UNITED STATES
PATENT AND TRADEMARK OFFICE

P.O. Box 1450
Alexandria, VA 22313 - 1450
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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
16/869,402	**07/02/2025 03:59:14 PM Z ET**	**5015.0390004**

Title of Invention

PERCUSSIVE THERAPY DEVICE

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	10857064
CONFIRMATION #	4812	FILED BY	Rolonda Lee
PATENT CENTER #	71185177	FILING DATE	05/07/2020
CUSTOMER #	186370	FIRST NAMED INVENTOR	Jason Wersland
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Joseph Venier

Documents

TOTAL DOCUMENTS: 2

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2025-07-02-Transmittal-Form-5015-0390004.pdf	1	Transmittal Letter	219 KB
2025-07-02-Assertion-Small-Entity-Status-5015-0390004.pdf	1	Assertion of entitlement to small entity status	76 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2025-07-02-Transmittal-Form-5015-0390004.pdf	435270F68BFED6CD4CD0A0FFC2DD0D1B735CD63E30884CAC0A7786626ED5E5C150F0B15F539330AA7672F3AB05F5FD256EED929C28F300AE068B2125D3468F82

2025-07-02-Assertion-Small-Entity-Status-5015-0390004.pdf

2840D1C4286FFB78B6280F8BEC3CAF39B4DC7501F8A368DE
83D9FBD9CFA807D668C30734F9793DDFD482A2A924AC841A
58AEF39E592037493D6FBD8F72D8E098

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.

Doc Code: TRAN.LET

Document Description: Transmittal Letter

PTO/SB/21 (07-09)
Approved for use through 11/30/2027. 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 displays a valid OMB control number.

TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	16/869,402
Filing Date	05/07/2020
First Named Inventor	Jason WERSLAND
Art Unit	3785
Examiner Name	STUART, Colin W.
Attorney Docket Number	5015.0390004

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation
- ☐ Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☑ Other Enclosure(s) (please identify below):
  Assertion of Small Entity Status under 37 C.F.R. § 1.27(c)

Remarks

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any over payment, to our Deposit Account No. 19-0036.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Sterne, Kessler, Goldstein & Fox P.L.L.C.		
Signature	/Joseph K. Venier/		
Printed name	Joseph K. Venier		
Date	June 27, 2025	Reg. No.	76,838

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name		Date	

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0031. Public burden for this form is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. If filing this completed form by mail, send to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

U.S. Patent No.: 10,857,064 | Confirmation No.: 4812

Date of Patent: December 8, 2020 | Art Unit: 3785

First Named Inventor: Jason WERSLAND | Atty. Docket: 5015.0390004

Patentee: Therabody, Inc.

Title: **PERCUSSIVE THERAPY DEVICE**

Assertion of Small Entity Status under 37 C.F.R. § 1.27(c)

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Commissioner:

This patent is entitled to small entity status and the same is respectfully asserted.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

/Joseph K. Venier/

Joseph K. Venier
Attorney for Patentee
Registration No. 76,838

Date: June 27, 2025

1101 K Street, NW
10th Floor
Washington, D.C. 20005
Main: 202-371-2600
Direct: 202-772-8785

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☑ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:21-cv-09079 MCS	11/18/2021	Central District of California

PLAINTIFF	DEFENDANT
THERABODY, INC., a Delaware corporation	LEGEND GROUP INC., a New York corporation; and DOES 1 through 10, inclusive,

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	10,702,448	7/7/2020	Therabody, Inc.
2	10,857,064	12/8/2020	Therabody, Inc.
3	11,160,722	11/2/2021	Therabody, Inc.
4	D880,714	4/7/2020	Therabody, Inc.
5	D880,715	4/7/2020	Therabody, Inc.

See Attached for Additional Patents and Trademarks

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1			
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
11/1/22 Minutes order of dismissal; 12/13/22 and 12/14/22 stipulation of dismissal of TJX Companites, Legend group Inc

CLERK	(BY) DEPUTY CLERK	DATE
Kiry Gray	L Chai	12/14/2022

X

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
6	D885,601	5/26/2020	Therabody, Inc.
7	D887,573	6/16/2020	Therabody, Inc.
8	D880,716	4/7/2020	Therabody, Inc.
9	D896,396	9/15/2020	Therabody, Inc.
10	D879,985	3/31/2020	Therabody, Inc.
11	D879,986	3/31/2020	Therabody, Inc.
12	D884,915	5/19/2020	Therabody, Inc.
13	6,043,891	4/28/2020	Therabody, Inc.
14	6,126,362	8/11/2020	Therabody, Inc.
15	6,126,363	8/11/2020	Therabody, Inc.

