

SCORE Placeholder Sheet for IFW Content

Application Number: 18587921

Document Date: 02/26/2024

The presence of this form in the IFW record indicates that the following document type was received in electronic format on the date identified above. This content is stored in the SCORE database.

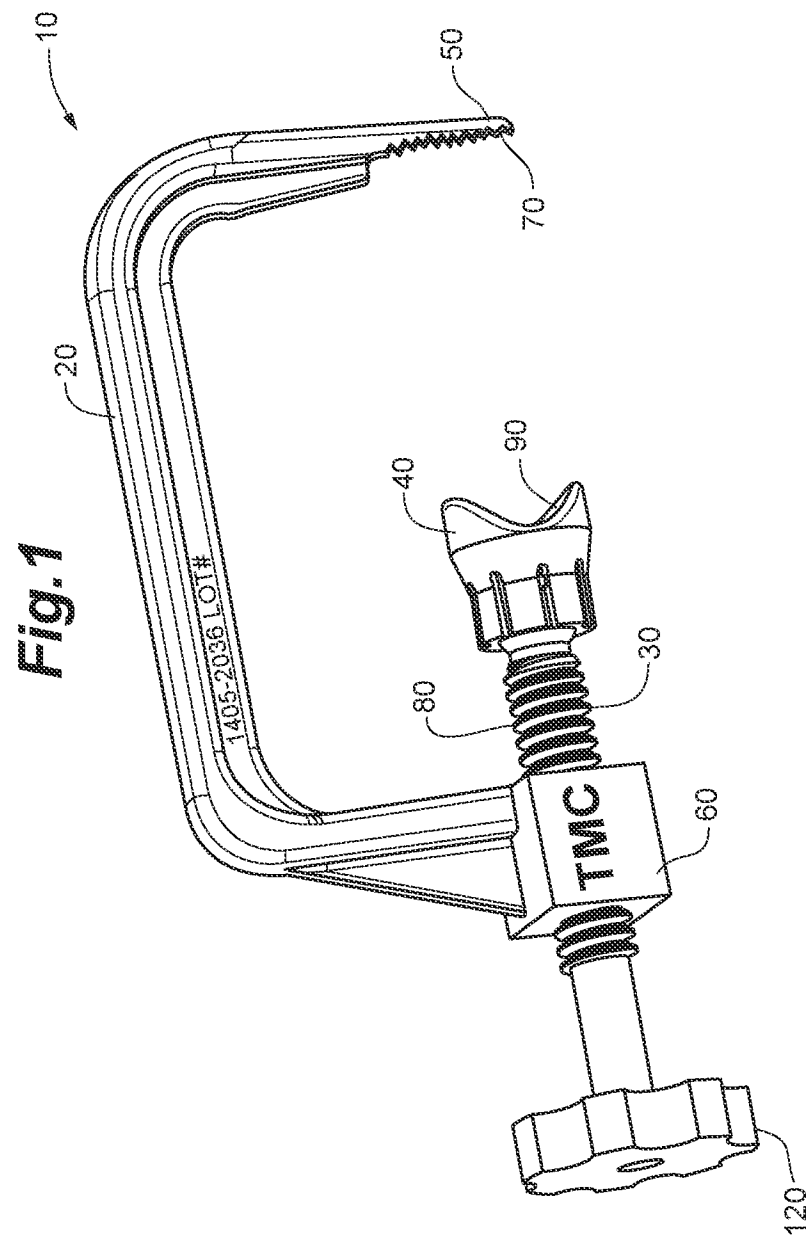
Since this was an electronic submission, there is no physical artifact folder, no artifact folder is recorded in PALM, and no paper documents or physical media exist. The TIFF images in the IFW record were created from the original documents that are stored in SCORE.

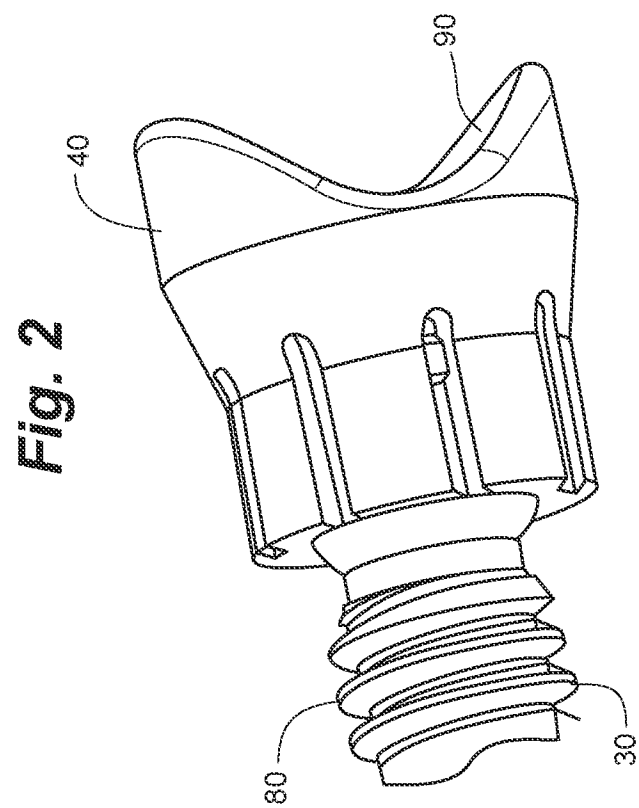
- Drawing

At the time of document entry (noted above):

- USPTO employees may access SCORE content via DAV or via the SCORE web page.
- External customers may access SCORE content via PAIR using the Supplemental Content tab.

<p><i>Paragon 28 v. Treace Medical Concepts</i> PGR2026-00022 Paragon Ex. 1002</p>





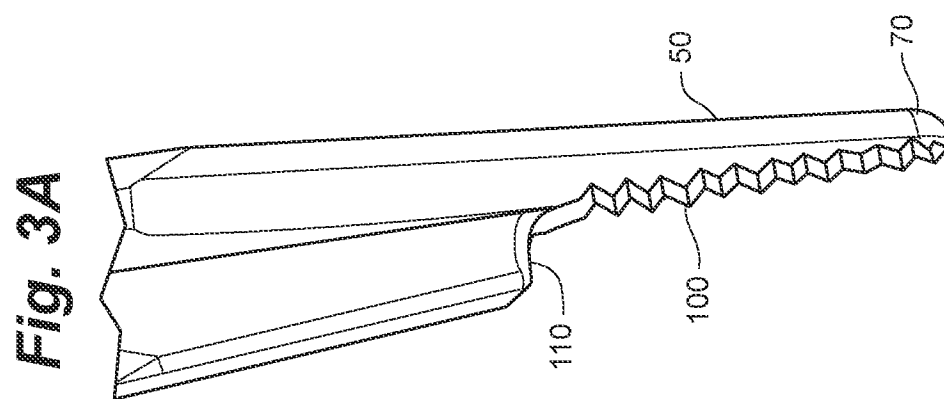


Fig. 3B

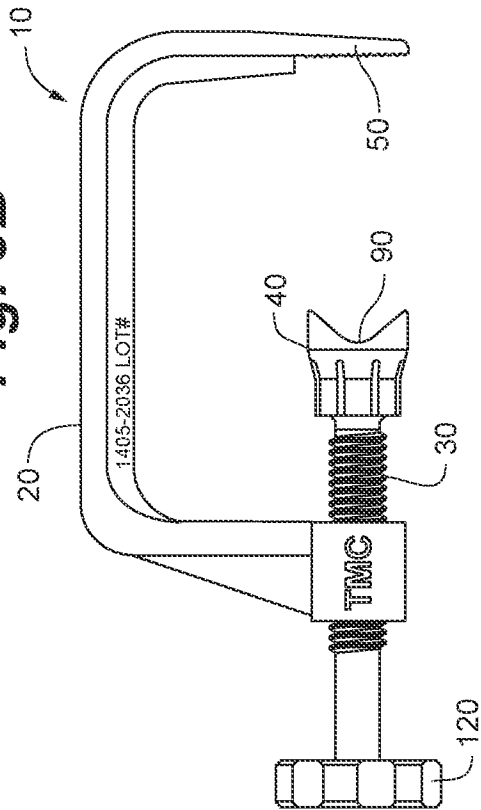
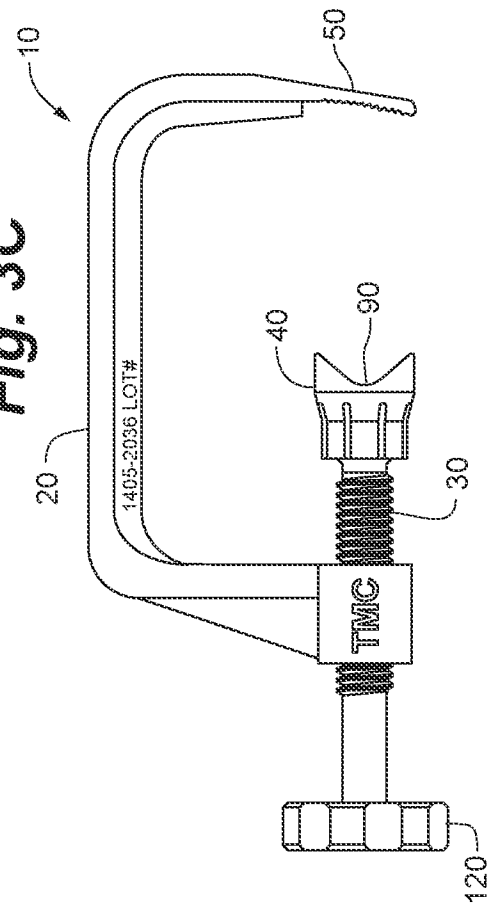


Fig. 3C



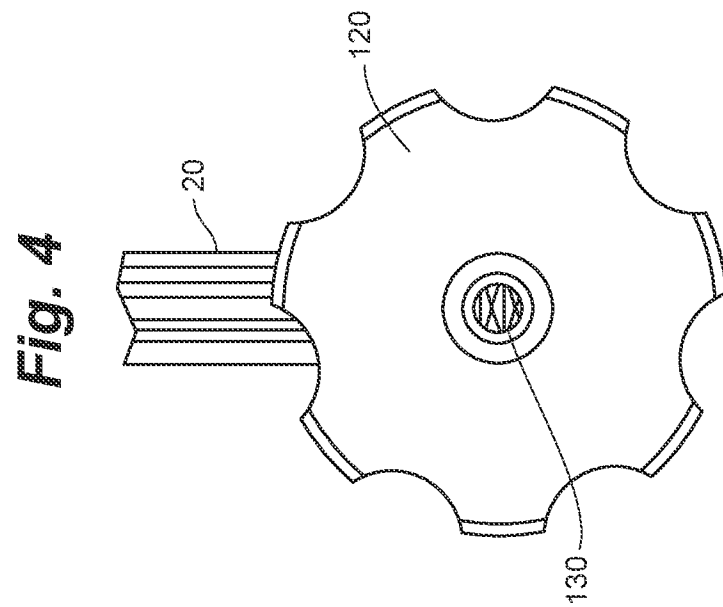


Fig. 5

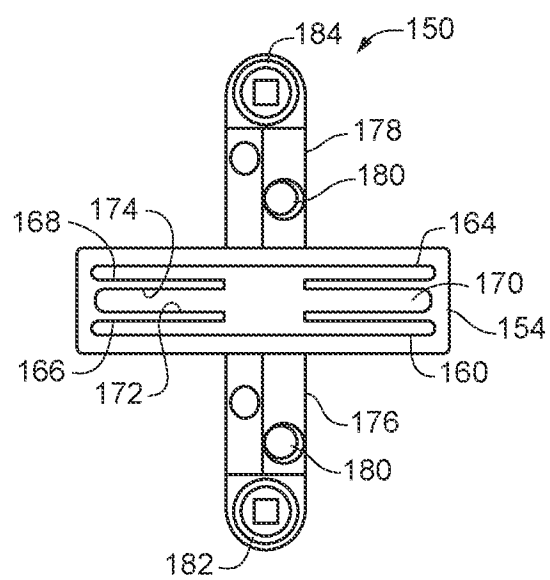
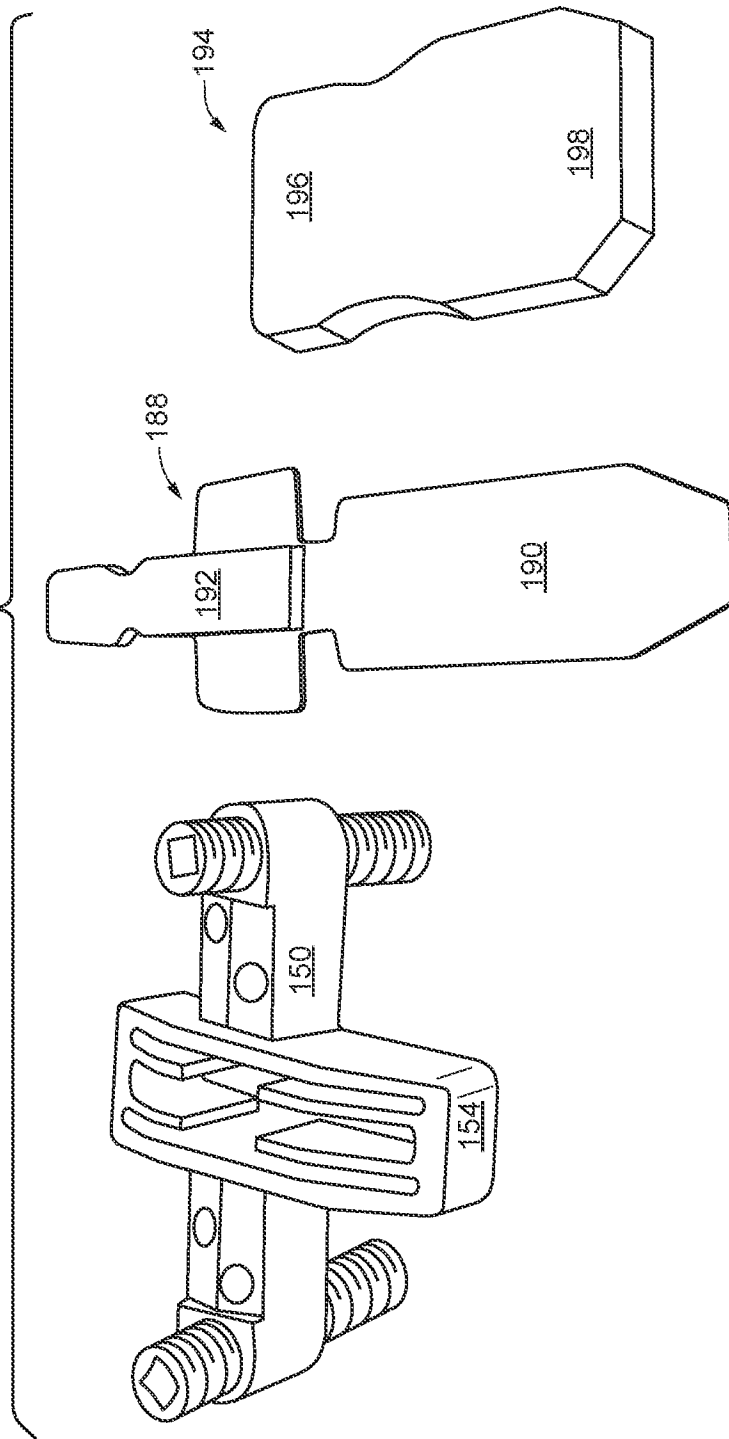


Fig. 6A



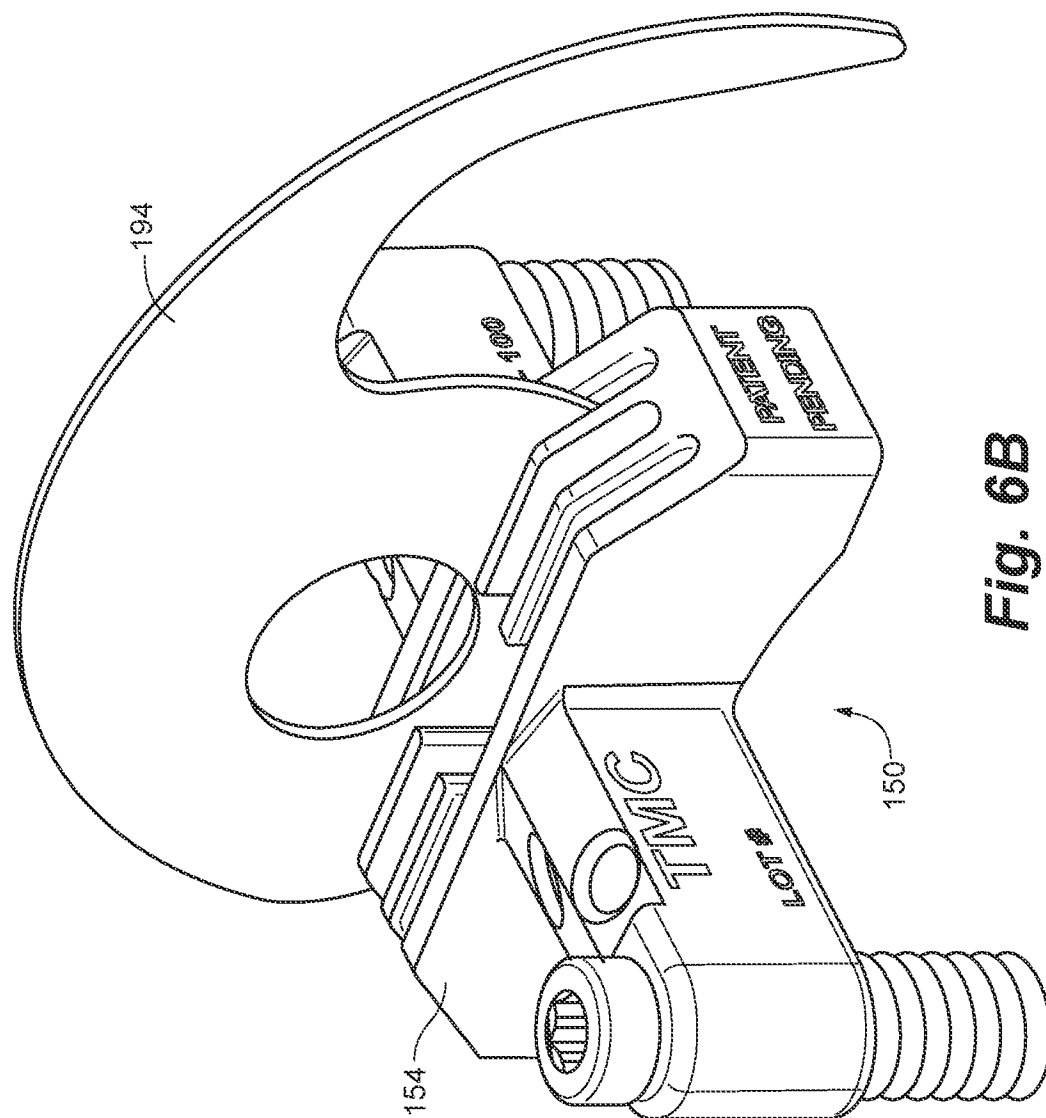


Fig. 6B

Fig. 7

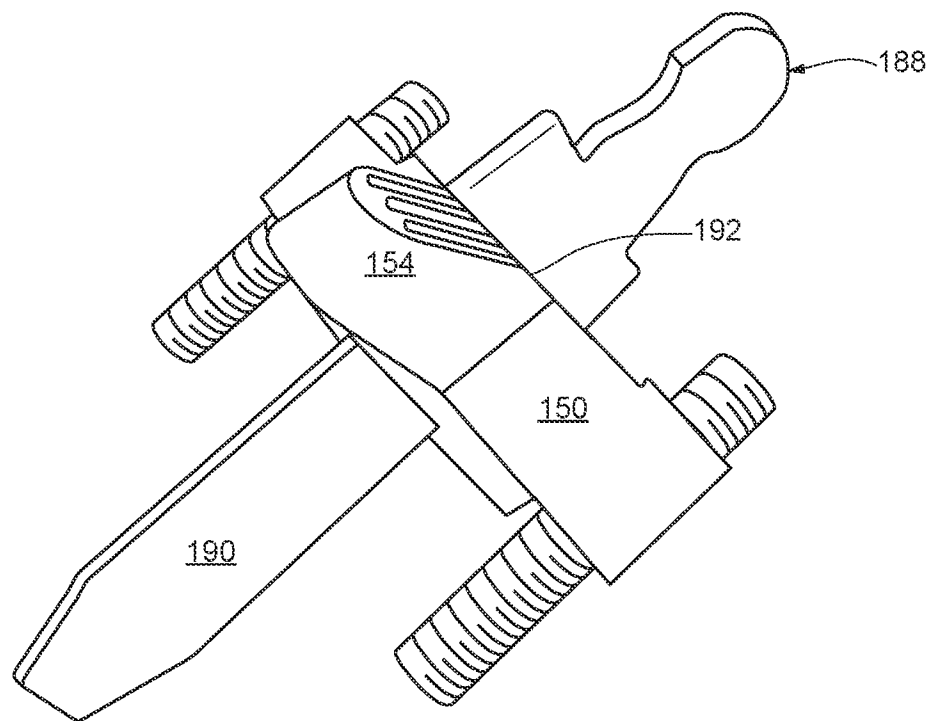


Fig. 8

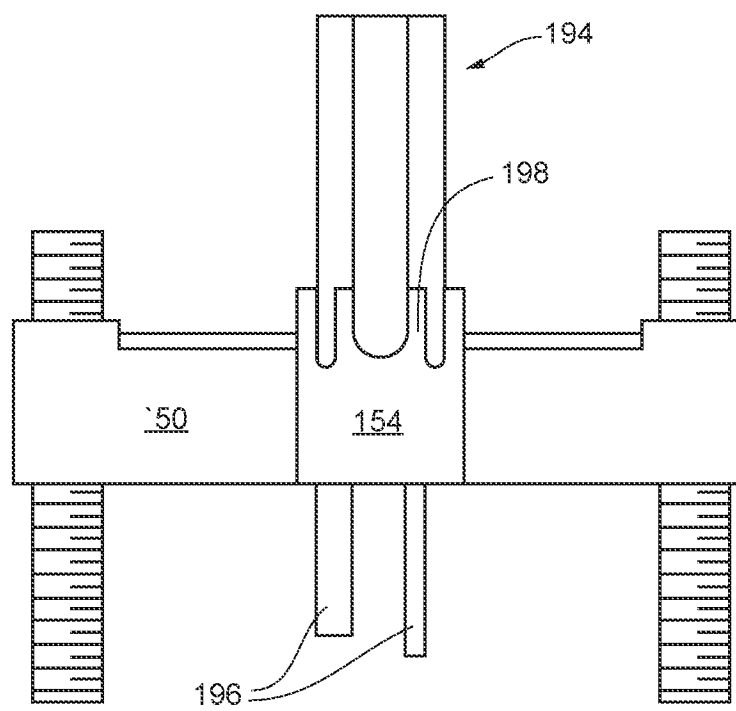


Fig. 9A

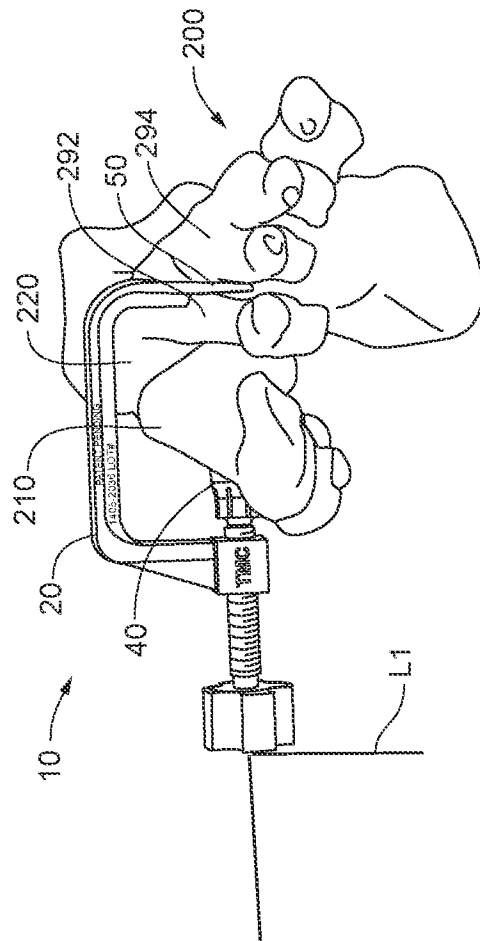


Fig. 9B

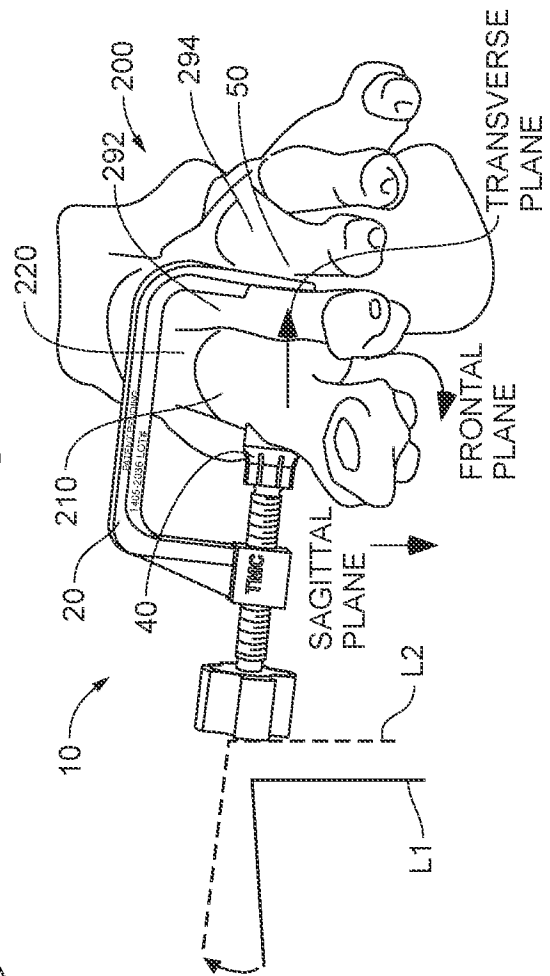


Fig. 10A

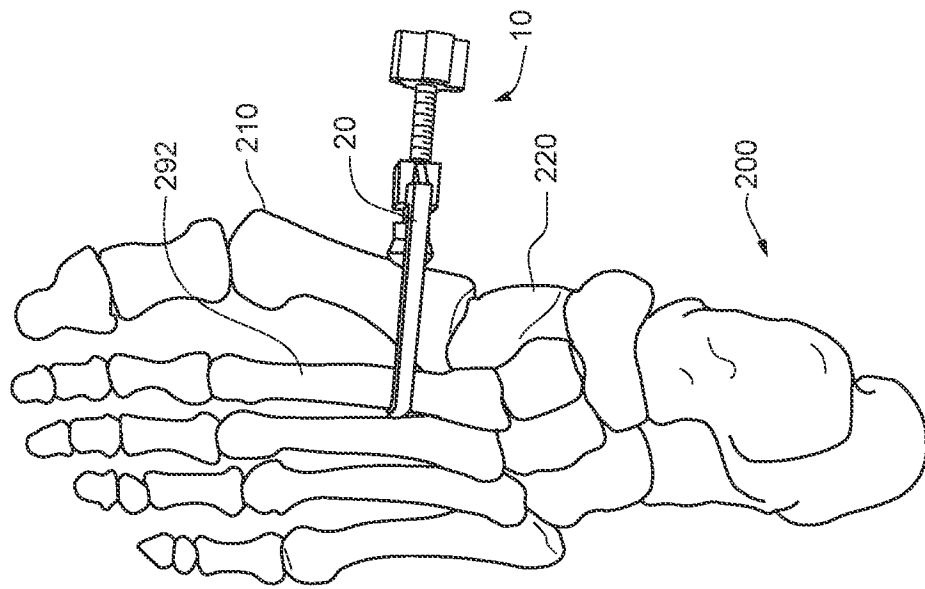


Fig. 10B

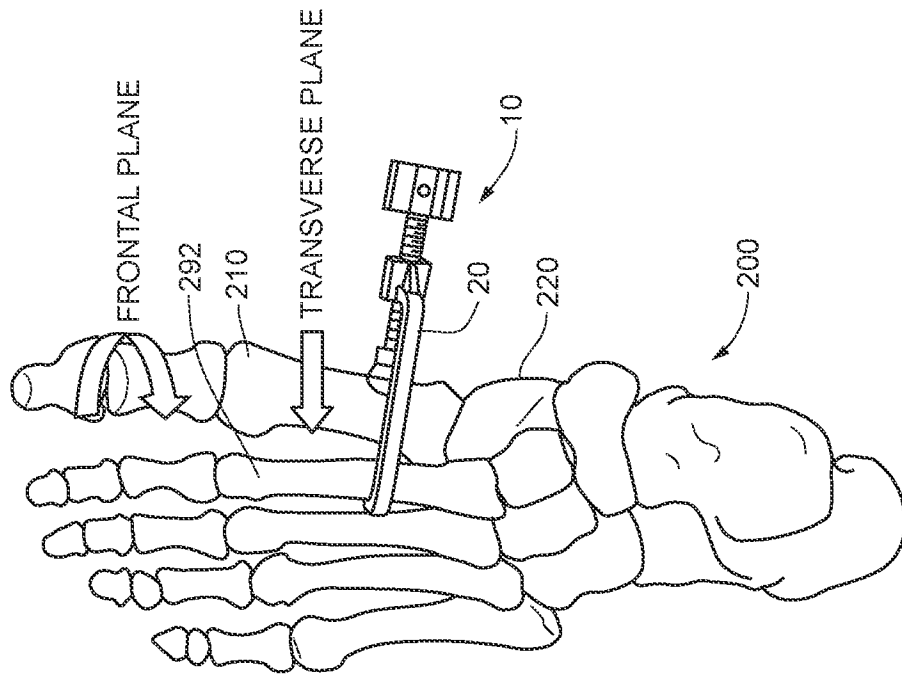


Fig. 11a

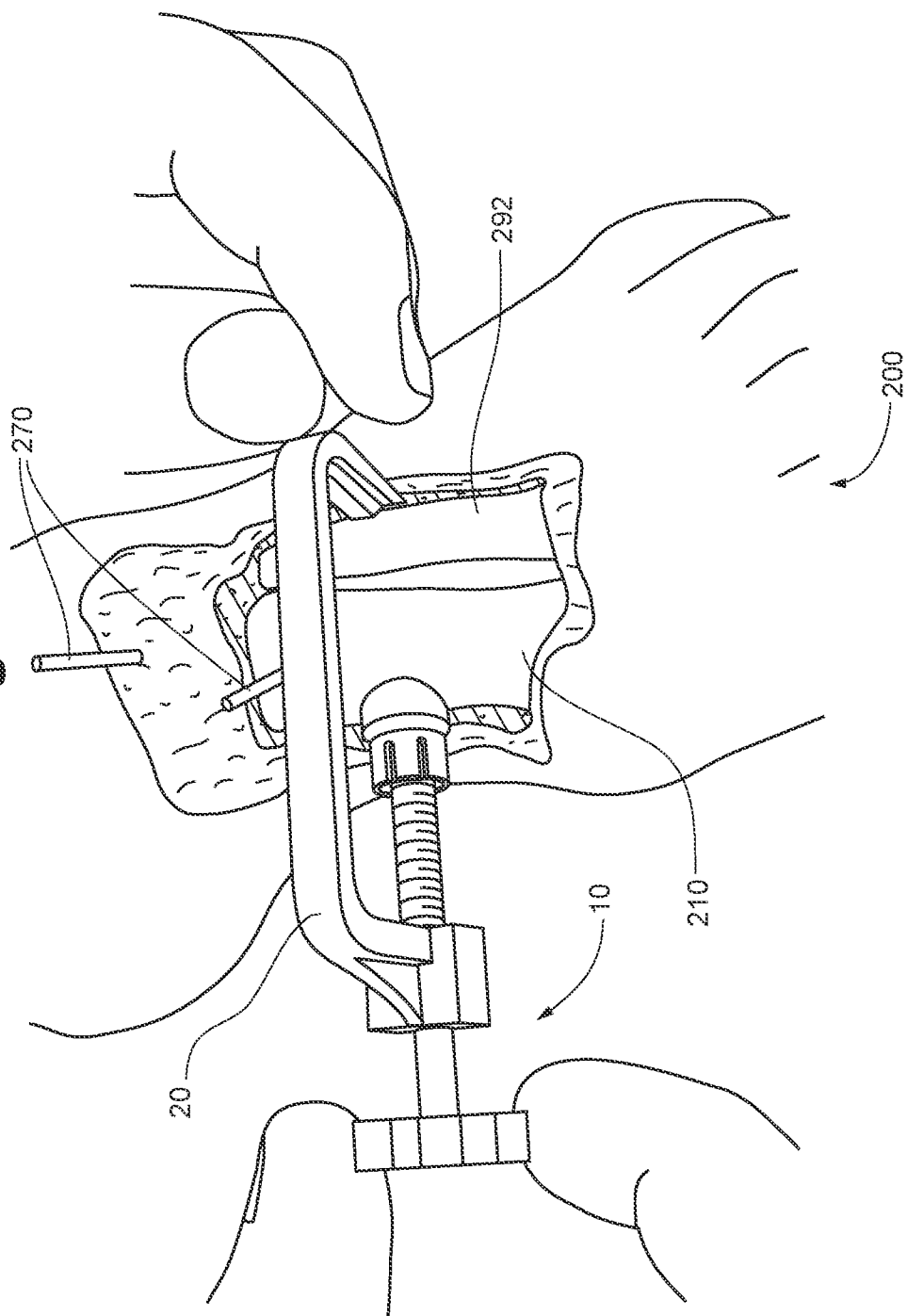


Fig. 11b

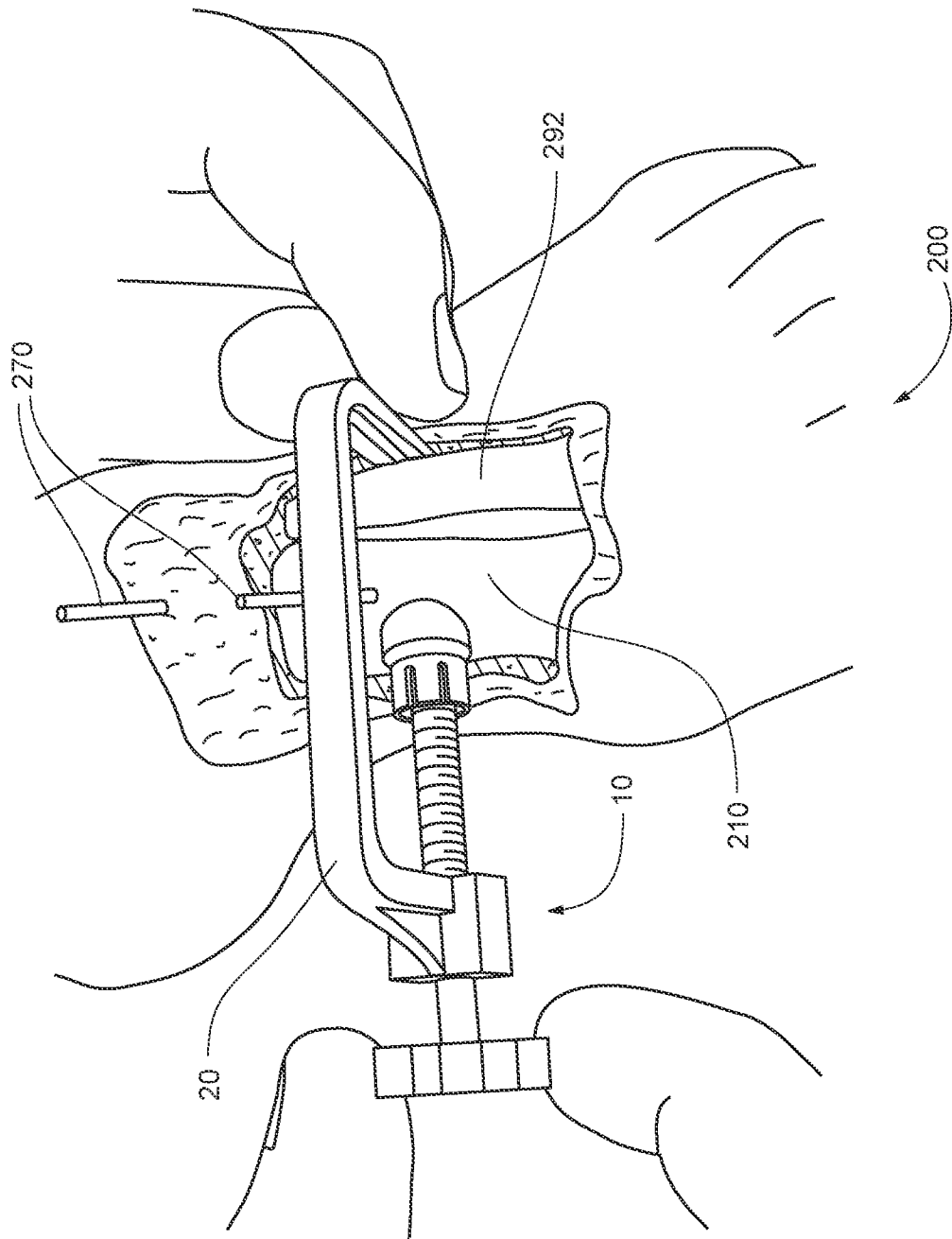


Fig. 11c

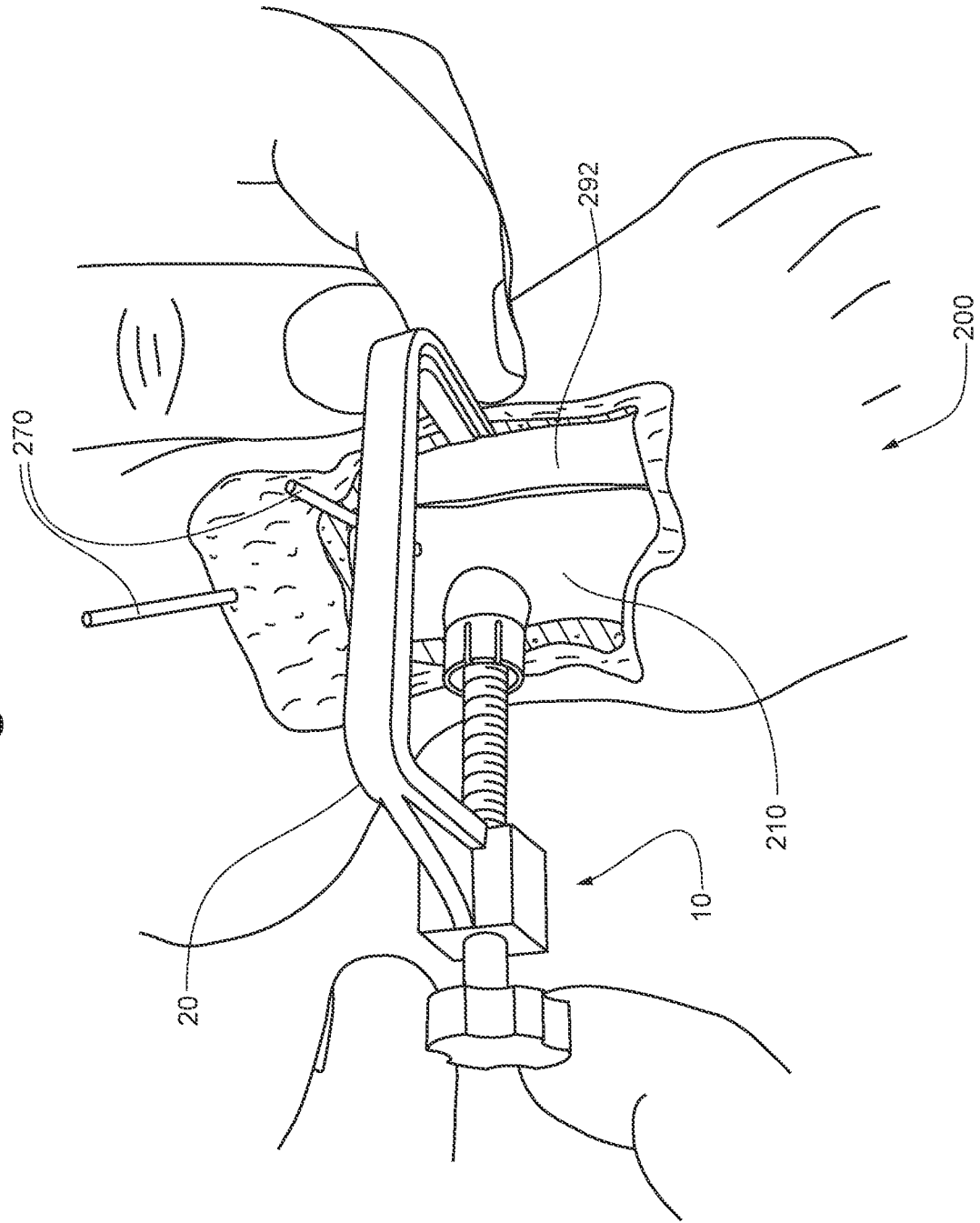


Fig. 12A

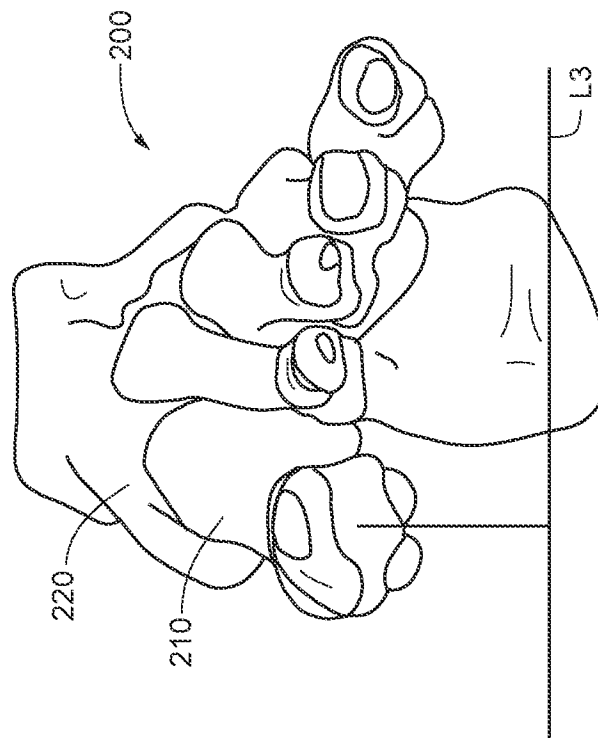


Fig. 12B

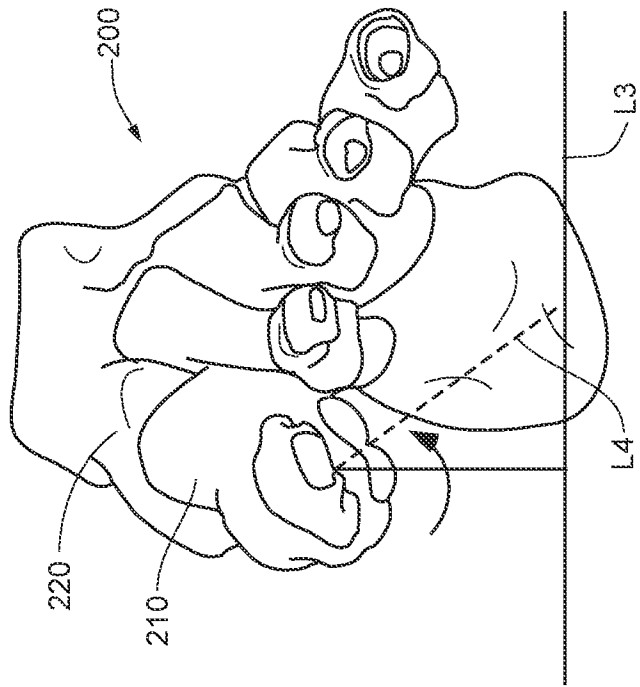


Fig. 13A

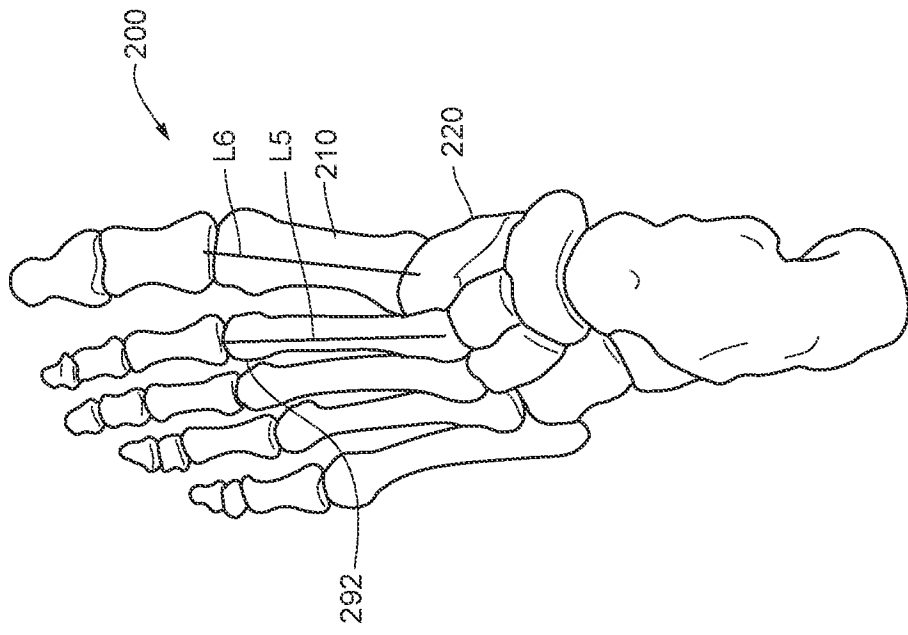


Fig. 13B

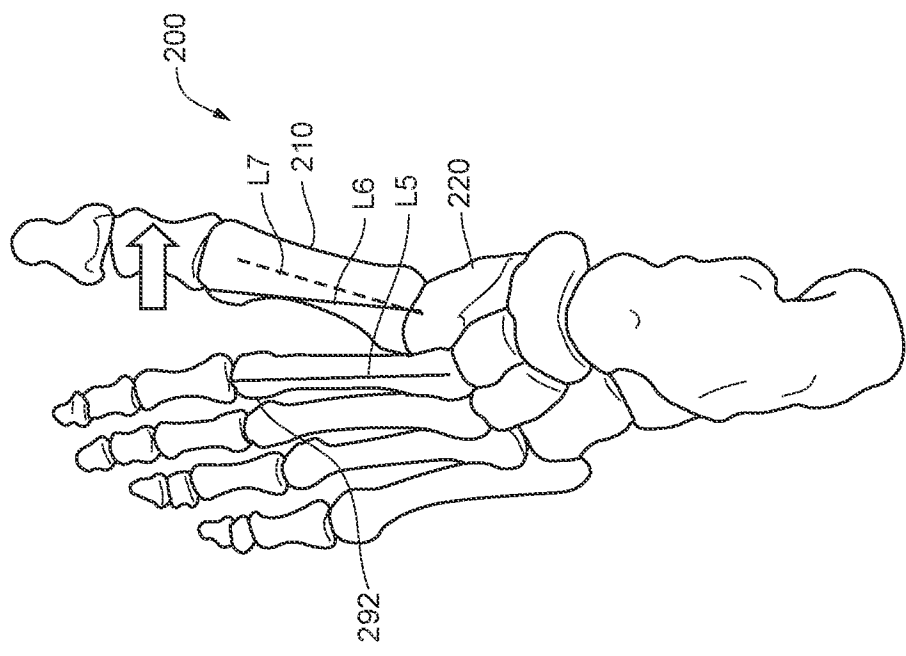


Fig. 14A

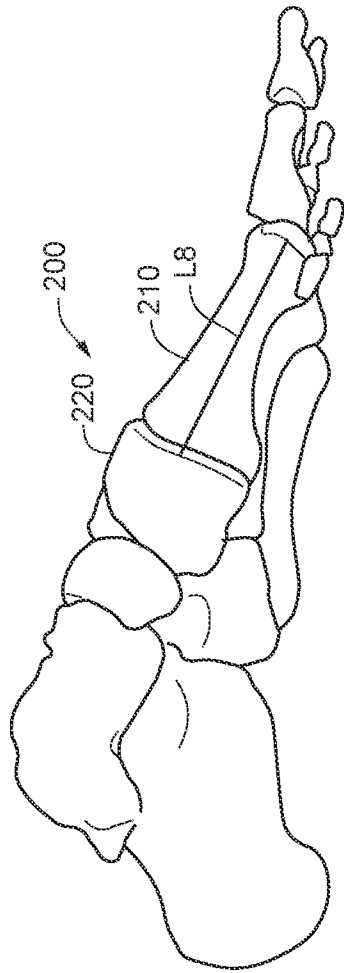


Fig. 14B

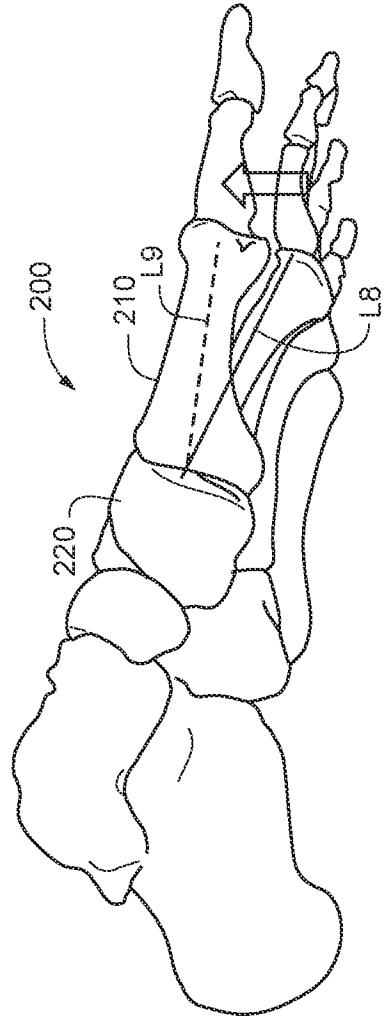


Fig. 15A

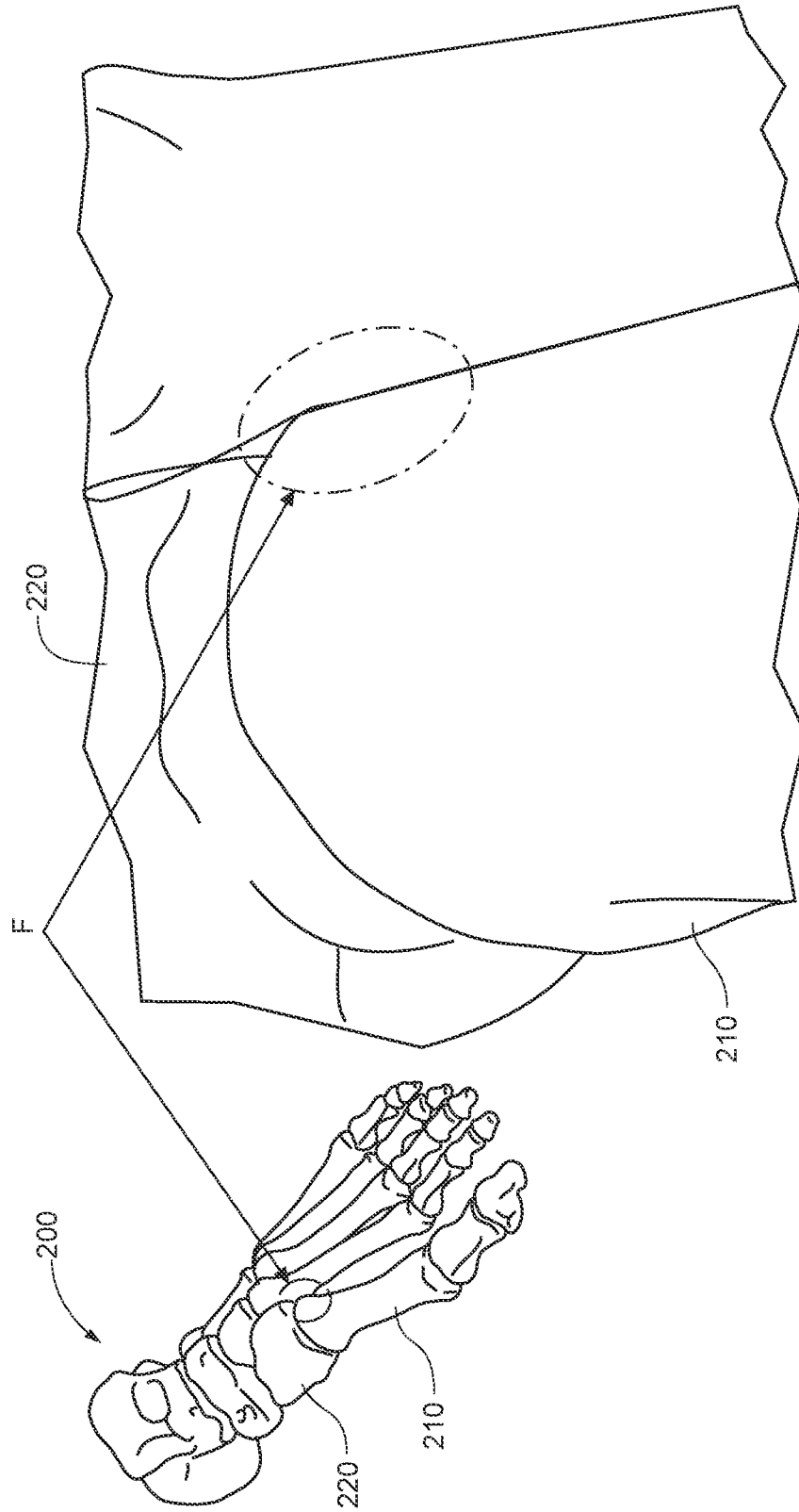
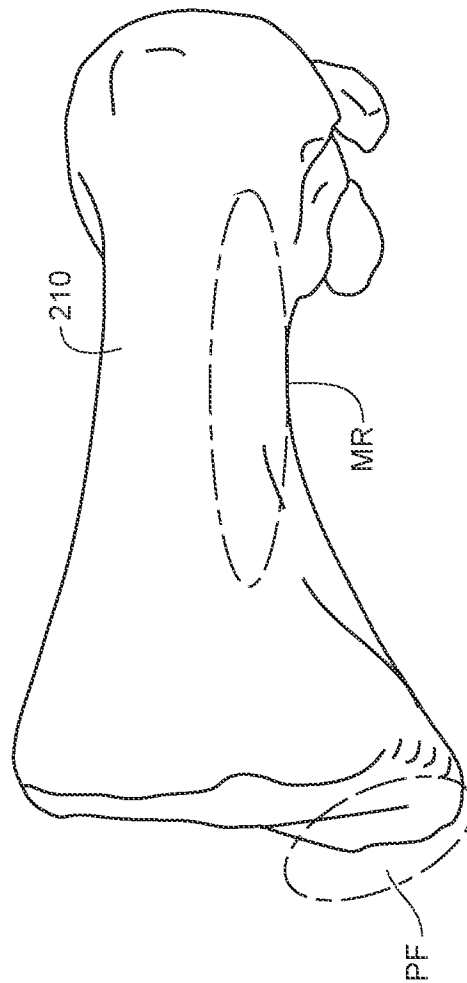
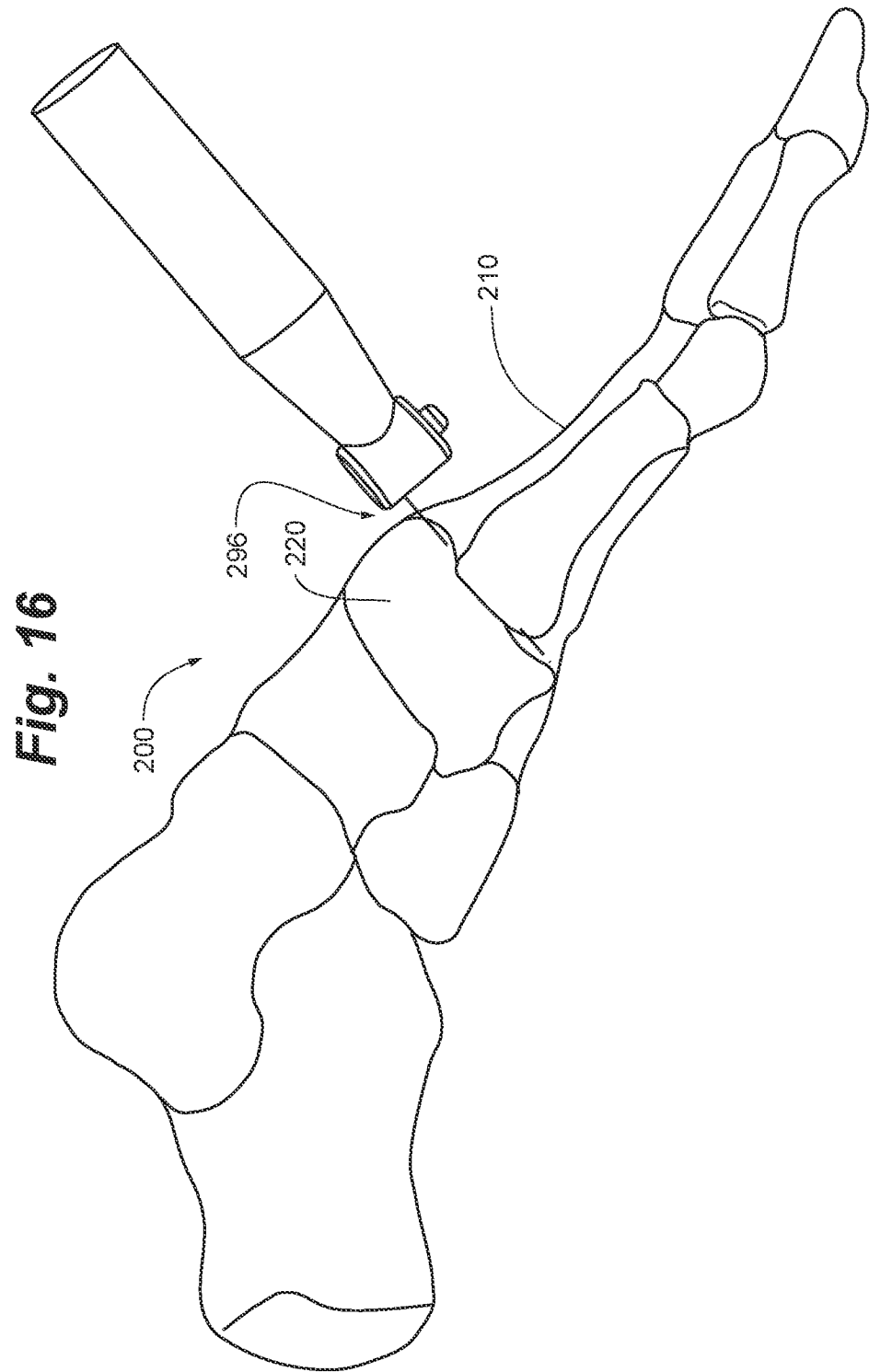
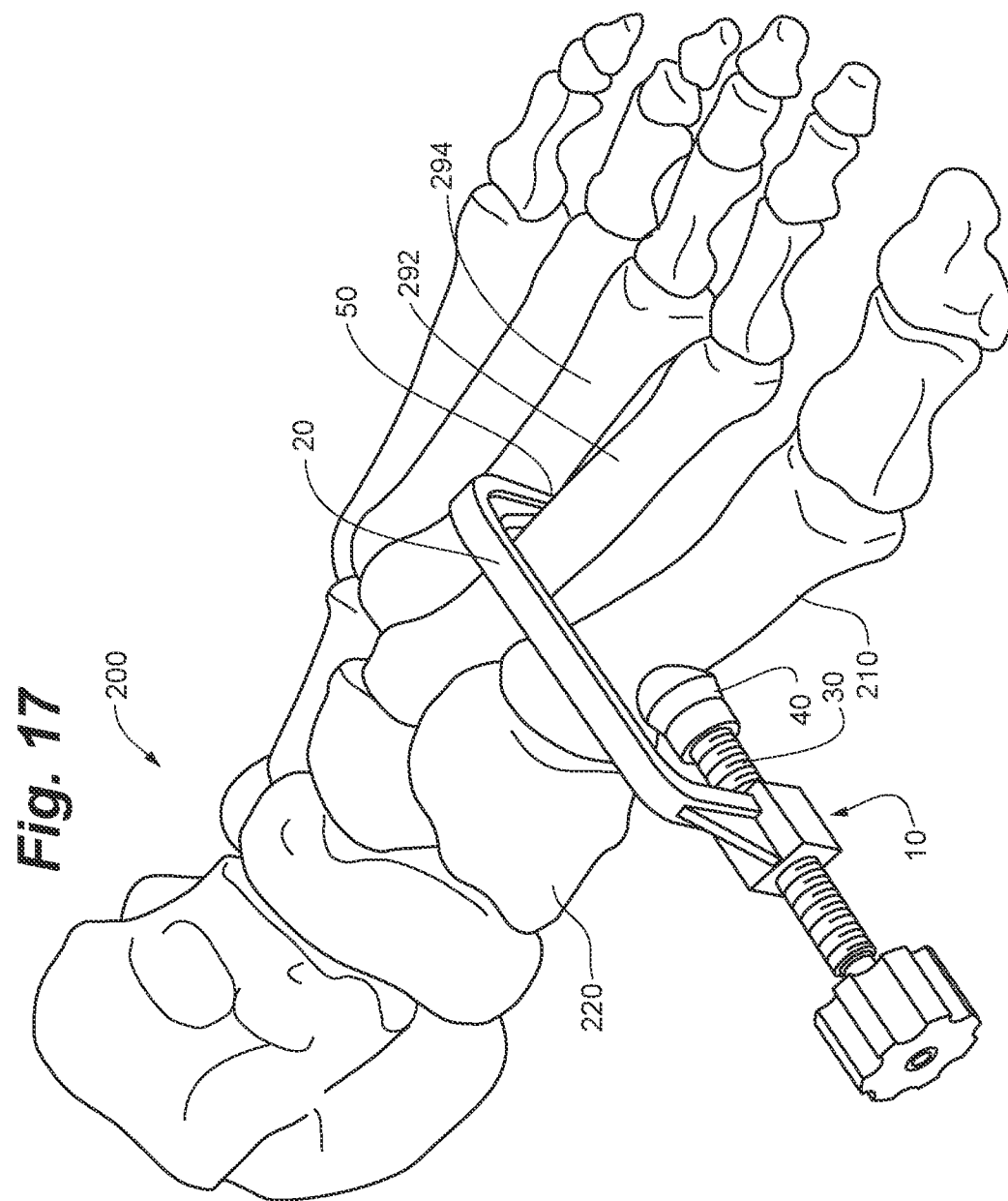
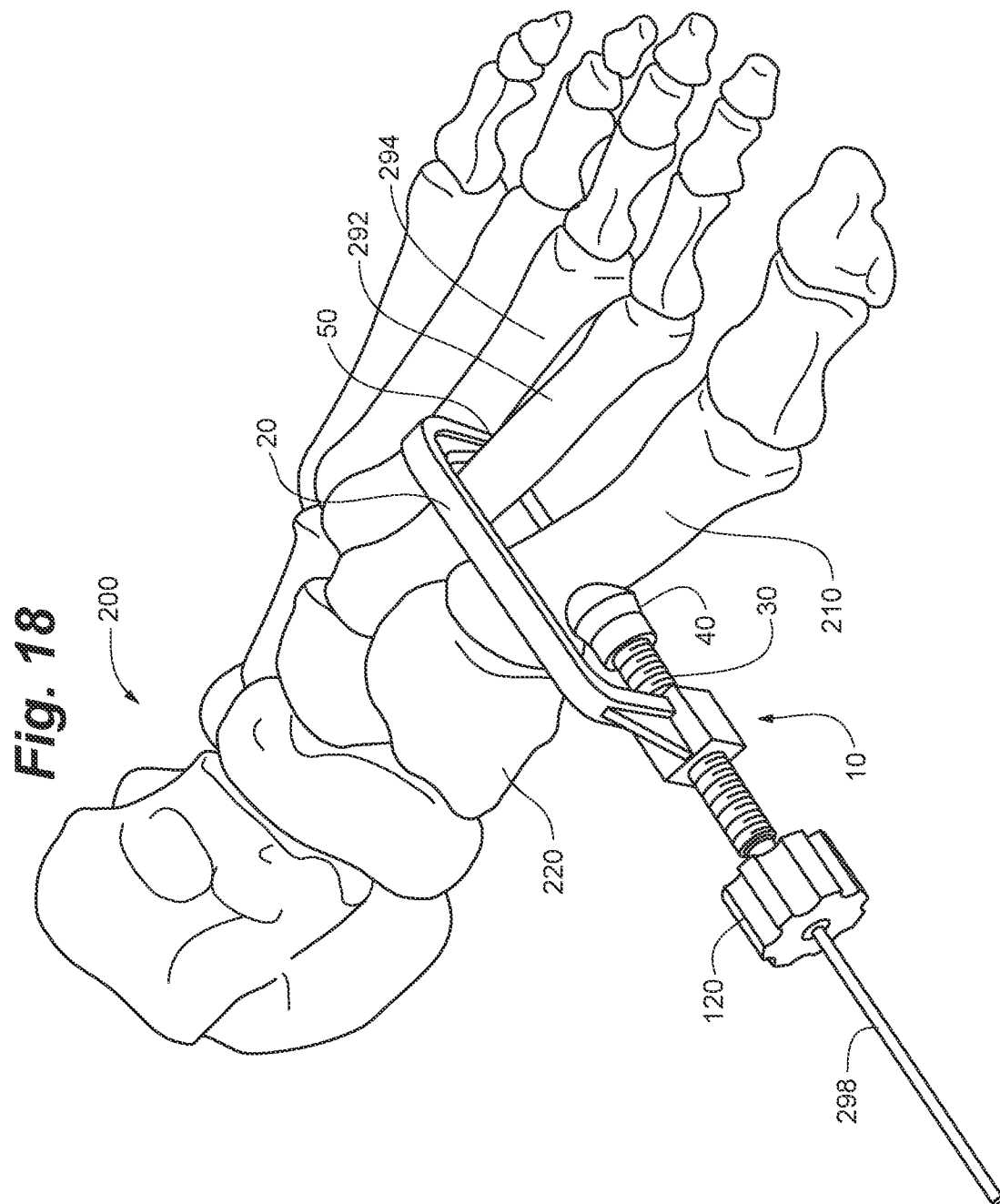


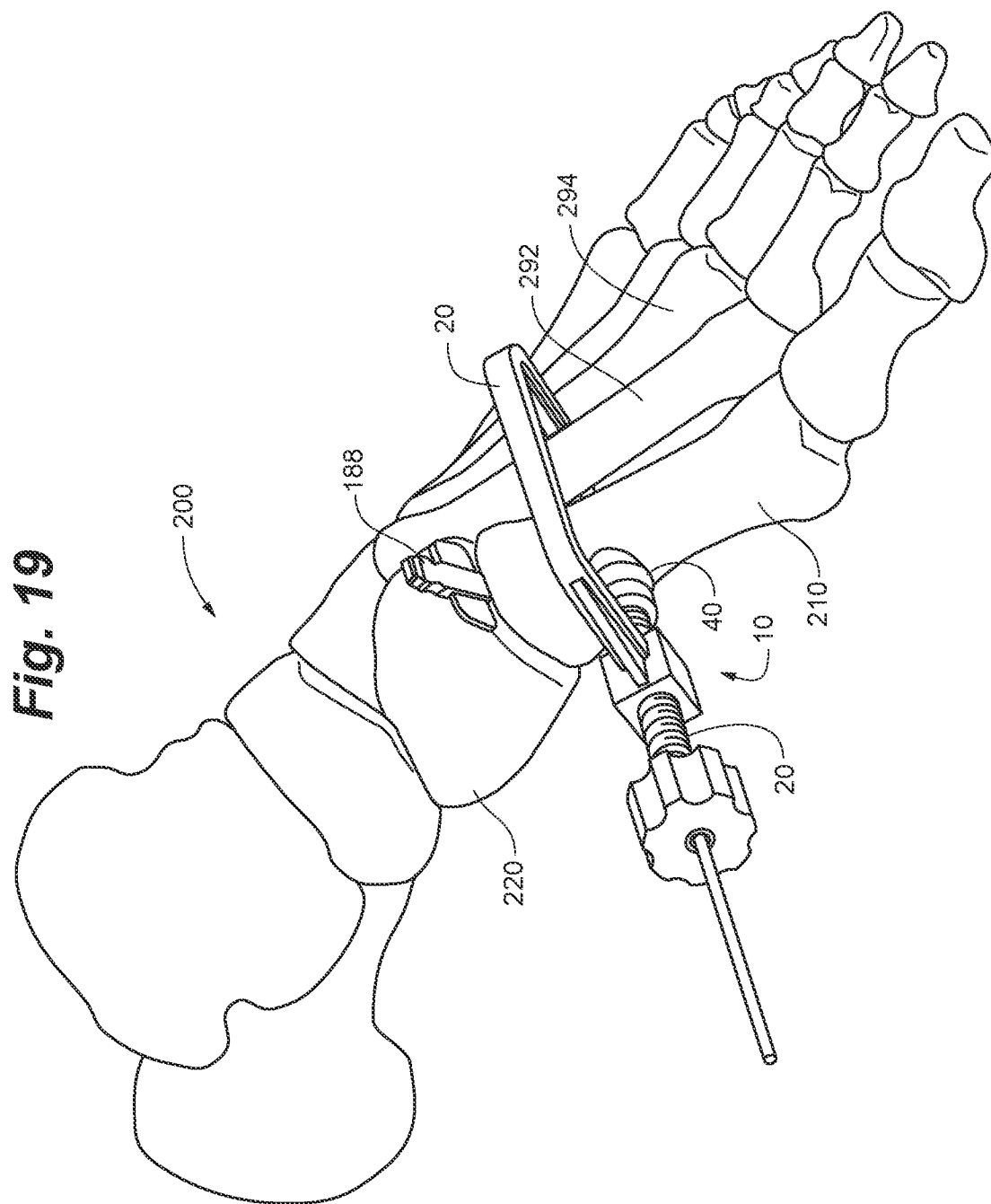
Fig. 15B











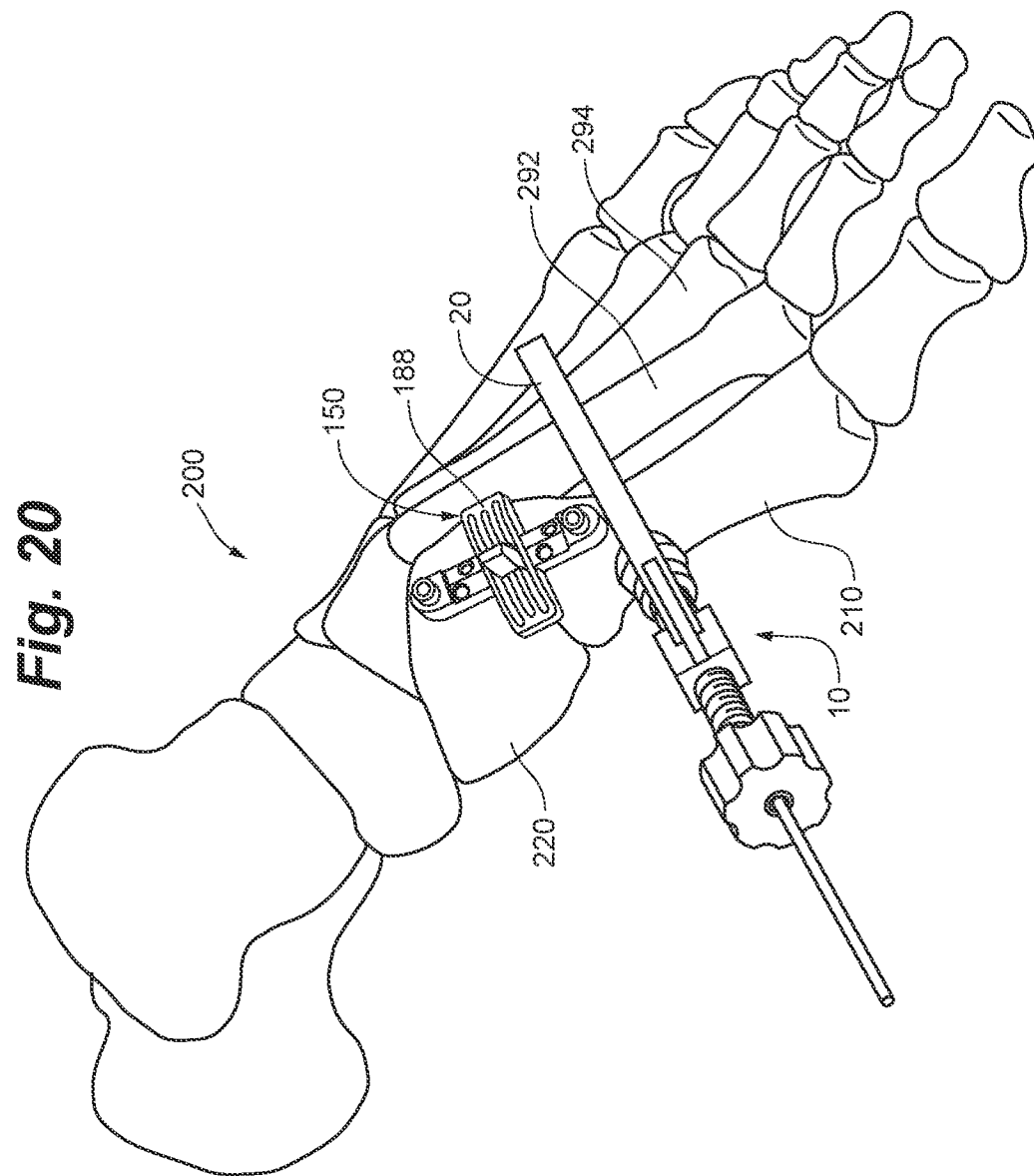


Fig. 21A

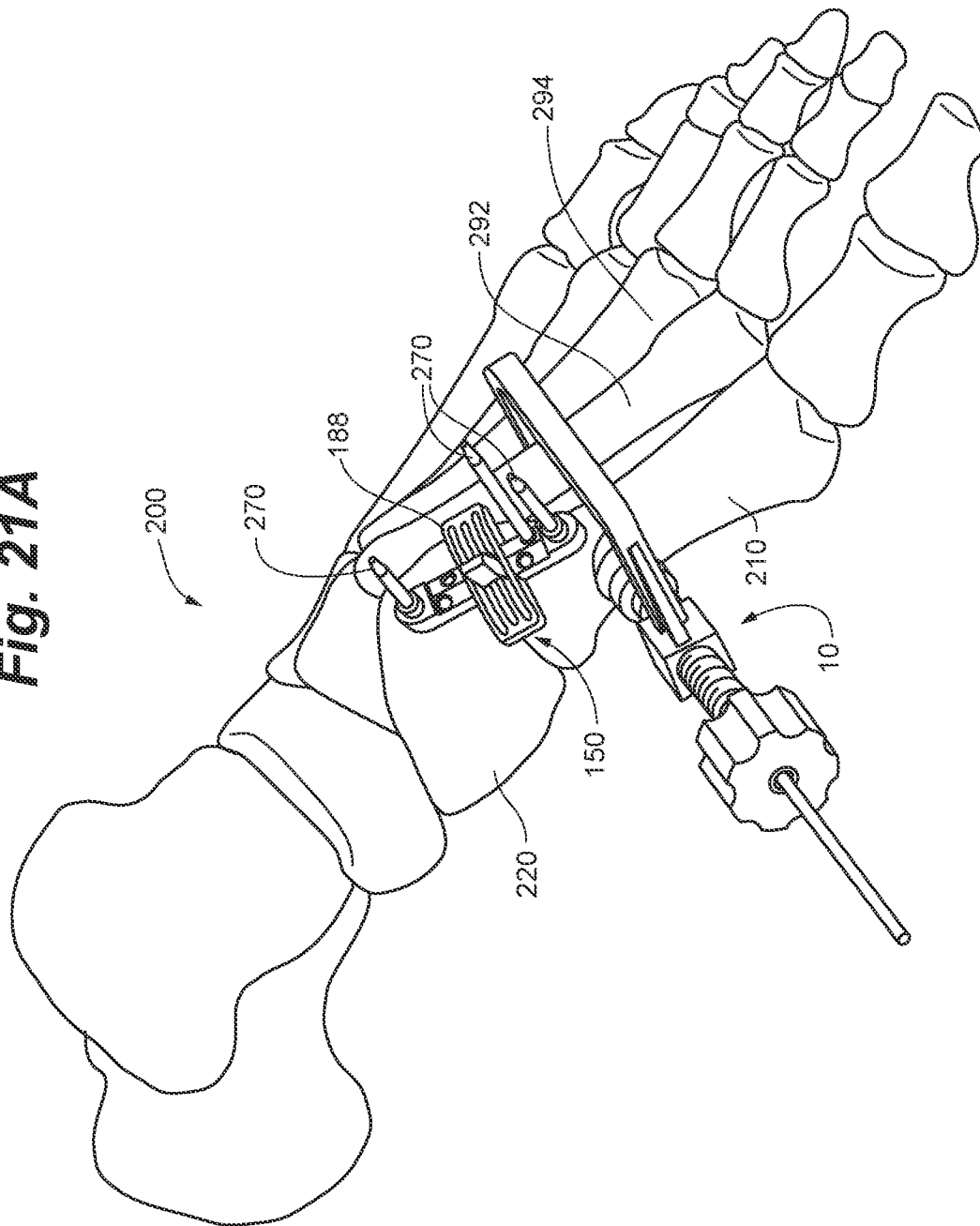
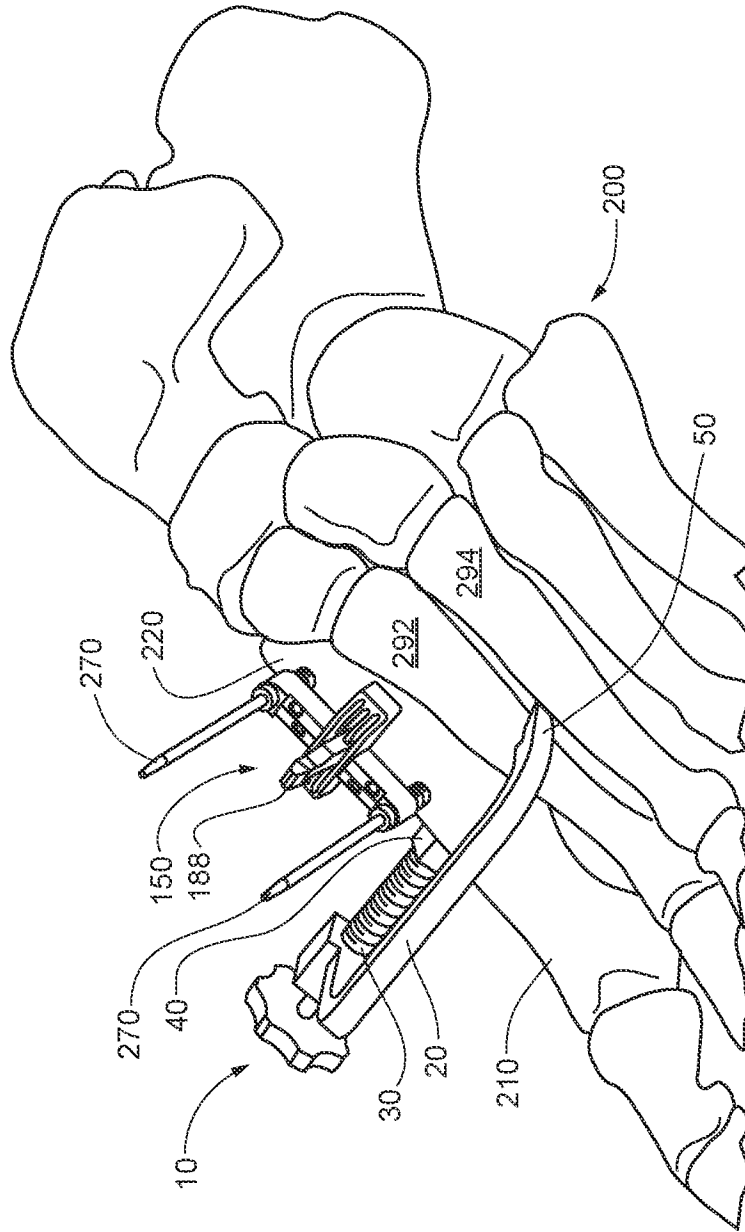
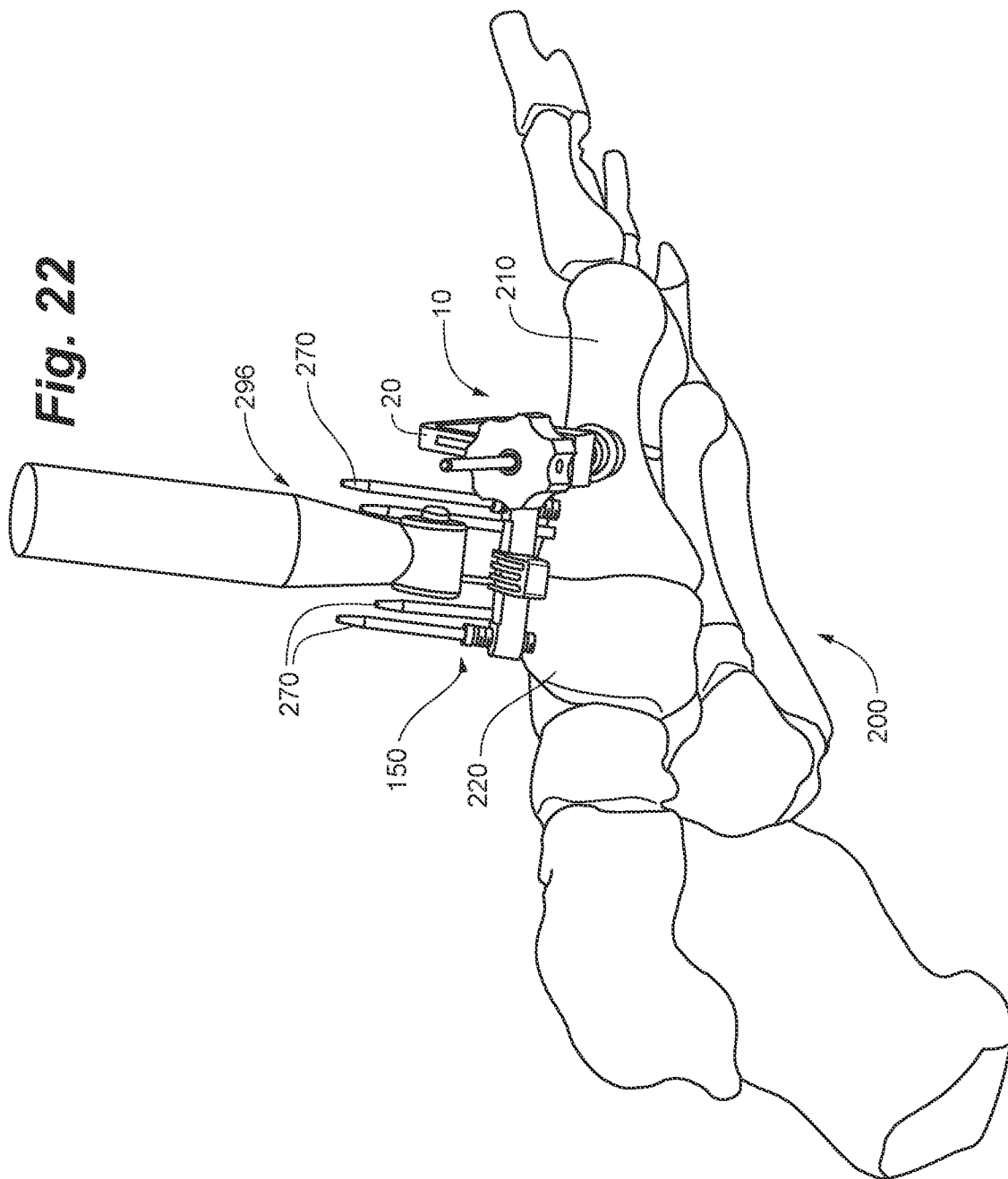
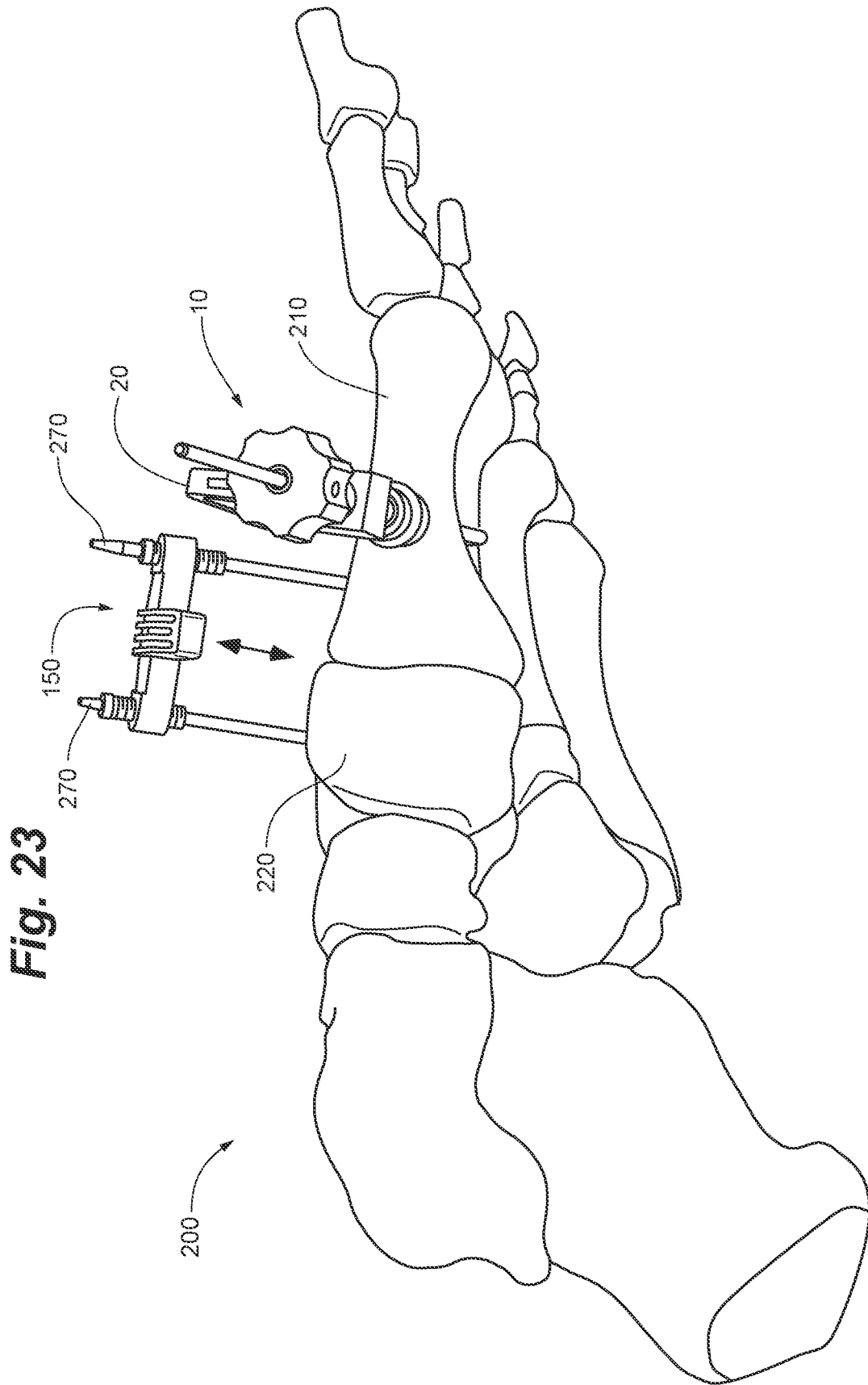


