shade to the user. At least one support arm **15** can be used to reinforce ribs **10**. Mast **30** provides height to the assembly and includes anchor **35** that allows the assembly to be secured into a support surface (e.g., sand). The ribs and support arms rotate about the mast, thereby self-adjusting the direction of sail **20** in response to the wind blowing, as described

in more detail below. The assembly further includes tension adjuster **25** that can be tightened or loosed to control the rotation of the ribs and support arms in response to wind conditions.

Fig. 2a illustrates one embodiment of rib **10**. As shown, the rib includes first end **11** and second end **12**. In some embodiments, the ribs can each include one or more joints **13** that can be folded, allowing the ribs to be easily stored when not in use, as illustrated in Figs. 2b and 2c. Any mechanism can be used to fold the ribs, such as (but not limited to) hinges, joints, and the like. For example, a living hinge, a barrel hinge, spring hinge, butterfly hinge, flag hinge, H hinge, or any other pivotable member can be used.

The term “living hinge” refers to a hinge integrally formed with two opposite portions of the same material. The term “barrel hinge” refers to a sectional barrel secured by a pivot. The term “spring hinge” refers to a spring-loaded hinge that applies force to secure the hinge in an open or closed configuration. “Butterfly hinge” refers to dovetail or parliament hinges. The term “flag hinge” refers to hinges that can be taken apart with a fixed pin on one leaf, manufactured in a right-hand or left-hand configuration. An “H hinge” refers to a hinge shaped like an “H.”

However, in some embodiments, the ribs are non-foldable and remain in the fully extended state, even during storage.

The ribs can be slightly offset relative to each other (e.g., are not 180 degrees apart). The offset nature allows the ribs to compensate for stretching of the sail. For example, in some embodiments, the angle **16** between ribs **10** can be about 180-300 degrees, as shown in Fig. 2d. Thus, the angle between ribs **10** can be at least/no more than about 180, 185, 190, 195, 200, 205, 210, 215, 220, 225, 230, 235, 240, 245, 250, 255, 260, 265, 270, 275, 280, 285, or 290 degrees. It should be appreciated that angle **16** is not limited and can be larger or smaller than the range set forth herein. The ribs can be fully folded, such as in a storage position, as shown in Fig. 2e.

In some embodiments, rib **10** can include extension **14** as shown in Fig. 2f. The extensions provide a decorative look the assembly when the sail is attached. Each extension can be attached to rib second end **12** using any desired method (e.g., adhesive,

welding, clips, clamps, hinges, screws, bolts, magnets, etc.). It should be appreciated that extension **14** is optional.

Ribs **10** can have any desired length. For example, suitable lengths can include (but are not limited to) about 3-10 feet. Thus, the ribs can have a length of at least about
5 (or no more than about) 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, or 10 feet. However, the presently disclosed subject matter is not limited the length of each rib can be larger or smaller than the range given herein.

The ribs are joined using pivot cap **40**, as illustrated in Fig. 3a. The pivot cap joins ribs **10** and enables rotation of the ribs about mast **30**. Thus, the pivot cap can freely
10 rotate about the mast in response to wind conditions, as discussed in more detail below and as shown in Fig. 3b. The ribs can rotate in a clockwise or counterclockwise direction, depending on the wind direction. It should be appreciated that the ribs can join to pivot cap **40** using any mechanism (e.g., screws, bolts, clips, hinges, welding, adhesive, magnets, and the like).

15 In some embodiments, one face of pivot cap **40** includes bridge **94** comprising opening **93** and slidable arm **95** that can be used to releasably lock the sail into proper position, as shown in Figs. 3c-3e. Particularly, a portion of the sail can be inserted into opening **94**. Arm **95** can then be slid to trap the portion of the sail over the bridge, as shown in Figs. 3f and 3g. Thus, a portion of the sail is trapped between the bridge and
20 the arm. To release the sail, the arm can be slid to expose opening **93**, thereby allowing the sail to be removed. The term "bridge" refers to any device that has a raised portion with an opening configured therein. In some embodiments, the arm can fully surround at least a segment of the raised bridge portion.

As shown in Fig. 4a, the assembly can include one or more support arms **15** that
25 provide stability to the ribs, allowing the assembly to support the sail even in high wind conditions. Each support arm includes first end **16** attached to rib **10** and second end **17** attached to slider **45**. The support arms can be attached to the rib and slider using any known mechanism, such as the use of adhesives, welding, magnets, mechanical elements (screws, bolts, clips), and the like. In some embodiments, the support arms are

hingedly attached to the ribs and/or slider to allow for easy transitioning between positions.

Slider **45** can move along mast **30** to fold or unfold the ribs and support arms. In some embodiments, the slider can be configured as a collar that fits about the outer circumference of mast **30**, as shown in Fig. 4b. The inner circumference of slider **45** is therefore at least slightly larger than the outer circumference of mast **30**. In this way, the slider and support arms can rotate freely about the mast. Particularly, the mast remains in a stationary position, while the slider (and attached support arms and ribs) rotate in response to the wind blowing. The slider can rotate in any direction (e.g., clockwise and counterclockwise).

The slider can include retention element **2** to keep it from sliding down the length of the mast. The retention element can include any device that retains the slider in a desired position on the mast, such as (but not limited to) a removable ledge with an outer circumference larger than the inner circumference of the slider, clips, pins, clasps, and the like. The retention element therefore locks the slider at a desired location along the mast. In this way, the ribs and support arms can be maintained in the open configuration without the slider slipping to a lower position. Likewise, the slider can also be locked in a lower “storage” configuration along the mast (or any location therebetween).

The slider can also be used to fold the ribs and support arms, such as when the assembly is transitioned to a storage configuration (e.g., not in use). When the slider is in an upper position on the mast, the support arms and ribs are unfolded outward and thus sail **20** is unfolded, as shown in Fig. 4a. When the slider moves to a lower position on the mast, the support arms and ribs are folded to the storage position, as shown in Figs 4c and 4d. Therefore, the slider can travel on the mast in an upward direction to extend the ribs and support arms to a fully open configuration. The slider can also move downward along the mast to transition the ribs and support arms into a folded position.

Ribs **10** and support arms **15** can have any desired cross-sectional shape. For example, the ribs and support arms can be configured with a circular, oval, square, rectangular, triangular, pentagonal, hexagonal, octagonal, heart, diamond, or abstract cross-sectional shape.

As set forth above, assembly **5** comprises mast **30** that reinforces ribs **10** and support arms **15**, as well as provides height to the assembly, as shown in Fig. 5a. The mast further provides a base about which the ribs can rotate via pivot cap **40**. The mast includes first end **31** operatively attached to pivot cap **40** and second end **32** attached to anchor **35**. The mast can be permanently or releasably attached to the pivot cap and/or anchor.

The pivot cap is attached to mast first end **31** using any known method. For example, a screw, bolt, or other element **33** can be threaded through the pivot cap, extending into the mast as shown in Fig. 5b. In this way, the pivot cap attaches to the mast and still can rotate freely in a clockwise or counterclockwise direction. The pivot cap can have any desired shape and is not limited to the embodiment shown in Fig. 5b. Attachment of the pivot cap to the mast is further not limited.