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

CIVIL MINUTES - GENERAL

Case No. 2:21-cv-09079-MCS-MAA Date November 1, 2022

Title THERABODY, INC. V. LEGEND GROUP INC.

Present: The Honorable Mark C. Scarsi, U. S. District Judge

Stephen Montes Kerr	Not Reported;
Deputy Clerk	Court Reporter/Recorder

Attorney(s) Present for Plaintiff(s):	Attorney(s) Present for Defendant(s):
None Present	None Present

Proceedings: (IN CHAMBERS) ORDER DISMISSING ACTION (JS-6)

The parties represent that they have settled or are in the process of settling the action. The Court **ORDERS** that the action be **DISMISSED WITHOUT PREJUDICE**. All hearings and deadlines are **VACATED**. The Court retains jurisdiction to vacate this Order and reopen the action within 45 days upon a request supported by a showing of good cause why the settlement cannot be completed within the 45-day period, explaining what further settlement processes are necessary and when the party or parties making the request reasonably expect the process to be concluded.

This Order does not preclude the filing of a stipulation of dismissal with prejudice, which does not require the approval of the Court. Fed. R. Civ. P. 41(a)(1)(A). Such a stipulation shall be filed within 45 days unless otherwise ordered by the Court pursuant to a stipulation of the parties supported by good cause.

IT IS SO ORDERED.

Initials of Clerk: smo

PARKER IBRAHIM & BERG LLP
BRYANT S. DELGADILLO (CA Bar No. 208361)
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Los Angeles, California 90067-4308
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Facsimile: 310-595.3300

Attorneys for Defendant The TJX Companies, Inc.

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

WESTERN DIVISION

THERABODY, INC., a Delaware corporation, Plaintiff, v. LEGEND GROUP INC., a New York corporation; TJX COMPANIES, INC., a Delaware corporation, and DOES 1 through 10, inclusive, Defendants.	Case No. 2:21-cv-09079-MCS-MAA **JOINT STIPULATION OF DISMISSAL AS TO DEFENDANT THE TJX COMPANIES, INC.**

TO THE HONORABLE COURT:

Pursuant to Federal Rule of Civil Procedure 41(a)(1)(A)(ii), Plaintiff Therabody, Inc. ("Therabody"), and Defendant The TJX Companies, Inc. ("TJX"),

by and through undersigned counsel in the above-captioned matter, hereby stipulate and agree that the claims brought by Therabody against TJX in this civil action shall be, and hereby are, dismissed *with prejudice*. Therabody and TJX shall each bear its own costs, expenses, and attorneys' fees.

Respectfully Submitted,

DATED: December 13, 2022 PARKER IBRAHIM & BERG LLP

By: */s/ Bryant S. Delgadillo*
BRYANT S. DELGADILLO
MATTHEW HENDERSON
Attorneys for Plaintiff Therabody, Inc.

DATED: December 13, 2022 DLA PIPER LLP (US)

By: */s/ Michael D. Jay*
MICHAEL D. JAY
Attorneys for Defendant
The TJX Companies, Inc.

CERTIFICATION

I, Michael D. Jay, hereby attest that all other signatories listed, and on whose behalf the filing is submitted, concur in the filing's content and have authorized the filing.

By: */s/ Michael D. Jay*
MICHAEL D. JAY

PARKER IBRAHIM & BERG LLP
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bryant.delgadillo@piblaw.com
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Tel: (619) 866-3444
Fax: (619) 330-2055

Attorneys for Defendant Legend Group Inc.

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

WESTERN DIVISION

THERABODY, INC., a Delaware corporation,

Plaintiff,

v.

LEGEND GROUP INC., a New York corporation; TJX COMPANIES, INC., a Delaware corporation, and DOES 1 through 10, inclusive,

Defendants.