Fig. 21B







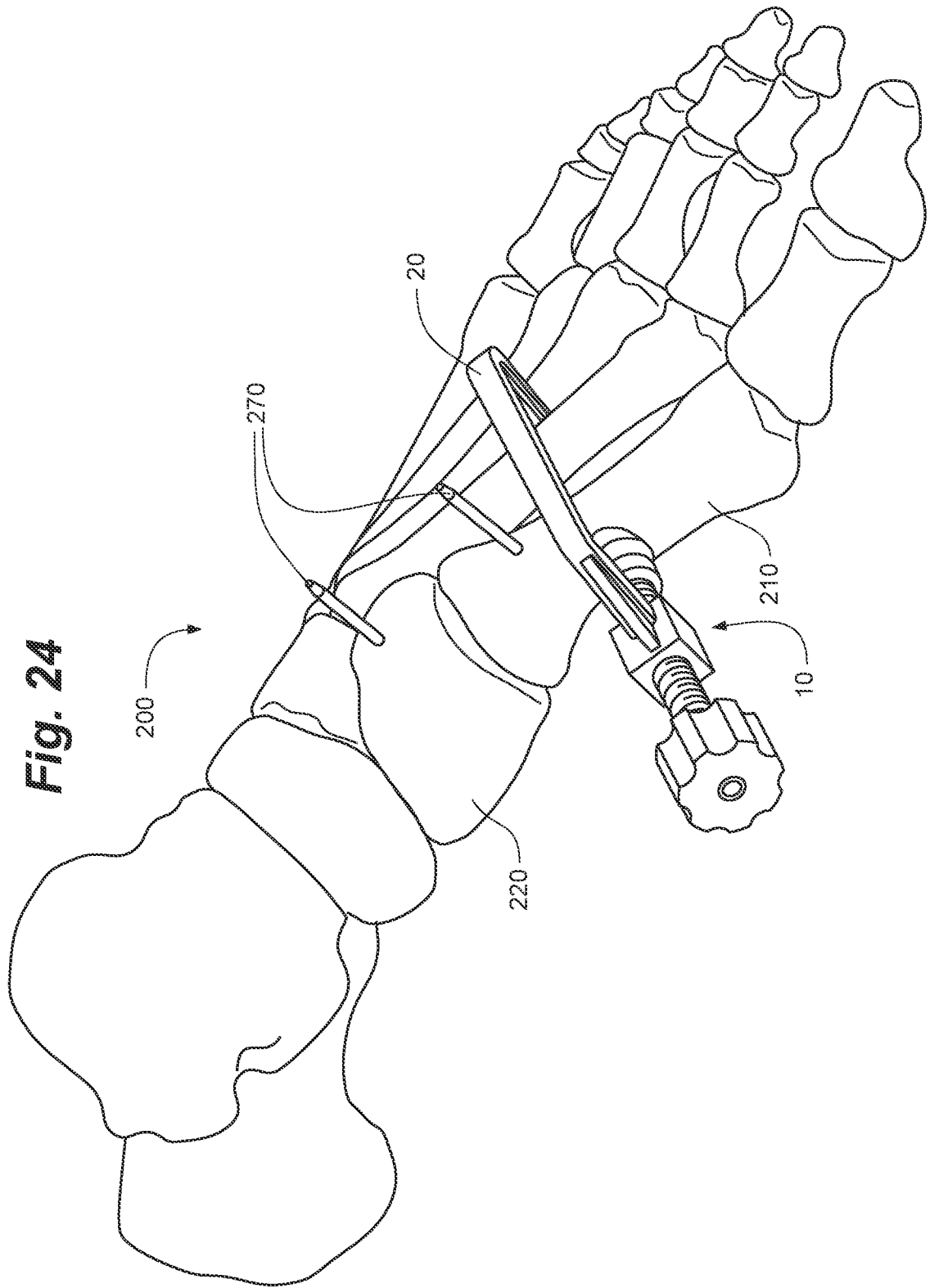


Fig. 25

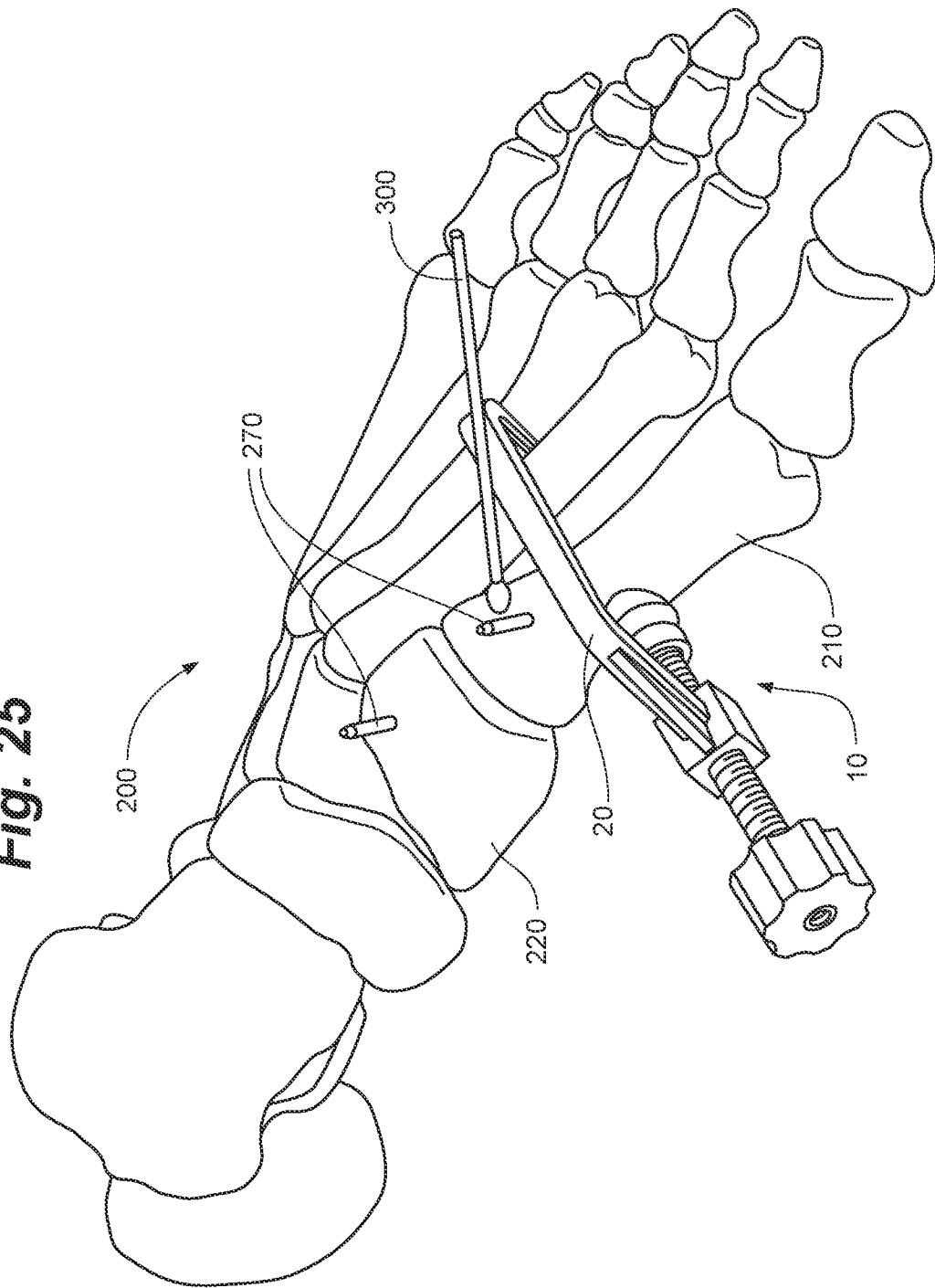


Fig. 26A

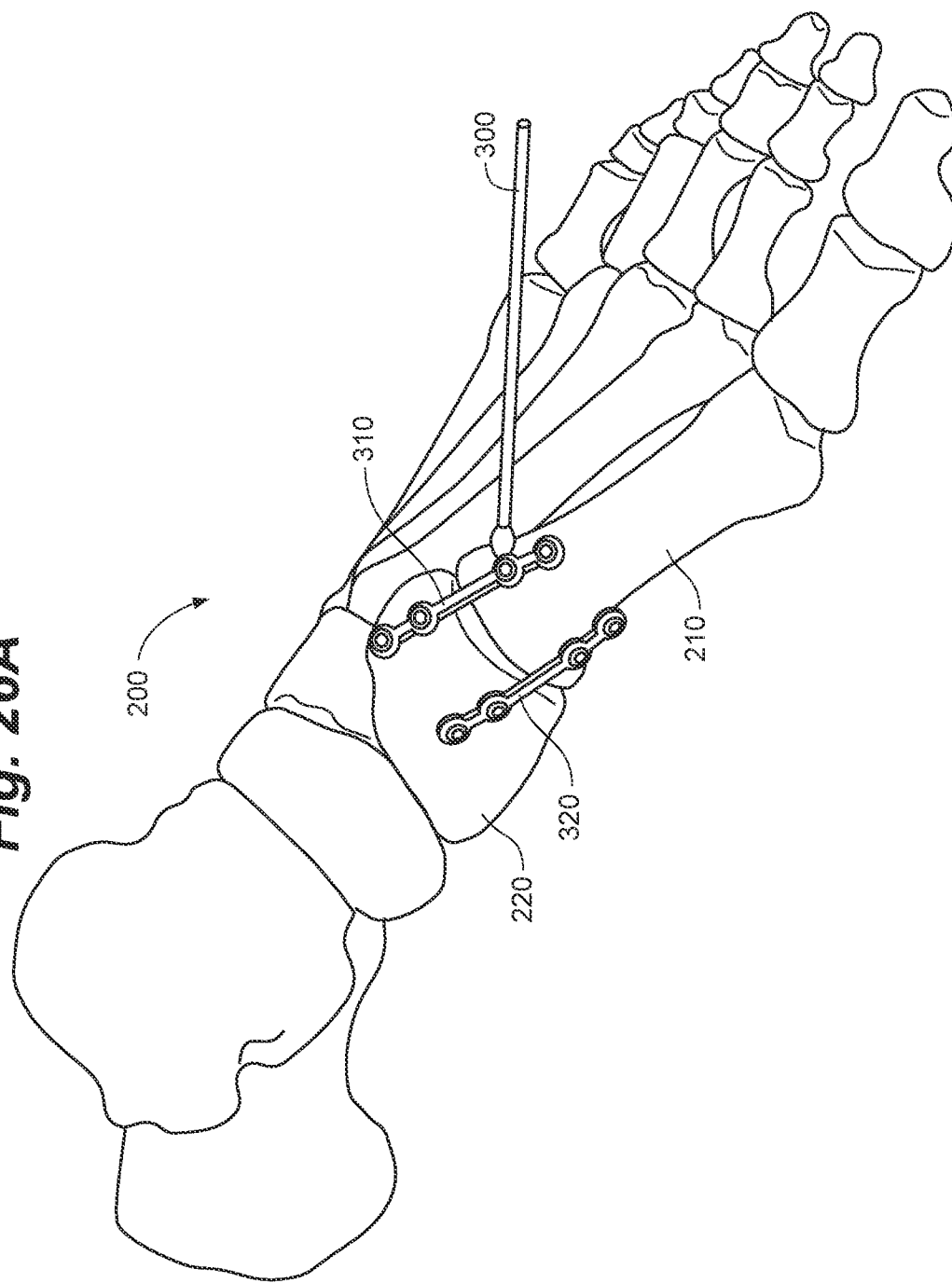


Fig. 26B

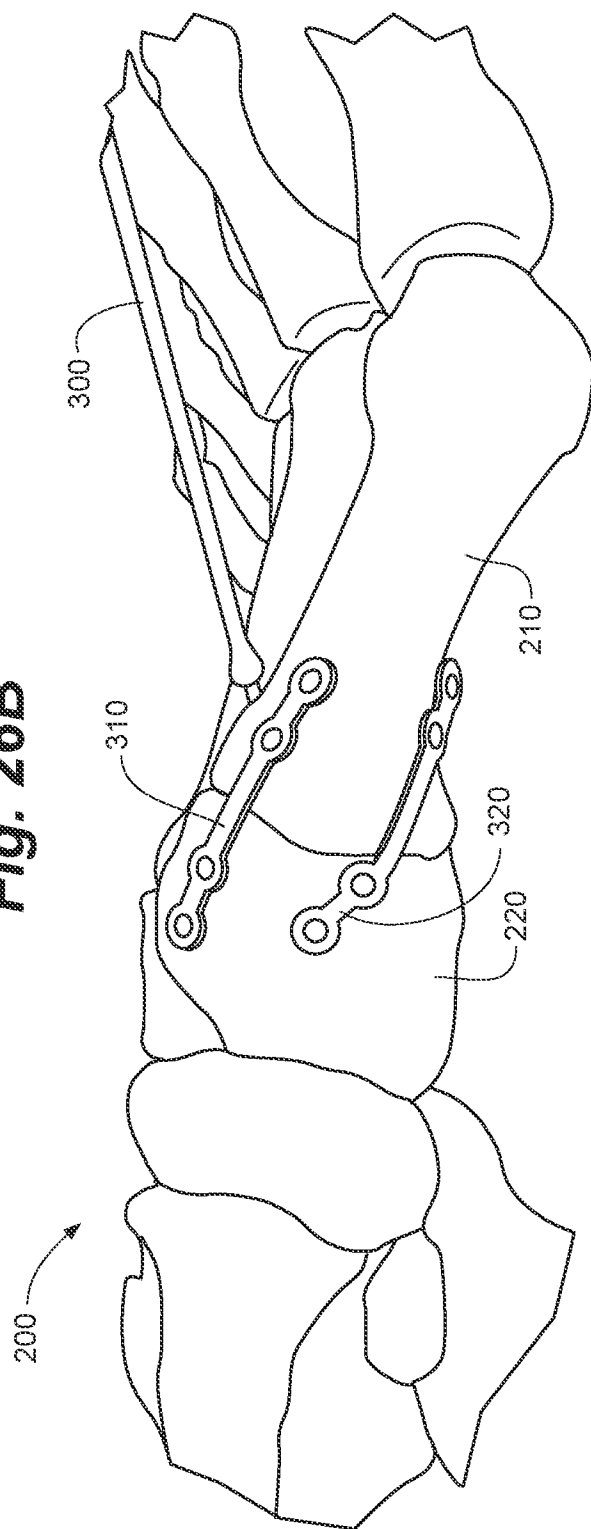
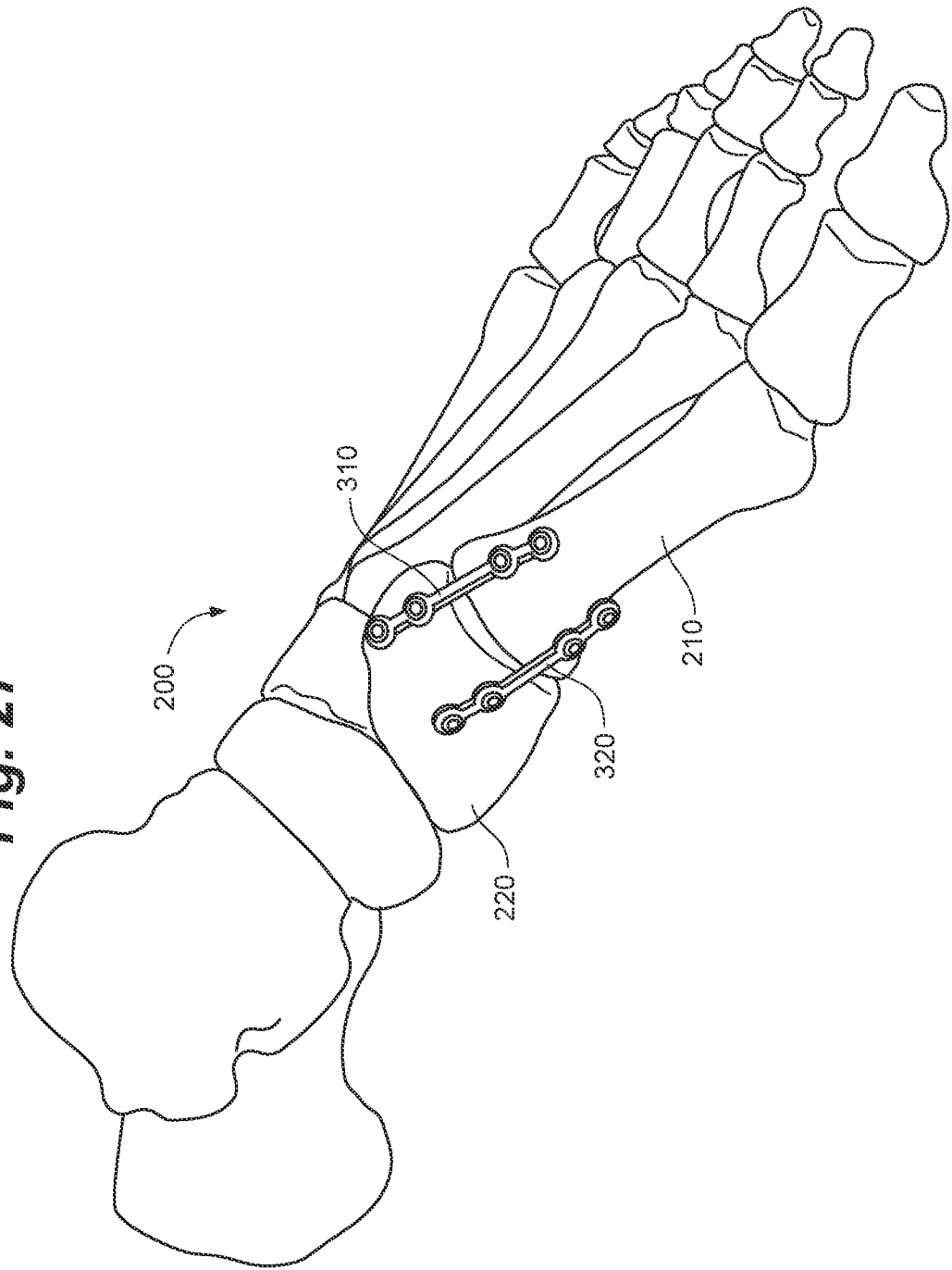


Fig. 27



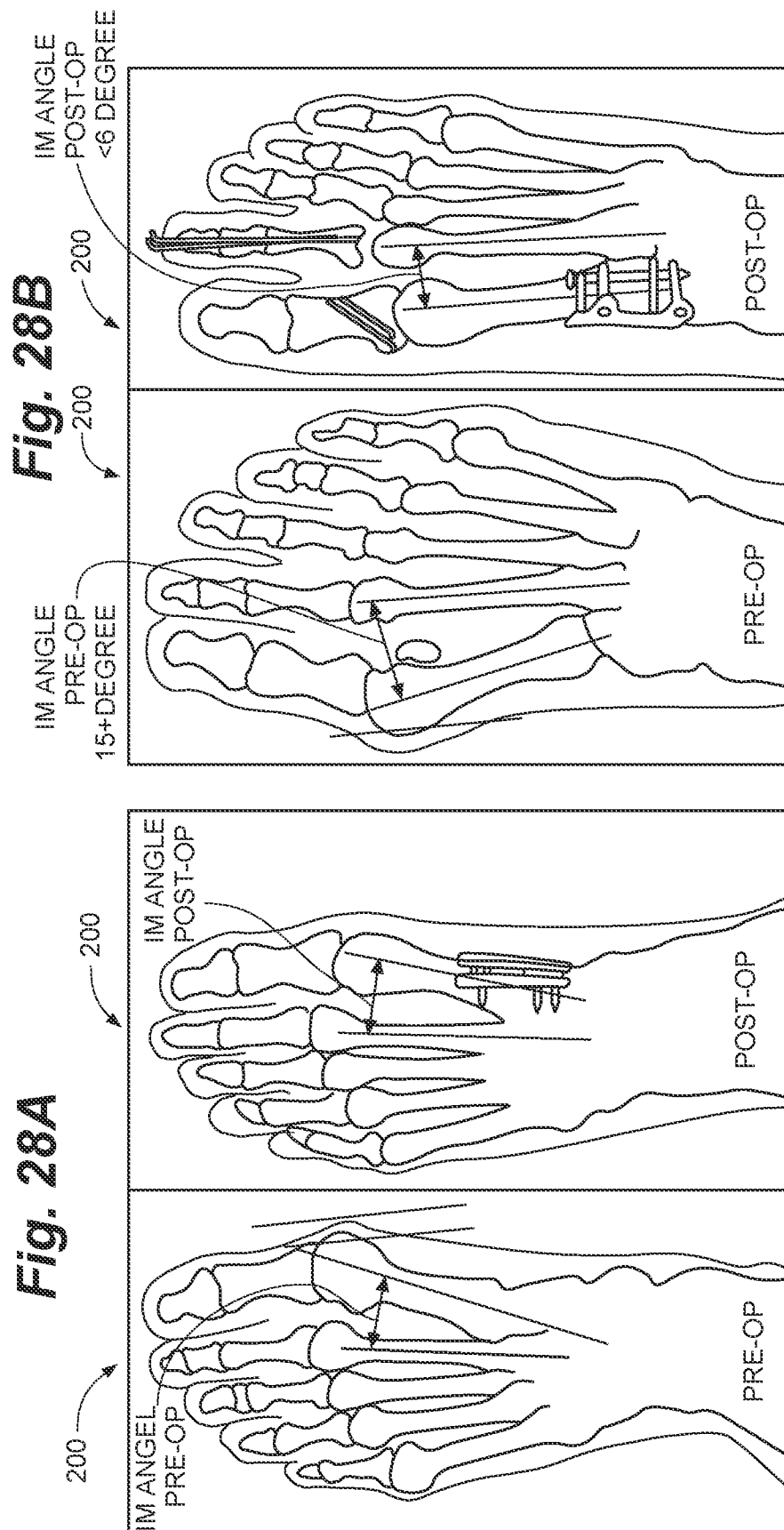


Fig. 29A

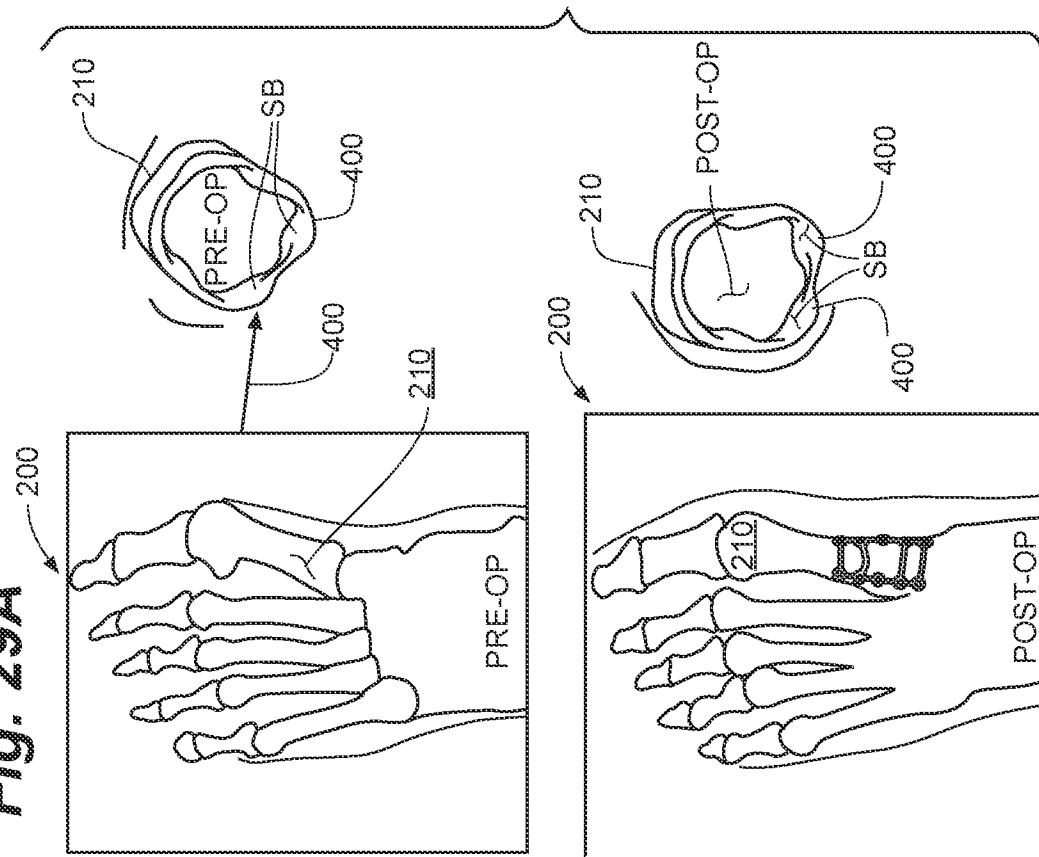


Fig. 29B

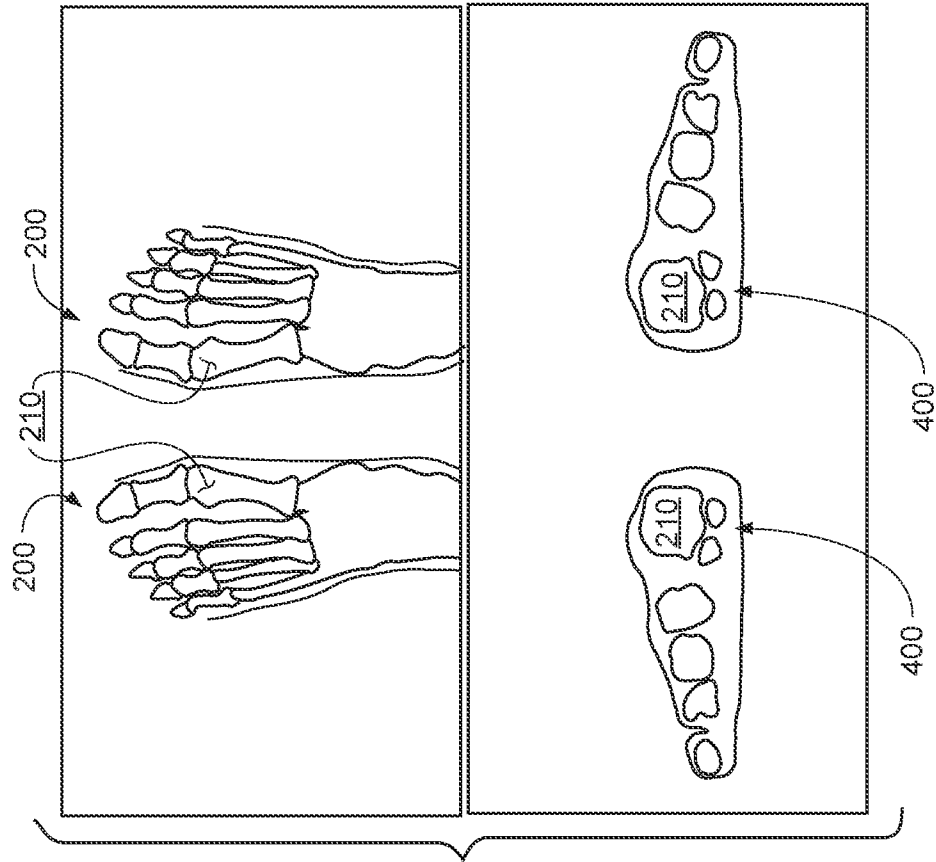


Fig. 30A

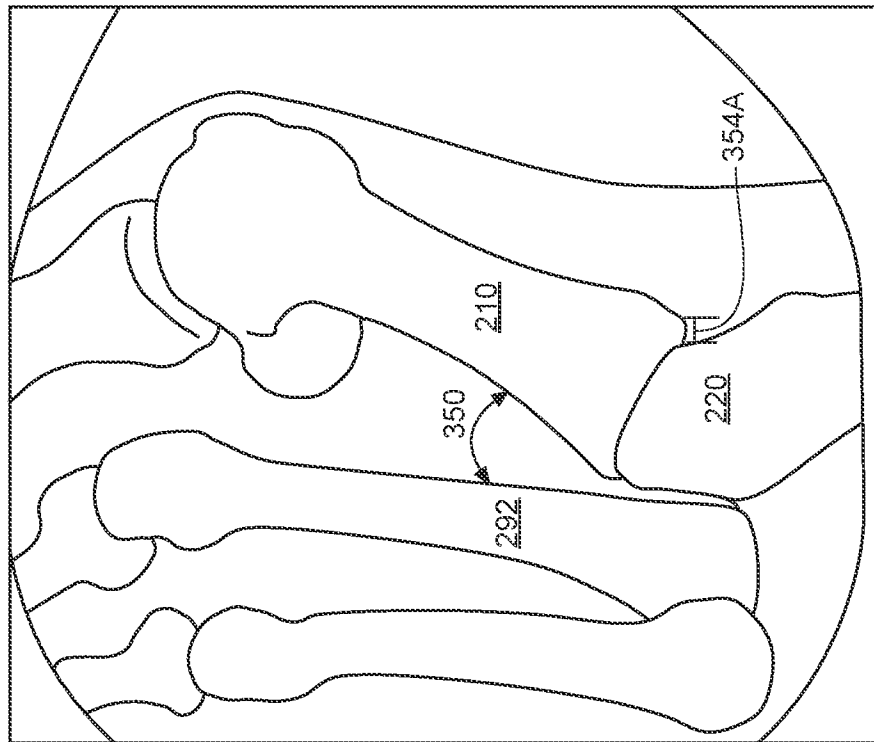
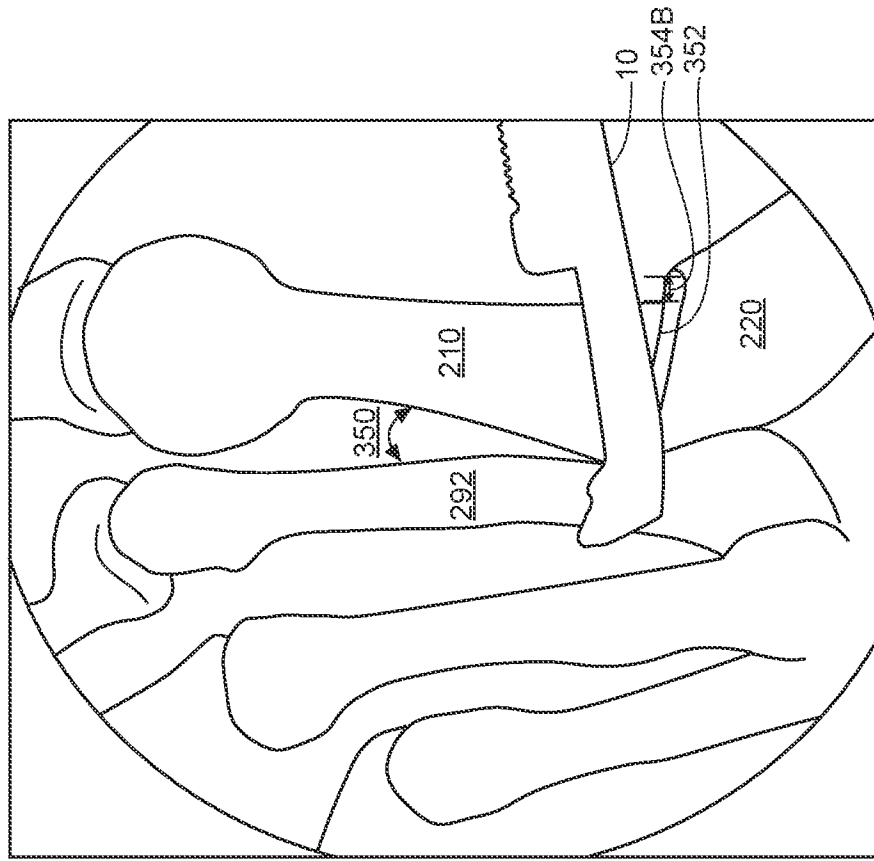


Fig. 30B



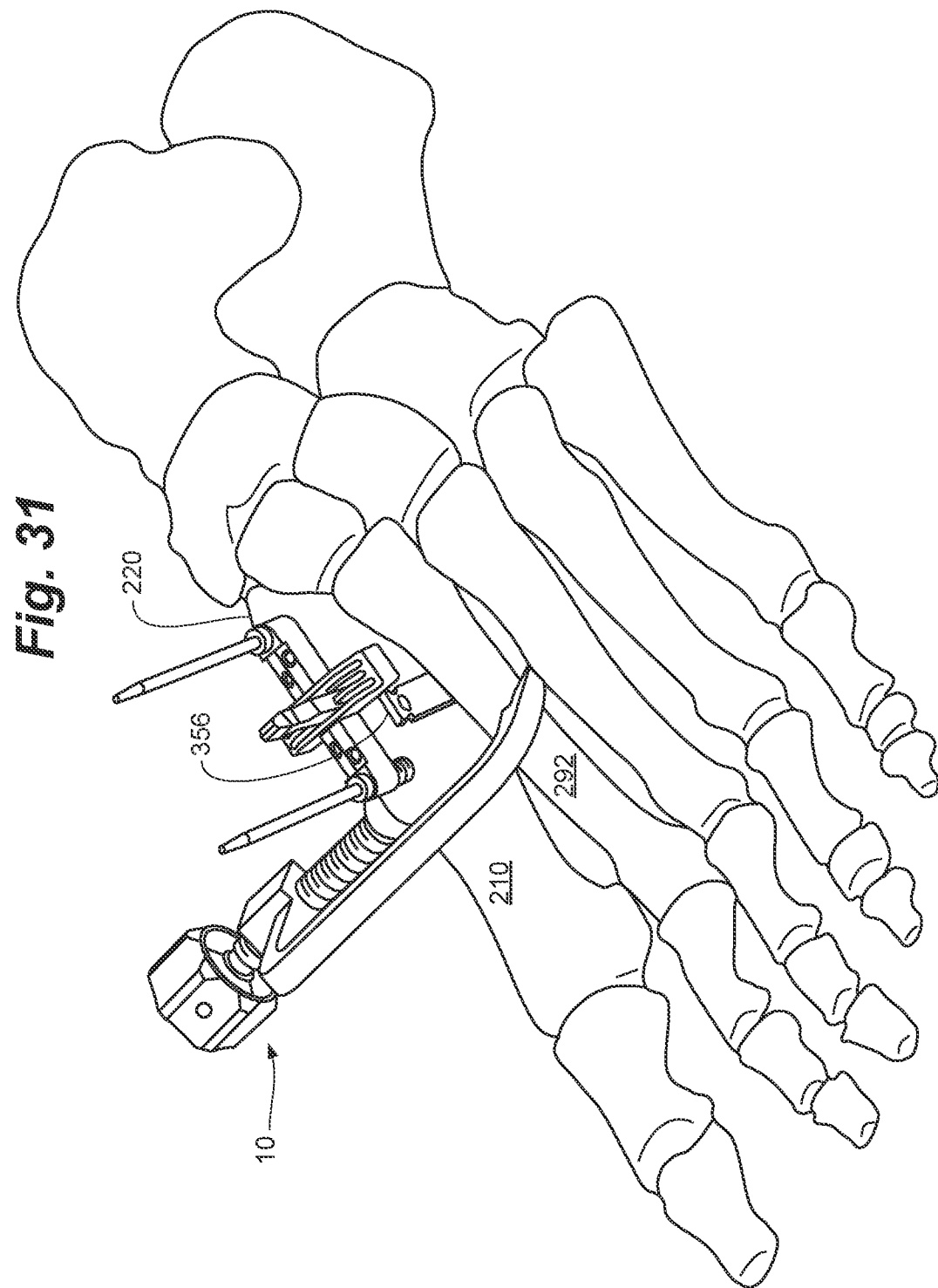


Fig. 32

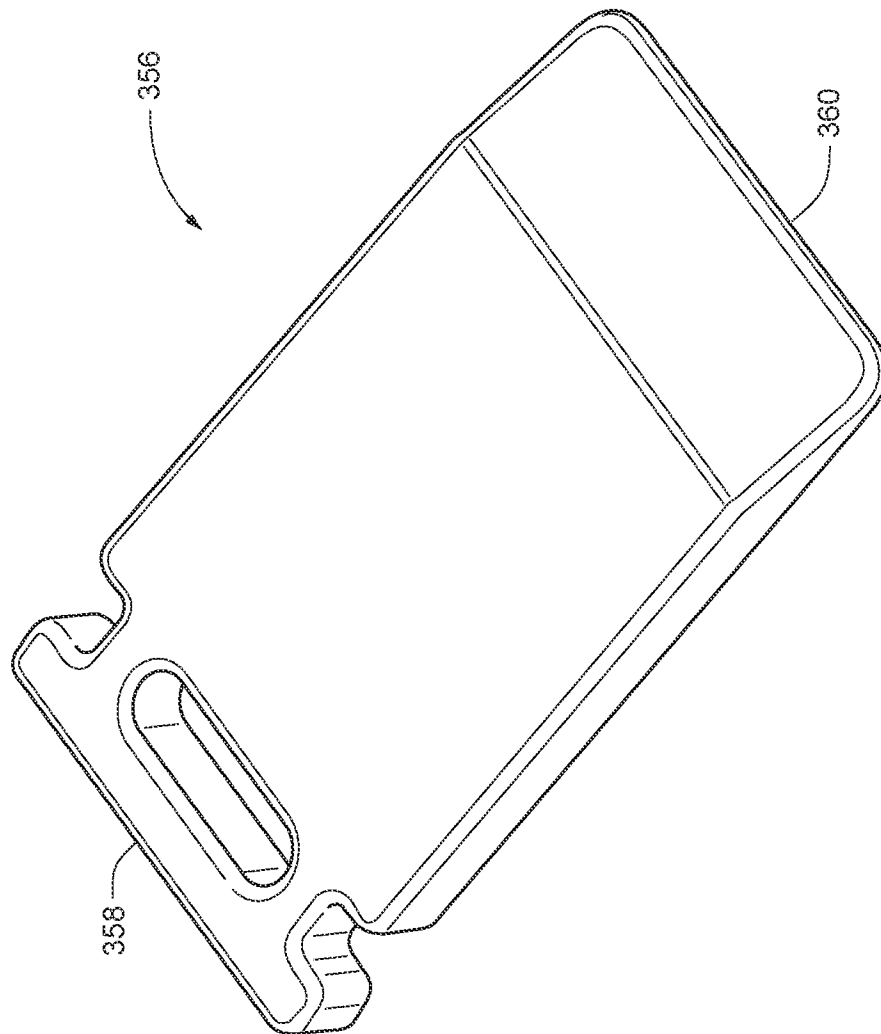


Fig. 33

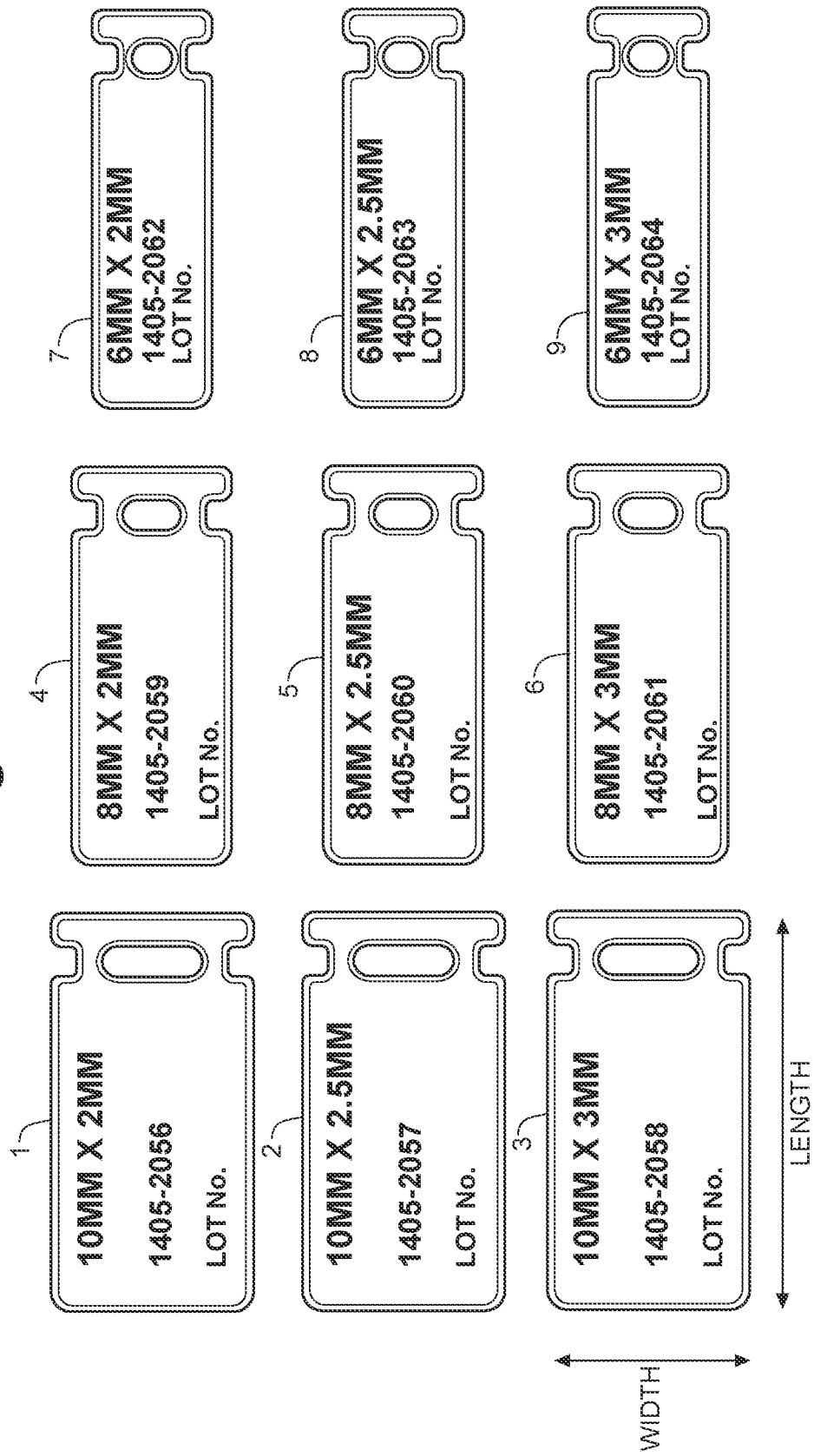


Fig. 35

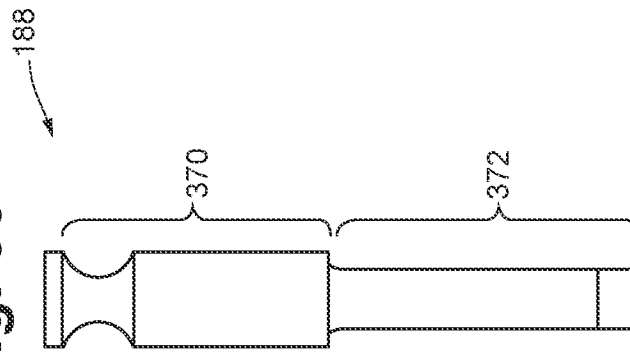


Fig. 36B

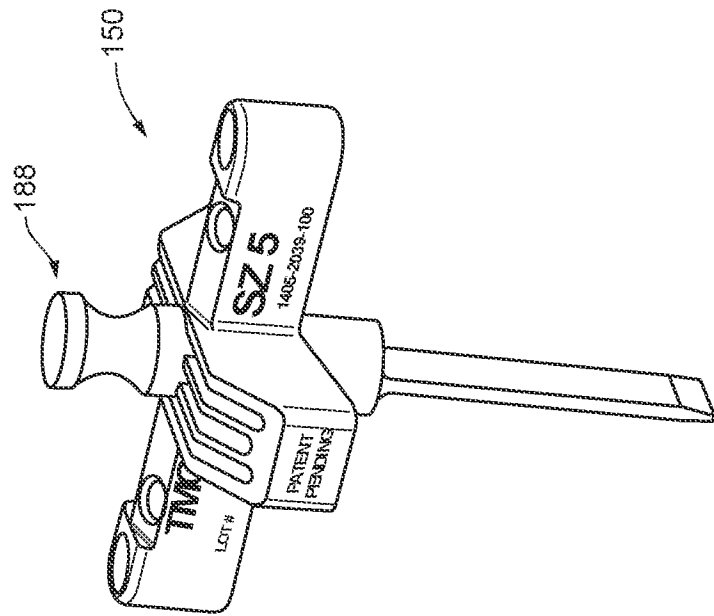
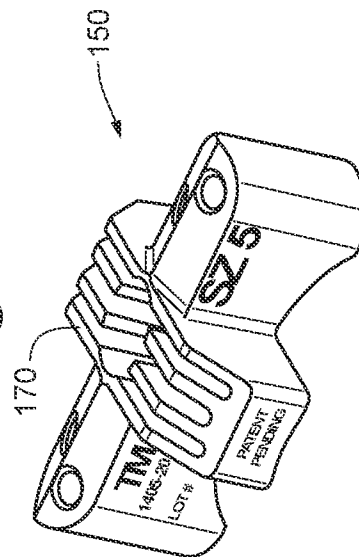


Fig. 36A



22859
Customer Number

Attorney Docket No.: 71212.4.6.USC7

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Robert D. Santrock
Application No.: Not Yet Assigned Group Art Unit: Not Yet Assigned
Filed: Filed Herewith Examiner: Not Yet Assigned
Title: BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

INFORMATION DISCLOSURE STATEMENT

Dear Commissioner:

Pursuant to 37 C.F.R. § 1.56, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached Form PTO/SB/08a. Copies of foreign and non-patent literature references not enclosed can be found in Application No. 17/567,879, filed January 3, 2022; Application No. 17/353,431, filed June 21, 2021; Application No. 16/031,855, filed July 10, 2018; or Application No. 14/981,335, filed December 28, 2015, from which the present application derives priority. In accordance with 37 C.F.R. § 1.98(d), Applicant is not enclosing additional copies of these references. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

By submitting these references, Applicant does not admit that the references are prior art to or material to this application, and reserves the right to establish that any reference is not prior art. Applicant does not represent that the references have been reviewed in detail; there may be details in the references of which Applicant is unaware.

Dated: February 26, 2024

FREDRIKSON & BYRON, P.A.
60 South Sixth Street, Suite 1500
Minneapolis, MN 55402-1425 USA
Telephone: (612) 492-7387

Respectfully submitted,

/Paul J. LaVanway, Jr./

Paul J. LaVanway, Jr.
Registration No. 64,610

Please grant any extension of time necessary for entry; charge any fee due to Deposit Account No. 06-1910.

#81532255v1

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	71212.4.6.USC7
		Application Number	
Title of Invention	BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS		
<p>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.</p> <p>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.</p>			

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.)
--------------------------	---

Inventor Information:

Inventor 1					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Robert	D.	Santrock		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Morgantown	State/Province	WV	Country of Residenceⁱ	US
Mailing Address of Inventor:					
Address 1	2036 Lakeside Estates				
Address 2					
City	Morgantown	State/Province	WV		
Postal Code	26508	Countryⁱ	US		
Inventor 2					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Paul		Dayton		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Ankeny	State/Province	IA	Country of Residenceⁱ	US
Mailing Address of Inventor:					
Address 1	5713 NE Sherman CT				
Address 2					
City	Ankeny	State/Province	IA		
Postal Code	50021	Countryⁱ	US		
Inventor 3					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Daniel	J.	Hatch		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					

Application Data Sheet 37 CFR 1.76		Attorney Docket Number		71212.4.6.USC7	
		Application Number			
Title of Invention		BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS			

City	Greeley	State/Province	CO	Country of Residence	US
------	---------	----------------	----	----------------------	----

Mailing Address of Inventor:

Address 1	533 North Brisbane Avenue				
Address 2					
City	Greeley	State/Province	CO		
Postal Code	80634	Country	US		
Inventor 4 Remove					
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	W.	Bret	Smith		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Lexington	State/Province	SC	Country of Residence	US

Mailing Address of Inventor:

Address 1	462 River Club Road				
Address 2					
City	Lexington	State/Province	SC		
Postal Code	29072	Country	US		
Inventor 5 Remove					
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	F.	Barry	Bays		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Collierville	State/Province	TN	Country of Residence	US

Mailing Address of Inventor:

Address 1	3044 Shea Road				
Address 2					
City	Collierville	State/Province	TN		
Postal Code	38017	Country	US		
Inventor 6 Remove					
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Carlos	Eduardo	Gil		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Memphis	State/Province	TN	Country of Residence	US

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	71212.4.6.USC7
		Application Number	
Title of Invention	BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS		

Mailing Address of Inventor:

Address 1	222 Grove Dale St		
Address 2			
City	Memphis	State/Province	TN
Postal Code	38120	Country i	US
Inventor 7			Remove
Legal Name			
Prefix	Given Name	Middle Name	Family Name
	Sean	F.	Scanlan
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service			
City	Jacksonville	State/Province	FL
		Country of Residence i	US

Mailing Address of Inventor:

Address 1	2051 Spoonbill Street		
Address 2			
City	Jacksonville	State/Province	FL
Postal Code	32224	Country i	US
Inventor 8			Remove
Legal Name			
Prefix	Given Name	Middle Name	Family Name
	Joe	W.	Ferguson
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service			
City	Ponte Vedra Beach	State/Province	FL
		Country of Residence i	US

Mailing Address of Inventor:

Address 1	201 Duckwood Lane		
Address 2			
City	Ponte Vedra Beach	State/Province	FL
Postal Code	32082	Country i	US
Inventor 9			Remove
Legal Name			
Prefix	Given Name	Middle Name	Family Name
	John	T.	Treace
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service			
City	Ponte Vedra Beach	State/Province	FL
		Country of Residence i	US

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	71212.4.6.USC7
		Application Number	
Title of Invention	BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS		

Mailing Address of Inventor:			
Address 1	4 Ocean Ridge Court		
Address 2			
City	Ponte Vedra Beach	State/Province	FL
Postal Code	32082	Country ⁱ	US
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.			<input type="button" value="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	22859		
Email Address	ip@fredlaw.com	<input type="button" value="Add Email"/>	<input type="button" value="Remove Email"/>

Application Information:

Title of the Invention	BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS		
Attorney Docket Number	71212.4.6.USC7	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	42	Suggested Figure for Publication (if any)	18

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.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	71212.4.6.USC7
		Application Number	
Title of Invention	BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS		

Representative Information:

<p>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.</p>			
<div> <div>Please Select One:</div> <div> ☒ Customer Number ☐ US Patent Practitioner ☐ Limited Recognition (37 CFR 11.9) </div> </div>			
Customer Number	22859		

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)		
	Continuation of	18183013	2023-03-13		
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
18183013	Continuation of	17567879	2022-01-03	11602387	2023-03-14
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
17567879	Continuation of	17353431	2021-06-21	11213333	2022-01-04
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
17353431	Continuation of	16998155	2020-08-20	11039873	2021-06-22
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16998155	Continuation of	16031855	2018-07-10	10849670	2020-12-01
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16031855	Continuation of	15452236	2017-03-07	10045807	2018-08-14

Application Data Sheet 37 CFR 1.76		Attorney Docket Number		71212.4.6.USC7	
		Application Number			
Title of Invention		BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS			
Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15452236	Continuation of	14981335	2015-12-28	9622805	2017-04-18
Prior Application Status		Expired		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
14981335	Claims benefit of provisional	62205338	2015-08-14		
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).

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	71212.4.6.USC7
		Application Number	
Title of Invention	BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS		

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	71212.4.6.USC7
		Application Number	
Title of Invention	BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS		

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
<p>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.</p>			
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: <input type="text"/>			
If the Applicant is an Organization check here. ☒			
Organization Name	Treace Medical Concepts, Inc.		
Mailing Address Information For Applicant:			
Address 1	100 Palmetto Park Place		
Address 2			
City	Ponte Vedra	State/Province	FL
Country	US	Postal Code	32081
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:

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.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	71212.4.6.USC7
		Application Number	
Title of Invention	BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS		

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. ☐

Prefix	Given Name	Middle Name	Family Name	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		State/Province	
Country ⁱ		Postal Code	
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:**[Remove](#)

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	/Paul J. LaVanway, Jr./		Date (YYYY-MM-DD)	2024-02-26	
First Name	Paul J.	Last Name	LaVanway, Jr.	Registration Number	64610

Additional Signature may be generated within this form by selecting the Add button.

[Add](#)

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	71212.4.6.USC7
		Application Number	
Title of Invention	BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS		

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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Robert D. Santrock	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	71212.4.6.USC7	

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

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

1	Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 41 pages.	☐
2	Prior Art Publications, Exhibit A of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 3 pages.	☐
3	Claim Chart for Fishco, "Making the Lapidus Easy," The Podiatry Institute (April 2014), Exhibit B1 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 97 pages.	☐
4	Claim Chart for Fishco, "A Straightforward Guide to the Lapidus Bunionectomy," HMP Global (September 6, 2013), Exhibit B2 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 67 pages.	☐
5	Claim Chart for Groves, "Functional Position Joint Sectioning: Pre-Load Method for Lapidus Arthrodesis," Update 2015: Proceedings of the Annual Meeting of the Podiatry Institute, Chpt. 6, pp. 23-29 (April 2015), Exhibit B3 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 151 pages.	☐
6	Claim Chart for Mote, "First Metatarsal-Cuneiform Arthrodesis for the Treatment of First Ray Pathology: A Technical Guide," The Journal Foot & Ankle Surgery (September 1, 2009), Exhibit B5 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 21 pages.	☐
7	Claim Chart for US Pat. No. 10,376,268 to Fallin et al., entitled "Indexed Tri-Planar Osteotomy Guide and Method," issued August 13, 2019, Exhibit B6 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 155 pages.	☐
8	Claim Chart for US Pat. No. 8,282,645 to Lawrence et al., entitled "Metatarsal Bone Implant Cutting Guide," issued January 18, 2010, Exhibit B7 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 76 pages.	☐
9	Claim Chart for US Pat. No. 9,452,057 to Dacosta et al., entitled "Bone Implants and Cutting Apparatuses and Methods," issued April 8, 2011, Exhibit B8 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 110 pages.	☐
10	Obviousness Chart, Exhibit C of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 153 pages.	☐
11	"Foot and Ankle Instrument Set," Smith & Nephew, 2013, 2 pages.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

12	"Lapidus Pearls: Gaining Joint Exposure to Decrease Non-Union," Youtube, Retrieved online from < https://www.youtube.com/watch?v=-jqJyE7pj-Y >, dated November 2, 2009, 3 pages.	☐
13	"Reconstructive Surgery of the Foot & Ankle," The Podiatry Institute, Update 2015, Conference Program, May 2015, 28 pages.	☐
14	"Speed Continuous Active Compression Implant," BioMedical Enterprises, Inc., A120-029 Rev. 3, 2013, 4 pages.	☐
15	"Visionaire: Patient Matched Cutting Blocks Surgical Procedure," Smith & Nephew, Inc., 2009, 2 pages.	☐
16	ARTHREX, "Comprehensive Foot System," Retrieved online from < https://www.arthrex.com/resources/animation/8U3iaPvY6kO8bwFAwZF50Q/comprehensive-foot-system?referringTeam=foot_and_ankle >, dated August 27, 2013, 3 pages.	☐
17	BARAVARIAN, "Why the Lapidus Procedure is Ideal for Bunions," Podiatry Today, Retrieved online from < https://www.hmpgloballearhmpgloballe.com/site/podipodi/article/5542 >, dated May 2006, 8 pages.	☐
18	BAUER et al., "Offset-V Osteotomy of the First Metatarsal Shaft in Hallux Abducto Valgus," McGlamry's Comprehensive Textbook of Foot and Ankle Surgery, Fourth Edition, Vol. 1, Chapter 29, 2013, 26 pages.	☐
19	COTTOM, "Fixation of the Lapidus Arthrodesis with a Plantar Interfragmentary Screw and Medial Low Profile Locking Plate," The Journal of Foot & Ankle Surgery, Vol. 51, 2012, pp. 517–522.	☐
20	COUGHLIN, "Fixation of the Lapidus Arthrodesis with a Plantar Interfragmentary Screw and Medial Low Profile Locking Plate," Orthopaedics and Traumatology, Vol. 7, 1999, pp. 133–143.	☐
21	DAYTON et al., "Observed Changes in Radiographic Measurements of the First Ray after Frontal Plane Rotation of the First Metatarsal in a Cadaveric Foot Model," The Journal of Foot & Ankle Surgery, Vol. 53, 2014, pp. 274–278.	☐
22	DAYTON et al., "Relationship of Frontal Plane Rotation of First Metatarsal to Proximal Articular Set Angle and Hallux Alignment in Patients Undergoing Tarsometatarsal Arthrodesis for Hallux Abducto Valgus: A Case Series and Critical Review of the Literature," The Journal of Foot & Ankle Surgery, 2013, Article in Press, March 1, 2013, 7 pages.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

23	DiDOMENICO et al., "Lapidus Bunionectomy: First Metatarsal-Cuneiform Arthrodesis," McGlamry's Comprehensive Textbook of Foot and Ankle Surgery, Fourth Edition, Vol. 1, Chapter 31, 2013, 24 pages.	☐
24	FALLIN et al., US Provisional Application Entitled INDEXED TRI-PLANAR OSTEOTOMY GUIDE AND METHOD, US Pat. App. No. 62/118,378, filed February 19, 2015, 62 pages.	☐
25	FISHCO, "A Straightforward Guide To The Lapidus Bunionectomy," Podiatry Today, Retrieved online from < https://www.hmpgloballearningnetwork.com/site/podiatry/blogged/straightforward-guide-lapidus-bunionectomy >, dated September 6, 2013, 5 pages.	☐
26	FISHCO, "Making the Lapidus Easy," The Podiatry Institute, Update 2014, Chapter 14, 2014, pp. 91–93.	☐
27	FLEMING et al., "Results of Modified Lapidus Arthrodesis Procedure Using Medial Eminence as an Interpositional Autograft," The Journal of Foot & Ankle Surgery, Vol. 50, 2011, pp. 272–275.	☐
28	FUHRMANN, "Arthrodesis of the First Tarsometatarsal Joint for Correction of the Advanced Splayfoot Accompanied by a Hallux Valgus," Operative Orthopädie und Traumatologie, No. 2, 2005, pp. 195–210.	☐
29	GERARD et al., "The Modified Lapidus Procedure," Orthopedics, Vol. 31, No. 3, March 2008, 7 pages.	☐
30	GIANNOUDIS et al., "Hallux Valgus Correction," Practical Procedures in Elective Orthopaedic Surgery, Pelvis and Lower Extremity, Chapter 38, 2012, 22 pages.	☐
31	GREINER, "The Jargon of Pedal Movements," Foot & Ankle International, Vol. 28, No. 1, January 2007, pp. 109–125.	☐
32	GROVES, "Functional Position Joint Sectioning: Pre-Load Method for Lapidus Arthrodesis," The Podiatry Institute, Update 2015, Chapter 6, 2015, pp. 23–29.	☐
33	HARDY et al., "Observations on Hallux Valgus," The Journal of Bone and Joint Surgery, Vol. 33B, No. 3, August 1951, pp. 376–391.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

34	HOLMES, Jr., "Correction of the Intermetatarsal Angle Component of Hallux Valgus Using Fiberwire-Attached Endobuttons," Revista Internacional de Ciencias Podologicas, Vol. 6, No. 2, 2012, pp. 73–79.	☐
35	Integra, "Integra Large Qwix Positioning and Fixation Screw, Surgical Technique," 2012, 16 pages.	☐
36	KILMARTIN et al., "Combined rotation scarf and Akin osteotomies for hallux valgus: a patient focused 9 year follow up of 50 patients," Journal of Foot and Ankle Research, Vol. 3, No. 2, 2010, 12 pages.	☐
37	LEE et al., "Technique Tip: Lateral Soft-Tissue Release for Correction of Hallux Valgus Through a Medial Incision Using A Dorsal Flap Over the First Metatarsal," Foot & Ankle International, Vol. 28, No. 8, August 2007, pp. 949–951.	☐
38	MOTE et al., "First Metatarsal-Cuneiform Arthrodesis for the Treatment of First Ray Pathology: A Technical Guide," JFAS Techniques Guide, Vol. 48, No. 5, September/October 2009, pp. 593–601.	☐
39	MYERSON, "Cuneiform-Metatarsal Arthrodesis," The Foot and Ankle, Chapter 9, 1997, pp. 107–117.	☐
40	SAMMARCO, "Surgical Strategies: Mau Osteotomy for Correction of Moderate and Severe Hallux Valgus Deformity," Foot & Ankle International, Vol. 28, No. 7, July 2007, pp. 857–864.	☐
41	SCHON et al., "Cuneiform-Metatarsal Arthrodesis for Hallux Valgus," The Foot and Ankle, Second Edition, Chapter 8, 2002, pp. 99–117.	☐
42	SOKOLOFF, "Lapidus Procedure," Textbook of Bunion Surgery, Chapter 15, 1981, pp. 277–287.	☐
43	STAMATIS et al., "Mini Locking Plate as "Medial Buttress" for Oblique Osteotomy for Hallux Valgus," Foot & Ankle International, Vol. 31, No. 10, October 2010, pp. 920–922.	☐
44	STEWART, "Use for BME Speed Nitinol Staple Fixation for the Lapidus Procedure," date unknown, 1 page.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

45	WUKICH et al., "Hypermobility of the First Tarsometatarsal Joint," Foot and Ankle Clinics, Vol. 10, No. 1, March 2005, pp. 157-166.	☐
46	DAYTON et al., "Biwinged Excision for Round Pedal Lesions," The Journal of Foot and Ankle Surgery, Vol. 35, No. 3, 1996, pp. 244-249.	☐
47	DAYTON et al., "Medial Incision Approach to the First Metatarsophalangeal Joint," The Journal of Foot and Ankle Surgery, Vol. 40, No. 6, November/December 2001, pp. 414-417.	☐
48	DAYTON et al., "Reduction of the Intermetatarsal Angle after First Metatarsophalangeal Joint Arthrodesis in Patients with Moderate and Severe Metatarsus Primus Adductus," The Journal of Foot and Ankle Surgery, Vol. 41, No. 5, September/October 2002, pp. 316-319.	☐
49	DAYTON et al., "Use of the Z Osteotomy for Tailor Bunionectomy," The Journal of Foot and Ankle Surgery, Vol. 42, No. 3, May/June 2003, pp. 167-169.	☐
50	DAYTON et al., "Early Weightbearing After First Metatarsophalangeal Joint Arthrodesis: A Retrospective Observational Case Analysis," The Journal of Foot and Ankle Surgery, Vol. 43, No. 3, May/June 2004, pp. 156-159.	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

***EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Robert D. Santrock	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	71212.4.6.USC7	

<p align="center">CERTIFICATION STATEMENT</p> <p>Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):</p> <p>☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).</p> <p>OR</p> <p>☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).</p> <p>☐ See attached certification statement.</p> <p>☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.</p> <p>☒ A certification statement is not submitted herewith.</p> <p align="center">SIGNATURE</p> <p>A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.</p> <table border="1"> <tr> <td>Signature</td> <td>/Paul J. LaVanway, Jr./</td> <td>Date (YYYY-MM-DD)</td> <td>2024-02-26</td> </tr> <tr> <td>Name/Print</td> <td>Paul J. LaVanway, Jr.</td> <td>Registration Number</td> <td>64610</td> </tr> </table> <p>This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.</p>				Signature	/Paul J. LaVanway, Jr./	Date (YYYY-MM-DD)	2024-02-26	Name/Print	Paul J. LaVanway, Jr.	Registration Number	64610
Signature	/Paul J. LaVanway, Jr./	Date (YYYY-MM-DD)	2024-02-26								
Name/Print	Paul J. LaVanway, Jr.	Registration Number	64610								

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.

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

RELATED APPLICATION

[0001] This application is a continuation of US Patent Application Serial No. 18/183,013, filed March 13, 2023, which is a continuation of US Patent Application Serial No. 17/567,879, filed January 3, 2022, now US Patent No. 11,602,387, issued March 14, 2023, which is a continuation of US Patent Application Serial No. 17/353,431, filed June 21, 2021, now US Patent No. 11,213,333, issued January 4, 2022, which is a continuation of US Patent Application Serial No. 16/998,155, filed August 20, 2020, now US Patent No. 11,039,873, issued June 22, 2021, which is a continuation of US Patent Application Serial No. 16/031,855, filed July 10, 2018, now US Patent No. 10,849,670, issued December 1, 2020, which is a continuation of US Patent Application Serial No. 15/452,236, filed March 7, 2017, now US Patent No. 10,045,807, issued August 14, 2018, which is a continuation of US Patent Application Serial No. 14/981,335, filed December 28, 2015, now US Patent No. 9,622,805, issued April 18, 2017, which claims the benefit of US Provisional Application Serial No. 62/205,338, filed August 14, 2015. The entire contents of these applications are hereby incorporated by reference.

TECHNICAL FIELD

[0002] This disclosure relates generally to devices and methods for positioning and/or preparing bones.

BACKGROUND

[0003] Bones, such as the bones of a foot, may be anatomically misaligned. In certain circumstances, surgical intervention is required to correctly align the bones to reduce patient discomfort and improve patient quality of life.

SUMMARY

[0004] Embodiments of the present invention include methods for temporarily fixing an orientation of a bone or bones. In general, the method of positioning a bone includes the steps of moving a bone from an anatomically misaligned position to an anatomically aligned position with respect to another bone and preparing an end of the bone and a facing end of another bone.

In some embodiments, at least one bone end is prepared after the bone is moved into the aligned position. In some embodiments, the bone is anatomically aligned in more than one plane such that the bone both translates and rotates in response to a moving force.

[0005] One embodiment includes a method of correcting a bunion deformity. The method has the steps of moving a first metatarsal from an anatomically misaligned position with respect to a second metatarsal to an anatomically aligned position with respect to the second metatarsal by applying a force to the first metatarsal, the force moving the first metatarsal to correct an alignment in more than one plane. The method can also include preparing an end of the first metatarsal and preparing an opposing end of a medial cuneiform for fusion. Embodiments of the invention also include a bone positioning device and a bone preparation guide, and methods of using such guides.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] The following drawings are illustrative of particular embodiments of the present invention and, therefore, in no way limit the scope of the invention. The drawings are not necessarily to scale (unless otherwise stated) and are intended for use in conjunction with the explanations in the following detailed description. Embodiments of the invention will hereinafter be described with respect to the appended drawings, wherein like numerals denote like elements.

[0007] FIG. 1 is a side perspective view of a bone positioning guide in accordance with an embodiment of the invention.

[0008] FIG. 2 is a side perspective view of a bone engagement member of a bone positioning guide in accordance with an embodiment of the invention.

[0009] FIG. 3A is a side perspective view of a tip of a bone positioning guide in accordance with an embodiment of the invention.

[0010] FIG. 3B is a side view of a bone positioning guide with a straight tip in accordance with an embodiment of the invention.

[0011] FIG. 3C is a side view of a bone positioning guide with a nonlinear tip in accordance with an embodiment of the invention.

[0012] FIG. 4 is an end view of an actuator of a bone positioning guide in accordance with an embodiment of the invention.

[0013] FIG. 5 is a top plan view of a bone preparing guide in accordance with an embodiment of the invention.

[0014] FIG. 6A is a perspective view of a bone preparing guide, a spacer, and a tissue removing instrument location check member in accordance with an embodiment of the invention.

[0015] FIG. 6B is a perspective view of another embodiment of a tissue removing instrument check location member engaged with a bone preparing guide.

[0016] FIG. 7 is a perspective view of a bone preparing guide engaged with a spacer in accordance with an embodiment of the invention.

[0017] FIG. 8 is a perspective view of a bone preparing guide engaged with a tissue removal instrument location check member in accordance with an embodiment of the invention.

[0018] FIG. 9A is a front view of a bone positioning guide on a deformed foot in accordance with an embodiment of the invention.

[0019] FIG. 9B is a front view of a bone positioning guide on a foot with a corrected alignment in accordance with an embodiment of the invention.

[0020] FIG. 10A is a top view of a bone positioning guide on a deformed foot in accordance with an embodiment of the invention.

[0021] FIG. 10B is a top view of a bone positioning guide on a foot with a corrected alignment in accordance with an embodiment of the invention.

[0022] FIGS. 11A-C depict a sequence of a bone positioning operation using a bone positioning guide on a foot at first, second, and third positions in accordance with an embodiment of the invention.

[0023] FIG. 12A is a front view of a foot with a normal first metatarsal position.

[0024] FIG. 12B is a front view of a foot with an isolated first metatarsal rotation bunion deformity.

[0025] FIG. 13A is a top view of a foot with a normal first metatarsal position.

[0026] FIG. 13B is a top view of a foot with an isolated first metatarsal transverse plane bunion deformity.

[0027] FIG. 14A is a side view of a foot with a normal first metatarsal position.

[0028] FIG. 14B is a side view of a foot with an isolated first metatarsal sagittal plane bunion deformity.

[0029] FIG. 15A is a perspective view and an enlarged view of a foot.

[0030] FIG. 15B is a perspective view of a first metatarsal.

[0031] FIG. 16 is a side perspective view of a foot depicting a bone preparation instrument inserted into a joint.

[0032] FIG. 17 is a perspective view of a foot depicting a bone positioning guide on the foot prior to an alignment of a first metatarsal.

[0033] FIG. 18 is a perspective view of a foot depicting a bone positioning guide on the foot after an alignment of a first metatarsal.

[0034] FIG. 19 is a perspective view of a foot depicting a bone positioning guide on the foot after an alignment of a first metatarsal and an insertion of a spacer into a joint space.

[0035] FIG. 20 is a perspective view of a foot depicting a bone positioning guide on the foot after an alignment of a first metatarsal and a positioning of a bone preparation guide.

[0036] FIG. 21A is a perspective view of a foot depicting a bone positioning guide on the foot after an alignment of a first metatarsal and a positioning of a bone preparation guide with pins.

[0037] FIG. 21B is another perspective view of a foot depicting a bone positioning guide on the foot after an alignment of a first metatarsal and a positioning of a bone preparation guide with pins.

[0038] FIG. 22 is a perspective view of a foot depicting a bone preparation instrument preparing a bone of the foot guided by a guide surface of a bone preparation guide.

[0039] FIG. 23 is a perspective view of a foot depicting a bone positioning guide on the foot and a removal of a bone preparation guide.

[0040] FIG. 24 is a perspective view of a foot depicting a bone positioning guide on the foot and pins.

[0041] FIG. 25 is a perspective view of a foot depicting a bone positioning guide on the foot and a compression pin.

[0042] FIG. 26A is a side perspective view of a foot depicting bone plates across a joint between first and second bones and a compression pin in accordance with an embodiment of the invention.

[0043] FIG. 26B is a side perspective view of a foot depicting bone plates across a joint between first and second bones and a compression pin in accordance with an embodiment of the invention.

[0044] FIG. 27 is a side perspective view of a foot depicting bone plates across a joint between first and second bones in accordance with an embodiment of the invention.

[0045] FIG. 28A and FIG. 28B depict examples of anatomically misaligned metatarsals and metatarsals that have been anatomically aligned using methods and/or instruments in accordance with the invention.

[0046] FIG. 29A and FIG. 29B depict examples of anatomically misaligned metatarsals and metatarsals that have been anatomically aligned using methods and/or instruments in accordance with the invention.

[0047] FIG. 30A illustrates a portion of a foot having a bunion caused by a misaligned first metatarsal relative to a second metatarsal.

[0048] FIG. 30B shows an example base compression that can be caused after the foot of FIG. 30A is anatomically aligned.

[0049] FIG. 31 illustrates an example bone positioning operation in which a fulcrum is positioned at an intersection between a first bone and a second bone.

[0050] FIG. 32 is a perspective view of one example fulcrum.

[0051] FIG. 33 illustrates an example system of different sized fulcrums.

[0052] FIG. 34 is a perspective view of another bone positioning guide according to an embodiment of the invention.

[0053] FIG. 35 illustrates an example configuration of a joint spacer that can allow a bone preparation guide to rotate around the spacer.

[0054] FIG. 36A is a perspective view of an example configuration of a bone positioning guide having an opening with circular cross-sectional shape.

[0055] FIG. 36B is a perspective view of the example bone positioning guide of FIG. 36A shown with the joint spacer from FIG. 35 inserted into the guide.

DETAILED DESCRIPTION

[0056] The following detailed description is exemplary in nature and is not intended to limit the scope, applicability, or configuration of the invention in any way. Rather, the following description provides practical illustrations for implementing exemplary embodiments of the present invention. Examples of constructions, materials, and dimensions are provided for selected elements, and all other elements employ that which is known to those of ordinary skill

in the field of the invention. Those skilled in the art will recognize that many of the noted examples have a variety of suitable alternatives.

[0057] Embodiments of the invention include a bone positioning guide and method of positioning bones in a medical procedure. In an exemplary application, embodiments of the bone positioning guide can be useful during a surgical procedure, such as a bone alignment, osteotomy, fusion procedure, and/or other procedures where one or more bones are to be prepared (e.g., cartilage or bone removal and/or cut). Such a procedure can be performed, for example, on bones (e.g., adjacent bones separated by a joint or different portions of a single bone) in the foot or hand, where bones are relatively smaller compared to bones in other parts of the human anatomy. In one example, a procedure utilizing an embodiment of the bone positioning guide can be performed to correct an alignment between a metatarsal (e.g., a first metatarsal) and a second metatarsal and/or a cuneiform (e.g., a medial, or first, cuneiform), such as in a bunion correction surgery. An example of such a procedure is a Lapidus procedure (also known as a first tarsal-metatarsal fusion). In another example, the procedure can be performed by modifying an alignment of a metatarsal (e.g., a first metatarsal). An example of such a procedure is a basilar metatarsal osteotomy procedure.

[0058] FIG. 1 shows a side perspective view of a bone positioning guide 10 in accordance with an embodiment of the invention. The bone positioning guide 10 can be useful for positioning a bone (e.g., orientating and/or translating) during a medical procedure. In some embodiments, the bone positioning guide includes a bone engagement member, a tip, a mechanism to urge the bone engagement member and the tip towards each other (e.g. moving the bone engagement member towards the tip, moving the tip towards the bone engagement member, or moving both simultaneously), and an actuator to actuate the mechanism. When the mechanism is actuated it causes a first bone engaged with the bone engagement member to move to correct an alignment in more than one plane with respect to a second bone in contact with the tip. In some embodiments, the correction in more than one plane includes a correction about an axis in a frontal plane.

[0059] In the embodiment of FIG. 1, bone positioning guide 10 includes a main body member 20 and a shaft 30, and the bone engagement member 40 is connected to the shaft and the tip 50 is connected to the main body member. In general, the main body member 20 can be sized and shaped to clear anatomy or other instrumentation (e.g., pins and guides) while positioned on a

patient. In the embodiment of FIG. 1, the main body member 20 includes a generally C-shaped configuration with a first end 60 and a second end 70. In some embodiments, the main body is sized and configured to engage bones of a human foot. In addition, although bone positioning guide 10 is illustrated as being formed of two components, main body member 20 and shaft 30, the guide can be fabricated from more components (e.g., 3, 4, or more) that are joined together to form the guide.

[0060] A shaft 30 can be movably connected to the main body member 20 proximate its first end 60. In some embodiments, the shaft 30 includes threads 80 that engage with the main body member 20 such that rotation of the shaft translates the shaft with respect to the main body member. In other embodiments, the shaft can slide within the main body member and can be secured thereto at a desired location with a set screw. In yet other embodiments, the shaft can be moved with respect to the main body by a ratchet mechanism. In the embodiment shown, the shaft moves along an axis that intersects the tip 50. In other embodiments, such as that described with respect to FIG. 34, the shaft 30 and/or bone engagement member 40 is offset from tip 50.

[0061] As shown in FIG. 2, embodiments of the bone positioning device can have a bone engagement member 40. In some embodiments, the bone engagement member includes a surface 90 configured to contact a bone, such as a metatarsal or a cuneiform. In the embodiment shown, the surface 90 is concave. Such a surface is adapted to promote surface contact with a generally cylindrical bone, such as a metatarsal. Other embodiments of surface shapes include planar surfaces and V-shaped surfaces. When using a concave or V-shaped bone engagement member 40, the sidewalls of the concavity or V-shaped groove may be symmetrical or asymmetrical. In a symmetrical configuration, the bottom of the concavity or groove can be centered between upwardly extending sidewalls configured to receive a bone. Each sidewall can extend upwardly to the same height and/or at the same slope. In the asymmetrical configuration, one sidewall can have a different configuration than the opposing sidewall. For example, one of the sidewalls may extend upwardly from the bottom of the concavity or groove to a lower height than the opposing sidewall. As another example, one sidewall may extend upwardly at a different angle than the opposing sidewall. The asymmetrical configuration can be useful for applying a force that is biased laterally instead of only being linear toward tip 50.

[0062] In some embodiments, bone engagement member 40 includes a pin or a clamp. Independent of whether bone engagement member 40 includes such pin or clamp, the bone

engagement member can engage an anatomical feature of a bone, such as a ridge (e.g., a medial ridge of a first metatarsal). In such embodiments, the engagement generally prohibits rotational movement of the bone with respect to the bone engagement member. In other embodiments, bone may be allowed to rotate with respect to the bone engagement member.

[0063] In the embodiment shown, the bone engagement member 40 is provided on an end of the shaft 30. In the embodiment of the shaft shown having threads 80, the bone engagement member 40 can be rotatably coupled to the shaft 30. In such embodiments, as the shaft is rotated relative to the main body member the bone engagement member 40 may or may not rotate with respect to the main body member even as it translates with respect to the main body member along with the shaft 30 and rotates with respect to the shaft. The bone engagement member may oscillate about the shaft 30, but generally does not rotate with respect to bone after contact with the bone.

[0064] FIGS. 3A-C depict a tip 50 of bone positioning guide 10, which can be at a second end 70 of the main body member opposite the first end. The tip 50 can be useful for contacting a bone, generally a bone distinct from a bone contacting the bone engagement member. For example, if the bone engagement member is in contact with a first metatarsal, the tip can be in contact with a metatarsal other than the first metatarsal (e.g., the second, third, fourth, or fifth metatarsal). In some embodiments, the tip is tapered to facilitate percutaneous insertion and contact with bone. The tip can also include a textured surface 100, such as serrated, roughened, cross-hatched, knurled, etc., to reduce slippage between the tip and bone. In the embodiment shown, the tip further includes a stop 110 to limit a depth of insertion. The shape of the tip can be configured to stably contact bone. For example, FIG. 3B shows a side view of the bone positioning guide with a generally straight tip 50, while FIG. 3C shows a side view of the bone positioning guide with a nonlinear tip 50 (e.g., a tip that is angled or curved). In some embodiments, the tip is configured to restrict translational movement between it and a bone, but to allow rotational movement between it and the bone.