Mast **30** includes length **51** that in some embodiments can be adjusted as desired by the user. For example, the mast can include telescoping inner and outer tubes **41**, **42**. The term “telescoping” refers to a mechanical action of at least two longitudinal bodies of congruent cross-sections sliding relative to each other along a common longitudinal axis. As shown in Figs. 5c-5d, inner tube **41** can be at least partially slidably disposed into the interior of outer tube **42**. Specifically, the diameter of the outer tube is larger than the diameter of the inner tube such that the inner tube can be housed within the interior of the outer tube. The mast can include any number of telescoping tubes. A locking pin can pass through one or more holes **43** configured in the outer tube to hold the mast at the desired length. Alternatively, the inner and outer tubes can cooperate with a locking screw to secure the mast height. It should be appreciated that the length of the mast can be locked using any known element, such as friction fit, screw fit, snap-fit, screws, bolts, and the like.

It should further be appreciated that the length of the mast can be adjusted using any known mechanism and is not limited to a telescoping arrangement. For example, the mast can include a plurality of segments that can be added or removed as desired to achieve a suitable height. In other embodiments, the length of mast **30** is not adjustable.

Mast **30** can have any desired cross-sectional shape. For example, the mast can be configured with a circular, oval, square, rectangular, triangular, pentagonal, hexagonal, octagonal, heart, diamond, or abstract cross-sectional shape.

Second end **32** of the mast is operatively connected to anchor **35**. The term
5 “anchor” broadly refers to any element that provides weight and/or a mechanism by which to secure assembly **5** into a support surface (e.g., sand). The anchor can be permanently attached to mast **30** using adhesives, welding, and the like. Alternatively, the anchor can be releasably attached to the mast using any of a wide variety of mechanical elements (e.g., screw knob **37**). A releasably attached anchor allows for the replacement of the
10 anchor depending on use conditions (e.g., beach sand versus grass or rock).

Fig. 6 illustrates one embodiment of anchor **35** comprising auger **36** that can be configured as any type of spike, helical corkscrew, or shaft optionally having a threaded portion capable of being turned and embedding itself into a support surface (e.g., sand at a beach). Lower end **38** of the auger can be configured as a spike or pointed end to
15 initiate insertion of the anchor into the support surface. Because auger **36** is inserted into a support surface, it does not rotate and remains in the inserted position until the user desires to remove it. Likewise, the mast does not rotate in response to wind conditions due to its attachment to the anchor.

The disclosed assembly further includes tension adjuster **25** that allows a user to
20 adjust the tension on the pivot cap relative to the mast easily and safely. In this way, a user can alter the amount of rotation ribs **10**, support arms **15** and slider **45** have about mast **30** in response to wind conditions. The tension adjuster can be generally located adjacent to the pivot cap. The tension adjuster is also attached to mast **30** using any known mechanism (e.g., screws, bolts, clips, etc.).

25 As described above, the pivot cap (and attached ribs, slider, and support arms) can freely rotate about the mast in response to the wind blowing. The tension adjuster can be tightened as desired by the user (e.g., when the wind is shifting back and forth) to stop or limit rotation of the pivot cap (and ribs, support arm, and slider) about the mast to maintain a more balanced assembly. For example, in some embodiments, the tension
30 adjuster can be loosened to allow the pivot cap, ribs, support arms, and slider to freely

rotate (e.g., 360 degrees) about the mast. In other embodiments, the pivot cap, ribs, slider, and support arms have a more limited freedom to rotate (e.g., it takes a stronger gust of wind to rotate). In some embodiments, the tension adjuster can be fully tightened such that the ribs, slider, and support arms cannot rotate relative to the mast.

5 Tension adjuster **25** can have any desired configuration that allows a user to control the level of movement of the tension cap relative to the mast. For example, in some embodiments, the tension adjuster can include passageway **60** with actuator **65** (e.g., lever or screw) capable of contacting pivot cap **40**, as shown in Figs. 7a and 7b. Adjusting the actuator through the passageway will increase or decrease the tension on
10 the pivot cap. Specifically, if the actuator is tightened to fully contact the pivot cap, the pivot cap will be incapable of moving relative to the mast. Alternatively, if the actuator is loosened such that it does not fully contact or press against the mast, the pivot cap is free to rotate. Any degree of actuator tightening can therefore adjust the level of pivot cap rotation.

15 The tension adjuster can have any known configuration and is not limited to the embodiment described above. For example, the tension adjuster can apply a force parallel, at an angle, or perpendicular to the tension it creates. The force can be generated by any known method, such as fixed displacement, stretching/compression of a spring, changing the volume of a gas, hydraulic pressure, or gravity. Tension adjuster
20 **25** can therefore include any device that applies a force to create or maintain tension.

Further, actuator **65** can have any known configuration, such as (but not limited to) a lever, wrench, key, screw, handle, knob, bolt, and the like.

25 The ribs, mast, support arms, pivot cap, tension adjuster, and anchor can be constructed from any desired material, such as (but not limited to) metal (e.g., aluminum, steel, brass, stainless steel, copper), plastic, wood, stone, or combinations thereof. In some embodiments, each element is constructed from the same material. In other embodiments, one element can be constructed from a material that differs from at least one other element.

Assembly **5** further includes sail **20** that cooperates with ribs **10**. As shown in Figs. 8a and 8b, the sail can include front edge **61**, rear edge **62**, and a pair of side edges **63**. The sail further includes top face **70** and bottom face **71**.

Front edge **61** comprises channel **65** sized and shaped to house each rib **10**, as shown in Figs. 8c. The front edge can be a straight edge, a curved edge, or have any known configuration. The ribs can be removed from channels **65** if desired by the user (e.g., to repair the sail or replace with a new sail). Channels **65** can be formed in the sail using any known method. For example, in some embodiments, the channel can be formed through sewing, welding, and the like. Such methods are well known in the art.

In some embodiments, each channel includes one or more apertures. For example, each channel can include apertures **91** sized and shaped to allow each rib to be inserted into channel **65**. The channel can further include one or more apertures **92** sized and shaped to allow each support arm to connect with the appropriate rib, as shown in Fig. 8d. Apertures **91**, **92** can have any desired size and/or shape so long as they allow for insertion of a rib and/or connection of a support arm with a rib (e.g., through one or more screws, clips, and/or the like). Further, apertures **91**, **92** can be positioned at any suitable position in the channel.

Optionally, bottom face **71** of the sail can include at least one closed conduit **72** that provides a passageway for the flow of the wind during use. Fig. 8e illustrates one embodiment of conduit **72** comprising open mouth **73** positioned adjacent to the sail front edge, length **74** and closed end **75**. Fig 8f illustrates the flow of wind (represented by the arrows) as it enters open mouth **73**, hits closed end **75** and then exits the open mouth. Conduit **72** provides added support for the sail, preventing or reducing excess flapping in the wind.

In some embodiments, the length of the conduit is the same as the length of the sail (i.e., the conduit extends the full length of the sail). In other embodiments, the conduit is configured to be shorter than the length of the sail, as shown in Figs. 8g and 8h. In some embodiments, the thickness of the conduit can taper as it reaches closed end **75**, as shown in Fig. 8i.