Case No. 2:21-cv-09079-MCS-MAA

JOINT STIPULATION OF DISMISSAL AS TO DEFENDANT LEGEND GROUP INC.

TO THE HONORABLE COURT:

Pursuant to Federal Rule of Civil Procedure 41(a)(1)(A)(ii), Plaintiff Therabody, Inc. ("Therabody"), and Defendant Legend Group Inc. ("Legend"), by and through undersigned counsel in the above-captioned matter, hereby stipulate and

agree that the claims brought by Therabody against Legend in this civil action shall be, and hereby are, dismissed *with prejudice*. Therabody and Legend shall each bear its own costs, expenses, and attorneys' fees. The parties further agree that the Court shall retain jurisdiction to enforce the terms of the settlement agreement as between the parties.

Respectfully Submitted,

DATED: December 14, 2022 PARKER IBRAHIM & BERG LLP

By: */s/ Bryant S. Delgadillo*
BRYANT S. DELGADILLO
MATTHEW HENDERSON
Attorneys for Plaintiff Therabody, Inc.

DATED: December 14, 2022 GUPTA EVANS AND AYRES PC

By: */s/ Christopher S. Evans*
Attorneys for Defendant
Legend Group Inc.

CERTIFICATION

I, Bryant S. Delgadillo, hereby attest that all other signatories listed, and on whose behalf the filing is submitted, concur in the filing's content and have authorized the filing.

By: */s/ Bryant S. Delgadillo*
BRYANT S. DELGADILLO

PROOF OF SERVICE

STATE OF CALIFORNIA, COUNTY OF ORANGE

Therabody, Inc. v. Legend Group Inc., et al.
USDC, Central Case No.: 2:21-cv-09079-MCS-MAA

I am employed in the County of Orange, State of California. I am over the age of 18 years and not a party to the within action. My business address is **Parker Ibrahim & Berg LLP,** 695 Town Center Drive, 16th Floor, Costa Mesa, CA 92626.

On December 14, 2022, I served the foregoing document(s) described as **JOINT STIPULATION OF DISMISSAL AS TO DEFENDANT LEGEND GROUP INC.** on the interested parties in this action.

BY CM/ECF NOTICE OF ELECTRONIC FILING: I electronically filed the document(s) with the Clerk of the Court by using the CM/ECF system. Participants in the case who are registered CM/ECF users will be served by the CM/ECF system. Participants in the case who are not registered CM/ECF users will be served by mail or by other means permitted by the court rules.

☒ (Federal) I declare that I am employed in the office of a member of the Bar of this Court, at whose direction the service was made.

Executed on December 14, 2022, at Costa Mesa, California.

/s/ Rhonda K. Viers
Rhonda K. Viers

SERVICE LIST

Therabody, Inc. v. Legend Group Inc., et al.
USDC, Central Case No.: 2:21-cv-09079-MCS-MAA

Ajay Gupta, Esq. GUPTA EVANS AND AYRES, PC 1620 5th Avenue, Suite 650 San Diego, CA 92101	***Attorneys for Defendant Legend Group Inc.*** T: 619.866.3444 F: 619.330.2055 E: ag@socal.law
Christopher S. Evans, Esq. GUPTA EVANS AND AYRES, PC 555 West 5th Street, 35th Floor Los Angeles, CA 90013	***Attorneys for Defendant Legend Group Inc.*** T: 619.866.3444 F: 619.330.2055 E: ce@socal.law
Michael Gabriel, Esq. BOCHNER IP, PLLC 295 Madison Ave., 12th Floor New York, NY 10017	***Attorneys for Defendant Legend Group Inc.*** T: 646.971.0685 E: michael@bochnerip.com
Michael D. Jay, Esq. DLA PIPER LLP (US) 2000 Avenue of the Stars 4th Floor, North Tower Los Angeles, CA 90067	***Attorneys for Defendant TJX COMPANIES, INC.*** T: 310.595.3000 F: 310.595.3300 E: michael.jay@us.dlapiper.com
Grant P. Wu, Esq. DLA PIPER LLP (US) 33 Arch Street, 26th Floor Boston, MA 02110	***Attorneys for Defendant TJX COMPANIES, INC.*** T: 617.406.6000 F: 617.406.6100 E: perry.wu@us.dlapiper.com

Nicholas G. Papastavros, Esq.
DLA PIPER LLP (US)
33 Arch Street, 26th Floor
Boston, MA 02110

Attorneys for Defendant TJX COMPANIES, INC.