[0065] As shown in FIG. 4, bone positioning guide 10 can also include an actuator (e.g., a knob or a handle) 120 to actuate the mechanism, in this embodiment associated with the shaft. In the embodiment shown, the actuator can be useful for allowing a user to rotate the shaft with respect to the main body member 20. Also as shown in FIG. 4, the actuator, shaft, and bone engagement member may include a cannulation 130 to allow the placement of a fixation wire (e.g., K-wire) through these components and into contact with or through a bone engaged with the bone

engagement member. For example, the fixation wire can be placed into the bone engaged with bone engagement member 40 to fix the position of the bone engagement member with respect to the bone. In another example, the fixation wire can be placed through the bone in contact with the bone engagement member and into an adjacent bone to maintain a bone position of the bone in contact with the bone engagement member and the adjacent bone.

[0066] In other embodiments, the mechanism to urge the bone engagement member and the tip towards each other can include a tenaculum or tong structure. In such embodiments, the guide can include a first shaft pivotably connected to a second shaft. A first end of each shaft can include an actuator, such as a handle. A second end of the first shaft can include a bone engagement member, as described above. And a second end of the second shaft can include a tip, as described above. In use, the actuator can be actuated (e.g., squeezed together) to move the bone engagement member and the tip closer together to position bone. Other embodiments of this type may include another set of shafts and another pivoting connection such that the bone engagement member and tip translate towards each other when the actuator is actuated.

[0067] In other embodiments, the mechanism to urge the bone engagement member and the tip towards each other can include a rack and pinion structure. In such embodiments, the rack can include a tip, as described above. And the pinion can include a bone engagement member, as described above, and an actuator (e.g., a knob). In use, the actuator can be actuated (e.g., turned about an axis generally perpendicular to a direction of travel) to move the bone engagement member and the tip closer together to position bone.

[0068] Embodiments of the bone positioning guide may include any suitable materials. In certain embodiments, the bone positioning guide is fabricated from a radiolucent material such that it is relatively penetrable by X-rays and other forms of radiation, such as thermoplastics and carbon-fiber materials. Such materials are useful for not obstructing visualization of bones using an imaging device when the bone positioning guide is positioned on bones.

[0069] Embodiments of the bone positioning guide can be useful in operation for temporarily positioning a bone or bones during a medical procedure. Bone positioning can be useful, for instance, to correct an anatomical misalignment of bones and temporarily maintain an anatomically aligned position, such as in a bone alignment and/or fusion procedure. In some embodiments, the bone positioning guide is capable of reducing an angle between the first metatarsal and the second metatarsal from over 10 degrees (e.g., up to about 35 degrees) to about

10 degrees or less (e.g., to about 1-5 degrees), including to negative angles of about -5 degrees. In some embodiments, the bone positioning guide is also capable of rotating the first metatarsal about its long axis with respect to the medial cuneiform from a rotational angle of over 4 degrees to a rotational angle of less than 4 degrees (e.g., to about 0 to 2 degrees).

[0070] In some embodiments, a bone preparation guide may be provided to facilitate the preparation of a bone. The bone preparation guide can be provided with a bone positioning guide, or either device can be provided or used independently. An example of a bone preparation guide 150 is shown in FIG. 5. In some embodiments, the bone preparation guide 150 includes a body 154 defining a first guide surface 160 to define a first preparing plane and a second guide surface 164 to define a second preparing plane. A tissue removing instrument (e.g., a saw, rotary bur, osteotome, etc., not shown) can be aligned with the surfaces to remove tissue (e.g., remove cartilage or bone and/or make cuts to bone). The first and second guide surfaces 160, 164 can be spaced from each other by a distance, (e.g., between about 2 millimeters and about 10 millimeters, such as between about 4 and about 7 millimeters). In the embodiment shown, the first and second guide surfaces are parallel, such that cuts to adjacent bones using the guide surfaces will be generally parallel.

[0071] In some embodiments, as shown in FIG. 5, a first facing surface 166 is positioned adjacent the first guide surface 160 and/or a second facing surface 168 is positioned adjacent the second guide surface 164. In such embodiments, the distance between the first guide surface and the first facing surface defines a first guide slot, and the distance between the second guide surface and the second facing surface defines a second guide slot. Each slot can be sized to receive a tissue removing instrument to prepare the bone ends. The first and second slots may be parallel or skewed. In the illustrated embodiment, the facing surfaces each contain a gap, such that the surface is not a single, continuous surface. In other embodiments, the facing surfaces can be a single, continuous surface lacking any such gap.

[0072] An opening 170 can be defined by the body 154 between the first and second guide surfaces. The opening can be an area between the guide surfaces useful for allowing a practitioner to have a visual path to bones during bone preparation and/or to receive instruments. In the embodiment shown, the opening extends across the body and a distance from a surface 172 opposite of the first facing surface 166 to a surface 174 opposite of the second facing surface 168.

[0073] The embodiment shown also includes a first end 176 extending from the body 154 in a first direction and a second end 178 extending from the body in a second direction. The second direction can be different than the first direction (e.g., an opposite direction). As shown, each of the first end and the second end can include at least one fixation aperture 180 configured to receive a fixation pin (not shown in FIG. 5) to secure the guide to a bone. As shown, such apertures may extend through the end at a vertical or skewed angle relative to a top surface of the guide.

[0074] The bone preparation guide 150 can also include a first adjustable stabilization member 182 engaged with the first end 176. In some embodiments, the bone preparation guide can include a second adjustable stabilization member 184 engaged with the second end 178. Each of the members can be threaded and engage a threaded aperture defined by the ends. The elevation of each end can be adjusted with respect to a bone by adjusting the stabilization member. In some embodiments, as shown, the stabilization members are cannulated such that they can receive a fixation pin.

[0075] As shown in FIGS. 6A and 7, the bone preparation guide can also include a spacer 188 extending downward from the body 154 and configured to be placed into a joint. In some embodiments, the spacer 188 is selectively engageable with the body. The spacer can have a first portion 190 configured to extend into a joint space and a second portion 192 engageable with the body 154. In the embodiment shown, the spacer can be received within opening 170, such that the spacer extends from the body in between the first and second guide surfaces. Such a spacer can be useful for positioning the body at a desired position with respect to a joint and for properly positioning the guide with respect to bones to be cut in more than one plane (e.g., three planes selected from more than one of a frontal plane, a transverse plane, and a sagittal plane). The distance between the spacer and the first guide surface can define a length of tissue removal (e.g., bone or cartilage to be cut) from a first bone, and the distance between the spacer and the second guide surface can define a length of tissue removal (e.g., bone or cartilage to be cut) from a second bone.

[0076] As shown in FIGS. 6A/B and 8, the bone preparation guide can also include a tissue removal location check member 194 engageable with the body 154 and configured to extend to a first bone and a second bone. The tissue removal location check member can have a first portion 196 configured to extend into contact with first and second bones and a second portion 198

engageable with the body. In the embodiments shown in FIGS. 6A and 8, the tissue removal location check member extends from the body at both the first and second guiding surfaces. In other embodiments, such as the embodiment shown in FIG. 6B, separate tissue removal location check members are provided for independent insertion into respective slots of the guide. Accordingly, embodiments of tissue removal location check members are useful for allowing a practitioner to see where a tissue removing instrument guided by the surfaces will contact the bone to be prepared.

[0077] Embodiments of the bone preparation guide can be useful in operation for guiding a preparation of a bone or bones at a targeted anatomy. Bone preparation can be useful, for instance, to facilitate contact between leading edges of adjacent bones, separated by a joint, or different portions of a single bone, separated by a fracture, such as in a bone alignment and/or fusion procedure.

[0078] Embodiments of the present invention also include methods for temporarily fixing an orientation of a bone or bones, for example, prior to or in conjunction with permanently fixing the orientation of the bone or bones. In general, the method of positioning a bone includes the steps of moving a bone from an anatomically misaligned position to an anatomically aligned position with respect to another bone and preparing an end of the moved bone and a facing end of another bone. In some embodiments, the end of at least one of the moved bone and the other bone is prepared after moving the bone into the aligned position. In certain embodiments, the bone is anatomically aligned in more than one plane with respect to another bone by applying a force to one bone at a single location, such that the bone both translates and rotates in response to the force. In certain embodiments, the moving step can be accomplished with a bone positioning device and/or the preparing step can be accomplished with a bone preparation guide, as described herein.

[0079] FIGS. 9A-B depict frontal views of a bone positioning guide 10 on a foot 200 having a first metatarsal 210, a medial cuneiform 220, a second metatarsal 292, and a third metatarsal 294. FIG. 9A depicts a foot 200 with an uncorrected bunion deformity, while FIG. 9B depicts the foot 200 with an alignment corrected by the bone positioning guide 10. Solid line L1 represents the starting location of the bone positioning guide 10 and dotted line L2 represents the finishing location of the bone positioning guide. As shown, as the bone positioning guide 10 is actuated it rotates with the first metatarsal 210 about an axis extending through the frontal plane as it pushes

the first metatarsal 210 laterally in the transverse plane and plantarly in the sagittal plane.

Accordingly, in this example, the position of the first metatarsal 210 is corrected with respect to the second metatarsal 292 generally in three planes by actuating a single bone positioning guide 10 to urge a bone engagement member 40 toward a tip 50. FIG. 10A shows a top view of a foot 200 with an uncorrected bunion deformity, while FIG. 10B shows a top view of the foot 200 with an alignment corrected by the bone positioning guide 10, emphasizing the rotational correction in the frontal plane and the lateral correction in the transverse plane.

[0080] FIGS. 11A-C show three sequential images of a bone positioning guide 10 on a foot 200 positioning a first metatarsal 210 with respect to a second metatarsal 292. FIG. 11A represents the beginning of the procedure, FIG. 11B the middle, and FIG. 11C the end. The orientation of the pins 270 is useful for visualizing the amount of rotation of the first metatarsal 210 in each image. With respect to FIGS. 11A-C, it can be seen the bone positioning guide 10 and the first metatarsal 210 are rotating in the frontal plane in response to actuation of bone positioning guide 10. Further, the angle between the first metatarsal 210 and second metatarsal 292 is reduced, as the space that can be seen between the first and second metatarsals in FIG. 11A is eliminated in FIG. 11C.

[0081] Each of the three potential planes of deformity will now be described in isolation. FIGS. 12A and 12B show frontal plane views of a foot 200. In FIG. 12A, the foot 200 is normal, while in FIG. 12B the foot is depicted with an uncorrected bunion deformity showing an isolated axial rotation of the first metatarsal 210. Solid line L3 indicates the alignment of the first metatarsal 210 relative to ground, while dotted line L4 in FIG. 12B indicates the extent of axial rotation in the frontal plane.

[0082] FIGS. 13A and 13B show transverse plane views of a foot 200. In FIG. 13A, the foot 200 is normal, while in FIG. 13B the foot is depicted with an uncorrected bunion deformity showing an isolated transverse plane first metatarsal 210 deviation. Solid line L5 indicates the alignment of the second metatarsal 292 and solid line L6 indicates the proper alignment of the first metatarsal 210 relative to the second metatarsal 292. The angle between these two lines forms the intermetatarsal angle (IMA). Dotted line L7 in FIG. 13B indicates the extent of transverse deviation.

[0083] FIGS. 14A and 14B show sagittal plane views of a foot 200. In FIG. 14A, the foot 200 is normal, while in FIG. 14B the foot is depicted with an uncorrected bunion deformity showing an

isolated sagittal deviation of the first metatarsal 210. Solid line L8 indicates the proper alignment of the first metatarsal 210, while dotted line L9 in FIG. 14B indicates the extent of sagittal deviation.

[0084] A specific embodiment of a method in accordance with an embodiment of the invention includes the steps of engaging a bone engagement member with a first bone, placing a tip of the bone positioning guide in apposition to a second bone, the second bone being different from the first bone, and moving the bone engagement member with respect to the tip to change the position of the first bone with respect to the second bone in more than one plane. In some embodiments, after alignment, at least one of an end of the first bone and a facing end of a third bone are prepared (e.g., only the end of the first bone or both the end of the first bone and the end of the second bone), optionally using a preparation guide.

[0085] In some embodiments, the method includes the step of mobilizing a joint for a corrective procedure. For example, after creating surgical access to the joint and before moving the bones into an aligned position, tissue can be released to allow a bone, such as a metatarsal, to rotate freely. In some embodiments, obstructing bone may be excised (e.g., a dorsolateral flare of the metatarsal base, a plantar flare of the metatarsal base (sometimes referred to as a plantar condyle), part of an end of a metatarsal facing a cuneiform, or osteophyte) to further promote free rotation by creating relatively flat surfaces with respect to a frontal plane. An example of a dorsolateral flare F on a first metatarsal 210 of a foot 200 is shown in FIG. 15A. An example of a plantar flare PF on a first metatarsal 210 is shown in FIG 15B. FIG. 15B also depicts a medial ridge MR, which, in some embodiments, can be engaged by the bone engaging member of a bone positioning guide.

[0086] Embodiments of methods in accordance with the invention can also include steps performed after preparing the ends of the bones. For example, the ends of the bones may be placed in apposition and optionally compressed together and the position of the bones can be fixed with one or more bone fixation devices (e.g., compressing bone screw, bone plate, bone staple, external fixator, intramedullary implant or nail) prior to a closing of the surgical access to the joint.

[0087] An exemplary method will now be described with respect to FIGS. 16-27 depicting a foot 200 having a first metatarsal 210, a medial cuneiform 220, and a second metatarsal 292. Note, unless otherwise indicated, the steps described need not be carried out in the order described.

[0088] After customary surgical preparation and access, a bone preparation instrument 296 can be inserted into the joint (e.g., first tarsal-metatarsal joint) to release soft tissues and/or excise the plantar flare from the base of the first metatarsal 210, as shown in FIG. 16. Excising the plantar flare may involve cutting plantar flare off the first metatarsal 210 so the face of the first metatarsal is generally planar. This step helps to mobilize the joint to facilitate a deformity correction. In some embodiments, the dorsal-lateral flare of the first metatarsal may also be excised to create space for the deformity correction (e.g., with respect to rotation of the first metatarsal). In certain embodiments, a portion of the metatarsal base facing the medial cuneiform can be removed during this mobilizing step.

[0089] An incision can be made and a tip 50 of a bone positioning guide 10 can be inserted on the lateral side of a metatarsal other than the first metatarsal 210, such as the second metatarsal 292. As shown in FIG. 17, the tip can be positioned proximally at a base of the second metatarsal 292 and a third metatarsal 294 interface. A surface of a bone engagement member 40 can be placed on the proximal portion of the first metatarsal 210. In some embodiments, the bone engagement member engages a medial ridge of the first metatarsal 210. As shown, the body 20 of the positioning guide can be generally perpendicular to the long axis of the second metatarsal 292.

[0090] As depicted in FIG. 18, the actuator 120 can be actuated to extend the shaft 30 to reduce the angle (transverse plane angle between the first metatarsal and the second metatarsal) and rotate the first metatarsal about its axis (frontal plane axial rotation). The first metatarsal 210 can be properly positioned with respect to the medial cuneiform 220 by moving the bone engagement member 40 with respect to the tip 50. In some embodiments, such movement simultaneously pivots the first metatarsal with respect to the cuneiform and rotates the first metatarsal about its longitudinal axis into an anatomically correct position to correct a transverse plane deformity and a frontal plane deformity. In certain embodiments, body 20 rotates in a generally lateral direction during this step. In some embodiments, fixation pins (not shown in FIG. 18) can be inserted into the bones prior to the positioning step (e.g., freehand or using apertures in the guide as a template), and can be used to impart additional force (transverse, sagittal, and/or frontal plane rotational) to the first metatarsal 210, if desired. The bone positioning guide 10 can hold the desired position of the first metatarsal 210 with respect to the second metatarsal 292. After the desired correction is achieved, a fixation wire 298 can be

inserted through a cannulation in the shaft 30 and driven into the first metatarsal 210 and the second metatarsal 292 to hold the corrected position.

[0091] As depicted in FIG. 19, a joint spacer 188 can be positioned within the joint between the first metatarsal and the medial cuneiform.

[0092] As shown in FIG. 20, a bone preparation guide 150 can be placed over the joint spacer 188 and engaged with the joint spacer to set a position and orientation of the bone preparation guide relative to the joint. As shown, the bone preparation guide 150 can be positioned proximal to the bone positioning guide 10 in longitudinal alignment with the long axis of the first metatarsal 210 and the medial cuneiform 220, generally on the dorsal or dorsal-medial surface. In other embodiments, the spacer 188 is positioned after the guide 150 is provisionally placed on the bones. In yet other embodiments, bone preparation guide 150 and joint spacer 188 are placed simultaneously. In still other embodiments, bone preparation guide 150 is placed on the bones without using joint spacer 188 to aid with positioning.

[0093] As depicted in FIGS. 21A and 21B, one or more fixation pins 270 can be inserted into apertures of the bone preparation guide 150 to secure the guide to the first metatarsal 210 and the medial cuneiform 220. As shown, some pins 270 can be inserted at an angle or in a converging orientation to help prevent movement of the bone preparation guide 150 during a tissue removing step. As shown, two of the pins 270, one on the first metatarsal and one on the medial cuneiform, are parallel to allow the bone preparation guide 150 to be removed from the foot without removing all the pins. After insertion of the pins 270, the spacer 188 can optionally be removed in embodiments having a selectively engageable spacer (e.g., a joint spacer 188 that is physically removable from bone preparation guide 150).

[0094] In some embodiments, the location of the intersection of the tissue removing instrument and the bone to be prepared is confirmed before bone preparation. In one embodiment, a tissue removing instrument location check member can be engaged with the preparation guide to visually confirm where a tissue removal instrument will contact the bone. In another embodiment, a tissue removal instrument is engaged with the preparation guide to visually confirm where the instrument will contact the bone. In either embodiment, such visual confirmation can include the use of an imaging device, such as an X-ray. If the position of the preparation guide is correct, additional fixation pins may be inserted through the apertures (e.g., angled apertures) to further fix the position of the preparation guide with respect to the first

metatarsal and the medial cuneiform. In some embodiments, the spacer is reattached prior to further bone preparation steps.

[0095] In some embodiments, the end of the first metatarsal 210 facing the medial cuneiform 220 can be prepared with a tissue removing instrument 296 guided by a guide surface of bone preparation guide 150 (e.g., inserted through a slot defined by a first guide surface and a first facing surface). In some embodiments, the first metatarsal 210 end preparation is done after the alignment of the bones, e.g., by actuating bone positioning guide 10 before preparing the end of first metatarsal 210. In other embodiments, the first metatarsal 210 end preparation is done before the alignment of the bones, e.g., by preparing the end of the first metatarsal 210 before actuating bone positioning guide 10.

[0096] In addition, as shown in FIG. 22, the end of the medial cuneiform 220 facing the first metatarsal 210 can be prepared with the tissue removing instrument 296 guided by a guide surface of bone preparation guide 150 (e.g., inserted through a slot defined by a second guide surface and a second facing surface). In some embodiments, the medial cuneiform 220 end preparation is done after the alignment of the bones. In yet other embodiments, the medial cuneiform 220 end preparation is done before the alignment of the bones. In embodiments that include cutting bone or cartilage, the cuneiform cut and the metatarsal cut can be parallel, conforming cuts. In the specific embodiment shown in FIG. 22, a saw blade can be inserted through a first slot to cut a portion of the medial cuneiform and the saw blade can be inserted through a second slot to cut a portion of the first metatarsal (e.g., in some embodiments the medial cuneiform can be cut before the first metatarsal). Accordingly, in the embodiment shown, the cuts to both the first metatarsal and the medial cuneiform were preformed after the first metatarsal was positioned.

[0097] Any angled/converging pins can be removed and the bone preparation guide 150 can be lifted off the parallel pins 270, as shown in FIG. 23. The parallel pins can be referred to as “reference pins” which can serve as a reference in later steps to ensure that the corrected alignment of the first metatarsal 210 has been maintained. The joint spacer can also be removed before, after, or simultaneously with the bone preparation guide. In some embodiments, the bone positioning guide 10 is also removed from the foot.

[0098] The tissue (e.g., bone or cartilage slices) from the first metatarsal and the medial cuneiform can be removed from the joint site and the joint surfaces can be fenestrated, if desired.

If the bone positioning guide was taken off the foot, it can be put back on, as shown in FIG. 24, before the additional steps discussed below.

[0099] After preparation, the ends of the two bones can be placed in apposition and optionally compressed together by provisionally fixating the joint. For example, the two bones may be placed in apposition by placing the cut end of the first metatarsal 210 in abutment with the cut end of the medial cuneiform 220. In some examples, the cut end of the first metatarsal 210 is placed adjacent to, and optionally in contact with, the cut end of the medial cuneiform 220.

[0100] As shown in FIG. 25, a compression pin, such as a threaded olive pin 300 can be inserted through the first metatarsal 210 and into the medial cuneiform 220 to provide compression and provisional fixation between the first metatarsal and the medial cuneiform. Additional compression pins can be inserted to provide additional stability. As shown, the parallel reference pins should be aligned during this step. In some embodiments, a practitioner checks for alignment of the parallel reference pins prior to insertion of the compression pin, and, if they are not aligned, adjusts the position of the first metatarsal until desired alignment is achieved.

[0101] Although they can be left in place, in some embodiments the parallel reference pins and bone positioning guide can be removed and a bone fixation device (e.g., two bone plates positioned in different planes, as shown) can be applied to stabilize the joint for fusion. FIG. 26A shows a first bone plate 310 positioned on a dorsal-medial side of the first metatarsal and medial cuneiform and a second bone plate 320 positioned on a medial-plantar side of the first metatarsal and the medial cuneiform. In other embodiments, such as the embodiment shown in FIG. 26B, the second bone plate 320 can be a helical bone plate positioned from a medial side of the cuneiform to a plantar side of the first metatarsal across the joint space. The plates can be applied with the insertion of bone screws.

[0102] As shown in FIG. 27, the compression pin can be removed and the incision can be closed.

[0103] FIGS. 28 A/B and 29A/B include examples of anatomically misaligned metatarsals and metatarsals that have been anatomically aligned using methods and/or instruments in accordance with the invention. FIG. 28A shows a left foot pre-operation and post-operation, while FIG. 28B shows a right foot pre-operation and post-operation. As can be seen from a comparison of the pre-operative images to the post-operative images, the patients' intermetatarsal angle (IMA) was significantly reduced. FIGS. 29A and 29B show the correction of an axial rotation in a frontal rotational plane. FIG. 29 A shows a pre-operative image and a post-operative image of a right

foot. Drawings of a metatarsal 210 are also provided to illustrate the rotation. The rotation of the metatarsal can be seen by the position of sesamoid bones 400, which are depicted as having been rotated under the first metatarsal 210 in the post-operative drawing. FIG. 29B shows pre-operative views of a left foot 200 and a right foot 200. Again, by comparing the location of the sesamoid bones 400 with respect to a reference location, such as ground, the planter surface of the foot, and/or a cuneiform, it can be seen this patient's metatarsal is rotated out of alignment.

[0104] Methods in accordance with embodiments of the invention can be useful for temporarily positioning a bone or bones. Bone positioning can be useful, for instance, to correct an anatomical misalignment of bones and temporarily maintain an anatomically aligned position, such as in a bone alignment and/or fusion procedure. In some embodiments, an “anatomically aligned position” means that an angle of a long axis of a first metatarsal relative to a long axis of a second metatarsal is about 10 degrees or less in the transverse plane or sagittal plane. In certain embodiments, anatomical misalignment can be corrected in both the transverse plane and the frontal plane. In the transverse plane, a normal intermetatarsal angle (“IMA”) between a first metatarsal and a second metatarsal is less than about 9 degrees. An IMA of between about 9 degrees and about 13 degrees is considered a mild misalignment of the first metatarsal and the second metatarsal. An IMA of greater than about 16 degrees is considered a severe misalignment of the first metatarsal and the second metatarsal. In some embodiments, methods in accordance with the invention are capable of anatomically aligning the bone(s) by reducing the IMA from over 10 degrees to about 10 degrees or less (e.g., to an IMA of about 1-5 degrees), including to negative angles of about -5 degrees or until interference with the second metatarsal, by positioning the first metatarsal at a different angle with respect to the second metatarsal.

[0105] With respect to the frontal plane, a normal first metatarsal will be positioned such that its crista prominence is generally perpendicular to the ground and/or its sesamoid bones are generally parallel to the ground and positioned under the metatarsal. This position can be defined as a metatarsal rotation of 0 degrees. In a misaligned first metatarsal, the metatarsal is axially rotated between about 4 degrees to about 30 degrees or more. In some embodiments, methods in accordance with the invention are capable of anatomically aligning the metatarsal by reducing the metatarsal rotation from about 4 degrees or more to less than 4 degrees (e.g., to about 0 to 2 degrees) by rotating the metatarsal with respect to the medial cuneiform.

[0106] While various embodiments of bone positioning and preparing guide systems and methods have been described, it should be appreciated that the concepts of the disclosure can be altered in practice, e.g., based on the needs of the clinician, the patient undergoing the bone repositioning procedure, the specific anatomy being treated, and/or the target clinical outcome. As one example, the described systems and techniques may be modified to utilize a fulcrum about which rotation and/or pivoting of one bone relative to another bone occurs via bone positioning guide 10. The fulcrum can establish and/or maintain space between adjacent bones being compressed between bone engagement member 40 and tip 50 of bone positioning guide 10, preventing lateral translation or base shift of the bones during rotation and pivoting.

[0107] FIG. 30A illustrates a portion of a foot having a bunion caused by a misaligned first metatarsal 210 relative to second metatarsal 292. FIG. 30B shows the foot of FIG. 30A after being anatomically aligned to correct the misalignment using bone positioning guide 10. As shown, first metatarsal 210 has been rotated counterclockwise in the frontal plane (from the perspective of a patient, clockwise from the perspective of a frontal observer) and also pivoted in the transverse plane (e.g., such that the angle 350 between the first metatarsal 210 and second metatarsal 292 is reduced). Rotation and pivoting of first metatarsal 210 can cause the base 352 of first metatarsal 210 to shift relative to medial cuneiform 220. In general, it is desirable that the offset 354A between first metatarsal 210 and medial cuneiform 220 be reduced to zero (e.g., such that there is substantially no offset) after rotation and pivoting. As shown in the illustrated application of FIG. 30B, however, the base 352 of first metatarsal 210 abutting medial cuneiform 220 has shifted toward second metatarsal 292. This results in a transverse offset 354B of first metatarsal 210 toward second metatarsal 292, causing base compression between first metatarsal 210 and second metatarsal 292.

[0108] To help avoid the base shift and offset 354B observed in FIG. 30B, a clinician can insert a fulcrum in the notch between first metatarsal 210 and second metatarsal 292 at the base of the metatarsals (e.g., adjacent respective cuneiform) before actuating bone positioning guide 10. The fulcrum can provide a point about which first metatarsal 210 can rotate and/or pivot while helping minimize or avoid base compression between the first metatarsal and the second metatarsal. In addition, use of the fulcrum may cause first metatarsal 210 and medial cuneiform 220 to be better angled relative to the guide slots of bone preparation guide 150 (once installed), providing a better cut angle through the guide slots than without use of the fulcrum. This can

help reduce or eliminate unwanted spring-back, or return positioning, of first metatarsal 210 after removing bone positioning guide 10.

[0109] FIG. 31 illustrates a bone positioning operation in which a fulcrum 356 is positioned at an intersection between a first bone and a second bone, where the first bone is being realigned relative to the second bone. In particular, FIG. 31 illustrates fulcrum 356 being positioned between first metatarsal 210 and second metatarsal 292. Fulcrum 356 may be positioned distally of bone preparation guide 150 between first metatarsal 210 and second metatarsal 292 as shown in FIG. 31 or, in other applications, proximally of the guide (e.g., at the ends of the first and second metatarsals abutting the medial and intermediate cuneiform bones, respectively).

[0110] When used, the clinician can insert fulcrum 356 between first metatarsal 210 and second metatarsal 292 (or other adjacent bones, when not performing a metatarsal realignment) at any time prior to actuating bone positioning guide 10. In different embodiments, fulcrum 356 can be inserted between first metatarsal 210 and second metatarsal 292 before or after inserting joint spacer 188 and/or placing bone preparation guide 150 over the joint being operated upon. In one embodiment, the clinician prepares the joint being operated upon to release soft tissues and/or excise the plantar flare from the base of the first metatarsal 210, as discussed above. Either before or after installing bone positioning guide 10 over adjacent bones, for example with bone engagement member 40 positioned in contact with the medial ridge of the first metatarsal 210 and tip 50 positioned in contact with second metatarsal 292, the clinician inserts fulcrum 356 at the joint between the first metatarsal and the second metatarsal. The clinician can subsequently actuate bone positioning guide 10 (e.g., rotate knob 120). In the case of a left foot as shown in FIG. 31, actuation of bone positioning guide 10 causes the first metatarsal 210 to rotate counterclockwise in the frontal plane (from the perspective of a patient) and also pivot in the transverse plane about the fulcrum. In the case of a right foot (not shown), actuation causes the first metatarsal to rotate clockwise in the frontal plane (from the perspective of a patient) and also pivot in the transverse plane about the fulcrum. Thus, for both feet, actuation of bone positioning guide 10 can supinate the first metatarsal in the frontal plane and pivot the first metatarsal in the transverse plane about fulcrum 356. While use of fulcrum 356 can minimize or eliminate base compression between adjacent bones being operated upon, in other embodiments as discussed above, the described systems and techniques can be implemented without using the fulcrum.

[0111] In instances in which fulcrum 356 is used, any suitable mechanical instrument can be used for the fulcrum. FIG. 32 is a perspective view of one example instrument that can be used as fulcrum 356. In this embodiment, fulcrum 356 has a generally rectangular shape and tapers in thickness along at least a portion of the length from the trailing end 358 to the leading end 360. Fulcrum 356 may be sized sufficiently small so that it does not interfere with placement of bone preparation guide 150 on the joint being worked upon. In some embodiments, the clinician is provided a system containing multiple different size fulcrums and allowed to choose the specific sized fulcrum desired for the specific procedure being performed. FIG. 33 illustrates an example kit or system of different sized fulcrums, labeled with exemplary “width x thickness” sizes, that may be provided to a clinician in such an embodiment. In some examples, fulcrum 356 has a width ranging from 5 millimeters to 15 millimeters (e.g., about 6 millimeters to about 10 millimeters) and a thickness ranging 1 millimeter to 12 millimeters (e.g., about 2 millimeters to about 3 millimeters), although fulcrums with different dimensions can be used. While FIGS. 32 and 33 illustrate one example style of fulcrum, other mechanical instruments providing a fulcrum functionality can be used without departing from the scope of the disclosure. For instance, as alternative examples, a surgical pin or screw driver head may be used as fulcrum 356.

[0112] As discussed above, bone positioning guide 10 can have a variety of different configurations, including a configuration in which bone engagement member 40 is laterally offset from tip 50. FIG. 34 is a perspective view of bone positioning guide 10 showing an example arrangement in which bone engagement member 40 is laterally offset from tip 50. In this embodiment, the first end 60 of main body member 20 is laterally offset from an axis 362 extending through shaft 30 and a geometric center of bone engagement member 40. In particular, in the illustrated configuration, tip 50 is offset laterally in the direction of the cuneiform relative to bone engagement member 40. As a result, when bone positioning guide 10 is actuated, e.g., by rotating knob 120, a moment can be created by the offset tip. This can cause the end of the first metatarsal 210 adjacent the proximal phalange to pivot toward the second metatarsal 292 and close angle 350, e.g., while the opposite end of the first metatarsal adjacent the medial cuneiform pivots away from the second metatarsal. This can also help avoid base compression between the first and second metatarsals.

[0113] As discussed above with respect to FIGS. 19 and 20, a joint spacer 188 can be positioned in a joint between a first metatarsal and a medial cuneiform before placing bone preparation

guide 150 over the joint spacer. Bone preparation guide 150 can have an opening 170 (FIG. 5) sized to receive joint spacer 188. In some examples, opening 170 of bone preparation guide 150 is size and/or shaped indexed to joint spacer 188 such that there is substantially no, or no, relative movement between the guide and spacer (once bone preparation guide 150 is placed over joint spacer 188). This arrangement can ensure that bone preparation guide 150 is positioned precisely at the location where guided by joint spacer 188.

[0114] In practice, once bone preparation guide 150 is placed over joint spacer 188, the guide slots of the bone preparation guide may not be perfectly aligned with the ends of the bones (e.g., first metatarsal 210 and medial cuneiform 220) to be cut through the guide slots. Accordingly, in other configurations, opening 170 of bone preparation guide 150 may not be sized and/or shaped and/or indexed to joint spacer 188. In other words, opening 170 of bone preparation guide 150 may have a different cross-sectional size and/or shape than the cross-sectional size and/or shape of joint spacer 188. In these configurations, bone preparation guide 150 may actuate or rotate about an axis extending through the length of joint spacer 188. As a result, after the clinician places bone preparation guide 150 over joint spacer 188, the clinician may rotate bone preparation guide 150 around joint spacer 188 until the guide slots of the bone preparation guide are better aligned with the ends of the bones to be cut (e.g., first metatarsal 210 and medial cuneiform 220). Depending on the configuration of opening 170 of bone preparation guide 150 and the configuration of joint spacer 188, the guide may rotate freely (e.g., 360 degrees) around the joint seeker or within a bounded angular range (e.g., from plus 20 degrees to minus 20 degrees from a normal position).

[0115] FIG. 35 illustrates one example configuration of a joint spacer 188 that can allow bone preparation guide 150 to rotate around the seeker. As shown in the illustrated example, joint spacer 188 has a proximal portion 370 having a cylindrical cross-section and a distal portion 372 having a rectangular cross-section. A leading edge of the distal portion 372 is insertable into the joint between the first metatarsal 210 and the medial cuneiform 220. Once bone preparation guide 150 is inserted over joint spacer 188, body 154 of the guide (FIG. 5) may be positioned about the proximal portion 370. This can allow the guide to be rotated around the proximal portion.

[0116] In other configurations, opening 170 of bone preparation guide 150 may be size and/or shape indexed to the cross-sectional size and/or shape of joint spacer 188 but still provide

relative rotation between the two components. For example, opening 170 may have a circular cross-section sized and shaped to receive proximal portion 370 of joint spacer 188 from FIG. 35. Because both opening 170 of bone preparation guide 150 and proximal portion 370 of joint spacer 188 have circular cross-sections in such an embodiment, the two components may rotate relative to each other. FIG. 36A is a perspective view of an example configuration of bone preparation guide 150 having an opening 170 with circular cross-sectional shape. FIG. 36B is a perspective view of the example bone preparation guide of FIG. 36A shown with joint spacer 188 from FIG. 35 inserted into the guide.

[0117] In embodiments where bone preparation guide 150 can rotate relative to joint spacer 188, the bone positioning guide and/or joint spacer may include a locking mechanism that is engageable to lock the rotational angle of the bone preparation guide relative to the joint spacer. For example, bone preparation guide 150 may include a set screw with thumb wheel that can be rotated, causing a distal end of the set screw to bear against or retract away from joint spacer 188. In use, a clinician can rotate bone preparation guide 150 around joint spacer 188 until the guide slots of the bone preparation guide are best aligned with the ends of the bones to be cut (e.g., first metatarsal 210 and medial cuneiform 220). The clinician can then engage the locking mechanism to prevent further rotation of bone preparation guide 150 relative to joint spacer 188 before performing further steps of the procedure.

[0118] Embodiments of the invention also include a disposable, sterile kit that includes an embodiment of a bone positioning guide and/or preparation guide described herein. Other components that may be included within the sterile kit include bone fixation devices.

[0119] Thus, embodiments of the invention are disclosed. Although the present invention has been described with reference to certain disclosed embodiments, the disclosed embodiments are presented for purposes of illustration, and not limitation, and other embodiments of the invention are possible. One skilled in the art will appreciate that various changes, adaptations, and modifications may be made without departing from the spirit of the invention.

CLAIMS:

1. A method of correcting a bunion deformity, comprising the steps of:
moving a first metatarsal from an anatomically misaligned position with respect to a second metatarsal to an anatomically aligned position with respect to the second metatarsal by applying a force to the first metatarsal, the force moving the first metatarsal to correct an alignment in more than one plane; and
after moving the first metatarsal into the anatomically aligned position, preparing an end of the first metatarsal and preparing an opposing end of a medial cuneiform for fusion.
2. The method of claim 1, wherein the more than one plane includes any two or more of the frontal plane, transverse plane, and sagittal plane.
3. The method of claim 1, wherein the first metatarsal is rotated in the frontal plane.
4. The method of claim 1, wherein, prior to moving the first metatarsal, further including the step of mobilizing a tarsal-metatarsal joint site by releasing soft tissue or obstructing bone.
5. The method of claim 1, wherein the force is applied by a bone engagement member of a bone positioning device.
6. The method of claim 1, wherein the preparing step includes placing a tissue removing instrument in apposition to a first guide surface of a guide.
7. The method of claim 1, further including the step of placing the prepared end of the medial cuneiform in apposition with the prepared end of the first metatarsal.
8. The method of claim 6, further including the step of fixing the position of the medial cuneiform with respect to the first metatarsal by applying at least one bone fixation device across or through a joint between the apposed prepared ends of the medial cuneiform and the first metatarsal.

9. A method of correcting a bunion deformity, comprising the steps of:

- mobilizing a tarsal-metatarsal joint site by releasing soft tissue or obstructing bone;
- moving, with a bone positioning guide having a bone engagement member engaged with a first metatarsal and a tip contacting a metatarsal other than the first metatarsal, the first metatarsal from an anatomically misaligned position with respect to a second metatarsal to an anatomically aligned position with respect to the second metatarsal by applying a force to the first metatarsal, the force moving the first metatarsal to correct an alignment in more than one plane, including about an axis in a frontal plane;
- preparing an end of the first metatarsal for fusion;
- preparing an opposing end of a medial cuneiform for fusion;
- provisionally fixating a joint between the apposed prepared ends of the medial cuneiform and the first metatarsal; and
- fixing the position of the medial cuneiform with respect to the first metatarsal by applying at least one bone fixation device across or through the joint between the apposed prepared ends of the medial cuneiform and the first metatarsal.

10. The method of claim 9, wherein the end of the first metatarsal is prepared before the first metatarsal is moved into the anatomically aligned position and the end of the medial cuneiform is prepared after the first metatarsal is moved into the anatomically aligned position.

11. The method of claim 9, wherein the end of the first metatarsal is prepared after the first metatarsal is moved into the anatomically aligned position and the end of the medial cuneiform is prepared after the first metatarsal is moved into the anatomically aligned position.

12. The method of claim 9, wherein the end of the first metatarsal is prepared before the first metatarsal is moved into the anatomically aligned position and the end of the medial cuneiform is prepared before the first metatarsal is moved into the anatomically aligned position.

13. The method of claim 9, wherein the end of the first metatarsal is prepared after the first metatarsal is moved into the anatomically aligned position and the end of the medial cuneiform is prepared before the first metatarsal is moved into the anatomically aligned position.

14. The method of claim 9, further comprising, prior to moving the first metatarsal, inserting a fulcrum between the first metatarsal and the second metatarsal, wherein moving the first metatarsal from the anatomically misaligned position to the anatomically aligned position comprises rotating the first metatarsal in the frontal plane and pivoting the first metatarsal in a transverse plane about the fulcrum.

15. A bone positioning guide, comprising:
a bone engagement member;
a tip;
a mechanism to urge the bone engagement member and the tip towards each other; and
an actuator to actuate the mechanism, wherein actuating the mechanism causes a first bone engaged with the bone engagement member to move to correct an alignment of the first bone in more than one plane with respect to a second bone in contact with the tip, including about an axis in a frontal plane.

16. The bone positioning guide of claim 15, wherein the mechanism comprises a main body and a shaft movably connected to the main body proximate a first end of the main body;
wherein the bone engagement member is rotatably coupled to the shaft; and the tip is at a second end of the main body opposite the first end.

17. The bone positioning guide of claim 15, wherein the tip includes a textured surface.

18. The bone positioning guide of claim 15, wherein the tip is tapered.

19. The bone positioning guide of claim 16, wherein the actuator is a knob coupled to the shaft.

20. A bone preparation guide, comprising:

a body with a first guide surface to define a first preparing plane and a second guide surface to define a second preparing plane, the first and second guide surfaces being spaced from each other by a distance, and an opening disposed between the first and second guide surfaces; and

a first end extending from the body in a first direction and a second end extending from the body in a second direction, the second direction being different than the first direction, each of the first end and the second end including a fixation aperture configured to receive a fixation pin.

ABSTRACT

Methods for temporarily fixing an orientation of a bone or bones. Methods of correcting a bunion deformity. Bone positioning devices. Methods of using a bone positioning device. Bone preparation guides. Methods of using a bone preparation guide.

#81532229v1

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Robert D. Santrock	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	71212.4.6.USC7	

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	10470779	B2	2019-11-12	Fallin et al.	
	2	8858602	B2	2014-10-14	Weiner et al.	
	3	8882778	B2	2014-11-11	Ranft	
	4	8882816	B2	2014-11-11	Kartalian et al.	
	5	8900247	B2	2014-12-02	Tseng et al.	
	6	8906026	B2	2014-12-09	Ammann et al.	
	7	D 720456	S	2014-12-30	Dacosta et al.	
	8	8945132	B2	2015-02-03	Plassy et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	9	8998903	B2	2015-04-07	Price et al.	
	10	8998904	B2	2015-04-07	Zeetser et al.	
	11	9023052	B2	2015-05-05	Lietz et al.	
	12	9044250	B2	2015-06-02	Olsen et al.	
	13	9060822	B2	2015-06-23	Lewis et al.	
	14	9089376	B2	2015-07-28	Medoff et al.	
	15	9107715	B2	2015-08-18	Blitz et al.	
	16	9113920	B2	2015-08-25	Ammann et al.	
	17	D 740424	S	2015-10-06	Dacosta et al.	
	18	D 765844	S	2016-09-06	DaCosta	
	19	D 766434	S	2016-09-13	DaCosta	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	20	D 766437	S	2016-09-13	DaCosta	
	21	D 766438	S	2016-09-13	DaCosta	
	22	D 766439	S	2016-09-13	DaCosta	
	23	9522023	B2	2016-11-08	Haddad et al.	
	24	9750538	B2	2017-09-05	Soffiatti et al.	
	25	9785747	B2	2017-10-10	Geebelen	
	26	10028750	B2	2018-07-24	Rose	
	27	10064631	B2	2018-09-04	Dacosta et al.	
	28	10159499	B2	2018-12-25	Dacosta et al.	
	29	10292713	B2	2019-05-21	Fallin et al.	
	30	8888785	B2	2014-11-18	AMMANN et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	31	9101421	B2	2015-08-11	BLACKLIDGE	
	32	10327829	B2	2019-06-25	DACOSTA et al.	
	33	5417694	A	1995-05-23	MARIK et al.	
	34	8080045	B2	2011-12-20	Wotton, III	
	35	10779867	B2	2020-09-22	Penzimer et al.	
	36	4754746	A	1988-07-05	COX	
	37	5586564	A	1996-12-24	BARRETT et al.	
	38	7097647	B2	2006-08-29	SEGLER et al.	
	39	7153310	B2	2006-12-26	RALPH et al.	
	40	9011507	B2	2015-04-21	SCHELLING	

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS

Remove

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20170042598	A1	2017-02-16	Santrock et al.	
	2	20170042599	A1	2017-02-16	Bays et al.	
	3	20170079669	A1	2017-03-23	Bays et al.	
	4	20170143511	A1	2017-05-25	Cachia	
	5	20140276815	A1	2014-09-18	Riccione	
	6	20140276853	A1	2014-09-18	Long et al.	
	7	20140277176	A1	2014-09-18	Buchanan et al.	
	8	20140288562	A1	2014-09-25	Von Zabern et al.	
	9	20140296995	A1	2014-10-02	Reiley et al.	
	10	20140303621	A1	2014-10-09	Gerold et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	11	20140336658	A1	2014-11-13	Luna et al.	
	12	20140343555	A1	2014-11-20	Russi et al.	
	13	20150032168	A1	2015-01-29	Orsak et al.	
	14	20170164989	A1	2017-06-15	WEINER et al.	
	15	20150045839	A1	2015-02-12	DACOSTA et al.	
	16	20150051650	A1	2015-02-19	VERSTREKEN et al.	
	17	20150057667	A1	2015-02-26	Ammann et al.	
	18	20150066094	A1	2015-03-05	Prandi et al.	
	19	20150112446	A1	2015-04-23	Melamed et al.	
	20	20150119944	A1	2015-04-30	Geldwert	
	21	20150142064	A1	2015-05-21	Perez et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	22	20150150608	A1	2015-06-04	Sammarco	
	23	20150182273	A1	2015-07-02	Stemniski et al.	
	24	20150223851	A1	2015-08-13	Hill et al.	
	25	20150245858	A1	2015-09-03	Weiner et al.	
	26	20160015426	A1	2016-01-21	Dayton	
	27	20160022315	A1	2016-01-28	SOFFIATTI et al.	
	28	20160151165	A1	2016-06-02	Fallin et al.	
	29	20160175089	A1	2016-06-23	Fallin et al.	
	30	20160192950	A1	2016-07-07	Dayton et al.	
	31	20160199076	A1	2016-07-14	Fallin et al.	
	32	20160213384	A1	2016-07-28	Fallin et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	33	20160235414	A1	2016-08-18	Hatch et al.	
	34	20160242791	A1	2016-08-25	Fallin et al.	
	35	20160256204	A1	2016-09-08	PATEL et al.	
	36	20160324532	A1	2016-11-10	MONTOYA et al.	
	37	20160354127	A1	2016-12-08	Lundquist et al.	
	38	20020099381	A1	2002-07-25	MARONEY	
	39	20080172054	A1	2008-07-17	CLAYPOOL et al.	
	40	20120330135	A1	2012-12-27	MILLAHN et al.	
	41	20130096563	A1	2013-04-18	MEADE et al.	
	42	20150045801	A1	2015-02-12	AXELSON JR et al.	
	43	20180344334	A1	2018-12-06	KIM et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	44	20130085502	A1	2013-04-04	Harrold	
	45	20050267482	A1	2005-12-01	HYDE JR.	
	46	20120303033	A1	2012-11-29	WEINER et al.	
	47	20130150900	A1	2013-06-13	HADDAD et al.	
	48	20140350561	A1	2014-11-27	DACOSTA et al.	
	49	20160135858	A1	2016-05-19	DACOSTA et al.	
	50	20180132868	A1	2018-05-17	DACOSTA et al.	
	51	20090112212	A1	2009-04-30	MURRAY et al.	
	52	20110264149	A1	2011-10-27	PAPPALARDO et al.	
	53	20170056031	A1	2017-03-02	AWTREY et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. [Add](#)

FOREIGN PATENT DOCUMENTS

[Remove](#)

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	2014511207	JP	A	2014-05-15	Webber		☐
	2	2014521384	JP	A	2014-08-28	Iannotti, et al.		☐
	3	100904142	KR	B1	2009-06-15	Warburton, et al.		☐
	4	2098036	RU	C1	1997-12-10	Skvortsov, et al.		☐
	5	2195892	RU	C2	2003-01-10	Kotel, et al.		☐
	6	2320287	RU	C1	2008-03-27	Ezhov		☐
	7	2321369	RU	C1	2008-04-10	Valiakhmetov, et al.		☐
	8	2321366	RU	C2	2008-04-10	Kotel, et al.		☐
	9	2346663	RU	C2	2009-02-20	Barinov, et al.		☐
	10	2412662	RU	C1	2011-02-27	Zyrjanov, et al.		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	11	1333328	SU	A2	1987-08-30	Nadgertsev, et al.		☐
	12	0166022	WO	A1	2001-09-13	Pinczewski et al.		☐
	13	03075775	WO	A1	2003-09-18	KUPA PRAEZ SMASCHINEN GES M B		☐
	14	2004089227	WO	A2	2004-10-21	KUHN		☐
	15	2008051064	WO	A1	2008-05-02	Jose		☐
	16	2009029798	WO	A1	2009-03-05	ACUMED LLC		☐
	17	2009032101	WO	A2	2009-03-12	Simon		☐
	18	2011037885	WO	A1	2011-03-31	Sand, et al.		☐
	19	2012029008	WO	A1	2012-03-08	Herzog et al.		☐
	20	2013090392	WO	A1	2013-06-20	Sammarco		☐
	21	2013134387	WO	A1	2013-09-12	Elghazaly		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	22	2013169475	WO	A1	2013-11-14	Neal, et al.		☐
	23	2014022055	WO	A1	2014-02-06	O'Connell, et al.		☐
	24	2014020561	WO	A1	2014-02-06	Honiball		☐
	25	2014035991	WO	A1	2014-03-06	Lang		☐
	26	2014085882	WO	A1	2014-06-12	Angeli		☐
	27	2014152535	WO	A1	2014-09-25	Mcginley, et al.		☐
	28	2014152219	WO	A2	2014-09-25	Dacosta, et al.		☐
	29	2014147099	WO	A1	2014-09-25	Claes, et al.		☐
	30	2014177783	WO	A1	2014-11-06	Leemrijse, et al.		☐
	31	2014200017	WO	A1	2014-12-18	Tanji		☐
	32	2015094409	WO	A1	2015-06-25	PARAGON 28, INC.		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	33	2015105880	WO	A1	2015-07-16	Montoya, et al.		☐
	34	2015127515	WO	A2	2015-09-03	Verstreken, et al.		☐
	35	2016134160	WO	A1	2016-08-25	TREACE MEDICAL CONCEPTS INC		☐
	36	200903719	IN	P1	2009-06-08	Hasselman		☐
	37	200904479	IN	P2	2010-05-21	Auger, et al.		☐
	38	140/DELNP/2012	IN	P1	2013-02-01	Johnson, et al.		☐
	39	2004/KOLNP/2013	IN	P2	2013-11-01	Stemniski, et al.		☐
	40	4162380	JP	B2	2008-10-08	Michael, et al.		☐
	41	4796943	JP	B2	2011-10-19	Yoshimura, et al.		☐
	42	5466647	JP	B2	2014-04-09	Fox		☐
	43	5628875	JP	B2	2014-11-19	Matsugaritei, et al.		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

44	2004174265	JP	A	2004-06-24	ZIMMER TEHC INC		☐
45	S635739	JP	A	1988-01-11	KYOCERA CORP		☐
46	3023068	EP	A2	2016-05-25	PARAGON 28 INC		☐
47	756	MD	Z	2014-11-30	CIOBANU et al.		☐
48	2008537498	JP	A	2008-09-18	QUANTUM ORTHOPEDICS		☐
49	103735306	CN	A	2014-04-23	DENG		☐
50	H0531116	JP	A	1993-02-09	HOWMEDICA INC		☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	NAGY et al., "The AO Ulnar Shortening Osteotomy System Indications and Surgical Technique," Journal of Wrist Surgery, Vol. 3, No. 2, 2014, pp. 91-97.	☐
	2	NexFix from Nexa Orthopedics, MetaFix I from Merete Medical, Inc. and The BioPro Lower Extremities from BioPro, found in Foot & Ankle International Journal, Vol. 28, No. 1, January 2007, 4 pages.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

3	ODENBRING et al., "A guide instrument for high tibial osteotomy," Acta Orthopaedica Scandinavica, Vol. 60, No. 4, 1989, pp. 449–451.	☐
4	OKUDA et al., "Postoperative Incomplete Reduction of the Sesamoids as a Risk Factor for Recurrence of Hallux Valgus," The Journal of Bone and Joint Surgery, Vol. 91-A, No. 1, July 2009, pp. 1637-1645.	☐
5	OSHER et al., "Accurate Determination of Relative Metatarsal Protrusion with a Small Intermetatarsal Angle: A Novel Simplified Method," The Journal of Foot & Ankle Surgery, Vol. 53, No. 5, September/October 2014, published online: June 3, 2014, pp. 548-556.	☐
6	OTSUKI et al., "Developing a novel custom cutting guide for curved per-acetabular osteotomy," International Orthopaedics (SICOT), Vol. 37, 2013, pp. 1033–1038.	☐
7	PATEL et al., "Modified Lapidus Arthrodesis: Rate of Nonunion in 227 Cases," The Journal of Foot & Ankle Surgery, Vol. 43, No. 1, January/February 2004, pp. 37-42.	☐
8	"Patient to Patient Precision, Accu-Cut, Osteotomy Guide System," BioPro, Foot & Ankle International Journal, Vol. 23, No. 8, August 2002, 2 pages.	☐
9	PETERS et al., "Flexor Hallucis Longus Tendon Laceration as a Complication of Total Ankle Arthroplasty," Foot & Ankle International, Vol. 34, No. 1, 2013, pp. 148–149.	☐
10	"Prophecy Inbone Preoperative Navigation Guides," Wright Medical Technology, Inc., November 2013, 6 pages.	☐
11	"RAYHACK Ulnar Shortening Generation II Low-Profile Locking System Surgical Technique," Wright Medical Technology, Inc., December 2013, 20 pages.	☐
12	Rx-Fix Mini Rail External Fixator, Wright Medical Technology, Brochure, August 15, 2014, 2 pages.	☐
13	SALTZMAN et al., "Prospective Controlled Trial of STAR Total Ankle Replacement Versus Ankle Fusion: Initial Results," Foot & Ankle International, Vol. 30, No. 7, July 2009, pp. 579–596.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

14	SCANLAN et al. "Technique Tip: Subtalar Joint Fusion Using a Parallel Guide and Double Screw Fixation," The Journal of Foot and Ankle Surgery, Vol. 49, Issue 3, May-June 2010, pp. 305-309, (Abstract Only).	☐
15	SCRANTON JR. et al, "Anatomic Variations in the First Ray: Part I. Anatomic Aspects Related to Bunion Surgery," Clinical Orthopaedics and Related Research, Vol. 151, September 1980, pp. 244-255.	☐
16	SIDDIQUI et al. "Fixation Of Metatarsal Fracture With Bone Plate In A Dromedary Heifer," Open Veterinary Journal, Vol. 3, No. 1, 2013, pp. 17-20.	☐
17	SIDEKICK STEALTH Rearfoot Fixator, Wright Medical Technology, Surgical Technique, December 2, 2013, 20 pages.	☐
18	SIMPSON et al., "Computer-Assisted Distraction Osteogenesis By Ilizarov's Method," International Journal of Medical Robots and Computer Assisted Surgery, Vol. 4, No. 4, December 2008, pp. 310-320, (Abstract Only).	☐
19	Small Bone External Fixation System, Acumed, Surgical Technique, Effective date September 2014, 8 pages.	☐
20	"Smith & Nephew scores a HAT-TRICK with its entry into the high-growth hammer toe repair market," Smith & Nephew, July 31, 2014, 2 pages.	☐
21	Stableloc External Fixation System, Acumed, Product Overview, Effective date September 2015, 4 pages.	☐
22	STAHL et al., "Derotation Of Post-Traumatic Femoral Deformities By Closed Intramedullary Sawing," Injury, Vol. 37, No. 2, February 2006, pp.145-151, (Abstract Only).	☐
23	TALBOT et al., "Assessing Sesamoid Subluxation: How Good is the AP Radiograph?," Foot and Ankle International, Vol. 19, No. 8, August 1998, pp. 547-554.	☐
24	TempFix Spanning the Ankle Joint Half Pin and Transfixing Pin Techniques, Biomet Orthopedics, Surgical Technique, 2012, 16 pages.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

25	TOTH et al., "The Effect of First Ray Shortening in the Development of Metatarsalgia in the Second Through Fourth Rays After Metatarsal Osteotomy," Foot & Ankle International, Vol. 28, No. 1, January 2007, pp. 61-63.	☐
26	TRICOT et al., "3D-corrective osteotomy using surgical guides for posttraumatic distal humeral deformity," Acta Orthopaedica Belgica, Vol. 78, No. 4, 2012, pp. 538-542.	☐
27	VITEK et al., "Die Behandlung des Hallux rigidus mit Cheilektomie und Akin-Moberg-Osteotomie unter Verwendung einer neuen Schnittlehre und eines neuen Schraubensystems," Orthopadische Praxis, Vol. 44, November 2008, pp. 563-566, including English Abstract on page 564.	☐
28	VITEK, "Neue Techniken in der Fußchirurgie Das V-tek-System," ABW Wissenschaftsverlag GmbH, 2009, 11 pages, including English Abstract.	☐
29	WEBER et al., "A Simple System For Navigation Of Bone Alignment Osteotomies Of The Tibia," International Congress Series, Vol. 1268, January 2004, pp. 608-613, (Abstract Only).	☐
30	WEIL et al., "Anatomic Plantar Plate Repair Using the Weil Metatarsal Osteotomy Approach," Foot & Ankle Specialist, Vol. 4, No. 3, 2011, pp. 145-150.	☐
31	WENDL et al., "Navigation in der Knieendoprothetik," OP-Journal, Vol. 17, 2002, pp. 22-27, including English Abstract.	☐
32	WHIPPLE et al., "Zimmer Herbert Whipple Bone Screw System: Surgical Techniques for Fixation of Scaphoid and Other Small Bone Fractures," Zimmer, 2003, 59 pages.	☐
33	YAKACKI et al. "Compression Forces of Internal and External Ankle Fixation Devices with Simulated Bone Resorption," Foot and Ankle International, Vol. 31, No. 1, January 2010, pp. 76-85, (Abstract Only).	☐
34	YASUDA et al., "Proximal Supination Osteotomy of the First Metatarsal for Hallux Valgus," Foot and Ankle International, Vol. 36, No. 6, June 2015, pp. 696-704.	☐
35	DAYTON et al., "Dorsal Suspension Stitch: An Alternative Stabilization After Flexor Tenotomy for Flexible Hammer Digit Syndrome," The Journal of Foot and Ankle Surgery, Vol. 48, No. 5, September/October 2009, pp. 602-605.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

36	DAYTON et al., "The Extended Knee Hemilithotomy Position for Gastrocnemius Recession," The Journal of Foot and Ankle Surgery, Vol. 49, 2010, pp. 214-216.	☐
37	WIENKE et al., "Bone Stimulation For Nonunions: What the Evidence Reveals," Podiatry Today, Vol. 24, No. 9, September 2011, pp. 52-57.	☐
38	DAYTON et al., "Hallux Varus as Complication of Foot Compartment Syndrome," The Journal of Foot and Ankle Surgery, Vol. 50, 2011, pp. 504-506.	☐
39	DAYTON et al., "Measurement of Mid-Calcaneal Length on Plain Radiographs: Reliability of a New Method," Foot and Ankle Specialist, Vol. 4, No. 5, October 2011, pp. 280-283.	☐
40	DAYTON et al., "A User-Friendly Method of Pin Site Management for External Fixators," Foot and Ankle Specialist, September 16, 2011, 4 pages.	☐
41	DAYTON et al., "Effectiveness of a Locking Plate in Preserving Midcalcaneal Length and Positional Outcome after Evans Calcaneal Osteotomy: A Retrospective Pilot Study," The Journal of Foot and Ankle Surgery, Vol. 52, 2013, pp. 710-713.	☐
42	DAYTON et al., "Does Postoperative Showering or Bathing of a Surgical Site Increase the Incidence of Infection? A Systematic Review of the Literature," The Journal of Foot and Ankle Surgery, Vol. 52, 2013, pp. 612-614.	☐
43	DAYTON et al., "Technique for Minimally Invasive Reduction of Calcaneal Fractures Using Small Bilateral External Fixation," The Journal of Foot and Ankle Surgery, Article in Press, 2014, 7 pages.	☐
44	DAYTON et al., "Clarification of the Anatomic Definition of the Bunion Deformity," The Journal of Foot and Ankle Surgery, Vol. 53, 2014, pp. 160-163.	☐
45	DAYTON et al., "Observed Changes in Radiographic Measurements of the First Ray after Frontal Plane Rotation of the First Metatarsal in a Cadaveric Foot Model," The Journal of Foot and Ankle Surgery, Article in Press, 2014, 5 pages.	☐
46	DAYTON et al., "Observed Changes in First Metatarsal and Medial Cuneiform Positions after First Metatarsophalangeal Joint Arthrodesis," The Journal of Foot and Ankle Surgery, Vol. 53, 2014, pp. 32-35.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

47	DAYTON et al., "Reduction of the Intermetatarsal Angle after First Metatarsal Phalangeal Joint Arthrodesis: A Systematic Review," The Journal of Foot and Ankle Surgery, Article in Press, 2014, 4 pages.	☐
48	FEILMEIER et al., "Reduction of Intermetatarsal Angle after First Metatarsophalangeal Joint Arthrodesis in Patients with Hallux Valgus," The Journal of Foot and Ankle Surgery, Vol. 53, 2014, pp. 29-31.	☐
49	DAYTON et al., "Principles of Management of Growth Plate Fractures in the Foot and Ankle," Clinics in Podiatric Medicine and Surgery, Pediatric Foot Deformities, October 2013, 17 pages.	☐
50	DAYTON et al., "Observed Changes in Radiographic Measurements of the First Ray after Frontal and Transverse Plane Rotation of the Hallux: Does the Hallux Drive the Metatarsal in a Bunion Deformity?," The Journal of Foot and Ankle Surgery, Article in Press, 2014, 4 pages.	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

***EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

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

Application Number	
Filing Date	
First Named Inventor	Robert D. Santrock
Art Unit	
Examiner Name	
Attorney Docket Number	71212.4.6.USC7

CERTIFICATION STATEMENT

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

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

OR

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

☐ See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Paul J. LaVanway, Jr./	Date (YYYY-MM-DD)	2024-02-26
Name/Print	Paul J. LaVanway, Jr.	Registration Number	64610

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

Privacy Act Statement

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

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

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

TRANSMITTAL FOR POWER OF ATTORNEY TO ONE OR MORE REGISTERED PRACTITIONERS

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

Application Number	Not Yet Assigned
Filing Date	Filed Herewith
First Named Inventor	Robert D. Santrock
Title	BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS
Art Unit	Not Yet Assigned
Examiner Name	Not Yet Assigned
Attorney Docket Number	71212.4.6.USC7

SIGNATURE of Applicant or Patent Practitioner

Signature	/Paul J. LaVanway, Jr./	Date (Optional)	February 26, 2024
Name	Paul J. LaVanway, Jr.	Registration Number	64610
Title (if Applicant is a juristic entity)	Attorney		
Applicant Name (if Applicant is a juristic entity)	Treace Medical Concepts, Inc.		

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



*Total of 1 forms are submitted.

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

POWER OF ATTORNEY BY APPLICANT

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

Application Number	Filing Date

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

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

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

- ☒ The address associated with the above-mentioned Customer Number
- OR
- ☐ The address associated with Customer Number:
- OR

Firm or Individual Name				
Address				
City	State	Zip		
Country				
Telephone	Email			

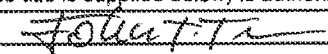
I am the Applicant (if the Applicant is a juristic entity, list the Applicant name in the box):

Treace Medical Concepts, Inc.

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

SIGNATURE of Applicant for Patent

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

Signature		Date (Optional)	10/19/16
Name	John T. Treace		
Title	Chief Executive Officer		

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

☒ Total of 1 forms are submitted.

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

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

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.

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.

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

Title of
Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

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 14/981,335

filed on December 28, 2015

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.

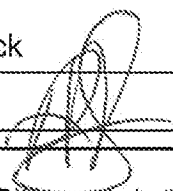
WARNING:

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: Robert D. Santrock

Date (Optional): 1/3/16

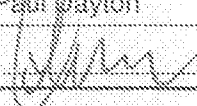
Signature: 

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.

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

Title of Invention	BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS	
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 <u>14/981,335</u>		
filed on <u>December 28, 2015</u>		
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: <u>Paul Dayton</u>		Date (Optional): <u>10/31/14</u>
Signature: 		
Note: An application data sheet (PTO/AIA/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 be (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-0198 and select option 2.

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.

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

Title of
Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

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 14/981,335

filed on December 28, 2015

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.

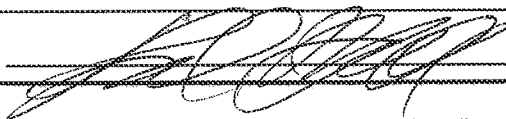
LEGAL NAME OF INVENTOR

Inventor: Daniel J. Hatch

Date (Optional):

9/17/16

Signature:



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.

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

Title of Invention	BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS
--------------------	--

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 14/981,335 filed on December 28, 2015.

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.

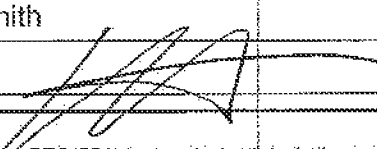
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.

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: W. Bret Smith Date (Optional): _____

Signature: 

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.

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

Title of
Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

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 14/981,335

filed on December 28, 2015

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: F. Barry Bays

Date (Optional): _____

Signature: F. Barry Bays

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-0198 and select option 2.

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

Title of
Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

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 14/981,335

filed on December 28, 2015

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: Carlos Eduardo Gil

Date (Optional): 10/19/16

Signature: _____

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.

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.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)****Title of
Invention****BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS**

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 14/981,335filed on December 28, 2015

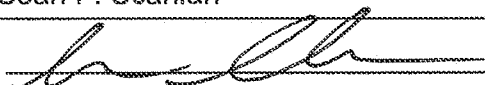
The above-identified application was made or authorized to be made by me.

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 INVENTORInventor: Sean F. ScanlanDate (Optional): 10/18/2016Signature: 

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.

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

Title of
Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

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 14/981,335

filed on December 28, 2015

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.

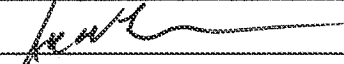
WARNING:

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: Joe William Ferguson

Date (Optional): 10/18/16

Signature: 

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.

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.

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)****Title of
Invention****BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS**

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 14/981,335filed on December 28, 2015

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:

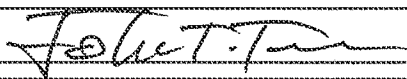
Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization 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 INVENTORInventor: John T. Treace

Date (Optional):

10/19/16

Signature:



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.

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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Robert D. Santrock	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	71212.4.6.USC7	

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	3664022	A	1972-05-23	SMALL	
	2	4069824	A	1978-01-24	WEINSTOCK	
	3	4159716	A	1979-07-03	BORCHERS	
	4	4187840	A	1980-02-12	Watanabe	
	5	4335715	A	1982-06-22	Kirkley	
	6	4338927	A	1982-07-13	Volkov et al.	
	7	4349018	A	1982-09-14	Chambers	
	8	4409973	A	1983-10-18	Neufeld	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	9	4440168	A	1984-04-03	Warren	
	10	4501268	A	1985-02-26	Comparetto	
	11	4502474	A	1985-03-05	COMPARETTO	
	12	4509511	A	1985-04-09	Neufeld	
	13	4565191	A	1986-01-21	Slocum	
	14	4570624	A	1986-02-18	Wu	
	15	4627425	A	1986-12-09	Reese	
	16	4628919	A	1986-12-16	Clyburn	
	17	4632102	A	1986-12-30	COMPARETTO	
	18	4664102	A	1987-05-12	Comparetto	
	19	4708133	A	1987-11-24	Comparetto	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	20	4736737	A	1988-04-12	FARGIE et al.	
	21	4750481	A	1988-06-14	Reese	
	22	4757810	A	1988-07-19	Reese	
	23	4895141	A	1990-01-23	KOENEMAN et al.	
	24	4952214	A	1990-08-28	Comparetto	
	25	4959066	A	1990-09-25	DUNN et al.	
	26	4978347	A	1990-12-18	ILIZAROV	
	27	4988349	A	1991-01-29	PENNIG	
	28	4995875	A	1991-02-26	Coes	
	29	5021056	A	1991-06-04	Hofmann et al.	
	30	5035698	A	1991-07-30	Comparetto	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	31	5042983	A	1991-08-27	Rayhack	
	32	5049149	A	1991-09-17	Schmidt	
	33	5053039	A	1991-10-01	Hofmann et al.	
	34	5078719	A	1992-01-07	Schreiber	
	35	5112334	A	1992-05-12	Alchermes et al.	
	36	5147364	A	1992-09-15	Comparetto	
	37	5176685	A	1993-01-05	Rayhack	
	38	5207676	A	1993-05-04	Canadell et al.	
	39	5246444	A	1993-09-21	Schreiber	
	40	5254119	A	1993-10-19	SCHREIBER	
	41	5312412	A	1994-05-17	WHIPPLE	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	42	5358504	A	1994-10-25	Paley et al.	
	43	5364402	A	1994-11-15	Mumme et al.	
	44	5374271	A	1994-12-20	HWANG	
	45	5413579	A	1995-05-09	DU TOIT	
	46	H001706	H	1998-01-06	Mason	
	47	5449360	A	1995-09-12	SCHREIBER	
	48	5470335	A	1995-11-28	DU TOIT	
	49	5490854	A	1996-02-13	Fisher et al.	
	50	5529075	A	1996-06-25	CLARK	
	51	5540695	A	1996-07-30	LEVY	
	52	5578038	A	1996-11-26	Slocum	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	53	5601565	A	1997-02-11	Huebner	
	54	5613969	A	1997-03-25	JENKINS JR	
	55	5620448	A	1997-04-15	PUDDU	
	56	5620442	A	1997-04-15	BAILEY et al.	
	57	5643270	A	1997-07-01	Combs	
	58	5667510	A	1997-09-16	COMBS	
	59	5722978	A	1998-03-03	Jenkins	
	60	5749875	A	1998-05-12	PUDDU	
	61	5779709	A	1998-07-14	Harris et al.	
	62	5788695	A	1998-08-04	RICHARDSON	
	63	5803924	A	1998-09-08	Oni et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	64	5810822	A	1998-09-22	MORTIER	
	65	5843085	A	1998-12-01	Graser	
	66	5893553	A	1999-04-13	PINKOUS	
	67	5911724	A	1999-06-15	Wehrli	
	68	5935128	A	1999-08-10	Carter et al.	
	69	5941877	A	1999-08-24	Viegas et al.	
	70	5951556	A	1999-09-14	FACCIOLI et al.	
	71	5980526	A	1999-11-09	Johnson et al.	
	72	5984931	A	1999-11-16	GREENFIELD	
	73	6007535	A	1999-12-28	RAYHACK et al.	
	74	6027504	A	2000-02-22	MCGUIRE	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	75	6030391	A	2000-02-29	Brainard et al.	
	76	6162223	A	2000-12-19	Orsak et al.	
	77	6171309	B1	2001-01-09	Huebner	
	78	6203545	B1	2001-03-20	Stoffella	
	79	6248109	B1	2001-06-19	Stoffella	
	80	6391031	B1	2002-05-21	Toomey	
	81	6478799	B1	2002-11-12	Williamson	
	82	6511481	B2	2003-01-28	von Hoffmann et al.	
	83	6547793	B1	2003-04-15	McGuire	
	84	6676662	B1	2004-01-13	Bagga et al.	
	85	6719773	B1	2004-04-13	Boucher et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	86	6743233	B1	2004-06-01	Baldwin et al.	
	87	6755838	B2	2004-06-29	Trnka	
	88	6796986	B2	2004-09-28	Duffner	
	89	6859661	B2	2005-02-22	Tuke	
	90	7018383	B2	2006-03-28	McGuire	
	91	7033361	B2	2006-04-25	Collazo	
	92	7112204	B2	2006-09-26	Justin et al.	
	93	7182766	B1	2007-02-27	Mogul	
	94	7241298	B2	2007-07-10	Nemec et al.	
	95	7282054	B2	2007-10-16	Steffensmeier et al.	
	96	7377924	B2	2008-05-27	Raistrick et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	97	7465303	B2	2008-12-16	Riccione et al.	
	98	7540874	B2	2009-06-02	Trumble et al.	
	99	7572258	B2	2009-08-11	Stiernborg	
	100	7641660	B2	2010-01-05	Lakin et al.	
	101	D 610257	S	2010-02-16	Horton	
	102	7686811	B2	2010-03-30	Byrd et al.	
	103	7691108	B2	2010-04-06	Lavallee	
	104	7763026	B2	2010-07-27	Egger et al.	
	105	D 629900	S	2010-12-28	Fisher	
	106	7967823	B2	2011-06-28	Ammann et al.	
	107	7972338	B2	2011-07-05	O'Brien	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	108	D 646389	S	2011-10-04	Claypool et al.	
	109	8057478	B2	2011-11-15	Kuczynski et al.	
	110	8062301	B2	2011-11-22	Ammann et al.	
	111	8080010	B2	2011-12-20	Schulz et al.	
	112	8083746	B2	2011-12-27	Novak	
	113	D 651316	S	2011-12-27	May et al.	
	114	D 651315	S	2011-12-27	Bertoni et al.	
	115	8123753	B2	2012-02-28	Poncet	
	116	8137406	B2	2012-03-20	Novak et al.	
	117	8147530	B2	2012-04-03	Strnad et al.	
	118	8167918	B2	2012-05-01	Strnad et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	119	8172848	B2	2012-05-08	Tomko et al.	
	120	8192441	B2	2012-06-05	Collazo	
	121	8197487	B2	2012-06-12	Poncet et al.	
	122	8231663	B2	2012-07-31	Kay et al.	
	123	8231623	B1	2012-07-31	Jordan	
	124	8236000	B2	2012-08-07	Ammann et al.	
	125	8246561	B1	2012-08-21	Agee et al.	
	126	D 666721	S	2012-09-04	Wright et al.	
	127	8262664	B2	2012-09-11	Justin et al.	
	128	8277459	B2	2012-10-02	Sand et al.	
	129	8282645	B2	2012-10-09	Lawrence et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	130	8282644	B2	2012-10-09	Edwards	
	131	8292966	B2	2012-10-23	Morton	
	132	8303596	B2	2012-11-06	Plassky et al.	
	133	8313492	B2	2012-11-20	Wong et al.	
	134	8323289	B2	2012-12-04	Re	
	135	8337503	B2	2012-12-25	Lian	
	136	8343159	B2	2013-01-01	Bennett	
	137	8377105	B2	2013-02-19	Buescher	
	138	8409209	B2	2013-04-02	Ammann et al.	
	139	D 679395	S	2013-04-02	Wright et al.	
	140	8435246	B2	2013-05-07	Fisher et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	141	8475462	B2	2013-07-02	Thomas et al.	
	142	8496662	B2	2013-07-30	Novak et al.	
	143	8523870	B2	2013-09-03	Green, II et al.	
	144	8529571	B2	2013-09-10	Horan et al.	
	145	8540777	B2	2013-09-24	Ammann et al.	
	146	8545508	B2	2013-10-01	Collazo	
	147	D 694884	S	2013-12-03	Mooradian et al.	
	148	D 695402	S	2013-12-10	Dacosta et al.	
	149	8652142	B2	2014-02-18	Geissler	
	150	8657820	B2	2014-02-25	Kubiak et al.	
	151	8672945	B2	2014-03-18	Lavallee et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	152	D 701303	S	2014-03-18	Cook	
	153	8696716	B2	2014-04-15	Kartalian et al.	
	154	8702715	B2	2014-04-22	Ammann et al.	
	155	8715363	B2	2014-05-06	Ratron et al.	
	156	8728084	B2	2014-05-20	Berelsman et al.	
	157	D 705929	S	2014-05-27	Frey	
	158	8758354	B2	2014-06-24	Habegger et al.	
	159	8764763	B2	2014-07-01	Wong et al.	
	160	8764760	B2	2014-07-01	Metzger et al.	
	161	8771279	B2	2014-07-08	Philippon et al.	
	162	8777948	B2	2014-07-15	Bernsteiner	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	163	8784457	B2	2014-07-22	Graham	
	164	8784427	B2	2014-07-22	Fallin et al.	
	165	8795286	B2	2014-08-05	Sand et al.	
	166	8801727	B2	2014-08-12	Chan et al.	
	167	8808303	B2	2014-08-19	Stemniski et al.	
	168	8828012	B2	2014-09-09	May et al.	
	169	11304705	B2	2022-04-19	FALLIN et al.	
	170	10376268	B2	2019-08-13	FALLIN et al.	
	171	9980760	B2	2018-05-29	DACOSTA et al.	
	172	9452057	B2	2016-09-27	DACOSTA et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS

Remove

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20140249537	A1	2014-09-04	WONG et al.	
	2	20020107519	A1	2002-08-08	Dixon et al.	
	3	20020165552	A1	2002-11-07	Duffner	
	4	20020198531	A1	2002-12-26	Millard et al.	
	5	20040010259	A1	2004-01-15	Keller et al.	
	6	20040039394	A1	2004-02-26	Conti et al.	
	7	20040097946	A1	2004-05-20	Dietzel et al.	
	8	20040138669	A1	2004-07-15	Horn	
	9	20050004676	A1	2005-01-06	Schon et al.	
	10	20050059978	A1	2005-03-17	Sherry et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	11	20050070909	A1	2005-03-31	Egger et al.	
	12	20050075641	A1	2005-04-07	Singhatat et al.	
	13	20050101961	A1	2005-05-12	Huebner et al.	
	14	20050149042	A1	2005-07-07	Metzger	
	15	20050228389	A1	2005-10-13	Stiernborg	
	16	20050251147	A1	2005-11-10	Novak	
	17	20050273112	A1	2005-12-08	McNamara	
	18	20060129163	A1	2006-06-15	McGuire	
	19	20060206044	A1	2006-09-14	Simon	
	20	20060217733	A1	2006-09-28	Plassky et al.	
	21	20060229621	A1	2006-10-12	Cadmus	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	22	20060241608	A1	2006-10-26	Myerson et al.	
	23	20060241607	A1	2006-10-26	Myerson et al.	
	24	20060264961	A1	2006-11-23	Murray-Brown	
	25	20070010818	A1	2007-01-11	Stone et al.	
	26	20070123857	A1	2007-05-31	Deffenbaugh et al.	
	27	20070233138	A1	2007-10-04	Figueroa et al.	
	28	20070265634	A1	2007-11-15	WEINSTEIN	
	29	20070276383	A1	2007-11-29	Rayhack	
	30	20080009863	A1	2008-01-10	Bond et al.	
	31	20080015603	A1	2008-01-17	Collazo	
	32	20080039850	A1	2008-02-14	Rowley et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	33	20080091197	A1	2008-04-17	Coughlin	
	34	20080140081	A1	2008-06-12	Heavener et al.	
	35	20080147073	A1	2008-06-19	Ammann et al.	
	36	20140257509	A1	2014-09-11	Dacosta et al.	
	37	20080195215	A1	2008-08-14	Morton	
	38	20080208252	A1	2008-08-28	Holmes	
	39	20080262500	A1	2008-10-23	Collazo	
	40	20080269908	A1	2008-10-30	Warburton	
	41	20080288004	A1	2008-11-20	Schendel	
	42	20090036931	A1	2009-02-05	Pech et al.	
	43	20090036893	A1	2009-02-05	Kartalian et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	44	20090054899	A1	2009-02-26	Ammann et al.	
	45	20090093849	A1	2009-04-09	Grabowski	
	46	20090105767	A1	2009-04-23	Reiley	
	47	20090118733	A1	2009-05-07	Orsak et al.	
	48	20090198279	A1	2009-08-06	Zhang et al.	
	49	20090198244	A1	2009-08-06	Leibel	
	50	20090222047	A1	2009-09-03	Graham	
	51	20090254126	A1	2009-10-08	Orbay et al.	
	52	20090254092	A1	2009-10-08	ALBIOL LLORACH	
	53	20090287309	A1	2009-11-19	Walch et al.	
	54	20100069910	A1	2010-03-18	Hasselman	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	55	20100121334	A1	2010-05-13	Couture et al.	
	56	20100130981	A1	2010-05-27	Richards	
	57	20100152782	A1	2010-06-17	Stone et al.	
	58	20100168799	A1	2010-07-01	Schumer	
	59	20100185245	A1	2010-07-22	Paul et al.	
	60	20100249779	A1	2010-09-30	Hotchkiss et al.	
	61	20100256687	A1	2010-10-07	Neufeld et al.	
	62	20100318088	A1	2010-12-16	Warne et al.	
	63	20100324556	A1	2010-12-23	Tyber et al.	
	64	20110009865	A1	2011-01-13	Orfaly	
	65	20110093084	A1	2011-04-21	Morton	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	66	20110118739	A1	2011-05-19	Tyber et al.	
	67	20110178524	A1	2011-07-21	Lawrence et al.	
	68	20110245835	A1	2011-10-06	Dodds et al.	
	69	20110288550	A1	2011-11-24	Orbay et al.	
	70	20110301648	A1	2011-12-08	Lofthouse et al.	
	71	20120016426	A1	2012-01-19	Robinson	
	72	20120065689	A1	2012-03-15	Prasad et al.	
	73	20120078258	A1	2012-03-29	Lo et al.	
	74	20120123484	A1	2012-05-17	Lietz et al.	
	75	20120123420	A1	2012-05-17	Honiball	
	76	20120130383	A1	2012-05-24	Budoff	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	77	20120130382	A1	2012-05-24	Iannotti et al.	
	78	20120130376	A1	2012-05-24	Loring et al.	
	79	20120185056	A1	2012-07-19	Warburton	
	80	20120184961	A1	2012-07-19	Johannaber	
	81	20120191199	A1	2012-07-26	Raemisch	
	82	20120239045	A1	2012-09-20	Li	
	83	20120253350	A1	2012-10-04	ANTHONY et al.	
	84	20120265301	A1	2012-10-18	Demers et al.	
	85	20120277745	A1	2012-11-01	LIZEE	
	86	20140257308	A1	2014-09-11	Johannaber	
	87	20130012949	A1	2013-01-10	Fallin et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	88	20130035694	A1	2013-02-07	Grimm et al.	
	89	20130085499	A1	2013-04-04	Lian	
	90	20140277214	A1	2014-09-18	Helenbolt et al.	
	91	20130131821	A1	2013-05-23	Cachia	
	92	20130150903	A1	2013-06-13	Vincent	
	93	20130158556	A1	2013-06-20	Jones et al.	
	94	20130165938	A1	2013-06-27	Chow et al.	
	95	20130165936	A1	2013-06-27	MYERS	
	96	20130172942	A1	2013-07-04	LEWIS et al.	
	97	20130184714	A1	2013-07-18	Kaneyama et al.	
	98	20130190766	A1	2013-07-25	Harris et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	99	20130190765	A1	2013-07-25	Harris et al.	
	100	20130204259	A1	2013-08-08	Zajac	
	101	20130226252	A1	2013-08-29	Mayer	
	102	20130226248	A1	2013-08-29	Hatch et al.	
	103	20130231668	A1	2013-09-05	Olsen et al.	
	104	20130237989	A1	2013-09-12	Bonutti	
	105	20130237987	A1	2013-09-12	Graham	
	106	20130267956	A1	2013-10-10	Terrill et al.	
	107	20130310836	A1	2013-11-21	Raub et al.	
	108	20130325076	A1	2013-12-05	Palmer et al.	
	109	20130325019	A1	2013-12-05	Thomas et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	110	20130331845	A1	2013-12-12	HORAN et al.	
	111	20130338785	A1	2013-12-19	Wong	
	112	20140005672	A1	2014-01-02	Edwards et al.	
	113	20140025127	A1	2014-01-23	Richter	
	114	20140039561	A1	2014-02-06	Weiner et al.	
	115	20140039501	A1	2014-02-06	Schickendantz et al.	
	116	20140046387	A1	2014-02-13	Waizenegger	
	117	20140074101	A1	2014-03-13	Collazo	
	118	20140074099	A1	2014-03-13	Vigneron et al.	
	119	20140094924	A1	2014-04-03	Hacking et al.	
	120	20140094861	A1	2014-04-03	Fallin	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	121	20140135775	A1	2014-05-15	MAXSON et al.	
	122	20140163563	A1	2014-06-12	Reynolds et al.	
	123	20140171953	A1	2014-06-19	GONZALVEZ et al.	
	124	20140180342	A1	2014-06-26	Lowery et al.	
	125	20140188139	A1	2014-07-03	Fallin et al.	
	126	20140194999	A1	2014-07-10	ORBAY et al.	
	127	20140194884	A1	2014-07-10	Martin et al.	
	128	20140207144	A1	2014-07-24	LEE et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	2009227957	AU	B2	2014-07-10	Boutin, et al.		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	2	2491824	CA	A1	2005-09-08	Grimm, et al.		☐
	3	2854997	CA	A1	2013-05-16	Leslie, et al.		☐
	4	695846	CH	A5	2006-09-29	Roland, et al.		☐
	5	2930668	CN	Y	2007-08-08	Lin		☐
	6	201558162	CN	U	2010-08-25	Xiaojian, et al.		☐
	7	201572172	CN	U	2010-09-08	Xiaojian, et al.		☐
	8	201586060	CN	U	2010-09-22	Xiaojian, et al.		☐
	9	201912210	CN	U	2011-08-03	Xing, et al.		☐
	10	101237835	CN	B	2012-11-07	ARTHREX INC.		☐
	11	202801773	CN	U	2013-03-20	Tang, et al.		☐
	12	103462675	CN	A	2013-12-25	Tang, et al.		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	13	103505276	CN	A	2014-01-15	Wang, et al.		☐
	14	203458450	CN	U	2014-03-05	Wang, et al.		☐
	15	203576647	CN	U	2014-05-07	Huang, et al.		☐
	16	102860860	CN	B	2014-05-21	Xia, et al.		☐
	17	104490460	CN	A	2015-04-08	Xu		☐
	18	104510523	CN	A	2015-04-15	Xu		☐
	19	104523327	CN	A	2015-04-22	Ma, et al.		☐
	20	104546102	CN	A	2015-04-29	Ma, et al.		☐
	21	204379413	CN	U	2015-06-10	Xu		☐
	22	204410951	CN	U	2015-06-24	Xu		☐
	23	204428145	CN	U	2015-07-01	Xu		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	24	204428144	CN	U	2015-07-01	Xu		☐
	25	204428143	CN	U	2015-07-01	Xu		☐
	26	204446081	CN	U	2015-07-08	Ma, et al.		☐
	27	202006010241	DE	U1	2007-03-29	RHEE		☐
	28	102007053058	DE	B3	2009-04-09	NORMED MEDIZIN TECHNIK VERTRIE		☐
	29	4134243	JP	B2	2008-08-20	Nishiyama, et al.		☐
	30	685206	EP	B1	2000-09-06	Ellis		☐
	31	1508316	EP	B1	2007-05-16	DEPUY FRANCE		☐
	32	1897509	EP	B1	2009-07-08	Arnould		☐
	33	2124772	EP	A1	2009-12-02	Richards		☐
	34	2124832	EP	B1	2012-08-08	Collins, et al.		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