The conduit can have any cross-sectional shape, such as (but not limited to) square, rectangular, circular, oval, triangular, and the like.

In some embodiments, the sail can be formed as a single portion of material. In other embodiments, the sail can be constructed from two or more pieces of material joined
5 together, such as by welding or sewing.

The sail can be configured in any desired shape, such as square, rectangular, rounded, oval, triangular, pentagonal, abstract, and the like. In some embodiments, the sail can include at least one straight edge to accommodate the channel.

The sail can further have any desired dimensions, such as length **77** and/or width
10 **76** of about 3-20 feet (e.g., at least/no more than about 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, or 20 feet). In some embodiments, the sail can have an area of about 10-100 ft² (e.g., at least/no more than about 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95, or 100 ft²). However, the sail can be configured with dimensions outside the range given above. The term “length” refers to the distance in the
15 longitudinal direction. The term “width” refers to the dimension perpendicular to the length.

Sail **20** can have any desired thickness, such as about 1 inch or less. Thus, the sail can have a thickness of about 1, 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2, 0.1, 0.01, 0.001 inches or less. However, the presently disclosed subject matter is not limited and the sail
20 can have thickness of greater or less than the range given above.

Sail **20** can be constructed from any desired lightweight material. The term “lightweight material” refers to any material that is able to be lifted and carried by the wind (e.g., a wind speed of at least about 2-3 mph). Suitable materials can therefore include (but are not limited to) nylon, polyester, vinyl, rayon, canvas, acrylic fabric, cotton, or
25 combinations thereof.

In some embodiments, the material(s) used to construct the sail can have a UPF (ultraviolet protection coefficient) rating of about 30 or more in accordance with ASTM D6544, incorporated by reference herein.

As shown in the cross-sectional views of Figs. 9a-9c, sail **20** can include coating
30 **21** to reduce the noise level when the sail is moving in the wind. The coating can be

positioned on the sail top and/or bottom surfaces. The coating can span the entire top and/or bottom surface or only a portion thereof.

In addition to coating **21**, the sail can optionally be calendared and/or treated with the application of heat/pressure to aid in the reduction of noise. The term “calendaring” refers to a method of passing the sail between calendar rolls at high temperature and/or pressure.

Coating **21** can comprise any material that would serve to reduce the amount of noise and/or movement of sail **20**. Suitable materials can therefore include (but are not limited to) urethane polyurethane, plastic (e.g., polyethylene), or combinations thereof.

Coating **21** can have any thickness, such as about 0.0001 inches to about 0.1 inches. In some embodiments, the coating can impart a waterproof or water-resistant quality to sail **20**. The term “waterproof” refers to a material that is impervious to water. The term “water-resistant” refers to the ability of a material to resist the entry of water to some degree but not entirely.

In some embodiments, sail **20** can include hem **82** sewn or otherwise applied at or adjacent to rear edge **62**, as shown in Fig. 9d. Hem **82** can be sewn with a durable material (e.g., monofilament nylon thread) to reduce the pliability of the sail, which aids in noise reduction and in the reduction of excess flapping in the wind. In some embodiments, hem **82** is in addition to any rear edge hem used to construct the sail (e.g., the rear edge can include an additional hem). It should be appreciated that hem **82** can be configured at any desired location.

In use, the disclosed umbrella assembly can be used to provide shade to one or more users. Anchor **35** is positioned in a support surface, such as sand at the beach. The anchor can be inserted into the ground using a twisting motion, which allows the auger to be easily buried, as shown in Figs. 10a and 10b. In some embodiments, the mast can be manually rotated to insert the auger into the ground. In other embodiments, mast **30** can include one or more handles **83** that fold out to aid in screwing the auger into the ground, as illustrated in Fig. 10c. In some embodiments, handles **83** can rotate up and down, flush with the mast as shown by the arrows. Thus, the handles fold into the mast when not in use and can be easily folded out when desired to insert the auger into

a support surface. It should be appreciated that the handles can have any desired configuration.

Mast **30** can then be extended to a desired length to accommodate one or more users and their belongings. For example, inner and outer tubes **41** and **42** can be
5 adjusted as needed to a desired length. In other embodiments, the mast is of a single length and need only be positioned and attached to the anchor.

Ribs **10** can then be inserted into channel **65** of the sail. In some embodiments, each rib is inserted into channel aperture **91** for proper placement in the channel. It should be appreciated that aperture **91** can be positioned at any location in channel **65**. For
10 example, in some embodiments, each aperture **91** is positioned adjacent to the center of the channel (e.g., about 1-10 inches from the center point of the channel). Once the ribs are inserted into channel **65**, apertures **92** are properly positioned to allow support arms **15** to be attached to the ribs, as shown in Fig 10d. Particularly, the apertures provide an opening in the sail to allow the support arms to directly attach to the ribs. In this way, the
15 support arms can be easily attached to the ribs.

The sail can then be secured into position via bridge **94** and arm **95** on the pivot cap, as shown in Fig 10e. For example, in some embodiments, the portion of the sail positioned between apertures **91** can be inserted into the bridge opening, and the arm then slid over to trap the sail material in position. In this way, the sail does not significantly
20 shift out of proper position during use.

The support arms can then be attached to the ribs through channel apertures **92**, as shown in Fig. 10f. Any known mechanism to secure the support arms to the ribs can be used. It should be appreciated that the opposing side of the support arms are secured to mast **30**.

25 It should be appreciated that the steps included above can be performed in any order.

If desired by the user, the tension adjuster can be set to lock the position of the ribs (e.g., no movement relative to the mast) or to limit movement. As the wind blows, the sail will move in response, blowing and extending outward providing shade to the

user, as shown in Figs. 10g and 10h. In some embodiments, the sail requires a wind speed of at least 2-3 miles per hour to flap or extend into the wind.

Because the support can rotate and adjust in response to the wind, the assembly has a reduced likelihood of falling over as a result heavy winds and/or when the wind shifts directions. Specifically, when the wind shifts direction, the sail will self-adjust (e.g. the pivot cap, ribs, sail, support arm, and slider rotate about the non-movable mast in response to the wind blowing and changing direction). In addition, because the sail rotates relative to the mast it prevents loosening the auger position and thereby causing failure of the assembly.

The disclosed assembly therefore offers many advantages over prior art systems. For example, because the sail consistently blows in response to the wind, the user's views are not blocked as is common with prior art umbrellas. As a result, users can keep an eye on children and the water at all times.

Further, the disclosed assembly allows the wind to self-adjust the direction of ribs **10** and sail **20**, saving the user the time and hassle of manually adjusting the assembly.

In addition, the assembly frame is designed to not fall over if the wind stops or changes direction by more than 90 degrees.

The frame of the assembly (e.g. mast) does not catch the wind. If the mast falls over, it typically falls straight to the ground and does not tumble down the beach.

The disclosed assembly is capable of being quickly assembled. Users can easily set up the umbrella assembly in about 40 seconds or less. Likewise, the assembly can be quickly and easily disassembled in about 40 seconds or less.