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E: nick.papastavros@dlapiper.com

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☑ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:21-cv-09327-GW	12/1/2021	Central District of California

PLAINTIFF	DEFENDANT
THERABODY, INC., a Delaware corporation	DJO, LLC, a Delaware LLC, dba COMPEX, and DOES 1 through 10, inclusive

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	10,918,565	2/16/2021	Therabody, Inc.
2	10,857,064	12/8/2020	Therabody, Inc.
3	D849,261	5/21/2019	Therabody, Inc.
4	D861,182	9/2/2019	Therabody, Inc.
5	D850,640	6/4/2019	Therabody, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

ORDER GRANTING JOINT STIPULATION DISMISSING CASE WITH PREJUDICE AND RETAINING JURISDICTION FOR ENFORCEMENT OF SETTLEMENT by Judge George H. Wu. It is hereby ORDERED that: 1. Pursuant to Fed. R. Civ. P. 41, all claims and counterclaims of the Parties asserted in this action are hereby dismissed with prejudice such that the entire action is dismissed with prejudice; 2. Each Party is responsible for its own attorney fees and costs with respect to this action; and, 3. This Court hereby retains jurisdiction for the limited purpose of enforcement of the settlement as between the Parties.

CLERK	(BY) DEPUTY CLERK	DATE
KIRY K. GRAY	A. BANDEK	12/15/2022

Copy 1—Upon initiation of action, mail this copy to Director **Copy 3—Upon termination of action, mail this copy to Director**
Copy 2—Upon filing document adding patent(s), mail this copy to Director **Copy 4—Case file copy**

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
6	D859,680	09/10/2019	Therabody, Inc.
7	D845,500	04/09/2019	Therabody, Inc.

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☑ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:21-cv-09079 MCS	DATE FILED 11/18/2021	U.S. DISTRICT COURT Central District of California
PLAINTIFF THERABODY, INC., a Delaware corporation		DEFENDANT LEGEND GROUP INC., a New York corporation; and DOES 1 through 10, inclusive,

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	10,702,448	7/7/2020	Therabody, Inc.
2	10,857,064	12/8/2020	Therabody, Inc.
3	11,160,722	11/2/2021	Therabody, Inc.
4	D880,714	4/7/2020	Therabody, Inc.
5	D880,715	4/7/2020	Therabody, Inc.

See Attached for Additional Patents and Trademarks

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1			
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
11/1/22 Minutes order of dismissal; 12/13/22 and 12/14/22 stipulation of dismissal of TJX Companites, Legend group Inc

CLERK	(BY) DEPUTY CLERK	DATE
Kiry Gray	L Chai	12/14/2022

X

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

Nicholas G. Papastavros, Esq.
DLA PIPER LLP (US)
33 Arch Street, 26th Floor
Boston, MA 02110

Attorneys for Defendant TJX COMPANIES, INC.

T: 617.406.6000
F: 617.406.6100
E: nick.papastavros@dlapiper.com

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
6 D885,601	5/26/2020	Therabody, Inc.
7 D887,573	6/16/2020	Therabody, Inc.
8 D880,716	4/7/2020	Therabody, Inc.
9 D896,396	9/15/2020	Therabody, Inc.
10 D879,985	3/31/2020	Therabody, Inc.
11 D879,986	3/31/2020	Therabody, Inc.
12 D884,915	5/19/2020	Therabody, Inc.
13 6,043,891	4/28/2020	Therabody, Inc.
14 6,126,362	8/11/2020	Therabody, Inc.
15 6,126,363	8/11/2020	Therabody, Inc.

UNITED STATES DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA

CIVIL MINUTES - GENERAL

Case No. 2:21-cv-09079-MCS-MAA Date November 1, 2022

Title THERABODY, INC. V. LEGEND GROUP INC.