35	2632349	EP	A1	2013-09-04	Iannotti, et al.		☐
36	2665428	EP	A1	2013-11-27	Johannaber		☐
37	2742878	EP	A1	2014-06-18	Reynolds, et al.		☐
38	2750617	EP	A1	2014-07-09	Gaudin		☐
39	2849684	EP	A1	2015-03-25	Neal, et al.		☐
40	2624764	EP	B1	2015-12-30	CERAMTEC GMBH		☐
41	2362616	FR	A1	1978-03-24	Duyck		☐
42	2764183	FR	B1	1999-11-05	Afriat, et al.		☐
43	2953120	FR	B1	2012-01-20	HECHARD		☐
44	3030221	FR	A1	2016-06-24	Boniface et al.		☐
45	2154144	GB	A	1985-09-04	De Bastiani, et al.		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	46	2154143	GB	A	1985-09-04	De Bastiani, et al.		☐
	47	2334214	GB	B	2003-01-22	STANLEY		☐
	48	2006158972	JP	A	2006-06-22	DEPUY PRODUCTS INC		☐
	49	2011092405	JP	A	2011-05-12	Sato		☐
	50	2011523889	JP	A	2011-08-25	Saravuaia, et al.		☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	"Accu-Cut Osteotomy Guide System," BioPro, Brochure, October 2018, 2 pages.	☐
	2	"Acumed Osteotomiesystem Operationstechnik," Acumed, 2014, 19 pages (including 3 pages English translation).	☐
	3	ALBANO et al., "Biomechanical Study of Transcortical or Transtrabecular Bone Fixation of Patellar Tendon Graft with Bioabsorbable Pins in ACL Reconstruction in Sheep," Revista Brasileira de Ortopedia (Rev Bras Ortop.) Vol. 47, No. 1, 2012, pp. 43-49.	☐
	4	ALVINE et al., "Peg and Dowel Fusion of the Proximal Interphalangeal Joint," Foot & Ankle, Vol. 1, No. 2, 1980, pp. 90-94.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

5	ANDERSON et al., "Uncemented STAR Total Ankle Prostheses," The Journal of Bone and Joint Surgery, Vol. 86(1, Suppl 2), September 2004, pp. 103-111, (Abstract Only).	☐
6	BEDNARZ et al., "Modified Lapidus Procedure for the Treatment of Hypermobility Hallux Valgus," Foot & Ankle International, Vol. 21, No. 10, October 2000, pp. 816-821.	☐
7	BLOMER, "Knieendoprothetik – Herstellerische Probleme und technologische Entwicklungen," Orthopade, Vol. 29, 2000, pp. 688-696, including English Abstract on page 689.	☐
8	BOUAICHA et al., "Fixation of Maximal Shift Scarf Osteotomy with Inside-Out Plating: Technique Tip," Foot & Ankle International, Vol. 32, No. 5, May 2011, pp. 567-569.	☐
9	CARR et al., "Correctional Osteotomy for Metatarsus Primus Varus and Hallux Valgus," The Journal of Bone and Joint Surgery, Vol. 50-A, No. 7, October 1968, pp. 1353-1367.	☐
10	COETZEE et al., "The Lapidus Procedure: A Prospective Cohort Outcome Study," Foot & Ankle International, Vol. 25, No. 8, August 2004, pp. 526-531.	☐
11	DAYTON et al., "Is Our Current Paradigm for Evaluation and Management of the Bunion Deformity Flawed? A Discussion of Procedure Philosophy Relative to Anatomy," The Journal of Foot and Ankle Surgery, Vol. 54, 2015, pp. 102-111.	☐
12	DAYTON et al., "Observed Changes in Radiographic Measurements of the First Ray after Frontal and Transverse Plane Rotation of the Hallux: Does the Hallux Drive the Metatarsal in a Bunion Deformity?," The Journal of Foot and Ankle Surgery, Vol. 53, 2014, pp. 584-587.	☐
13	DAYTON et al., "Relationship Of Frontal Plane Rotation Of First Metatarsal To Proximal Articular Set Angle And Hallux Alignment In Patients Undergoing Tarsometatarsal Arthrodesis For Hallux Abducto Valgus: A Case Series And Critical Review Of The Literature," The Journal of Foot and Ankle Surgery, Vol. 52, No. 3, May/June 2013, pp. 348-354.	☐
14	DAYTON et al., "Quantitative Analysis of the Degree of Frontal Rotation Required to Anatomically Align the First Metatarsal Phalangeal Joint During Modified Tarsal-Metatarsal Arthrodesis Without Capsular Balancing," The Journal of Foot and Ankle Surgery, 2015, pp. 1-6.	☐
15	DE GEER et al., "A New Measure of Tibial Sesamoid Position in Hallux Valgus in Relation to the Coronal Rotation of the First Metatarsal in CT Scans," Foot and Ankle International, March 26, 2015, 9 pages.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

16	DiDOMENICO et al., "Correction of Frontal Plane Rotation of Sesamoid Apparatus during the Lapidus Procedure: A Novel Approach," The Journal of Foot and Ankle Surgery, Vol. 53, 2014, pp. 248-251.	☐
17	DOBBE et al. "Patient-Tailored Plate For Bone Fixation And Accurate 3D Positioning In Corrective Osteotomy," Medical and Biological Engineering and Computing, Vol. 51, No. 1-2, February 2013, pp. 19-27, (Abstract Only).	☐
18	DOTY et al., "Hallux valgus and hypermobility of the first ray: facts and fiction," International Orthopaedics, Vol. 37, 2013, pp. 1655-1660.	☐
19	EBI Extra Small Rail Fixator, Biomet Trauma, retrieved December 19, 2014, from the Internet: < http://footandanklefixation.com/product/biomet-trauma-ebi-extra-small-rail-fixator >, 7 pages.	☐
20	European Patent Application No. 16837611.9, Extended European Search Report dated April 11, 2019, 8 pages.	☐
21	"Futura Forefoot Implant Arthroplasty Products," Tornier, Inc., 2008, 14 pages.	☐
22	GALLI et al., "Enhanced Lapidus Arthrodesis: Crossed Screw Technique With Middle Cuneiform Fixation Further Reduces Sagittal Mobility," The Journal of Foot & Ankle Surgery, Vol. 54, Vol. 3, May/June 2015, published online: November 21, 2014, pp. 437-440.	☐
23	GARTHWAIT, "Accu-Cut System Facilitates Enhanced Precision," Podiatry Today, Vol. 18, No. 6, June 2005, 6 pages.	☐
24	GONZALEZ DEL PINO et al., "Variable Angle Locking Intercarpal Fusion System for Four-Corner Arthrodesis: Indications and Surgical Technique," Journal of Wrist Surgery, Vol. 1, No. 1, August 2012, pp. 73-78.	☐
25	GOTTE, "Entwicklung eines Assistenzrobotersystems für die Knieendoprothetik," Forschungsberichte, Technische Universität München, 165, 2002, 11 pages, including partial English Translation.	☐
26	GREGG et al., "Plantar plate repair and Weil osteotomy for metatarsophalangeal joint instability," Foot and Ankle Surgery, Vol. 13, 2007, pp. 116-121.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

27	GRONDAL et al., "A Guide Plate for Accurate Positioning of First Metatarsophalangeal Joint during Fusion," Operative Orthopädie Und Traumatologie, Vol. 16, No. 2, 2004, pp. 167-178 (Abstract Only).	☐
28	"HAT-TRICK Lesser Toe Repair System," Smith & Nephew, Brochure, August 2014, 12 pages.	☐
29	"HAT-TRICK Lesser Toe Repair System, Foot and Ankle Technique Guide, Metatarsal Shortening Osteotomy Surgical Technique," Smith & Nephew, 2014, 16 pages.	☐
30	HETHERINGTON et al., "Evaluation of surgical experience and the use of an osteotomy guide on the apical angle of an Austin osteotomy," The Foot, Vol. 18, 2008, pp. 159–164.	☐
31	HIRAO et al., "Computer assisted planning and custom-made surgical guide for malunited pronation deformity after first metatarsophalangeal joint arthrodesis in rheumatoid arthritis: A case report," Computer Aided Surgery, Vol. 19, Nos. 1–3, 2014, pp. 13–19.	☐
32	"Hoffmann II Compact External Fixation System," Stryker, Brochure, Literature Number 5075-1-500, 2006, 12 pages.	☐
33	"Hoffmann II Micro Lengthener," Stryker, Operative Technique, Literature Number 5075-2-002, 2008, 12 pages.	☐
34	"Hoffmann Small System External Fixator Orthopedic Instruments," Stryker, retrieved December 19, 2014, from the Internet: < http://www.alibaba.com/product-detail/Stryker-Hoffmann-Small-System-External-Fixator_1438850129.html >, 3 pages.	☐
35	International Patent Application No. PCT/US2016/046892, International Search Report and Written Opinion mailed December 28, 2016, 18 pages.	☐
36	KIM et al., "A New Measure of Tibial Sesamoid Position in Hallux Valgus in Relation to the Coronal Rotation of the First Metatarsal in CT Scans," Foot and Ankle International, Vol. 36, No. 8, 2015, pp. 944-952.	☐
37	"Lag Screw Target Bow," Stryker Leibinger GmbH & Co. KG, Germany 2004, 8 pages.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

38	LAPIDUS, "The Author's Bunion Operation From 1931 to 1959," Clinical Orthopaedics, Vol. 16, 1960, pp. 119-135.	☐
39	LIESKE et al., "Implantation einer Sprunggelenkttotalendo-prothese vom Typ Salto 2," Operative Orthopädie und Traumatologie, Vol. 26, No. 4, 2014, pp. 401–413, including English Abstract on page 403.	☐
40	MAC (Multi Axial Correction) Fixation System, Biomet Trauma, retrieved December 19, 2014, from the Internet: < http://footandanklefixation.com/product/biomet-trauma-mac-multi-axial-correction-fixation-system >, 7 pages.	☐
41	MAGIN, "Computernavigierter Gelenkersatz am Knie mit dem Orthopilot," Operative Orthopädie und Traumatologie, Vol. 22, No. 1, 2010, pp. 63-80, including English Abstract on page 64.	☐
42	MAGIN, "Die belastungsstabile Lapidus-Arthrodesse bei Hallux-valgus-Deformität mittels IVP-Plattenfixateur (V-TEK-System)," Operative Orthopädie und Traumatologie, Vol. 26, No. 2, 2014, pp. 184–195, including English Abstract on page 186.	☐
43	Michelangelo Bunion System, Surgical Technique, Instratek Incorporated, publication date unknown, 4 pages.	☐
44	Mini Joint Distractor, Arthrex, retrieved December 19, 2014, from the Internet: < http://www.arthrex.com/foot-ankle/mini-joint-distractor/products >, 2 pages.	☐
45	MiniRail System, Small Bone Innovations, Surgical Technique, 2010, 24 pages.	☐
46	MIYAKE et al., "Three-Dimensional Corrective Osteotomy for Malunited Diaphyseal Forearm Fractures Using Custom-Made Surgical Guides Based on Computer Simulation," JBJS Essential Surgical Techniques, Vol. 2, No. 4, 2012, 11 pages.	☐
47	Modular Rail System: External Fixator, Smith & Nephew, Surgical Technique, 2013, 44 pages.	☐
48	MONNICH et al., "A Hand Guided Robotic Planning System for Laser Osteotomy in Surgery," World Congress on Medical Physics and Biomedical Engineering Vol. 25/6: Surgery, Nimimal Invasive Interventions, Endoscopy and Image Guided Therapy, September 7-12, 2009, pages 59-62, (Abstract Only).	☐

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

Application Number	
Filing Date	
First Named Inventor	Robert D. Santrock
Art Unit	
Examiner Name	
Attorney Docket Number	71212.4.6.USC7

49	MOORE et al., "Effect Of Ankle Flexion Angle On Axial Alignment Of Total Ankle Replacement," Foot and Ankle International, Vol. 31, No. 12, December 2010, pp. 1093-1098, (Abstract Only).	☐
50	MORTIER et al., "Axial Rotation of the First Metatarsal Head in a Normal Population and Hallux Valgus Patients," Orthopaedics and Traumatology: Surgery and Research, Vol. 98, 2012, pp. 677-683.	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

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

Application Number	
Filing Date	
First Named Inventor	Robert D. Santrock
Art Unit	
Examiner Name	
Attorney Docket Number	71212.4.6.USC7

CERTIFICATION STATEMENT

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

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

OR

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

☐ See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Paul J. LaVanway, Jr./	Date (YYYY-MM-DD)	2024-02-26
Name/Print	Paul J. LaVanway, Jr.	Registration Number	64610

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

Privacy Act Statement

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

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

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

**CERTIFICATION AND REQUEST FOR PRIORITIZED EXAMINATION
UNDER 37 CFR 1.102(e) (Page 1 of 1)**

First Named Inventor:	Robert D. Santrock	Nonprovisional Application Number (if known):	
Title of Invention:	BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS		

APPLICANT HEREBY CERTIFIES THE FOLLOWING AND REQUESTS PRIORITIZED EXAMINATION FOR THE ABOVE-IDENTIFIED APPLICATION.

1. The processing fee set forth in 37 CFR 1.17(i)(1) and the prioritized examination fee set forth in 37 CFR 1.17(c) have been filed with the request. The publication fee requirement is met because that fee, set forth in 37 CFR 1.18(d), is currently \$0. The basic filing fee, search fee, and examination fee are filed with the request or have been already been paid. I understand that any required excess claims fees or application size fee must be paid for the application.
2. I understand that the application may not contain, or be amended to contain, more than four independent claims, more than thirty total claims, or any multiple dependent claims, and that any request for an extension of time will cause an outstanding Track I request to be dismissed.
3. The applicable box is checked below:

I. ☒ Original Application (Track One) - Prioritized Examination under § 1.102(e)(1)

- i. (a) The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a). This certification and request is being filed with the utility application via EFS-Web.
---OR---
(b) The application is an original nonprovisional plant application filed under 35 U.S.C. 111(a). This certification and request is being filed with the plant application in paper.
- ii. An executed inventor's oath or declaration under 37 CFR 1.63 or 37 CFR 1.64 for each inventor, or the application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) is filed with the application.

II. ☐ Request for Continued Examination - Prioritized Examination under § 1.102(e)(2)

- i. A request for continued examination has been filed with, or prior to, this form.
- ii. If the application is a utility application, this certification and request is being filed via EFS-Web.
- iii. The application is an original nonprovisional utility application filed under 35 U.S.C. 111(a), or is a national stage entry under 35 U.S.C. 371.
- iv. This certification and request is being filed prior to the mailing of a first Office action responsive to the request for continued examination.
- v. No prior request for continued examination has been granted prioritized examination status under 37 CFR 1.102(e)(2).

Signature /Paul J. LaVanway, Jr./	Date February 26, 2024
Name (Print/Typed) Paul J. LaVanway, Jr.	Practitioner Registration Number 64610

Note: This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications. Submit multiple forms if more than one signature is required.*

☒ *Total of 1 forms are submitted.

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.



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/587,921

RECEIPT DATE / TIME
02/26/2024 10:52:23 PM Z ET

ATTORNEY DOCKET #
71212.4.6.USC7

Title of Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 7731

FILED BY Paul LaVanway

PATENT CENTER # 64455434

FILING DATE -

CUSTOMER # 22859

FIRST NAMED INVENTOR Robert D. Santrock

CORRESPONDENCE ADDRESS -

AUTHORIZED BY -

Documents

TOTAL DOCUMENTS: 12

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
71212_4_6._USC7_ADS.pdf	11	Application Data Sheet	2175 KB
71212_4_6._USC7_IDS_Transmittal.pdf	1	Transmittal Letter	137 KB
71212_4_6._USC7_APP-APP.TEXT.docx	29	Application body structured text document	58 KB

Warning: The abstract should be in narrative form and generally limited to a single paragraph preferably within the range of 50 to 150 words in length. See MPEP 608.01(b). The abstract contains more than one paragraph. Please review and revise if necessary. Text decorations have been removed.

71212_4_6._USC7_IDS3.pdf	8	Information Disclosure Statement (IDS) Form (SB08)	1238 KB
71212_4_6._USC7_IDS4.pdf	6	Information Disclosure Statement (IDS) Form (SB08)	1236 KB

71212_4_6._USC7_IDS2.pdf	21	Information Disclosure Statement (IDS) Form (SB08)	1018 KB
71212_4_6._USC7_IDS1.pdf	40	Information Disclosure Statement (IDS) Form (SB08)	1023 KB
71212_4_6._USC7_TrackIRrequest.pdf	2	Track One Request	112 KB
71212_4_6._USC7_FIGS.pdf	42	Drawings-other than black and white line drawings	1082 KB
71212_4_6._USC7_Dec.pdf	10	Oath or Declaration filed	1307 KB
71212_4_6._USC7_APP.pdf	29	Auxiliary PDF of Application	196 KB
71212_4_6._USC7_PoA.pdf	3	Power of Attorney	2047 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
71212_4_6._USC7_ADS.pdf	D98160D08F8B779F0CA5703988B49328A7EB7EDAD32ED4D9F82E926272B9207269464AE2322BD35115CFB9F92799BBA6EA74466CC96EA87287C3BF93797B1A16
71212_4_6._USC7_IDS_Transmittal.pdf	BD74DBA24E08697245166E949FC3E6E4037376C07B7B13273BA4EF2F90B50FD7F480D0D680E2AAECB8F36656006C9378344D71F2B14436039785F1AEAC51AB8D
71212_4_6._USC7_APP-APP.TEXT.docx	4A8D591B13BB210D2B58B96D7B258BA8D40FE82B6BFA4C9FA620B508498A24DF8A79AB8AE358B74CC2E8B1661C926A33A9B4E0B63C2EEA102AAED7C44109DFA8
71212_4_6._USC7_IDS3.pdf	188172E8BA8D6B6F632D13AD9A29C95DC18C00CFF66E2B0E08E330678E88844F5245B148E47229A7AD5C8980FB3F0D48C91861CDE086D962AF9C26A62AE34062
71212_4_6._USC7_IDS4.pdf	0EEA9011399231CFD8D2FCB4B418E8D12B280318ED347ACA54C2242EF1ED7141DE1FA8E170A1B01D55F47645EFF2DD7A2EF51D575EBA950030EBAFFE71219CDB
71212_4_6._USC7_IDS2.pdf	F47383AD2A44E7D6A2F21AA4488B7A14BA6B0318F69595E6EECC9623B5624B3EA8B905904780393A76D91D0B3E54E6157BDF2239B979A02E60A67B0DB4FB891E
71212_4_6._USC7_IDS1.pdf	03965080C16DF3A848F39740C3D1C4138670C17F5DA72A128D7E68304F4F6AA87CEC13D8FED0709E42B0D695DF5D3D827A28ECB4074B5F6F79C0CEB1D59319DD
71212_4_6._USC7_TrackIRrequest.pdf	0E4429FA29302EE27505803BB7677EADA4651CBB9A5170688F654B8B2911BEE2DCA2736FA3899D09EA492DAA8A61C547B

	6BF967CC99A49E80BAA9E41DF066058
71212_4_6._USC7_FIGS.pdf	1C7431857CBCF4EEE573274D5AD2425C2141D47F19947045A 7A651E3CDBFAE3768D8310F87CED27CBE677090AA98FB609 1EBAC1E763CF05A483165045B5D2475
71212_4_6._USC7_Dec.pdf	FD9BD7E34C44B1EB734E43A2B8C6D93BBF1FC916713B89D8 03F6F69D075A2C6D1BD2F7E06C6E4830DBA1C7A83C408118 948C77F50692154E9D119704C80D20CE
71212_4_6._USC7_APP.pdf	2959D7C9EBD997432A57BB9CB4FF9BBF0350F859D81E1893E 7D11E2FA9371B9CA27A59EB15655493F04ECFAE743B809776 008E5DB5DF3273A646E9C3531DE098
71212_4_6._USC7_PoA.pdf	531CD3BE3ACC93C569563792F9F7CA1218405725FADEBE649 0231F3831BEA97C700D23D4C283CBCE58074616FC14C1E53F C79ED4DA532C04D6B5BB4593607248

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 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.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Robert D. Santrock	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	71212.4.6.USC7	

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

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

1	Claim Chart for Groves Public Use (March 26, 2014), Exhibit B4 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 161 pages.	☐
2	GROVES, "Operative Report," St. Tammany Parish Hospital, Date of Procedure, March 26, 2014, 2 pages.	☐
3	D'AMICO et al., "Motion of the First Ray: Clarification Through Investigation," Journal of the American Podiatry Association, Vol. 69, No. 1, January 1979, pp. 17-23.	☐
4	OKUDA et al., "Proximal Metatarsal Osteotomy for Hallux Valgus: Comparison of Outcome for Moderate and Severe Deformities," Foot and Ankle International," Vol. 29, No. 7, July 2008, pp. 664-670.	☐
5	OKUDA et al., "The Shape of the Lateral Edge of the First Metatarsal Head as a Risk Factor for Recurrence of Hallux Valgus," The Journal of Bone and Joint Surgery, Vol. 89, 2007, pp. 2163-2172.	☐
6	MIZUNO et al., "Detorsion Osteotomy of the First Metatarsal Bone in Hallux Valgus," Japanese Orthopaedic Association, Tokyo, 1956; 30:813-819.	☐
7	EUSTACE et al., "Hallux valgus, first metatarsal pronation and collapse of the medial longitudinal arch - a radiological correlation," Skeletal Radiology, Vol. 23, 1994, pp. 191-194.	☐
8	COLLAN et al., "The biomechanics of the first metatarsal bone in hallux valgus: A preliminary study utilizing a weight bearing extremity CT," Foot and Ankle Surgery, Vol. 19, 2013, pp. 155-161.	☐
9	LE et al., "Tarsometatarsal Arthrodesis," Operative Techniques in Foot and Ankle Surgery, Section II, Chapter 40, 2011, pp. 281-285.	☐
10	COETZEE et al., "Revision Hallux Valgus Correction," Operative Techniques in Foot and Ankle Surgery, Section I, Chapter 15, 2011, pp. 84-96.	☐
11	SHURNAS et al., "Proximal Metatarsal Opening Wedge Osteotomy," Operative Techniques in Foot and Ankle Surgery, Section I, Chapter 13, 2011, pp. 73-78.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

12	EASLEY et al., "What is the Best Treatment for Hallux Valgus?," Evidence-Based Orthopaedics - The Best Answers to Clinical Questions, Chapter 73, 2009, pp. 479-491.	☐
13	SMITH et al., "Opening Wedge Osteotomies for Correction of Hallux Valgus: A Review of Wedge Plate Fixation," Foot and Ankle Specialist, Vol. 2, No. 6, December 2009, pp. 277-282.	☐
14	WEBER et al., "Use of the First Ray Splay Test to Assess Transverse Plane Instability Before First Metatarsocuneiform Fusion," The Journal of Foot and Ankle Surgery, Vol. 45, No. 4, July/August 2006, pp. 278-282.	☐
15	SANDHU et al., "Digital Arthrodesis With a One-Piece Memory Nitinol Intramedullary Fixation Device: A Retrospective Review," Foot and Ankle Specialist, Vol. 6, No. 5, October 2013, pp. 364-366.	☐
16	EASLEY et al., "Current Concepts Review: Hallux Valgus Part I: Pathomechanics, Clinical Assessment, and Nonoperative Management," Foot and Ankle International, Vol. 28, No. 5, May 2007, pp. 654-659.	☐
17	RODRIGUEZ et al., "Ilizarov method of fixation for the management of pilon and distal tibial fractures in the compromised diabetic patient: A technique guide," The Foot and Ankle Journal Online, Vol. 7, No. 2, 2014, 9 pages.	☐
18	FEILMEIER et al., "Incidence of Surgical Site Infection in the Foot and Ankle with Early Exposure and Showering of Surgical Sites: A Prospective Observation," The Journal of Foot and Ankle Surgery, Vol. 53, 2014, pp. 173-175.	☐
19	CATANESE et al., "Measuring Sesamoid Position in Hallux Valgus: When Is the Sesamoid Axial View Necessary," Foot and Ankle Specialist, 2014, 3 pages.	☐
20	DAYTON et al., "Comparison of Complications for Internal and External Fixation for Charcot Reconstruction: A Systematic Review," The Journal of Foot and Ankle Surgery, Article in Press, 2015, 4 pages.	☐
21	DAYTON et al., "A new triplanar paradigm for bunion management," Lower Extremity Review, April 2015, 9 pages.	☐
22	DAYTON et al., "American College of Foot and Ankle Surgeons' Clinical Consensus Statement: Perioperative Prophylactic Antibiotic Use in Clean Elective Foot Surgery," The Journal of Foot and Ankle Surgery, Article in Press, 2015, 7 pages.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

23	DAYTON et al., "Complications of Metatarsal Suture Techniques for Bunion Correction: A Systematic Review of the Literature," The Journal of Foot and Ankle Surgery, Article in Press, 2015, 3 pages.	☐
24	DeCARBO et al., "The Weil Osteotomy: A Refresher," Techniques in Foot and Ankle Surgery, Vol. 13, No. 4, December 2014, pp. 191-198.	☐
25	DeCARBO et al., "Resurfacing Interpositional Arthroplasty for Degenerative Joint Disease of the First Metatarsalphalangeal Joint," Podiatry Management, January 2013, pp. 137-142.	☐
26	DeCARBO et al., "Locking Plates: Do They Prevent Complications?," Podiatry Today, April 2014, 7 pages.	☐
27	EASLEY et al., "Current Concepts Review: Hallux Valgus Part II: Operative Treatment," Foot and Ankle International, Vol. 28, No. 6, June 2007, pp. 748-758.	☐
28	KIM et al., "A Multicenter Retrospective Review of Outcomes for Arthrodesis, Hemi-Metallic Joint Implant, and Resectional Arthroplasty in the Surgical Treatment of End-Stage Hallux Rigidus," The Journal of Foot and Ankle Surgery, Vol. 51, 2012, pp. 50-56.	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

***EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

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

Application Number	
Filing Date	
First Named Inventor	Robert D. Santrock
Art Unit	
Examiner Name	
Attorney Docket Number	71212.4.6.USC7

CERTIFICATION STATEMENT

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

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

OR

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

☐ See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Paul J. LaVanway, Jr./	Date (YYYY-MM-DD)	2024-02-26
Name/Print	Paul J. LaVanway, Jr.	Registration Number	64610

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

Privacy Act Statement

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

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

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



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION #
18/587,921

RECEIPT DATE / TIME
02/26/2024 10:52:23 PM Z ET

ATTORNEY DOCKET #
71212.4.6.USC7

Title of Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	7731	FILED BY	Paul LaVanway
PATENT CENTER #	64455434	AUTHORIZED BY	-
CUSTOMER #	22859	FILING DATE	-
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Robert D. Santrock

Payment Information

PAYMENT METHOD CARD / 9797	PAYMENT TRANSACTION ID E20242PM52546650	PAYMENT AUTHORIZED BY Paul LaVanway
-------------------------------	--	--

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
1817	REQUEST FOR PRIORITIZED EXAMINATION	4200.00	1	4200.00
1111	UTILITY PATENT APPL. SEARCH FEE	700.00	1	700.00
1011	BASIC FILING FEE - UTILITY (PAPER FILING ALSO REQUIRES NON-ELECTRONIC FILING FEE UNDER 1.16(T))	320.00	1	320.00
1311	PATENT APPL. EXAMINATION FEE	800.00	1	800.00
TOTAL AMOUNT:				\$6,020.00

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 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.



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 NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
18/587,921	02/26/2024		1820	71212.4.6.USC7	20	4

CONFIRMATION NO. 7731

22859

FREDRIKSON & BYRON, P.A.
INTELLECTUAL PROPERTY GROUP
60 SOUTH SIXTH STREET, SUITE 1500
MINNEAPOLIS, MN 55402

FILING RECEIPT



0000000071156698

Date Mailed: 04/18/2024

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)

Robert D. Santrock, Morgantown, WV;
Paul Dayton, Ankeny, IA;
Daniel J. Hatch, Greeley, CO;
W. Bret Smith, Lexington, SC;
F. Barry Bays, Collierville, TN;
Carlos Eduardo Gil, Memphis, TN;
Sean F. Scanlan, Jacksonville, FL;
Joe W. Ferguson, Ponte Vedra Beach, FL;
John T. Treace, Ponte Vedra Beach, FL;

Applicant(s)

Treace Medical Concepts, Inc., Ponte Vedra, FL;

Power of Attorney: The patent practitioners associated with Customer Number 22859

Domestic Priority data as claimed by applicant

This application is a CON of 18/183,013 03/13/2023 PAT 11,911,085
which is a CON of 17/567,879 01/03/2022 PAT 11,602,387
which is a CON of 17/353,431 06/21/2021 PAT 11,213,333
which is a CON of 16/998,155 08/20/2020 PAT 11,039,873
which is a CON of 16/031,855 07/10/2018 PAT 10,849,670
which is a CON of 15/452,236 03/07/2017 PAT 10,045,807
which is a CON of 14/981,335 12/28/2015 PAT 9,622,805
which claims benefit of 62/205,338 08/14/2015

page 1 of 4

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: 04/16/2024

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 18/587,921**

Projected Publication Date: 07/25/2024

Non-Publication Request: No

Early Publication Request: No

Title

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

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 countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

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 U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number
18/587,921

APPLICATION AS FILED - PART I

(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)	RATE(\$)	FEE(\$)	
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A		N/A	320	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A		N/A	700	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A		N/A	800	
TOTAL CLAIMS (37 CFR 1.16(i))	20	minus 20 = *	0		x	= 0	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4	minus 3 = *	1		x 480 =	480	
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	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))						0	
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL		TOTAL	2300	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		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										

		(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
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										

* 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.



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 NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7

CONFIRMATION NO. 7731

22859
FREDRIKSON & BYRON, P.A.
INTELLECTUAL PROPERTY GROUP
60 SOUTH SIXTH STREET, SUITE 1500
MINNEAPOLIS, MN 55402

FORMALITIES LETTER



OC000000071156701

Date Mailed: 04/18/2024

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

An application number and filing date have been accorded to the above-identified nonprovisional application. The item(s) indicated below, however, are missing.

Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- Additional claim fees of **\$480** as an undiscounted entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.

SUMMARY OF FEES DUE:

The fee(s) required (including the fees noted above) are as follows. No entity status discount is in effect. If applicant is qualified for small entity status, a written assertion of small entity status must be submitted to establish small entity status. (See 37 CFR 1.27). If applicant is qualified for micro entity status, an acceptable Certification of Micro Entity Status must be submitted to establish micro entity status. (See 37 CFR 1.29 and forms PTO/SB/15A and 15B.)

- **\$480** for 1 independent claims over 3.
- **\$(0)** previous unapplied payment amount.
- **\$480** TOTAL FEE BALANCE DUE.

Replies must be received in the USPTO within the set time period or must include a proper Certificate of Mailing or Transmission under 37 CFR 1.8 with a mailing or transmission date within the set time period. For more information and a suggested format, see Form PTO/SB/92 and MPEP 512.

Replies should be addressed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

REPLY VIA ELECTRONIC FILING

A reply may be submitted via electronic filing only by registered users of the appropriate USPTO patent electronic filing system and must include:

- A separate document having the document description, "**Applicant response to Pre-Exam Formalities Notice**"; and
- the item(s) for which a reply period is set forth above.

For more information about electronic filing, contact the Patent Electronic Business Center (EBC) 1-866-217-9197 or visit <https://www.uspto.gov/ebc>

NOTE: If the reply is not being submitted electronically, a copy of this notice must be included.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at **(571) 272-4000** or **(571) 272-4200** or **1-888-786-0101**.

/nbekele/



United States Patent and Trademark Office

Under Secretary of Commerce for Intellectual Property and
Director of the United States Patent and Trademark Office

WELCOME TO THE UNITED STATES PATENT AND TRADEMARK OFFICE (USPTO)

*Congratulations on taking the first step to protect your invention. You can now advertise or mark any products covered by this application for your invention as **"Patent Pending"** for as long as this application is pending!*

We are here to help you on the rest of your journey.

New to the process? The Patent Basics page will take you from "What is a patent?" to assistance with the application process.

- www.uspto.gov/PatentBasics

Consider cost savings. You might qualify for small entity or micro entity status, which means a discount on most USPTO patent fees.

- www.uspto.gov/EntityStatus

Become a registered electronic filer (eFiler). You'll gain access to the full capabilities of Patent Center. As a registered eFiler, you can electronically view your submission, track the progress of your application, and respond to USPTO correspondence.

- www.uspto.gov/NewPatentFilers

Learn how to identify which of your creative ideas might be intellectual property assets and how to protect them by using the USPTO Intellectual Property (IP) Identifier.

- ipidentifier.uspto.gov

We also provide Pro Se Assistance, support specifically geared for **independent inventors without an attorney or agent**. Follow the link below, call us at 866-767-3848, or email proseassistancecenter@uspto.gov.

- www.uspto.gov/ProSePatents

Need help near you? We have regional offices across the country, as well as Patent and Trademark Resource Centers in libraries in nearly every state, with specialists standing by to help you at no cost.

- www.uspto.gov/locations
- www.uspto.gov/ptrc

Contact us:

- **General information:** USPTO Contact Center
 - www.uspto.gov/help
- **Patent Center:**
 - Patent Electronic Business Center
 - www.uspto.gov/EBC
- **Pre or post-examination:** Application Assistance Unit
 - www.uspto.gov/PatentAssistance

Want to learn more?

- **Access our free services** all in one spot. Find all of our contact centers, nationwide services, events, education, and training.
 - www.uspto.gov/FreeServices
- **Connect with us** on Instagram, LinkedIn, Twitter, Facebook, and YouTube.
- **Hear about resources for startups, inventors, and entrepreneurs**, as well as our initiatives engaging women, the military community, and others. These programs offer helpful tips and tricks on identifying and managing your IP, finding options for funding, and expanding your network to support your business.
 - www.uspto.gov/startups
 - www.uspto.gov/inventors
 - www.uspto.gov/initiatives
- We hope you connect with us by subscribing to receive important notifications by email.
 - www.uspto.gov/subscribe

Kathi Vidal

Under Secretary of Commerce for Intellectual Property and
Director of the United States Patent and Trademark Office

Derrick Brent

Deputy Under Secretary of Commerce for Intellectual Property and
Deputy Director of the United States Patent and Trademark Office



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/587,921

RECEIPT DATE / TIME
05/30/2024 12:11:56 AM Z ET

ATTORNEY DOCKET #
71212.4.6.USC7

Title of Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 7731

FILED BY Jaclyn O'Neil

PATENT CENTER # 65703927

FILING DATE 02/26/2024

CUSTOMER # 22859

FIRST NAMED INVENTOR Robert D. Santrock

CORRESPONDENCE ADDRESS -

AUTHORIZED BY Paul LaVanway

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
71212_4_6_USC7_Response_to_Missing_Parts_05282024.pdf	1	Applicant Response to Pre-Exam Formalities Notice	109 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
71212_4_6_USC7_Response_to_Missing_Parts_05282024.pdf	E57ABF40FB4CA746274D698B2E37DCF11F2C4876A5D0656B263DD60A5D7D63E30FDAB119076CE1AF7B73F4F7AA24A4FD9456BAEDF3A2C840B0CE3F9D3752753E

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 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.



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION #
18/587,921

RECEIPT DATE / TIME
05/30/2024 12:11:56 AM Z ET

ATTORNEY DOCKET #
71212.4.6.USC7

Title of Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 7731

FILED BY Jaclyn O'Neil

PATENT CENTER # 65703927

AUTHORIZED BY Paul LaVarway

CUSTOMER # 22859

FILING DATE 02/26/2024

CORRESPONDENCE
ADDRESS -

FIRST NAMED
INVENTOR Robert D. Santrock

Payment Information

PAYMENT METHOD
CARD / 9797

PAYMENT TRANSACTION ID
E20245T112246907

PAYMENT AUTHORIZED BY
Paul LaVarway

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
1201	EACH INDEPENDENT CLAIM IN EXCESS OF THREE	480.00	1	480.00
TOTAL AMOUNT:				\$480.00

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 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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Robert D. Santrock

Application No.: 18/587,921

Group Art Unit: 3775

Filed: February 26, 2024

Examiner: Not Assigned

Title: BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

RESPONSE TO NOTICE TO FILE MISSING PARTS

Dear Commissioner:

In response to the Notice to File Missing Parts of Nonprovisional Application mailed April 18, 2024, Applicant submits herewith the required additional claim fee.

The fees are being made at the time of submission via EFS-Web. The Commissioner is hereby authorized to grant any extensions of time, including those that may be due under 37 C.F.R. §1.136, and to charge any fees that may be required, including those under 37 C.F.R. §§ 1.16 and 1.17, during the entire pendency of this application to Deposit Account No. 06-1910.

The Commissioner is hereby authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1910.

Dated: May 20, 2024

Respectfully submitted,

/Paul J. LaVanway, Jr./

FREDRIKSON & BYRON, P.A.
60 South Sixth Street, Suite 1500
Minneapolis, MN 55402-1425 USA
Telephone: 612.492.7387

Paul J. LaVanway, Jr.
Registration No. 64,610

Please grant any extension of time necessary for entry; charge any fee due to Deposit Account No. 06-1910.

82537220v1



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 NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
18/587,921	02/26/2024	3775	2300	71212.4.6.USC7	20	4

22859
FREDRIKSON & BYRON, P.A.
INTELLECTUAL PROPERTY GROUP
60 SOUTH SIXTH STREET, SUITE 1500
MINNEAPOLIS, MN 55402

CONFIRMATION NO. 7731

UPDATED FILING RECEIPT



0000000073582115

Date Mailed: 06/06/2024

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)

Robert D. Santrock, Morgantown, WV;
Paul Dayton, Ankeny, IA;
Daniel J. Hatch, Greeley, CO;
W. Bret Smith, Lexington, SC;
F. Barry Bays, Collierville, TN;
Carlos Eduardo Gil, Memphis, TN;
Sean F. Scanlan, Jacksonville, FL;
Joe W. Ferguson, Ponte Vedra Beach, FL;
John T. Treace, Ponte Vedra Beach, FL;

Applicant(s)

Treace Medical Concepts, Inc., Ponte Vedra, FL;

Power of Attorney: The patent practitioners associated with Customer Number 22859

Domestic Priority data as claimed by applicant

This application is a CON of 18/183,013 03/13/2023 PAT 11,911,085
which is a CON of 17/567,879 01/03/2022 PAT 11,602,387
which is a CON of 17/353,431 06/21/2021 PAT 11,213,333
which is a CON of 16/998,155 08/20/2020 PAT 11,039,873
which is a CON of 16/031,855 07/10/2018 PAT 10,849,670
which is a CON of 15/452,236 03/07/2017 PAT 10,045,807
which is a CON of 14/981,335 12/28/2015 PAT 9,622,805
which claims benefit of 62/205,338 08/14/2015

page 1 of 4

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: 04/16/2024

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 18/587,921**

Projected Publication Date: 07/25/2024

Non-Publication Request: No

Early Publication Request: No

Title

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Preliminary Class

606

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 countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

LICENSE FOR FOREIGN FILING UNDER

Title 35, United States Code, Section 184

Title 37, Code of Federal Regulations, 5.11 & 5.15

GRANTED

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

SelectUSA

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 U.S. offers tremendous resources and advantages for those who invest and manufacture goods here. Through SelectUSA, our nation works to promote and facilitate business investment. SelectUSA provides information assistance to the international investor community; serves as an ombudsman for existing and potential investors; advocates on behalf of U.S. cities, states, and regions competing for global investment; and counsels U.S. economic development organizations on investment attraction best practices. To learn more about why the United States is the best country in the world to develop technology, manufacture products, deliver services, and grow your business, visit <http://www.SelectUSA.gov> or call +1-202-482-6800.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number
18/587,921

APPLICATION AS FILED - PART I

(Column 1)		(Column 2)		SMALL ENTITY		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)	RATE(\$)	FEE(\$)	
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A		N/A	320	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A		N/A	700	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A		N/A	800	
TOTAL CLAIMS (37 CFR 1.16(i))	20	minus 20 = * 0			x	= 0	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	4	minus 3 = * 1			x 480	= 480	
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	
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))						0	
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL		TOTAL	2300	

APPLICATION AS AMENDED - PART II

		(Column 1)	(Column 2)	(Column 3)	SMALL ENTITY		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.



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.
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7	7731
22859 7590 07/02/2024 FREDRIKSON & BYRON, P.A. INTELLECTUAL PROPERTY GROUP 60 SOUTH SIXTH STREET, SUITE 1500 MINNEAPOLIS, MN 55402			EXAMINER CENTRAL, DOCKET	
			ART UNIT	PAPER NUMBER
			OPAP	
			NOTIFICATION DATE	DELIVERY MODE
			07/02/2024	ELECTRONIC

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

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

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

IP@FREDLAW.COM

<i>Decision Dismissing Request for Prioritized Examination (Track I)</i>	Application No. 18/587,921	Applicant(s) Santrock et al.	
	Examiner CHERYL P GIBSON BAYLOR	Art Unit OPET	AIA (FITF) Status Yes

1. THE REQUEST FILED 26 February 2024 IS **DISMISSED** BECAUSE:

- A. ☐ The application is not a utility application under 35 U.S.C. 111(a) filed by Patent Electronic System or a plant application under 35 U.S.C. 111(a):
- ☐ The application is a utility application that was not filed by Patent Electronic System.
 - ☐ The application is neither a utility application nor a plant application, but rather is a _____, which is excluded from the Track I program.
- B. ☐ The request was not filed with the application or on the same date of the application.
- C. ☒ One or more of the following fees were not filed with the application:
- ☐ Basic filing fee, as set forth in 37 CFR 1.16(a), or for a plant application, 37 CFR 1.16(c).
 - ☐ Search fee, as set forth in 37 CFR 1.16(k), or for a plant application, 37 CFR 1.16(m).
 - ☐ Examination fee, as set forth in 37 CFR 1.16(o), or for a plant application, 37 CFR 1.16(q).
 - ☐ Publication fee, as set forth in 37 CFR 1.18(d).
 - ☒ Track I processing fee, as set forth in 37 CFR 1.17(i).
 - ☐ Track I prioritized examination fee, as set forth in 37 CFR 1.17(c).
 - ☐ Application size fee, due because the specification and drawings exceed 100 sheets of paper, as set forth in 37 CFR 1.16(s).
 - ☐ Excess independent claim fee, due because the number of independent claims exceeds three, as set forth in 37 CFR 1.16(h).
 - ☐ Excess claim fee, due because the number of claims exceeds twenty, as set forth in 37 CFR 1.16(i).
- D. ☐ The executed inventor's oath or declaration, or an application data sheet meeting the conditions specified in 37 CFR 1.53(f)(3)(i) was not filed with the application or on the same date the application was filed.
- E. ☐ The application contains or has been amended to contain:
- ☐ More than four independent claims.
 - ☐ More than thirty total claims.
 - ☐ One or more multiple dependent claims.
- F. ☐ The Track I program has exceeded its limit of 15,000 requests for the current fiscal year.
- G. ☐ Other: _____

2. CONCLUSION

- ☐ **ALL of the above defect(s) consist only of one or more of items E (i-iii). Applicant is hereby accorded a non-extendable ONE MONTH time period from the mailing date of this Decision to (1) correct the subject defect(s) and (2) file a petition under 37 CFR 1.181 requesting reconsideration of prioritized examination. If no such petition is timely filed, the application will not undergo prioritized examination.**

- OR -

- ☒ **The application will not undergo prioritized examination, because the request was not accompanied by all of the required items.**

Telephone inquiries with regard to this decision should be directed to CHERYL P GIBSON BAYLOR at (571)272-3213. In his/her absence, calls may be directed to Petition Help Desk at (571) 272-3282.

/CHERYL GIBSON BAYLOR/
Paralegal Specialist, OPET



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION #
18/587,921

RECEIPT DATE / TIME
07/24/2024 05:33:46 PM Z ET

ATTORNEY DOCKET #
71212.4.6.USC7

Title of Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 7731

FILED BY Zachary Anderson

PATENT CENTER # 66506419

AUTHORIZED BY Paul LaVarway

CUSTOMER # 22859

FILING DATE 02/26/2024

CORRESPONDENCE
ADDRESS -

FIRST NAMED
INVENTOR Robert D. Santrock

Payment Information

PAYMENT METHOD
CARD / 9797

PAYMENT TRANSACTION ID
E20247NH34588383

PAYMENT AUTHORIZED BY
Zachary Anderson

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
1830	PROCESSING FEE, EXCEPT IN PROVISIONAL APPLICATIONS	140.00	1	140.00
TOTAL AMOUNT:				\$140.00

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 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.

22859
Customer Number

PATENT
Attorney Docket No.: 71212.4.6.USC7

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Robert D. Santrock
Application No.: 18/587,921 Group Art Unit: OPAP
Filed: February 26, 2024 Examiner: DOCKET CENTRAL
Title: BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND
METHODS

**PETITION UNDER 37 CFR 1.181 REQUESTING RECONSIDERATION OF
PRIORITIZED EXAMINATION**

Dear Commissioner:

In response to the Decision Dismissing Request for Prioritized Examination (“the Decision”) mailed July 2, 2024 for the above-referenced patent application, Applicant files this petition under 37 C.F.R. § 1.181 requesting reconsideration of the Decision. The Decision denied Applicant’s request for prioritized examination on the grounds that the Track I processing fee set forth in 37 C.F.R. § 1.17(i) was not include with the original request.

Applicant’s omission of the Track I processing fee set forth in 37 C.F.R. § 1.17(i) was inadvertent. Applicant encloses with this request the required Track I processing fee set forth in 37 C.F.R. § 1.17(i). Applicant therefore respectfully requests the Patent Office reconsider and accept Applicant’s request for prioritized examination. The fees are being made at the time of submission via EFS-web.

The Commissioner is hereby authorized to charge any fees that may be required, including those under 37 C.F.R. §§ 1.16 and 1.17, during the entire pendency of this application to Deposit Account No. 06-1910. The Petitions Office is invited to telephone the undersigned if it would be useful to advance consideration of the petition.

Dated: July 24, 2024

Respectfully submitted,

FREDRIKSON & BYRON, P.A.
60 South Sixth Street, Suite 1500
Minneapolis, MN 55402-1425 USA
Telephone: (612) 492-7387
Facsimile: (612) 492-7077

/Paul J. LaVanway, Jr./
Paul J. LaVanway, Jr.
Registration No. 64,610

Application No. 18/587,921

Please grant any extension of time necessary for entry; charge any fee due to Deposit Account No. 06-1910.

83055873v1



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/587,921

RECEIPT DATE / TIME
07/24/2024 05:33:46 PM Z ET

ATTORNEY DOCKET #
71212.4.6.USC7

Title of Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 7731

FILED BY Zachary Anderson

PATENT CENTER # 66506419

FILING DATE 02/26/2024

CUSTOMER # 22859

FIRST NAMED INVENTOR Robert D. Santrock

CORRESPONDENCE ADDRESS -

AUTHORIZED BY Paul LaVanway

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
71212.4.6.USC7_Request_for r_Reconsideration_of_Prioriti zed_Examination.pdf	2	Petition for review by the Office of Petitions	113 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
71212.4.6.USC7_Request_for_ Reconsideration_of_Prioritized_ Examination.pdf	1061D9325464419D2C20A1AAC03C48EEAA75E9B3D8F7EBE67 EFA55EF19B4DB3F950F798066FFCAFB4459F1661DE5114F794 45FB367875FB85E871041E6A3ABCE

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 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.



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 NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7

CONFIRMATION NO. 7731

22859
FREDRIKSON & BYRON, P.A.
INTELLECTUAL PROPERTY GROUP
60 SOUTH SIXTH STREET, SUITE 1500
MINNEAPOLIS, MN 55402

PUBLICATION NOTICE



OC000000075657579

Date Mailed: 07/25/2024

Title:BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Publication No.US-2024-0245437-A1

Publication Date:07/25/2024

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 viewed using the USPTO's publicly available Searchable Databases via the Patent Public Search tool at www.uspto.gov. The direct link to access the Patent Public Search tool is currently <https://ppubs.uspto.gov/pubwebapp/static/pages/ppubsbasic.html>.

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 Patent Center, the USPTO's electronic patent application filing and management system. The direct link to access this status information is currently <https://patentcenter.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of Patent Center.

Further assistance in electronically accessing the publication, or about Patent Center, 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



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.
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7	7731
22859	7590	08/20/2024		
FREDRIKSON & BYRON, P.A. INTELLECTUAL PROPERTY GROUP 60 SOUTH SIXTH STREET, SUITE 1500 MINNEAPOLIS, MN 55402			EXAMINER CENTRAL, DOCKET	
			ART UNIT	PAPER NUMBER
			OPAP	
			NOTIFICATION DATE	DELIVERY MODE
			08/20/2024	ELECTRONIC

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

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

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

IP@FREDLAW.COM



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Doc Code: TRACK1.GRANT

**Decision Granting Request for
Prioritized Examination
(Track I or After RCE)**

Application No.:18/587,921

The petition, filed July 24, 2024, under 37 CFR 1.181 is GRANTED. In view of the specific circumstances surrounding this application and, in particular, the filing of the Track 1 Request requirements including irregularities with Patent Center involving payment of the processing fee, the Office, in this specific instance, hereby waives, *sua sponte*, the processing fee date requirement of the Prioritized Examination, Track 1, program to the extent necessary to render the processing fee as timely paid and sufficient to fulfill such requirement. **Petitioner's attention is drawn to the first sentence of Item 1 of the signed Certification and Request for Prioritized Examination, filed February 26, 2024, which specifically identifies the processing fee.** Petitioner should note that because of the specific circumstances of this application, and in this specific instance, the processing fee was accepted as timely, **HOWEVER, IN ANY FUTURE REQUESTS FOR PRIORITIZED EXAMINATION, TRACK 1, ALL OF THE REQUIREMENTS, INCLUDING PAYMENT OF THE PROCESSING FEE, AS REQUIRED BY 37 CFR 1.102(e), MUST BE TIMELY SATISFIED FOR AN APPLICATION TO BE ACCEPTED INTO THE PRIORITIZED EXAMINATION, TRACK 1, PROGRAM.**

1. THE REQUEST FILED February 26, 2024 IS **GRANTED**.

The above-identified application has met the requirements for prioritized examination

- A. ☒ for an original nonprovisional application (Track I).
B. ☐ for an application undergoing continued examination (RCE).

2. **The above-identified application will undergo prioritized examination.** The application will be accorded special status throughout its entire course of prosecution until one of the following occurs:

- A. filing a **petition for extension of time** to extend the time period for filing a reply;
B. filing an **amendment to amend the application to contain more than four independent claims, more than thirty total claims**, or a multiple dependent claim;
C. filing a **request for continued examination**;
D. filing a notice of appeal;
E. filing a request for suspension of action;
F. mailing of a notice of allowance;
G. mailing of a final Office action;
H. completion of examination as defined in 37 CFR 41.102; or
I. abandonment of the application.

Telephone inquiries with regard to this decision should be directed to Vanitha Elgart at 571-272-7395.

/VANITHA M ELGART/
Petitions Examiner, OPET



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/587,921

RECEIPT DATE / TIME
08/23/2024 05:43:24 PM Z ET

ATTORNEY DOCKET #
71212.4.6.USC7

Title of Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 7731

FILED BY Zachary Anderson

PATENT CENTER # 66909540

FILING DATE 02/26/2024

CUSTOMER # 22859

FIRST NAMED INVENTOR Robert D. Santrock

CORRESPONDENCE ADDRESS -

AUTHORIZED BY Paul LaVanway

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
71212.4.6.USC7_Preliminary_Amendment.pdf	11	Preliminary Amendment	113 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
71212.4.6.USC7_Preliminary_Amendment.pdf	6CE5F09B7764E446E018D03280CDBCDA38C8C8CCB063F201 FEF180ED96810E3263D2B9CD58F93DC0A43189BF8ECA2555 1617ABCCC78446648A82E73CC37A71FB

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 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.



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION # 18/587,921	RECEIPT DATE / TIME 08/23/2024 05:43:24 PM Z ET	ATTORNEY DOCKET # 71212.4.6.USC7
------------------------------------	---	--

Title of Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	7731	FILED BY	Zachary Anderson
PATENT CENTER #	66909540	AUTHORIZED BY	Paul LaVanway
CUSTOMER #	22859	FILING DATE	02/26/2024
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Robert D. Santrock

Payment Information

PAYMENT METHOD CARD / 9797	PAYMENT TRANSACTION ID E20248MH43558600	PAYMENT AUTHORIZED BY Paul LaVanway
-------------------------------	--	--

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
1202	EACH CLAIM IN EXCESS OF 20	100.00	10	1000.00
TOTAL AMOUNT:				\$1,000.00

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 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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Robert D. Santrock

Application No.: 18/587,921

Group Art Unit: 3775

Filed: February 26, 2024

Examiner: To be assigned

Title: BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

PRELIMINARY AMENDMENT

Dear Commissioner:

Prior to examination of the above referenced patent application, please amend the application as follows.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks begin on page 11 of this paper.

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1–20. (Canceled)

21. (New) An instrumented surgical technique for preparing a tarsal-metatarsal joint for fusion and for repositioning a first metatarsal to correct a bunion deformity, the instrumented surgical technique comprising:

- making an incision on a foot to provide access to a tarsal-metatarsal joint;
- engaging the first metatarsal with a bone engagement member of a bone positioning guide;
- engaging the bone positioning guide with a second metatarsal separated from the first metatarsal by an intermetatarsal angle;
- cutting an end of the first metatarsal with a tissue removing instrument;
- rotating a knob connected to a threaded shaft of the bone positioning guide to cause the bone engagement member to push the first metatarsal laterally toward the second metatarsal and thereby reduce the intermetatarsal angle between the first metatarsal and the second metatarsal to correct the bunion deformity;
- imparting a force to a pin inserted into the first metatarsal to adjust an alignment of the first metatarsal in a frontal plane to correct the bunion deformity;
- cutting an end of a medial cuneiform with the tissue removing instrument;
- compressing the first metatarsal together with the medial cuneiform; and
- fixating a moved position of the first metatarsal relative to the medial cuneiform for fusion using at least one bone fixation device.

22. (New) The instrumented surgical technique of claim 21, wherein:

- rotating the knob connected to the threaded shaft comprises rotating the knob connected to the threaded shaft after cutting the end of the first metatarsal;

imparting the force to the pin inserted into the first metatarsal comprises imparting the force to the pin inserted into the first metatarsal after cutting the end of the first metatarsal; and cutting the end of the medial cuneiform comprises cutting the end of the medial cuneiform after rotating the knob and after imparting the force to the pin to correct the bunion deformity.

23. (New) The instrumented surgical technique of claim 21, further comprising removing the bone positioning guide from the first metatarsal and the second metatarsal with the moved position of the first metatarsal remaining fixated relative to the medial cuneiform by the at least one bone fixation device.

24. (New) The instrumented surgical technique of claim 21, further comprising, prior to engaging the first metatarsal with the bone engagement member of the bone positioning guide and engaging the bone positioning guide with the second metatarsal, joining at least three components together, including the threaded shaft and the bone engagement member, to form the bone positioning guide.

25. (New) The instrumented surgical technique of claim 21, further comprising making a second incision on the foot to provide access to the second metatarsal, wherein engaging the bone positioning guide with the second metatarsal comprises positioning a bone contact surface of the bone positioning guide in contact with the second metatarsal.

26. (New) The instrumented surgical technique of claim 25, wherein the bone positioning guide comprises a tip defining the bone contact surface, and positioning the bone contact surface of the bone positioning guide in contact with the second metatarsal comprises inserting the tip through the second incision.

27. (New) The instrumented surgical technique of claim 21, wherein imparting the force to the pin inserted into the first metatarsal to adjust the alignment of the first metatarsal in the frontal plane comprises imparting the force to the pin inserted into the first metatarsal to adjust the alignment of the first metatarsal in the frontal plane after rotating the knob connected to the

threaded shaft of the bone positioning guide to cause the bone engagement member to push the first metatarsal laterally toward the second metatarsal and thereby reduce the intermetatarsal angle between the first metatarsal and the second metatarsal.

28. (New) The instrumented surgical technique of claim 21, further comprising moving the first metatarsal in a sagittal plane.

29. (New) The instrumented surgical technique of claim 21, wherein:
the tissue removing instrument is a saw blade;
cutting the end of the first metatarsal comprises guiding the saw blade through a first bone preparation guide cutting slot; and
cutting the end of the medial cuneiform comprises guiding the saw blade through a second bone preparation guide cutting slot.

30. (New) The instrumented surgical technique of claim 21, wherein the bone positioning guide comprises a cannulation, and further comprising inserting a fixation wire through the cannulation and into the second metatarsal.

31. (New) The instrumented surgical technique of claim 21, wherein the at least one bone fixation device comprises at least one of a screw and a plate.

32. (New) The instrumented surgical technique of claim 21, wherein the at least one bone fixation device comprises an intramedullary implant.

33. (New) The instrumented surgical technique of claim 21, wherein fixating the moved position of the first metatarsal relative to the medial cuneiform for fusion using at least one bone fixation device comprises inserting a compressing bone screw and a plate across the tarsal-metatarsal joint, wherein inserting the plate across the tarsal-metatarsal joint comprises inserting a plurality of bone screws through the bone plate to secure a first end of the bone plate to the medial cuneiform and a second end of the bone plate to the first metatarsal.

34. (New) An instrumented surgical technique for preparing a tarsal-metatarsal joint for fusion and for repositioning a first metatarsal to correct a bunion deformity, the instrumented surgical technique comprising:

- making an incision on a foot to provide access to a tarsal-metatarsal joint;
- engaging the first metatarsal with the bone engagement member of a bone positioning guide;
- engaging the bone positioning guide with a second metatarsal separated from the first metatarsal by an intermetatarsal angle;
- cutting an end of the first metatarsal by guiding a saw blade through a first bone preparation guide cutting slot;
- removing a cut portion of the first metatarsal from the tarsal-metatarsal joint;
- after cutting the end of the first metatarsal, rotating a knob connected to a threaded shaft of the bone positioning guide to cause the bone engagement member to push the first metatarsal laterally toward the second metatarsal and thereby reduce the intermetatarsal angle between the first metatarsal and the second metatarsal to correct the bunion deformity;
- after cutting the end of the first metatarsal, imparting a force to a pin inserted into the first metatarsal to adjust an alignment of the first metatarsal in a frontal plane to correct the bunion deformity;
- after rotating the knob and after imparting the force to the pin to correct the bunion deformity of the first metatarsal, cutting an end of a medial cuneiform by guiding the saw blade through a second bone preparation guide cutting slot;
- removing a cut portion of the medial cuneiform from the tarsal-metatarsal joint;
- fenestrating a cut end of the first metatarsal;
- fenestrating a cut end of the medial cuneiform;
- compressing the first metatarsal together with the medial cuneiform;
- fixating a moved position of the first metatarsal relative to the medial cuneiform for fusion using at least one bone fixation device; and
- removing the bone positioning guide from the first metatarsal and the second metatarsal.

35. (New) The instrumented surgical technique of claim 34, further comprising after cutting the end of the first metatarsal, moving the first metatarsal in a sagittal plane.

36. (New) The instrumented surgical technique of claim 34, further comprising positioning a joint spacer offset from the first bone preparation guide cutting slot into the tarsal-metatarsal joint simultaneous with positioning the first bone preparation guide cutting slot over an end of the first metatarsal to be cut.

37. (New) The instrumented surgical technique of claim 34, further comprising positioning a joint spacer offset from the second bone preparation guide cutting slot into the tarsal-metatarsal joint simultaneous with positioning the second bone preparation guide cutting slot over an end of the medial cuneiform to be cut.

38. (New) The instrumented surgical technique of claim 34, wherein imparting the force to the pin inserted into the first metatarsal to adjust the alignment of the first metatarsal in the frontal plane comprises imparting the force to the pin inserted into the first metatarsal adjust the alignment of the first metatarsal in the frontal plane after rotating the knob connected to the threaded shaft of the bone positioning guide to cause the bone engagement member to push the first metatarsal laterally toward the second metatarsal and thereby reduce the intermetatarsal angle between the first metatarsal and the second metatarsal.

39. (New) The instrumented surgical technique of claim 34, further comprising making a second incision on the foot to provide access to the second metatarsal, wherein:

engaging the bone positioning guide with the second metatarsal comprises positioning a bone contact surface of the bone positioning guide in contact with the second metatarsal; and

rotating the knob connected to a threaded shaft of the bone positioning guide to cause the bone engagement member to push the first metatarsal laterally toward the second metatarsal comprises rotating the knob connected to a threaded shaft of the bone positioning guide to reduce a distance between the bone engagement member and the contact surface.

40. (New) The instrumented surgical technique of claim 39, wherein the bone positioning guide comprises a tip defining the bone contact surface, and positioning the bone contact surface

of the bone positioning guide in contact with the second metatarsal comprises inserting the tip through the second incision.

41. (New) The instrumented surgical technique of claim 39, wherein:

the bone positioning guide comprises a body, a first leg carrying the bone engagement member, and a second leg defining the bone contact surface; and

engaging the first metatarsal with the bone engagement member and positioning the bone contact surface in contact with the second metatarsal comprises positioning the body extending in a medial-to-lateral direction across the first metatarsal and across the second metatarsal with the first leg positioned on a medial side of the first metatarsal.

42. (New) The instrumented surgical technique of claim 34, wherein the bone positioning guide comprises a cannulation, and further comprising inserting a fixation wire through the cannulation and into the second metatarsal.

43. (New) The instrumented surgical technique of claim 34, wherein the bone positioning guide is formed by joining at least three components together, including the threaded shaft and the bone engagement member, to provide the bone positioning guide.

44. (New) The instrumented surgical technique of claim 34, wherein the at least one bone fixation device comprises at least one of a screw and a plate.

45. (New) The instrumented surgical technique of claim 34, wherein the at least one bone fixation device comprises an intramedullary implant.

46. (New) The instrumented surgical technique of claim 34, wherein fixating the moved position of the first metatarsal relative to the medial cuneiform for fusion using at least one bone fixation device comprises inserting a compressing bone screw and a plate across the tarsal-metatarsal joint, wherein inserting the plate across the tarsal-metatarsal joint comprises inserting a plurality of bone screws through the bone plate to secure a first end of the bone plate to the medial cuneiform and a second end of the bone plate to the first metatarsal.

47. (New) An instrumented surgical technique for correcting a bunion deformity, the instrumented surgical technique comprising:

- making an incision on a foot to provide access to a tarsal-metatarsal joint;
- engaging the first metatarsal with the bone engagement member of the bone positioning guide;
- engaging the bone positioning guide with the second metatarsal separated from the first metatarsal by an intermetatarsal angle;
- preparing an end of the first metatarsal for fusion;
- rotating a knob connected to a threaded shaft of the bone positioning guide to cause the bone engagement member to push the first metatarsal laterally toward the second metatarsal and thereby reduce the intermetatarsal angle between the first metatarsal and the second metatarsal to correct a bunion deformity;
- imparting a force to a pin inserted into the first metatarsal to adjust an alignment of the first metatarsal in a frontal plane to correct the bunion deformity;
- preparing an end of a medial cuneiform for fusion; and
- installing at least one fixation device through the incision to fixate a moved position of the first metatarsal relative to the medial cuneiform.

48. (New) The instrumented surgical technique of claim 47, wherein:

- rotating the knob connected to the threaded shaft comprises rotating the knob connected to the threaded shaft after preparing the end of the first metatarsal;
- imparting the force to the pin inserted into the first metatarsal comprises imparting the force to the pin inserted into the first metatarsal after preparing the end of the first metatarsal;
- and
- preparing the end of the medial cuneiform comprises preparing the end of the medial cuneiform after rotating the knob and after imparting the force to the pin to correct the bunion deformity.

49. (New) The instrumented surgical technique of claim 48, further comprising:

after preparing the end of the first metatarsal and after preparing the end of the medial cuneiform but prior to installing the at least one fixation device, compressing a prepared end the first metatarsal together with a prepared end of the medial cuneiform; and

after installing the at least one fixation device through the incision to fixate the moved position of the first metatarsal relative to the medial cuneiform, removing the bone positioning guide from the first metatarsal and the second metatarsal.

50. (New) An instrumented surgical technique for preparing a tarsal-metatarsal joint for fusion and for repositioning a first metatarsal to correct a bunion deformity, the instrumented surgical technique comprising:

making an incision on a foot to provide access to a tarsal-metatarsal joint;

making a second incision on the foot to provide access to a second metatarsal separated from the first metatarsal by an intermetatarsal angle;

engaging the first metatarsal with the bone engagement member of a bone positioning guide;

positioning a bone contact surface of the bone positioning guide in contact with the second metatarsal;

cutting an end of the first metatarsal by guiding a saw blade through a first bone preparation guide cutting slot;

rotating a knob connected to a threaded shaft of the bone positioning guide to reduce a distance between the bone engagement member and the contact surface, thereby reducing the intermetatarsal angle between the first metatarsal and the second metatarsal to correct the bunion deformity;

imparting a force to a pin inserted into the first metatarsal to adjust an alignment of the first metatarsal in a frontal plane to correct the bunion deformity;

cutting an end of a medial cuneiform by guiding the saw blade through a second bone preparation guide cutting slot;

compressing the first metatarsal together with the medial cuneiform;

fixating a moved position of the first metatarsal relative to the medial cuneiform for fusion using at least one bone fixation device; and

removing the bone positioning guide from the first metatarsal and the second metatarsal,

wherein one or both of the first metatarsal and the medial cuneiform is cut after reducing the intermetatarsal angle between the first metatarsal and the second metatarsal to correct the bunion deformity and after adjusting the alignment of the first metatarsal in the frontal plane to correct the bunion deformity.

REMARKS

By way of this Preliminary Amendment, claims 1–20 are canceled and new claims 21–50 are added. Claims 21–50 will be pending upon entry of the amendment. No new matter is added by way of the amendment, and support for the new claims can be found throughout Applicant's disclosure.

Applicant respectfully requests that the Preliminary Amendment be entered prior to examination and consideration of the above-identified application. The Examiner is invited to telephone the undersigned to discuss this application.

Dated: August 23, 2024

Respectfully submitted,

FREDRIKSON & BYRON, P.A.
60 South Sixth Street, Suite 1500
Minneapolis, MN 55402-4400 USA
Telephone: 612.492.7387

/Paul J. LaVanway, Jr./
Paul J. LaVanway, Jr.
Registration No. 64,610

82552967v1

Issue Classification 	Application/Control No. 18/587,921	Applicant(s)/Patent Under Reexamination Santrock et al.
	Examiner CHRISTOPHER J BECCIA	Art Unit 3775

CPC						
Symbol					Type	Version
A61B	/	17	/	8866	F	2013-01-01
A61B	/	17	/	151	I	2013-01-01
A61B	/	17	/	15	I	2013-01-01
A61B	/	17	/	152	I	2013-01-01
A61B	/	17	/	1775	I	2016-11-01
A61B	/	17	/	1682	I	2013-01-01
A61B	/	17	/	1728	I	2013-01-01
A61B	/	17	/	1739	I	2013-01-01
A61B	/	17	/	8061	I	2013-01-01
A61B	/	17	/	025	A	2013-01-01
A61B	/	2017	/	565	A	2013-01-01
A61B	/	17	/	562	A	2013-01-01
A61B	/	17	/	66	A	2013-01-01
A61B	/	2017	/	564	A	2013-01-01
A61B	/	17	/	90	A	2021-08-01
A61B	/	2017	/	00367	A	2013-01-01
A61B	/	2017	/	681	A	2013-01-01

CPC Combination Sets				
Symbol			Type	Set

Use images from artifact folder? ☒ Yes ☐ No			
NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	30	
/CHRISTOPHER J BECCIA/	10 September 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	18

Issue Classification 	Application/Control No. 18/587,921	Applicant(s)/Patent Under Reexamination Santrock et al.
	Examiner CHRISTOPHER J BECCIA	Art Unit 3775

INTERNATIONAL CLASSIFICATION			
CLAIMED			
A61B	/	17	/ 88

NON-CLAIMED			
	/		/

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

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

Use images from artifact folder? ☒ Yes ☐ No			
NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	30	
/CHRISTOPHER J BECCIA/ Primary Examiner, Art Unit 3775	10 September 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	18

Issue Classification 	Application/Control No. 18/587,921	Applicant(s)/Patent Under Reexamination Santrock et al.
	Examiner CHRISTOPHER J BECCIA	Art Unit 3775

☒ 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
	1		10		19		28		37		46				
	2		11		20		29		38		47				
	3		12		21		30		39		48				
	4		13		22		31		40		49				
	5		14		23		32		41		50				
	6		15		24		33		42						
	7		16		25		34		43						
	8		17		26		35		44						
	9		18		27		36		45						

Use images from artifact folder? ☒ Yes ☐ No			
NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	30	
/CHRISTOPHER J BECCIA/ Primary Examiner, Art Unit 3775		10 September 2024	
(Primary Examiner)	(Date)	O.G. Print Claim(s)	O.G. Print Figure
		1	18

Search Notes 	Application/Control No. 18/587,921	Applicant(s)/Patent Under Reexamination Santrock et al.
	Examiner CHRISTOPHER J BECCIA	Art Unit 3775

CPC - Searched*		
Symbol	Date	Examiner
A61B17/88, 8866	09/10/2024	CJB
A61B17/15, 151, 152, 17, 1775, 1739, 16, 1682, 80, 8061	09/10/2024	CJB

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
Search History Attached	09/10/2024	CJB
Inventor Search	09/10/2024	CJB
Text Search	09/10/2024	CJB
Classification Search	09/10/2024	CJB
B/F Citations	09/10/2024	CJB

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	See Attached Search History	09/10/2024	CJB

/CHRISTOPHER J BECCIA/ Primary Examiner, Art Unit 3775	
---	--

<i>Index of Claims</i> 	Application/Control No. 18/587,921	Applicant(s)/Patent Under Reexamination Santrock et al.
	Examiner CHRISTOPHER J BECCIA	Art Unit 3775

✓	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	09/10/2024								
	1	-								
	2	-								
	3	-								
	4	-								
	5	-								
	6	-								
	7	-								
	8	-								
	9	-								
	10	-								
	11	-								
	12	-								
	13	-								
	14	-								
	15	-								
	16	-								
	17	-								
	18	-								
	19	-								
	20	-								
	21	=								
	22	=								
	23	=								
	24	=								
	25	=								
	26	=								
	27	=								
	28	=								
	29	=								
	30	=								
	31	=								
	32	=								
	33	=								
	34	=								
	35	=								
	36	=								
	37	=								
	38	=								
	39	=								
	40	=								
	41	=								
	42	=								

<p><i>Index of Claims</i></p> 	<p>Application/Control No.</p> <p>18/587,921</p>	<p>Applicant(s)/Patent Under Reexamination</p> <p>Santrock et al.</p>
	<p>Examiner</p> <p>CHRISTOPHER J BECCIA</p>	<p>Art Unit</p> <p>3775</p>

CLAIM			DATE							
Final	Original	09/10/2024								
	43	=								
	44	=								
	45	=								
	46	=								
	47	=								
	48	=								
	49	=								
	50	=								



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

BIB DATA SHEET

CONFIRMATION NO. 7731

SERIAL NUMBER	FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.		
18/587,921	02/26/2024	606	3775	71212.4.6.USC7		
APPLICANTS Treace Medical Concepts, Inc., Ponte Vedra, FL;						
INVENTORS Robert D. Santrock, Morgantown, WV; Paul Dayton, Ankeny, IA; Daniel J. Hatch, Greeley, CO; W. Bret Smith, Lexington, SC; F. Barry Bays, Collierville, TN; Carlos Eduardo Gil, Memphis, TN; Sean F. Scanlan, Jacksonville, FL; Joe W. Ferguson, Ponte Vedra Beach, FL; John T. Treace, Ponte Vedra Beach, FL;						
** CONTINUING DATA ***** This application is a CON of 18/183,013 03/13/2023 PAT 11911085 which is a CON of 17/567,879 01/03/2022 PAT 11602387 which is a CON of 17/353,431 06/21/2021 PAT 11213333 which is a CON of 16/998,155 08/20/2020 PAT 11039873 which is a CON of 16/031,855 07/10/2018 PAT 10849670 which is a CON of 15/452,236 03/07/2017 PAT 10045807 which is a CON of 14/981,335 12/28/2015 PAT 9622805 which claims benefit of 62/205,338 08/14/2015						
** FOREIGN APPLICATIONS *****						
** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** 04/16/2024						
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and <u>/CHRISTOPHER J BECCIA/</u> Acknowledged <u>Examiner's Signature</u>		☐ Met after Allowance CB <u>Initials</u>	STATE OR COUNTRY WV	SHEETS DRAWINGS 42	TOTAL CLAIMS 20	INDEPENDENT CLAIMS 4
ADDRESS FREDRIKSON & BYRON, P.A. INTELLECTUAL PROPERTY GROUP 60 SOUTH SIXTH STREET, SUITE 1500 MINNEAPOLIS, MN 55402 UNITED STATES						
TITLE BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS						

FILING FEE RECEIVED 0.00	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	☐ All Fees
		☐ 1.16 Fees (Filing)
		☐ 1.17 Fees (Processing Ext. of time)
		☐ 1.18 Fees (Issue)
		☐ Other _____
		☐ Credit

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	0	"14981335"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:23 AM
L2	0	santrock-robert-d.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:24 AM
L3	25	dayton-paul.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:24 AM
L4	3	hatch-daniel.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:24 AM
L5	282	smith-bret-w.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:24 AM
L6	1	gil-carlos-eduardo.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:25 AM
L7	0	scanlan-sean-f.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:25 AM
L8	11	ferguson-joe-william.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:25 AM
L9	3	treace-john-t.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:25 AM
L11	669	606/105.ccls.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/10/13 10:30 AM
L12	2618	a61b17/88.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/10/13 10:30 AM
L13	245	metatarsal and cuneiform and fusion	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	ADJ	ON	ON	2016/10/13 10:52 AM
L14	27	L13 and bunion	(US-PGPUB; USPAT;	ADJ	ON	ON	2016/10/13

L15	24	("20020045896" "20030060827" "20040143266" "20050171544" "20070173843" "20090076554" "20090210010" "20090210011" "20100125300" "20100274293" "20110009866" "20110295324" "20120303033" "20140148859" "3489143" "4493317" "5534027" "5591169" "5667510" "7648508" "7717945" "8852246" "8858602").PN. OR ("9060822").URPN.	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	10:56 AM 2016/10/13 10:57 AM
L16	87	metatarsal and bunion and fusion	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	ADJ	ON	ON	2016/10/13 10:58 AM
L17	67	("1665030" "1746865" "20040127907" "20050021033" "20060241607" "20060241608" "20080008777" "20080155731" "20080177302" "20080269806" "20090036893" "20090076617" "20090210010" "20090222047" "20090254190" "20100036430" "20100094294" "20100106110" "20100125297" "20100152752" "20100211071" "20100211075" "20100234896" "20100249687" "20110061664" "20110077656" "20110082405" "20110118780" "20110119807" "20110130789" "20110178557"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:00 AM

L18	17	"20110224729" "20110301648" "20120016426" "20120071935" "20120215147" "20120330322" "2596038" "2706023" "2958324" "4583303" "4644940" "5190545" "5282782" "5529075" "5743913" "5843085" "6318373" "6391031" "6520965" "6629943" "6746450" "6964645" "7344538" "7582088" "7875058" "7901431" "8057522" "8221455" "8257403" "8257406" "8398678").PN. OR ("8821551").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:01 AM
L19	1	("20030105461" "20040102776" "20040210234" "20070233113" "20090012569" "20090177203" "20090254126" "20090281577" "20090318977" "20110208247" "5586985" "5662655" "5674222" "5810822" "6648885" "7857836" "8177822").PN. OR ("9433452").URPN.	(USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:02 AM
L20	374	(12/567314).APP. ("20010027583" "20010034956" "20020007134" "20020022862" "20020032466" "20020056209" "20020058036" "20020062140" "20020077281" "20020138026" "20020162250" "20020193309" "20030005601" "20030023268" "20030040750" "20030045881" "20030093920" "20030105193" "20030134792" "20030148692"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:02 AM

		"20030152637"					
		"20030172553"					
		"20030186433"					
		"20030187372"					
		"20030225356"					
		"20040019308"					
		"20040031169"					
		"20040039319"					
		"20040045194"					
		"20040093746"					
		"20040103561"					
		"20040107604"					
		"20040123495"					
		"20040127907"					
		"20040156931"					
		"20040161481"					
		"20040168329"					
		"20040168353"					
		"20040186182"					
		"20040191338"					
		"20040194348"					
		"20040194352"					
		"20040210234"					
		"20040243197"					
		"20050019436"					
		"20050020690"					
		"20050054959"					
		"20050054962"					
		"20050055849"					
		"20050058734"					
		"20050059873"					
		"20050060910"					
		"20050061332"					
		"20050063971"					
		"20050070909"					
		"20050076536"					
		"20050115116"					
		"20050123567"					
		"20050158382"					
		"20050177084"					
		"20050187071"					
		"20050197711"					
		"20050202047"					
		"20050208540"					
		"20050228389"					
		"20050229430"					
		"20050229433"					
		"20050241187"					
		"20050251081"					
		"20060002954"					
		"20060015102"					
		"20060030854"					
		"20060058796"					
		"20060064048"					
		"20060074434"					
		"20060079558"					
		"20060079559"					
		"20060081553"					

		"20060148903" "20060155233" "20060161090" "20060162464" "20060178702" "20060189914" "20060201011" "20060240105" "20060241066" "20060241607" "20060241608" "20060247566" "20060251721" "20060258588" "20060264961").PN. OR ("20060269628" "20060271077" "20060276737" "20060282231" "20070010818" "20070016205" "20070016275" "20070033750" "20070036876" "20070051020" "20070051376" "20070074334" "20070074426" "20070078518" "20070088341" "20070094896" "20070128226" "20070131798" "20070141020" "20070197948" "20070204487" "20070213296" "20070213308" "20070214681" "20070225217" "20070225703" "20070260252" "20070265296" "20070265634" "20070281906" "20070282342" "20070299382" "20080008777" "20080010856" "20080014272" "20080027119" "20080041169" "20080057068" "20080065224" "20080076829" "20080078628" "20080081834" "20080086139"					
--	--	---	--	--	--	--	--

		"20080086909" "20080086913" "20080102121" "20080113025" "20080139641" "20080141565" "20080147084" "20080153780" "20080155731" "20080200989" "20080208252" "20080216593" "20080217816" "20080221697" "20080229482" "20080242646" "20080248282" "20080260791" "20080262091" "20080263900" "20080280975" "20080282580" "20080287406" "20080287866" "20080288019" "20080294170" "20080301977" "20090005358" "20090012180" "20090036893" "20090043318" "20090054527" "20090062253" "20090062359" "20090082466" "20090082773" "20090082874" "20090111792" "20090113759" "20090117167" "20090118242" "20090133289" "20090156614" "20090157194" "20090181098" "20090192222" "20090198287" "20090209536" "20090210010" "20090215809").PN. OR ("20090216334" "20090222047" "20090228049" "20090287246" "20090291975" "20090292022" "20090292023" "20090306723"					
--	--	---	--	--	--	--	--