Current assemblies commonly make use of sandbags, requiring users to fill the bags with sand to weigh down the umbrella, which is messy, time consuming, and can be hazardous if no shovel is available. Further, if wet sand is used, it is even more difficult to fill the bags.

Assembly **5** comprises a single mast, so it is universally permitted on beaches where tents are not.

The mast is typically not in the middle of the umbrella sitting area, thereby providing adding convenience to the user.

The disclosed assembly is quiet compared to other umbrellas and sun shades. Specifically, sail **20** does not loudly flap in the wind. Rather the sail stays extended by consistently floating in the direction of the wind.

Further, the disclosed system acts as an effective seagull deterrent. Because the
5 sail is constantly changing directions in response to the wind, birds are deterred and tend to keep their distance.

As described above, although several embodiments of the present invention have been described for illustrative purposes, those skilled in the art will appreciate that various modifications, additions, and substitutions are possible without departing from the scope
10 and spirit of the invention as disclosed in the accompanying claims.

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

PCT/US20/38920

International Application No.

22 June 2020 (22.06.2020)

International Filing Date

PCT INTERNATIONAL APPLICATION RO/US

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference (if desired) (25 characters maximum)
255/2

Box No. I TITLE OF INVENTION	
SELF-ADJUSTING SUN SHADE ASSEMBLY	
Box No. II APPLICANT ☐ This person is also inventor	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)	
Solbello, Inc. 206 Causeway Dr. #279 Wrightsville Beach, NC 28480	
Telephone No.	
Facsimile No.	
Applicant's registration No. with the Office	
E-mail authorization: Marking one of the check-boxes below authorizes the receiving Office, the International Searching Authority, the International Bureau and the International Preliminary Examining Authority to use the e-mail address indicated in this Box to send, notifications issued in respect of this international application to that e-mail address if those offices are willing to do so. ☐ as advance copies followed by paper notifications; or ☒ exclusively in electronic form (no paper notifications will be sent). E-mail address: <u>ajohnson@dogwood-law.com</u>	
State (that is, country) of nationality: US	State (that is, country) of residence: US
This person is applicant for the purposes of: ☒ all designated States ☐ the States indicated in the Supplemental Box	
Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.	
Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: ☒ agent ☐ common representative	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)	
JOHNSON, Ashley D. Dogwood Patent and Trademark Law 4801 Glenwood Ave., Suite 200 Raleigh, NC 28409 United States	
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E-mail authorization: Marking one of the check-boxes below authorizes the receiving Office, the International Searching Authority, the International Bureau and the International Preliminary Examining Authority to use the e-mail address indicated in this Box to send, notifications issued in respect of this international application to that e-mail address if those offices are willing to do so. ☐ as advance copies followed by paper notifications; or ☒ exclusively in electronic form (no paper notifications will be sent). E-mail address: <u>ajohnson@dogwood-law.com</u>	
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Box No. V DESIGNATIONS

The filing of this request constitutes under Rule 4.9(a) the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents.

However,

- ☐ DE Germany is not designated for any kind of national protection
- ☐ JP Japan is not designated for any kind of national protection
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(The check-boxes above may only be used to exclude (irrevocably) the designations concerned if, at the time of filing or subsequently under Rule 26bis.1, the international application contains in Box No. VI a priority claim to an earlier national application filed in the particular State concerned, in order to avoid the ceasing of the effect, under the national law, of this earlier national application.)

Box No. VI PRIORITY CLAIM AND DOCUMENT

The priority of the following earlier application(s) is hereby claimed:

Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country or Member of WTO	regional application: regional Office	international application: receiving Office
item (1) 28/08/2019 28 AUG 2019	62/892700	US		
item (2)				
item (3)				

- ☐ Further priority claims are indicated in the Supplemental Box.

Furnishing the priority document(s):

- ☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application(s) was filed with the receiving Office which, for the purposes of this international application, is the receiving Office) identified above as:

☐ all items ☒ item (1) ☐ item (2) ☐ item (3) ☐ other, see Supplemental Box

- ☐ The International Bureau is requested to obtain from a digital library a certified copy of the earlier application(s) identified above, using, where applicable, the access code(s) indicated below (if the earlier application(s) is available to it from a digital library):

☐ item (1) access code _____ ☐ item (2) access code _____ ☐ item (3) access code _____ ☐ other, see Supplemental Box

Restore the right of priority: the receiving Office is requested to restore the right of priority for the earlier application(s) identified above or in the Supplemental Box as item(s) (_____). (See also the Notes to Box No. VI; further information *must* be provided to support a request to restore the right of priority.)

Incorporation by reference: where an element of the international application referred to in Article 11(1)(ii)(d) or (e) or a part of the description, claims or drawings referred to in Rule 20.5(a) is not otherwise contained in this international application but is completely contained in an earlier application whose priority is claimed on the date on which one or more elements referred to in Article 11(1)(ii) were first received by the receiving Office, that element or part is, subject to confirmation under Rule 20.6, incorporated by reference in this international application for the purposes of Rule 20.6.

Box No. VII INTERNATIONAL SEARCHING AUTHORITY

Choice of International Searching Authority (ISA) (if more than one International Searching Authority is competent to carry out the international search, indicate the Authority chosen, the two-letter code may be used):

ISA/ KR

Box No. IX CHECK LIST for PAPER filings – this sheet is only to be used when filing an international application on PAPER

This international application contains the following:	Number of sheets	This international application is accompanied by the following item(s) (mark the applicable check-boxes below and indicate in right column the number of each item):	Number of items
(a) request form: PCT/RO/101 (including any declarations and supplemental sheets)	3	1. ☐ fee calculation sheet	1
(b) description (excluding any sequence listing part of the description, see (f), below)	20	2. ☐ original separate power of attorney	1
(c) claims	4	3. ☐ original general power of attorney	1
(d) abstract	1	4. ☐ copy of general power of attorney; reference number	1
(e) drawings (if any)	17	5. ☐ priority document(s) identified in Box No. VI as item(s)	1
(f) sequence listing part of the description (if any)	0	6. ☐ Translation of international application into (language)	1
Total number of sheets	45	7. ☐ separate indications concerning deposited microorganism or other biological material	1
		8. ☐ (only where item (f) is marked in the left column) copy in electronic form (Annex C/ST.25 text file) on physical data carrier(s) of the sequence listing, not forming part of the international application, which is furnished only for the purposes of international search under Rule 13ter (type and number of physical data carriers)	1
		9. ☐ (only where item (f) (in the left column) and item 8 (above) are marked) a statement confirming that "the information recorded in electronic form submitted under Rule 13ter is identical to the sequence listing as contained in the international application" as filed on paper	1
		10. ☐ copy of results of earlier search(es) (Rule 12bis I(a))	1
		11. ☐ other (specify):	1
Figure of the drawings which should accompany the abstract:	1	Language of filing of the international application:	English

Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).