Present: The Honorable Mark C. Scarsi, U. S. District Judge

Stephen Montes Kerr	Not Reported;
Deputy Clerk	Court Reporter/Recorder

Attorney(s) Present for Plaintiff(s):	Attorney(s) Present for Defendant(s):
None Present	None Present

Proceedings: (IN CHAMBERS) ORDER DISMISSING ACTION (JS-6)

The parties represent that they have settled or are in the process of settling the action. The Court **ORDERS** that the action be **DISMISSED WITHOUT PREJUDICE**. All hearings and deadlines are **VACATED**. The Court retains jurisdiction to vacate this Order and reopen the action within 45 days upon a request supported by a showing of good cause why the settlement cannot be completed within the 45-day period, explaining what further settlement processes are necessary and when the party or parties making the request reasonably expect the process to be concluded.

This Order does not preclude the filing of a stipulation of dismissal with prejudice, which does not require the approval of the Court. Fed. R. Civ. P. 41(a)(1)(A). Such a stipulation shall be filed within 45 days unless otherwise ordered by the Court pursuant to a stipulation of the parties supported by good cause.

IT IS SO ORDERED.

Initials of Clerk: smo

PARKER IBRAHIM & BERG LLP
BRYANT S. DELGADILLO (CA Bar No. 208361)
bryant.delgadillo@piblaw.com
MATTHEW S. HENDERSON (CA Bar No. 274252)
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Attorneys for Plaintiff Therabody, Inc.

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Attorneys for Defendant The TJX Companies, Inc.

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

WESTERN DIVISION

THERABODY, INC., a Delaware corporation, Plaintiff, v. LEGEND GROUP INC., a New York corporation; TJX COMPANIES, INC., a Delaware corporation, and DOES 1 through 10, inclusive, Defendants.	Case No. 2:21-cv-09079-MCS-MAA **JOINT STIPULATION OF DISMISSAL AS TO DEFENDANT THE TJX COMPANIES, INC.**

TO THE HONORABLE COURT:

Pursuant to Federal Rule of Civil Procedure 41(a)(1)(A)(ii), Plaintiff Therabody, Inc. ("Therabody"), and Defendant The TJX Companies, Inc. ("TJX"),

by and through undersigned counsel in the above-captioned matter, hereby stipulate and agree that the claims brought by Therabody against TJX in this civil action shall be, and hereby are, dismissed *with prejudice*. Therabody and TJX shall each bear its own costs, expenses, and attorneys' fees.

Respectfully Submitted,

DATED: December 13, 2022 PARKER IBRAHIM & BERG LLP

By: */s/ Bryant S. Delgadillo*
BRYANT S. DELGADILLO
MATTHEW HENDERSON
Attorneys for Plaintiff Therabody, Inc.

DATED: December 13, 2022 DLA PIPER LLP (US)

By: */s/ Michael D. Jay*
MICHAEL D. JAY
Attorneys for Defendant
The TJX Companies, Inc.

CERTIFICATION

I, Michael D. Jay, hereby attest that all other signatories listed, and on whose behalf the filing is submitted, concur in the filing's content and have authorized the filing.

By: */s/ Michael D. Jay*
MICHAEL D. JAY

PARKER IBRAHIM & BERG LLP
BRYANT S. DELGADILLO (CA Bar No. 208361)
bryant.delgadillo@piblaw.com
MATTHEW S. HENDERSON (CA Bar No. 274252)
matthew.henderson@piblaw.com
695 Town Center Drive, 16th Floor
Costa Mesa, California 92626
Tel: (714) 361-9550
Fax: (714) 784-4190

Attorneys for Plaintiff Therabody, Inc.

AJAY GUPTA (CA Bar No. 242132)
ag@socal.law
GUPTA EVANS AND AYRES, PC
1620 – 5th Avenue, Suite 650
San Diego, California 92121
Tel: (619) 866-3444
Fax: (619) 330-2055

Attorneys for Defendant Legend Group Inc.

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

WESTERN DIVISION

THERABODY, INC., a Delaware corporation,

Plaintiff,

v.

LEGEND GROUP INC., a New York corporation; TJX COMPANIES, INC., a Delaware corporation, and DOES 1 through 10, inclusive,

Defendants.

Case No. 2:21-cv-09079-MCS-MAA

JOINT STIPULATION OF DISMISSAL AS TO DEFENDANT LEGEND GROUP INC.