		"20100021107" "20100036430" "20100152752" "20110118780" "20110178557" "20110224729" "20110301648" "20120071935" "2291413" "3867929" "3880155" "3987559" "4069824" "4213208" "4240214" "4244359" "4255875" "4263902" "4266553" "4300294" "4314412" "4317293" "4393876" "4409974" "4414964" "4439934" "4510699" "4583303" "4597195" "4603698" "4604997" "4608988" "4632103" "4644940" "4676801" "4726127" "4729369" "4738255" "4813162" "4819644" "4841647" "4842931" "4852556" "4856505" "4876758" "4901453" "4930504" "4940046" "4969277" "4976712" "5005575" "5012596" "5035069" "5092347" "5094226" "5098421" "5138777" "5167665" "5174052" "5250049" "5272139" "5306301" "5350383" "5497789" "5529075" "5537764" "5539020" "5571139" "5601565" "5607756" "5611801" "5617651" "5640779" "5645588" "5665060" "5665112" "5685834" "5713903" "5725585" "5728136" "5788697" "5792093" "5797913" "5802737" "5810822" "5843085" "5853293" "5919194" "5921986" "5962011" "6001101" "6068648" "6091000" "6093163" "6203545" "6238357" "6248109" "6248788" "6264677" "6283973" "6315749" "6318373" "6319270" "6348053" "6367087" "6391031" "6406234" "6424864"					
--	--	--	--	--	--	--	--

		"6447783" "6478761" "6481120").PN. OR ("6514222" "6547792" "6547800" "6569188" "6583114" "6604301" "6616665" "6629943" "6643956" "6684532" "6689136" "6716234" "6800063" "6862481" "6874258" "6887243" "6887259" "6889088" "6890333" "6902799" "6908465" "6909513" "6910287" "6942668" "6964645" "6991636" "7008428" "7013583" "7055268" "7056885" "7062866" "7070601" "7097647" "7141545" "7175667" "7192411" "7217853" "7253266" "7263788" "7266910" "7270644" "7276244" "7287293" "7291175" "7291483" "7325323" "7326211" "7383089" "7392605" "7396338" "7485135" "7493810" "7513880" "7572258" "7625395" "7875058" "D341424" "D443694" "H001706" "RE32698" "RE34753").PN. OR ("8277459").URPN.					
L21	1	(12/793429).APP.	(USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:02 AM
L22	397	("20010027583" "20010034956" "20020007134" "20020022862" "20020032466" "20020056209" "20020058036" "20020062140" "20020077281" "20020138026" "20020162250" "20020193309" "20030005601" "20030023268" "20030040750" "20030045881" "20030093920" "20030105193" "20030134792" "20030148692"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:02 AM

		"20030152637"					
		"20030172553"					
		"20030186433"					
		"20030187372"					
		"20030225356"					
		"20040019308"					
		"20040031169"					
		"20040039319"					
		"20040045194"					
		"20040071522"					
		"20040093746"					
		"20040103561"					
		"20040107604"					
		"20040123495"					
		"20040127907"					
		"20040153153"					
		"20040156931"					
		"20040161481"					
		"20040168329"					
		"20040168353"					
		"20040186182"					
		"20040191338"					
		"20040194348"					
		"20040194352"					
		"20040210234"					
		"20040243197"					
		"20050019436"					
		"20050020690"					
		"20050054959"					
		"20050054962"					
		"20050055849"					
		"20050058734"					
		"20050059873"					
		"20050060910"					
		"20050061332"					
		"20050063971"					
		"20050070909"					
		"20050076536"					
		"20050115116"					
		"20050123567"					
		"20050158382"					
		"20050177084"					
		"20050187071"					
		"20050197711"					
		"20050202047"					
		"20050208540"					
		"20050228389"					
		"20050229430"					
		"20050229433"					
		"20050241187"					
		"20050251081"					
		"20060002954"					
		"20060015102"					
		"20060030854"					
		"20060058796"					
		"20060064048"					
		"20060074434"					
		"20060079558"					

		"20060079559" "20060081553" "20060148903" "20060155233" "20060161090" "20060162464" "20060178702" "20060189914" "20060201011" "20060240105" "20060241066" "20060241607" "20060241608" "20060247566" "20060251721").PN. OR ("20060258588" "20060264961" "20060269628" "20060271077" "20060276737" "20060282231" "20070010818" "20070016205" "20070016275" "20070033750" "20070036876" "20070051020" "20070051376" "20070074334" "20070074426" "20070078518" "20070088341" "20070094896" "20070128226" "20070131798" "20070141020" "20070197948" "20070204487" "20070213296" "20070213308" "20070214681" "20070225217" "20070225703" "20070260252" "20070265296" "20070265634" "20070281906" "20070282342" "20070299382" "20080008777" "20080010856" "20080014272" "20080027119" "20080041169" "20080057068" "20080065224" "20080076829" "20080078628"					
--	--	---	--	--	--	--	--

		"20080081834" "20080086139" "20080086909" "20080086913" "20080102121" "20080113025" "20080139641" "20080141565" "20080147084" "20080153780" "20080155731" "20080200989" "20080208252" "20080216593" "20080217816" "20080221697" "20080229482" "20080242646" "20080248282" "20080260791" "20080262091" "20080263900" "20080280975" "20080282580" "20080287406" "20080287866" "20080288019" "20080294170" "20080301977" "20090005358" "20090012180" "20090036893" "20090043318" "20090054527" "20090062253" "20090062359" "20090082466" "20090082773" "20090082874" "20090111792" "20090113759" "20090117167" "20090118242" "20090133289" "20090155614" "20090157194" "20090181098" "20090192222" "20090198287" "20090209536").PN. OR ("20090210010" "20090215809" "20090216334" "20090222047" "20090228049" "20090287246" "20090291975" "20090292022"					
--	--	---	--	--	--	--	--

		"20090292023" "20090306723" "20100036430" "20100082072" "20100152752" "20100152786" "20100211071" "20110077656" "20110118780" "20110178557" "20110224729" "20120016426" "20120071935" "20120330322" "2291413" "3867929" "3880155" "3987559" "4069824" "4213208" "4240214" "4244359" "4255875" "4263902" "4266553" "4300294" "4314412" "4317293" "4393876" "4409974" "4414964" "4439934" "4497603" "4510699" "4583303" "4597195" "4603698" "4604997" "4608988" "4620825" "4632103" "4644940" "4676801" "4726127" "4729369" "4738255" "4772286" "4813162" "4819644" "4841647" "4842931" "4852556" "4856505" "4859128" "4876758" "4901453" "4930504" "4940046" "4969277" "4976712" "5005575" "5012596" "5035069" "5044850" "5092347" "5094226" "5098421" "5138777" "5167665" "5174052" "5250049" "5272139" "5306301" "5350383" "5497789" "5503510" "5529075" "5537764" "5539020" "5571139" "5601565" "5607756" "5611801" "5617651" "5618142" "5640779" "5645588" "5665060" "5665112" "5685834" "5713903" "5725541" "5725585" "5728136" "5788697" "5792093" "5797913" "5802737" "5810822" "5843085" "5853293" "5919194"					
--	--	--	--	--	--	--	--

		"5921986" "5962011" "6001101" "6068648" "6091000" "6093163" "6203545").PN. OR ("6238357" "6248109" "6248788" "6264677" "6283973" "6299398" "6315749" "6318373" "6319270" "6348053" "6367087" "6391031" "6406234" "6424864" "6447783" "6478761" "6481120" "6514222" "6547792" "6547800" "6569188" "6583114" "6604301" "6616665" "6629943" "6643956" "6684532" "6689136" "6716234" "6749384" "6800063" "6862481" "6874258" "6887243" "6887259" "6889088" "6890333" "6902799" "6905296" "6908465" "6909513" "6910287" "6942668" "6964645" "6991636" "7008428" "7013583" "7052498" "7055268" "7056885" "7062866" "7070601" "7097647" "7141545" "7175667" "7182561" "7192411" "7217853" "7253266" "7263788" "7266910" "7270644" "7273338" "7276244" "7287293" "7291175" "7291483" "7322783" "7325323" "7326211" "7383089" "7384226" "7392605" "7396338" "7485135" "7485153" "7493810" "7513880" "7572258" "7625395" "7650681" "7722303" "7824141" "7833255" "7875058" "8048134" "8096742" "D341424" "D443694" "H001706" "RE32698" "RE34753").PN. OR ("8696719").URPN. ("20030023268" "20030236555" "20060178702" "20060264961" "20070010818"					
L23	110	("20030023268" "20030236555" "20060178702" "20060264961" "20070010818"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:02 AM

		"20080177302" "20080269743" "20080281355" "20090036893" "20100076504" "20100152752" "20100211071" "20100268273" "4159716" "4409974" "5306301" "5529075" "5888203" "6391031" "6719801" "6964645" "7235091").PN. OR ("7875058").URPN.					
L24	1	"14981335"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/01/19 01:05 PM
L25	130	("D0765844" "D076643 4" "D0766437" "D07664 38" "D0766438" "20020 198531" "20080208252 " "20090222047" "2013 0035694" "2013018471 4" "20130204259" "201 30267956" "201501199 44" "20160256204" "20 040039394" "20040097 946" "20050004676" "2 0050075641" "2005010 1961" "20050149042" " 20050228389" "200502 73112" "20060206044" " "20060217733" "20060 229621" "20060241607 " "20060241608" "2006 0264961" "2007023313 8" "20070265634" "200 70276383" "200800911 97" "20080140081" "20 080262500" "20080269 908" "20090036893" "2 0090093849" "2009010 5767" "20090198244" " 20090254092" "200902 54126" "20090287309" " "20100069910" "20100 121334" "20100130981 " "20100152782" "2010 0168799" "2010018524 5" "20100256687" "201 00324556" "201100930 84" "20110245835" "20 110288550" "20110301 648" "20120065689" "2 0120078258" "2012012 3420" "20120123484" "	(US-PGPUB; USPAT)	OR	OFF	OFF	2017/02/10 06:31 PM

		20120130376" "20120130383" "20120184961" "20120239045" "20120253350" "20120265301" "20130012949" "20130085499" "20130150903" "20130158556" "20140046387" "20140257509" "20150032168" "20150045839" "20160015426" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160242791" "4159716" "4187840" "4338927" "4627425" "4757810" "4952214" "4978347" "5021056" "5112334" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "5810822" "5893553" "5935128" "6030391" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "7686811" "7972338" "8057478" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231663" "8246561" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "H1706").PN.					
L26	89	("20060229730" "20070005074" "20070173947" "20070226986" "20070233141" "20070299533" "20080287954" "20090099567" "20090110498" "20090138020" "20090157083" "20120130434" "5539649" "5683397" "5766259" "6002859" "6205411" "6228085"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/02/10 06:35 PM

L27	1112	"6663669" "6673116" "6852130" "6875236" "7314488").PN. OR ("8337503").URPN. ("1480285" "20010005797" "20010011190" "20010021876" "20010054478" "20020007294" "20020029045" "20020052606" "20020059049" "20020082741" "20020087274" "20020092532" "20020107522" "20020128872" "20020147415" "20020186818" "20020193797" "20020198528" "20020198531" "20030009171" "20030009234" "20030011624" "20030018338" "20030039676" "20030055502" "20030105526" "20030109784" "20030120276" "20030130741" "20030139817" "20030158606" "20030171757" "20030216669" "20040018144" "20040030245" "20040054372" "20040054416" "20040068187" "20040092932" "20040098133" "20040102852" "20040102866" "20040106926" "20040115586" "20040122436" "20040122439" "20040128026" "20040133276" "20040138754" "20040143336" "20040147927" "20040148026" "20040153079"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/02/10 06:36 PM
-----	------	--	-----------------------------	----	-----	-----	------------------------

		"20040153087" "20040158254" "20040162619" "20040167390" "20040171924" "20040172137" "20040181144" "20040193169" "20040204644" "20040204760" "20040212586" "20040220583" "20040236341" "20040236424" "20040243481" "20040254584" "20040260301" "20050008887" "20050010227" "20050010300" "20050015022" "20050019664" "20050027303" "20050027361" "20050043806" "20050043837" "20050049524" "20050049603" "20050059873" "20050060040" "20050065628" "20050070897" "20050071015" "20050075641" "20050096535" "20050113841" "20050113846" "20050119664" "20050131662" "20050137708" "20050148843").PN. OR ("20050149042" "20050171545" "20050177245" "20050203536" "20050203540" "20050209605" "20050216305" "20050222571" "20050222573" "20050228393" "20050234461" "20050234465" "20050234468" "20050240195" "20050240267" "20050244239" "20050245934"					
--	--	---	--	--	--	--	--

		"20050245936" "20050251147" "20050267353" "20050267485" "20050267584" "20050273114" "20050283252" "20050283253" "20060004284" "20060015120" "20060030853" "20060038520" "20060052725" "20060058803" "20060058884" "20060058886" "20060074434" "20060089621" "20060093988" "20060094951" "20060095044" "20060100832" "20060105011" "20060111722" "20060122616" "20060122618" "20060136058" "20060142657" "20060147332" "20060149283" "20060155380" "20060161165" "20060161167" "20060172263" "20060178497" "20060184177" "20060184250" "20060190086" "20060192319" "20060195111" "20060195194" "20060195198" "20060200158" "20060204932" "20060210644" "20060217808" "20060235421" "20060241635" "20060241636" "20060271058" "20060276796" "20060276797" "20060287733" "20060287891" "20060293681" "20070015995" "20070016008" "20070016209"					
--	--	--	--	--	--	--	--

		"20070027680" "20070039205" "20070043582" "20070066917" "20070073133" "20070073136" "20070073137" "20070083214" "20070083266" "20070100258" "20070100450" "20070100462" "20070106299" "20070118055" "20070118138" "20070118243" "20070129809" "20070142914").PN. OR ("20070150068" "20070156066" "20070156171" "20070162038" "20070162039" "20070173946" "20070173948" "20070185498" "20070191962" "20070198022" "20070203430" "20070203605" "20070219639" "20070219640" "20070224238" "20070226986" "20070233121" "20070233136" "20070233140" "20070233141" "20070233269" "20070233272" "20070238069" "20070239282" "20070239481" "20070244487" "20070250169" "20070253617" "20070255288" "20070255412" "20070262867" "20070272747" "20070276224" "20070276400" "20070276501" "20070288029" "20070288030" "20080009952" "20080015599" "20080015603"					
--	--	---	--	--	--	--	--

		"20080015604" "20080015605" "20080021299" "20080021494" "20080021567" "20080027563" "20080033442" "20080039850" "20080051799" "20080051910" "20080058945" "20080058947" "20080062183" "20080065225" "20080094396" "20080097451" "20080112996" "20080114370" "20080133022" "20080140081" "20080140209" "20080140213" "20080146969" "20080147072" "20080147073" "20080147074" "20080161815" "20080161816" "20080172125" "20080195099" "20080195107" "20080195108" "20080195109" "20080195216" "20080200926" "20080208200" "20080208353" "20080215059" "20080230422" "20080234664" "20080234683" "20080234685" "20080234833" "20080243127" "20080255674" "20080257363" "20080262500" "20080262624" "20080269596" "20080269906" "20080275452" "20080281328" "20080281329").PN. OR ("20080281426" "20080287926" "20080287954" "20080294170" "20080294266"					
--	--	---	--	--	--	--	--

		"20080300600" "20080306485" "20080306558" "20080312659" "20080319448" "20090012526" "20090018546" "20090018666" "20090024131" "20090024169" "20090043556" "20090048618" "20090076371" "20090076512" "20090076520" "20090076555" "20090082770" "20090082774" "20090087276" "20090088674" "20090088753" "20090088754" "20090088755" "20090088758" "20090088759" "20090088760" "20090088761" "20090088763" "20090088865" "20090088866" "20090089034" "20090089081" "20090093815" "20090093816" "20090096613" "20090099567" "20090105837" "20090116621" "20090118736" "20090118769" "20090131941" "20090131942" "20090138020" "20090149964" "20090149965" "20090149977" "20090151736" "20090157083" "20090163922" "20090163923" "20090164024" "20090177282" "20090187193" "20090209884" "20090209961" "20090222014" "20090222015" "20090222016"					
--	--	--	--	--	--	--	--

		"20090222103" "20090226068" "20090228016" "20090234360" "20090248044" "20090250413" "20090254093" "20090254367" "20090259312" "20090270868" "20090274350" "20090287217" "20090287309" "20090306676" "20090307893" "20090318836" "20090318921" "20100010493" "20100016984" "20100016986" "20100023015" "20100030231" "20100036404" "20100042105" "20100049195" "20100057088" "20100076439" "20100076505" "20100076563" "20100076571").PN. OR ("20100082034" "20100082035" "20100082067" "20100087829" "20100094295" "20100105011" "20100121334" "20100121335" "20100137869" "20100137924" "20100145343" "20100145344" "20100152782" "20100160917" "20100160919" "20100168752" "20100168754" "20100168857" "20100168866" "20100179663" "20100185202" "20100191244" "20100198067" "20100198224" "20100212138" "20100217109" "20100217270" "20100217336"					
--	--	---	--	--	--	--	--

		"20100217338" "20100217399" "20100228257" "20100249657" "20100249796" "20100256649" "20100262150" "20100274253" "20100281678" "20100286700" "20100291401" "20100292743" "20100298894" "20100305574" "20100318088" "20100324692" "20110004317" "20110008754" "20110009869" "20110014081" "20110015636" "20110015639" "20110015752" "20110016690" "20110022049" "20110022174" "20110029088" "20110029091" "20110029093" "20110029116" "20110035012" "20110040303" "20110040334" "20110046735" "20110054478" "20110066193" "20110066245" "20110071528" "20110071529" "20110071530" "20110071532" "20110071533" "20110071581" "20110071802" "20110087332" "20110092804" "20110093086" "20110106093" "20110106254" "20110125264" "20110125284" "20110130795" "20110151027" "20110151259" "20110153025" "20110160736" "20110160867" "20110166578"					
--	--	--	--	--	--	--	--

		"20110172672" "20110177590" "20110184419" "20110184526" "20110190899" "20110190901" "20110213376").PN. OR ("20110214279" "20110218545" "20110224674" "20110238071" "20110245835" "20110251617" "20110257657" "20110269100" "20110275032" "20110276145" "20110282473" "20110295887" "20110313424" "20110319745" "20120010619" "20120010710" "20120010711" "20120029345" "20120029520" "20120041445" "20120041446" "20120041564" "20120065640" "20120078254" "20120078258" "20120078259" "20120089595" "20120101586" "20120109137" "20120109138" "20120109226" "20120116203" "20120123422" "20120130382" "20120130505" "20120136365" "20120141034" "20120143197" "20120143267" "20120150242" "20120158002" "20120165954" "20120192401" "20120209276" "20120215225" "20120215310" "20120221017" "20120226283" "20120226315" "20120232596" "20120245587"					
--	--	---	--	--	--	--	--

		"20120259335" "20120259423" "20120265208" "20120271131" "20120271314" "20120271366" "20120276509" "20120277751" "20120289965" "20120296339" "20120303004" "20120303033" "20120310364" "20120310399" "20120316564" "20120323246" "20120323282" "20120323323" "20130001121" "20130006250" "20130018483" "20130035766" "20130046310" "20130053854" "20130056912" "20130060253" "20130072940" "20130085500" "20130085590" "20130110116" "20130110470" "20130116699" "20130119579" "20130123850" "20130131681" "20130144392" "20130158671" "20130184764" "20130197528" "20130197529" "20130197687" "20130204384").PN. OR ("20130218163" "20130245631" "20130245801" "20130261503" "20130264749" "20130268085" "20130282132" "20130289730" "20130317511" "20130326878" "20130338673" "20140005672" "20140012266" "20140018934" "20140018948" "20140052270"					
--	--	---	--	--	--	--	--

		"20140066933" "20140066937" "20140081275" "20140081659" "20140088724" "20140094816" "20140100578" "20140107651" "20140107654" "20140107715" "20140127211" "20140135775" "20140163564" "20140163565" "20140172116" "20140188119" "20140222157" "20140243833" "20140257304" "20140257508" "20140276854" "20140276856" "20140276870" "20140276873" "20140303938" "20140303990" "20140309644" "20140324058" "20140378979" "20150088293" "20150342622" "2181746" "2407845" "2416228" "2618913" "2910978" "3330611" "3840904" "3975858" "4246895" "4306866" "4324006" "4421112" "4436684" "4457306" "4475549" "4506393" "4524766" "4528980" "4565191" "4619658" "4621630" "4632111" "4633862" "4663720" "4689984" "4695283" "4696292" "4703751" "4704686" "4706660" "4719907" "4721104" "4722330" "4759350" "4778474" "4800874" "4821213" "4822365" "4841975" "4846161" "4871975" "4892545" "4893619" "4896663" "4907577" "4927422" "4936862" "4952213" "4959066" "4976737" "4979949" "4985037" "5002579" "5006121"					
--	--	--	--	--	--	--	--

		"5007936" "5030219" "5030221" "5041117" "5053037" "5053039" "5056351" "5086401").PN. OR ("5098383" "5098436" "5108425" "5122144" "5123927" "5129908" "5129909" "5133760" "5140777" "5150304" "5176684" "5194066" "5234433" "5246444" "5253506" "5258032" "5261915" "5274565" "5282802" "5299288" "5300077" "5320529" "5320625" "5323697" "5342366" "5344423" "5360446" "5364402" "5368858" "5370692" "5370699" "5405395" "5408409" "5411521" "5415662" "5417694" "5438263" "5440496" "5448489" "5449360" "5452407" "5454816" "5462550" "5472415" "5474559" "5490854" "5496324" "5507833" "5514519" "5520695" "5527317" "5539649" "5540695" "5545222" "5549688" "5554190" "5560096" "5571110" "5578037" "5593411" "5595703" "5601565" "5607431" "5611802" "5613969" "5620448" "5634927" "5641323" "5653714" "5658294" "5662656" "5662710" "5671018" "5676668" "5677107" "5681354" "5682886" "5683469" "5690635" "5697933" "5702460" "5702464" "5704941" "5709689" "5720752" "5722978" "5725376" "5725593" "5735277" "5745834" "5748767" "5749875" "5749876" "5762125" "5766251" "5768134" "5769092" "5776200" "5786217" "5792143" "5798924" "5799055" "5835619" "5860980" "5860981" "5871018"					
--	--	---	--	--	--	--	--

		"5876456" "5879398" "5879402" "5880976" "5885297" "5885298" "5888219" "5895389" "5899907" "5901060" "5911724" "5921988" "5925049" "5942370" "5967777" "5976149" "5980526" "6008433" "6019767") . PN. OR ("6033415" "6042612" "6056754" "6059789" "6059833" "6066175" "6086593" "6120510" "6120544" "6126690" "6126692" "6136033" "6156069" "6159217" "6161080" "6162257" "6187010" "6195615" "6203546" "6205411" "6206927" "6210445" "6238435" "6254604" "6258097" "6264698" "6270529" "6273891" "6290727" "6293971" "6302913" "6310269" "6312258" "6312473" "6319285" "6322728" "6325829" "6327491" "6338738" "6343987" "6354011" "6361563" "6379299" "6379388" "6383228" "6391251" "6395005" "6424332" "6427698" "6459948" "6463351" "6475243" "6482236" "6488715" "6503255" "6508980" "6510334" "6514259" "6517583" "6519998" "6520964" "6533737" "6547823" "6551325" "6554837" "6556008" "6558391" "6558428" "6562073" "6564085" "6567681" "6575980" "6575982" "6591581" "6605293" "6610067" "6622567" "6629999" "6641617" "6676892" "6682566" "6696073" "6697664" "6701174" "6709462" "6711431" "6711432" "6712856" "6716249" "6725077" "6738657" "6740092" "6749638" "6750653" "6772026" "6780190"					
--	--	--	--	--	--	--	--

		"6786930" "6799066" "6823871" "6827723" "6887247" "6905514" "6916324" "6923817" "6923831" "6932842" "6942475" "6944518" "6945976" "6953480" "6960216" "6975755" "6990220" "6993406" "7001385" "7029479" "7042222" "7048741" "7050877" "7060074" "7074241" "7104997" "7105026" "7115131" "7121832") . PN. OR ("7141053" "7169185" "7174282" "7176466" "7184814" "7198628" "7218232" "7239908" "7241315" "7255702" "7258701" "7275218" "7282054" "7294133" "7297164" "7309339" "7333013" "7335231" "7371260" "7383164" "7385498" "7388972" "7390327" "7392076" "7427200" "7427272" "7468075" "7474223" "7488325" "7494510" "7517365" "7519540" "7527631" "7534263" "7537664" "7542791" "7559931" "7575602" "7578851" "7582091" "7591821" "7601155" "7603192" "7604639" "7611516" "7618451" "7621915" "7625409" "7646161" "7651501" "7670345" "7682398" "7695477" "7695521" "7699847" "7704253" "7723395" "7747305" "7780672" "7780740" "7789885" "7794466" "7794467" "7794504" "7806896" "7809184" "7819925" "7828806" "7833245" "7837690" "7850698" "7879109" "7892261" "7896921" "7926363" "7935119" "7935150" "7938861" "7959637" "7962196" "7963968" "7967823" "7967868" "7974677" "7981158" "7988736"					
--	--	--	--	--	--	--	--

L28	34	"7993353" "8062301" "8066708" "8070752" "8083745" "8083746" "8083749" "8086336" "8092465" "8105330" "8122582" "8133230" "8133234" "8137406" "8147861" "8160345" "8167951" "8170641" "8182489" "8192441" "8192495" "8200355" "8211112" "8221430" "8241292" "8241293" "8246680" "8260589" "8265790" "8268099" "8268100" "8282646" "8298237" "8303596" "8313491" "8333772" "8337503" "8355773" "8372078").PN. OR ("8377066" "8388690" "8398646" "8407067" "8414594" "8419741" "8425522" "8430882" "8430931" "8439675" "8439925" "8444564" "8444651" "8457930" "8460302" "8469961" "8473305" "8486150" "8500740" "8532361" "8532806" "8532807" "8535387" "8543234" "8545508" "8568487" "8591516" "8597365" "8603180" "8608748" "8608749" "8617170" "8617174" "8617175" "8632547" "8652142" "8668700" "8702712" "8702715" "8706285" "8715289" "8728387" "8735773" "8764760" "8775133" "8777875" "8828016" "8828087" "8828089" "8834568" "8858561" "8864769" "8900244" "8903530" "8956364" "8979936" "9005297" "D533664" "D622854" "D669176" "D672038" "RE39301").PN. OR ("9561040").URPN. ("0487068" "20020107522" "20020165552" "20030028196"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/02/10 06:36 PM
-----	----	---	-----------------------------	----	-----	-----	------------------------

		"20030135217" "20040153066" "20050075641" "20060106396" "20100076564" "3835860" "4180909" "4201213" "4208792" "4733663" "4777948" "4990148" "5019081" "5026375" "5112334" "5470328" "5514139" "5582618" "5601563" "5617633" "5649947" "5681314" "5716405" "5766177" "5851214" "5873886" "5897559" "5911724" "6200320").PN. OR ("8262664").URPN.					
L29	348	bunion and (aligned or alignment)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/02/10 06:39 PM
L30	245	bunion with metatarsal	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/02/10 06:39 PM
L31	1	"14981335"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/02/10 06:40 PM
L36	8	santrock-robert-d.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/08/16 09:11 PM
L37	208	("20020198531" "20040039394" "20040097946" "20050004676" "20050075641" "20050101961" "20050149042" "20050228389" "20050273112" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070233138" "20070265634" "20070276383" "20080091197" "20080140081" "20080208252"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/08/16 09:12 PM

		"20080262500" "20080269908" "20090036893" "20090093849" "20090105767" "20090198244" "20090222047" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100256687" "20100324556" "20110093084" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130383" "20120184961" "20120239045" "20120253350" "20120265301" "20130012949" "20130035694" "20130085499" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130184714" "20130190765" "20130190766" "20130204259" "20130231668" "20130237987" "20130237989" "20130267956" "20130310836" "20130325076" "20130331845" "20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387"					
--	--	--	--	--	--	--	--

		"20140074099" "20140074101" "20140094861" "20140094924" "20140163563" "20140171953" "20140180342" "20140194884" "20140207144" "20140249537" "20140257509" "20140276815" "20140276853" "20140277176").PN. OR ("20140277214" "20140296995" "20140336658" "20150032168" "20150045839" "20150051650" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "4159716" "4187840" "4338927" "4627425" "4757810" "4952214" "4978347" "5021056" "5112334" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "5810822" "5893553" "5935128" "6030391" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "7686811" "7972338" "8057478" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231663" "8246561" "8262664" "8282644"					
--	--	---	--	--	--	--	--

L38	209	"8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "8435246" "8475462" "8523870" "8652142" "8672945" "8696716" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "D765844" "D766434" "D766437" "D766438" "H001706").PN. OR ("9622805").URPN. ("20020198531" "20040 039394" "20040097946 " "20050004676" "2005 0075641" "2005010196 1" "20050149042" "200 50228389" "200502731 12" "20060206044" "20 060217733" "20060229 621" "20060241607" "2 0060241608" "2006026 4961" "20070233138" " 20070265634" "200702 76383" "20080091197" " "20080140081" "20080 208252" "20080262500 " "20080269908" "2009 0036893" "2009009384 9" "20090105767" "200 90198244" "200902220 47" "20090254092" "20 090254126" "20090287 309" "20100069910" "2 0100121334" "2010013 0981" "20100152782" " 20100168799" "201001 85245" "20100256687" " "20100324556" "20110 093084" "20110245835	(US-PGPUB; USPAT)	OR	OFF	OFF	2017/08/16 09:12 PM
-----	-----	--	-------------------	----	-----	-----	------------------------

		" 20110288550" 20110301648" 20120016426" 20120065689" 20120078258" 20120123420" 20120123484" 20120130376" 20120130383" 20120184961" 20120120239045" 20120253350" 20120265301" 20130012949" 20130035694" 20130085499" 20130150903" 20130158556" 20130165936" 20130165938" 20130172942" 20130184714" 20130190765" 20130190766" 20130204259" 20130231668" 20130237987" 20130237989" 20130267956" 20130310836" 20130325076" 20130331845" 20130338785" 20140005672" 20140025127" 20140039501" 20140039561" 20140046387" 20140074099" 20140074101" 20140094861" 20140094924" 20140163563" 20140171953" 20140180342" 20140194884" 20140207144" 20140249537" 201402076815" 20140276853" 20140277176" 20140277214" 20140296995" 20140336658" 20150032168" 20150045839" 20150051650" 20150066094" 20150112446" 20150119944" 20150142064" 20150150608" 20150182273" 20150223851" 20150245858" 20160015426" 20160151165" 20160175089" 20160192950" 20160199076" 20160213384" 20160235414" 20160242791" 20160256204" 4159716" 4187840" 4338927" 4627425" 4757810" 4952214" 4978347" 5021056" 5112334" 5254119" 5312412" 5358504" 5364402" 5413579"				
--	--	---	--	--	--	--

		5449360" "5810822" "5893553" "5935128" "6030391" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "7686811" "7972338" "8057478" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231663" "8246561" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "8435246" "8475462" "8523870" "8652142" "8672945" "8696716" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "D765844" "D766434" "D766437" "D766438" "D766439" "H001706").PN.					
L39	4	("20160354127" "20170042599" "20170079669" "4570624").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2017/08/16 09:12 PM
L40	1963	a61b17/8866.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/08/16 09:14 PM
L41	2968	a61b17/88.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/08/16 09:14 PM
L42	5243	a61b17/8061.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/08/16 09:14 PM
L43	1	"15452236"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	OFF	2017/09/22 10:44 AM

L44	19	("20070123857" "20090118733" "20090198279" "20100249779" "20140303621" "20160022315" "4628919" "4895141" "4988349" "5207676" "5620442" "5788695" "5803924" "5941877" "5951556" "6162223" "6171309" "8231623" "9750538").PN.	IBM_TDB) (US-PGPUB; USPAT)	OR	OFF	OFF	2018/04/24 04:57 PM
L45	83	("20010051806" "20020013584" "20020115998" "20030149429" "20030225407" "20040097922" "20040138659" "20050038425" "20070100338" "20070123857" "20070161984" "20080275509" "20080275562" "20080275563" "20080312656" "20100249779" "20110245876" "20120150186" "20140025076" "20140066931" "20140135766" "20140276815" "20140276824" "20140303621" "20140303622" "20140350558" "20160015426" "20160022315" "20160038184" "20160151099" "20160157892" "20160249952" "20160270822" "2238870" "2346346" "4135505" "4273116" "4312336" "4554915" "4576158" "4621627" "4628919" "4714076" "4848368" "4988349" "5122140" "5160335" "5207676" "5292322" "5304177" "5320444" "5320622" "5429637" "5620442" "5662648" "5683389" "5688271"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/24 04:57 PM

L46	197	"5707370" "5709681" "5769851" "5788695" "5803924" "5827282" "5941877" "5951556" "6162222" "6162223" "6171309" "6217577" "6245071" "7004943" "7282052" "7758582" "7993069" "8088166" "8123805" "8231623" "8439914" "9168065" "9398957" "D518174").PN. OR ("9750538").URPN. ("0583455" "1201864" "1789060" "1869972" "1997466" "2214490" "2238870" "2250417" "2251209" "2333033" "2346346" "2371519" "2391537" "2391693" "2393694" "2393831" "2393982" "2406987" "2434431" "2435850" "2443106" "2497626" "2697433" "2812761" "3128768" "3244170" "3709218" "3835849" "3862631" "3961854" "3975032" "4003096" "4040130" "4096857" "4127119" "4135505" "4185624" "4187841" "4220146" "4244360" "4258708" "4271832" "4299212" "4308863" "4338927" "4349017" "4393868" "4409970" "4450834" "4475546" "4483334" "4488542" "4502473" "4535763" "4541422" "4548199" "4611586" "4620533" "4621627" "4628919" "4628921" "4628922" "4662365" "4696293" "4714076" "4730608" "4745913" "4747400" "4823781" "4848368" "4869242" "4895141" "4913137" "4922896" "4923458" "4941481" "4942872" "4976712" "4978348" "4988349" "4998935" "5024618" "5026372" "5098432" "5100403" "5102411"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/24 04:57 PM
-----	-----	--	-----------------------------	----	-----	-----	------------------------

		"5108394" "5152280" "5160335" "5167661" "5203783" "5207676" "5209750" "5254078" "5275599" "5281224" "5292322" "5300072" "5304177" "5314426" "5320622" "5320623" "5330474" "5334202" "5342360" "5352228" "5380322" "5571103" "5601551" "5643258" "5658283" "5683389" "5709681" "Re31809" "Re34985").PN. OR ("6171309").URPN.					
L47	1	"15452236"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/04/24 04:58 PM
L54	1	"16031855"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:16 PM
L55	25	santrock-robert-d.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:16 PM
L56	7	"10045807".pn.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:17 PM
L57	4	"9622805".pn.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:17 PM
L58	232	("20020198531" "20040039394" "20040097946" "20050004676" "20050075641" "20050101961" "20050149042" "20050228389" "20050273112" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070123857" "20070233138" "20070265634" "20070276383" "20080091197"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/01/03 03:17 PM

		"20080140081" "20080208252" "20080262500" "20080269908" "20090036893" "20090093849" "20090105767" "20090118733" "20090198244" "20090198279" "20090222047" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100249779" "20100256687" "20100324556" "20110093084" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130383" "20120184961" "20120239045" "20120253350" "20120265301" "20130012949" "20130035694" "20130085499" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130184714" "20130190765" "20130190766" "20130204259" "20130231668" "20130237987" "20130237989" "20130267956" "20130310836" "20130325076" "20130331845" "20130338785"					
--	--	--	--	--	--	--	--

		"20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924" "20140163563" "20140171953" "20140180342" "20140194884" "20140207144" "20140249537").PN. OR ("20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140296995" "20140303621" "20140336658" "20150032168" "20150045839" "20150051650" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160022315" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "20160354127" "20170042599" "20170079669" "4159716" "4187840" "4338927" "4570624" "4627425" "4628919" "4757810" "4895141" "4952214" "4978347" "4988349" "5021056" "5112334" "5207676" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "5620442" "5788695"					
--	--	---	--	--	--	--	--

		"5803924" "5810822" "5893553" "5935128" "5941877" "5951556" "6030391" "6162223" "6171309" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "7686811" "7972338" "8057478" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231623" "8231663" "8246561" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "8435246" "8475462" "8523870" "8652142" "8672945" "8696716" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903").PN. OR ("8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "9750538" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "D765844" "D766434" "D766437" "D766438" "D766439" "H001706").PN. OR ("10045807").URPN.					
L59	7782	a61b17/80.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:17 PM
L60	2505	a61b17/8866.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:17 PM
L61	6989	a61b17/8061.cpc.	(US-PGPUB; USPAT;	OR	OFF	OFF	2020/01/03

L62	4344	a61b17/15.cpc.	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	03:17 PM 2020/01/03 03:17 PM
L63	1033	a61b17/151.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:18 PM
L64	3768	a61b17/17.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:18 PM
L65	3069	a61b17/1739.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:18 PM
L66	21	("10028750" "10064631 "10159499" "1032782 9" "20100318088" "201 30131821" "201401357 75" "20140288562" "20 170143511" "20170164 989" "5490854" "64787 99" "6859661" "728205 4" "8303596" "8764760" "8882816" "8945132" " 9785747" "D720456" "D 740424").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:19 PM
L67	88	("10292713" "20020165 552" "20040138669" "2 0050070909" "2005025 1147" "20060129163" " 20070010818" "200800 39850" "20080147073" " "20080195215" "20090 036931" "20090054899 " "20120185056" "2012 0191199" "2013022624 8" "20130226252" "201 40188139" "201401949 99" "20140343555" "20 150057667" "20160324 532" "20170042598" "4 069824" "4335715" "43 49018" "4409973" "444 0168" "4501268" "4502 474" "4509511" "45651 91" "4632102" "466410 2" "4708133" "4750481" "5035698" "5042983" " 5049149" "5053039" "5 078719" "5147364" "51 76685" "5246444" "547	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:19 PM

		0335" "5540695" "5578038" "5613969" "5620448" "5643270" "5667510" "5722978" "5749875" "5779709" "5843085" "5911724" "5980526" "5984931" "6007535" "6027504" "6203545" "6248109" "6391031" "6547793" "6676662" "6755838" "6796986" "7018383" "7112204" "7540874" "7572258" "7691108" "7763026" "7967823" "8062301" "8083746" "8236000" "8277459" "8409209" "8496662" "8529571" "8540777" "8657820" "8702715" "8777948" "8888785" "8900247" "8906026" "9113920").PN.					
L68	1	("20050059978").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:20 PM
L69	5	("20080009863" "20140257308" "4995875" "5601565" "6511481").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:20 PM
L70	8	("20020099381" "20080172054" "2012027745" "20120330135" "20130096563" "20150045801" "20180344334" "5417694").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:20 PM
L71	4	("20020107519" "20040010259" "20130325019" "5529075").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:20 PM
L72	230	("20020198531" "20040039394" "20040097946" "20050004676" "20050075641" "20050101961" "20050149042" "20050228389" "20050273112" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070123857" "20070233138" "20070265634" "20070276383" "20080091197" "20080140081" "20080208252" "20080262500" "20080269908" "20090036893" "20090093849" "20090105767" "20090118733" "20090198244" "20	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:20 PM

		090198279" "20090222 047" "20090254092" "2 0090254126" "2009028 7309" "20100069910" " 20100121334" "201001 30981" "20100152782" " "20100168799" "20100 185245" "20100249779 " "20100256687" "2010 0324556" "2011009308 4" "20110245835" "201 10288550" "201103016 48" "20120016426" "20 120065689" "20120078 258" "20120123420" "2 0120123484" "2012013 0376" "20120130383" " 20120184961" "201202 39045" "20120253350" " "20120265301" "20130 012949" "20130035694 " "20130085499" "2013 0150903" "2013015855 6" "20130165936" "201 30165938" "201301729 42" "20130184714" "20 130190765" "20130190 766" "20130204259" "2 0130231668" "2013023 7987" "20130237989" " 20130267956" "201303 10836" "20130325076" " "20130331845" "20130 338785" "20140005672 " "20140025127" "2014 0039501" "2014003956 1" "20140046387" "201 40074099" "201400741 01" "20140094861" "20 140094924" "20140163 563" "20140171953" "2 0140180342" "2014019 4884" "20140207144" " 20140249537" "201402 57509" "20140276815" " "20140276853" "20140 277176" "20140277214 " "20140296995" "2014 0303621" "2014033665 8" "20150032168" "201 50045839" "201500516 50" "20150066094" "20 150112446" "20150119 944" "20150142064" "2 0150150608" "2015018 2273" "20150223851" " 20150245858" "201600 15426" "20160022315" "					
--	--	--	--	--	--	--	--

		"20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "20160354127" "20170042599" "20170079669" "4159716" "4187840" "4338927" "4570624" "4627425" "4628919" "4757810" "4895141" "4952214" "4978347" "4988349" "5021056" "5112334" "5207676" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "5620442" "5788695" "5803924" "5810822" "5893553" "5935128" "5941877" "5951556" "6030391" "6162223" "6171309" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "7686811" "7972338" "8057478" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231623" "8231663" "8246561" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "8435246" "8475462" "8523870" "8652142" "8672945" "8696716" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "9750538" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "D765844" "D766434" "D766437" "D766438"). PN.					
--	--	--	--	--	--	--	--

L73	2	("D766439" "H001706").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:20 PM
L76	9	("10470779" "20080015603" "20080288004" "20110178524" "3664022" "4736737" "4959066" "8545508" "9522023").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/07/19 08:44 PM
L77	1	(12/689155).APP.	(USPAT; USOCR)	OR	OFF	OFF	2020/07/19 08:45 PM
L78	30	("20050228389" "20070265634" "20080195215" "20080269908" "20100222782" "20100256687" "20100324556" "20110077656" "20110093084" "20110288550" "4627425" "5601565").PN. OR ("8282645").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/07/19 08:45 PM
L79	0	(12/726195).APP.	(USPAT; USOCR)	OR	OFF	OFF	2020/07/19 08:45 PM
L80	195	("20040039394" "20040097946" "20050004676" "20050075641" "20050101961" "20050149042" "20050228389" "20050273112" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070233138" "20070265634" "20070276383" "20080091197" "20080140081" "20080262500" "20080269908" "20090036893" "20090093849" "20090105767" "20090198244" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/07/19 08:46 PM

		"20100152782" "20100168799" "20100185245" "20100256687" "20100324556" "20110093084" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130383" "20120184961" "20120239045" "20120253350" "20120265301" "20130012949" "20130085499" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130190765" "20130190766" "20130231668" "20130237987" "20130237989" "20130310836" "20130325076" "20130331845" "20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924" "20140163563" "20140171953" "20140180342" "20140194884" "20140207144" "20140249537" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140296995" "20140336658"					
--	--	--	--	--	--	--	--

		"20150032168" "20150045839" "20150051650" "20150066094").PN. OR ("20150112446" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160151165" "20160175089" "20160199076" "20160213384" "20160235414" "20160242791" "4159716" "4187840" "4338927" "4627425" "4757810" "4952214" "4978347" "5021056" "5112334" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "5810822" "5893553" "5935128" "6030391" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "7686811" "7972338" "8057478" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231663" "8246561" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "8435246" "8475462" "8523870" "8652142" "8672945" "8696716" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "D610257" "D629900" "D646389" "D651315" "D651316"					
--	--	---	--	--	--	--	--

L81	357	"D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "H001706").PN. OR ("9687250").URPN. ("10028750" "10064631" "10159499" "10292713" "10327829" "20020099381" "20020107519" "20020165552" "20020198531" "20040010259" "20040039394" "20040097946" "20040138669" "20050004676" "20050059978" "20050070909" "20050075641" "20050101961" "20050149042" "20050228389" "20050251147" "20050273112" "20060129163" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070010818" "20070123857" "20070233138" "20070265634" "20070276383" "20080009863" "20080039850" "20080091197" "20080140081" "20080147073" "20080172054" "20080195215" "20080208252" "20080262500" "20080269908" "20090036893" "20090036931" "20090054899" "20090093849" "20090105767" "20090118733" "20090198244"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/07/19 08:46 PM
-----	-----	---	-----------------------------	----	-----	-----	------------------------

		"20090198279" "20090222047" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100249779" "20100256687" "20100318088" "20100324556" "20110093084" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130383" "20120184961" "20120185056" "20120191199" "20120239045" "20120253350" "20120265301" "20120277745" "20120330135" "20130012949" "20130035694" "20130085499" "20130096563" "20130131821" "20130150903" "20130158556" "20130165936" "20130165938").PN. OR ("20130172942" "20130184714" "20130190765" "20130190766" "20130204259" "20130226248" "20130226252" "20130231668" "20130237987" "20130237989" "20130267956" "20130310836" "20130325019" "20130325076" "20130331845"					
--	--	---	--	--	--	--	--

		"20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924" "20140135775" "20140163563" "20140171953" "20140180342" "20140188139" "20140194884" "20140194999" "20140207144" "20140249537" "20140257308" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140288562" "20140296995" "20140303621" "20140336658" "20140343555" "20150032168" "20150045801" "20150045839" "20150051650" "20150057667" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160022315" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "20160324532" "20160354127" "20170042598" "20170042599" "20170143511"					
--	--	--	--	--	--	--	--

		"20170164989" "20180344334" "4069824" "4159716" "4187840" "4335715" "4338927" "4349018" "4409973" "4440168" "4501268" "4502474" "4509511" "4565191" "4570624" "4627425" "4628919" "4632102" "4664102" "4708133" "4750481" "4757810" "4895141" "4952214" "4978347" "4988349" "4995875").PN. OR ("5021056" "5035698" "5042983" "5049149" "5053039" "5078719" "5112334" "5147364" "5176685" "5207676" "5246444" "5254119" "5312412" "5358504" "5364402" "5413579" "5417694" "5449360" "5470335" "5490854" "5529075" "5540695" "5578038" "5601565" "5613969" "5620442" "5620448" "5643270" "5667510" "5722978" "5749875" "5779709" "5788695" "5803924" "5810822" "5843085" "5893553" "5911724" "5935128" "5941877" "5951556" "5980526" "5984931" "6007535" "6027504" "6030391" "6162223" "6171309" "6203545" "6248109" "6391031" "6478799" "6511481" "6547793" "6676662" "6719773" "6743233" "6755838" "6796986" "6859661" "7018383" "7033361" "7112204" "7182766" "7241298" "7282054" "7377924" "7465303" "7540874" "7572258" "7641660" "7686811" "7691108" "7763026" "7967823" "7972338" "8057478" "8062301" "8080010" "8083746" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441"					
--	--	---	--	--	--	--	--

		"8197487" "8231623" "8231663" "8236000" "8246561" "8262664" "8277459" "8282644" "8282645" "8292966" "8303596" "8313492" "8323289" "8337503" "8343159" "8377105" "8409209" "8435246" "8475462" "8496662" "8523870" "8529571" "8540777" "8652142" "8657820" "8672945" "8696716" "8702715" "8715363" "8728084" "8758354" "8764760" "8764763" "8771279" "8777948" "8784427" "8784457" "8795286" "8801727").PN. OR ("8808303" "8828012" "8858602" "8882778" "8882816" "8888785" "8900247" "8906026" "8945132" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "9113920" "9750538" "9785747" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "D720456" "D740424" "D765844" "D766434" "D766437" "D766438" "H001706").PN. OR ("10575862").URPN.					
L82	0	"16998155"	(US-PGPUB; USPAT)	OR	ON	ON	2020/11/06 03:15 PM
L83	1	"16031855"	(US-PGPUB; USPAT)	OR	ON	ON	2020/11/06 03:15 PM
L84	372	("10028750" "10064631 " "10159499" "1029271 3" "10327829" "104707 79" "20020099381" "20 020107519" "20020165 552" "20020198531" "2 0040010259" "2004003 9394" "20040097946" " 20040138669" "200500	(US-PGPUB; USPAT)	OR	ON	ON	2020/11/06 03:19 PM

		04676" "20050059978" "20050070909" "20050075641" "20050101961" "20050149042" "20050228389" "20050251147" "20050273112" "20060129163" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070010818" "20070123857" "20070233138" "20070265634" "20070276383" "20080009863" "20080015603" "20080039850" "20080091197" "20080140081" "20080147073" "20080172054" "20080195215" "20080208252" "20080262500" "20080269908" "20080288004" "20090036893" "20090036931" "20090054899" "20090093849" "20090105767" "20090118733" "20090198244" "20090198279" "20090222047" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100249779" "20100256687" "20100318088" "20100324556" "20110009865" "20110093084" "20110118739" "20110178524" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130382" "20120130383" "20120184961" "20120185056" "20120191199" "20120239045" "20120253350" "20120265301" "20120277745" "20120330135" "20130012949" "20130035694" "20130085499" "20130096563" "20130131821" "20130150903" "20130158556" "201					
--	--	---	--	--	--	--	--

		30165936" "201301659 38" "20130172942" "20 130184714" "20130190 765" "20130190766" "2 0130204259" "2013022 6248" "20130226252" " 20130231668" "201302 37987" "20130237989" " "20130267956" "20130 310836" "20130325019 " "20130325076" "2013 0331845" "2013033878 5" "20140005672" "201 40025127" "201400395 01" "20140039561" "20 140046387" "20140074 099" "20140074101" "2 0140094861" "2014009 4924" "20140135775" " 20140163563" "201401 71953" "20140180342" " "20140188139" "20140 194884" "20140194999 " "20140207144" "2014 0249537" "2014025730 8" "20140257509" "201 40276815" "201402768 53" "20140277176" "20 140277214" "20140288 562" "20140296995" "2 0140303621" "2014033 6658" "20140343555" " 20150032168" "201500 45801" "20150045839" " "20150051650" "20150 057667" "20150066094 " "20150112446" "2015 0119944" "2015014206 4" "20150150608" "201 50182273" "201502238 51" "20150245858" "20 160015426" "20160022 315" "20160151165" "2 0160175089" "2016019 2950" "20160199076" " 20160213384" "201602 35414" "20160242791" " "20160256204" "20160 324532" "20160354127 " "20170042598" "2017 0042599" "2017007966 9" "20170143511" "201 70164989" "201803443 34" "3664022" "406982 4" "4159716" "4187840" "4335715" "4338927" " 4349018" "4409973" "4 440168" "4501268" "45					
--	--	---	--	--	--	--	--

		02474" "4509511" "456 5191" "4570624" "4627 425" "4628919" "46321 02" "4664102" "470813 3" "4736737" "4750481" "4757810" "4895141" " 4952214" "4959066" "4 978347" "4988349" "49 95875" "5021056" "503 5698" "5042983" "5049 149" "5053039" "50787 19" "5112334" "514736 4" "5176685" "5207676" "5246444" "5254119" " 5312412" "5358504" "5 364402" "5374271" "54 13579" "5417694" "544 9360" "5470335" "5490 854" "5529075" "55406 95" "5578038" "560156 5" "5613969" "5620442" "5620448" "5643270" " 5667510" "5722978" "5 749875" "5779709" "57 88695" "5803924" "581 0822" "5843085" "5893 553" "5911724" "59351 28" "5941877" "595155 6" "5980526" "5984931" "6007535" "6027504" " 6030391" "6162223" "6 171309" "6203545" "62 48109" "6391031" "647 8799" "6511481" "6547 793" "6676662" "67197 73" "6743233" "675583 8" "6796986" "6859661" "7018383" "7033361" " 7112204" "7182766" "7 241298" "7282054" "73 77924" "7465303" "754 0874" "7572258" "7641 660" "7686811" "76911 08" "7763026" "796782 3" "7972338" "8057478" "8062301" "8080010" " 8083746" "8123753" "8 137406" "8147530" "81 67918" "8172848" "819 2441" "8197487" "8231 623" "8231663" "82360 00" "8246561" "826266 4" "8277459" "8282644" "8282645" "8292966" " 8303596" "8313492" "8 323289" "8337503" "83 43159" "8377105" "840 9209" "8435246" "8475				
--	--	--	--	--	--	--

		462" "8496662" "8523870" "8529571" "8540777" "8545508" "8652142" "8657820" "8672945" "8696716" "8702715" "8715363" "8728084" "8758354" "8764760" "8764763" "8771279" "8777948" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8882816" "8888785" "8900247" "8906026" "8945132" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "9113920" "9522023" "9750538" "9785747" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "D720456" "D740424" "D765844" "D766434" "D766437" "D766438" "D766439" "H001706").PN.					
L85	1	"10045807".pn.	(US-PGPUB; USPAT)	OR	ON	ON	2020/11/06 03:22 PM
L86	231	("4159716" "4187840" "4338927" "4570624" "4627425" "4628919" "4757810" "4895141" "4952214" "4978347" "4988349" "5021056" "5112334" "5207676" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "5620442" "H1706" "5788695" "5803924" "5810822" "5893553" "5935128" "5941877" "5951556" "6030391" "6162223" "6171309" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "D610257" "7686811" "D629900" "7972338" "D646389" "8057478" "D651315" "D651316" "8080010" "8123753"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2020/11/06 03:22 PM

		"8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231623" "8231663" "8246561" "D666721" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "D679395" "8435246" "8475462" "8523870" "D694884" "D695402" "8652142" "D701303" "8672945" "8696716" "D705929" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "D765844" "D766434" "D766437" "D766438" "D766439" "9750538" "20020198531" "20040039394" "20040097946" "20050004676" "20050075641" "20050101961" "20050149042" "20050228389" "20050273112" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070123857" "20070233138" "20070265634" "20070276383" "20080091197" "20080140081" "20080208252" "20080262500" "20080269908" "20090036893" "20090093849" "20090105767" "20090118733" "20090198244"					
--	--	--	--	--	--	--	--

		"20090198279" "20090222047" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100249779" "20100256687" "20100324556" "20110093084" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130383" "20120184961" "20120239045" "20120253350" "20120265301" "20130012949" "20130035694" "20130085499" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130184714" "20130190765" "20130190766" "20130204259" "20130231668" "20130237987" "20130237989" "20130267956" "20130310836" "20130325076" "20130331845" "20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924"					
--	--	--	--	--	--	--	--

		"20140163563" "20140171953" "20140180342" "20140194884" "20140207144" "20140249537" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140296995" "20140303621" "20140336658" "20150032168" "20150045839" "20150051650" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160022315" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "20160354127" "20170042599" "20170079669").pn. OR ("10045807").urpn. AND (PGPB USPT USOC).dbnm.					
L87	1	"9622805".pn.	(US-PGPUB; USPAT)	OR	ON	ON	2020/11/06 03:23 PM
L88	207	("4159716" "4187840" "4338927" "4627425" "4757810" "4952214" "4978347" "5021056" "5112334" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "H1706" "5810822" "5893553" "5935128" "6030391" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2020/11/06 03:23 PM

		"D610257" "7686811" "D629900" "7972338" "D646389" "8057478" "D651315" "D651316" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231663" "8246561" "D666721" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "D679395" "8435246" "8475462" "8523870" "D694884" "D695402" "8652142" "D701303" "8672945" "8696716" "D705929" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "D765844" "D766434" "D766437" "D766438" "20020198531" "20040039394" "20040097946" "20050004676" "20050075641" "20050101961" "20050149042" "20050228389" "20050273112" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070233138" "20070265634" "20070276383" "20080091197" "20080140081" "20080208252" "20080262500" "20080269908" "20090036893" "20090093849"					
--	--	--	--	--	--	--	--

		"20090105767" "20090198244" "20090222047" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100256687" "20100324556" "20110093084" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130383" "20120184961" "20120239045" "20120253350" "20120265301" "20130012949" "20130035694" "20130085499" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130184714" "20130190765" "20130190766" "20130204259" "20130231668" "20130237987" "20130237989" "20130267956" "20130310836" "20130325076" "20130331845" "20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924"					
--	--	--	--	--	--	--	--

		"20140163563" "20140171953" "20140180342" "20140194884" "20140207144" "20140249537" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140296995" "20140336658" "20150032168" "20150045839" "20150051650" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204").pn. OR ("9622805").urpn. AND (PGPB USPT USOC).dbnm.					
L89	0	santrock-robert.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/11/06 05:41 PM
L90	30	santrock-robert-d.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/11/06 05:41 PM
L92	3	("10779867" OR "20130085502" OR "8080045").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2021/02/13 10:09 AM
L93	1	(13/250890).APP.	(USPAT; USOCR)	OR	ON	ON	2021/02/13 10:10 AM
L94	40	("4667664" "4865025" "4889111" "4913137" "5034013" "5505734" "D379855" "5658287" "5766174" "5855579" "5976138" "6093192" "6123708" "6168595"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2021/02/13 10:10 AM

		"6200317" "6261290" "6488684" "6579293" "6808527" "6921400" "7056322" "D604846" "8231629" "20020058949" "20040230193" "20050096656" "20050107791" "20050159749" "20060064106" "20060264945" "20070100342" "20080287949" "20080300597" "20090149861").pn. OR ("8551106").urpn. AND (PGPB USPT USOC).dbnm.					
L95	15	("8182485" "8361075" "8574234" "8574270" "8974504" "9005255" "9017329" "9044282" "20050165395" "20060142763" "20070225714" "20110137313" "20120083848" "20120226322" "20130116734").pn. OR ("10779867").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2021/02/13 10:10 AM
L96	2	"17353431"	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/12 09:33 AM
L97	250	("10028750" OR "10064631" OR "10159499" OR "10292713" OR "10327829" OR "10470779" OR "10779867" OR "20020099381" OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/10/12 09:36 AM

		"20020107519" OR "20020165552" OR "20020198531" OR "20040010259" OR "20040039394" OR "20040097946" OR "20040138669" OR "20050004676" OR "20050059978" OR "20050070909" OR "20050075641" OR "20050101961" OR "20050149042" OR "20050228389" OR "20050251147" OR "20050273112" OR "20060129163" OR "20060206044" OR "20060217733" OR "20060229621" OR "20060241607" OR "20060241608" OR "20060264961" OR "20070010818" OR "20070123857" OR "20070233138" OR "20070265634" OR "20070276383" OR "20080009863" OR "20080015603" OR "20080039850" OR "20080091197" OR "20080140081" OR "20080147073" OR "20080172054" OR "20080195215" OR "20080208252" OR "20080262500" OR "20080269908" OR "20080288004" OR "20090036893" OR "20090036931" OR "20090054899" OR "20090093849" OR "20090105767" OR "20090118733" OR "20090198244" OR "20090198279" OR "20090222047" OR "20090254092" OR "20090254126" OR "20090287309" OR "20100069910" OR "20100121334" OR "20100130981" OR "20100152782" OR "20100168799" OR "20100185245" OR					
--	--	--	--	--	--	--	--

		"20100249779" OR "20100256687" OR "20100318088" OR "20100324556" OR "20110009865" OR "20110093084" OR "20110118739" OR "20110178524" OR "20110245835" OR "20110288550" OR "20110301648" OR "20120016426" OR "20120065689" OR "20120078258" OR "20120123420" OR "20120123484" OR "20120130376" OR "20120130382" OR "20120130383" OR "20120184961" OR "20120185056" OR "20120191199" OR "20120239045" OR "20120253350" OR "20120265301" OR "20120277745" OR "20120330135" OR "20130012949" OR "20130035694" OR "20130085499" OR "20130085502" OR "20130096563" OR "20130131821" OR "20130150903" OR "20130158556" OR "20130165936" OR "20130165938" OR "20130172942" OR "20130184714" OR "20130190765" OR "20130190766" OR "20130204259" OR "20130226248" OR "20130226252" OR "20130231668" OR "20130237987" OR "20130237989" OR "20130267956" OR "20130310836" OR "20130325019" OR "20130325076" OR "20130331845" OR "20130338785" OR "20140005672" OR "20140025127" OR "20140039501" OR "20140039561" OR "20140046387" OR					
--	--	--	--	--	--	--	--

		"20140074099" OR "20140074101" OR "20140094861" OR "20140094924" OR "20140135775" OR "20140163563" OR "20140171953" OR "20140180342" OR "20140188139" OR "20140194884" OR "20140194999" OR "20140207144" OR "20140249537" OR "20140257308" OR "20140257509" OR "20140276815" OR "20140276853" OR "20140277176" OR "20140277214" OR "20140288562" OR "20140296995" OR "20140303621" OR "20140336658" OR "20140343555" OR "20150032168" OR "20150045801" OR "20150045839" OR "20150051650" OR "20150057667" OR "20150066094" OR "20150112446" OR "20150119944" OR "20150142064" OR "20150150608" OR "20150182273" OR "20150223851" OR "20150245858" OR "20160015426" OR "20160022315" OR "20160151165" OR "20160175089" OR "20160192950" OR "20160199076" OR "20160213384" OR "20160235414" OR "20160242791" OR "20160256204" OR "20160324532" OR "20160354127" OR "20170042598" OR "20170042599" OR "20170079669" OR "20170143511" OR "20170164989" OR "20180344334" OR "3664022" OR "4069824" OR "4159716" OR					
--	--	--	--	--	--	--	--

	"4187840" OR "4335715" OR "4338927" OR "4349018" OR "4409973" OR "4440168" OR "4501268" OR "4502474" OR "4509511" OR "4565191" OR "4570624" OR "4627425" OR "4628919" OR "4632102" OR "4664102" OR "4708133" OR "4736737" OR "4750481" OR "4757810" OR "4895141" OR "4952214" OR "4959066" OR "4978347" OR "4988349" OR "4995875" OR "5021056" OR "5035698" OR "5042983" OR "5049149" OR "5053039" OR "5078719" OR "5112334" OR "5147364" OR "5176685" OR "5207676" OR "5246444" OR "5254119" OR "5312412" OR "5358504" OR "5364402" OR "5374271" OR "5413579" OR "5417694" OR "5449360" OR "5470335" OR "5490854" OR "5529075" OR "5540695" OR "5578038" OR "5601565" OR "5613969" OR "5620442" OR "5620448" OR "5643270" OR "5667510" OR "5722978" OR "5749875" OR "5779709" OR					
--	--	--	--	--	--	--

L98	125	"5788695" OR "5803924" OR "5810822" OR "5843085" OR "5893553" OR "5911724" OR "5935128" OR "5941877" OR "5951556" OR "5980526").pn. ("5984931" OR "6007535" OR "6027504" OR "6030391" OR "6162223" OR "6171309" OR "6203545" OR "6248109" OR "6391031" OR "6478799" OR "6511481" OR "6547793" OR "6676662" OR "6719773" OR "6743233" OR "6755838" OR "6796986" OR "6859661" OR "7018383" OR "7033361" OR "7112204" OR "7182766" OR "7241298" OR "7282054" OR "7377924" OR "7465303" OR "7540874" OR "7572258" OR "7641660" OR "7686811" OR "7691108" OR "7763026" OR "7967823" OR "7972338" OR "8057478" OR "8062301" OR "8080010" OR "8080045" OR "8083746" OR "8123753" OR "8137406" OR "8147530" OR "8167918" OR "8172848" OR "8192441" OR "8197487" OR "8231623" OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/10/12 09:36 AM
-----	-----	---	-------------------	----	----	----	------------------------

		"8231663" OR "8236000" OR "8246561" OR "8262664" OR "8277459" OR "8282644" OR "8282645" OR "8292966" OR "8303596" OR "8313492" OR "8323289" OR "8337503" OR "8343159" OR "8377105" OR "8409209" OR "8435246" OR "8475462" OR "8496662" OR "8523870" OR "8529571" OR "8540777" OR "8545508" OR "8652142" OR "8657820" OR "8672945" OR "8696716" OR "8702715" OR "8715363" OR "8728084" OR "8758354" OR "8764760" OR "8764763" OR "8771279" OR "8777948" OR "8784427" OR "8784457" OR "8795286" OR "8801727" OR "8808303" OR "8828012" OR "8858602" OR "8882778" OR "8882816" OR "8888785" OR "8900247" OR "8906026" OR "8945132" OR "8998903" OR "8998904" OR "9023052" OR "9044250" OR "9060822" OR "9089376" OR "9101421" OR "9107715" OR "9113920" OR "9522023" OR "9750538" OR					
--	--	--	--	--	--	--	--

L99	4	"9785747" OR "D610257" OR "D629900" OR "D646389" OR "D651315" OR "D651316" OR "D666721" OR "D679395" OR "D694884" OR "D695402" OR "D701303" OR "D705929" OR "D720456" OR "D740424" OR "D765844" OR "D766434" OR "D766437" OR "D766438" OR "D766439" OR "H001706").pn. "11039873".pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/12 09:37 AM
L100	2	"10849670".pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/12 09:37 AM
L101	8	"10045807".pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2021/10/12 09:37 AM

L102	378	("3664022" "4069824" "4159716" "4187840" "4335715" "4338927" "4349018" "4409973" "4440168" "4501268" "4502474" "4509511" "4565191" "4570624" "4627425" "4628919" "4632102" "4664102" "4708133" "4736737" "4750481" "4757810" "4895141" "4952214" "4959066" "4978347" "4988349" "4995875" "5021056" "5035698" "5042983" "5049149" "5053039" "5078719" "5112334" "5147364" "5176685" "5207676" "5246444" "5254119" "5312412" "5358504" "5364402" "5374271" "5413579" "5417694" "5449360" "5470335" "5490854" "5529075" "5540695" "5578038" "5601565" "5613969" "5620442" "5620448" "5643270" "5667510" "H1706" "5722978" "5749875" "5779709" "5788695" "5803924" "5810822" "5843085" "5893553" "5911724" "5935128" "5941877" "5951556" "5980526" "5984931" "6007535" "6027504" "6030391" "6162223" "6171309" "6203545" "6248109" "6391031" "6478799" "6511481" "6547793" "6676662" "6719773" "6743233" "6755838" "6796986" "6859661" "7018383" "7033361"	EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR)	OR	ON	ON	2021/10/12 09:38 AM
------	-----	---	---	----	----	----	------------------------

		"7112204" "7182766" "7241298" "7282054" "7377924" "7465303" "7540874" "7572258" "7641660" "D610257" "7686811" "7691108" "7763026" "D629900" "7967823" "7972338" "D646389" "8057478" "8062301" "D651315" "D651316" "8080010" "8080045" "8083746" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231623" "8231663" "8236000" "8246561" "D666721" "8262664" "8277459" "8282644" "8282645" "8292966" "8303596" "8313492" "8323289" "8337503" "8343159" "8377105" "D679395" "8409209" "8435246" "8475462" "8496662" "8523870" "8529571" "8540777" "8545508" "D694884" "D695402" "8652142" "8657820" "D701303" "8672945" "8696716" "8702715" "D705929" "8715363" "8728084" "8758354" "8764760" "8764763" "8771279" "8777948" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8882816" "8888785" "D720456" "8900247" "8906026" "8945132" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "9113920" "D740424" "D765844" "D766434" "D766437" "D766438" "D766439" "9522023" "9622805" "9750538" "9785747" "10028750" "10045807" "10064631" "10159499" "10292713"					
--	--	---	--	--	--	--	--

		"10327829" "10335220" "10342590" "10470779" "10779867" "20020099381" "20020107519" "20020165552" "20020198531" "20040010259" "20040039394" "20040097946" "20040138669" "20050004676" "20050059978" "20050070909" "20050075641" "20050101961" "20050149042" "20050228389" "20050251147" "20050273112" "20060129163" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070010818" "20070123857" "20070233138" "20070265634" "20070276383" "20080009863" "20080015603" "20080039850" "20080091197" "20080140081" "20080147073" "20080172054" "20080195215" "20080208252" "20080262500" "20080269908" "20080288004" "20090036893" "20090036931" "20090054899" "20090093849" "20090105767" "20090118733" "20090198244" "20090198279" "20090222047" "20090254092" "20090254126" "20090287309"					
--	--	---	--	--	--	--	--

		"20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100249779" "20100256687" "20100318088" "20100324556" "20110009865" "20110093084" "20110118739" "20110178524" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130382" "20120130383" "20120184961" "20120185056" "20120191199" "20120239045" "20120253350" "20120265301" "20120277745" "20120330135" "20130012949" "20130035694" "20130085499" "20130085502" "20130096563" "20130131821" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130184714" "20130190765" "20130190766" "20130204259" "20130226248" "20130226252" "20130231668" "20130237987" "20130237989" "20130267956" "20130310836" "20130325019" "20130325076" "20130331845"					
--	--	--	--	--	--	--	--

		"20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924" "20140135775" "20140163563" "20140171953" "20140180342" "20140188139" "20140194884" "20140194999" "20140207144" "20140249537" "20140257308" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140288562" "20140296995" "20140303621" "20140336658" "20140343555" "20150032168" "20150045801" "20150045839" "20150051650" "20150057667" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160022315" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "20160324532" "20160354127" "20170042598" "20170042599" "20170079669"					
--	--	--	--	--	--	--	--

L103	375	"20170143511" "20170164989" "20180344334").pn. OR ("11039873").urpn. AND (PGPB USPT USOC).dbnm. ("3664022" "4069824" "4159716" "4187840" "4335715" "4338927" "4349018" "4409973" "4440168" "4501268" "4502474" "4509511" "4565191" "4570624" "4627425" "4628919" "4632102" "4664102" "4708133" "4736737" "4750481" "4757810" "4895141" "4952214" "4959066" "4978347" "4988349" "4995875" "5021056" "5035698" "5042983" "5049149" "5053039" "5078719" "5112334" "5147364" "5176685" "5207676" "5246444" "5254119" "5312412" "5358504" "5364402" "5374271" "5413579" "5417694" "5449360" "5470335" "5490854" "5529075" "5540695" "5578038" "5601565" "5613969" "5620442" "5620448" "5643270" "5667510" "H001706" "5722978" "5749875" "5779709" "5788695" "5803924" "5810822" "5843085" "5893553" "5911724" "5935128" "5941877" "5951556" "5980526" "5984931" "6007535" "6027504" "6030391" "6162223" "6171309" "6203545" "6248109" "6391031" "6478799" "6511481" "6547793" "6676662" "6719773" "6743233" "6755838" "6796986" "6859661" "7018383" "7033361" "7112204" "7182766" "7241298" "7282054" "7377924" "7465303" "7540874" "7572258" "7641660" "D610257"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2021/10/12 09:38 AM
------	-----	--	-----------------------------	----	----	----	------------------------

		"7686811" "7691108" "7763026" "D629900" "7967823" "7972338" "D646389" "8057478" "8062301" "D651315" "D651316" "8080010" "8083746" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231623" "8231663" "8236000" "8246561" "D666721" "8262664" "8277459" "8282644" "8282645" "8292966" "8303596" "8313492" "8323289" "8337503" "8343159" "8377105" "D679395" "8409209" "8435246" "8475462" "8496662" "8523870" "8529571" "8540777" "8545508" "D694884" "D695402" "8652142" "8657820" "D701303" "8672945" "8696716" "8702715" "D705929" "8715363" "8728084" "8758354" "8764760" "8764763" "8771279" "8777948" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8882816" "8888785" "D720456" "8900247" "8906026" "8945132" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "9113920" "D740424" "D765844" "D766434" "D766437" "D766438" "D766439" "9522023" "9622805" "9750538" "9785747" "10028750" "10045807" "10064631" "10159499" "10292713" "10327829" "10470779" "20020099381" "20020107519" "20020165552"				
--	--	---	--	--	--	--

		"20020198531" "20040010259" "20040039394" "20040097946" "20040138669" "20050004676" "20050059978" "20050070909" "20050075641" "20050101961" "20050149042" "20050228389" "20050251147" "20050273112" "20060129163" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070010818" "20070123857" "20070233138" "20070265634" "20070276383" "20080009863" "20080015603" "20080039850" "20080091197" "20080140081" "20080147073" "20080172054" "20080195215" "20080208252" "20080262500" "20080269908" "20080288004" "20090036893" "20090036931" "20090054899" "20090093849" "20090105767" "20090118733" "20090198244" "20090198279" "20090222047" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100249779" "20100256687"					
--	--	--	--	--	--	--	--

		"20100318088" "20100324556" "20110009865" "20110093084" "20110118739" "20110178524" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130382" "20120130383" "20120184961" "20120185056" "20120191199" "20120239045" "20120253350" "20120265301" "20120277745" "20120330135" "20130012949" "20130035694" "20130085499" "20130096563" "20130131821" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130184714" "20130190765" "20130190766" "20130204259" "20130226248" "20130226252" "20130231668" "20130237987" "20130237989" "20130267956" "20130310836" "20130325019" "20130325076" "20130331845" "20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861"					
--	--	--	--	--	--	--	--

L104	12	"20140094924" "20140135775" "20140163563" "20140171953" "20140180342" "20140188139" "20140194884" "20140194999" "20140207144" "20140249537" "20140257308" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140288562" "20140296995" "20140303621" "20140336658" "20140343555" "20150032168" "20150045801" "20150045839" "20150051650" "20150057667" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160022315" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "20160324532" "20160354127" "20170042598" "20170042599" "20170079669" "20170143511" "20170164989" "20180344334").pn. OR ("10849670").urpn. AND (PGPB USPT USOC).dbnm. smith-w-brent.in.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP,	OR	ON	ON	2021/10/13 05:54 PM
------	----	--	--	----	----	----	------------------------

L105	55	santrock-robert-d.in.	AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/13 05:56 PM
L106	21	L105 AND cutting.clm.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/13 05:57 PM
L107	9	"10335220".pn.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/13 06:01 PM

L108	6	"16422557"	RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/14 08:59 AM
L109	7	"9936994".pn.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/14 09:00 AM
L110	5	"9622805".pn.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/14 09:01 AM
L111	2	"17353431"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY,	OR	ON	ON	2021/10/28 05:38 PM

L112	5	"16998155"	CA, CH, CN, CS, CU, CZ, DD, DK, EA, EE, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/03/11 09:59 PM
L113	60	santrock-robert-d.in.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/03/11 10:00 PM
L114	37	L113 AND fixation.clm.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN,	OR	ON	ON	2022/03/11 10:00 PM

			WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L115	29	L113 AND (fixation device).clm.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	ADJ	ON	ON	2022/03/11 10:00 PM
L116	8	L113 AND (fixation device).clm.	(USPAT)	ADJ	ON	ON	2022/03/11 10:00 PM
L117	0	L113 AND (fixate).clm.	(USPAT)	ADJ	ON	ON	2022/03/11 10:03 PM
L118	0	L113 AND fixate.clm.	(USPAT)	ADJ	ON	ON	2022/03/11 10:03 PM
L119	68	cuneiform AND fixate	(USPAT)	ADJ	ON	ON	2022/03/11 10:03 PM
L120	4	"11039873".pn.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/02 12:11 PM
L121	250	("10028750" OR "10064631" OR "10159499" OR "10292713" OR "10327829" OR "10470779" OR "10779867" OR "20020099381" OR "20020107519" OR "20020165552" OR "20020198531" OR "20040010259" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/02 12:13 PM

		"20040039394" OR "20040097946" OR "20040138669" OR "20050004676" OR "20050059978" OR "20050070909" OR "20050075641" OR "20050101961" OR "20050149042" OR "20050228389" OR "20050251147" OR "20050273112" OR "20060129163" OR "20060206044" OR "20060217733" OR "20060229621" OR "20060241607" OR "20060241608" OR "20060264961" OR "20070010818" OR "20070123857" OR "20070233138" OR "20070265634" OR "20070276383" OR "20080009863" OR "20080015603" OR "20080039850" OR "20080091197" OR "20080140081" OR "20080147073" OR "20080172054" OR "20080195215" OR "20080208252" OR "20080262500" OR "20080269908" OR "20080288004" OR "20090036893" OR "20090036931" OR "20090054899" OR "20090093849" OR "20090105767" OR "20090118733" OR "20090198244" OR "20090198279" OR "20090222047" OR "20090254092" OR "20090254126" OR "20090287309" OR "20100069910" OR "20100121334" OR "20100130981" OR "20100152782" OR "20100168799" OR "20100185245" OR "20100249779" OR "20100256687" OR "20100318088" OR "20100324556" OR					
--	--	--	--	--	--	--	--

		"20110009865" OR "20110093084" OR "20110118739" OR "20110178524" OR "20110245835" OR "20110288550" OR "20110301648" OR "20120016426" OR "20120065689" OR "20120078258" OR "20120123420" OR "20120123484" OR "20120130376" OR "20120130382" OR "20120130383" OR "20120184961" OR "20120185056" OR "20120191199" OR "20120239045" OR "20120253350" OR "20120265301" OR "20120277745" OR "20120330135" OR "20130012949" OR "20130035694" OR "20130085499" OR "20130085502" OR "20130096563" OR "20130131821" OR "20130150903" OR "20130158556" OR "20130165936" OR "20130165938" OR "20130172942" OR "20130184714" OR "20130190765" OR "20130190766" OR "20130204259" OR "20130226248" OR "20130226252" OR "20130231668" OR "20130237987" OR "20130237989" OR "20130267956" OR "20130310836" OR "20130325019" OR "20130325076" OR "20130331845" OR "20130338785" OR "20140005672" OR "20140025127" OR "20140039501" OR "20140039561" OR "20140046387" OR "20140074099" OR "20140074101" OR "20140094861" OR "20140094924" OR					
--	--	--	--	--	--	--	--

		"20140135775" OR "20140163563" OR "20140171953" OR "20140180342" OR "20140188139" OR "20140194884" OR "20140194999" OR "20140207144" OR "20140249537" OR "20140257308" OR "20140257509" OR "20140276815" OR "20140276853" OR "20140277176" OR "20140277214" OR "20140288562" OR "20140296995" OR "20140303621" OR "20140336658" OR "20140343555" OR "20150032168" OR "20150045801" OR "20150045839" OR "20150051650" OR "20150057667" OR "20150066094" OR "20150112446" OR "20150119944" OR "20150142064" OR "20150150608" OR "20150182273" OR "20150223851" OR "20150245858" OR "20160015426" OR "20160022315" OR "20160151165" OR "20160175089" OR "20160192950" OR "20160199076" OR "20160213384" OR "20160235414" OR "20160242791" OR "20160256204" OR "20160324532" OR "20160354127" OR "20170042598" OR "20170042599" OR "20170079669" OR "20170143511" OR "20170164989" OR "20180344334" OR "3664022" OR "4069824" OR "4159716" OR "4187840" OR "4335715" OR "4338927" OR "4349018" OR					
--	--	--	--	--	--	--	--

		"4409973" OR "4440168" OR "4501268" OR "4502474" OR "4509511" OR "4565191" OR "4570624" OR "4627425" OR "4628919" OR "4632102" OR "4664102" OR "4708133" OR "4736737" OR "4750481" OR "4757810" OR "4895141" OR "4952214" OR "4959066" OR "4978347" OR "4988349" OR "4995875" OR "5021056" OR "5035698" OR "5042983" OR "5049149" OR "5053039" OR "5078719" OR "5112334" OR "5147364" OR "5176685" OR "5207676" OR "5246444" OR "5254119" OR "5312412" OR "5358504" OR "5364402" OR "5374271" OR "5413579" OR "5417694" OR "5449360" OR "5470335" OR "5490854" OR "5529075" OR "5540695" OR "5578038" OR "5601565" OR "5613969" OR "5620442" OR "5620448" OR "5643270" OR "5667510" OR "5722978" OR "5749875" OR "5779709" OR "5788695" OR "5803924" OR "5810822" OR "5843085" OR					
--	--	--	--	--	--	--	--

L122	125	"5893553" OR "5911724" OR "5935128" OR "5941877" OR "5951556" OR "5980526").pn. ("5984931" OR "6007535" OR "6027504" OR "6030391" OR "6162223" OR "6171309" OR "6203545" OR "6248109" OR "6391031" OR "6478799" OR "6511481" OR "6547793" OR "6676662" OR "6719773" OR "6743233" OR "6755838" OR "6796986" OR "6859661" OR "7018383" OR "7033361" OR "7112204" OR "7182766" OR "7241298" OR "7282054" OR "7377924" OR "7465303" OR "7540874" OR "7572258" OR "7641660" OR "7686811" OR "7691108" OR "7763026" OR "7967823" OR "7972338" OR "8057478" OR "8062301" OR "8080010" OR "8080045" OR "8083746" OR "8123753" OR "8137406" OR "8147530" OR "8167918" OR "8172848" OR "8192441" OR "8197487" OR "8231623" OR "8231663" OR "8236000" OR "8246561" OR "8262664" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/02 12:13 PM
------	-----	---	-------------------	----	----	----	------------------------

		"8277459" OR "8282644" OR "8282645" OR "8292966" OR "8303596" OR "8313492" OR "8323289" OR "8337503" OR "8343159" OR "8377105" OR "8409209" OR "8435246" OR "8475462" OR "8496662" OR "8523870" OR "8529571" OR "8540777" OR "8545508" OR "8652142" OR "8657820" OR "8672945" OR "8696716" OR "8702715" OR "8715363" OR "8728084" OR "8758354" OR "8764760" OR "8764763" OR "8771279" OR "8777948" OR "8784427" OR "8784457" OR "8795286" OR "8801727" OR "8808303" OR "8828012" OR "8858602" OR "8882778" OR "8882816" OR "8888785" OR "8900247" OR "8906026" OR "8945132" OR "8998903" OR "8998904" OR "9023052" OR "9044250" OR "9060822" OR "9089376" OR "9101421" OR "9107715" OR "9113920" OR "9522023" OR "9750538" OR "9785747" OR "D610257" OR "D629900" OR "D646389" OR					
--	--	--	--	--	--	--	--

L123	4	"D651315" OR "D651316" OR "D666721" OR "D679395" OR "D694884" OR "D695402" OR "D701303" OR "D705929" OR "D720456" OR "D740424" OR "D765844" OR "D766434" OR "D766437" OR "D766438" OR "D766439" OR "H001706").pn. "11213333".pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/02 12:19 PM
L124	2	"10849670".pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/02 12:20 PM
L125	8	"10045807".pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL,	OR	ON	ON	2022/04/02 12:20 PM

L126	5	"9622805".pn.	NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/02 12:21 PM
L127	632	(metatarsal AND fixation).clm.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/02 12:21 PM
L128	84	(metatarsal AND fixation).clm.	(USPAT)	OR	ON	ON	2022/04/02 12:22 PM
L129	50	santrock-robert-d.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2022/04/03 09:59 PM
L130	30	santrock-robert-d.in.	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/03 10:00 PM
L131	163	treace AND fixation.clm.	(USPAT)	OR	ON	ON	2022/04/04 10:05 AM
L132	10	L131 AND bone preparation guide	(USPAT)	ADJ	ON	ON	2022/04/04 10:26 AM
L133	14	bone preparation guide.clm.	(USPAT)	ADJ	ON	ON	2022/04/04 10:43 AM
L134	1	"4159716".pn.	(USPAT)	ADJ	ON	ON	2022/04/04 06:37 PM

L135	31	((US-20130172942-A1 OR US-20110301648-A1 OR US-20110077656-A1 OR US-20120016426-A1 OR US-20150119944-A1 OR US-20090036893-A1).did. AND PGPB.dbnm.) OR ((US-10575862-B2 OR US-9687250-B2 OR US-8282645-B2 OR US-10045807-B2 OR US-9622805-B2 OR US-8696719-B2 OR US-8277459-B2 OR US-6964645-B1 OR US-7875058-B2 OR US-9433452-B2 OR US-8821551-B2 OR US-9060822-B2 OR US-10342590-B2 OR US-10561426-B1 OR US-9936994-B2 OR US-10335220-B2 OR US-10779867-B2 OR US-8080045-B2 OR US-8551106-B2 OR US-11039873-B2 OR US-10849670-B2 OR US-11213333-B2 OR US-11278337-B2 OR US-11116558-B2 OR US-4159716-A).did. AND USPT.dbnm.)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	ADJ	ON	ON	2022/04/04 06:39 PM
L136	17	L135 AND cuneiform	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	ADJ	ON	ON	2022/04/04 06:39 PM
L137	5	"5529075".pn.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB,	ADJ	ON	ON	2022/04/04 06:43 PM

			HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L138	232	cuneiform AND (cutting guide)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	ADJ	ON	ON	2022/04/04 06:44 PM
L139	137	cuneiform AND (cutting guide)	(US-PGPUB; USPAT; USOCR)	ADJ	ON	ON	2022/04/04 06:44 PM
L140	45	metatarsal WITH (cutting guide)	(US-PGPUB; USPAT; USOCR)	ADJ	ON	ON	2022/04/04 06:48 PM
L141	3	"17567879"	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/06/26 04:41 PM
L142	14	("10376268" OR "11304705" OR "20050267482" OR "20120303033" OR "20130150900" OR "20140350561" OR "20160135858" OR "20180132868" OR "4754746" OR "5586564" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/10/20 03:00 PM

L143	3	"7097647" OR "7153310" OR "9452057" OR "9980760").pn. "18183013"	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/06/25 05:50 PM
L144	40	santrock-robert-d.in.	(US-PGPUB; USPAT)	OR	OFF	OFF	2023/06/26 05:42 PM
L145	19	santrock-robert-d.in.	(USPAT)	OR	OFF	OFF	2023/06/26 05:43 PM
L146	5	"4570624".pn.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/06/30 09:03 AM
L147	4	("20090112212" OR "20110264149" OR "20170056031" OR "9011507").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/11 01:51 PM
L148	124	("2346346" "2434431").pn. OR ("4159716").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:03 AM
L149	97	("3489143" "4493317" "5534027" "5591169" "5667510" "7648508" "7717945" "8852246" "8858602" "20020045896"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:05 AM

L150	250	"20030060827" "20040143266" "20050171544" "20070173843" "20090076554" "20090210010" "20090210011" "20100125300" "20100274293" "20110009866" "20110295324" "20120303033" "20140148859").pn. OR ("9060822").urpn. AND (PGPB USPT USOC).dbnm. ("10028750" OR "10064631" OR "10159499" OR "10292713" OR "10327829" OR "10376268" OR "10470779" OR "10779867" OR "11304705" OR "20020099381" OR "20020107519" OR "20020165552" OR "20020198531" OR "20040010259" OR "20040039394" OR "20040097946" OR "20040138669" OR "20050004676" OR "20050059978" OR "20050070909" OR "20050075641" OR "20050101961" OR "20050149042" OR "20050228389" OR "20050251147" OR "20050267482" OR "20050273112" OR "20060129163" OR "20060206044" OR "20060217733" OR "20060229621" OR "20060241607" OR "20060241608" OR "20060264961" OR "20070010818" OR "20070123857" OR "20070233138" OR "20070265634" OR "20070276383" OR "20080009863" OR "20080015603" OR	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 09:17 AM
------	-----	---	-------------------	----	----	----	------------------------

		"20080039850" OR "20080091197" OR "20080140081" OR "20080147073" OR "20080172054" OR "20080195215" OR "20080208252" OR "20080262500" OR "20080269908" OR "20080288004" OR "20090036893" OR "20090036931" OR "20090054899" OR "20090093849" OR "20090105767" OR "20090112212" OR "20090118733" OR "20090198244" OR "20090198279" OR "20090222047" OR "20090254092" OR "20090254126" OR "20090287309" OR "20100069910" OR "20100121334" OR "20100130981" OR "20100152782" OR "20100168799" OR "20100185245" OR "20100249779" OR "20100256687" OR "20100318088" OR "20100324556" OR "20110009865" OR "20110093084" OR "20110118739" OR "20110178524" OR "20110245835" OR "20110264149" OR "20110288550" OR "20110301648" OR "20120016426" OR "20120065689" OR "20120078258" OR "20120123420" OR "20120123484" OR "20120130376" OR "20120130382" OR "20120130383" OR "20120184961" OR "20120185056" OR "20120191199" OR "20120239045" OR "20120253350" OR "20120265301" OR "20120277745" OR "20120303033" OR "20120330135" OR					
--	--	--	--	--	--	--	--

		"20130012949" OR "20130035694" OR "20130085499" OR "20130085502" OR "20130096563" OR "20130131821" OR "20130150900" OR "20130150903" OR "20130158556" OR "20130165936" OR "20130165938" OR "20130172942" OR "20130184714" OR "20130190765" OR "20130190766" OR "20130204259" OR "20130226248" OR "20130226252" OR "20130231668" OR "20130237987" OR "20130237989" OR "20130267956" OR "20130310836" OR "20130325019" OR "20130325076" OR "20130331845" OR "20130338785" OR "20140005672" OR "20140025127" OR "20140039501" OR "20140039561" OR "20140046387" OR "20140074099" OR "20140074101" OR "20140094861" OR "20140094924" OR "20140135775" OR "20140163563" OR "20140171953" OR "20140180342" OR "20140188139" OR "20140194884" OR "20140194999" OR "20140207144" OR "20140249537" OR "20140257308" OR "20140257509" OR "20140276815" OR "20140276853" OR "20140277176" OR "20140277214" OR "20140288562" OR "20140296995" OR "20140303621" OR "20140336658" OR "20140343555" OR "20140350561" OR "20150032168" OR					
--	--	--	--	--	--	--	--

		"20150045801" OR "20150045839" OR "20150051650" OR "20150057667" OR "20150066094" OR "20150112446" OR "20150119944" OR "20150142064" OR "20150150608" OR "20150182273" OR "20150223851" OR "20150245858" OR "20160015426" OR "20160022315" OR "20160135858" OR "20160151165" OR "20160175089" OR "20160192950" OR "20160199076" OR "20160213384" OR "20160235414" OR "20160242791" OR "20160256204" OR "20160324532" OR "20160354127" OR "20170042598" OR "20170042599" OR "20170056031" OR "20170079669" OR "20170143511" OR "20170164989" OR "20180132868" OR "20180344334" OR "3664022" OR "4069824" OR "4159716" OR "4187840" OR "4335715" OR "4338927" OR "4349018" OR "4409973" OR "4440168" OR "4501268" OR "4502474" OR "4509511" OR "4565191" OR "4570624" OR "4627425" OR "4628919" OR "4632102" OR "4664102" OR "4708133" OR "4736737" OR "4750481" OR "4754746" OR "4757810" OR "4895141" OR "4952214" OR					
--	--	--	--	--	--	--	--

	"6478799" OR "6511481" OR "6547793" OR "6676662" OR "6719773" OR "6743233" OR "6755838" OR "6796986" OR "6859661" OR "7018383" OR "7033361" OR "7097647" OR "7112204" OR "7153310" OR "7182766" OR "7241298" OR "7282054" OR "7377924" OR "7465303" OR "7540874" OR "7572258" OR "7641660" OR "7686811" OR "7691108" OR "7763026" OR "7967823" OR "7972338" OR "8057478" OR "8062301" OR "8080010" OR "8080045" OR "8083746" OR "8123753" OR "8137406" OR "8147530" OR "8167918" OR "8172848" OR "8192441" OR "8197487" OR "8231623" OR "8231663" OR "8236000" OR "8246561" OR "8262664" OR "8277459" OR "8282644" OR "8282645" OR "8292966" OR "8303596" OR "8313492" OR "8323289" OR "8337503" OR "8343159" OR "8377105" OR "8409209" OR "8435246" OR "8475462" OR "8496662" OR					
--	--	--	--	--	--	--

		"8523870" OR "8529571" OR "8540777" OR "8545508" OR "8652142" OR "8657820" OR "8672945" OR "8696716" OR "8702715" OR "8715363" OR "8728084" OR "8758354" OR "8764760" OR "8764763" OR "8771279" OR "8777948" OR "8784427" OR "8784457" OR "8795286" OR "8801727" OR "8808303" OR "8828012" OR "8858602" OR "8882778" OR "8882816" OR "8888785" OR "8900247" OR "8906026" OR "8945132" OR "8998903" OR "8998904" OR "9011507" OR "9023052" OR "9044250" OR "9060822" OR "9089376" OR "9101421" OR "9107715" OR "9113920" OR "9452057" OR "9522023" OR "9750538" OR "9785747" OR "9980760" OR "D610257" OR "D629900" OR "D646389" OR "D651315" OR "D651316" OR "D666721" OR "D679395" OR "D694884" OR "D695402" OR "D701303" OR "D705929" OR "D720456" OR "D740424" OR "D765844" OR					
--	--	--	--	--	--	--	--

L152	66	"D766434" OR "D766437" OR "D766438" OR "D766439" OR "H001706").pn. santrock-robert-d.in.	(US-PGPUB; USPAT)	OR	OFF	OFF	2024/09/10 09:33 AM
L153	211	dayton-paul.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2024/09/10 09:33 AM
L154	565	smith-bret-w.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2024/09/10 09:33 AM
L155	128	treace-john-t.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2024/09/10 09:33 AM
L156	420	("2291413" "3867929" "3880155" "3987559" "4069824" "4213208" "4240214" "4244359" "4255875" "4263902" "4266553" "4300294" "4314412" "4317293" "4393876" "4409974" "4414964" "4439934" "4497603" "4510699" "4583303" "4597195" "4603698" "4604997" "4608988" "4620825" "4632103" "4644940" "4676801" "4726127" "4729369" "4738255" "RE32698" "4772286" "4813162" "4819644" "4841647" "4842931" "4852556" "4856505" "4859128" "4876758" "4901453" "4930504" "4940046" "4969277" "4976712" "5005575" "5012596" "5035069" "5044850" "5092347" "5094226" "5098421" "5138777" "5167665" "5174052" "5250049" "D341424" "5272139" "5306301" "5350383" "RE34753" "5497789" "5503510" "5529075" "5537764" "5539020" "5571139" "5601565" "5607756" "5611801" "5617651"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:42 AM

		"5618142" "5640779" "5645588" "5665060" "5665112" "5685834" "00H1706" "5713903" "5725541" "5725585" "5728136" "5788697" "5792093" "5797913" "5802737" "5810822" "5843085" "5853293" "5919194" "5921986" "5962011" "6001101" "6068648" "6091000" "6093163" "6203545" "6238357" "D443694" "6248109" "6248788" "6264677" "6283973" "6299398" "6315749" "6318373" "6319270" "6348053" "6367087" "6391031" "6406234" "6424864" "6447783" "6478761" "6481120" "6514222" "6547792" "6547800" "6569188" "6583114" "6604301" "6616665" "6629943" "6643956" "6684532" "6689136" "6716234" "6749384" "6800063" "6862481" "6874258" "6887243" "6887259" "6889088" "6890333" "6902799" "6905296" "6908465" "6909513" "6910287" "6942668" "6964645" "6991636" "7008428" "7013583" "7052498" "7055268" "7056885" "7062866" "7070601" "7097647" "7141545" "7175667" "7182561" "7192411" "7217853" "7253266" "7263788" "7266910" "7270644" "7273338" "7276244" "7287293" "7291175" "7291483" "7322783" "7325323" "7326211" "7383089" "7384226" "7392605" "7396338" "7485135" "7485153" "7493810" "7513880" "7572258" "7625395" "7650681" "7722303" "7824141" "7833255" "7875058" "8048134" "8096742" "20010027583"					
--	--	---	--	--	--	--	--

		"20010034956" "20020007134" "20020022862" "20020032466" "20020056209" "20020058036" "20020062140" "20020077281" "20020138026" "20020162250" "20020193309" "20030005601" "20030023268" "20030040750" "20030045881" "20030093920" "20030105193" "20030134792" "20030148692" "20030152637" "20030172553" "20030186433" "20030187372" "20030225356" "20040019308" "20040031169" "20040039319" "20040045194" "20040071522" "20040093746" "20040103561" "20040107604" "20040123495" "20040127907" "20040153153" "20040156931" "20040161481" "20040168329" "20040168353" "20040186182" "20040191338" "20040194348" "20040194352" "20040210234" "20040243197" "20050019436" "20050020690" "20050054959" "20050054962" "20050055849" "20050058734" "20050059873" "20050060910" "20050061332" "20050063971" "20050070909" "20050076536" "20050115116"					
--	--	--	--	--	--	--	--

		"20050123567" "20050158382" "20050177084" "20050187071" "20050197711" "20050202047" "20050208540" "20050228389" "20050229430" "20050229433" "20050241187" "20050251081" "20060002954" "20060015102" "20060030854" "20060058796" "20060064048" "20060074434" "20060079558" "20060079559" "20060081553" "20060148903" "20060155233" "20060161090" "20060162464" "20060178702" "20060189914" "20060201011" "20060240105" "20060241066" "20060241607" "20060241608" "20060247566" "20060251721" "20060258588" "20060264961" "20060269628" "20060271077" "20060276737" "20060282231" "20070010818" "20070016205" "20070016275" "20070033750" "20070036876" "20070051020" "20070051376" "20070074334" "20070074426" "20070078518" "20070088341" "20070094896" "20070128226" "20070131798" "20070141020" "20070197948" "20070204487" "20070213296"					
--	--	--	--	--	--	--	--

		"20070213308" "20070214681" "20070225217" "20070225703" "20070260252" "20070265296" "20070265634" "20070281906" "20070282342" "20070299382" "20080008777" "20080010856" "20080014272" "20080027119" "20080041169" "20080057068" "20080065224" "20080076829" "20080078628" "20080081834" "20080086139" "20080086909" "20080086913" "20080102121" "20080113025" "20080139641" "20080141565" "20080147084" "20080153780" "20080155731" "20080200989" "20080208252" "20080216593" "20080217816" "20080221697" "20080229482" "20080242646" "20080248282" "20080260791" "20080262091" "20080263900" "20080280975" "20080282580" "20080287406" "20080287866" "20080288019" "20080294170" "20080301977" "20090005358" "20090012180" "20090036893" "20090043318" "20090054527" "20090062253" "20090062359" "20090082466" "20090082773" "20090082874"					
--	--	--	--	--	--	--	--

		"20090111792" "20090113759" "20090117167" "20090118242" "20090133289" "20090155614" "20090157194" "20090181098" "20090192222" "20090198287" "20090209536" "20090210010" "20090215809" "20090216334" "20090222047" "20090228049" "20090287246" "20090291975" "20090292022" "20090292023" "20090306723" "20100036430" "20100082072" "20100152752" "20100152786" "20100211071" "20110077656" "20110118780" "20110178557" "20110224729" "20120016426" "20120071935" "20120330322").pn. OR ("8696719").urpn. AND (PGPB USPT USOC).dbnm. ("2291413" "3867929" "3880155" "3987559" "4069824" "4213208" "4240214" "4244359" "4255875" "4263902" "4266553" "4300294" "4314412" "4317293" "4393876" "4409974" "4414964" "4439934" "4510699" "4583303" "4597195" "4603698" "4604997" "4608988" "4632103" "4644940" "4676801" "4726127" "4729369" "4738255" "RE32698" "4813162" "4819644" "4841647" "4842931" "4852556" "4856505" "4876758" "4901453" "4930504" "4940046"					
L157	459	("2291413" "3867929" "3880155" "3987559" "4069824" "4213208" "4240214" "4244359" "4255875" "4263902" "4266553" "4300294" "4314412" "4317293" "4393876" "4409974" "4414964" "4439934" "4510699" "4583303" "4597195" "4603698" "4604997" "4608988" "4632103" "4644940" "4676801" "4726127" "4729369" "4738255" "RE32698" "4813162" "4819644" "4841647" "4842931" "4852556" "4856505" "4876758" "4901453" "4930504" "4940046"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:42 AM

		"4969277" "4976712" "5005575" "5012596" "5035069" "5092347" "5094226" "5098421" "5138777" "5167665" "5174052" "5250049" "D341424" "5272139" "5306301" "5350383" "RE34753" "5497789" "5529075" "5537764" "5539020" "5571139" "5601565" "5607756" "5611801" "5617651" "5640779" "5645588" "5665060" "5665112" "5685834" "00H1706" "5713903" "5725585" "5728136" "5788697" "5792093" "5797913" "5802737" "5810822" "5843085" "5853293" "5919194" "5921986" "5962011" "6001101" "6068648" "6091000" "6093163" "6203545" "6238357" "D443694" "6248109" "6248788" "6264677" "6283973" "6315749" "6318373" "6319270" "6348053" "6367087" "6391031" "6406234" "6424864" "6447783" "6478761" "6481120" "6514222" "6547792" "6547800" "6569188" "6583114" "6604301" "6616665" "6629943" "6643956" "6684532" "6689136" "6716234" "6800063" "6862481" "6874258" "6887243" "6887259" "6889088" "6890333" "6902799" "6908465" "6909513" "6910287" "6942668" "6964645" "6991636" "7008428" "7013583" "7055268" "7056885" "7062866" "7070601" "7097647" "7141545" "7175667" "7192411" "7217853" "7253266" "7263788" "7266910" "7270644" "7276244" "7287293" "7291175" "7291483" "7325323" "7326211" "7383089" "7392605"					
--	--	--	--	--	--	--	--

		"7396338" "7485135" "7493810" "7513880" "7572258" "7625395" "7875058" "20010027583" "20010034956" "20020007134" "20020022862" "20020032466" "20020056209" "20020058036" "20020062140" "20020077281" "20020138026" "20020162250" "20020193309" "20030005601" "20030023268" "20030040750" "20030045881" "20030093920" "20030105193" "20030134792" "20030148692" "20030152637" "20030172553" "20030186433" "20030187372" "20030225356" "20040019308" "20040031169" "20040039319" "20040045194" "20040093746" "20040103561" "20040107604" "20040123495" "20040127907" "20040156931" "20040161481" "20040168329" "20040168353" "20040186182" "20040191338" "20040194348" "20040194352" "20040210234" "20040243197" "20050019436" "20050020690" "20050054959" "20050054962" "20050055849" "20050058734" "20050059873" "20050060910" "20050061332" "20050063971"					
--	--	--	--	--	--	--	--

		"20050070909" "20050076536" "20050115116" "20050123567" "20050158382" "20050177084" "20050187071" "20050197711" "20050202047" "20050208540" "20050228389" "20050229430" "20050229433" "20050241187" "20050251081" "20060002954" "20060015102" "20060030854" "20060058796" "20060064048" "20060074434" "20060079558" "20060079559" "20060081553" "20060148903" "20060155233" "20060161090" "20060162464" "20060178702" "20060189914" "20060201011" "20060240105" "20060241066" "20060241607" "20060241608" "20060247566" "20060251721" "20060258588" "20060264961" "20060269628" "20060271077" "20060276737" "20060282231" "20070010818" "20070016205" "20070016275" "20070033750" "20070036876" "20070051020" "20070051376" "20070074334" "20070074426" "20070078518" "20070088341" "20070094896" "20070128226" "20070131798" "20070141020"					
--	--	--	--	--	--	--	--

		"20070197948" "20070204487" "20070213296" "20070213308" "20070214681" "20070225217" "20070225703" "20070260252" "20070265296" "20070265634" "20070281906" "20070282342" "20070299382" "20080008777" "20080010856" "20080014272" "20080027119" "20080041169" "20080057068" "20080065224" "20080076829" "20080078628" "20080081834" "20080086139" "20080086909" "20080086913" "20080102121" "20080113025" "20080139641" "20080141565" "20080147084" "20080153780" "20080155731" "20080200989" "20080208252" "20080216593" "20080217816" "20080221697" "20080229482" "20080242646" "20080248282" "20080260791" "20080262091" "20080263900" "20080280975" "20080282580" "20080287406" "20080287866" "20080288019" "20080294170" "20080301977" "20090005358" "20090012180" "20090036893" "20090043318" "20090054527" "20090062253" "20090062359"					
--	--	--	--	--	--	--	--

		"20090082466" "20090082773" "20090082874" "20090111792" "20090113759" "20090117167" "20090118242" "20090133289" "20090156614" "20090157194" "20090181098" "20090192222" "20090198287" "20090209536" "20090210010" "20090215809" "20090216334" "20090222047" "20090228049" "20090287246" "20090291975" "20090292022" "20090292023" "20090306723" "20100021107" "20100036430" "20100152752" "20110118780" "20110178557" "20110224729" "20110301648" "20120071935").pn. OR ("8277459").urpn. AND (PGPB USPT USOC).dbnm.					
L158	275	L157 AND metatarsal	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:49 AM
L159	206	L156 AND metatarsal	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:49 AM
L160	42	L151 AND metatarsal	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:49 AM
L161	52	("6342057" "6692496" "7011665" "7819877" "8080010" "8231627" "8764807" "9283008" "20050033301" "20060189996" "20070173843" "20070225714" "20070239168" "20080021452" "20090036931" "20100087824" "20110218576" "20110264149" "20120078252"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:53 AM

L162	82	"20120303038" "20140148859" "20140180348" "20140309703" "20150359580").pn. OR ("9980760").urpn. AND (PGPB USPT USOC).dbnm. ("4651724" "5674222" "6283969" "6730090" "7229444" "7335204" "8603148" "8906070" "20080119895" "20090198277" "20100069966" "20110029025").pn. OR ("9101421").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:53 AM
L163	216	("4159716" "4187840" "4338927" "4627425" "4757810" "4952214" "4978347" "5021056" "5112334" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "00H1706" "5810822" "5893553" "5935128" "6030391" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "D610257" "7686811" "D629900" "7972338" "D646389" "8057478" "D651315" "D651316" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231663" "8246561" "D666721" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "D679395" "8435246" "8475462" "8523870" "D694884" "D695402" "8652142" "D701303" "8672945" "8696716" "D705929" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 10:29 AM

		"8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "20040039394" "20040097946" "20050004676" "20050075641" "20050101961" "20050149042" "20050228389" "20050273112" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070233138" "20070265634" "20070276383" "20080091197" "20080140081" "20080262500" "20080269908" "20090036893" "20090093849" "20090105767" "20090198244" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100256687" "20100324556" "20110093084" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130383" "20120184961" "20120239045" "20120253350" "20120265301"					
--	--	--	--	--	--	--	--

		"20130012949" "20130085499" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130190765" "20130190766" "20130231668" "20130237987" "20130237989" "20130310836" "20130325076" "20130331845" "20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924" "20140163563" "20140171953" "20140180342" "20140194884" "20140207144" "20140249537" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140296995" "20140336658" "20150032168" "20150045839" "20150051650" "20150066094" "20150112446" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160151165" "20160175089" "20160199076" "20160213384" "20160235414" "20160242791").pn. OR ("9687250").urpn. AND (PGPB USPT USOC).dbnm.					
--	--	---	--	--	--	--	--

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N32	5	(bunion deformity).clm.	(USPAT)	AND	ON	ON	2017/02/10 06:43 PM
N33	1	(bunion deformity plane).clm.	(USPAT)	AND	ON	ON	2017/02/10 06:44 PM
N34	0	(bunion plane aligned).clm.	(USPAT)	AND	ON	ON	2017/02/10 06:44 PM
N49	1	(method bunion deformity guide cuneiform).clm.	(USPAT)	AND	ON	ON	2018/04/24 05:21 PM
N50	1	(method bunion deformity cuneiform).clm.	(USPAT)	AND	ON	ON	2018/04/24 05:21 PM
N52	1	(method bunion cuneiform).clm.	(USPAT)	AND	ON	ON	2018/04/24 05:21 PM
N53	2	(bunion cuneiform).clm.	(USPAT)	AND	ON	ON	2018/04/24 05:21 PM
N74	1	(realignment metatarsal cuneiform).clm.	(USPAT)	AND	ON	ON	2020/04/10 02:08 PM
N75	2	(realignment metatarsal).clm.	(USPAT)	AND	ON	ON	2020/04/10 02:09 PM
N82	2	(realignment metatarsal).clm.	(USPAT)	AND	ON	ON	2020/07/19 08:50 PM
N83	25	(method bunion deformity).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2021/02/13 10:16 AM
N84	8	(method bunion deformity guide).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2021/02/13 10:17 AM
N85	8	(method bunion deformity guide plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2021/02/13 10:17 AM
N86	8	(method bunion deformity metatarsal guide tip cuneiform).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2021/10/28 06:19 PM
N87	1	(metatarsal correction tissue removing plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2022/06/26 05:35 PM
N88	2	(metatarsal correction tissue removing plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2022/10/20 03:02 PM
N89	2	(metatarsal correction tissue removing plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2022/10/20 03:02 PM
N90	2	(metatarsal correction tissue removing plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2022/10/20 03:02 PM
N91	11	(method bunion	(US-PGPUB; USPAT)	AND	ON	ON	2023/10/11

N92	30	transverse angle preparing).clm. (method metatarsal transverse angle preparing).clm.	(US-PGPUB; USPAT)	AND	ON	ON	03:51 PM 2023/10/11 03:52 PM
N93	29	(method metatarsal transverse angle preparing plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2023/10/11 03:52 PM
N94	33	(metatarsal transverse angle preparing plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2024/09/10 04:05 PM
N95	2	(metatarsal incision guide knob cutting).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2024/09/10 04:05 PM
N96	13	(metatarsal incision guide fixation cutting).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2024/09/10 04:06 PM

Doc code: IDS

PTO/SB/08a (01-22)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 05/31/2024. OMB 0651-0031

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

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number			
	Filing Date			
	First Named Inventor	Robert D. Santrock		
	Art Unit			
	Examiner Name			
	Attorney Docket Number	71212.4.6.USC7		

U.S.PATENTS							Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	
	1						

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS							Remove
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	
	1						

If you wish to add additional U.S. Published Application citation information please click the Add button.

Add

FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

Add

NON-PATENT LITERATURE DOCUMENTS				Remove
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

1	Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 41 pages.	☐
2	Prior Art Publications, Exhibit A of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 3 pages.	☐
3	Claim Chart for Fishco, "Making the Lapidus Easy," The Podiatry Institute (April 2014), Exhibit B1 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 97 pages.	☐
4	Claim Chart for Fishco, "A Straightforward Guide to the Lapidus Bunionectomy," HMP Global (September 6, 2013), Exhibit B2 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 67 pages.	☐
5	Claim Chart for Groves, "Functional Position Joint Sectioning: Pre-Load Method for Lapidus Arthrodesis," Update 2015: Proceedings of the Annual Meeting of the Podiatry Institute, Chpt. 6, pp. 23-29 (April 2015), Exhibit B3 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 151 pages.	☐
6	Claim Chart for Mote, "First Metatarsal-Cuneiform Arthrodesis for the Treatment of First Ray Pathology: A Technical Guide," The Journal Foot & Ankle Surgery (September 1, 2009), Exhibit B5 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 21 pages.	☐
7	Claim Chart for US Pat. No. 10,376,268 to Fallin et al., entitled "Indexed Tri-Planar Osteotomy Guide and Method," issued August 13, 2019, Exhibit B6 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 155 pages.	☐
8	Claim Chart for US Pat. No. 8,282,645 to Lawrence et al., entitled "Metatarsal Bone Implant Cutting Guide," issued January 18, 2010, Exhibit B7 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 76 pages.	☐
9	Claim Chart for US Pat. No. 9,452,057 to Dacosta et al., entitled "Bone Implants and Cutting Apparatuses and Methods," issued April 8, 2011, Exhibit B8 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 110 pages.	☐
10	Obviousness Chart, Exhibit C of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 153 pages.	☐
11	"Foot and Ankle Instrument Set," Smith & Nephew, 2013, 2 pages.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

12	"Lapidus Pearls: Gaining Joint Exposure to Decrease Non-Union," Youtube, Retrieved online from < https://www.youtube.com/watch?v=-jqJyE7pj-Y >, dated November 2, 2009, 3 pages.	☐
13	"Reconstructive Surgery of the Foot & Ankle," The Podiatry Institute, Update 2015, Conference Program, May 2015, 28 pages.	☐
14	"Speed Continuous Active Compression Implant," BioMedical Enterprises, Inc., A120-029 Rev. 3, 2013, 4 pages.	☐
15	"Visionaire: Patient Matched Cutting Blocks Surgical Procedure," Smith & Nephew, Inc., 2009, 2 pages.	☐
16	ARTHREX, "Comprehensive Foot System," Retrieved online from < https://www.arthrex.com/resources/animation/8U3iaPvY6kO8bwFAwZF50Q/comprehensive-foot-system?referringTeam=foot_and_ankle >, dated August 27, 2013, 3 pages.	☐
17	BARAVARIAN, "Why the Lapidus Procedure is Ideal for Bunions," Podiatry Today, Retrieved online from < https://www.hmpgloballearhmpgloballe.com/site/podipodi/article/5542 >, dated May 2006, 8 pages.	☐
18	BAUER et al., "Offset-V Osteotomy of the First Metatarsal Shaft in Hallux Abducto Valgus," McGlamry's Comprehensive Textbook of Foot and Ankle Surgery, Fourth Edition, Vol. 1, Chapter 29, 2013, 26 pages.	☐
19	COTTOM, "Fixation of the Lapidus Arthrodesis with a Plantar Interfragmentary Screw and Medial Low Profile Locking Plate," The Journal of Foot & Ankle Surgery, Vol. 51, 2012, pp. 517-522.	☐
20	COUGHLIN, "Fixation of the Lapidus Arthrodesis with a Plantar Interfragmentary Screw and Medial Low Profile Locking Plate," Orthopaedics and Traumatology, Vol. 7, 1999, pp. 133-143.	☐
21	DAYTON et al., "Observed Changes in Radiographic Measurements of the First Ray after Frontal Plane Rotation of the First Metatarsal in a Cadaveric Foot Model," The Journal of Foot & Ankle Surgery, Vol. 53, 2014, pp. 274-278.	☐
22	DAYTON et al., "Relationship of Frontal Plane Rotation of First Metatarsal to Proximal Articular Set Angle and Hallux Alignment in Patients Undergoing Tarsometatarsal Arthrodesis for Hallux Abducto Valgus: A Case Series and Critical Review of the Literature," The Journal of Foot & Ankle Surgery, 2013, Article in Press, March 1, 2013, 7 pages.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

23	DiDOMENICO et al., "Lapidus Bunionectomy: First Metatarsal-Cuneiform Arthrodesis," McGlamry's Comprehensive Textbook of Foot and Ankle Surgery, Fourth Edition, Vol. 1, Chapter 31, 2013, 24 pages.	☐
24	FALLIN et al., US Provisional Application Entitled INDEXED TRI-PLANAR OSTEOTOMY GUIDE AND METHOD, US Pat. App. No. 62/118,378, filed February 19, 2015, 62 pages.	☐
25	FISHCO, "A Straightforward Guide To The Lapidus Bunionectomy," Podiatry Today, Retrieved online from < https://www.hmpgloballearningnetwork.com/site/podiatry/blogged/straightforward-guide-lapidus-bunionectomy >, dated September 6, 2013, 5 pages.	☐
26	FISHCO, "Making the Lapidus Easy," The Podiatry Institute, Update 2014, Chapter 14, 2014, pp. 91–93.	☐
27	FLEMING et al., "Results of Modified Lapidus Arthrodesis Procedure Using Medial Eminence as an Interpositional Autograft," The Journal of Foot & Ankle Surgery, Vol. 50, 2011, pp. 272–275.	☐
28	FUHRMANN, "Arthrodesis of the First Tarsometatarsal Joint for Correction of the Advanced Splayfoot Accompanied by a Hallux Valgus," Operative Orthopädie und Traumatologie, No. 2, 2005, pp. 195–210.	☐
29	GERARD et al., "The Modified Lapidus Procedure," Orthopedics, Vol. 31, No. 3, March 2008, 7 pages.	☐
30	GIANNOUDIS et al., "Hallux Valgus Correction," Practical Procedures in Elective Orthopaedic Surgery, Pelvis and Lower Extremity, Chapter 38, 2012, 22 pages.	☐
31	GREINER, "The Jargon of Pedal Movements," Foot & Ankle International, Vol. 28, No. 1, January 2007, pp. 109–125.	☐
32	GROVES, "Functional Position Joint Sectioning: Pre-Load Method for Lapidus Arthrodesis," The Podiatry Institute, Update 2015, Chapter 6, 2015, pp. 23–29.	☐
33	HARDY et al., "Observations on Hallux Valgus," The Journal of Bone and Joint Surgery, Vol. 33B, No. 3, August 1951, pp. 376–391.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

34	HOLMES, Jr., "Correction of the Intermetatarsal Angle Component of Hallux Valgus Using Fiberwire-Attached Endobuttons," Revista Internacional de Ciencias Podologicas, Vol. 6, No. 2, 2012, pp. 73-79.	☐
35	Integra, "Integra Large Qwix Positioning and Fixation Screw, Surgical Technique," 2012, 16 pages.	☐
36	KILMARTIN et al., "Combined rotation scarf and Akin osteotomies for hallux valgus: a patient focused 9 year follow up of 50 patients," Journal of Foot and Ankle Research, Vol. 3, No. 2, 2010, 12 pages.	☐
37	LEE et al., "Technique Tip: Lateral Soft-Tissue Release for Correction of Hallux Valgus Through a Medial Incision Using A Dorsal Flap Over the First Metatarsal," Foot & Ankle International, Vol. 28, No. 8, August 2007, pp. 949-951.	☐
38	MOTE et al., "First Metatarsal-Cuneiform Arthrodesis for the Treatment of First Ray Pathology: A Technical Guide," JFAS Techniques Guide, Vol. 48, No. 5, September/October 2009, pp. 593-601.	☐
39	MYERSON, "Cuneiform-Metatarsal Arthrodesis," The Foot and Ankle, Chapter 9, 1997, pp. 107-117.	☐
40	SAMMARCO, "Surgical Strategies: Mau Osteotomy for Correction of Moderate and Severe Hallux Valgus Deformity," Foot & Ankle International, Vol. 28, No. 7, July 2007, pp. 857-864.	☐
41	SCHON et al., "Cuneiform-Metatarsal Arthrodesis for Hallux Valgus," The Foot and Ankle, Second Edition, Chapter 8, 2002, pp. 99-117.	☐
42	SOKOLOFF, "Lapidus Procedure," Textbook of Bunion Surgery, Chapter 15, 1981, pp. 277-287.	☐
43	STAMATIS et al., "Mini Locking Plate as "Medial Buttress" for Oblique Osteotomy for Hallux Valgus," Foot & Ankle International, Vol. 31, No. 10, October 2010, pp. 920-922.	☐
44	STEWART, "Use for BME Speed Nitinol Staple Fixation for the Lapidus Procedure," date unknown, 1 page.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	45	WUKICH et al., "Hypermobility of the First Tarsometatarsal Joint," Foot and Ankle Clinics, Vol. 10, No. 1, March 2005, pp. 157-166.	☐
	46	DAYTON et al., "Biwinged Excision for Round Pedal Lesions," The Journal of Foot and Ankle Surgery, Vol. 35, No. 3, 1996, pp. 244-249.	☐
	47	DAYTON et al., "Medial Incision Approach to the First Metatarsophalangeal Joint," The Journal of Foot and Ankle Surgery, Vol. 40, No. 6, November/December 2001, pp. 414-417.	☐
	48	DAYTON et al., "Reduction of the Intermetatarsal Angle after First Metatarsophalangeal Joint Arthrodesis in Patients with Moderate and Severe Metatarsus Primus Adductus," The Journal of Foot and Ankle Surgery, Vol. 41, No. 5, September/October 2002, pp. 316-319.	☐
	49	DAYTON et al., "Use of the Z Osteotomy for Tailor Bunionectomy," The Journal of Foot and Ankle Surgery, Vol. 42, No. 3, May/June 2003, pp. 167-169.	☐
	50	DAYTON et al., "Early Weightbearing After First Metatarsophalangeal Joint Arthrodesis: A Retrospective Observational Case Analysis," The Journal of Foot and Ankle Surgery, Vol. 43, No. 3, May/June 2004, pp. 156-159.	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/CHRISTOPHER J BECCIA/	Date Considered	09/10/2024
--------------------	------------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

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

Application Number	
Filing Date	
First Named Inventor	Robert D. Santrock
Art Unit	
Examiner Name	
Attorney Docket Number	71212.4.6.USC7

CERTIFICATION STATEMENT

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

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

OR

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

☐ See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Paul J. LaVanway, Jr./	Date (YYYY-MM-DD)	2024-02-26
Name/Print	Paul J. LaVanway, Jr.	Registration Number	64610

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

Privacy Act Statement

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

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

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

Doc code: IDS

PTO/SB/08a (01-22)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 05/31/2024. OMB 0651-0031

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

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number			
	Filing Date			
	First Named Inventor	Robert D. Santrock		
	Art Unit			
	Examiner Name			
	Attorney Docket Number	71212.4.6.USC7		

U.S.PATENTS							Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	
	1						

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS							Remove
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	
	1						

If you wish to add additional U.S. Published Application citation information please click the Add button.

Add

FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

Add

NON-PATENT LITERATURE DOCUMENTS				Remove			
Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.					T ⁵

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

1	Claim Chart for Groves Public Use (March 26, 2014), Exhibit B4 of Defendant Fusion Orthopedics LLC's Invalidity Contentions, No. CV-22-00490-PHX-SRB, US District Court for the District of Arizona, August 27, 2022, 161 pages.	☐
2	GROVES, "Operative Report," St. Tammany Parish Hospital, Date of Procedure, March 26, 2014, 2 pages.	☐
3	D'AMICO et al., "Motion of the First Ray: Clarification Through Investigation," Journal of the American Podiatry Association, Vol. 69, No. 1, January 1979, pp. 17-23.	☐
4	OKUDA et al., "Proximal Metatarsal Osteotomy for Hallux Valgus: Comparison of Outcome for Moderate and Severe Deformities," Foot and Ankle International," Vol. 29, No. 7, July 2008, pp. 664-670.	☐
5	OKUDA et al., "The Shape of the Lateral Edge of the First Metatarsal Head as a Risk Factor for Recurrence of Hallux Valgus," The Journal of Bone and Joint Surgery, Vol. 89, 2007, pp. 2163-2172.	☐
6	MIZUNO et al., "Detorsion Osteotomy of the First Metatarsal Bone in Hallux Valgus," Japanese Orthopaedic Association, Tokyo, 1956; 30:813-819.	☐
7	EUSTACE et al., "Hallux valgus, first metatarsal pronation and collapse of the medial longitudinal arch - a radiological correlation," Skeletal Radiology, Vol. 23, 1994, pp. 191-194.	☐
8	COLLAN et al., "The biomechanics of the first metatarsal bone in hallux valgus: A preliminary study utilizing a weight bearing extremity CT," Foot and Ankle Surgery, Vol. 19, 2013, pp. 155-161.	☐
9	LE et al., "Tarsometatarsal Arthrodesis," Operative Techniques in Foot and Ankle Surgery, Section II, Chapter 40, 2011, pp. 281-285.	☐
10	COETZEE et al., "Revision Hallux Valgus Correction," Operative Techniques in Foot and Ankle Surgery, Section I, Chapter 15, 2011, pp. 84-96.	☐
11	SHURNAS et al., "Proximal Metatarsal Opening Wedge Osteotomy," Operative Techniques in Foot and Ankle Surgery, Section I, Chapter 13, 2011, pp. 73-78.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

12	EASLEY et al., "What is the Best Treatment for Hallux Valgus?," Evidence-Based Orthopaedics - The Best Answers to Clinical Questions, Chapter 73, 2009, pp. 479-491.	☐
13	SMITH et al., "Opening Wedge Osteotomies for Correction of Hallux Valgus: A Review of Wedge Plate Fixation," Foot and Ankle Specialist, Vol. 2, No. 6, December 2009, pp. 277-282.	☐
14	WEBER et al., "Use of the First Ray Splay Test to Assess Transverse Plane Instability Before First Metatarsocuneiform Fusion," The Journal of Foot and Ankle Surgery, Vol. 45, No. 4, July/August 2006, pp. 278-282.	☐
15	SANDHU et al., "Digital Arthrodesis With a One-Piece Memory Nitinol Intramedullary Fixation Device: A Retrospective Review," Foot and Ankle Specialist, Vol. 6, No. 5, October 2013, pp. 364-366.	☐
16	EASLEY et al., "Current Concepts Review: Hallux Valgus Part I: Pathomechanics, Clinical Assessment, and Nonoperative Management," Foot and Ankle International, Vol. 28, No. 5, May 2007, pp. 654-659.	☐
17	RODRIGUEZ et al., "Ilizarov method of fixation for the management of pilon and distal tibial fractures in the compromised diabetic patient: A technique guide," The Foot and Ankle Journal Online, Vol. 7, No. 2, 2014, 9 pages.	☐
18	FEILMEIER et al., "Incidence of Surgical Site Infection in the Foot and Ankle with Early Exposure and Showering of Surgical Sites: A Prospective Observation," The Journal of Foot and Ankle Surgery, Vol. 53, 2014, pp. 173-175.	☐
19	CATANESE et al., "Measuring Sesamoid Position in Hallux Valgus: When Is the Sesamoid Axial View Necessary," Foot and Ankle Specialist, 2014, 3 pages.	☐
20	DAYTON et al., "Comparison of Complications for Internal and External Fixation for Charcot Reconstruction: A Systematic Review," The Journal of Foot and Ankle Surgery, Article in Press, 2015, 4 pages.	☐
21	DAYTON et al., "A new triplanar paradigm for bunion management," Lower Extremity Review, April 2015, 9 pages.	☐
22	DAYTON et al., "American College of Foot and Ankle Surgeons' Clinical Consensus Statement: Perioperative Prophylactic Antibiotic Use in Clean Elective Foot Surgery," The Journal of Foot and Ankle Surgery, Article in Press, 2015, 7 pages.	☐

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

Application Number	
Filing Date	
First Named Inventor	Robert D. Santrock
Art Unit	
Examiner Name	
Attorney Docket Number	71212.4.6.USC7

23	DAYTON et al., "Complications of Metatarsal Suture Techniques for Bunion Correction: A Systematic Review of the Literature," The Journal of Foot and Ankle Surgery, Article in Press, 2015, 3 pages.	☐
24	DeCARBO et al., "The Weil Osteotomy: A Refresher," Techniques in Foot and Ankle Surgery, Vol. 13, No. 4, December 2014, pp. 191-198.	☐
25	DeCARBO et al., "Resurfacing Interpositional Arthroplasty for Degenerative Joint Disease of the First Metatarsalphalangeal Joint," Podiatry Management, January 2013, pp. 137-142.	☐
26	DeCARBO et al., "Locking Plates: Do They Prevent Complications?," Podiatry Today, April 2014, 7 pages.	☐
27	EASLEY et al., "Current Concepts Review: Hallux Valgus Part II: Operative Treatment," Foot and Ankle International, Vol. 28, No. 6, June 2007, pp. 748-758.	☐
28	KIM et al., "A Multicenter Retrospective Review of Outcomes for Arthrodesis, Hemi-Metallic Joint Implant, and Resectional Arthroplasty in the Surgical Treatment of End-Stage Hallux Rigidus," The Journal of Foot and Ankle Surgery, Vol. 51, 2012, pp. 50-56.	☐

If you wish to add additional non-patent literature document citation information please click the Add button **EXAMINER SIGNATURE**

Examiner Signature	/CHRISTOPHER J BECCIA/	Date Considered	09/10/2024
--------------------	------------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

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

Application Number	
Filing Date	
First Named Inventor	Robert D. Santrock
Art Unit	
Examiner Name	
Attorney Docket Number	71212.4.6.USC7

CERTIFICATION STATEMENT

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

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

OR

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

☐ See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Paul J. LaVanway, Jr./	Date (YYYY-MM-DD)	2024-02-26
Name/Print	Paul J. LaVanway, Jr.	Registration Number	64610

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

Privacy Act Statement

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

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

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

Doc code: IDS

PTO/SB/08a (02-18)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 11/30/2020. OMB 0651-0031

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

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Robert D. Santrock	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	71212.4.6.USC7	

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	3664022	A	1972-05-23	SMALL	
	2	4069824	A	1978-01-24	WEINSTOCK	
	3	4159716	A	1979-07-03	BORCHERS	
	4	4187840	A	1980-02-12	Watanabe	
	5	4335715	A	1982-06-22	Kirkley	
	6	4338927	A	1982-07-13	Volkov et al.	
	7	4349018	A	1982-09-14	Chambers	
	8	4409973	A	1983-10-18	Neufeld	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	9	4440168	A	1984-04-03	Warren	
	10	4501268	A	1985-02-26	Comparetto	
	11	4502474	A	1985-03-05	COMPARETTO	
	12	4509511	A	1985-04-09	Neufeld	
	13	4565191	A	1986-01-21	Slocum	
	14	4570624	A	1986-02-18	Wu	
	15	4627425	A	1986-12-09	Reese	
	16	4628919	A	1986-12-16	Clyburn	
	17	4632102	A	1986-12-30	COMPARETTO	
	18	4664102	A	1987-05-12	Comparetto	
	19	4708133	A	1987-11-24	Comparetto	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	20	4736737	A	1988-04-12	FARGIE et al.	
	21	4750481	A	1988-06-14	Reese	
	22	4757810	A	1988-07-19	Reese	
	23	4895141	A	1990-01-23	KOENEMAN et al.	
	24	4952214	A	1990-08-28	Comparetto	
	25	4959066	A	1990-09-25	DUNN et al.	
	26	4978347	A	1990-12-18	ILIZAROV	
	27	4988349	A	1991-01-29	PENNIG	
	28	4995875	A	1991-02-26	Coes	
	29	5021056	A	1991-06-04	Hofmann et al.	
	30	5035698	A	1991-07-30	Comparetto	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	31	5042983	A	1991-08-27	Rayhack	
	32	5049149	A	1991-09-17	Schmidt	
	33	5053039	A	1991-10-01	Hofmann et al.	
	34	5078719	A	1992-01-07	Schreiber	
	35	5112334	A	1992-05-12	Alchermes et al.	
	36	5147364	A	1992-09-15	Comparetto	
	37	5176685	A	1993-01-05	Rayhack	
	38	5207676	A	1993-05-04	Canadell et al.	
	39	5246444	A	1993-09-21	Schreiber	
	40	5254119	A	1993-10-19	SCHREIBER	
	41	5312412	A	1994-05-17	WHIPPLE	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	42	5358504	A	1994-10-25	Paley et al.	
	43	5364402	A	1994-11-15	Mumme et al.	
	44	5374271	A	1994-12-20	HWANG	
	45	5413579	A	1995-05-09	DU TOIT	
	46	H001706	H	1998-01-06	Mason	
	47	5449360	A	1995-09-12	SCHREIBER	
	48	5470335	A	1995-11-28	DU TOIT	
	49	5490854	A	1996-02-13	Fisher et al.	
	50	5529075	A	1996-06-25	CLARK	
	51	5540695	A	1996-07-30	LEVY	
	52	5578038	A	1996-11-26	Slocum	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	53	5601565	A	1997-02-11	Huebner	
	54	5613969	A	1997-03-25	JENKINS JR	
	55	5620448	A	1997-04-15	PUDDU	
	56	5620442	A	1997-04-15	BAILEY et al.	
	57	5643270	A	1997-07-01	Combs	
	58	5667510	A	1997-09-16	COMBS	
	59	5722978	A	1998-03-03	Jenkins	
	60	5749875	A	1998-05-12	PUDDU	
	61	5779709	A	1998-07-14	Harris et al.	
	62	5788695	A	1998-08-04	RICHARDSON	
	63	5803924	A	1998-09-08	Oni et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	64	5810822	A	1998-09-22	MORTIER	
	65	5843085	A	1998-12-01	Graser	
	66	5893553	A	1999-04-13	PINKOUS	
	67	5911724	A	1999-06-15	Wehrli	
	68	5935128	A	1999-08-10	Carter et al.	
	69	5941877	A	1999-08-24	Viegas et al.	
	70	5951556	A	1999-09-14	FACCIOLI et al.	
	71	5980526	A	1999-11-09	Johnson et al.	
	72	5984931	A	1999-11-16	GREENFIELD	
	73	6007535	A	1999-12-28	RAYHACK et al.	
	74	6027504	A	2000-02-22	MCGUIRE	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	75	6030391	A	2000-02-29	Brainard et al.	
	76	6162223	A	2000-12-19	Orsak et al.	
	77	6171309	B1	2001-01-09	Huebner	
	78	6203545	B1	2001-03-20	Stoffella	
	79	6248109	B1	2001-06-19	Stoffella	
	80	6391031	B1	2002-05-21	Toomey	
	81	6478799	B1	2002-11-12	Williamson	
	82	6511481	B2	2003-01-28	von Hoffmann et al.	
	83	6547793	B1	2003-04-15	McGuire	
	84	6676662	B1	2004-01-13	Bagga et al.	
	85	6719773	B1	2004-04-13	Boucher et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	86	6743233	B1	2004-06-01	Baldwin et al.	
	87	6755838	B2	2004-06-29	Trnka	
	88	6796986	B2	2004-09-28	Duffner	
	89	6859661	B2	2005-02-22	Tuke	
	90	7018383	B2	2006-03-28	McGuire	
	91	7033361	B2	2006-04-25	Collazo	
	92	7112204	B2	2006-09-26	Justin et al.	
	93	7182766	B1	2007-02-27	Mogul	
	94	7241298	B2	2007-07-10	Nemec et al.	
	95	7282054	B2	2007-10-16	Steffensmeier et al.	
	96	7377924	B2	2008-05-27	Raistrick et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	97	7465303	B2	2008-12-16	Riccione et al.	
	98	7540874	B2	2009-06-02	Trumble et al.	
	99	7572258	B2	2009-08-11	Stiernborg	
	100	7641660	B2	2010-01-05	Lakin et al.	
	101	D 610257	S	2010-02-16	Horton	
	102	7686811	B2	2010-03-30	Byrd et al.	
	103	7691108	B2	2010-04-06	Lavallee	
	104	7763026	B2	2010-07-27	Egger et al.	
	105	D 629900	S	2010-12-28	Fisher	
	106	7967823	B2	2011-06-28	Ammann et al.	
	107	7972338	B2	2011-07-05	O'Brien	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	108	D 646389	S	2011-10-04	Claypool et al.	
	109	8057478	B2	2011-11-15	Kuczynski et al.	
	110	8062301	B2	2011-11-22	Ammann et al.	
	111	8080010	B2	2011-12-20	Schulz et al.	
	112	8083746	B2	2011-12-27	Novak	
	113	D 651316	S	2011-12-27	May et al.	
	114	D 651315	S	2011-12-27	Bertoni et al.	
	115	8123753	B2	2012-02-28	Poncet	
	116	8137406	B2	2012-03-20	Novak et al.	
	117	8147530	B2	2012-04-03	Strnad et al.	
	118	8167918	B2	2012-05-01	Strnad et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	119	8172848	B2	2012-05-08	Tomko et al.	
	120	8192441	B2	2012-06-05	Collazo	
	121	8197487	B2	2012-06-12	Poncet et al.	
	122	8231663	B2	2012-07-31	Kay et al.	
	123	8231623	B1	2012-07-31	Jordan	
	124	8236000	B2	2012-08-07	Ammann et al.	
	125	8246561	B1	2012-08-21	Agee et al.	
	126	D 666721	S	2012-09-04	Wright et al.	
	127	8262664	B2	2012-09-11	Justin et al.	
	128	8277459	B2	2012-10-02	Sand et al.	
	129	8282645	B2	2012-10-09	Lawrence et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	130	8282644	B2	2012-10-09	Edwards	
	131	8292966	B2	2012-10-23	Morton	
	132	8303596	B2	2012-11-06	Plassky et al.	
	133	8313492	B2	2012-11-20	Wong et al.	
	134	8323289	B2	2012-12-04	Re	
	135	8337503	B2	2012-12-25	Lian	
	136	8343159	B2	2013-01-01	Bennett	
	137	8377105	B2	2013-02-19	Buescher	
	138	8409209	B2	2013-04-02	Ammann et al.	
	139	D 679395	S	2013-04-02	Wright et al.	
	140	8435246	B2	2013-05-07	Fisher et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	141	8475462	B2	2013-07-02	Thomas et al.	
	142	8496662	B2	2013-07-30	Novak et al.	
	143	8523870	B2	2013-09-03	Green, II et al.	
	144	8529571	B2	2013-09-10	Horan et al.	
	145	8540777	B2	2013-09-24	Ammann et al.	
	146	8545508	B2	2013-10-01	Collazo	
	147	D 694884	S	2013-12-03	Mooradian et al.	
	148	D 695402	S	2013-12-10	Dacosta et al.	
	149	8652142	B2	2014-02-18	Geissler	
	150	8657820	B2	2014-02-25	Kubiak et al.	
	151	8672945	B2	2014-03-18	Lavallee et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	152	D 701303	S	2014-03-18	Cook	
	153	8696716	B2	2014-04-15	Kartalian et al.	
	154	8702715	B2	2014-04-22	Ammann et al.	
	155	8715363	B2	2014-05-06	Ratron et al.	
	156	8728084	B2	2014-05-20	Berelsman et al.	
	157	D 705929	S	2014-05-27	Frey	
	158	8758354	B2	2014-06-24	Habegger et al.	
	159	8764763	B2	2014-07-01	Wong et al.	
	160	8764760	B2	2014-07-01	Metzger et al.	
	161	8771279	B2	2014-07-08	Philippon et al.	
	162	8777948	B2	2014-07-15	Bernsteiner	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	163	8784457	B2	2014-07-22	Graham	
	164	8784427	B2	2014-07-22	Fallin et al.	
	165	8795286	B2	2014-08-05	Sand et al.	
	166	8801727	B2	2014-08-12	Chan et al.	
	167	8808303	B2	2014-08-19	Stemniski et al.	
	168	8828012	B2	2014-09-09	May et al.	
	169	11304705	B2	2022-04-19	FALLIN et al.	
	170	10376268	B2	2019-08-13	FALLIN et al.	
	171	9980760	B2	2018-05-29	DACOSTA et al.	
	172	9452057	B2	2016-09-27	DACOSTA et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS

Remove

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20140249537	A1	2014-09-04	WONG et al.	
	2	20020107519	A1	2002-08-08	Dixon et al.	
	3	20020165552	A1	2002-11-07	Duffner	
	4	20020198531	A1	2002-12-26	Millard et al.	
	5	20040010259	A1	2004-01-15	Keller et al.	
	6	20040039394	A1	2004-02-26	Conti et al.	
	7	20040097946	A1	2004-05-20	Dietzel et al.	
	8	20040138669	A1	2004-07-15	Horn	
	9	20050004676	A1	2005-01-06	Schon et al.	
	10	20050059978	A1	2005-03-17	Sherry et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	11	20050070909	A1	2005-03-31	Egger et al.	
	12	20050075641	A1	2005-04-07	Singhatat et al.	
	13	20050101961	A1	2005-05-12	Huebner et al.	
	14	20050149042	A1	2005-07-07	Metzger	
	15	20050228389	A1	2005-10-13	Stiernborg	
	16	20050251147	A1	2005-11-10	Novak	
	17	20050273112	A1	2005-12-08	McNamara	
	18	20060129163	A1	2006-06-15	McGuire	
	19	20060206044	A1	2006-09-14	Simon	
	20	20060217733	A1	2006-09-28	Plassky et al.	
	21	20060229621	A1	2006-10-12	Cadmus	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	22	20060241608	A1	2006-10-26	Myerson et al.	
	23	20060241607	A1	2006-10-26	Myerson et al.	
	24	20060264961	A1	2006-11-23	Murray-Brown	
	25	20070010818	A1	2007-01-11	Stone et al.	
	26	20070123857	A1	2007-05-31	Deffenbaugh et al.	
	27	20070233138	A1	2007-10-04	Figueroa et al.	
	28	20070265634	A1	2007-11-15	WEINSTEIN	
	29	20070276383	A1	2007-11-29	Rayhack	
	30	20080009863	A1	2008-01-10	Bond et al.	
	31	20080015603	A1	2008-01-17	Collazo	
	32	20080039850	A1	2008-02-14	Rowley et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	33	20080091197	A1	2008-04-17	Coughlin	
	34	20080140081	A1	2008-06-12	Heavener et al.	
	35	20080147073	A1	2008-06-19	Ammann et al.	
	36	20140257509	A1	2014-09-11	Dacosta et al.	
	37	20080195215	A1	2008-08-14	Morton	
	38	20080208252	A1	2008-08-28	Holmes	
	39	20080262500	A1	2008-10-23	Collazo	
	40	20080269908	A1	2008-10-30	Warburton	
	41	20080288004	A1	2008-11-20	Schendel	
	42	20090036931	A1	2009-02-05	Pech et al.	
	43	20090036893	A1	2009-02-05	Kartalian et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	44	20090054899	A1	2009-02-26	Ammann et al.	
	45	20090093849	A1	2009-04-09	Grabowski	
	46	20090105767	A1	2009-04-23	Reiley	
	47	20090118733	A1	2009-05-07	Orsak et al.	
	48	20090198279	A1	2009-08-06	Zhang et al.	
	49	20090198244	A1	2009-08-06	Leibel	
	50	20090222047	A1	2009-09-03	Graham	
	51	20090254126	A1	2009-10-08	Orbay et al.	
	52	20090254092	A1	2009-10-08	ALBIOL LLORACH	
	53	20090287309	A1	2009-11-19	Walch et al.	
	54	20100069910	A1	2010-03-18	Hasselman	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	55	20100121334	A1	2010-05-13	Couture et al.	
	56	20100130981	A1	2010-05-27	Richards	
	57	20100152782	A1	2010-06-17	Stone et al.	
	58	20100168799	A1	2010-07-01	Schumer	
	59	20100185245	A1	2010-07-22	Paul et al.	
	60	20100249779	A1	2010-09-30	Hotchkiss et al.	
	61	20100256687	A1	2010-10-07	Neufeld et al.	
	62	20100318088	A1	2010-12-16	Warne et al.	
	63	20100324556	A1	2010-12-23	Tyber et al.	
	64	20110009865	A1	2011-01-13	Orfaly	
	65	20110093084	A1	2011-04-21	Morton	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	66	20110118739	A1	2011-05-19	Tyber et al.	
	67	20110178524	A1	2011-07-21	Lawrence et al.	
	68	20110245835	A1	2011-10-06	Dodds et al.	
	69	20110288550	A1	2011-11-24	Orbay et al.	
	70	20110301648	A1	2011-12-08	Lofthouse et al.	
	71	20120016426	A1	2012-01-19	Robinson	
	72	20120065689	A1	2012-03-15	Prasad et al.	
	73	20120078258	A1	2012-03-29	Lo et al.	
	74	20120123484	A1	2012-05-17	Lietz et al.	
	75	20120123420	A1	2012-05-17	Honiball	
	76	20120130383	A1	2012-05-24	Budoff	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	77	20120130382	A1	2012-05-24	Iannotti et al.	
	78	20120130376	A1	2012-05-24	Loring et al.	
	79	20120185056	A1	2012-07-19	Warburton	
	80	20120184961	A1	2012-07-19	Johannaber	
	81	20120191199	A1	2012-07-26	Raemisch	
	82	20120239045	A1	2012-09-20	Li	
	83	20120253350	A1	2012-10-04	ANTHONY et al.	
	84	20120265301	A1	2012-10-18	Demers et al.	
	85	20120277745	A1	2012-11-01	LIZEE	
	86	20140257308	A1	2014-09-11	Johannaber	
	87	20130012949	A1	2013-01-10	Fallin et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	88	20130035694	A1	2013-02-07	Grimm et al.	
	89	20130085499	A1	2013-04-04	Lian	
	90	20140277214	A1	2014-09-18	Helenbolt et al.	
	91	20130131821	A1	2013-05-23	Cachia	
	92	20130150903	A1	2013-06-13	Vincent	
	93	20130158556	A1	2013-06-20	Jones et al.	
	94	20130165938	A1	2013-06-27	Chow et al.	
	95	20130165936	A1	2013-06-27	MYERS	
	96	20130172942	A1	2013-07-04	LEWIS et al.	
	97	20130184714	A1	2013-07-18	Kaneyama et al.	
	98	20130190766	A1	2013-07-25	Harris et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	99	20130190765	A1	2013-07-25	Harris et al.	
	100	20130204259	A1	2013-08-08	Zajac	
	101	20130226252	A1	2013-08-29	Mayer	
	102	20130226248	A1	2013-08-29	Hatch et al.	
	103	20130231668	A1	2013-09-05	Olsen et al.	
	104	20130237989	A1	2013-09-12	Bonutti	
	105	20130237987	A1	2013-09-12	Graham	
	106	20130267956	A1	2013-10-10	Terrill et al.	
	107	20130310836	A1	2013-11-21	Raub et al.	
	108	20130325076	A1	2013-12-05	Palmer et al.	
	109	20130325019	A1	2013-12-05	Thomas et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	110	20130331845	A1	2013-12-12	HORAN et al.	
	111	20130338785	A1	2013-12-19	Wong	
	112	20140005672	A1	2014-01-02	Edwards et al.	
	113	20140025127	A1	2014-01-23	Richter	
	114	20140039561	A1	2014-02-06	Weiner et al.	
	115	20140039501	A1	2014-02-06	Schickendantz et al.	
	116	20140046387	A1	2014-02-13	Waizenegger	
	117	20140074101	A1	2014-03-13	Collazo	
	118	20140074099	A1	2014-03-13	Vigneron et al.	
	119	20140094924	A1	2014-04-03	Hacking et al.	
	120	20140094861	A1	2014-04-03	Fallin	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	121	20140135775	A1	2014-05-15	MAXSON et al.	
	122	20140163563	A1	2014-06-12	Reynolds et al.	
	123	20140171953	A1	2014-06-19	GONZALVEZ et al.	
	124	20140180342	A1	2014-06-26	Lowery et al.	
	125	20140188139	A1	2014-07-03	Fallin et al.	
	126	20140194999	A1	2014-07-10	ORBAY et al.	
	127	20140194884	A1	2014-07-10	Martin et al.	
	128	20140207144	A1	2014-07-24	LEE et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	2009227957	AU	B2	2014-07-10	Boutin, et al.		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	2	2491824	CA	A1	2005-09-08	Grimm, et al.		☐
	3	2854997	CA	A1	2013-05-16	Leslie, et al.		☐
	4	695846	CH	A5	2006-09-29	Roland, et al.		☐
	5	2930668	CN	Y	2007-08-08	Lin		☐
	6	201558162	CN	U	2010-08-25	Xiaojuan, et al.		☐
	7	201572172	CN	U	2010-09-08	Xiaojuan, et al.		☐
	8	201586060	CN	U	2010-09-22	Xiaojuan, et al.		☐
	9	201912210	CN	U	2011-08-03	Xing, et al.		☐
	10	101237835	CN	B	2012-11-07	ARTHREX INC.		☐
	11	202801773	CN	U	2013-03-20	Tang, et al.		☐
	12	103462675	CN	A	2013-12-25	Tang, et al.		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	13	103505276	CN	A	2014-01-15	Wang, et al.		☐
	14	203458450	CN	U	2014-03-05	Wang, et al.		☐
	15	203576647	CN	U	2014-05-07	Huang, et al.		☐
	16	102860860	CN	B	2014-05-21	Xia, et al.		☐
	17	104490460	CN	A	2015-04-08	Xu		☐
	18	104510523	CN	A	2015-04-15	Xu		☐
	19	104523327	CN	A	2015-04-22	Ma, et al.		☐
	20	104546102	CN	A	2015-04-29	Ma, et al.		☐
	21	204379413	CN	U	2015-06-10	Xu		☐
	22	204410951	CN	U	2015-06-24	Xu		☐
	23	204428145	CN	U	2015-07-01	Xu		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	24	204428144	CN	U	2015-07-01	Xu		☐
	25	204428143	CN	U	2015-07-01	Xu		☐
	26	204446081	CN	U	2015-07-08	Ma, et al.		☐
	27	202006010241	DE	U1	2007-03-29	RHEE		☐
	28	102007053058	DE	B3	2009-04-09	NORMED MEDIZIN TECHNIK VERTRIE		☐
	29	4134243	JP	B2	2008-08-20	Nishiyama, et al.		☐
	30	685206	EP	B1	2000-09-06	Ellis		☐
	31	1508316	EP	B1	2007-05-16	DEPUY FRANCE		☐
	32	1897509	EP	B1	2009-07-08	Arnould		☐
	33	2124772	EP	A1	2009-12-02	Richards		☐
	34	2124832	EP	B1	2012-08-08	Collins, et al.		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	35	2632349	EP	A1	2013-09-04	Iannotti, et al.		☐
	36	2665428	EP	A1	2013-11-27	Johannaber		☐
	37	2742878	EP	A1	2014-06-18	Reynolds, et al.		☐
	38	2750617	EP	A1	2014-07-09	Gaudin		☐
	39	2849684	EP	A1	2015-03-25	Neal, et al.		☐
	40	2624764	EP	B1	2015-12-30	CERAMTEC GMBH		☐
	41	2362616	FR	A1	1978-03-24	Duyck		☐
	42	2764183	FR	B1	1999-11-05	Afriat, et al.		☐
	43	2953120	FR	B1	2012-01-20	HECHARD		☐
	44	3030221	FR	A1	2016-06-24	Boniface et al.		☐
	45	2154144	GB	A	1985-09-04	De Bastiani, et al.		☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	46	2154143	GB	A	1985-09-04	De Bastiani, et al.		☐
	47	2334214	GB	B	2003-01-22	STANLEY		☐
	48	2006158972	JP	A	2006-06-22	DEPUY PRODUCTS INC		☐
	49	2011092405	JP	A	2011-05-12	Sato		☐
	50	2011523889	JP	A	2011-08-25	Saravuia, et al.		☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	"Accu-Cut Osteotomy Guide System," BioPro, Brochure, October 2018, 2 pages.	☐
	2	"Acumed Osteotomiesystem Operationstechnik," Acumed, 2014, 19 pages (including 3 pages English translation).	☐
	3	ALBANO et al., "Biomechanical Study of Transcortical or Transtrabecular Bone Fixation of Patellar Tendon Graft with Bioabsorbable Pins in ACL Reconstruction in Sheep," Revista Brasileira de Ortopedia (Rev Bras Ortop.) Vol. 47, No. 1, 2012, pp. 43-49.	☐
	4	ALVINE et al., "Peg and Dowel Fusion of the Proximal Interphalangeal Joint," Foot & Ankle, Vol. 1, No. 2, 1980, pp. 90-94.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

5	ANDERSON et al., "Uncemented STAR Total Ankle Prostheses," The Journal of Bone and Joint Surgery, Vol. 86(1, Suppl 2), September 2004, pp. 103-111, (Abstract Only).	☐
6	BEDNARZ et al., "Modified Lapidus Procedure for the Treatment of Hypermobility Hallux Valgus," Foot & Ankle International, Vol. 21, No. 10, October 2000, pp. 816-821.	☐
7	BLOMER, "Knieendoprothetik – Herstellerische Probleme und technologische Entwicklungen," Orthopade, Vol. 29, 2000, pp. 688-696, including English Abstract on page 689.	☐
8	BOUAICHA et al., "Fixation of Maximal Shift Scarf Osteotomy with Inside-Out Plating: Technique Tip," Foot & Ankle International, Vol. 32, No. 5, May 2011, pp. 567-569.	☐
9	CARR et al., "Correctional Osteotomy for Metatarsus Primus Varus and Hallux Valgus," The Journal of Bone and Joint Surgery, Vol. 50-A, No. 7, October 1968, pp. 1353-1367.	☐
10	COETZEE et al., "The Lapidus Procedure: A Prospective Cohort Outcome Study," Foot & Ankle International, Vol. 25, No. 8, August 2004, pp. 526-531.	☐
11	DAYTON et al., "Is Our Current Paradigm for Evaluation and Management of the Bunion Deformity Flawed? A Discussion of Procedure Philosophy Relative to Anatomy," The Journal of Foot and Ankle Surgery, Vol. 54, 2015, pp. 102-111.	☐
12	DAYTON et al., "Observed Changes in Radiographic Measurements of the First Ray after Frontal and Transverse Plane Rotation of the Hallux: Does the Hallux Drive the Metatarsal in a Bunion Deformity?," The Journal of Foot and Ankle Surgery, Vol. 53, 2014, pp. 584-587.	☐
13	DAYTON et al., "Relationship Of Frontal Plane Rotation Of First Metatarsal To Proximal Articular Set Angle And Hallux Alignment In Patients Undergoing Tarsometatarsal Arthrodesis For Hallux Abducto Valgus: A Case Series And Critical Review Of The Literature," The Journal of Foot and Ankle Surgery, Vol. 52, No. 3, May/June 2013, pp. 348-354.	☐
14	DAYTON et al., "Quantitative Analysis of the Degree of Frontal Rotation Required to Anatomically Align the First Metatarsal Phalangeal Joint During Modified Tarsal-Metatarsal Arthrodesis Without Capsular Balancing," The Journal of Foot and Ankle Surgery, 2015, pp. 1-6.	☐
15	DE GEER et al., "A New Measure of Tibial Sesamoid Position in Hallux Valgus in Relation to the Coronal Rotation of the First Metatarsal in CT Scans," Foot and Ankle International, March 26, 2015, 9 pages.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

16	DiDOMENICO et al., "Correction of Frontal Plane Rotation of Sesamoid Apparatus during the Lapidus Procedure: A Novel Approach," The Journal of Foot and Ankle Surgery, Vol. 53, 2014, pp. 248-251.	☐
17	DOBBE et al. "Patient-Tailored Plate For Bone Fixation And Accurate 3D Positioning In Corrective Osteotomy," Medical and Biological Engineering and Computing, Vol. 51, No. 1-2, February 2013, pp. 19-27, (Abstract Only).	☐
18	DOTY et al., "Hallux valgus and hypermobility of the first ray: facts and fiction," International Orthopaedics, Vol. 37, 2013, pp. 1655-1660.	☐
19	EBI Extra Small Rail Fixator, Biomet Trauma, retrieved December 19, 2014, from the Internet: < http://footandanklefixation.com/product/biomet-trauma-ebi-extra-small-rail-fixator >, 7 pages.	☐
20	European Patent Application No. 16837611.9, Extended European Search Report dated April 11, 2019, 8 pages.	☐
21	"Futura Forefoot Implant Arthroplasty Products," Tornier, Inc., 2008, 14 pages.	☐
22	GALLI et al., "Enhanced Lapidus Arthrodesis: Crossed Screw Technique With Middle Cuneiform Fixation Further Reduces Sagittal Mobility," The Journal of Foot & Ankle Surgery, Vol. 54, Vol. 3, May/June 2015, published online: November 21, 2014, pp. 437-440.	☐
23	GARTHWAIT, "Accu-Cut System Facilitates Enhanced Precision," Podiatry Today, Vol. 18, No. 6, June 2005, 6 pages.	☐
24	GONZALEZ DEL PINO et al., "Variable Angle Locking Intercarpal Fusion System for Four-Corner Arthrodesis: Indications and Surgical Technique," Journal of Wrist Surgery, Vol. 1, No. 1, August 2012, pp. 73-78.	☐
25	GOTTE, "Entwicklung eines Assistenzrobotersystems für die Knieendoprothetik," Forschungsberichte, Technische Universität München, 165, 2002, 11 pages, including partial English Translation.	☐
26	GREGG et al., "Plantar plate repair and Weil osteotomy for metatarsophalangeal joint instability," Foot and Ankle Surgery, Vol. 13, 2007, pp. 116-121.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

27	GRONDAL et al., "A Guide Plate for Accurate Positioning of First Metatarsophalangeal Joint during Fusion," Operative Orthopädie Und Traumatologie, Vol. 16, No. 2, 2004, pp. 167-178 (Abstract Only).	☐
28	"HAT-TRICK Lesser Toe Repair System," Smith & Nephew, Brochure, August 2014, 12 pages.	☐
29	"HAT-TRICK Lesser Toe Repair System, Foot and Ankle Technique Guide, Metatarsal Shortening Osteotomy Surgical Technique," Smith & Nephew, 2014, 16 pages.	☐
30	HETHERINGTON et al., "Evaluation of surgical experience and the use of an osteotomy guide on the apical angle of an Austin osteotomy," The Foot, Vol. 18, 2008, pp. 159-164.	☐
31	HIRAO et al., "Computer assisted planning and custom-made surgical guide for malunited pronation deformity after first metatarsophalangeal joint arthrodesis in rheumatoid arthritis: A case report," Computer Aided Surgery, Vol. 19, Nos. 1-3, 2014, pp. 13-19.	☐
32	"Hoffmann II Compact External Fixation System," Stryker, Brochure, Literature Number 5075-1-500, 2006, 12 pages.	☐
33	"Hoffmann II Micro Lengthener," Stryker, Operative Technique, Literature Number 5075-2-002, 2008, 12 pages.	☐
34	"Hoffmann Small System External Fixator Orthopedic Instruments," Stryker, retrieved December 19, 2014, from the Internet: < http://www.alibaba.com/product-detail/Stryker-Hoffmann-Small-System-External-Fixator_1438850129.html >, 3 pages.	☐
35	International Patent Application No. PCT/US2016/046892, International Search Report and Written Opinion mailed December 28, 2016, 18 pages.	☐
36	KIM et al., "A New Measure of Tibial Sesamoid Position in Hallux Valgus in Relation to the Coronal Rotation of the First Metatarsal in CT Scans," Foot and Ankle International, Vol. 36, No. 8, 2015, pp. 944-952.	☐
37	"Lag Screw Target Bow," Stryker Leibinger GmbH & Co. KG, Germany 2004, 8 pages.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

38	LAPIDUS, "The Author's Bunion Operation From 1931 to 1959," Clinical Orthopaedics, Vol. 16, 1960, pp. 119-135.	☐
39	LIESKE et al., "Implantation einer Sprunggelenkttotalendo-prothese vom Typ Salto 2," Operative Orthopädie und Traumatologie, Vol. 26, No. 4, 2014, pp. 401-413, including English Abstract on page 403.	☐
40	MAC (Multi Axial Correction) Fixation System, Biomet Trauma, retrieved December 19, 2014, from the Internet: < http://footandanklefixation.com/product/biomet-trauma-mac-multi-axial-correction-fixation-system >, 7 pages.	☐
41	MAGIN, "Computernavigierter Gelenkersatz am Knie mit dem Orthopilot," Operative Orthopädie und Traumatologie, Vol. 22, No. 1, 2010, pp. 63-80, including English Abstract on page 64.	☐
42	MAGIN, "Die belastungsstabile Lapidus-Arthrodesse bei Hallux-valgus-Deformität mittels IVP-Plattenfixateur (V-TEK-System)," Operative Orthopädie und Traumatologie, Vol. 26, No. 2, 2014, pp. 184-195, including English Abstract on page 186.	☐
43	Michelangelo Bunion System, Surgical Technique, Instratek Incorporated, publication date unknown, 4 pages.	☐
44	Mini Joint Distractor, Arthrex, retrieved December 19, 2014, from the Internet: < http://www.arthrex.com/foot-ankle/mini-joint-distractor/products >, 2 pages.	☐
45	MiniRail System, Small Bone Innovations, Surgical Technique, 2010, 24 pages.	☐
46	MIYAKE et al., "Three-Dimensional Corrective Osteotomy for Malunited Diaphyseal Forearm Fractures Using Custom-Made Surgical Guides Based on Computer Simulation," JBJS Essential Surgical Techniques, Vol. 2, No. 4, 2012, 11 pages.	☐
47	Modular Rail System: External Fixator, Smith & Nephew, Surgical Technique, 2013, 44 pages.	☐
48	MONNICH et al., "A Hand Guided Robotic Planning System for Laser Osteotomy in Surgery," World Congress on Medical Physics and Biomedical Engineering Vol. 25/6: Surgery, Nimimal Invasive Interventions, Endoscopy and Image Guided Therapy, September 7-12, 2009, pages 59-62, (Abstract Only).	☐

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

Application Number	
Filing Date	
First Named Inventor	Robert D. Santrock
Art Unit	
Examiner Name	
Attorney Docket Number	71212.4.6.USC7

49	MOORE et al., "Effect Of Ankle Flexion Angle On Axial Alignment Of Total Ankle Replacement," Foot and Ankle International, Vol. 31, No. 12, December 2010, pp. 1093-1098, (Abstract Only).	☐
50	MORTIER et al., "Axial Rotation of the First Metatarsal Head in a Normal Population and Hallux Valgus Patients," Orthopaedics and Traumatology: Surgery and Research, Vol. 98, 2012, pp. 677-683.	☐

If you wish to add additional non-patent literature document citation information please click the Add button **EXAMINER SIGNATURE**

Examiner Signature	/CHRISTOPHER J BECCIA/	Date Considered	09/10/2024
--------------------	------------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

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

Application Number	
Filing Date	
First Named Inventor	Robert D. Santrock
Art Unit	
Examiner Name	
Attorney Docket Number	71212.4.6.USC7

CERTIFICATION STATEMENT

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

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

OR

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

☐ See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Paul J. LaVanway, Jr./	Date (YYYY-MM-DD)	2024-02-26
Name/Print	Paul J. LaVanway, Jr.	Registration Number	64610

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

Privacy Act Statement

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

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

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

Doc code: IDS

PTO/SB/08a (02-18)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 11/30/2020. OMB 0651-0031

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

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		
	Filing Date		
	First Named Inventor	Robert D. Santrock	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	71212.4.6.USC7	

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	10470779	B2	2019-11-12	Fallin et al.	
	2	8858602	B2	2014-10-14	Weiner et al.	
	3	8882778	B2	2014-11-11	Ranft	
	4	8882816	B2	2014-11-11	Kartalian et al.	
	5	8900247	B2	2014-12-02	Tseng et al.	
	6	8906026	B2	2014-12-09	Ammann et al.	
	7	D 720456	S	2014-12-30	Dacosta et al.	
	8	8945132	B2	2015-02-03	Plassy et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	9	8998903	B2	2015-04-07	Price et al.	
	10	8998904	B2	2015-04-07	Zeetser et al.	
	11	9023052	B2	2015-05-05	Lietz et al.	
	12	9044250	B2	2015-06-02	Olsen et al.	
	13	9060822	B2	2015-06-23	Lewis et al.	
	14	9089376	B2	2015-07-28	Medoff et al.	
	15	9107715	B2	2015-08-18	Blitz et al.	
	16	9113920	B2	2015-08-25	Ammann et al.	
	17	D 740424	S	2015-10-06	Dacosta et al.	
	18	D 765844	S	2016-09-06	DaCosta	
	19	D 766434	S	2016-09-13	DaCosta	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	20	D 766437	S	2016-09-13	DaCosta	
	21	D 766438	S	2016-09-13	DaCosta	
	22	D 766439	S	2016-09-13	DaCosta	
	23	9522023	B2	2016-11-08	Haddad et al.	
	24	9750538	B2	2017-09-05	Soffiatti et al.	
	25	9785747	B2	2017-10-10	Geebelen	
	26	10028750	B2	2018-07-24	Rose	
	27	10064631	B2	2018-09-04	Dacosta et al.	
	28	10159499	B2	2018-12-25	Dacosta et al.	
	29	10292713	B2	2019-05-21	Fallin et al.	
	30	8888785	B2	2014-11-18	AMMANN et al.	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	31	9101421	B2	2015-08-11	BLACKLIDGE	
	32	10327829	B2	2019-06-25	DACOSTA et al.	
	33	5417694	A	1995-05-23	MARIK et al.	
	34	8080045	B2	2011-12-20	Wotton, III	
	35	10779867	B2	2020-09-22	Penzimer et al.	
	36	4754746	A	1988-07-05	COX	
	37	5586564	A	1996-12-24	BARRETT et al.	
	38	7097647	B2	2006-08-29	SEGLER et al.	
	39	7153310	B2	2006-12-26	RALPH et al.	
	40	9011507	B2	2015-04-21	SCHELLING	

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS

Remove

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20170042598	A1	2017-02-16	Santrock et al.	
	2	20170042599	A1	2017-02-16	Bays et al.	
	3	20170079669	A1	2017-03-23	Bays et al.	
	4	20170143511	A1	2017-05-25	Cachia	
	5	20140276815	A1	2014-09-18	Riccione	
	6	20140276853	A1	2014-09-18	Long et al.	
	7	20140277176	A1	2014-09-18	Buchanan et al.	
	8	20140288562	A1	2014-09-25	Von Zabern et al.	
	9	20140296995	A1	2014-10-02	Reiley et al.	
	10	20140303621	A1	2014-10-09	Gerold et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	11	20140336658	A1	2014-11-13	Luna et al.	
	12	20140343555	A1	2014-11-20	Russi et al.	
	13	20150032168	A1	2015-01-29	Orsak et al.	
	14	20170164989	A1	2017-06-15	WEINER et al.	
	15	20150045839	A1	2015-02-12	DACOSTA et al.	
	16	20150051650	A1	2015-02-19	VERSTREKEN et al.	
	17	20150057667	A1	2015-02-26	Ammann et al.	
	18	20150066094	A1	2015-03-05	Prandi et al.	
	19	20150112446	A1	2015-04-23	Melamed et al.	
	20	20150119944	A1	2015-04-30	Geldwert	
	21	20150142064	A1	2015-05-21	Perez et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	22	20150150608	A1	2015-06-04	Sammarco	
	23	20150182273	A1	2015-07-02	Stemniski et al.	
	24	20150223851	A1	2015-08-13	Hill et al.	
	25	20150245858	A1	2015-09-03	Weiner et al.	
	26	20160015426	A1	2016-01-21	Dayton	
	27	20160022315	A1	2016-01-28	SOFFIATTI et al.	
	28	20160151165	A1	2016-06-02	Fallin et al.	
	29	20160175089	A1	2016-06-23	Fallin et al.	
	30	20160192950	A1	2016-07-07	Dayton et al.	
	31	20160199076	A1	2016-07-14	Fallin et al.	
	32	20160213384	A1	2016-07-28	Fallin et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	33	20160235414	A1	2016-08-18	Hatch et al.	
	34	20160242791	A1	2016-08-25	Fallin et al.	
	35	20160256204	A1	2016-09-08	PATEL et al.	
	36	20160324532	A1	2016-11-10	MONTOYA et al.	
	37	20160354127	A1	2016-12-08	Lundquist et al.	
	38	20020099381	A1	2002-07-25	MARONEY	
	39	20080172054	A1	2008-07-17	CLAYPOOL et al.	
	40	20120330135	A1	2012-12-27	MILLAHN et al.	
	41	20130096563	A1	2013-04-18	MEADE et al.	
	42	20150045801	A1	2015-02-12	AXELSON JR et al.	
	43	20180344334	A1	2018-12-06	KIM et al.	