/Ashley D. Johnson/
Ashley D. Johnson
U.S. Reg. No. 58482

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1. Date of actual receipt of the purported international application: 22 June 2020 (22.06.2020)	2. Drawings: ☐ received: ☐ not received:
3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application:	
4. Date of timely receipt of the required corrections under PCT Article 11(2):	
5. International Searching Authority (if two or more are competent): /KR	
6. ☐ Transmittal of search copy delayed until search fee is paid	

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Date of receipt of the record copy by the International Bureau:

CLAIMS

What is claimed is:

1. A sun shade assembly comprising:
 - a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap;
 - a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge;
 - a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast;
 - at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast;
 - a tension adjuster that adjusts rotation of the pivot cap about the mast; and
 - an anchor operably connected to the second end of the mast;
 - wherein the pivot cap, ribs, slider, and support arms are configured to rotate about the mast in response to blowing of the wind.
2. The assembly of claim 1, wherein the pivot cap rotates about the mast at an angle of about 0-360 degrees.
3. The assembly of claim 1, wherein the ribs are configured at an angle of greater than 180 degrees relative to each other.
4. The assembly of claim 1, wherein one face of the pivot cap comprises a lock defined by a bridge comprising an opening and a slidable arm that moves to cover and expose the opening.
5. The assembly of claim 1, wherein the slider is configured as a collar that fits around the exterior circumference of the mast.

6. The assembly of claim 1, wherein the mast length is adjustable.
7. The assembly of claim 1, wherein the anchor is releasably attached to the second end of the mast.
8. The assembly of claim 1, wherein the anchor comprises an auger.
9. The assembly of claim 1, wherein the tension adjuster is configured to permit the pivot cap, slider, ribs, and support arms to freely rotate about the mast, not rotate about the mast, or any level of rotation therebetween.
10. The assembly of claim 1, wherein the sail channel comprises one or more apertures to facilitate insertion of the ribs into the channel.
11. The assembly of claim 1, wherein the sail channel comprises one or more apertures to allow direct contact between each rib and a corresponding support arm.
12. The assembly of claim 1, wherein the sail has a top face and a bottom face, and wherein the bottom face includes at least one conduit configured as a channel with an open mouth positioned adjacent to the channel, a closed back end, and a length parallel with the length of the sail.
13. The assembly of claim 1, wherein the sail has a top face and a bottom face and wherein at least one of the top or bottom faces comprises a coating.
14. The assembly of claim 1, wherein the sail has an opposed rear edge comprising an adjacent hem constructed from a durable material.
15. The assembly of claim 1, wherein the mast comprises at least one handle for gripping the mast.
16. A method of using a sunshade, the method comprising:

positioning the anchor of a sun shade assembly in a support surface, wherein the sun shade assembly comprises:

a pair of ribs defined by a first end and a second end, wherein the first end of each rib is attached to a pivot cap;

a sail with a front edge comprising a channel sized and shaped to house each rib such that the ribs extend across the edge;

a mast comprising a first end and a second end, wherein the first end is operably connected to the pivot cap, wherein the pivot cap can freely rotate about the mast;

at least one support arm with a first end and a second end, wherein the first end of the support arm is attached to a rib and the second end of the support arm is attached to a slider configured to move up and down the mast;

a tension adjuster that adjusts rotation of the pivot cap about the mast; and

an anchor operably connected to the second end of the mast;

adjusting the tension adjuster to achieve a desired amount of rotation of the pivot cap, ribs, support arms, slider, and sail relative to the non-movable mast;

wherein the sun shade assembly self-adjusts in response to the blowing of the wind.

17. The method of claim 16, wherein the tension adjuster can be adjusted to allow the pivot cap, slider, ribs, and support arms to freely rotate about the mast, not rotate about the mast, or any level of rotation therebetween.

18. The method of claim 16, wherein the sail has a top face and a bottom face, and wherein the bottom face includes at least one conduit configured as a channel with an open mouth positioned adjacent to the channel, a closed back end, and a length parallel with the length of the sail.

19. The method of claim 16, wherein one face of the pivot cap comprises a lock defined by a bridge comprising an opening and a slidable arm that moves to cover and expose the opening.
20. The method of claim 16, wherein the sail has an opposed rear edge comprising an adjacent hem constructed from a durable material.



(51) International Patent Classification:

E04H 15/28 (2006.01) E04H 12/22 (2006.01)

(21) International Application Number:

PCT/US2020/038920

(22) International Filing Date:

22 June 2020 (22.06.2020)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

62/892,700 28 August 2019 (28.08.2019) US

(71) Applicant: **SOLBELLO, INC.** [US/US]; 206 Causeway Dr. #279, Wrightsville Beach, NC 28480 (US).

(72) Inventor: **JAMES, Paul T.**; PO Box 276, Wrightsville Beach, NC 28480 (US).

(74) Agent: **JOHNSON, Ashley, D.**; Dogwood Patent and Trademark Law, 4801 Glenwood Ave., Suite 200, Raleigh, NC 28409 (US).

(81) Designated States (*unless otherwise indicated, for every kind of national protection available*): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

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(54) Title: SELF-ADJUSTING SUN SHADE ASSEMBLY

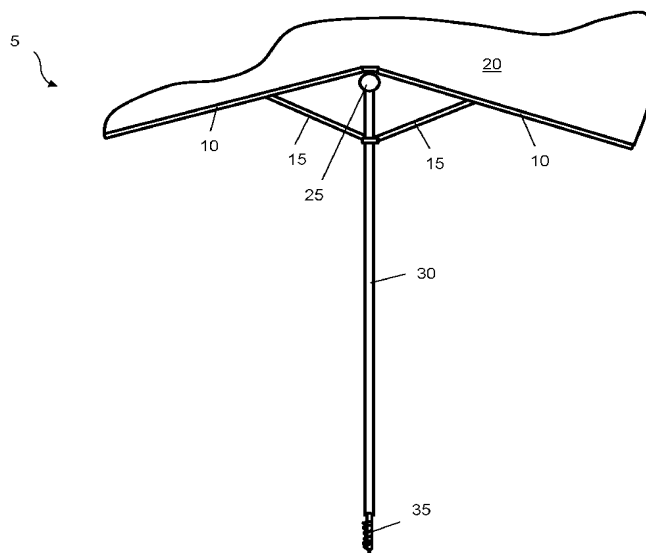


Fig. 1

(57) **Abstract:** The presently disclosed subject matter is directed to a sun shade assembly. Particularly, the assembly includes a sail that releasably attaches to a pair of ribs, providing shade to the user. At least one support arm can be used to reinforce the ribs. A mast provides height to the assembly and includes an anchor that allows the assembly to be secured into a support surface (e.g., sand). The ribs and support arms rotate about the mast, thereby self-adjusting the direction of sail in response to the wind blowing. The assembly further includes a tension adjuster that can be tightened or loosed to control the rotation of the ribs and support arms in response to wind conditions.



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Published:

— *with international search report (Art. 21(3))*

PCT**REQUEST**

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

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PCT/US20/38920

International Application No.