TO THE HONORABLE COURT:

Pursuant to Federal Rule of Civil Procedure 41(a)(1)(A)(ii), Plaintiff Therabody, Inc. ("Therabody"), and Defendant Legend Group Inc. ("Legend"), by and through undersigned counsel in the above-captioned matter, hereby stipulate and

agree that the claims brought by Therabody against Legend in this civil action shall be, and hereby are, dismissed *with prejudice*. Therabody and Legend shall each bear its own costs, expenses, and attorneys' fees. The parties further agree that the Court shall retain jurisdiction to enforce the terms of the settlement agreement as between the parties.

Respectfully Submitted,

DATED: December 14, 2022 PARKER IBRAHIM & BERG LLP

By: */s/ Bryant S. Delgadillo*
BRYANT S. DELGADILLO
MATTHEW HENDERSON
Attorneys for Plaintiff Therabody, Inc.

DATED: December 14, 2022 GUPTA EVANS AND AYRES PC

By: */s/ Christopher S. Evans*
Attorneys for Defendant
Legend Group Inc.

CERTIFICATION

I, Bryant S. Delgadillo, hereby attest that all other signatories listed, and on whose behalf the filing is submitted, concur in the filing's content and have authorized the filing.

By: */s/ Bryant S. Delgadillo*
BRYANT S. DELGADILLO

PROOF OF SERVICE

STATE OF CALIFORNIA, COUNTY OF ORANGE

Therabody, Inc. v. Legend Group Inc., et al.
USDC, Central Case No.: 2:21-cv-09079-MCS-MAA

I am employed in the County of Orange, State of California. I am over the age of 18 years and not a party to the within action. My business address is **Parker Ibrahim & Berg LLP,** 695 Town Center Drive, 16th Floor, Costa Mesa, CA 92626.

On December 14, 2022, I served the foregoing document(s) described as **JOINT STIPULATION OF DISMISSAL AS TO DEFENDANT LEGEND GROUP INC.** on the interested parties in this action.

BY CM/ECF NOTICE OF ELECTRONIC FILING: I electronically filed the document(s) with the Clerk of the Court by using the CM/ECF system. Participants in the case who are registered CM/ECF users will be served by the CM/ECF system. Participants in the case who are not registered CM/ECF users will be served by mail or by other means permitted by the court rules.

☒ (Federal) I declare that I am employed in the office of a member of the Bar of this Court, at whose direction the service was made.

Executed on December 14, 2022, at Costa Mesa, California.

/s/ Rhonda K. Viers
Rhonda K. Viers

SERVICE LIST

Therabody, Inc. v. Legend Group Inc., et al.
USDC, Central Case No.: 2:21-cv-09079-MCS-MAA

Ajay Gupta, Esq. GUPTA EVANS AND AYRES, PC 1620 5th Avenue, Suite 650 San Diego, CA 92101	***Attorneys for Defendant Legend Group Inc.*** T: 619.866.3444 F: 619.330.2055 E: ag@socal.law
Christopher S. Evans, Esq. GUPTA EVANS AND AYRES, PC 555 West 5th Street, 35th Floor Los Angeles, CA 90013	***Attorneys for Defendant Legend Group Inc.*** T: 619.866.3444 F: 619.330.2055 E: ce@socal.law
Michael Gabriel, Esq. BOCHNER IP, PLLC 295 Madison Ave., 12th Floor New York, NY 10017	***Attorneys for Defendant Legend Group Inc.*** T: 646.971.0685 E: michael@bochnerip.com
Michael D. Jay, Esq. DLA PIPER LLP (US) 2000 Avenue of the Stars 4th Floor, North Tower Los Angeles, CA 90067	***Attorneys for Defendant TJX COMPANIES, INC.*** T: 310.595.3000 F: 310.595.3300 E: michael.jay@us.dlapiper.com
Grant P. Wu, Esq. DLA PIPER LLP (US) 33 Arch Street, 26th Floor Boston, MA 02110	***Attorneys for Defendant TJX COMPANIES, INC.*** T: 617.406.6000 F: 617.406.6100 E: perry.wu@us.dlapiper.com

To: e-office@sternekessler.com,,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 186370

Aug 01, 2022 04:52:52 AM

Dear PAIR Customer:

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
(Therabody)
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005
UNITED STATES

The following USPTO patent application(s) associated with your Customer Number, 186370 , have new outgoing correspondence. This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

Disclaimer:
The list of documents shown below is provided as a courtesy and is not part of the official file wrapper. The content of the images shown in PAIR is the official record.