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	44	20130085502	A1	2013-04-04	Harrold	
	45	20050267482	A1	2005-12-01	HYDE JR.	
	46	20120303033	A1	2012-11-29	WEINER et al.	
	47	20130150900	A1	2013-06-13	HADDAD et al.	
	48	20140350561	A1	2014-11-27	DACOSTA et al.	
	49	20160135858	A1	2016-05-19	DACOSTA et al.	
	50	20180132868	A1	2018-05-17	DACOSTA et al.	
	51	20090112212	A1	2009-04-30	MURRAY et al.	
	52	20110264149	A1	2011-10-27	PAPPALARDO et al.	
	53	20170056031	A1	2017-03-02	AWTREY et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button. [Add](#)

FOREIGN PATENT DOCUMENTS

[Remove](#)

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	2014511207	JP	A	2014-05-15	Webber		☐
	2	2014521384	JP	A	2014-08-28	Iannotti, et al.		☐
	3	100904142	KR	B1	2009-06-15	Warburton, et al.		☐
	4	2098036	RU	C1	1997-12-10	Skvortsov, et al.		☐
	5	2195892	RU	C2	2003-01-10	Kotel, et al.		☐
	6	2320287	RU	C1	2008-03-27	Ezhov		☐
	7	2321369	RU	C1	2008-04-10	Valiakhmetov, et al.		☐
	8	2321366	RU	C2	2008-04-10	Kotel, et al.		☐
	9	2346663	RU	C2	2009-02-20	Barinov, et al.		☐
	10	2412662	RU	C1	2011-02-27	Zyrjanov, et al.		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	11	1333328	SU	A2	1987-08-30	Nadgertsev, et al.		☐
	12	0166022	WO	A1	2001-09-13	Pinczewski et al.		☐
	13	03075775	WO	A1	2003-09-18	KUPA PRAEZ SMASCHINEN GES M B		☐
	14	2004089227	WO	A2	2004-10-21	KUHN		☐
	15	2008051064	WO	A1	2008-05-02	Jose		☐
	16	2009029798	WO	A1	2009-03-05	ACUMED LLC		☐
	17	2009032101	WO	A2	2009-03-12	Simon		☐
	18	2011037885	WO	A1	2011-03-31	Sand, et al.		☐
	19	2012029008	WO	A1	2012-03-08	Herzog et al.		☐
	20	2013090392	WO	A1	2013-06-20	Sammarco		☐
	21	2013134387	WO	A1	2013-09-12	Elghazaly		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	22	2013169475	WO	A1	2013-11-14	Neal, et al.		☐
	23	2014022055	WO	A1	2014-02-06	O'Connell, et al.		☐
	24	2014020561	WO	A1	2014-02-06	Honiball		☐
	25	2014035991	WO	A1	2014-03-06	Lang		☐
	26	2014085882	WO	A1	2014-06-12	Angeli		☐
	27	2014152535	WO	A1	2014-09-25	Mcginley, et al.		☐
	28	2014152219	WO	A2	2014-09-25	Dacosta, et al.		☐
	29	2014147099	WO	A1	2014-09-25	Claes, et al.		☐
	30	2014177783	WO	A1	2014-11-06	Leemrijse, et al.		☐
	31	2014200017	WO	A1	2014-12-18	Tanji		☐
	32	2015094409	WO	A1	2015-06-25	PARAGON 28, INC.		☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	33	2015105880	WO	A1	2015-07-16	Montoya, et al.		☐
	34	2015127515	WO	A2	2015-09-03	Verstreken, et al.		☐
	35	2016134160	WO	A1	2016-08-25	TREACE MEDICAL CONCEPTS INC		☐
	36	200903719	IN	P1	2009-06-08	Hasselman		☐
	37	200904479	IN	P2	2010-05-21	Auger, et al.		☐
	38	140/DELNP/2012	IN	P1	2013-02-01	Johnson, et al.		☐
	39	2004/KOLNP/2013	IN	P2	2013-11-01	Stemniski, et al.		☐
	40	4162380	JP	B2	2008-10-08	Michael, et al.		☐
	41	4796943	JP	B2	2011-10-19	Yoshimura, et al.		☐
	42	5466647	JP	B2	2014-04-09	Fox		☐
	43	5628875	JP	B2	2014-11-19	Matsugaritei, et al.		☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	44	2004174265	JP	A	2004-06-24	ZIMMER TEHC INC		☐
	45	S635739	JP	A	1988-01-11	KYOCERA CORP		☐
	46	3023068	EP	A2	2016-05-25	PARAGON 28 INC		☐
	47	756	MD	Z	2014-11-30	CIOBANU et al.		☐
	48	2008537498	JP	A	2008-09-18	QUANTUM ORTHOPEDICS		☐
	49	103735306	CN	A	2014-04-23	DENG		☐
	50	H0531116	JP	A	1993-02-09	HOWMEDICA INC		☐

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	NAGY et al., "The AO Ulnar Shortening Osteotomy System Indications and Surgical Technique," Journal of Wrist Surgery, Vol. 3, No. 2, 2014, pp. 91-97.	☐
	2	NexFix from Nexa Orthopedics, MetaFix I from Merete Medical, Inc. and The BioPro Lower Extremities from BioPro, found in Foot & Ankle International Journal, Vol. 28, No. 1, January 2007, 4 pages.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

3	ODENBRING et al., "A guide instrument for high tibial osteotomy," Acta Orthopaedica Scandinavica, Vol. 60, No. 4, 1989, pp. 449–451.	☐
4	OKUDA et al., "Postoperative Incomplete Reduction of the Sesamoids as a Risk Factor for Recurrence of Hallux Valgus," The Journal of Bone and Joint Surgery, Vol. 91-A, No. 1, July 2009, pp. 1637-1645.	☐
5	OSHER et al., "Accurate Determination of Relative Metatarsal Protrusion with a Small Intermetatarsal Angle: A Novel Simplified Method," The Journal of Foot & Ankle Surgery, Vol. 53, No. 5, September/October 2014, published online: June 3, 2014, pp. 548-556.	☐
6	OTSUKI et al., "Developing a novel custom cutting guide for curved per-acetabular osteotomy," International Orthopaedics (SICOT), Vol. 37, 2013, pp. 1033–1038.	☐
7	PATEL et al., "Modified Lapidus Arthrodesis: Rate of Nonunion in 227 Cases," The Journal of Foot & Ankle Surgery, Vol. 43, No. 1, January/February 2004, pp. 37-42.	☐
8	"Patient to Patient Precision, Accu-Cut, Osteotomy Guide System," BioPro, Foot & Ankle International Journal, Vol. 23, No. 8, August 2002, 2 pages.	☐
9	PETERS et al., "Flexor Hallucis Longus Tendon Laceration as a Complication of Total Ankle Arthroplasty," Foot & Ankle International, Vol. 34, No. 1, 2013, pp. 148–149.	☐
10	"Prophecy Inbone Preoperative Navigation Guides," Wright Medical Technology, Inc., November 2013, 6 pages.	☐
11	"RAYHACK Ulnar Shortening Generation II Low-Profile Locking System Surgical Technique," Wright Medical Technology, Inc., December 2013, 20 pages.	☐
12	Rx-Fix Mini Rail External Fixator, Wright Medical Technology, Brochure, August 15, 2014, 2 pages.	☐
13	SALTZMAN et al., "Prospective Controlled Trial of STAR Total Ankle Replacement Versus Ankle Fusion: Initial Results," Foot & Ankle International, Vol. 30, No. 7, July 2009, pp. 579–596.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

14	SCANLAN et al. "Technique Tip: Subtalar Joint Fusion Using a Parallel Guide and Double Screw Fixation," The Journal of Foot and Ankle Surgery, Vol. 49, Issue 3, May-June 2010, pp. 305-309, (Abstract Only).	☐
15	SCRANTON JR. et al, "Anatomic Variations in the First Ray: Part I. Anatomic Aspects Related to Bunion Surgery," Clinical Orthopaedics and Related Research, Vol. 151, September 1980, pp. 244-255.	☐
16	SIDDIQUI et al. "Fixation Of Metatarsal Fracture With Bone Plate In A Dromedary Heifer," Open Veterinary Journal, Vol. 3, No. 1, 2013, pp. 17-20.	☐
17	SIDEKICK STEALTH Rearfoot Fixator, Wright Medical Technology, Surgical Technique, December 2, 2013, 20 pages.	☐
18	SIMPSON et al., "Computer-Assisted Distraction Osteogenesis By Ilizarov's Method," International Journal of Medical Robots and Computer Assisted Surgery, Vol. 4, No. 4, December 2008, pp. 310-320, (Abstract Only).	☐
19	Small Bone External Fixation System, Acumed, Surgical Technique, Effective date September 2014, 8 pages.	☐
20	"Smith & Nephew scores a HAT-TRICK with its entry into the high-growth hammer toe repair market," Smith & Nephew, July 31, 2014, 2 pages.	☐
21	Stableloc External Fixation System, Acumed, Product Overview, Effective date September 2015, 4 pages.	☐
22	STAHL et al., "Derotation Of Post-Traumatic Femoral Deformities By Closed Intramedullary Sawing," Injury, Vol. 37, No. 2, February 2006, pp.145-151, (Abstract Only).	☐
23	TALBOT et al., "Assessing Sesamoid Subluxation: How Good is the AP Radiograph?," Foot and Ankle International, Vol. 19, No. 8, August 1998, pp. 547-554.	☐
24	TempFix Spanning the Ankle Joint Half Pin and Transfixing Pin Techniques, Biomet Orthopedics, Surgical Technique, 2012, 16 pages.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

25	TOTH et al., "The Effect of First Ray Shortening in the Development of Metatarsalgia in the Second Through Fourth Rays After Metatarsal Osteotomy," Foot & Ankle International, Vol. 28, No. 1, January 2007, pp. 61-63.	☐
26	TRICOT et al., "3D-corrective osteotomy using surgical guides for posttraumatic distal humeral deformity," Acta Orthopaedica Belgica, Vol. 78, No. 4, 2012, pp. 538-542.	☐
27	VITEK et al., "Die Behandlung des Hallux rigidus mit Cheilektomie und Akin-Moberg-Osteotomie unter Verwendung einer neuen Schnittlehre und eines neuen Schraubensystems," Orthopadische Praxis, Vol. 44, November 2008, pp. 563-566, including English Abstract on page 564.	☐
28	VITEK, "Neue Techniken in der Fußchirurgie Das V-tek-System," ABW Wissenschaftsverlag GmbH, 2009, 11 pages, including English Abstract.	☐
29	WEBER et al., "A Simple System For Navigation Of Bone Alignment Osteotomies Of The Tibia," International Congress Series, Vol. 1268, January 2004, pp. 608-613, (Abstract Only).	☐
30	WEIL et al., "Anatomic Plantar Plate Repair Using the Weil Metatarsal Osteotomy Approach," Foot & Ankle Specialist, Vol. 4, No. 3, 2011, pp. 145-150.	☐
31	WENDL et al., "Navigation in der Knieendoprothetik," OP-Journal, Vol. 17, 2002, pp. 22-27, including English Abstract.	☐
32	WHIPPLE et al., "Zimmer Herbert Whipple Bone Screw System: Surgical Techniques for Fixation of Scaphoid and Other Small Bone Fractures," Zimmer, 2003, 59 pages.	☐
33	YAKACKI et al. "Compression Forces of Internal and External Ankle Fixation Devices with Simulated Bone Resorption," Foot and Ankle International, Vol. 31, No. 1, January 2010, pp. 76-85, (Abstract Only).	☐
34	YASUDA et al., "Proximal Supination Osteotomy of the First Metatarsal for Hallux Valgus," Foot and Ankle International, Vol. 36, No. 6, June 2015, pp. 696-704.	☐
35	DAYTON et al., "Dorsal Suspension Stitch: An Alternative Stabilization After Flexor Tenotomy for Flexible Hammer Digit Syndrome," The Journal of Foot and Ankle Surgery, Vol. 48, No. 5, September/October 2009, pp. 602-605.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

	36	DAYTON et al., "The Extended Knee Hemilithotomy Position for Gastrocnemius Recession," The Journal of Foot and Ankle Surgery, Vol. 49, 2010, pp. 214-216.	☐
	37	WIENKE et al., "Bone Stimulation For Nonunions: What the Evidence Reveals," Podiatry Today, Vol. 24, No. 9, September 2011, pp. 52-57.	☐
	38	DAYTON et al., "Hallux Varus as Complication of Foot Compartment Syndrome," The Journal of Foot and Ankle Surgery, Vol. 50, 2011, pp. 504-506.	☐
	39	DAYTON et al., "Measurement of Mid-Calcaneal Length on Plain Radiographs: Reliability of a New Method," Foot and Ankle Specialist, Vol. 4, No. 5, October 2011, pp. 280-283.	☐
	40	DAYTON et al., "A User-Friendly Method of Pin Site Management for External Fixators," Foot and Ankle Specialist, September 16, 2011, 4 pages.	☐
	41	DAYTON et al., "Effectiveness of a Locking Plate in Preserving Midcalcaneal Length and Positional Outcome after Evans Calcaneal Osteotomy: A Retrospective Pilot Study," The Journal of Foot and Ankle Surgery, Vol. 52, 2013, pp. 710-713.	☐
	42	DAYTON et al., "Does Postoperative Showering or Bathing of a Surgical Site Increase the Incidence of Infection? A Systematic Review of the Literature," The Journal of Foot and Ankle Surgery, Vol. 52, 2013, pp. 612-614.	☐
	43	DAYTON et al., "Technique for Minimally Invasive Reduction of Calcaneal Fractures Using Small Bilateral External Fixation," The Journal of Foot and Ankle Surgery, Article in Press, 2014, 7 pages.	☐
	44	DAYTON et al., "Clarification of the Anatomic Definition of the Bunion Deformity," The Journal of Foot and Ankle Surgery, Vol. 53, 2014, pp. 160-163.	☐
	45	DAYTON et al., "Observed Changes in Radiographic Measurements of the First Ray after Frontal Plane Rotation of the First Metatarsal in a Cadaveric Foot Model," The Journal of Foot and Ankle Surgery, Article in Press, 2014, 5 pages.	☐
	46	DAYTON et al., "Observed Changes in First Metatarsal and Medial Cuneiform Positions after First Metatarsophalangeal Joint Arthrodesis," The Journal of Foot and Ankle Surgery, Vol. 53, 2014, pp. 32-35.	☐

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

Application Number		
Filing Date		
First Named Inventor	Robert D. Santrock	
Art Unit		
Examiner Name		
Attorney Docket Number	71212.4.6.USC7	

47	DAYTON et al., "Reduction of the Intermetatarsal Angle after First Metatarsal Phalangeal Joint Arthrodesis: A Systematic Review," The Journal of Foot and Ankle Surgery, Article in Press, 2014, 4 pages.	☐
48	FEILMEIER et al., "Reduction of Intermetatarsal Angle after First Metatarsophalangeal Joint Arthrodesis in Patients with Hallux Valgus," The Journal of Foot and Ankle Surgery, Vol. 53, 2014, pp. 29-31.	☐
49	DAYTON et al., "Principles of Management of Growth Plate Fractures in the Foot and Ankle," Clinics in Podiatric Medicine and Surgery, Pediatric Foot Deformities, October 2013, 17 pages.	☐
50	DAYTON et al., "Observed Changes in Radiographic Measurements of the First Ray after Frontal and Transverse Plane Rotation of the Hallux: Does the Hallux Drive the Metatarsal in a Bunion Deformity?," The Journal of Foot and Ankle Surgery, Article in Press, 2014, 4 pages.	☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/CHRISTOPHER J BECCIA/	Date Considered	09/10/2024
--------------------	------------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

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

Application Number	
Filing Date	
First Named Inventor	Robert D. Santrock
Art Unit	
Examiner Name	
Attorney Docket Number	71212.4.6.USC7

CERTIFICATION STATEMENT

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

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

OR

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

☐ See attached certification statement.

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

☒ A certification statement is not submitted herewith.

SIGNATURE

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

Signature	/Paul J. LaVanway, Jr./	Date (YYYY-MM-DD)	2024-02-26
Name/Print	Paul J. LaVanway, Jr.	Registration Number	64610

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

Privacy Act Statement

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

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

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



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

NOTICE OF ALLOWANCE AND FEE(S) DUE

22859 7590 09/18/2024
FREDRIKSON & BYRON, P.A.
INTELLECTUAL PROPERTY GROUP
60 SOUTH SIXTH STREET, SUITE 1500
MINNEAPOLIS, MN 55402

EXAMINER	
BECCIA, CHRISTOPHER J	
ART UNIT	PAPER NUMBER
3775	

DATE MAILED: 09/18/2024

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7	7731

TITLE OF INVENTION: BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	12/18/2024

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 the USPTO patent electronic filing system.

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 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. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

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.

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 the USPTO patent electronic filing system 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.
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7	7731

TITLE OF INVENTION: BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	12/18/2024

EXAMINER	ART UNIT	CLASS-SUBCLASS
BECCIA, CHRISTOPHER J	3775	606-08600R

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 _____

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)

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

☐ Electronic Payment via the USPTO patent electronic filing system ☐ 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.
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7	7731
22859	7590	09/18/2024	EXAMINER	
FREDRIKSON & BYRON, P.A. INTELLECTUAL PROPERTY GROUP 60 SOUTH SIXTH STREET, SUITE 1500 MINNEAPOLIS, MN 55402			BECCIA, CHRISTOPHER J	
			ART UNIT	PAPER NUMBER
			3775	

DATE MAILED: 09/18/2024

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. 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
- 10) 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.

Notice of Allowability	Application No. 18/587,921	Applicant(s) Santrock et al.	
	Examiner CHRISTOPHER J BECCIA	Art Unit 3775	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 Claims dated August 23, 2024.
☐ 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 21-50 . 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 _____
--	---

/CHRISTOPHER J BECCIA/
Primary Examiner, Art Unit 3775

Notice of Pre-AIA or AIA Status

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

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: Most pertinent prior art, including U.S. Patent No. 4,159,716 to *Borchers*, U.S. Patent Pub. No. 2011/0077656 to *Sand et al.*, and U.S. Patent No. 5,529,075 to *Clark* disclose a instrumented surgical technique for preparing a tarsal-metatarsal joint for fusion and for repositioning a first metatarsal to correct a bunion deformity comprising making an incision on a foot to provide access to a tarsal-metatarsal joint, engaging the first metatarsal with a bone engagement member of a bone positioning guide, engaging the bone positioning guide with a second metatarsal separated from the first metatarsal by an intermetatarsal angle, cutting an end of the first metatarsal with a tissue removing instrument, imparting a force to adjust an alignment of the first metatarsal in a frontal plane to correct the bunion deformity, and fixating a moved position of the first metatarsal relative to the medial cuneiform for fusion using at least one bone fixation device.

The prior art fails to teach or disclose, however, the steps including but not limited to wherein the instrumented surgical technique includes rotating a knob connected to a threaded shaft of the bone positioning guide to cause the bone engagement member to push the first metatarsal laterally toward the second metatarsal and thereby reduce the intermetatarsal angle between the first metatarsal and the second metatarsal to correct the bunion deformity, imparting a force to a pin inserted into the first metatarsal to adjust an alignment of the first metatarsal in a frontal plane to correct the bunion deformity, cutting an end of a medial cuneiform with the tissue removing instrument, compressing the

Art Unit: 3775

first metatarsal together with the medial cuneiform, and fixating a moved position of the first metatarsal relative to the medial cuneiform for fusion using at least one bone fixation device.

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

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER J BECCIA whose telephone number is (571)270-7391. The examiner can normally be reached Mon - Fri 8:30-5:00.

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, Kevin Truong can be reached on 571-272-4705. 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 (toll-free). If you would like

Art Unit: 3775

assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or
571-272-1000.

/CHRISTOPHER J BECCIA/

Primary Examiner, Art Unit 3775

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		18587921	
	Filing Date		2024-02-26	
	First Named Inventor	Robert D. Santrock		
	Art Unit	3775		
	Examiner Name	CHRISTOPHER J BECCIA		
	Attorney Docket Number	71212.4.6.USC7		

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1	4364381	A	1982-12-21	Sher et al.			
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1	20060036257	A1	2006-02-16	Steffensmeier			
	2	20020058944	A1	2002-05-16	Michelson			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							☐
If you wish to add additional Foreign Patent Document citation information please click the Add button								Add
NON-PATENT LITERATURE DOCUMENTS								Remove

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		18587921
	Filing Date		2024-02-26
	First Named Inventor	Robert D. Santrock	
	Art Unit	3775	
	Examiner Name	CHRISTOPHER J BECCIA	
	Attorney Docket Number	71212.4.6.USC7	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

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

Application Number	18587921
Filing Date	2024-02-26
First Named Inventor	Robert D. Santrock
Art Unit	3775
Examiner Name	CHRISTOPHER J BECCIA
Attorney Docket Number	71212.4.6.USC7

CERTIFICATION STATEMENT

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

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

OR

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

- ☐ See attached certification statement.
- ☒ A certification statement is not submitted herewith.

FEE

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

COPIES

☐ An identification of an earlier application pursuant to 37 CFR 1.98 (d) (1) is attached.

SIGNATURE

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

Signature	/Paul J. LaVanway, Jr/	Date (YYYY-MM-DD)	2024-11-25
Name/Print	Paul J. LaVanway, Jr.	Registration Number	64,610

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

Privacy Act Statement

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

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

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



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION # 18/587,921	RECEIPT DATE / TIME 11/25/2024 09:43:07 PM Z ET	ATTORNEY DOCKET # 71212.4.6.USC7
------------------------------------	---	--

Title of Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	7731	FILED BY	Ethan Dolentz
PATENT CENTER #	68113320	AUTHORIZED BY	Paul LaVanway
CUSTOMER #	22859	FILING DATE	02/26/2024
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Robert D. Santrock

Payment Information

PAYMENT METHOD CARD / 9797	PAYMENT TRANSACTION ID E2024AOL45586846	PAYMENT AUTHORIZED BY Zachary Anderson
--------------------------------------	---	--

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
1801	REQUEST FOR CONTINUED EXAMINATION (RCE) - 1ST REQUEST (SEE 37 CFR 1.114)	1360.00	1	1360.00
TOTAL AMOUNT:				\$1,360.00

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 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.



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/587,921

RECEIPT DATE / TIME
11/25/2024 09:43:07 PM Z ET

ATTORNEY DOCKET #
71212.4.6.USC7

Title of Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 7731

FILED BY Ethan Dolentz

PATENT CENTER # 68113320

FILING DATE 02/26/2024

CUSTOMER # 22859

FIRST NAMED
INVENTOR Robert D. Santrock

CORRESPONDENCE
ADDRESS -

AUTHORIZED BY Paul LaVanway

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
71212.4.6.USC7 IDS 5.pdf	4	Information Disclosure Statement (IDS) Form (SB08)	1313 KB
71212.4.6.USC7 RCE.pdf	3	Request for Continued Examination (RCE)	1642 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
71212.4.6.USC7 IDS 5.pdf	0D2F1EF04AF782E77D0EBFA6D23203FB5FD116EAF99000BE 8AF600ED1E0BE041EF334CCAE5572D5E682595E6F7AA98600 86FFA9FAFEA4CC372F1FF0F33E9B601
71212.4.6.USC7 RCE.pdf	D3CC14B9DF82A0330CDDD6401580E0E69C54C7D3DA4B51A

291089C7F1DCBB3C307C7165D1D1934C2A85590860CFF0562
A7E89D4DE2547978EC9014845583EF7F

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 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.

**REQUEST FOR CONTINUED EXAMINATION(RCE)TRANSMITTAL
(Submitted Only via EFS-Web)**

Application Number	18/587,921	Filing Date	2024-02-26	Docket Number (if applicable)	71212.4.6.USC7	Art Unit	3775
First Named Inventor	Santrock, Robert D.			Examiner Name	Christopher J. Beccia		

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.

Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. The Instruction Sheet for this form is located at WWW.USPTO.GOV

SUBMISSION REQUIRED UNDER 37 CFR 1.114

Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

☐ Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.☐ Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____☐ Other _____☒ Enclosed☐ Amendment/Reply☒ Information Disclosure Statement (IDS)☐ Affidavit(s)/ Declaration(s)☐ Other _____**MISCELLANEOUS**☐ Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of months _____
(Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)☐ Other _____**FEES****The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.**☒ The Director is hereby authorized to charge any underpayment of fees, or credit any overpayments, to
Deposit Account No 061910**SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED**☒ Patent Practitioner Signature☐ Applicant Signature

Signature of Registered U.S. Patent Practitioner			
Signature	/Paul J. LaVanway, Jr./	Date (YYYY-MM-DD)	2024-11-25
Name	Paul J. LaVanway, Jr.	Registration Number	64,610

This collection of information is required by 37 CFR 1.114. 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 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450.

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

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.

Issue Classification 	Application/Control No. 18/587,921	Applicant(s)/Patent Under Reexamination Santrock et al.	
	Examiner CHRISTOPHER J BECCIA	Art Unit 3775	

CPC						
Symbol					Type	Version
A61B	/	17	/	8866	F	2013-01-01
A61B	/	17	/	151	I	2013-01-01
A61B	/	17	/	15	I	2013-01-01
A61B	/	17	/	152	I	2013-01-01
A61B	/	17	/	1775	I	2016-11-01
A61B	/	17	/	1682	I	2013-01-01
A61B	/	17	/	1728	I	2013-01-01
A61B	/	17	/	1739	I	2013-01-01
A61B	/	17	/	8061	I	2013-01-01
A61B	/	17	/	025	A	2013-01-01
A61B	/	2017	/	565	A	2013-01-01
A61B	/	17	/	562	A	2013-01-01
A61B	/	17	/	66	A	2013-01-01
A61B	/	2017	/	564	A	2013-01-01
A61B	/	17	/	90	A	2021-08-01
A61B	/	2017	/	00367	A	2013-01-01
A61B	/	2017	/	681	A	2013-01-01

CPC Combination Sets							
Symbol				Type	Set	Ranking	Version
	/		/				

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	30	
/CHRISTOPHER J BECCIA/ Primary Examiner, Art Unit 3775	11 December 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	18

Issue Classification 	Application/Control No. 18/587,921	Applicant(s)/Patent Under Reexamination Santrock et al.
	Examiner CHRISTOPHER J BECCIA	Art Unit 3775

INTERNATIONAL CLASSIFICATION			
CLAIMED			
A61B	/	17	/ 88
NON-CLAIMED			
	/		/

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

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

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	30	
/CHRISTOPHER J BECCIA/ Primary Examiner, Art Unit 3775	11 December 2024	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	18

Issue Classification 	Application/Control No. 18/587,921	Applicant(s)/Patent Under Reexamination Santrock et al.
	Examiner CHRISTOPHER J BECCIA	Art Unit 3775

☒ 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
	1		10		19		28		37		46				
	2		11		20		29		38		47				
	3		12		21		30		39		48				
	4		13		22		31		40		49				
	5		14		23		32		41		50				
	6		15		24		33		42						
	7		16		25		34		43						
	8		17		26		35		44						
	9		18		27		36		45						

NONE	Total Claims Allowed:	
(Assistant Examiner)	(Date)	30
/CHRISTOPHER J BECCIA/ Primary Examiner, Art Unit 3775	11 December 2024	O.G. Print Claim(s)
(Primary Examiner)	(Date)	1
		O.G. Print Figure
		18

<i>Index of Claims</i> 	Application/Control No. 18/587,921	Applicant(s)/Patent Under Reexamination Santrock et al.
	Examiner CHRISTOPHER J BECCIA	Art Unit 3775

✓	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	09/10/2024	12/11/2024							
	1	-	-							
	2	-	-							
	3	-	-							
	4	-	-							
	5	-	-							
	6	-	-							
	7	-	-							
	8	-	-							
	9	-	-							
	10	-	-							
	11	-	-							
	12	-	-							
	13	-	-							
	14	-	-							
	15	-	-							
	16	-	-							
	17	-	-							
	18	-	-							
	19	-	-							
	20	-	-							
	21	=	=							
	22	=	=							
	23	=	=							
	24	=	=							
	25	=	=							
	26	=	=							
	27	=	=							
	28	=	=							
	29	=	=							
	30	=	=							
	31	=	=							
	32	=	=							
	33	=	=							
	34	=	=							
	35	=	=							
	36	=	=							
	37	=	=							
	38	=	=							
	39	=	=							
	40	=	=							
	41	=	=							
	42	=	=							

<p><i>Index of Claims</i></p> 	<p>Application/Control No.</p> <p>18/587,921</p>	<p>Applicant(s)/Patent Under Reexamination</p> <p>Santrock et al.</p>
	<p>Examiner</p> <p>CHRISTOPHER J BECCIA</p>	<p>Art Unit</p> <p>3775</p>

CLAIM		DATE								
Final	Original	09/10/2024	12/11/2024							
	43	=	=							
	44	=	=							
	45	=	=							
	46	=	=							
	47	=	=							
	48	=	=							
	49	=	=							
	50	=	=							

<i>Search Notes</i> 	Application/Control No. 18/587,921	Applicant(s)/Patent Under Reexamination Santrock et al.
	Examiner CHRISTOPHER J BECCIA	Art Unit 3775

CPC - Searched*		
Symbol	Date	Examiner
A61B17/88, 8866	09/10/2024	CJB
A61B17/15, 151, 152, 17, 1775, 1739, 16, 1682, 80, 8061	09/10/2024	CJB

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
Search History Attached	09/10/2024	CJB
Inventor Search	09/10/2024	CJB
Text Search	09/10/2024	CJB
Classification Search	09/10/2024	CJB
B/F Citations	09/10/2024	CJB
Search History Attached	12/11/2024	CJB

/CHRISTOPHER J BECCIA/ Primary Examiner, Art Unit 3775	
---	--

<i>Search Notes</i> 	Application/Control No. 18/587,921	Applicant(s)/Patent Under Reexamination Santrock et al.
	Examiner CHRISTOPHER J BECCIA	Art Unit 3775

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	See Attached Search History	09/10/2024	CJB
	See Attached Search History	12/11/2024	CJB

/CHRISTOPHER J BECCIA/ Primary Examiner, Art Unit 3775	
---	--

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-22)
Approved for use through 05/31/2024. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		18587921	
	Filing Date		2024-02-26	
	First Named Inventor	Robert D. Santrock		
	Art Unit	3775		
	Examiner Name	CHRISTOPHER J BECCIA		
	Attorney Docket Number	71212.4.6.USC7		

U.S.PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1	4364381	A	1982-12-21	Sher et al.			
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S.PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear		
	1	20060036257	A1	2006-02-16	Steffensmeier			
	2	20020058944	A1	2002-05-16	Michelson			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							☐
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	

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

Application Number		18587921	
Filing Date		2024-02-26	
First Named Inventor	Robert D. Santrock		
Art Unit	3775		
Examiner Name	CHRISTOPHER J BECCIA		
Attorney Docket Number	71212.4.6.USC7		

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button

Add

EXAMINER SIGNATURE

Examiner Signature	/CHRISTOPHER J BECCIA/	Date Considered	12/10/2024
--------------------	------------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		18587921
	Filing Date		2024-02-26
	First Named Inventor	Robert D. Santrock	
	Art Unit		3775
	Examiner Name	CHRISTOPHER J BECCIA	
	Attorney Docket Number		71212.4.6.USC7

CERTIFICATION STATEMENT

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

- ☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).
- OR
- ☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).
- ☐ See attached certification statement.
- ☒ A certification statement is not submitted herewith.

FEE

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

COPIES

- ☐ An identification of an earlier application pursuant to 37 CFR 1.98 (d) (1) is attached.

SIGNATURE

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

Signature	/Paul J. LaVanway, Jr/	Date (YYYY-MM-DD)	2024-11-25
Name/Print	Paul J. LaVanway, Jr.	Registration Number	64,610

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

Privacy Act Statement

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

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

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

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	0	"14981335"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:23 AM
L2	0	santrock-robert-d.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:24 AM
L3	25	dayton-paul.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:24 AM
L4	3	hatch-daniel.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:24 AM
L5	282	smith-bret-w.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:24 AM
L6	1	gil-carlos-eduardo.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:25 AM
L7	0	scanlan-sean-f.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:25 AM
L8	11	ferguson-joe-william.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:25 AM
L9	3	treace-john-t.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/07/29 09:25 AM
L11	669	606/105.ccls.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/10/13 10:30 AM
L12	2618	a61b17/88.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2016/10/13 10:30 AM
L13	245	metatarsal and cuneiform and fusion	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	ADJ	ON	ON	2016/10/13 10:52 AM
L14	27	L13 and bunion	(US-PGPUB; USPAT;	ADJ	ON	ON	2016/10/13

L15	24	("20020045896" "20030060827" "20040143266" "20050171544" "20070173843" "20090076554" "20090210010" "20090210011" "20100125300" "20100274293" "20110009866" "20110295324" "20120303033" "20140148859" "3489143" "4493317" "5534027" "5591169" "5667510" "7648508" "7717945" "8852246" "8858602").PN. OR ("9060822").URPN.	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	10:56 AM 2016/10/13 10:57 AM
L16	87	metatarsal and bunion and fusion	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	ADJ	ON	ON	2016/10/13 10:58 AM
L17	67	("1665030" "1746865" "20040127907" "20050021033" "20060241607" "20060241608" "20080008777" "20080155731" "20080177302" "20080269806" "20090036893" "20090076617" "20090210010" "20090222047" "20090254190" "20100036430" "20100094294" "20100106110" "20100125297" "20100152752" "20100211071" "20100211075" "20100234896" "20100249687" "20110061664" "20110077656" "20110082405" "20110118780" "20110119807" "20110130789" "20110178557"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:00 AM

L18	17	"20110224729" "20110301648" "20120016426" "20120071935" "20120215147" "20120330322" "2596038" "2706023" "2958324" "4583303" "4644940" "5190545" "5282782" "5529075" "5743913" "5843085" "6318373" "6391031" "6520965" "6629943" "6746450" "6964645" "7344538" "7582088" "7875058" "7901431" "8057522" "8221455" "8257403" "8257406" "8398678").PN. OR ("8821551").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:01 AM
L19	1	("20030105461" "20040102776" "20040210234" "20070233113" "20090012569" "20090177203" "20090254126" "20090281577" "20090318977" "20110208247" "5586985" "5662655" "5674222" "5810822" "6648885" "7857836" "8177822").PN. OR ("9433452").URPN.	(USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:02 AM
L20	374	(12/567314).APP. ("20010027583" "20010034956" "20020007134" "20020022862" "20020032466" "20020056209" "20020058036" "20020062140" "20020077281" "20020138026" "20020162250" "20020193309" "20030005601" "20030023268" "20030040750" "20030045881" "20030093920" "20030105193" "20030134792" "20030148692"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:02 AM

		"20030152637" "20030172553" "20030186433" "20030187372" "20030225356" "20040019308" "20040031169" "20040039319" "20040045194" "20040093746" "20040103561" "20040107604" "20040123495" "20040127907" "20040156931" "20040161481" "20040168329" "20040168353" "20040186182" "20040191338" "20040194348" "20040194352" "20040210234" "20040243197" "20050019436" "20050020690" "20050054959" "20050054962" "20050055849" "20050058734" "20050059873" "20050060910" "20050061332" "20050063971" "20050070909" "20050076536" "20050115116" "20050123567" "20050158382" "20050177084" "20050187071" "20050197711" "20050202047" "20050208540" "20050228389" "20050229430" "20050229433" "20050241187" "20050251081" "20060002954" "20060015102" "20060030854" "20060058796" "20060064048" "20060074434" "20060079558" "20060079559" "20060081553"					
--	--	--	--	--	--	--	--

		"20060148903" "20060155233" "20060161090" "20060162464" "20060178702" "20060189914" "20060201011" "20060240105" "20060241066" "20060241607" "20060241608" "20060247566" "20060251721" "20060258588" "20060264961").PN. OR ("20060269628" "20060271077" "20060276737" "20060282231" "20070010818" "20070016205" "20070016275" "20070033750" "20070036876" "20070051020" "20070051376" "20070074334" "20070074426" "20070078518" "20070088341" "20070094896" "20070128226" "20070131798" "20070141020" "20070197948" "20070204487" "20070213296" "20070213308" "20070214681" "20070225217" "20070225703" "20070260252" "20070265296" "20070265634" "20070281906" "20070282342" "20070299382" "20080008777" "20080010856" "20080014272" "20080027119" "20080041169" "20080057068" "20080065224" "20080076829" "20080078628" "20080081834" "20080086139"					
--	--	---	--	--	--	--	--

		"20080086909" "20080086913" "20080102121" "20080113025" "20080139641" "20080141565" "20080147084" "20080153780" "20080155731" "20080200989" "20080208252" "20080216593" "20080217816" "20080221697" "20080229482" "20080242646" "20080248282" "20080260791" "20080262091" "20080263900" "20080280975" "20080282580" "20080287406" "20080287866" "20080288019" "20080294170" "20080301977" "20090005358" "20090012180" "20090036893" "20090043318" "20090054527" "20090062253" "20090062359" "20090082466" "20090082773" "20090082874" "20090111792" "20090113759" "20090117167" "20090118242" "20090133289" "20090156614" "20090157194" "20090181098" "20090192222" "20090198287" "20090209536" "20090210010" "20090215809").PN. OR ("20090216334" "20090222047" "20090228049" "20090287246" "20090291975" "20090292022" "20090292023" "20090306723"					
--	--	---	--	--	--	--	--

		"20100021107" "20100036430" "20100152752" "20110118780" "20110178557" "20110224729" "20110301648" "20120071935" "2291413" "3867929" "3880155" "3987559" "4069824" "4213208" "4240214" "4244359" "4255875" "4263902" "4266553" "4300294" "4314412" "4317293" "4393876" "4409974" "4414964" "4439934" "4510699" "4583303" "4597195" "4603698" "4604997" "4608988" "4632103" "4644940" "4676801" "4726127" "4729369" "4738255" "4813162" "4819644" "4841647" "4842931" "4852556" "4856505" "4876758" "4901453" "4930504" "4940046" "4969277" "4976712" "5005575" "5012596" "5035069" "5092347" "5094226" "5098421" "5138777" "5167665" "5174052" "5250049" "5272139" "5306301" "5350383" "5497789" "5529075" "5537764" "5539020" "5571139" "5601565" "5607756" "5611801" "5617651" "5640779" "5645588" "5665060" "5665112" "5685834" "5713903" "5725585" "5728136" "5788697" "5792093" "5797913" "5802737" "5810822" "5843085" "5853293" "5919194" "5921986" "5962011" "6001101" "6068648" "6091000" "6093163" "6203545" "6238357" "6248109" "6248788" "6264677" "6283973" "6315749" "6318373" "6319270" "6348053" "6367087" "6391031" "6406234" "6424864"					
--	--	--	--	--	--	--	--

		"6447783" "6478761" "6481120").PN. OR ("6514222" "6547792" "6547800" "6569188" "6583114" "6604301" "6616665" "6629943" "6643956" "6684532" "6689136" "6716234" "6800063" "6862481" "6874258" "6887243" "6887259" "6889088" "6890333" "6902799" "6908465" "6909513" "6910287" "6942668" "6964645" "6991636" "7008428" "7013583" "7055268" "7056885" "7062866" "7070601" "7097647" "7141545" "7175667" "7192411" "7217853" "7253266" "7263788" "7266910" "7270644" "7276244" "7287293" "7291175" "7291483" "7325323" "7326211" "7383089" "7392605" "7396338" "7485135" "7493810" "7513880" "7572258" "7625395" "7875058" "D341424" "D443694" "H001706" "RE32698" "RE34753").PN. OR ("8277459").URPN.					
L21	1	(12/793429).APP.	(USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:02 AM
L22	397	("20010027583" "20010034956" "20020007134" "20020022862" "20020032466" "20020056209" "20020058036" "20020062140" "20020077281" "20020138026" "20020162250" "20020193309" "20030005601" "20030023268" "20030040750" "20030045881" "20030093920" "20030105193" "20030134792" "20030148692"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:02 AM

		"20030152637" "20030172553" "20030186433" "20030187372" "20030225356" "20040019308" "20040031169" "20040039319" "20040045194" "20040071522" "20040093746" "20040103561" "20040107604" "20040123495" "20040127907" "20040153153" "20040156931" "20040161481" "20040168329" "20040168353" "20040186182" "20040191338" "20040194348" "20040194352" "20040210234" "20040243197" "20050019436" "20050020690" "20050054959" "20050054962" "20050055849" "20050058734" "20050059873" "20050060910" "20050061332" "20050063971" "20050070909" "20050076536" "20050115116" "20050123567" "20050158382" "20050177084" "20050187071" "20050197711" "20050202047" "20050208540" "20050228389" "20050229430" "20050229433" "20050241187" "20050251081" "20060002954" "20060015102" "20060030854" "20060058796" "20060064048" "20060074434" "20060079558"					
--	--	--	--	--	--	--	--

		"20060079559" "20060081553" "20060148903" "20060155233" "20060161090" "20060162464" "20060178702" "20060189914" "20060201011" "20060240105" "20060241066" "20060241607" "20060241608" "20060247566" "20060251721").PN. OR ("20060258588" "20060264961" "20060269628" "20060271077" "20060276737" "20060282231" "20070010818" "20070016205" "20070016275" "20070033750" "20070036876" "20070051020" "20070051376" "20070074334" "20070074426" "20070078518" "20070088341" "20070094896" "20070128226" "20070131798" "20070141020" "20070197948" "20070204487" "20070213296" "20070213308" "20070214681" "20070225217" "20070225703" "20070260252" "20070265296" "20070265634" "20070281906" "20070282342" "20070299382" "20080008777" "20080010856" "20080014272" "20080027119" "20080041169" "20080057068" "20080065224" "20080076829" "20080078628"					
--	--	---	--	--	--	--	--

		"20080081834" "20080086139" "20080086909" "20080086913" "20080102121" "20080113025" "20080139641" "20080141565" "20080147084" "20080153780" "20080155731" "20080200989" "20080208252" "20080216593" "20080217816" "20080221697" "20080229482" "20080242646" "20080248282" "20080260791" "20080262091" "20080263900" "20080280975" "20080282580" "20080287406" "20080287866" "20080288019" "20080294170" "20080301977" "20090005358" "20090012180" "20090036893" "20090043318" "20090054527" "20090062253" "20090062359" "20090082466" "20090082773" "20090082874" "20090111792" "20090113759" "20090117167" "20090118242" "20090133289" "20090155614" "20090157194" "20090181098" "20090192222" "20090198287" "20090209536").PN. OR ("20090210010" "20090215809" "20090216334" "20090222047" "20090228049" "20090287246" "20090291975" "20090292022"					
--	--	---	--	--	--	--	--

		"20090292023" "20090306723" "20100036430" "20100082072" "20100152752" "20100152786" "20100211071" "20110077656" "20110118780" "20110178557" "20110224729" "20120016426" "20120071935" "20120330322" "2291413" "3867929" "3880155" "3987559" "4069824" "4213208" "4240214" "4244359" "4255875" "4263902" "4266553" "4300294" "4314412" "4317293" "4393876" "4409974" "4414964" "4439934" "4497603" "4510699" "4583303" "4597195" "4603698" "4604997" "4608988" "4620825" "4632103" "4644940" "4676801" "4726127" "4729369" "4738255" "4772286" "4813162" "4819644" "4841647" "4842931" "4852556" "4856505" "4859128" "4876758" "4901453" "4930504" "4940046" "4969277" "4976712" "5005575" "5012596" "5035069" "5044850" "5092347" "5094226" "5098421" "5138777" "5167665" "5174052" "5250049" "5272139" "5306301" "5350383" "5497789" "5503510" "5529075" "5537764" "5539020" "5571139" "5601565" "5607756" "5611801" "5617651" "5618142" "5640779" "5645588" "5665060" "5665112" "5685834" "5713903" "5725541" "5725585" "5728136" "5788697" "5792093" "5797913" "5802737" "5810822" "5843085" "5853293" "5919194"					
--	--	--	--	--	--	--	--

		"5921986" "5962011" "6001101" "6068648" "6091000" "6093163" "6203545").PN. OR ("6238357" "6248109" "6248788" "6264677" "6283973" "6299398" "6315749" "6318373" "6319270" "6348053" "6367087" "6391031" "6406234" "6424864" "6447783" "6478761" "6481120" "6514222" "6547792" "6547800" "6569188" "6583114" "6604301" "6616665" "6629943" "6643956" "6684532" "6689136" "6716234" "6749384" "6800063" "6862481" "6874258" "6887243" "6887259" "6889088" "6890333" "6902799" "6905296" "6908465" "6909513" "6910287" "6942668" "6964645" "6991636" "7008428" "7013583" "7052498" "7055268" "7056885" "7062866" "7070601" "7097647" "7141545" "7175667" "7182561" "7192411" "7217853" "7253266" "7263788" "7266910" "7270644" "7273338" "7276244" "7287293" "7291175" "7291483" "7322783" "7325323" "7326211" "7383089" "7384226" "7392605" "7396338" "7485135" "7485153" "7493810" "7513880" "7572258" "7625395" "7650681" "7722303" "7824141" "7833255" "7875058" "8048134" "8096742" "D341424" "D443694" "H001706" "RE32698" "RE34753").PN. OR ("8696719").URPN. ("20030023268" "20030236555" "20060178702" "20060264961" "20070010818"					
L23	110	("20030023268" "20030236555" "20060178702" "20060264961" "20070010818"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2016/10/13 11:02 AM

		"20080177302" "20080269743" "20080281355" "20090036893" "20100076504" "20100152752" "20100211071" "20100268273" "4159716" "4409974" "5306301" "5529075" "5888203" "6391031" "6719801" "6964645" "7235091").PN. OR ("7875058").URPN.					
L24	1	"14981335"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/01/19 01:05 PM
L25	130	("D0765844" "D076643 4" "D0766437" "D07664 38" "D0766438" "20020 198531" "20080208252 " "20090222047" "2013 0035694" "2013018471 4" "20130204259" "201 30267956" "201501199 44" "20160256204" "20 040039394" "20040097 946" "20050004676" "2 0050075641" "2005010 1961" "20050149042" " 20050228389" "200502 73112" "20060206044" " "20060217733" "20060 229621" "20060241607 " "20060241608" "2006 0264961" "2007023313 8" "20070265634" "200 70276383" "200800911 97" "20080140081" "20 080262500" "20080269 908" "20090036893" "2 0090093849" "2009010 5767" "20090198244" " 20090254092" "200902 54126" "20090287309" " "20100069910" "20100 121334" "20100130981 " "20100152782" "2010 0168799" "2010018524 5" "20100256687" "201 00324556" "201100930 84" "20110245835" "20 110288550" "20110301 648" "20120065689" "2 0120078258" "2012012 3420" "20120123484" "	(US-PGPUB; USPAT)	OR	OFF	OFF	2017/02/10 06:31 PM

		20120130376" "20120130383" "20120184961" "20120239045" "20120253350" "20120265301" "20130012949" "20130085499" "20130150903" "20130158556" "20140046387" "20140257509" "20150032168" "20150045839" "20160015426" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160242791" "4159716" "4187840" "4338927" "4627425" "4757810" "4952214" "4978347" "5021056" "5112334" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "5810822" "5893553" "5935128" "6030391" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "7686811" "7972338" "8057478" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231663" "8246561" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "H1706").PN.					
L26	89	("20060229730" "20070005074" "20070173947" "20070226986" "20070233141" "20070299533" "20080287954" "20090099567" "20090110498" "20090138020" "20090157083" "20120130434" "5539649" "5683397" "5766259" "6002859" "6205411" "6228085"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/02/10 06:35 PM

L27	1112	"6663669" "6673116" "6852130" "6875236" "7314488").PN. OR ("8337503").URPN. ("1480285" "20010005797" "20010011190" "20010021876" "20010054478" "20020007294" "20020029045" "20020052606" "20020059049" "20020082741" "20020087274" "20020092532" "20020107522" "20020128872" "20020147415" "20020186818" "20020193797" "20020198528" "20020198531" "20030009171" "20030009234" "20030011624" "20030018338" "20030039676" "20030055502" "20030105526" "20030109784" "20030120276" "20030130741" "20030139817" "20030158606" "20030171757" "20030216669" "20040018144" "20040030245" "20040054372" "20040054416" "20040068187" "20040092932" "20040098133" "20040102852" "20040102866" "20040106926" "20040115586" "20040122436" "20040122439" "20040128026" "20040133276" "20040138754" "20040143336" "20040147927" "20040148026" "20040153079"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/02/10 06:36 PM
-----	------	--	-----------------------------	----	-----	-----	------------------------

		"20040153087" "20040158254" "20040162619" "20040167390" "20040171924" "20040172137" "20040181144" "20040193169" "20040204644" "20040204760" "20040212586" "20040220583" "20040236341" "20040236424" "20040243481" "20040254584" "20040260301" "20050008887" "20050010227" "20050010300" "20050015022" "20050019664" "20050027303" "20050027361" "20050043806" "20050043837" "20050049524" "20050049603" "20050059873" "20050060040" "20050065628" "20050070897" "20050071015" "20050075641" "20050096535" "20050113841" "20050113846" "20050119664" "20050131662" "20050137708" "20050148843").PN. OR ("20050149042" "20050171545" "20050177245" "20050203536" "20050203540" "20050209605" "20050216305" "20050222571" "20050222573" "20050228393" "20050234461" "20050234465" "20050234468" "20050240195" "20050240267" "20050244239" "20050245934"					
--	--	---	--	--	--	--	--

		"20050245936" "20050251147" "20050267353" "20050267485" "20050267584" "20050273114" "20050283252" "20050283253" "20060004284" "20060015120" "20060030853" "20060038520" "20060052725" "20060058803" "20060058884" "20060058886" "20060074434" "20060089621" "20060093988" "20060094951" "20060095044" "20060100832" "20060105011" "20060111722" "20060122616" "20060122618" "20060136058" "20060142657" "20060147332" "20060149283" "20060155380" "20060161165" "20060161167" "20060172263" "20060178497" "20060184177" "20060184250" "20060190086" "20060192319" "20060195111" "20060195194" "20060195198" "20060200158" "20060204932" "20060210644" "20060217808" "20060235421" "20060241635" "20060241636" "20060271058" "20060276796" "20060276797" "20060287733" "20060287891" "20060293681" "20070015995" "20070016008" "20070016209"					
--	--	--	--	--	--	--	--

		"20070027680" "20070039205" "20070043582" "20070066917" "20070073133" "20070073136" "20070073137" "20070083214" "20070083266" "20070100258" "20070100450" "20070100462" "20070106299" "20070118055" "20070118138" "20070118243" "20070129809" "20070142914").PN. OR ("20070150068" "20070156066" "20070156171" "20070162038" "20070162039" "20070173946" "20070173948" "20070185498" "20070191962" "20070198022" "20070203430" "20070203605" "20070219639" "20070219640" "20070224238" "20070226986" "20070233121" "20070233136" "20070233140" "20070233141" "20070233269" "20070233272" "20070238069" "20070239282" "20070239481" "20070244487" "20070250169" "20070253617" "20070255288" "20070255412" "20070262867" "20070272747" "20070276224" "20070276400" "20070276501" "20070288029" "20070288030" "20080009952" "20080015599" "20080015603"					
--	--	---	--	--	--	--	--

		"20080015604" "20080015605" "20080021299" "20080021494" "20080021567" "20080027563" "20080033442" "20080039850" "20080051799" "20080051910" "20080058945" "20080058947" "20080062183" "20080065225" "20080094396" "20080097451" "20080112996" "20080114370" "20080133022" "20080140081" "20080140209" "20080140213" "20080146969" "20080147072" "20080147073" "20080147074" "20080161815" "20080161816" "20080172125" "20080195099" "20080195107" "20080195108" "20080195109" "20080195216" "20080200926" "20080208200" "20080208353" "20080215059" "20080230422" "20080234664" "20080234683" "20080234685" "20080234833" "20080243127" "20080255674" "20080257363" "20080262500" "20080262624" "20080269596" "20080269906" "20080275452" "20080281328" "20080281329").PN. OR ("20080281426" "20080287926" "20080287954" "20080294170" "20080294266"					
--	--	---	--	--	--	--	--

		"20080300600" "20080306485" "20080306558" "20080312659" "20080319448" "20090012526" "20090018546" "20090018666" "20090024131" "20090024169" "20090043556" "20090048618" "20090076371" "20090076512" "20090076520" "20090076555" "20090082770" "20090082774" "20090087276" "20090088674" "20090088753" "20090088754" "20090088755" "20090088758" "20090088759" "20090088760" "20090088761" "20090088763" "20090088865" "20090088866" "20090089034" "20090089081" "20090093815" "20090093816" "20090096613" "20090099567" "20090105837" "20090116621" "20090118736" "20090118769" "20090131941" "20090131942" "20090138020" "20090149964" "20090149965" "20090149977" "20090151736" "20090157083" "20090163922" "20090163923" "20090164024" "20090177282" "20090187193" "20090209884" "20090209961" "20090222014" "20090222015" "20090222016"					
--	--	--	--	--	--	--	--

		"20090222103" "20090226068" "20090228016" "20090234360" "20090248044" "20090250413" "20090254093" "20090254367" "20090259312" "20090270868" "20090274350" "20090287217" "20090287309" "20090306676" "20090307893" "20090318836" "20090318921" "20100010493" "20100016984" "20100016986" "20100023015" "20100030231" "20100036404" "20100042105" "20100049195" "20100057088" "20100076439" "20100076505" "20100076563" "20100076571").PN. OR ("20100082034" "20100082035" "20100082067" "20100087829" "20100094295" "20100105011" "20100121334" "20100121335" "20100137869" "20100137924" "20100145343" "20100145344" "20100152782" "20100160917" "20100160919" "20100168752" "20100168754" "20100168857" "20100168866" "20100179663" "20100185202" "20100191244" "20100198067" "20100198224" "20100212138" "20100217109" "20100217270" "20100217336"					
--	--	---	--	--	--	--	--

		"20100217338"					
		"20100217399"					
		"20100228257"					
		"20100249657"					
		"20100249796"					
		"20100256649"					
		"20100262150"					
		"20100274253"					
		"20100281678"					
		"20100286700"					
		"20100291401"					
		"20100292743"					
		"20100298894"					
		"20100305574"					
		"20100318088"					
		"20100324692"					
		"20110004317"					
		"20110008754"					
		"20110009869"					
		"20110014081"					
		"20110015636"					
		"20110015639"					
		"20110015752"					
		"20110016690"					
		"20110022049"					
		"20110022174"					
		"20110029088"					
		"20110029091"					
		"20110029093"					
		"20110029116"					
		"20110035012"					
		"20110040303"					
		"20110040334"					
		"20110046735"					
		"20110054478"					
		"20110066193"					
		"20110066245"					
		"20110071528"					
		"20110071529"					
		"20110071530"					
		"20110071532"					
		"20110071533"					
		"20110071581"					
		"20110071802"					
		"20110087332"					
		"20110092804"					
		"20110093086"					
		"20110106093"					
		"20110106254"					
		"20110125264"					
		"20110125284"					
		"20110130795"					
		"20110151027"					
		"20110151259"					
		"20110153025"					
		"20110160736"					
		"20110160867"					
		"20110166578"					

		"20110172672" "20110177590" "20110184419" "20110184526" "20110190899" "20110190901" "20110213376").PN. OR ("20110214279" "20110218545" "20110224674" "20110238071" "20110245835" "20110251617" "20110257657" "20110269100" "20110275032" "20110276145" "20110282473" "20110295887" "20110313424" "20110319745" "20120010619" "20120010710" "20120010711" "20120029345" "20120029520" "20120041445" "20120041446" "20120041564" "20120065640" "20120078254" "20120078258" "20120078259" "20120089595" "20120101586" "20120109137" "20120109138" "20120109226" "20120116203" "20120123422" "20120130382" "20120130505" "20120136365" "20120141034" "20120143197" "20120143267" "20120150242" "20120158002" "20120165954" "20120192401" "20120209276" "20120215225" "20120215310" "20120221017" "20120226283" "20120226315" "20120232596" "20120245587"					
--	--	---	--	--	--	--	--

		"20120259335" "20120259423" "20120265208" "20120271131" "20120271314" "20120271366" "20120276509" "20120277751" "20120289965" "20120296339" "20120303004" "20120303033" "20120310364" "20120310399" "20120316564" "20120323246" "20120323282" "20120323323" "20130001121" "20130006250" "20130018483" "20130035766" "20130046310" "20130053854" "20130056912" "20130060253" "20130072940" "20130085500" "20130085590" "20130110116" "20130110470" "20130116699" "20130119579" "20130123850" "20130131681" "20130144392" "20130158671" "20130184764" "20130197528" "20130197529" "20130197687" "20130204384").PN. OR ("20130218163" "20130245631" "20130245801" "20130261503" "20130264749" "20130268085" "20130282132" "20130289730" "20130317511" "20130326878" "20130338673" "20140005672" "20140012266" "20140018934" "20140018948" "20140052270"					
--	--	---	--	--	--	--	--

		"20140066933"					
		"20140066937"					
		"20140081275"					
		"20140081659"					
		"20140088724"					
		"20140094816"					
		"20140100578"					
		"20140107651"					
		"20140107654"					
		"20140107715"					
		"20140127211"					
		"20140135775"					
		"20140163564"					
		"20140163565"					
		"20140172116"					
		"20140188119"					
		"20140222157"					
		"20140243833"					
		"20140257304"					
		"20140257508"					
		"20140276854"					
		"20140276856"					
		"20140276870"					
		"20140276873"					
		"20140303938"					
		"20140303990"					
		"20140309644"					
		"20140324058"					
		"20140378979"					
		"20150088293"					
		"20150342622"					
		"2181746" "2407845"					
		"2416228" "2618913"					
		"2910978" "3330611"					
		"3840904" "3975858"					
		"4246895" "4306866"					
		"4324006" "4421112"					
		"4436684" "4457306"					
		"4475549" "4506393"					
		"4524766" "4528980"					
		"4565191" "4619658"					
		"4621630" "4632111"					
		"4633862" "4663720"					
		"4689984" "4695283"					
		"4696292" "4703751"					
		"4704686" "4706660"					
		"4719907" "4721104"					
		"4722330" "4759350"					
		"4778474" "4800874"					
		"4821213" "4822365"					
		"4841975" "4846161"					
		"4871975" "4892545"					
		"4893619" "4896663"					
		"4907577" "4927422"					
		"4936862" "4952213"					
		"4959066" "4976737"					
		"4979949" "4985037"					
		"5002579" "5006121"					

		"5007936" "5030219" "5030221" "5041117" "5053037" "5053039" "5056351" "5086401").PN. OR ("5098383" "5098436" "5108425" "5122144" "5123927" "5129908" "5129909" "5133760" "5140777" "5150304" "5176684" "5194066" "5234433" "5246444" "5253506" "5258032" "5261915" "5274565" "5282802" "5299288" "5300077" "5320529" "5320625" "5323697" "5342366" "5344423" "5360446" "5364402" "5368858" "5370692" "5370699" "5405395" "5408409" "5411521" "5415662" "5417694" "5438263" "5440496" "5448489" "5449360" "5452407" "5454816" "5462550" "5472415" "5474559" "5490854" "5496324" "5507833" "5514519" "5520695" "5527317" "5539649" "5540695" "5545222" "5549688" "5554190" "5560096" "5571110" "5578037" "5593411" "5595703" "5601565" "5607431" "5611802" "5613969" "5620448" "5634927" "5641323" "5653714" "5658294" "5662656" "5662710" "5671018" "5676668" "5677107" "5681354" "5682886" "5683469" "5690635" "5697933" "5702460" "5702464" "5704941" "5709689" "5720752" "5722978" "5725376" "5725593" "5735277" "5745834" "5748767" "5749875" "5749876" "5762125" "5766251" "5768134" "5769092" "5776200" "5786217" "5792143" "5798924" "5799055" "5835619" "5860980" "5860981" "5871018"					
--	--	---	--	--	--	--	--

		"5876456" "5879398" "5879402" "5880976" "5885297" "5885298" "5888219" "5895389" "5899907" "5901060" "5911724" "5921988" "5925049" "5942370" "5967777" "5976149" "5980526" "6008433" "6019767") . PN. OR ("6033415" "6042612" "6056754" "6059789" "6059833" "6066175" "6086593" "6120510" "6120544" "6126690" "6126692" "6136033" "6156069" "6159217" "6161080" "6162257" "6187010" "6195615" "6203546" "6205411" "6206927" "6210445" "6238435" "6254604" "6258097" "6264698" "6270529" "6273891" "6290727" "6293971" "6302913" "6310269" "6312258" "6312473" "6319285" "6322728" "6325829" "6327491" "6338738" "6343987" "6354011" "6361563" "6379299" "6379388" "6383228" "6391251" "6395005" "6424332" "6427698" "6459948" "6463351" "6475243" "6482236" "6488715" "6503255" "6508980" "6510334" "6514259" "6517583" "6519998" "6520964" "6533737" "6547823" "6551325" "6554837" "6556008" "6558391" "6558428" "6562073" "6564085" "6567681" "6575980" "6575982" "6591581" "6605293" "6610067" "6622567" "6629999" "6641617" "6676892" "6682566" "6696073" "6697664" "6701174" "6709462" "6711431" "6711432" "6712856" "6716249" "6725077" "6738657" "6740092" "6749638" "6750653" "6772026" "6780190"					
--	--	--	--	--	--	--	--

		"6786930" "6799066" "6823871" "6827723" "6887247" "6905514" "6916324" "6923817" "6923831" "6932842" "6942475" "6944518" "6945976" "6953480" "6960216" "6975755" "6990220" "6993406" "7001385" "7029479" "7042222" "7048741" "7050877" "7060074" "7074241" "7104997" "7105026" "7115131" "7121832") . PN. OR ("7141053" "7169185" "7174282" "7176466" "7184814" "7198628" "7218232" "7239908" "7241315" "7255702" "7258701" "7275218" "7282054" "7294133" "7297164" "7309339" "7333013" "7335231" "7371260" "7383164" "7385498" "7388972" "7390327" "7392076" "7427200" "7427272" "7468075" "7474223" "7488325" "7494510" "7517365" "7519540" "7527631" "7534263" "7537664" "7542791" "7559931" "7575602" "7578851" "7582091" "7591821" "7601155" "7603192" "7604639" "7611516" "7618451" "7621915" "7625409" "7646161" "7651501" "7670345" "7682398" "7695477" "7695521" "7699847" "7704253" "7723395" "7747305" "7780672" "7780740" "7789885" "7794466" "7794467" "7794504" "7806896" "7809184" "7819925" "7828806" "7833245" "7837690" "7850698" "7879109" "7892261" "7896921" "7926363" "7935119" "7935150" "7938861" "7959637" "7962196" "7963968" "7967823" "7967868" "7974677" "7981158" "7988736"					
--	--	--	--	--	--	--	--

L28	34	"7993353" "8062301" "8066708" "8070752" "8083745" "8083746" "8083749" "8086336" "8092465" "8105330" "8122582" "8133230" "8133234" "8137406" "8147861" "8160345" "8167951" "8170641" "8182489" "8192441" "8192495" "8200355" "8211112" "8221430" "8241292" "8241293" "8246680" "8260589" "8265790" "8268099" "8268100" "8282646" "8298237" "8303596" "8313491" "8333772" "8337503" "8355773" "8372078").PN. OR ("8377066" "8388690" "8398646" "8407067" "8414594" "8419741" "8425522" "8430882" "8430931" "8439675" "8439925" "8444564" "8444651" "8457930" "8460302" "8469961" "8473305" "8486150" "8500740" "8532361" "8532806" "8532807" "8535387" "8543234" "8545508" "8568487" "8591516" "8597365" "8603180" "8608748" "8608749" "8617170" "8617174" "8617175" "8632547" "8652142" "8668700" "8702712" "8702715" "8706285" "8715289" "8728387" "8735773" "8764760" "8775133" "8777875" "8828016" "8828087" "8828089" "8834568" "8858561" "8864769" "8900244" "8903530" "8956364" "8979936" "9005297" "D533664" "D622854" "D669176" "D672038" "RE39301").PN. OR ("9561040").URPN. ("0487068" "20020107522" "20020165552" "20030028196"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/02/10 06:36 PM
-----	----	---	-----------------------------	----	-----	-----	------------------------

		"20030135217" "20040153066" "20050075641" "20060106396" "20100076564" "3835860" "4180909" "4201213" "4208792" "4733663" "4777948" "4990148" "5019081" "5026375" "5112334" "5470328" "5514139" "5582618" "5601563" "5617633" "5649947" "5681314" "5716405" "5766177" "5851214" "5873886" "5897559" "5911724" "6200320").PN. OR ("8262664").URPN.					
L29	348	bunion and (aligned or alignment)	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/02/10 06:39 PM
L30	245	bunion with metatarsal	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/02/10 06:39 PM
L31	1	"14981335"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/02/10 06:40 PM
L36	8	santrock-robert-d.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/08/16 09:11 PM
L37	208	("20020198531" "20040039394" "20040097946" "20050004676" "20050075641" "20050101961" "20050149042" "20050228389" "20050273112" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070233138" "20070265634" "20070276383" "20080091197" "20080140081" "20080208252"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2017/08/16 09:12 PM

		"20080262500" "20080269908" "20090036893" "20090093849" "20090105767" "20090198244" "20090222047" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100256687" "20100324556" "20110093084" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130383" "20120184961" "20120239045" "20120253350" "20120265301" "20130012949" "20130035694" "20130085499" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130184714" "20130190765" "20130190766" "20130204259" "20130231668" "20130237987" "20130237989" "20130267956" "20130310836" "20130325076" "20130331845" "20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387"					
--	--	--	--	--	--	--	--

		"20140074099" "20140074101" "20140094861" "20140094924" "20140163563" "20140171953" "20140180342" "20140194884" "20140207144" "20140249537" "20140257509" "20140276815" "20140276853" "20140277176").PN. OR ("20140277214" "20140296995" "20140336658" "20150032168" "20150045839" "20150051650" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "4159716" "4187840" "4338927" "4627425" "4757810" "4952214" "4978347" "5021056" "5112334" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "5810822" "5893553" "5935128" "6030391" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "7686811" "7972338" "8057478" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231663" "8246561" "8262664" "8282644"					
--	--	---	--	--	--	--	--

L38	209	"8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "8435246" "8475462" "8523870" "8652142" "8672945" "8696716" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "D765844" "D766434" "D766437" "D766438" "H001706").PN. OR ("9622805").URPN. ("20020198531" "20040 039394" "20040097946 "20050004676" "2005 0075641" "2005010196 1" "20050149042" "200 50228389" "200502731 12" "20060206044" "20 060217733" "20060229 621" "20060241607" "2 0060241608" "2006026 4961" "20070233138" " 20070265634" "200702 76383" "20080091197" " "20080140081" "20080 208252" "20080262500 "20080269908" "2009 0036893" "2009009384 9" "20090105767" "200 90198244" "200902220 47" "20090254092" "20 090254126" "20090287 309" "20100069910" "2 0100121334" "2010013 0981" "20100152782" " 20100168799" "201001 85245" "20100256687" " "20100324556" "20110 093084" "20110245835	(US-PGPUB; USPAT)	OR	OFF	OFF	2017/08/16 09:12 PM
-----	-----	--	-------------------	----	-----	-----	------------------------

		" 20110288550" 20110301648" 20120016426" 20120065689" 20120078258" 20120123420" 20120123484" 20120130376" 20120130383" 20120184961" 20120120239045" 20120253350" 20120265301" 20130012949" 20130035694" 20130085499" 20130150903" 20130158556" 20130165936" 20130165938" 20130172942" 20130184714" 20130190765" 20130190766" 20130204259" 20130231668" 20130237987" 20130237989" 20130267956" 20130310836" 20130325076" 20130331845" 20130338785" 20140005672" 20140025127" 20140039501" 20140039561" 20140046387" 20140074099" 20140074101" 20140094861" 20140094924" 20140163563" 20140171953" 20140180342" 20140194884" 20140207144" 20140249537" 20140257509" 20140276815" 20140276853" 20140277176" 20140277214" 20140296995" 20140336658" 20150032168" 20150045839" 20150051650" 20150066094" 20150112446" 20150119944" 20150142064" 20150150608" 20150182273" 20150223851" 20150245858" 20160015426" 20160151165" 20160175089" 20160192950" 20160199076" 20160213384" 20160235414" 20160242791" 20160256204" 4159716" 4187840" 4338927" 4627425" 4757810" 4952214" 4978347" 5021056" 5112334" 5254119" 5312412" 5358504" 5364402" 5413579"				
--	--	---	--	--	--	--

		5449360" "5810822" "5893553" "5935128" "6030391" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "7686811" "7972338" "8057478" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231663" "8246561" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "8435246" "8475462" "8523870" "8652142" "8672945" "8696716" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "D765844" "D766434" "D766437" "D766438" "D766439" "H001706").PN.					
L39	4	("20160354127" "20170042599" "20170079669" "4570624").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2017/08/16 09:12 PM
L40	1963	a61b17/8866.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/08/16 09:14 PM
L41	2968	a61b17/88.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/08/16 09:14 PM
L42	5243	a61b17/8061.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2017/08/16 09:14 PM
L43	1	"15452236"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT;	OR	OFF	OFF	2017/09/22 10:44 AM

L44	19	("20070123857" "20090118733" "20090198279" "20100249779" "20140303621" "20160022315" "4628919" "4895141" "4988349" "5207676" "5620442" "5788695" "5803924" "5941877" "5951556" "6162223" "6171309" "8231623" "9750538").PN.	IBM_TDB) (US-PGPUB; USPAT)	OR	OFF	OFF	2018/04/24 04:57 PM
L45	83	("20010051806" "20020013584" "20020115998" "20030149429" "20030225407" "20040097922" "20040138659" "20050038425" "20070100338" "20070123857" "20070161984" "20080275509" "20080275562" "20080275563" "20080312656" "20100249779" "20110245876" "20120150186" "20140025076" "20140066931" "20140135766" "20140276815" "20140276824" "20140303621" "20140303622" "20140350558" "20160015426" "20160022315" "20160038184" "20160151099" "20160157892" "20160249952" "20160270822" "2238870" "2346346" "4135505" "4273116" "4312336" "4554915" "4576158" "4621627" "4628919" "4714076" "4848368" "4988349" "5122140" "5160335" "5207676" "5292322" "5304177" "5320444" "5320622" "5429637" "5620442" "5662648" "5683389" "5688271"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/24 04:57 PM

L46	197	"5707370" "5709681" "5769851" "5788695" "5803924" "5827282" "5941877" "5951556" "6162222" "6162223" "6171309" "6217577" "6245071" "7004943" "7282052" "7758582" "7993069" "8088166" "8123805" "8231623" "8439914" "9168065" "9398957" "D518174").PN. OR ("9750538").URPN. ("0583455" "1201864" "1789060" "1869972" "1997466" "2214490" "2238870" "2250417" "2251209" "2333033" "2346346" "2371519" "2391537" "2391693" "2393694" "2393831" "2393982" "2406987" "2434431" "2435850" "2443106" "2497626" "2697433" "2812761" "3128768" "3244170" "3709218" "3835849" "3862631" "3961854" "3975032" "4003096" "4040130" "4096857" "4127119" "4135505" "4185624" "4187841" "4220146" "4244360" "4258708" "4271832" "4299212" "4308863" "4338927" "4349017" "4393868" "4409970" "4450834" "4475546" "4483334" "4488542" "4502473" "4535763" "4541422" "4548199" "4611586" "4620533" "4621627" "4628919" "4628921" "4628922" "4662365" "4696293" "4714076" "4730608" "4745913" "4747400" "4823781" "4848368" "4869242" "4895141" "4913137" "4922896" "4923458" "4941481" "4942872" "4976712" "4978348" "4988349" "4998935" "5024618" "5026372" "5098432" "5100403" "5102411"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2018/04/24 04:57 PM
-----	-----	--	-----------------------------	----	-----	-----	------------------------

		"5108394" "5152280" "5160335" "5167661" "5203783" "5207676" "5209750" "5254078" "5275599" "5281224" "5292322" "5300072" "5304177" "5314426" "5320622" "5320623" "5330474" "5334202" "5342360" "5352228" "5380322" "5571103" "5601551" "5643258" "5658283" "5683389" "5709681" "Re31809" "Re34985").PN. OR ("6171309").URPN.					
L47	1	"15452236"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2018/04/24 04:58 PM
L54	1	"16031855"	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:16 PM
L55	25	santrock-robert-d.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:16 PM
L56	7	"10045807".pn.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:17 PM
L57	4	"9622805".pn.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:17 PM
L58	232	("20020198531" "20040039394" "20040097946" "20050004676" "20050075641" "20050101961" "20050149042" "20050228389" "20050273112" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070123857" "20070233138" "20070265634" "20070276383" "20080091197"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/01/03 03:17 PM

		"20080140081"					
		"20080208252"					
		"20080262500"					
		"20080269908"					
		"20090036893"					
		"20090093849"					
		"20090105767"					
		"20090118733"					
		"20090198244"					
		"20090198279"					
		"20090222047"					
		"20090254092"					
		"20090254126"					
		"20090287309"					
		"20100069910"					
		"20100121334"					
		"20100130981"					
		"20100152782"					
		"20100168799"					
		"20100185245"					
		"20100249779"					
		"20100256687"					
		"20100324556"					
		"20110093084"					
		"20110245835"					
		"20110288550"					
		"20110301648"					
		"20120016426"					
		"20120065689"					
		"20120078258"					
		"20120123420"					
		"20120123484"					
		"20120130376"					
		"20120130383"					
		"20120184961"					
		"20120239045"					
		"20120253350"					
		"20120265301"					
		"20130012949"					
		"20130035694"					
		"20130085499"					
		"20130150903"					
		"20130158556"					
		"20130165936"					
		"20130165938"					
		"20130172942"					
		"20130184714"					
		"20130190765"					
		"20130190766"					
		"20130204259"					
		"20130231668"					
		"20130237987"					
		"20130237989"					
		"20130267956"					
		"20130310836"					
		"20130325076"					
		"20130331845"					
		"20130338785"					

		"20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924" "20140163563" "20140171953" "20140180342" "20140194884" "20140207144" "20140249537").PN. OR ("20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140296995" "20140303621" "20140336658" "20150032168" "20150045839" "20150051650" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160022315" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "20160354127" "20170042599" "20170079669" "4159716" "4187840" "4338927" "4570624" "4627425" "4628919" "4757810" "4895141" "4952214" "4978347" "4988349" "5021056" "5112334" "5207676" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "5620442" "5788695"					
--	--	---	--	--	--	--	--

		"5803924" "5810822" "5893553" "5935128" "5941877" "5951556" "6030391" "6162223" "6171309" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "7686811" "7972338" "8057478" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231623" "8231663" "8246561" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "8435246" "8475462" "8523870" "8652142" "8672945" "8696716" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903").PN. OR ("8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "9750538" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "D765844" "D766434" "D766437" "D766438" "D766439" "H001706").PN. OR ("10045807").URPN.					
L59	7782	a61b17/80.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:17 PM
L60	2505	a61b17/8866.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:17 PM
L61	6989	a61b17/8061.cpc.	(US-PGPUB; USPAT;	OR	OFF	OFF	2020/01/03

L62	4344	a61b17/15.cpc.	USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	03:17 PM
L63	1033	a61b17/151.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:17 PM
L64	3768	a61b17/17.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:18 PM
L65	3069	a61b17/1739.cpc.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/01/03 03:18 PM
L66	21	("10028750" "10064631 "10159499" "1032782 9" "20100318088" "201 30131821" "201401357 75" "20140288562" "20 170143511" "20170164 989" "5490854" "64787 99" "6859661" "728205 4" "8303596" "8764760" "8882816" "8945132" " 9785747" "D720456" "D 740424").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:19 PM
L67	88	("10292713" "20020165 552" "20040138669" "2 0050070909" "2005025 1147" "20060129163" " 20070010818" "200800 39850" "20080147073" " "20080195215" "20090 036931" "20090054899 "20120185056" "2012 0191199" "2013022624 8" "20130226252" "201 40188139" "201401949 99" "20140343555" "20 150057667" "20160324 532" "20170042598" "4 069824" "4335715" "43 49018" "4409973" "444 0168" "4501268" "4502 474" "4509511" "45651 91" "4632102" "466410 2" "4708133" "4750481" "5035698" "5042983" " 5049149" "5053039" "5 078719" "5147364" "51 76685" "5246444" "547	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:19 PM

		0335" "5540695" "5578 038" "5613969" "56204 48" "5643270" "566751 0" "5722978" "5749875" "5779709" "5843085" "5 5911724" "5980526" "5 984931" "6007535" "60 27504" "6203545" "624 8109" "6391031" "6547 793" "6676662" "67558 38" "6796986" "701838 3" "7112204" "7540874" "7572258" "7691108" "7 763026" "7967823" "8 062301" "8083746" "82 36000" "8277459" "840 9209" "8496662" "8529 571" "8540777" "86578 20" "8702715" "877794 8" "8888785" "8900247" "8906026" "9113920"). PN.					
L68	1	("20050059978").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:20 PM
L69	5	("20080009863" "20140 257308" "4995875" "56 01565" "6511481").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:20 PM
L70	8	("20020099381" "20080 172054" "2012027745 "20120330135" "2013 0096563" "2015004580 1" "20180344334" "541 7694").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:20 PM
L71	4	("20020107519" "20040 010259" "20130325019 "5529075").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:20 PM
L72	230	("20020198531" "20040 039394" "20040097946 "20050004676" "2005 0075641" "2005010196 1" "20050149042" "200 50228389" "200502731 12" "20060206044" "20 060217733" "20060229 621" "20060241607" "2 0060241608" "2006026 4961" "20070123857" "2 20070233138" "200702 65634" "20070276383" "2 20080091197" "20080 140081" "20080208252 "20080262500" "2008 0269908" "2009003689 3" "20090093849" "200 90105767" "200901187 33" "20090198244" "20	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:20 PM

		090198279" "20090222 047" "20090254092" "2 0090254126" "2009028 7309" "20100069910" " 20100121334" "201001 30981" "20100152782" " "20100168799" "20100 185245" "20100249779 " "20100256687" "2010 0324556" "2011009308 4" "20110245835" "201 10288550" "201103016 48" "20120016426" "20 120065689" "20120078 258" "20120123420" "2 0120123484" "2012013 0376" "20120130383" " 20120184961" "201202 39045" "20120253350" " "20120265301" "20130 012949" "20130035694 " "20130085499" "2013 0150903" "2013015855 6" "20130165936" "201 30165938" "201301729 42" "20130184714" "20 130190765" "20130190 766" "20130204259" "2 0130231668" "2013023 7987" "20130237989" " 20130267956" "201303 10836" "20130325076" " "20130331845" "20130 338785" "20140005672 " "20140025127" "2014 0039501" "2014003956 1" "20140046387" "201 40074099" "201400741 01" "20140094861" "20 140094924" "20140163 563" "20140171953" "2 0140180342" "2014019 4884" "20140207144" " 20140249537" "201402 57509" "20140276815" " "20140276853" "20140 277176" "20140277214 " "20140296995" "2014 0303621" "2014033665 8" "20150032168" "201 50045839" "201500516 50" "20150066094" "20 150112446" "20150119 944" "20150142064" "2 0150150608" "2015018 2273" "20150223851" " 20150245858" "201600 15426" "20160022315" "					
--	--	--	--	--	--	--	--

		"20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "20160354127" "20170042599" "20170079669" "4159716" "4187840" "4338927" "4570624" "4627425" "4628919" "4757810" "4895141" "4952214" "4978347" "4988349" "5021056" "5112334" "5207676" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "5620442" "5788695" "5803924" "5810822" "5893553" "5935128" "5941877" "5951556" "6030391" "6162223" "6171309" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "7686811" "7972338" "8057478" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231623" "8231663" "8246561" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "8435246" "8475462" "8523870" "8652142" "8672945" "8696716" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "9750538" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "D765844" "D766434" "D766437" "D766438"). PN.					
--	--	--	--	--	--	--	--

L73	2	("D766439" "H001706").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/01/03 03:20 PM
L76	9	("10470779" "20080015603" "20080288004" "20110178524" "3664022" "4736737" "4959066" "8545508" "9522023").PN.	(US-PGPUB; USPAT)	OR	OFF	OFF	2020/07/19 08:44 PM
L77	1	(12/689155).APP.	(USPAT; USOCR)	OR	OFF	OFF	2020/07/19 08:45 PM
L78	30	("20050228389" "20070265634" "20080195215" "20080269908" "20100222782" "20100256687" "20100324556" "20110077656" "20110093084" "20110288550" "4627425" "5601565").PN. OR ("8282645").URPN.	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/07/19 08:45 PM
L79	0	(12/726195).APP.	(USPAT; USOCR)	OR	OFF	OFF	2020/07/19 08:45 PM
L80	195	("20040039394" "20040097946" "20050004676" "20050075641" "20050101961" "20050149042" "20050228389" "20050273112" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070233138" "20070265634" "20070276383" "20080091197" "20080140081" "20080262500" "20080269908" "20090036893" "20090093849" "20090105767" "20090198244" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/07/19 08:46 PM

		"20100152782" "20100168799" "20100185245" "20100256687" "20100324556" "20110093084" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130383" "20120184961" "20120239045" "20120253350" "20120265301" "20130012949" "20130085499" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130190765" "20130190766" "20130231668" "20130237987" "20130237989" "20130310836" "20130325076" "20130331845" "20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924" "20140163563" "20140171953" "20140180342" "20140194884" "20140207144" "20140249537" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140296995" "20140336658"					
--	--	--	--	--	--	--	--

		"20150032168" "20150045839" "20150051650" "20150066094").PN. OR ("20150112446" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160151165" "20160175089" "20160199076" "20160213384" "20160235414" "20160242791" "4159716" "4187840" "4338927" "4627425" "4757810" "4952214" "4978347" "5021056" "5112334" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "5810822" "5893553" "5935128" "6030391" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "7686811" "7972338" "8057478" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231663" "8246561" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "8435246" "8475462" "8523870" "8652142" "8672945" "8696716" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "D610257" "D629900" "D646389" "D651315" "D651316"					
--	--	---	--	--	--	--	--

L81	357	"D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "H001706").PN. OR ("9687250").URPN. ("10028750" "10064631" "10159499" "10292713" "10327829" "20020099381" "20020107519" "20020165552" "20020198531" "20040010259" "20040039394" "20040097946" "20040138669" "20050004676" "20050059978" "20050070909" "20050075641" "20050101961" "20050149042" "20050228389" "20050251147" "20050273112" "20060129163" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070010818" "20070123857" "20070233138" "20070265634" "20070276383" "20080009863" "20080039850" "20080091197" "20080140081" "20080147073" "20080172054" "20080195215" "20080208252" "20080262500" "20080269908" "20090036893" "20090036931" "20090054899" "20090093849" "20090105767" "20090118733" "20090198244"	(US-PGPUB; USPAT; USOCR)	OR	OFF	OFF	2020/07/19 08:46 PM
-----	-----	---	-----------------------------	----	-----	-----	------------------------

		"20090198279" "20090222047" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100249779" "20100256687" "20100318088" "20100324556" "20110093084" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130383" "20120184961" "20120185056" "20120191199" "20120239045" "20120253350" "20120265301" "20120277745" "20120330135" "20130012949" "20130035694" "20130085499" "20130096563" "20130131821" "20130150903" "20130158556" "20130165936" "20130165938").PN. OR ("20130172942" "20130184714" "20130190765" "20130190766" "20130204259" "20130226248" "20130226252" "20130231668" "20130237987" "20130237989" "20130267956" "20130310836" "20130325019" "20130325076" "20130331845"					
--	--	---	--	--	--	--	--

		"20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924" "20140135775" "20140163563" "20140171953" "20140180342" "20140188139" "20140194884" "20140194999" "20140207144" "20140249537" "20140257308" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140288562" "20140296995" "20140303621" "20140336658" "20140343555" "20150032168" "20150045801" "20150045839" "20150051650" "20150057667" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160022315" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "20160324532" "20160354127" "20170042598" "20170042599" "20170143511"					
--	--	--	--	--	--	--	--

		"20170164989" "20180344334" "4069824" "4159716" "4187840" "4335715" "4338927" "4349018" "4409973" "4440168" "4501268" "4502474" "4509511" "4565191" "4570624" "4627425" "4628919" "4632102" "4664102" "4708133" "4750481" "4757810" "4895141" "4952214" "4978347" "4988349" "4995875").PN. OR ("5021056" "5035698" "5042983" "5049149" "5053039" "5078719" "5112334" "5147364" "5176685" "5207676" "5246444" "5254119" "5312412" "5358504" "5364402" "5413579" "5417694" "5449360" "5470335" "5490854" "5529075" "5540695" "5578038" "5601565" "5613969" "5620442" "5620448" "5643270" "5667510" "5722978" "5749875" "5779709" "5788695" "5803924" "5810822" "5843085" "5893553" "5911724" "5935128" "5941877" "5951556" "5980526" "5984931" "6007535" "6027504" "6030391" "6162223" "6171309" "6203545" "6248109" "6391031" "6478799" "6511481" "6547793" "6676662" "6719773" "6743233" "6755838" "6796986" "6859661" "7018383" "7033361" "7112204" "7182766" "7241298" "7282054" "7377924" "7465303" "7540874" "7572258" "7641660" "7686811" "7691108" "7763026" "7967823" "7972338" "8057478" "8062301" "8080010" "8083746" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441"					
--	--	---	--	--	--	--	--