22 JUNE 2020 22-06-2020

International Filing Date

PCT INTERNATIONAL APPLICATION RO/US

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference (if desired) (25 characters maximum)
255/2

Box No. I TITLE OF INVENTION	
SELF-ADJUSTING SUN SHADE ASSEMBLY	
Box No. II APPLICANT	
☐ This person is also inventor	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's home (that is, country) of residence (if no home of residence is indicated below). Scibello, Inc. 206 Causeway Dr. #279 Wrightsville Beach, NC 28480 UNITED STATES	
Telephone No.	
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Applicant's registration No. with the Office	
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State (that is, country) of nationality: US	State (that is, country) of residence: US
This person is applicant for the purposes of: ☒ all designated States ☐ the States indicated in the Supplemental Box	
Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S)	
☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.	
Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE	
The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as: ☒ agent ☐ common representative	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) JOHNSON, Ashley D. Dogwood Patent and Trademark Law 4801 Glenwood Ave., Suite 200 Raleigh, NC 28409 UNITED STATES	
Telephone No. 9195767612	
Facsimile No.	
Agent's registration No. with the Office 58482	
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2
Sheet No.

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER) INVENTOR(S) <i>If none of the following sub-boxes is used, this sheet should not be included in the request.</i>	
Name and address: <i>(Family name followed by given name, for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i> James, Paul T. PO Box 276 Wrightsville Beach, NC 28480 UNITED STATES	This person is: ☐ applicant only ☐ applicant and inventor ☒ inventor only <i>(if this check-box is marked, do not fill in below.)</i> Applicant's registration No. with the Office
State (that is, country) of nationality: US	State (that is, country) of residence: US
This person is applicant for the purposes of: ☒ all designated States ☐ the States indicated in the Supplemental Box	
Name and address: <i>(Family name followed by given name, for a legal entity, full official designation. The address must include postal code and name of country. The country of the address indicated in this Box is the applicant's State (that is, country) of residence if no State of residence is indicated below.)</i> 	This person is: ☐ applicant only ☐ applicant and inventor ☐ inventor only <i>(if this check-box is marked, do not fill in below.)</i> Applicant's registration No. with the Office
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Sheet No. 3

Box No. V DESIGNATIONS				
The filing of this request constitutes under Rule 4.9(a) the designation of all Contracting States bound by the PCT on the international filing date, for the grant of every kind of protection available and, where applicable, for the grant of both regional and national patents. However, ☐ DE Germany is not designated for any kind of national protection ☐ JP Japan is not designated for any kind of national protection ☐ KR Republic of Korea is not designated for any kind of national protection <i>(The check-boxes above may only be used to exclude (irrevocably) the designations concerned if, at the time of filing or subsequently under Rule 26bis.1, the international application contains in Box No. VI a priority claim to an earlier national application filed in the particular State concerned, in order to avoid the ceasing of the effect, under the national law, of this earlier national application.)</i>				
Box No. VI PRIORITY CLAIM AND DOCUMENT				
The priority of the following earlier application(s) is hereby claimed:				
Filing date of earlier application (day/month/year)	Number of earlier application	Where earlier application is:		
		national application: country or Member of WTO	regional application: regional Office	international application: receiving Office
item (1) 28/08/2019 28 AUG 2019	82/882700	US		
item (2)				
item (3)				
☐ Further priority claims are indicated in the Supplemental Box.				
Furnishing the priority document(s): ☒ The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application(s) was filed with the receiving Office which, for the purposes of this international application, is the receiving Office) identified above as: ☐ all items ☒ item (1) ☐ item (2) ☐ item (3) ☐ other, see Supplemental Box ☐ The International Bureau is requested to obtain from a digital library a certified copy of the earlier application(s) identified above, using, where applicable, the access code(s) indicated below (if the earlier application(s) is available to it from a digital library): ☐ item (1) access code _____ ☐ item (2) access code _____ ☐ item (3) access code _____ ☐ other, see Supplemental Box				
Restores the right of priority: the receiving Office is requested to restore the right of priority for the earlier application(s) identified above or in the Supplemental Box as item(s) _____. (See also the Notes to Box No. VI: further information must be provided to support a request to restore the right of priority.)				
Incorporation by reference: where an element of the international application referred to in Article 11(1)(ii)(d) or (e) or a part of the description, claims or drawings referred to in Rule 20.5(a), or an element or part of the description, claims or drawings referred to in Rule 20.5(b)(a) is not otherwise contained in this international application but is completely contained in an earlier application whose priority is claimed on the date on which one or more elements referred to in Article 11(1)(ii) were first received by the receiving Office, that element or part is, subject to confirmation under Rule 20.6, incorporated by reference in this international application for the purposes of Rule 20.6.				
Box No. VII INTERNATIONAL SEARCHING AUTHORITY				
Choice of International Searching Authority (ISA) (if more than one International Searching Authority is competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used). ISA/ KR				

Sheet No. 4

Box No. IX CHECK LIST for PAPER filings – this sheet is only to be used when filing an international application on PAPER			
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(a) request form PCT/RO/101 (including any declarations and supplemental sheets)	4	1. ☐ fee calculation sheet	
(b) description (excluding any sequence listing part of the description, see (f), below)	20	2. ☐ original separate power of attorney	
(c) claims	4	3. ☐ original general power of attorney	
(d) abstract	1	4. ☐ copy of general power of attorney; reference number	
(e) drawings (if any)	17	5. ☐ priority document(s) identified in Box No. VI as item(s)	
(f) sequence listing part of the description (if any)	0	6. ☐ Translation of international application into (language)	
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		10. ☐ copy of results of earlier search(es) (Rule 12bis.1(s))	
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Figure of the drawings which should accompany the abstract:		Language of filing of the international application:	English
Box No. X SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE			
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/Ashley D. Johnson/ Ashley D. Johnson U.S. Reg. No. 58482			

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July 01, 2020

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APPLICATION NUMBER: 62/892,700

FILING DATE: August 28, 2019

RELATED PCT APPLICATION NUMBER: PCT/US20/38920

THE COUNTRY CODE AND NUMBER OF YOUR PRIORITY APPLICATION, TO BE USED FOR FILING ABROAD UNDER THE PARIS CONVENTION, IS US62/892,700



Certified by

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SCORE Placeholder Sheet for IFW Content

Application Number: 62892700

Document Date: 08/28/2019

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Provisional Application for Patent Cover Sheet

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c)

Inventor(s)

Inventor 1

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Given Name

Middle Name

Family Name

City

State

Country j

Paul

Thomas

James

Wilmington

NC

US

All Inventors Must Be Listed – Additional Inventor Information blocks may be generated within this form by selecting the **Add** button.[Add](#)**Title of Invention**

Unbrello, the self-adjusting shade-umbrella alternative.

Attorney Docket Number (if applicable)

533435924

Correspondence Address

Direct all correspondence to (select one):

☐ The address corresponding to Customer Number☒ Firm or Individual Name

Firm or Individual Name 1

Paul James

Firm or Individual Name 2

Mailing Address of Applicant:

Address 1

6401 GUY CT

Address 2

City

Wilmington

State/Province

NC

Postal Code

28403

Country j

US

Phone

8587052295

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

☒ No.