Application	Document	Mailroom Date	Attorney Docket No.
16869402	N570	08/01/2022	5015.039004
	N570	08/01/2022	5015.039004

To view your correspondence online or update your email addresses, please visit us anytime at https://sportal.uspto.gov/secure/myportal/privatepair.

If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov with 'e-Office Action' on the subject line or call 1-866-217-9197 during the following hours:

Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

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
16/869,402	05/07/2020	Jason Wersland	76840-5077

CONFIRMATION NO. 4812

24574
JEFFER, MANGELS, BUTLER & MITCHELL, LLP
1900 AVENUE OF THE STARS, 7TH FLOOR
LOS ANGELES, CA 90067

POWER OF ATTORNEY NOTICE

OC000000135523421

Date Mailed: 08/01/2022

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/27/2022.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

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**.

/tmwilliams/

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
16/869,402	05/07/2020	Jason Wersland	5015.039004

CONFIRMATION NO. 4812

186370
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.
(Therabody)
1100 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

POA ACCEPTANCE LETTER



Date Mailed: 08/01/2022

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/27/2022.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

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**.

/tmwilliams/

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82A (07-13)
Approved for use through 03/31/2021. OMB 0651-0035
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 displays a valid OMB control number.

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/AIA82B identifies the application to which the Power of Attorney is directed, the Power of Attorney will not be recognized in the application.

Application Number	16/869,402
Filing Date	05/07/2020
First Named Inventor	Jason WERSLAND
Title	PERCUSSIVE MASSAGE DEVICE
Art Unit	3785
Examiner Name	STUART, COLIN W.
Attorney Docket Number	5015.0390004

SIGNATURE of Applicant or Patent Practitioner

Signature	/Richard D. Coller III/	Date (Optional)	July 27, 2022
Name	Richard D. Coller III	Registration Number	60,390
Title (if Applicant is a juristic entity)	Attorney for Applicant		
Applicant Name (if Applicant is a juristic entity)	Therabody, 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.**

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

Doc Code: PA..
Document Description: Power of Attorney

PTO/AIA/82B (07-13)
Approved for use through 03/31/2021. OMB 0651-0035
U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE
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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: 186370

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):

Therabody, 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	/[signature]/	Date (Optional)	
Name	Jonathan Feldman		
Title	General Counsel & Secretary		

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 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.

PTO/AIA/96 (08-12)
Approved for use through 01/31/2013. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Theragun, Inc.

Application No./Patent No.: 16/869,402 Filed/Issue Date: 05/07/2020

Titled: PERCUSSIVE MASSAGE DEVICE

Therabody, Inc., a corporation

(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☑ The assignee of the entire right, title, and interest.

2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):

☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.

☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (*e.g.*, bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

B. ☑ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Inventors WERSLAND et al. To: THERAGUN, INC.

The document was recorded in the United States Patent and Trademark Office at Reel 052736, Frame 0939, or for which a copy thereof is attached.

2. From: THERAGUN, INC. To: THERABODY, INC.

The document was recorded in the United States Patent and Trademark Office at Reel 059526, Frame 0180, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(b). 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. 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.

PTO/AIA/96 (08-12)
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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☑ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Richard D. Coller III/	July 27, 2022
Signature	Date
Richard D. Coller III	60,390
Printed or Typed Name	Title or Registration Number

[Page 2 of 2]

Electronic Acknowledgement Receipt	
EFS ID:	46280009
Application Number:	16869402
International Application Number:	
Confirmation Number:	4812
Title of Invention:	PERCUSSIVE THERAPY DEVICE
First Named Inventor/Applicant Name:	Jason Wersland
Customer Number:	24574
Filer:	Richard Daniel Coller III/Grace Perkins
Filer Authorized By:	Richard Daniel Coller III
Attorney Docket Number:	76840-5077
Receipt Date:	27-JUL-2022
Filing Date:	07-MAY-2020
Time Stamp:	11:40:44
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Transmittal Letter	Transmittal-5015-0390004.PDF	290451 b9ce251980a52d08d71e38bcef949b4e8264763a	no	1