		"8197487" "8231623" "8231663" "8236000" "8246561" "8262664" "8277459" "8282644" "8282645" "8292966" "8303596" "8313492" "8323289" "8337503" "8343159" "8377105" "8409209" "8435246" "8475462" "8496662" "8523870" "8529571" "8540777" "8652142" "8657820" "8672945" "8696716" "8702715" "8715363" "8728084" "8758354" "8764760" "8764763" "8771279" "8777948" "8784427" "8784457" "8795286" "8801727").PN. OR ("8808303" "8828012" "8858602" "8882778" "8882816" "8888785" "8900247" "8906026" "8945132" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "9113920" "9750538" "9785747" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "D720456" "D740424" "D765844" "D766434" "D766437" "D766438" "H001706").PN. OR ("10575862").URPN.					
L82	0	"16998155"	(US-PGPUB; USPAT)	OR	ON	ON	2020/11/06 03:15 PM
L83	1	"16031855"	(US-PGPUB; USPAT)	OR	ON	ON	2020/11/06 03:15 PM
L84	372	("10028750" "10064631 " "10159499" "1029271 3" "10327829" "104707 79" "20020099381" "20 020107519" "20020165 552" "20020198531" "2 0040010259" "2004003 9394" "20040097946" " 20040138669" "200500	(US-PGPUB; USPAT)	OR	ON	ON	2020/11/06 03:19 PM

		04676" "20050059978" "20050070909" "20050075641" "20050101961" "20050149042" "20050228389" "20050251147" "20050273112" "20060129163" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070010818" "20070123857" "20070233138" "20070265634" "20070276383" "20080009863" "20080015603" "20080039850" "20080091197" "20080140081" "20080147073" "20080172054" "20080195215" "20080208252" "20080262500" "20080269908" "20080288004" "20090036893" "20090036931" "20090054899" "20090093849" "20090105767" "20090118733" "20090198244" "20090198279" "20090222047" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100249779" "20100256687" "20100318088" "20100324556" "20110009865" "20110093084" "20110118739" "20110178524" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130382" "20120130383" "20120184961" "20120185056" "20120191199" "20120239045" "20120253350" "20120265301" "20120277745" "20120330135" "20130012949" "20130035694" "20130085499" "20130096563" "20130131821" "20130150903" "20130158556" "201					
--	--	---	--	--	--	--	--

		30165936" "201301659 38" "20130172942" "20 130184714" "20130190 765" "20130190766" "2 0130204259" "2013022 6248" "20130226252" " 20130231668" "201302 37987" "20130237989" " "20130267956" "20130 310836" "20130325019 " "20130325076" "2013 0331845" "2013033878 5" "20140005672" "201 40025127" "201400395 01" "20140039561" "20 140046387" "20140074 099" "20140074101" "2 0140094861" "2014009 4924" "20140135775" " 20140163563" "201401 71953" "20140180342" " "20140188139" "20140 194884" "20140194999 " "20140207144" "2014 0249537" "2014025730 8" "20140257509" "201 40276815" "201402768 53" "20140277176" "20 140277214" "20140288 562" "20140296995" "2 0140303621" "2014033 6658" "20140343555" " 20150032168" "201500 45801" "20150045839" " "20150051650" "20150 057667" "20150066094 " "20150112446" "2015 0119944" "2015014206 4" "20150150608" "201 50182273" "201502238 51" "20150245858" "20 160015426" "20160022 315" "20160151165" "2 0160175089" "2016019 2950" "20160199076" " 20160213384" "201602 35414" "20160242791" " "20160256204" "20160 324532" "20160354127 " "20170042598" "2017 0042599" "2017007966 9" "20170143511" "201 70164989" "201803443 34" "3664022" "406982 4" "4159716" "4187840" "4335715" "4338927" " 4349018" "4409973" "4 440168" "4501268" "45					
--	--	---	--	--	--	--	--

		02474" "4509511" "456 5191" "4570624" "4627 425" "4628919" "46321 02" "4664102" "470813 3" "4736737" "4750481" "4757810" "4895141" " 4952214" "4959066" "4 978347" "4988349" "49 95875" "5021056" "503 5698" "5042983" "5049 149" "5053039" "50787 19" "5112334" "514736 4" "5176685" "5207676" "5246444" "5254119" " 5312412" "5358504" "5 364402" "5374271" "54 13579" "5417694" "544 9360" "5470335" "5490 854" "5529075" "55406 95" "5578038" "560156 5" "5613969" "5620442" "5620448" "5643270" " 5667510" "5722978" "5 749875" "5779709" "57 88695" "5803924" "581 0822" "5843085" "5893 553" "5911724" "59351 28" "5941877" "595155 6" "5980526" "5984931" "6007535" "6027504" " 6030391" "6162223" "6 171309" "6203545" "62 48109" "6391031" "647 8799" "6511481" "6547 793" "6676662" "67197 73" "6743233" "675583 8" "6796986" "6859661" "7018383" "7033361" " 7112204" "7182766" "7 241298" "7282054" "73 77924" "7465303" "754 0874" "7572258" "7641 660" "7686811" "76911 08" "7763026" "796782 3" "7972338" "8057478" "8062301" "8080010" " 8083746" "8123753" "8 137406" "8147530" "81 67918" "8172848" "819 2441" "8197487" "8231 623" "8231663" "82360 00" "8246561" "826266 4" "8277459" "8282644" "8282645" "8292966" " 8303596" "8313492" "8 323289" "8337503" "83 43159" "8377105" "840 9209" "8435246" "8475				
--	--	--	--	--	--	--

		462" "8496662" "8523870" "8529571" "8540777" "8545508" "8652142" "8657820" "8672945" "8696716" "8702715" "8715363" "8728084" "8758354" "8764760" "8764763" "8771279" "8777948" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8882816" "8888785" "8900247" "8906026" "8945132" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "9113920" "9522023" "9750538" "9785747" "D610257" "D629900" "D646389" "D651315" "D651316" "D666721" "D679395" "D694884" "D695402" "D701303" "D705929" "D720456" "D740424" "D765844" "D766434" "D766437" "D766438" "D766439" "H001706").PN.					
L85	1	"10045807".pn.	(US-PGPUB; USPAT)	OR	ON	ON	2020/11/06 03:22 PM
L86	231	("4159716" "4187840" "4338927" "4570624" "4627425" "4628919" "4757810" "4895141" "4952214" "4978347" "4988349" "5021056" "5112334" "5207676" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "5620442" "H1706" "5788695" "5803924" "5810822" "5893553" "5935128" "5941877" "5951556" "6030391" "6162223" "6171309" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "D610257" "7686811" "D629900" "7972338" "D646389" "8057478" "D651315" "D651316" "8080010" "8123753"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2020/11/06 03:22 PM

		"8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231623" "8231663" "8246561" "D666721" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "D679395" "8435246" "8475462" "8523870" "D694884" "D695402" "8652142" "D701303" "8672945" "8696716" "D705929" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "D765844" "D766434" "D766437" "D766438" "D766439" "9750538" "20020198531" "20040039394" "20040097946" "20050004676" "20050075641" "20050101961" "20050149042" "20050228389" "20050273112" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070123857" "20070233138" "20070265634" "20070276383" "20080091197" "20080140081" "20080208252" "20080262500" "20080269908" "20090036893" "20090093849" "20090105767" "20090118733" "20090198244"					
--	--	--	--	--	--	--	--

		"20090198279" "20090222047" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100249779" "20100256687" "20100324556" "20110093084" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130383" "20120184961" "20120239045" "20120253350" "20120265301" "20130012949" "20130035694" "20130085499" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130184714" "20130190765" "20130190766" "20130204259" "20130231668" "20130237987" "20130237989" "20130267956" "20130310836" "20130325076" "20130331845" "20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924"					
--	--	--	--	--	--	--	--

		"20140163563" "20140171953" "20140180342" "20140194884" "20140207144" "20140249537" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140296995" "20140303621" "20140336658" "20150032168" "20150045839" "20150051650" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160022315" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "20160354127" "20170042599" "20170079669").pn. OR ("10045807").urpn. AND (PGPB USPT USOC).dbnm.					
L87	1	"9622805".pn.	(US-PGPUB; USPAT)	OR	ON	ON	2020/11/06 03:23 PM
L88	207	("4159716" "4187840" "4338927" "4627425" "4757810" "4952214" "4978347" "5021056" "5112334" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "H1706" "5810822" "5893553" "5935128" "6030391" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2020/11/06 03:23 PM

		"D610257" "7686811" "D629900" "7972338" "D646389" "8057478" "D651315" "D651316" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231663" "8246561" "D666721" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "D679395" "8435246" "8475462" "8523870" "D694884" "D695402" "8652142" "D701303" "8672945" "8696716" "D705929" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "D765844" "D766434" "D766437" "D766438" "20020198531" "20040039394" "20040097946" "20050004676" "20050075641" "20050101961" "20050149042" "20050228389" "20050273112" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070233138" "20070265634" "20070276383" "20080091197" "20080140081" "20080208252" "20080262500" "20080269908" "20090036893" "20090093849"					
--	--	--	--	--	--	--	--

		"20090105767" "20090198244" "20090222047" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100256687" "20100324556" "20110093084" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130383" "20120184961" "20120239045" "20120253350" "20120265301" "20130012949" "20130035694" "20130085499" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130184714" "20130190765" "20130190766" "20130204259" "20130231668" "20130237987" "20130237989" "20130267956" "20130310836" "20130325076" "20130331845" "20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924"					
--	--	--	--	--	--	--	--

		"20140163563" "20140171953" "20140180342" "20140194884" "20140207144" "20140249537" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140296995" "20140336658" "20150032168" "20150045839" "20150051650" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204").pn. OR ("9622805").urpn. AND (PGPB USPT USOC).dbnm.					
L89	0	santrock-robert.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/11/06 05:41 PM
L90	30	santrock-robert-d.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2020/11/06 05:41 PM
L92	3	("10779867" OR "20130085502" OR "8080045").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2021/02/13 10:09 AM
L93	1	(13/250890).APP.	(USPAT; USOCR)	OR	ON	ON	2021/02/13 10:10 AM
L94	40	("4667664" "4865025" "4889111" "4913137" "5034013" "5505734" "D379855" "5658287" "5766174" "5855579" "5976138" "6093192" "6123708" "6168595"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2021/02/13 10:10 AM

		"6200317" "6261290" "6488684" "6579293" "6808527" "6921400" "7056322" "D604846" "8231629" "20020058949" "20040230193" "20050096656" "20050107791" "20050159749" "20060064106" "20060264945" "20070100342" "20080287949" "20080300597" "20090149861").pn. OR ("8551106").urpn. AND (PGPB USPT USOC).dbnm.					
L95	15	("8182485" "8361075" "8574234" "8574270" "8974504" "9005255" "9017329" "9044282" "20050165395" "20060142763" "20070225714" "20110137313" "20120083848" "20120226322" "20130116734").pn. OR ("10779867").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2021/02/13 10:10 AM
L96	2	"17353431"	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/12 09:33 AM
L97	250	("10028750" OR "10064631" OR "10159499" OR "10292713" OR "10327829" OR "10470779" OR "10779867" OR "20020099381" OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/10/12 09:36 AM

		"20020107519" OR "20020165552" OR "20020198531" OR "20040010259" OR "20040039394" OR "20040097946" OR "20040138669" OR "20050004676" OR "20050059978" OR "20050070909" OR "20050075641" OR "20050101961" OR "20050149042" OR "20050228389" OR "20050251147" OR "20050273112" OR "20060129163" OR "20060206044" OR "20060217733" OR "20060229621" OR "20060241607" OR "20060241608" OR "20060264961" OR "20070010818" OR "20070123857" OR "20070233138" OR "20070265634" OR "20070276383" OR "20080009863" OR "20080015603" OR "20080039850" OR "20080091197" OR "20080140081" OR "20080147073" OR "20080172054" OR "20080195215" OR "20080208252" OR "20080262500" OR "20080269908" OR "20080288004" OR "20090036893" OR "20090036931" OR "20090054899" OR "20090093849" OR "20090105767" OR "20090118733" OR "20090198244" OR "20090198279" OR "20090222047" OR "20090254092" OR "20090254126" OR "20090287309" OR "20100069910" OR "20100121334" OR "20100130981" OR "20100152782" OR "20100168799" OR "20100185245" OR					
--	--	--	--	--	--	--	--

		"20100249779" OR "20100256687" OR "20100318088" OR "20100324556" OR "20110009865" OR "20110093084" OR "20110118739" OR "20110178524" OR "20110245835" OR "20110288550" OR "20110301648" OR "20120016426" OR "20120065689" OR "20120078258" OR "20120123420" OR "20120123484" OR "20120130376" OR "20120130382" OR "20120130383" OR "20120184961" OR "20120185056" OR "20120191199" OR "20120239045" OR "20120253350" OR "20120265301" OR "20120277745" OR "20120330135" OR "20130012949" OR "20130035694" OR "20130085499" OR "20130085502" OR "20130096563" OR "20130131821" OR "20130150903" OR "20130158556" OR "20130165936" OR "20130165938" OR "20130172942" OR "20130184714" OR "20130190765" OR "20130190766" OR "20130204259" OR "20130226248" OR "20130226252" OR "20130231668" OR "20130237987" OR "20130237989" OR "20130267956" OR "20130310836" OR "20130325019" OR "20130325076" OR "20130331845" OR "20130338785" OR "20140005672" OR "20140025127" OR "20140039501" OR "20140039561" OR "20140046387" OR					
--	--	--	--	--	--	--	--

		"20140074099" OR "20140074101" OR "20140094861" OR "20140094924" OR "20140135775" OR "20140163563" OR "20140171953" OR "20140180342" OR "20140188139" OR "20140194884" OR "20140194999" OR "20140207144" OR "20140249537" OR "20140257308" OR "20140257509" OR "20140276815" OR "20140276853" OR "20140277176" OR "20140277214" OR "20140288562" OR "20140296995" OR "20140303621" OR "20140336658" OR "20140343555" OR "20150032168" OR "20150045801" OR "20150045839" OR "20150051650" OR "20150057667" OR "20150066094" OR "20150112446" OR "20150119944" OR "20150142064" OR "20150150608" OR "20150182273" OR "20150223851" OR "20150245858" OR "20160015426" OR "20160022315" OR "20160151165" OR "20160175089" OR "20160192950" OR "20160199076" OR "20160213384" OR "20160235414" OR "20160242791" OR "20160256204" OR "20160324532" OR "20160354127" OR "20170042598" OR "20170042599" OR "20170079669" OR "20170143511" OR "20170164989" OR "20180344334" OR "3664022" OR "4069824" OR "4159716" OR					
--	--	--	--	--	--	--	--

	"4187840" OR "4335715" OR "4338927" OR "4349018" OR "4409973" OR "4440168" OR "4501268" OR "4502474" OR "4509511" OR "4565191" OR "4570624" OR "4627425" OR "4628919" OR "4632102" OR "4664102" OR "4708133" OR "4736737" OR "4750481" OR "4757810" OR "4895141" OR "4952214" OR "4959066" OR "4978347" OR "4988349" OR "4995875" OR "5021056" OR "5035698" OR "5042983" OR "5049149" OR "5053039" OR "5078719" OR "5112334" OR "5147364" OR "5176685" OR "5207676" OR "5246444" OR "5254119" OR "5312412" OR "5358504" OR "5364402" OR "5374271" OR "5413579" OR "5417694" OR "5449360" OR "5470335" OR "5490854" OR "5529075" OR "5540695" OR "5578038" OR "5601565" OR "5613969" OR "5620442" OR "5620448" OR "5643270" OR "5667510" OR "5722978" OR "5749875" OR "5779709" OR					
--	--	--	--	--	--	--

L98	125	"5788695" OR "5803924" OR "5810822" OR "5843085" OR "5893553" OR "5911724" OR "5935128" OR "5941877" OR "5951556" OR "5980526").pn. ("5984931" OR "6007535" OR "6027504" OR "6030391" OR "6162223" OR "6171309" OR "6203545" OR "6248109" OR "6391031" OR "6478799" OR "6511481" OR "6547793" OR "6676662" OR "6719773" OR "6743233" OR "6755838" OR "6796986" OR "6859661" OR "7018383" OR "7033361" OR "7112204" OR "7182766" OR "7241298" OR "7282054" OR "7377924" OR "7465303" OR "7540874" OR "7572258" OR "7641660" OR "7686811" OR "7691108" OR "7763026" OR "7967823" OR "7972338" OR "8057478" OR "8062301" OR "8080010" OR "8080045" OR "8083746" OR "8123753" OR "8137406" OR "8147530" OR "8167918" OR "8172848" OR "8192441" OR "8197487" OR "8231623" OR	(US-PGPUB; USPAT)	OR	ON	ON	2021/10/12 09:36 AM
-----	-----	---	-------------------	----	----	----	------------------------

		"8231663" OR "8236000" OR "8246561" OR "8262664" OR "8277459" OR "8282644" OR "8282645" OR "8292966" OR "8303596" OR "8313492" OR "8323289" OR "8337503" OR "8343159" OR "8377105" OR "8409209" OR "8435246" OR "8475462" OR "8496662" OR "8523870" OR "8529571" OR "8540777" OR "8545508" OR "8652142" OR "8657820" OR "8672945" OR "8696716" OR "8702715" OR "8715363" OR "8728084" OR "8758354" OR "8764760" OR "8764763" OR "8771279" OR "8777948" OR "8784427" OR "8784457" OR "8795286" OR "8801727" OR "8808303" OR "8828012" OR "8858602" OR "8882778" OR "8882816" OR "8888785" OR "8900247" OR "8906026" OR "8945132" OR "8998903" OR "8998904" OR "9023052" OR "9044250" OR "9060822" OR "9089376" OR "9101421" OR "9107715" OR "9113920" OR "9522023" OR "9750538" OR					
--	--	--	--	--	--	--	--

L99	4	"9785747" OR "D610257" OR "D629900" OR "D646389" OR "D651315" OR "D651316" OR "D666721" OR "D679395" OR "D694884" OR "D695402" OR "D701303" OR "D705929" OR "D720456" OR "D740424" OR "D765844" OR "D766434" OR "D766437" OR "D766438" OR "D766439" OR "H001706").pn. "11039873".pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/12 09:37 AM
L100	2	"10849670".pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/12 09:37 AM
L101	8	"10045807".pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2021/10/12 09:37 AM

L102	378	("3664022" "4069824" "4159716" "4187840" "4335715" "4338927" "4349018" "4409973" "4440168" "4501268" "4502474" "4509511" "4565191" "4570624" "4627425" "4628919" "4632102" "4664102" "4708133" "4736737" "4750481" "4757810" "4895141" "4952214" "4959066" "4978347" "4988349" "4995875" "5021056" "5035698" "5042983" "5049149" "5053039" "5078719" "5112334" "5147364" "5176685" "5207676" "5246444" "5254119" "5312412" "5358504" "5364402" "5374271" "5413579" "5417694" "5449360" "5470335" "5490854" "5529075" "5540695" "5578038" "5601565" "5613969" "5620442" "5620448" "5643270" "5667510" "H1706" "5722978" "5749875" "5779709" "5788695" "5803924" "5810822" "5843085" "5893553" "5911724" "5935128" "5941877" "5951556" "5980526" "5984931" "6007535" "6027504" "6030391" "6162223" "6171309" "6203545" "6248109" "6391031" "6478799" "6511481" "6547793" "6676662" "6719773" "6743233" "6755838" "6796986" "6859661" "7018383" "7033361"	EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR)	OR	ON	ON	2021/10/12 09:38 AM
------	-----	---	---	----	----	----	------------------------

		"7112204" "7182766" "7241298" "7282054" "7377924" "7465303" "7540874" "7572258" "7641660" "D610257" "7686811" "7691108" "7763026" "D629900" "7967823" "7972338" "D646389" "8057478" "8062301" "D651315" "D651316" "8080010" "8080045" "8083746" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231623" "8231663" "8236000" "8246561" "D666721" "8262664" "8277459" "8282644" "8282645" "8292966" "8303596" "8313492" "8323289" "8337503" "8343159" "8377105" "D679395" "8409209" "8435246" "8475462" "8496662" "8523870" "8529571" "8540777" "8545508" "D694884" "D695402" "8652142" "8657820" "D701303" "8672945" "8696716" "8702715" "D705929" "8715363" "8728084" "8758354" "8764760" "8764763" "8771279" "8777948" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8882816" "8888785" "D720456" "8900247" "8906026" "8945132" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "9113920" "D740424" "D765844" "D766434" "D766437" "D766438" "D766439" "9522023" "9622805" "9750538" "9785747" "10028750" "10045807" "10064631" "10159499" "10292713"					
--	--	---	--	--	--	--	--

	"10327829" "10335220" "10342590" "10470779" "10779867" "20020099381" "20020107519" "20020165552" "20020198531" "20040010259" "20040039394" "20040097946" "20040138669" "20050004676" "20050059978" "20050070909" "20050075641" "20050101961" "20050149042" "20050228389" "20050251147" "20050273112" "20060129163" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070010818" "20070123857" "20070233138" "20070265634" "20070276383" "20080009863" "20080015603" "20080039850" "20080091197" "20080140081" "20080147073" "20080172054" "20080195215" "20080208252" "20080262500" "20080269908" "20080288004" "20090036893" "20090036931" "20090054899" "20090093849" "20090105767" "20090118733" "20090198244" "20090198279" "20090222047" "20090254092" "20090254126" "20090287309"					
--	---	--	--	--	--	--

		"20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100249779" "20100256687" "20100318088" "20100324556" "20110009865" "20110093084" "20110118739" "20110178524" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130382" "20120130383" "20120184961" "20120185056" "20120191199" "20120239045" "20120253350" "20120265301" "20120277745" "20120330135" "20130012949" "20130035694" "20130085499" "20130085502" "20130096563" "20130131821" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130184714" "20130190765" "20130190766" "20130204259" "20130226248" "20130226252" "20130231668" "20130237987" "20130237989" "20130267956" "20130310836" "20130325019" "20130325076" "20130331845"					
--	--	--	--	--	--	--	--

		"20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924" "20140135775" "20140163563" "20140171953" "20140180342" "20140188139" "20140194884" "20140194999" "20140207144" "20140249537" "20140257308" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140288562" "20140296995" "20140303621" "20140336658" "20140343555" "20150032168" "20150045801" "20150045839" "20150051650" "20150057667" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160022315" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "20160324532" "20160354127" "20170042598" "20170042599" "20170079669"					
--	--	--	--	--	--	--	--

L103	375	"20170143511" "20170164989" "20180344334").pn. OR ("11039873").urpn. AND (PGPB USPT USOC).dbnm. ("3664022" "4069824" "4159716" "4187840" "4335715" "4338927" "4349018" "4409973" "4440168" "4501268" "4502474" "4509511" "4565191" "4570624" "4627425" "4628919" "4632102" "4664102" "4708133" "4736737" "4750481" "4757810" "4895141" "4952214" "4959066" "4978347" "4988349" "4995875" "5021056" "5035698" "5042983" "5049149" "5053039" "5078719" "5112334" "5147364" "5176685" "5207676" "5246444" "5254119" "5312412" "5358504" "5364402" "5374271" "5413579" "5417694" "5449360" "5470335" "5490854" "5529075" "5540695" "5578038" "5601565" "5613969" "5620442" "5620448" "5643270" "5667510" "H001706" "5722978" "5749875" "5779709" "5788695" "5803924" "5810822" "5843085" "5893553" "5911724" "5935128" "5941877" "5951556" "5980526" "5984931" "6007535" "6027504" "6030391" "6162223" "6171309" "6203545" "6248109" "6391031" "6478799" "6511481" "6547793" "6676662" "6719773" "6743233" "6755838" "6796986" "6859661" "7018383" "7033361" "7112204" "7182766" "7241298" "7282054" "7377924" "7465303" "7540874" "7572258" "7641660" "D610257"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2021/10/12 09:38 AM
------	-----	--	-----------------------------	----	----	----	------------------------

		"7686811" "7691108" "7763026" "D629900" "7967823" "7972338" "D646389" "8057478" "8062301" "D651315" "D651316" "8080010" "8083746" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231623" "8231663" "8236000" "8246561" "D666721" "8262664" "8277459" "8282644" "8282645" "8292966" "8303596" "8313492" "8323289" "8337503" "8343159" "8377105" "D679395" "8409209" "8435246" "8475462" "8496662" "8523870" "8529571" "8540777" "8545508" "D694884" "D695402" "8652142" "8657820" "D701303" "8672945" "8696716" "8702715" "D705929" "8715363" "8728084" "8758354" "8764760" "8764763" "8771279" "8777948" "8784427" "8784457" "8795286" "8801727" "8808303" "8828012" "8858602" "8882778" "8882816" "8888785" "D720456" "8900247" "8906026" "8945132" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "9113920" "D740424" "D765844" "D766434" "D766437" "D766438" "D766439" "9522023" "9622805" "9750538" "9785747" "10028750" "10045807" "10064631" "10159499" "10292713" "10327829" "10470779" "20020099381" "20020107519" "20020165552"				
--	--	---	--	--	--	--

		"20020198531" "20040010259" "20040039394" "20040097946" "20040138669" "20050004676" "20050059978" "20050070909" "20050075641" "20050101961" "20050149042" "20050228389" "20050251147" "20050273112" "20060129163" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070010818" "20070123857" "20070233138" "20070265634" "20070276383" "20080009863" "20080015603" "20080039850" "20080091197" "20080140081" "20080147073" "20080172054" "20080195215" "20080208252" "20080262500" "20080269908" "20080288004" "20090036893" "20090036931" "20090054899" "20090093849" "20090105767" "20090118733" "20090198244" "20090198279" "20090222047" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100249779" "20100256687"					
--	--	--	--	--	--	--	--

		"20100318088" "20100324556" "20110009865" "20110093084" "20110118739" "20110178524" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130382" "20120130383" "20120184961" "20120185056" "20120191199" "20120239045" "20120253350" "20120265301" "20120277745" "20120330135" "20130012949" "20130035694" "20130085499" "20130096563" "20130131821" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130184714" "20130190765" "20130190766" "20130204259" "20130226248" "20130226252" "20130231668" "20130237987" "20130237989" "20130267956" "20130310836" "20130325019" "20130325076" "20130331845" "20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861"					
--	--	--	--	--	--	--	--

L104	12	"20140094924" "20140135775" "20140163563" "20140171953" "20140180342" "20140188139" "20140194884" "20140194999" "20140207144" "20140249537" "20140257308" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140288562" "20140296995" "20140303621" "20140336658" "20140343555" "20150032168" "20150045801" "20150045839" "20150051650" "20150057667" "20150066094" "20150112446" "20150119944" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160022315" "20160151165" "20160175089" "20160192950" "20160199076" "20160213384" "20160235414" "20160242791" "20160256204" "20160324532" "20160354127" "20170042598" "20170042599" "20170079669" "20170143511" "20170164989" "20180344334").pn. OR ("10849670").urpn. AND (PGPB USPT USOC).dbnm. smith-w-brent.in.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP,	OR	ON	ON	2021/10/13 05:54 PM
------	----	--	--	----	----	----	------------------------

L105	55	santrock-robert-d.in.	AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/13 05:56 PM
L106	21	L105 AND cutting.clm.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/13 05:57 PM
L107	9	"10335220".pn.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO,	OR	ON	ON	2021/10/13 06:01 PM

L108	6	"16422557"	RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/14 08:59 AM
L109	7	"9936994".pn.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/14 09:00 AM
L110	5	"9622805".pn.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2021/10/14 09:01 AM
L111	2	"17353431"	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY,	OR	ON	ON	2021/10/28 05:38 PM

L112	5	"16998155"	CA, CH, CN, CS, CU, CZ, DD, DK, EA, EE, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/03/11 09:59 PM
L113	60	santrock-robert-d.in.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/03/11 10:00 PM
L114	37	L113 AND fixation.clm.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN,	OR	ON	ON	2022/03/11 10:00 PM

			WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L115	29	L113 AND (fixation device).clm.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	ADJ	ON	ON	2022/03/11 10:00 PM
L116	8	L113 AND (fixation device).clm.	(USPAT)	ADJ	ON	ON	2022/03/11 10:00 PM
L117	0	L113 AND (fixate).clm.	(USPAT)	ADJ	ON	ON	2022/03/11 10:03 PM
L118	0	L113 AND fixate.clm.	(USPAT)	ADJ	ON	ON	2022/03/11 10:03 PM
L119	68	cuneiform AND fixate	(USPAT)	ADJ	ON	ON	2022/03/11 10:03 PM
L120	4	"11039873".pn.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/02 12:11 PM
L121	250	("10028750" OR "10064631" OR "10159499" OR "10292713" OR "10327829" OR "10470779" OR "10779867" OR "20020099381" OR "20020107519" OR "20020165552" OR "20020198531" OR "20040010259" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/02 12:13 PM

		"20040039394" OR "20040097946" OR "20040138669" OR "20050004676" OR "20050059978" OR "20050070909" OR "20050075641" OR "20050101961" OR "20050149042" OR "20050228389" OR "20050251147" OR "20050273112" OR "20060129163" OR "20060206044" OR "20060217733" OR "20060229621" OR "20060241607" OR "20060241608" OR "20060264961" OR "20070010818" OR "20070123857" OR "20070233138" OR "20070265634" OR "20070276383" OR "20080009863" OR "20080015603" OR "20080039850" OR "20080091197" OR "20080140081" OR "20080147073" OR "20080172054" OR "20080195215" OR "20080208252" OR "20080262500" OR "20080269908" OR "20080288004" OR "20090036893" OR "20090036931" OR "20090054899" OR "20090093849" OR "20090105767" OR "20090118733" OR "20090198244" OR "20090198279" OR "20090222047" OR "20090254092" OR "20090254126" OR "20090287309" OR "20100069910" OR "20100121334" OR "20100130981" OR "20100152782" OR "20100168799" OR "20100185245" OR "20100249779" OR "20100256687" OR "20100318088" OR "20100324556" OR					
--	--	--	--	--	--	--	--

		"20110009865" OR "20110093084" OR "20110118739" OR "20110178524" OR "20110245835" OR "20110288550" OR "20110301648" OR "20120016426" OR "20120065689" OR "20120078258" OR "20120123420" OR "20120123484" OR "20120130376" OR "20120130382" OR "20120130383" OR "20120184961" OR "20120185056" OR "20120191199" OR "20120239045" OR "20120253350" OR "20120265301" OR "20120277745" OR "20120330135" OR "20130012949" OR "20130035694" OR "20130085499" OR "20130085502" OR "20130096563" OR "20130131821" OR "20130150903" OR "20130158556" OR "20130165936" OR "20130165938" OR "20130172942" OR "20130184714" OR "20130190765" OR "20130190766" OR "20130204259" OR "20130226248" OR "20130226252" OR "20130231668" OR "20130237987" OR "20130237989" OR "20130267956" OR "20130310836" OR "20130325019" OR "20130325076" OR "20130331845" OR "20130338785" OR "20140005672" OR "20140025127" OR "20140039501" OR "20140039561" OR "20140046387" OR "20140074099" OR "20140074101" OR "20140094861" OR "20140094924" OR					
--	--	--	--	--	--	--	--

		"20140135775" OR "20140163563" OR "20140171953" OR "20140180342" OR "20140188139" OR "20140194884" OR "20140194999" OR "20140207144" OR "20140249537" OR "20140257308" OR "20140257509" OR "20140276815" OR "20140276853" OR "20140277176" OR "20140277214" OR "20140288562" OR "20140296995" OR "20140303621" OR "20140336658" OR "20140343555" OR "20150032168" OR "20150045801" OR "20150045839" OR "20150051650" OR "20150057667" OR "20150066094" OR "20150112446" OR "20150119944" OR "20150142064" OR "20150150608" OR "20150182273" OR "20150223851" OR "20150245858" OR "20160015426" OR "20160022315" OR "20160151165" OR "20160175089" OR "20160192950" OR "20160199076" OR "20160213384" OR "20160235414" OR "20160242791" OR "20160256204" OR "20160324532" OR "20160354127" OR "20170042598" OR "20170042599" OR "20170079669" OR "20170143511" OR "20170164989" OR "20180344334" OR "3664022" OR "4069824" OR "4159716" OR "4187840" OR "4335715" OR "4338927" OR "4349018" OR					
--	--	--	--	--	--	--	--

		"4409973" OR "4440168" OR "4501268" OR "4502474" OR "4509511" OR "4565191" OR "4570624" OR "4627425" OR "4628919" OR "4632102" OR "4664102" OR "4708133" OR "4736737" OR "4750481" OR "4757810" OR "4895141" OR "4952214" OR "4959066" OR "4978347" OR "4988349" OR "4995875" OR "5021056" OR "5035698" OR "5042983" OR "5049149" OR "5053039" OR "5078719" OR "5112334" OR "5147364" OR "5176685" OR "5207676" OR "5246444" OR "5254119" OR "5312412" OR "5358504" OR "5364402" OR "5374271" OR "5413579" OR "5417694" OR "5449360" OR "5470335" OR "5490854" OR "5529075" OR "5540695" OR "5578038" OR "5601565" OR "5613969" OR "5620442" OR "5620448" OR "5643270" OR "5667510" OR "5722978" OR "5749875" OR "5779709" OR "5788695" OR "5803924" OR "5810822" OR "5843085" OR					
--	--	--	--	--	--	--	--

L122	125	"5893553" OR "5911724" OR "5935128" OR "5941877" OR "5951556" OR "5980526").pn. ("5984931" OR "6007535" OR "6027504" OR "6030391" OR "6162223" OR "6171309" OR "6203545" OR "6248109" OR "6391031" OR "6478799" OR "6511481" OR "6547793" OR "6676662" OR "6719773" OR "6743233" OR "6755838" OR "6796986" OR "6859661" OR "7018383" OR "7033361" OR "7112204" OR "7182766" OR "7241298" OR "7282054" OR "7377924" OR "7465303" OR "7540874" OR "7572258" OR "7641660" OR "7686811" OR "7691108" OR "7763026" OR "7967823" OR "7972338" OR "8057478" OR "8062301" OR "8080010" OR "8080045" OR "8083746" OR "8123753" OR "8137406" OR "8147530" OR "8167918" OR "8172848" OR "8192441" OR "8197487" OR "8231623" OR "8231663" OR "8236000" OR "8246561" OR "8262664" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/04/02 12:13 PM
------	-----	---	-------------------	----	----	----	------------------------

		"8277459" OR "8282644" OR "8282645" OR "8292966" OR "8303596" OR "8313492" OR "8323289" OR "8337503" OR "8343159" OR "8377105" OR "8409209" OR "8435246" OR "8475462" OR "8496662" OR "8523870" OR "8529571" OR "8540777" OR "8545508" OR "8652142" OR "8657820" OR "8672945" OR "8696716" OR "8702715" OR "8715363" OR "8728084" OR "8758354" OR "8764760" OR "8764763" OR "8771279" OR "8777948" OR "8784427" OR "8784457" OR "8795286" OR "8801727" OR "8808303" OR "8828012" OR "8858602" OR "8882778" OR "8882816" OR "8888785" OR "8900247" OR "8906026" OR "8945132" OR "8998903" OR "8998904" OR "9023052" OR "9044250" OR "9060822" OR "9089376" OR "9101421" OR "9107715" OR "9113920" OR "9522023" OR "9750538" OR "9785747" OR "D610257" OR "D629900" OR "D646389" OR					
--	--	--	--	--	--	--	--

L123	4	"D651315" OR "D651316" OR "D666721" OR "D679395" OR "D694884" OR "D695402" OR "D701303" OR "D705929" OR "D720456" OR "D740424" OR "D765844" OR "D766434" OR "D766437" OR "D766438" OR "D766439" OR "H001706").pn. "11213333".pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/02 12:19 PM
L124	2	"10849670".pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/02 12:20 PM
L125	8	"10045807".pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL,	OR	ON	ON	2022/04/02 12:20 PM

L126	5	"9622805".pn.	NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/02 12:21 PM
L127	632	(metatarsal AND fixation).clm.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/04/02 12:21 PM
L128	84	(metatarsal AND fixation).clm.	(USPAT)	OR	ON	ON	2022/04/02 12:22 PM
L129	50	santrock-robert-d.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2022/04/03 09:59 PM
L130	30	santrock-robert-d.in.	(US-PGPUB; USPAT)	OR	OFF	OFF	2022/04/03 10:00 PM
L131	163	treace AND fixation.clm.	(USPAT)	OR	ON	ON	2022/04/04 10:05 AM
L132	10	L131 AND bone preparation guide	(USPAT)	ADJ	ON	ON	2022/04/04 10:26 AM
L133	14	bone preparation guide.clm.	(USPAT)	ADJ	ON	ON	2022/04/04 10:43 AM
L134	1	"4159716".pn.	(USPAT)	ADJ	ON	ON	2022/04/04 06:37 PM

L135	31	((US-20130172942-A1 OR US-20110301648-A1 OR US-20110077656-A1 OR US-20120016426-A1 OR US-20150119944-A1 OR US-20090036893-A1).did. AND PGPB.dbnm.) OR ((US-10575862-B2 OR US-9687250-B2 OR US-8282645-B2 OR US-10045807-B2 OR US-9622805-B2 OR US-8696719-B2 OR US-8277459-B2 OR US-6964645-B1 OR US-7875058-B2 OR US-9433452-B2 OR US-8821551-B2 OR US-9060822-B2 OR US-10342590-B2 OR US-10561426-B1 OR US-9936994-B2 OR US-10335220-B2 OR US-10779867-B2 OR US-8080045-B2 OR US-8551106-B2 OR US-11039873-B2 OR US-10849670-B2 OR US-11213333-B2 OR US-11278337-B2 OR US-11116558-B2 OR US-4159716-A).did. AND USPT.dbnm.)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	ADJ	ON	ON	2022/04/04 06:39 PM
L136	17	L135 AND cuneiform	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	ADJ	ON	ON	2022/04/04 06:39 PM
L137	5	"5529075".pn.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB,	ADJ	ON	ON	2022/04/04 06:43 PM

			HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
L138	232	cuneiform AND (cutting guide)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	ADJ	ON	ON	2022/04/04 06:44 PM
L139	137	cuneiform AND (cutting guide)	(US-PGPUB; USPAT; USOCR)	ADJ	ON	ON	2022/04/04 06:44 PM
L140	45	metatarsal WITH (cutting guide)	(US-PGPUB; USPAT; USOCR)	ADJ	ON	ON	2022/04/04 06:48 PM
L141	3	"17567879"	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2022/06/26 04:41 PM
L142	14	("10376268" OR "11304705" OR "20050267482" OR "20120303033" OR "20130150900" OR "20140350561" OR "20160135858" OR "20180132868" OR "4754746" OR "5586564" OR	(US-PGPUB; USPAT)	OR	ON	ON	2022/10/20 03:00 PM

L143	3	"7097647" OR "7153310" OR "9452057" OR "9980760").pn. "18183013"	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/06/25 05:50 PM
L144	40	santrock-robert-d.in.	(US-PGPUB; USPAT)	OR	OFF	OFF	2023/06/26 05:42 PM
L145	19	santrock-robert-d.in.	(USPAT)	OR	OFF	OFF	2023/06/26 05:43 PM
L146	5	"4570624".pn.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2023/06/30 09:03 AM
L147	4	("20090112212" OR "20110264149" OR "20170056031" OR "9011507").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2023/10/11 01:51 PM
L148	124	("2346346" "2434431").pn. OR ("4159716").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:03 AM
L149	97	("3489143" "4493317" "5534027" "5591169" "5667510" "7648508" "7717945" "8852246" "8858602" "20020045896"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:05 AM

L150	250	"20030060827" "20040143266" "20050171544" "20070173843" "20090076554" "20090210010" "20090210011" "20100125300" "20100274293" "20110009866" "20110295324" "20120303033" "20140148859").pn. OR ("9060822").urpn. AND (PGPB USPT USOC).dbnm. ("10028750" OR "10064631" OR "10159499" OR "10292713" OR "10327829" OR "10376268" OR "10470779" OR "10779867" OR "11304705" OR "20020099381" OR "20020107519" OR "20020165552" OR "20020198531" OR "20040010259" OR "20040039394" OR "20040097946" OR "20040138669" OR "20050004676" OR "20050059978" OR "20050070909" OR "20050075641" OR "20050101961" OR "20050149042" OR "20050228389" OR "20050251147" OR "20050267482" OR "20050273112" OR "20060129163" OR "20060206044" OR "20060217733" OR "20060229621" OR "20060241607" OR "20060241608" OR "20060264961" OR "20070010818" OR "20070123857" OR "20070233138" OR "20070265634" OR "20070276383" OR "20080009863" OR "20080015603" OR	(US-PGPUB; USPAT)	OR	ON	ON	2024/09/10 09:17 AM
------	-----	---	-------------------	----	----	----	------------------------

		"20080039850" OR "20080091197" OR "20080140081" OR "20080147073" OR "20080172054" OR "20080195215" OR "20080208252" OR "20080262500" OR "20080269908" OR "20080288004" OR "20090036893" OR "20090036931" OR "20090054899" OR "20090093849" OR "20090105767" OR "20090112212" OR "20090118733" OR "20090198244" OR "20090198279" OR "20090222047" OR "20090254092" OR "20090254126" OR "20090287309" OR "20100069910" OR "20100121334" OR "20100130981" OR "20100152782" OR "20100168799" OR "20100185245" OR "20100249779" OR "20100256687" OR "20100318088" OR "20100324556" OR "20110009865" OR "20110093084" OR "20110118739" OR "20110178524" OR "20110245835" OR "20110264149" OR "20110288550" OR "20110301648" OR "20120016426" OR "20120065689" OR "20120078258" OR "20120123420" OR "20120123484" OR "20120130376" OR "20120130382" OR "20120130383" OR "20120184961" OR "20120185056" OR "20120191199" OR "20120239045" OR "20120253350" OR "20120265301" OR "20120277745" OR "20120303033" OR "20120330135" OR					
--	--	--	--	--	--	--	--

		"20130012949" OR "20130035694" OR "20130085499" OR "20130085502" OR "20130096563" OR "20130131821" OR "20130150900" OR "20130150903" OR "20130158556" OR "20130165936" OR "20130165938" OR "20130172942" OR "20130184714" OR "20130190765" OR "20130190766" OR "20130204259" OR "20130226248" OR "20130226252" OR "20130231668" OR "20130237987" OR "20130237989" OR "20130267956" OR "20130310836" OR "20130325019" OR "20130325076" OR "20130331845" OR "20130338785" OR "20140005672" OR "20140025127" OR "20140039501" OR "20140039561" OR "20140046387" OR "20140074099" OR "20140074101" OR "20140094861" OR "20140094924" OR "20140135775" OR "20140163563" OR "20140171953" OR "20140180342" OR "20140188139" OR "20140194884" OR "20140194999" OR "20140207144" OR "20140249537" OR "20140257308" OR "20140257509" OR "20140276815" OR "20140276853" OR "20140277176" OR "20140277214" OR "20140288562" OR "20140296995" OR "20140303621" OR "20140336658" OR "20140343555" OR "20140350561" OR "20150032168" OR					
--	--	--	--	--	--	--	--

		"20150045801" OR "20150045839" OR "20150051650" OR "20150057667" OR "20150066094" OR "20150112446" OR "20150119944" OR "20150142064" OR "20150150608" OR "20150182273" OR "20150223851" OR "20150245858" OR "20160015426" OR "20160022315" OR "20160135858" OR "20160151165" OR "20160175089" OR "20160192950" OR "20160199076" OR "20160213384" OR "20160235414" OR "20160242791" OR "20160256204" OR "20160324532" OR "20160354127" OR "20170042598" OR "20170042599" OR "20170056031" OR "20170079669" OR "20170143511" OR "20170164989" OR "20180132868" OR "20180344334" OR "3664022" OR "4069824" OR "4159716" OR "4187840" OR "4335715" OR "4338927" OR "4349018" OR "4409973" OR "4440168" OR "4501268" OR "4502474" OR "4509511" OR "4565191" OR "4570624" OR "4627425" OR "4628919" OR "4632102" OR "4664102" OR "4708133" OR "4736737" OR "4750481" OR "4754746" OR "4757810" OR "4895141" OR "4952214" OR					
--	--	--	--	--	--	--	--

		"6478799" OR "6511481" OR "6547793" OR "6676662" OR "6719773" OR "6743233" OR "6755838" OR "6796986" OR "6859661" OR "7018383" OR "7033361" OR "7097647" OR "7112204" OR "7153310" OR "7182766" OR "7241298" OR "7282054" OR "7377924" OR "7465303" OR "7540874" OR "7572258" OR "7641660" OR "7686811" OR "7691108" OR "7763026" OR "7967823" OR "7972338" OR "8057478" OR "8062301" OR "8080010" OR "8080045" OR "8083746" OR "8123753" OR "8137406" OR "8147530" OR "8167918" OR "8172848" OR "8192441" OR "8197487" OR "8231623" OR "8231663" OR "8236000" OR "8246561" OR "8262664" OR "8277459" OR "8282644" OR "8282645" OR "8292966" OR "8303596" OR "8313492" OR "8323289" OR "8337503" OR "8343159" OR "8377105" OR "8409209" OR "8435246" OR "8475462" OR "8496662" OR					
--	--	--	--	--	--	--	--

		"8523870" OR "8529571" OR "8540777" OR "8545508" OR "8652142" OR "8657820" OR "8672945" OR "8696716" OR "8702715" OR "8715363" OR "8728084" OR "8758354" OR "8764760" OR "8764763" OR "8771279" OR "8777948" OR "8784427" OR "8784457" OR "8795286" OR "8801727" OR "8808303" OR "8828012" OR "8858602" OR "8882778" OR "8882816" OR "8888785" OR "8900247" OR "8906026" OR "8945132" OR "8998903" OR "8998904" OR "9011507" OR "9023052" OR "9044250" OR "9060822" OR "9089376" OR "9101421" OR "9107715" OR "9113920" OR "9452057" OR "9522023" OR "9750538" OR "9785747" OR "9980760" OR "D610257" OR "D629900" OR "D646389" OR "D651315" OR "D651316" OR "D666721" OR "D679395" OR "D694884" OR "D695402" OR "D701303" OR "D705929" OR "D720456" OR "D740424" OR "D765844" OR					
--	--	--	--	--	--	--	--

L152	66	"D766434" OR "D766437" OR "D766438" OR "D766439" OR "H001706").pn. santrock-robert-d.in.	(US-PGPUB; USPAT)	OR	OFF	OFF	2024/09/10 09:33 AM
L153	211	dayton-paul.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2024/09/10 09:33 AM
L154	565	smith-bret-w.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2024/09/10 09:33 AM
L155	128	treace-john-t.in.	(US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	OFF	OFF	2024/09/10 09:33 AM
L156	420	("2291413" "3867929" "3880155" "3987559" "4069824" "4213208" "4240214" "4244359" "4255875" "4263902" "4266553" "4300294" "4314412" "4317293" "4393876" "4409974" "4414964" "4439934" "4497603" "4510699" "4583303" "4597195" "4603698" "4604997" "4608988" "4620825" "4632103" "4644940" "4676801" "4726127" "4729369" "4738255" "RE32698" "4772286" "4813162" "4819644" "4841647" "4842931" "4852556" "4856505" "4859128" "4876758" "4901453" "4930504" "4940046" "4969277" "4976712" "5005575" "5012596" "5035069" "5044850" "5092347" "5094226" "5098421" "5138777" "5167665" "5174052" "5250049" "D341424" "5272139" "5306301" "5350383" "RE34753" "5497789" "5503510" "5529075" "5537764" "5539020" "5571139" "5601565" "5607756" "5611801" "5617651"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:42 AM

		"5618142" "5640779" "5645588" "5665060" "5665112" "5685834" "00H1706" "5713903" "5725541" "5725585" "5728136" "5788697" "5792093" "5797913" "5802737" "5810822" "5843085" "5853293" "5919194" "5921986" "5962011" "6001101" "6068648" "6091000" "6093163" "6203545" "6238357" "D443694" "6248109" "6248788" "6264677" "6283973" "6299398" "6315749" "6318373" "6319270" "6348053" "6367087" "6391031" "6406234" "6424864" "6447783" "6478761" "6481120" "6514222" "6547792" "6547800" "6569188" "6583114" "6604301" "6616665" "6629943" "6643956" "6684532" "6689136" "6716234" "6749384" "6800063" "6862481" "6874258" "6887243" "6887259" "6889088" "6890333" "6902799" "6905296" "6908465" "6909513" "6910287" "6942668" "6964645" "6991636" "7008428" "7013583" "7052498" "7055268" "7056885" "7062866" "7070601" "7097647" "7141545" "7175667" "7182561" "7192411" "7217853" "7253266" "7263788" "7266910" "7270644" "7273338" "7276244" "7287293" "7291175" "7291483" "7322783" "7325323" "7326211" "7383089" "7384226" "7392605" "7396338" "7485135" "7485153" "7493810" "7513880" "7572258" "7625395" "7650681" "7722303" "7824141" "7833255" "7875058" "8048134" "8096742" "20010027583"					
--	--	---	--	--	--	--	--

		"20010034956" "20020007134" "20020022862" "20020032466" "20020056209" "20020058036" "20020062140" "20020077281" "20020138026" "20020162250" "20020193309" "20030005601" "20030023268" "20030040750" "20030045881" "20030093920" "20030105193" "20030134792" "20030148692" "20030152637" "20030172553" "20030186433" "20030187372" "20030225356" "20040019308" "20040031169" "20040039319" "20040045194" "20040071522" "20040093746" "20040103561" "20040107604" "20040123495" "20040127907" "20040153153" "20040156931" "20040161481" "20040168329" "20040168353" "20040186182" "20040191338" "20040194348" "20040194352" "20040210234" "20040243197" "20050019436" "20050020690" "20050054959" "20050054962" "20050055849" "20050058734" "20050059873" "20050060910" "20050061332" "20050063971" "20050070909" "20050076536" "20050115116"					
--	--	--	--	--	--	--	--

		"20050123567" "20050158382" "20050177084" "20050187071" "20050197711" "20050202047" "20050208540" "20050228389" "20050229430" "20050229433" "20050241187" "20050251081" "20060002954" "20060015102" "20060030854" "20060058796" "20060064048" "20060074434" "20060079558" "20060079559" "20060081553" "20060148903" "20060155233" "20060161090" "20060162464" "20060178702" "20060189914" "20060201011" "20060240105" "20060241066" "20060241607" "20060241608" "20060247566" "20060251721" "20060258588" "20060264961" "20060269628" "20060271077" "20060276737" "20060282231" "20070010818" "20070016205" "20070016275" "20070033750" "20070036876" "20070051020" "20070051376" "20070074334" "20070074426" "20070078518" "20070088341" "20070094896" "20070128226" "20070131798" "20070141020" "20070197948" "20070204487" "20070213296"					
--	--	--	--	--	--	--	--

		"20070213308" "20070214681" "20070225217" "20070225703" "20070260252" "20070265296" "20070265634" "20070281906" "20070282342" "20070299382" "20080008777" "20080010856" "20080014272" "20080027119" "20080041169" "20080057068" "20080065224" "20080076829" "20080078628" "20080081834" "20080086139" "20080086909" "20080086913" "20080102121" "20080113025" "20080139641" "20080141565" "20080147084" "20080153780" "20080155731" "20080200989" "20080208252" "20080216593" "20080217816" "20080221697" "20080229482" "20080242646" "20080248282" "20080260791" "20080262091" "20080263900" "20080280975" "20080282580" "20080287406" "20080287866" "20080288019" "20080294170" "20080301977" "20090005358" "20090012180" "20090036893" "20090043318" "20090054527" "20090062253" "20090062359" "20090082466" "20090082773" "20090082874"					
--	--	--	--	--	--	--	--

		"20090111792" "20090113759" "20090117167" "20090118242" "20090133289" "20090155614" "20090157194" "20090181098" "20090192222" "20090198287" "20090209536" "20090210010" "20090215809" "20090216334" "20090222047" "20090228049" "20090287246" "20090291975" "20090292022" "20090292023" "20090306723" "20100036430" "20100082072" "20100152752" "20100152786" "20100211071" "20110077656" "20110118780" "20110178557" "20110224729" "20120016426" "20120071935" "20120330322").pn. OR ("8696719").urpn. AND (PGPB USPT USOC).dbnm.					
L157	459	("2291413" "3867929" "3880155" "3987559" "4069824" "4213208" "4240214" "4244359" "4255875" "4263902" "4266553" "4300294" "4314412" "4317293" "4393876" "4409974" "4414964" "4439934" "4510699" "4583303" "4597195" "4603698" "4604997" "4608988" "4632103" "4644940" "4676801" "4726127" "4729369" "4738255" "RE32698" "4813162" "4819644" "4841647" "4842931" "4852556" "4856505" "4876758" "4901453" "4930504" "4940046"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:42 AM

		"4969277" "4976712"					
		"5005575" "5012596"					
		"5035069" "5092347"					
		"5094226" "5098421"					
		"5138777" "5167665"					
		"5174052" "5250049"					
		"D341424" "5272139"					
		"5306301" "5350383"					
		"RE34753" "5497789"					
		"5529075" "5537764"					
		"5539020" "5571139"					
		"5601565" "5607756"					
		"5611801" "5617651"					
		"5640779" "5645588"					
		"5665060" "5665112"					
		"5685834" "00H1706"					
		"5713903" "5725585"					
		"5728136" "5788697"					
		"5792093" "5797913"					
		"5802737" "5810822"					
		"5843085" "5853293"					
		"5919194" "5921986"					
		"5962011" "6001101"					
		"6068648" "6091000"					
		"6093163" "6203545"					
		"6238357" "D443694"					
		"6248109" "6248788"					
		"6264677" "6283973"					
		"6315749" "6318373"					
		"6319270" "6348053"					
		"6367087" "6391031"					
		"6406234" "6424864"					
		"6447783" "6478761"					
		"6481120" "6514222"					
		"6547792" "6547800"					
		"6569188" "6583114"					
		"6604301" "6616665"					
		"6629943" "6643956"					
		"6684532" "6689136"					
		"6716234" "6800063"					
		"6862481" "6874258"					
		"6887243" "6887259"					
		"6889088" "6890333"					
		"6902799" "6908465"					
		"6909513" "6910287"					
		"6942668" "6964645"					
		"6991636" "7008428"					
		"7013583" "7055268"					
		"7056885" "7062866"					
		"7070601" "7097647"					
		"7141545" "7175667"					
		"7192411" "7217853"					
		"7253266" "7263788"					
		"7266910" "7270644"					
		"7276244" "7287293"					
		"7291175" "7291483"					
		"7325323" "7326211"					
		"7383089" "7392605"					

		"7396338" "7485135" "7493810" "7513880" "7572258" "7625395" "7875058" "20010027583" "20010034956" "20020007134" "20020022862" "20020032466" "20020056209" "20020058036" "20020062140" "20020077281" "20020138026" "20020162250" "20020193309" "20030005601" "20030023268" "20030040750" "20030045881" "20030093920" "20030105193" "20030134792" "20030148692" "20030152637" "20030172553" "20030186433" "20030187372" "20030225356" "20040019308" "20040031169" "20040039319" "20040045194" "20040093746" "20040103561" "20040107604" "20040123495" "20040127907" "20040156931" "20040161481" "20040168329" "20040168353" "20040186182" "20040191338" "20040194348" "20040194352" "20040210234" "20040243197" "20050019436" "20050020690" "20050054959" "20050054962" "20050055849" "20050058734" "20050059873" "20050060910" "20050061332" "20050063971"					
--	--	--	--	--	--	--	--

		"20050070909" "20050076536" "20050115116" "20050123567" "20050158382" "20050177084" "20050187071" "20050197711" "20050202047" "20050208540" "20050228389" "20050229430" "20050229433" "20050241187" "20050251081" "20060002954" "20060015102" "20060030854" "20060058796" "20060064048" "20060074434" "20060079558" "20060079559" "20060081553" "20060148903" "20060155233" "20060161090" "20060162464" "20060178702" "20060189914" "20060201011" "20060240105" "20060241066" "20060241607" "20060241608" "20060247566" "20060251721" "20060258588" "20060264961" "20060269628" "20060271077" "20060276737" "20060282231" "20070010818" "20070016205" "20070016275" "20070033750" "20070036876" "20070051020" "20070051376" "20070074334" "20070074426" "20070078518" "20070088341" "20070094896" "20070128226" "20070131798" "20070141020"					
--	--	--	--	--	--	--	--

		"20070197948" "20070204487" "20070213296" "20070213308" "20070214681" "20070225217" "20070225703" "20070260252" "20070265296" "20070265634" "20070281906" "20070282342" "20070299382" "20080008777" "20080010856" "20080014272" "20080027119" "20080041169" "20080057068" "20080065224" "20080076829" "20080078628" "20080081834" "20080086139" "20080086909" "20080086913" "20080102121" "20080113025" "20080139641" "20080141565" "20080147084" "20080153780" "20080155731" "20080200989" "20080208252" "20080216593" "20080217816" "20080221697" "20080229482" "20080242646" "20080248282" "20080260791" "20080262091" "20080263900" "20080280975" "20080282580" "20080287406" "20080287866" "20080288019" "20080294170" "20080301977" "20090005358" "20090012180" "20090036893" "20090043318" "20090054527" "20090062253" "20090062359"					
--	--	--	--	--	--	--	--

		"20090082466" "20090082773" "20090082874" "20090111792" "20090113759" "20090117167" "20090118242" "20090133289" "20090156614" "20090157194" "20090181098" "20090192222" "20090198287" "20090209536" "20090210010" "20090215809" "20090216334" "20090222047" "20090228049" "20090287246" "20090291975" "20090292022" "20090292023" "20090306723" "20100021107" "20100036430" "20100152752" "20110118780" "20110178557" "20110224729" "20110301648" "20120071935").pn. OR ("8277459").urpn. AND (PGPB USPT USOC).dbnm.					
L158	275	L157 AND metatarsal	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:49 AM
L159	206	L156 AND metatarsal	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:49 AM
L160	42	L151 AND metatarsal	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:49 AM
L161	52	("6342057" "6692496" "7011665" "7819877" "8080010" "8231627" "8764807" "9283008" "20050033301" "20060189996" "20070173843" "20070225714" "20070239168" "20080021452" "20090036931" "20100087824" "20110218576" "20110264149" "20120078252"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:53 AM

L162	82	"20120303038" "20140148859" "20140180348" "20140309703" "20150359580").pn. OR ("9980760").urpn. AND (PGPB USPT USOC).dbnm. ("4651724" "5674222" "6283969" "6730090" "7229444" "7335204" "8603148" "8906070" "20080119895" "20090198277" "20100069966" "20110029025").pn. OR ("9101421").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 09:53 AM
L163	216	("4159716" "4187840" "4338927" "4627425" "4757810" "4952214" "4978347" "5021056" "5112334" "5254119" "5312412" "5358504" "5364402" "5413579" "5449360" "00H1706" "5810822" "5893553" "5935128" "6030391" "6719773" "6743233" "7033361" "7182766" "7241298" "7377924" "7465303" "7641660" "D610257" "7686811" "D629900" "7972338" "D646389" "8057478" "D651315" "D651316" "8080010" "8123753" "8137406" "8147530" "8167918" "8172848" "8192441" "8197487" "8231663" "8246561" "D666721" "8262664" "8282644" "8282645" "8292966" "8313492" "8323289" "8337503" "8343159" "8377105" "D679395" "8435246" "8475462" "8523870" "D694884" "D695402" "8652142" "D701303" "8672945" "8696716" "D705929" "8715363" "8728084" "8758354" "8764763" "8771279" "8784427" "8784457" "8795286"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/09/10 10:29 AM

		"8801727" "8808303" "8828012" "8858602" "8882778" "8998903" "8998904" "9023052" "9044250" "9060822" "9089376" "9101421" "9107715" "20040039394" "20040097946" "20050004676" "20050075641" "20050101961" "20050149042" "20050228389" "20050273112" "20060206044" "20060217733" "20060229621" "20060241607" "20060241608" "20060264961" "20070233138" "20070265634" "20070276383" "20080091197" "20080140081" "20080262500" "20080269908" "20090036893" "20090093849" "20090105767" "20090198244" "20090254092" "20090254126" "20090287309" "20100069910" "20100121334" "20100130981" "20100152782" "20100168799" "20100185245" "20100256687" "20100324556" "20110093084" "20110245835" "20110288550" "20110301648" "20120016426" "20120065689" "20120078258" "20120123420" "20120123484" "20120130376" "20120130383" "20120184961" "20120239045" "20120253350" "20120265301"					
--	--	--	--	--	--	--	--

		"20130012949" "20130085499" "20130150903" "20130158556" "20130165936" "20130165938" "20130172942" "20130190765" "20130190766" "20130231668" "20130237987" "20130237989" "20130310836" "20130325076" "20130331845" "20130338785" "20140005672" "20140025127" "20140039501" "20140039561" "20140046387" "20140074099" "20140074101" "20140094861" "20140094924" "20140163563" "20140171953" "20140180342" "20140194884" "20140207144" "20140249537" "20140257509" "20140276815" "20140276853" "20140277176" "20140277214" "20140296995" "20140336658" "20150032168" "20150045839" "20150051650" "20150066094" "20150112446" "20150142064" "20150150608" "20150182273" "20150223851" "20150245858" "20160015426" "20160151165" "20160175089" "20160199076" "20160213384" "20160235414" "20160242791").pn. OR ("9687250").urpn. AND (PGPB USPT USOC).dbnm.					
--	--	---	--	--	--	--	--

L164	3	("20020058944" OR "20060036257" OR "4364381").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2024/12/10 09:48 PM
L165	202	("1556421" "2014289" "2061217" "2181746" "2291413" "2576801" "2653820" "2815778" "3562912" "3674375" "3690005" "3727611" "3835849" "3867932").pn. OR ("4364381").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/12/10 09:48 PM
L166	1	(10/912988).APP.	(USPAT; USOCR)	OR	ON	ON	2024/12/10 09:49 PM
L167	273	("0309709" "2697433" "3532088" "4211228" "4349018" "4457307" "4524766" "4566448" "4566466" "4567886" "4574794" "4646729" "4738253" "4759350" "4825857" "4841975" "4938762" "4952213" "5002547" "5007936" "5037423" "5116338" "5122144" "5213112" "5228459" "5230338" "5234433" "5251127" "5275603" "5305203" "5306276" "5342367" "5342368" "5344423" "5364401" "5364402" "5368552" "5445640" "5451228" "5458645" "5474559" "5484446" "5486180" "5514139" "5514143" "5520695" "5527316" "5540696" "5551429" "5562674" "5593411" "5597379" "5601563" "5611802" "5628750" "5643272" "5649928" "5681316" "5681320" "5682886" "5683397" "5688280" "5704941" "5735904" "5743915" "5755803" "5776201" "5788700" "5800438" "5810827" "5824085" "5860980" "5871018" "5879354" "5904691" "5911723" "5921992" "5995738" "6002859" "6022377" "6033415" "6051016")	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/12/10 09:49 PM

L168	1	"6056754" "6077270" "6090114" "6113639" "6167145" "6197064" "6267762" "6285902" "6296646" "6368310" "6396939" "6402762" "6430434" "6450978" "6475228" "6477400" "6478799" "6490467" "6503254" "6514259" "6551325" "6554837" "6575980" "6595997" "6632225" "6673077" "6685711" "6695848" "6712824" "6859661" "6932823" "7029477" "7094241" "7201755" "7235080" "7335206" "7371240" "20020068942" "20020133160" "20020133162" "20020133163" "20020133164" "20020198530" "20030069585" "20030069591" "20030100906" "20030130665" "20030216741" "20030225413" "20030233149" "20040039396" "20040097951" "20040102785" "20040122305" "20040152955" "20040153062" "20040249387" "20050070910" "20050143746" "20050182415" "20050203528" "20050203541" "20060030855" "20060036257" "20060149276" "20060189998" "20060195111" "20060217734" "20060247647" "20070173854").pn. OR ("8167888").urpn. AND (PGPB USPT USOC).dbnm. (09/972560).APP.	(USPAT; USOCR)	OR	ON	ON	2024/12/10 09:49 PM
------	---	--	----------------	----	----	----	------------------------

L169	127	("3937222" "4842578" "5387215" "5601556" "5853415" "5904687" "6063088" "6083228").pn. OR ("6692501").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2024/12/10 09:49 PM
------	-----	---	--------------------------	----	----	----	---------------------

PE2E SEARCH - Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
N32	5	(bunion deformity).clm.	(USPAT)	AND	ON	ON	2017/02/10 06:43 PM
N33	1	(bunion deformity plane).clm.	(USPAT)	AND	ON	ON	2017/02/10 06:44 PM
N34	0	(bunion plane aligned).clm.	(USPAT)	AND	ON	ON	2017/02/10 06:44 PM
N49	1	(method bunion deformity guide cuneiform).clm.	(USPAT)	AND	ON	ON	2018/04/24 05:21 PM
N50	1	(method bunion deformity cuneiform).clm.	(USPAT)	AND	ON	ON	2018/04/24 05:21 PM
N52	1	(method bunion cuneiform).clm.	(USPAT)	AND	ON	ON	2018/04/24 05:21 PM
N53	2	(bunion cuneiform).clm.	(USPAT)	AND	ON	ON	2018/04/24 05:21 PM
N74	1	(realignment metatarsal cuneiform).clm.	(USPAT)	AND	ON	ON	2020/04/10 02:08 PM
N75	2	(realignment metatarsal).clm.	(USPAT)	AND	ON	ON	2020/04/10 02:09 PM
N82	2	(realignment metatarsal).clm.	(USPAT)	AND	ON	ON	2020/07/19 08:50 PM
N83	25	(method bunion deformity).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2021/02/13 10:16 AM
N84	8	(method bunion deformity guide).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2021/02/13 10:17 AM
N85	8	(method bunion deformity guide plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2021/02/13 10:17 AM
N86	8	(method bunion deformity metatarsal guide tip cuneiform).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2021/10/28 06:19 PM
N87	1	(metatarsal correction tissue removing plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2022/06/26 05:35 PM
N88	2	(metatarsal correction tissue removing plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2022/10/20 03:02 PM

N89	2	(metatarsal correction tissue removing plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2022/10/20 03:02 PM
N90	2	(metatarsal correction tissue removing plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2022/10/20 03:02 PM
N91	11	(method bunion transverse angle preparing).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2023/10/11 03:51 PM
N92	30	(method metatarsal transverse angle preparing).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2023/10/11 03:52 PM
N93	29	(method metatarsal transverse angle preparing plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2023/10/11 03:52 PM
N94	33	(metatarsal transverse angle preparing plane).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2024/09/10 04:05 PM
N95	2	(metatarsal incision guide knob cutting).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2024/09/10 04:05 PM
N96	13	(metatarsal incision guide fixation cutting).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2024/09/10 04:06 PM
N98	2	(metatarsal bunion cutting knob).clm.	(US-PGPUB; USPAT)	AND	ON	ON	2024/12/11 10:20 AM



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

NOTICE OF ALLOWANCE AND FEE(S) DUE

22859 7590 12/26/2024
FREDRIKSON & BYRON, P.A.
INTELLECTUAL PROPERTY GROUP
60 SOUTH SIXTH STREET, SUITE 1500
MINNEAPOLIS, MN 55402

EXAMINER	
BECCIA, CHRISTOPHER J	
ART UNIT	PAPER NUMBER
3775	

DATE MAILED: 12/26/2024

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7	7731

TITLE OF INVENTION: BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	03/26/2025

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 the USPTO patent electronic filing system.

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 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. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

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.

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 the USPTO patent electronic filing system 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.
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7	7731

TITLE OF INVENTION: BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	\$1200	\$0.00	\$0.00	\$1200	03/26/2025

EXAMINER	ART UNIT	CLASS-SUBCLASS
BECCIA, CHRISTOPHER J	3775	606-08600R

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)

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

☐ Electronic Payment via the USPTO patent electronic filing system ☐ 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.
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7	7731
22859	7590	12/26/2024	EXAMINER	
FREDRIKSON & BYRON, P.A. INTELLECTUAL PROPERTY GROUP 60 SOUTH SIXTH STREET, SUITE 1500 MINNEAPOLIS, MN 55402			BECCIA, CHRISTOPHER J	
			ART UNIT	PAPER NUMBER
			3775	
DATE MAILED: 12/26/2024				

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. 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
- 10) 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.

Notice of Allowability	Application No. 18/587,921	Applicant(s) Santrock et al.	
	Examiner CHRISTOPHER J BECCIA	Art Unit 3775	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 Request for Continued Examination dated November 25, 2024.
☐ 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 21-50. 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)	5. ☐ Examiner's Amendment/Comment
2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date ____.	6. ☒ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material ____.	7. ☐ Other ____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. ____.	

/CHRISTOPHER J BECCIA/ Primary Examiner, Art Unit 3775	
---	--

Notice of Pre-AIA or AIA Status

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

REASONS FOR ALLOWANCE

The following is an examiner's statement of reasons for allowance: Most pertinent prior art, including U.S. Patent No. 4,159,716 to *Borchers*, U.S. Patent Pub. No. 2011/0077656 to *Sand et al.*, and U.S. Patent No. 5,529,075 to *Clark* disclose a instrumented surgical technique for preparing a tarsal-metatarsal joint for fusion and for repositioning a first metatarsal to correct a bunion deformity comprising making an incision on a foot to provide access to a tarsal-metatarsal joint, engaging the first metatarsal with a bone engagement member of a bone positioning guide, engaging the bone positioning guide with a second metatarsal separated from the first metatarsal by an intermetatarsal angle, cutting an end of the first metatarsal with a tissue removing instrument, imparting a force to adjust an alignment of the first metatarsal in a frontal plane to correct the bunion deformity, and fixating a moved position of the first metatarsal relative to the medial cuneiform for fusion using at least one bone fixation device.

The prior art fails to teach or disclose, however, the steps including but not limited to wherein the instrumented surgical technique includes rotating a knob connected to a threaded shaft of the bone positioning guide to cause the bone engagement member to push the first metatarsal laterally toward the second metatarsal and thereby reduce the intermetatarsal angle between the first metatarsal and the second metatarsal to correct the bunion deformity, imparting a force to a pin inserted into the first metatarsal to adjust an alignment of the first metatarsal in a frontal plane to correct the bunion deformity, cutting an end of a medial cuneiform with the tissue removing instrument, compressing the

Art Unit: 3775

first metatarsal together with the medial cuneiform, and fixating a moved position of the first metatarsal relative to the medial cuneiform for fusion using at least one bone fixation device.

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

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER J BECCIA whose telephone number is (571)270-7391. The examiner can normally be reached Mon - Fri 8:30-5:00.

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, Kevin Truong can be reached on 571-272-4705. 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 (toll-free). If you would like

Art Unit: 3775

assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHRISTOPHER J BECCIA/

Primary Examiner, Art Unit 3775



ACKNOWLEDGEMENT OF CHANGE TO SMALL ENTITY STATUS

APPLICATION #	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET #	REQUEST ID
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7	360421

The entity status change request below filed through Patent Center on 02/25/2025 has been accepted.

Certifications

APPLICANT ASSERTING SMALL ENTITY STATUS. See 37CFR 1.27.

Signature

I certify, in accordance with 37 CFR 1.4(d)(4), that I am one of the signatories making the entity status change.

Signature	Name	Registration #
/Paul J. LaVanway, Jr./	Paul LaVanway	64610

REQUEST FOR REFUND

Reference # (Patent #, Application #, Trademark Serial #, Registration #, etc.)		Title of Invention or Mark Information	
18/587,921		BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS	
Attorney Docket # (if applicable)	Payment Date (mm/dd/yyyy)	Refund Request Amount	
71212.4.6.USC7	11/25/2024	\$ 816.00	
Refund Option (Select one)			
☒ If approved, issue the refund to the account associated with the original payment.			
☐ If approved, and the original payment was a check, issue the refund to deposit account # _____.			
☐ If approved, and the original payment was a check, issue the refund as a U.S. Treasury check.			
Reason for Refund Request Refund requests must generally be filed within 2 years of payment date (37 CFR 1.26 and 2.209)			
☐ Duplicate Payment ☐ No Fee Due ☐ Office Error ☐ Other: <div></div>			
☒ Small Entity Later Established* *(Must be filed within 3 months of payment date, 37 CFR 1.28. There is no refund when micro entity is later established.)			
Rationale (Supporting documentation may be submitted with this form)			
Applicant entitled to small entity status when making payment for which refund is requested, but inadvertently paid at undiscounted entity rate.			

Requester's Information

Company or Firm Name (if applicable)		
FREDRIKSON & BYRON, P.A.		
Address Line 1	City	State/Region
60 SOUTH SIXTH STREET, SUITE 1500	MINNEAPOLIS	MN
Address Line 2 (if applicable)	Country	Zip/Postal Code
	US	55402
Email Address (You will receive an acknowledgment of receipt only if you provide a valid email address)		Phone Number
IP@fredlaw.com		612-492-7000
Requester's Name		Registration Number (if applicable)
Paul J. LaVanway, Jr.		64610
Signature		Date (mm/dd/yyyy)
/Paul J. LaVanway, Jr./		02/24/2025

Submit online via Patent Center (Patents customers who are registered users only): <https://patentcenter.uspto.gov>, or

Fax to: 571-273-6500, or

Mail to: Mail Stop 16, Director of the U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/587,921

RECEIPT DATE / TIME
02/25/2025 11:42:48 AM Z ET

ATTORNEY DOCKET #
71212.4.6.USC7

Title of Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 7731

FILED BY Zachary Anderson

PATENT CENTER # 69324314

FILING DATE 02/26/2024

CUSTOMER # 22859

FIRST NAMED INVENTOR Robert D. Santrock

CORRESPONDENCE ADDRESS -

AUTHORIZED BY Paul LaVanway

Documents

TOTAL DOCUMENTS: 1

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
71212.4.6.USC7_Refund-Request-Form_11-25-2024_1801.pdf	1	Refund Request	789 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
71212.4.6.USC7_Refund-Request-Form_11-25-2024_1801.pdf	A3A28323A02873BD56F0CD290D6A182EFCD1E70E0C4FEF5D7A92A7B0819F6BE55EE02FD103B0FB91DCB7E50EA844658762876F6FAE4E1C0284FE8F7AFA49EE70

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 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.



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
18/587,921

RECEIPT DATE / TIME
03/11/2025 05:35:25 PM Z ET

ATTORNEY DOCKET #
71212.4.6.USC7

Title of Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 7731

FILED BY Paul LaVanway

PATENT CENTER # 69528993

FILING DATE 02/26/2024

CUSTOMER # 22859

FIRST NAMED
INVENTOR Robert D. Santrock

CORRESPONDENCE
ADDRESS -

AUTHORIZED BY Paul LaVanway

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
71212.4.6.USC7_Comments _on_Statement_of_Reasons _for_Allowance.pdf	1	Post Allowance Communication - Incoming	88 KB
71212.4.6.USC7_Issue_Fee _Transmittal.pdf	1	Issue Fee Payment (PTO-85B)	2194 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
71212.4.6.USC7_Comments_o n_Statement_of_Reasons_for_ Allowance.pdf	BB3DF1239634BC5482EA6BBB1269BD04E9D09CC6B81B3FC3 72F723BEC3FBF95CF9761F478621E34B84E4883DB7515D57A 7000FB00E1957BF57A0834713CEE0EE

71212.4.6.USC7_Issue_Fee_Tr
ansmittal.pdf

81E92700224A574640825008E661021E6D522E821FCC78165A
C9531E280EA36CBD3C723679A272E178C4AA79EDC6E2C169
B1D6F1BBE559CD4674D48D35B14AE5

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 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.



UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
www.uspto.gov

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
18/587,921	03/11/2025 05:35:25 PM Z ET	71212.4.6.USC7

Title of Invention

BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	7731	FILED BY	Paul LaVanway
PATENT CENTER #	69528993	AUTHORIZED BY	Paul LaVanway
CUSTOMER #	22859	FILING DATE	02/26/2024
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Robert D. Santrock

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 1071	E20253AH36085149	Paul LaVanway

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
2501	UTILITY ISSUE FEE	480.00	1	480.00
TOTAL AMOUNT:				\$480.00

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 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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Robert D. Santrock

Application No.: 18/587,921 Group Art Unit: 3775

Filed: February 26, 2024 Examiner: Christopher J. Beccia

Title: BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND
METHODS

COMMENTS ON STATEMENT OF REASONS FOR ALLOWANCE

Dear Commissioner:

Applicant has reviewed the Examiner's Statement of Reasons for Allowance accompanying the Notice of Allowance mailed December 26, 2024. Applicant does not acquiesce in any particular stated reasons for allowance or the characterization of any prior art.

Applicant agrees with the Examiner that the claims are allowable over the prior art. Applicant points out, however, that the claims require multiple limitations not taught or suggested by the prior art and that the claims are allowable for multiple reasons.

Applicant respectfully requests that the Examiner place the preceding comments into the prosecution record prior to issuance of the above-identified application. The Examiner is invited to telephone the below-signed attorney to discuss this application.

Dated: March 11, 2025

FREDRIKSON & BYRON, P.A.
60 South Sixth Street, Suite 1500
Minneapolis, MN 55402-4400 USA
Telephone: (612) 492-7387

Respectfully submitted,

/Paul J. LaVanway, Jr./

Paul J. LaVanway, Jr.
Registration No. 64,610

#85580341v1

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

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 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. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize dependency.**

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.

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 the USPTO patent electronic filing system 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.
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7	7731

TITLE OF INVENTION: BONE POSITIONING AND PREPARING GUIDE SYSTEMS AND METHODS

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	Small Small	\$4,000 \$516	\$0.00	\$0.00	\$4,000 \$516	03/26/2025

EXAMINER	ART UNIT	CLASS-SUBCLASS
BECCIA, CHRISTOPHER J	3775	606-08600R

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 **Fredrikson & Byron, P.A.**

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)

Treace Medical Concepts, Inc.

Ponte Vedra, FL

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)

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

☒ Electronic Payment via the USPTO patent electronic filing system ☐ 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. **06-1910**

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 /Paul J. LaVanway, Jr./

Date March 11, 2025

Typed or printed name Paul J. LaVanway, Jr.

Registration No. 64,610



APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
18/587,921	04/15/2025	12274481	71212.4.6.USC7	7731

22859 7590 03/26/2025

FREDRIKSON & BYRON, P.A.
INTELLECTUAL PROPERTY GROUP
60 SOUTH SIXTH STREET, SUITE 1500
MINNEAPOLIS, MN 55402

ISSUE NOTIFICATION

The projected patent number and issue date are specified above. The patent will issue electronically. The electronically issued patent is the official patent grant pursuant to 35 U.S.C. § 153. The patent may be accessed on or after the issue date through Patent Center at <https://patentcenter.uspto.gov/>. The patent will be available in both the public and the private sides of Patent Center. Further assistance in electronically accessing the patent, or about Patent Center, is available by calling the Patent Electronic Business Center at 1-888-217-9197.

The USPTO is implementing electronic patent issuance with a transition period, during which period the USPTO will mail a ceremonial paper copy of the electronic patent grant to the correspondence address of record. Additional copies of the patent (i.e., certified and presentation copies) may be ordered for a fee from the USPTO's Certified Copy Center at <https://certifiedcopycenter.uspto.gov/index.html>. The Certified Copy Center may be reached at (800)972-6382.

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 0 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 Center (<https://patentcenter.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 PATENT CENTER site <https://patentcenter.uspto.gov> for additional inventors):

Robert D. Santrock, Morgantown, WV;
Paul Dayton, Ankeny, IA;
Daniel J. Hatch, Greeley, CO;
W. Bret Smith, Lexington, SC;
F. Barry Bays, Collierville, TN;

APPLICANT(s) (Please see PATENT CENTER site <https://patentcenter.uspto.gov> for additional applicants):

Treace Medical Concepts, Inc., Ponte Vedra, FL;

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](https://selectusa.gov).



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.
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7	7731

22859 7590 04/15/2025
FREDRIKSON & BYRON, P.A.
INTELLECTUAL PROPERTY GROUP
60 SOUTH SIXTH STREET, SUITE 1500
MINNEAPOLIS, MN 55402

EXAMINER

BECCIA, CHRISTOPHER J

ART UNIT	PAPER NUMBER
----------	--------------

3775

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

04/15/2025

ELECTRONIC

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

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

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

IP@FREDLAW.COM

APPLICATION NO.	ISSUE DATE	PATENT NO.
18/587,921	15-Apr-2025	12274481

FREDRIKSON & BYRON, P.A.
INTELLECTUAL PROPERTY GROUP
60 SOUTH SIXTH STREET, SUITE 1500
MINNEAPOLIS, MN 55402

EGRANT NOTIFICATION

Your electronic patent grant (eGrant) is now available, which can be accessed via Patent Center at <https://patentcenter.uspto.gov>

The electronic patent grant is the official patent grant under 35 U.S.C. 153. For more information, please visit <https://www.uspto.gov/electronicgrants>



United States Patent and Trademark Office

Office of the Chief Financial Officer

Document Code:WFEE

User :Suad Mohammed

Sale Accounting Date:05/16/2025

Sale Item Reference Number
18587921

Effective Date
11/25/2024

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I20255FA58158021	2801	RCE- 1ST REQUEST	\$544.00	Salea



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.
18/587,921	02/26/2024	Robert D. Santrock	71212.4.6.USC7	7731
22859 7590 05/21/2025 FREDRIKSON & BYRON, P.A. INTELLECTUAL PROPERTY GROUP 60 SOUTH SIXTH STREET, SUITE 1500 MINNEAPOLIS, MN 55402			EXAMINER BECCIA, CHRISTOPHER J	
			ART UNIT	PAPER NUMBER
			3775	
			NOTIFICATION DATE	DELIVERY MODE
			05/21/2025	ELECTRONIC

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

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

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

IP@FREDLAW.COM



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

In re Application of :
Santrock et al. :
Application No. 18/587,921 :
Filed: 26 Feb 2024 : **DECISION ON PETITION**
For: BONE POSITIONING AND :
PREPARING GUIDE SYSTEMS AND :
METHODS :

This is a decision on the request for refund filed February 25, 2025. The request is being considered under the provisions of 37 CFR 1.28(a).

The request for refund is **GRANTED**.

Applicant requests a refund of \$816.00, for an RCE (Request for Continued Examination) fee erroneously paid at a large entity rate on November 25, 2024. On February 25, 2025, applicant filed an assertion under 37 CFR 1.27(c), claiming small entity status.

In view of the provisions of 37 CFR 1.28(a) and a review of the Office finance records for the above-identified application, the request for refund is granted. Therefore, a total of \$816.00 has been refunded to petitioner's credit card. Also, see MPEP §509.03(IV).

Telephone inquiries concerning this decision should be directed to Kimberly Inabinet at (571) 272-4618.

/KIMBERLY A INABINET/
Paralegal Specialist, OPET