Yes, the invention was made by an agency of the United States Government. The U.S. Government agency name is:

Yes, the invention was under a contract with an agency of the United States Government. The name of the U.S. Government agency and Government contract number are:

Entity Status**Applicant asserts small entity status under 37 CFR 1.27 or applicant certifies micro entity status under 37 CFR 1.29**

- ☐ Applicant asserts small entity status under 37 CFR 1.27
- ☒ Applicant certifies micro entity status under 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent.
- ☐ No

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Signature	Paul James/		Date (YYYY-MM-DD)	2019-08-27
First Name	Paul	Last Name	James	Registration Number (If appropriate)

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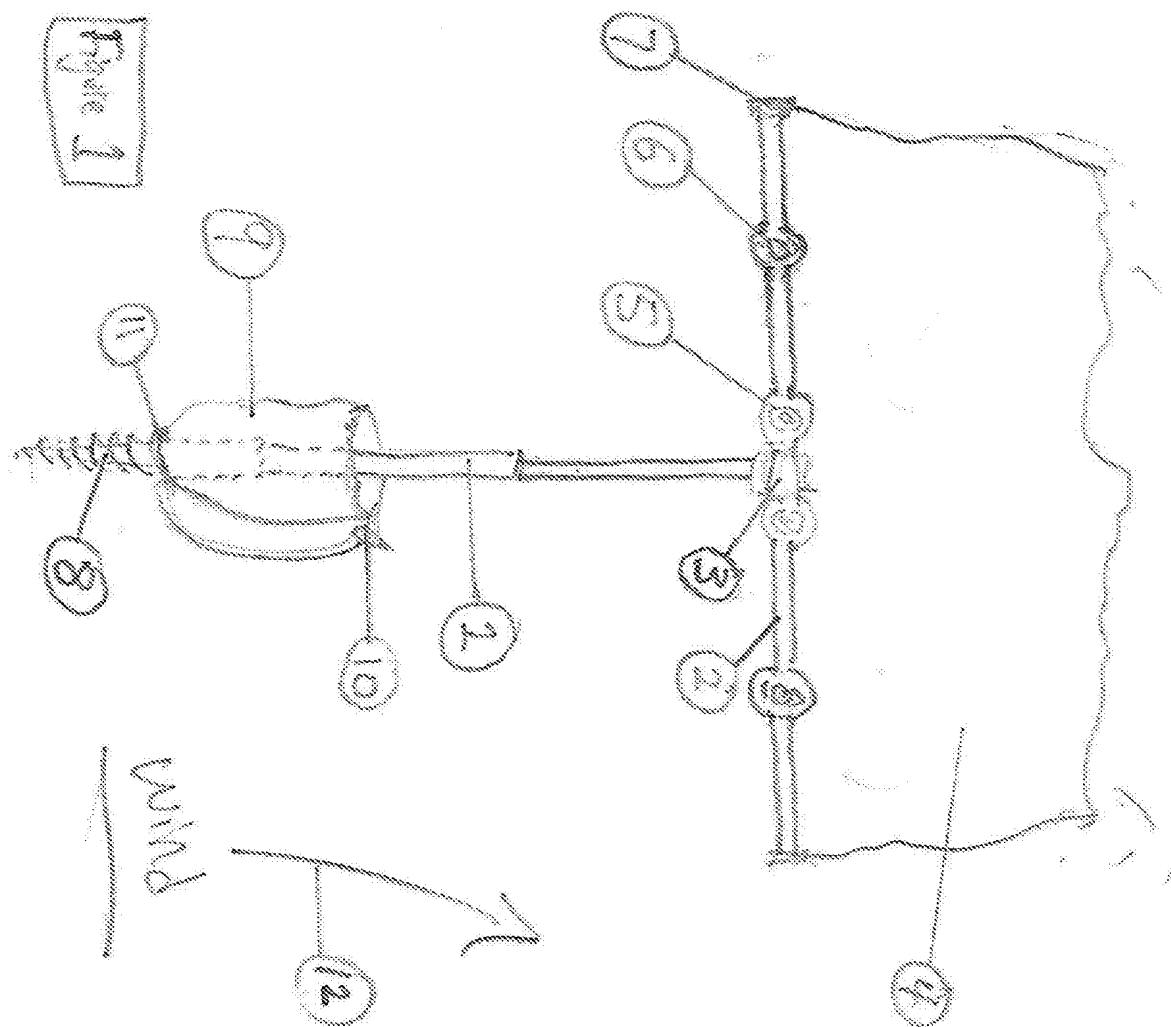


Fig 2

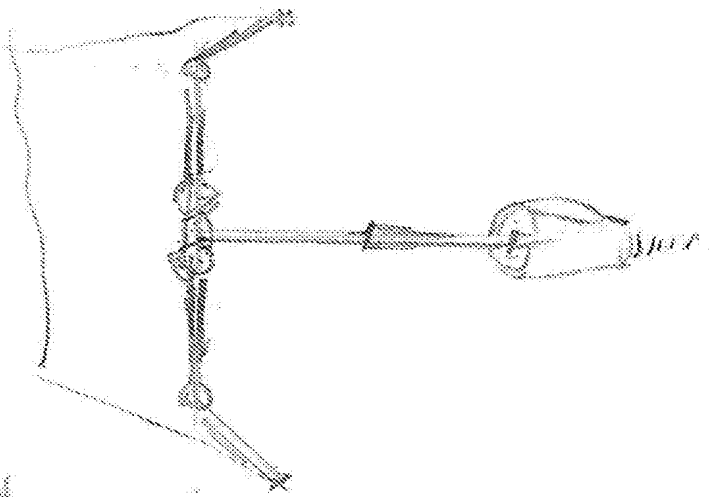


Fig 3

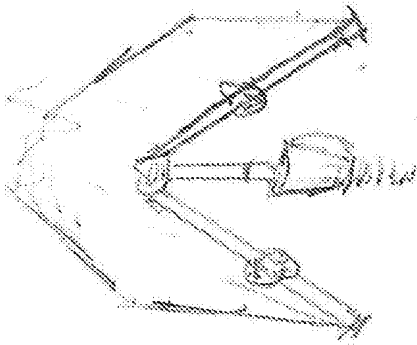
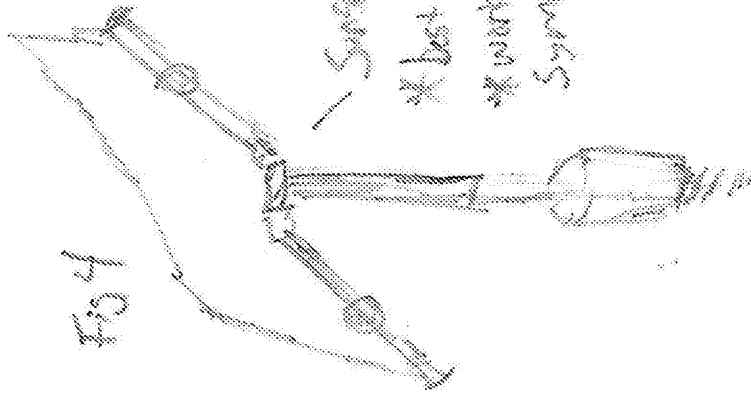


Fig 4



Swivel tilt.
* best w/ low wind
* works best w/
symmetrical sides

Fig 6

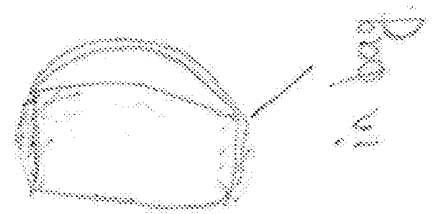


Fig 5

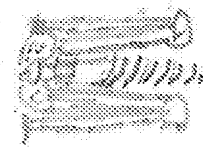
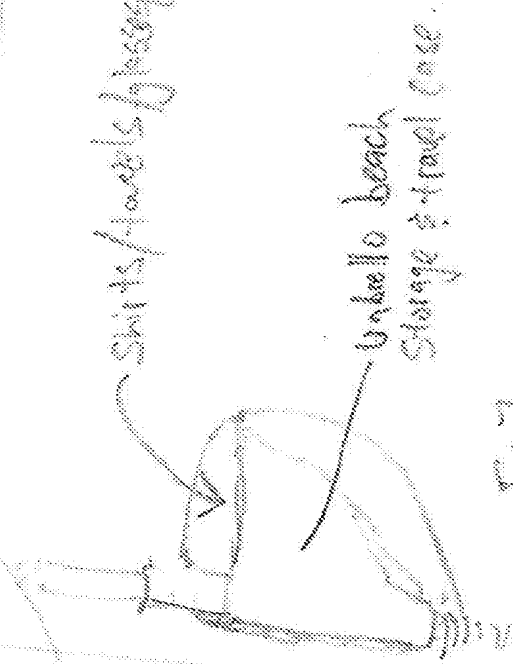


Fig 7



PROVISIONAL APPLICATION FOR PATENT

INVENTION TITLE

Unbrello, the self-adjusting shade-umbrella alternative.

BACKGROUND OF THE INVENTION

Problem Solved: Shade umbrellas are dangerous in the wind. Shade umbrellas easily break in the wind. Shade umbrellas almost always have the mast in the middle of the sitting area. Sunglasses, shirts, and other accessories need a place to stay dry and out of the sand.

Other devices require excessive setup time and constant adjusting as the wind changes direction.

Many beaches only permit single-pole beach umbrellas. Standard Beach umbrellas don't do well in the wind and they are dangerous. They are generally U-shaped with a frame that catch the wind. This results in a broken umbrella, injured people (or even death), and many times trash left on the beach (the broken umbrella).

Our device: has a single pole so it's permitted on beaches where tents are not. Our device allows the wind to self-adjust its direction so the user doesn't have to. Our umbrella-device framing is one that will not catch wind, if our falls over, it will fall strait down and not tumble dangerously down the beach. Our device's mast is almost always not going to be in the middle of the sitting area. Our carrying case is dual-purpose to work as a storage place for beach accessories when main product is in use.

DETAILED DESCRIPTION OF THE INVENTION

As stated above, shade umbrellas are dangerous in the wind. Shade umbrellas easily break in the wind.

Other devices require excessive setup time and constant adjusting as the wind changes direction. The invention claimed here solves this problem.

This umbrella device doesn't allow wind taking it out of the ground and hurl it down the beach. This device uses wind to its advantage instead of breaking. This device is quick to setup and uses the wind to automatically adjust its direction.

The claimed invention differs from what currently exists. Shade tents are anchored at more than one point so, as the wind switches direction throughout the day, they must be adjusted. These adjustments are time-consuming and inconvenient.

This invention is an improvement on what currently exists. Shade tents are anchored at more than one point so, as the wind switches direction throughout the day, they must be adjusted. These adjustments are time-consuming and inconvenient.

They are inconvenient, dangerous, high-failure, hurtful to our planet.

Our device: has a single pole so it's permitted on beaches where tents are not. Our device allows the wind to self-adjust its direction so the user doesn't have to. Our umbrella-device framing is one that will not catch wind, if our falls over, it will fall strait down and not tumble dangerously down the beach.

When in use, the wind usually will keep the shaded area to the side of the mast instead of right above it.

The Version of The Invention Discussed Here Includes:

1. Telescoping mast
2. Ribs
3. Tension adjustable and pivoting point at T-connection
4. Lightweight fabric
5. Main rib hinges
6. Secondary rib hinges
7. End caps
8. Auger bottom
9. Carry case/beach accessory storage.
10. Chord with loaded chord lock.
11. Hole in the bottom of the case.
12. Moving air (wind).

Relationship Between The Components:

#1 anchors/stakes in the ground to hold up the frame, #8 is used for sand application. #2 & # 12 support #4. #3 allows #2 to rotate freely and can be tightened to compensate for wind conditions. #5 & #6 allows frame to take different shapes to compensate for sun direction and to compact for transport. #7 helps hold #4 in place and aids for safety. #9 is used to contain all when not in use. #10 is used to close #9 when it has contents. #11 allows #8 & #1 to pass through so #9 can be used to hold beach accessories off the sand and water.

How The Invention Works:

Securely plant mast in ground, extend to desired height and unfold arms to desired shape to allow the wind to lift the shade, adjust the setting knob on top for the wind condition, and adjust the ribs for sun condition. Slide carrying case up mast and stow your belongings inside out of the sand and water. Sit/stand/lay in the sun-shaded area. The wind will turn the shade in the direction it's blowing so no further work required.

How To Make The Invention:

Assemble parts. The pivot point secured to the mast by thread or glue or other means. The hinges secured to ribs by thread, glue or other means. The fabric has a channel sewn or welded to insert the ribs and end-caps to secure in place. The end caps may be removable to change the fabric. The Bag is cone shaped.

All parts aide to the overall function and ease of use. The auger bottom could be changed out for different ground conditions.

How To Use The Invention:

Use the invention anytime there is wind on a sunny day where you want shade.

Use this invention in windy areas only permitting single-pole umbrellas.

ABSTRACT

Self-adjusting shade umbrella is disclosed. Our device: has a single pole so it's permitted on beaches where tents are not. Our device allows the wind to self-adjust its direction so the user doesn't have to. Our umbrella-device framing is one that will not catch wind, if our falls over, it will fall strait down and not tumble dangerously down the beach.

Electronic Acknowledgement Receipt	
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Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Certification of Micro Entity (Gross Income Basis)	533435924_CMESGIB1.pdf	139192	no	2
			b02b5b52e2a7b47399dd85eab213fc5dc33f7932		
Warnings:					
Information:					
2	Provisional Cover Sheet (SB16)	533435924_ProvisionalSB.pdf	2007137	no	3
			d22ae2283ec1f2dab4305d9dcdec2b57a479f38		
Warnings:					
Information:					
3	Drawings-other than black and white line drawings	533435924ABX-draw.pdf	497997	no	2
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Information:					
4		533435924ABX-desc.pdf	1329306	yes	4
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	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	3	
	Abstract		4	4	
Warnings:					
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5	Fee Worksheet (SB06)	fee-info.pdf	29983	no	2
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DOCUMENT MADE AVAILABLE UNDER THE PATENT COOPERATION TREATY (PCT)

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