Warnings:

Information:					
2	Power of Attorney	POA-5015-0390004.PDF	1679995 de05cf78c6fb2956fc3ee99d37795ba704e6ef6b	no	2
Warnings:					
Information:					
3	Assignee showing of ownership per 37 CFR 3.73	Statement-373c-5015-0390004.PDF	144121 815993433bb2e91a1d655c55cf0cfc801e9fef43	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	2114567		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

Doc Code: TRAN.LET

Document Description: Transmittal Letter

PTO/SB/21 (07-09)
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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number	16/869,402
Filing Date	05/07/2020
First Named Inventor	Jason WERSLAND
Art Unit	3785
Examiner Name	STUART, COLIN W.
Attorney Docket Number	5015.0390004

ENCLOSURES *(Check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment/Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☐ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Reply to Missing Parts/ Incomplete Application
  - ☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☑ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
  - ☐ Landscape Table on CD
- ☐ After Allowance Communication to TC
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to TC **(Appeal Notice, Brief, Reply Brief)**
- ☐ Proprietary Information
- ☐ Status Letter
- ☑ Other Enclosure(s) (please Identify below):
  Statement Under 37 CFR 3.73(c)

Remarks

The Office may charge any fee deficiency for any submission made with this transmittal to Deposit Account 19-0036.

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Sterne, Kessler, Goldstein & Fox P.L.L.C.		
Signature	/Richard D. Coller III/		
Printed name	Richard D. Coller III		
Date	July 27, 2022	Reg. No.	60,390

CERTIFICATE OF TRANSMISSION/MAILING

I hereby certify that this correspondence is being facsimile transmitted to the USPTO or deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below:

Signature			
Typed or printed name		Date	

This collection of information is required by 37 CFR 1.5. 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 and1.14. This collection is estimated to 2 hours 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.

AO 120 (Rev. 08/10)

TO:	Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☑ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 2:21-cv-09726	DATE FILED 12/16/2021	U.S. DISTRICT COURT Central District of California
PLAINTIFF Therabody, Inc., a Delaware corporation		DEFENDANT NJOIE, a California company of unknown type, BOSS AUDIO SYSTEMS, a California company of unknown type; AVA ENTERPRISES, INC., a California corporation; and DOES 1 through 10, inclusive

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	10,918,565	2/16/2021	Therabody, Inc.
2	10,857,064	12/8/2020	Therabody, Inc.
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
Joint Stipulation of Dismissal with Prejudice filed 7/12/2022.

CLERK	(BY) DEPUTY CLERK	DATE
KIRY K. GRAY	G. Kami	7/13/2022

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the District of Delaware on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO. 21-247-CFC	DATE FILED 2/22/2021	U.S. DISTRICT COURT for the District of Delaware
PLAINTIFF THERAGUN, INC.		DEFENDANT ECHELON FITNESS MULTIMEDIA, LLC and DOES 1 through 10

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	D869,387 S	12/10/2019	Theragun, Inc.
2	D879,985 S	3/31/2020	Theragun, Inc.
3	D880,714 S	4/7/2020	Theragun, Inc.
4	D880,715 S	4/7/2020	Theragun, Inc.
5	10,702,448 B2	7/7/2020	Theragun, Inc.
6	10,857,064 B2	12/8/2020	Theragun, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading

	PATENT OR ~~TRADEMARK NO.~~	DATE OF PATENT ~~OR TRADEMARK~~	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
Stipulation of Dismissal "So ordered" by Chief Judge Connolly 6/22/2022.

CLERK	(BY) DEPUTY CLERK	DATE
John A. Cerino	/s/N. Fasano	6/22/2022

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the District of Delaware on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
22-310-RGA	3/9/2022	for the District of Delaware

PLAINTIFF	DEFENDANT
THERABODY, INC.	THE TJX COMPANIES, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US D837,636 S	1/8/2019	Theragun, LLC
2	US D918,404 S	5/4/2021	Theragun, Inc.
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY
5/13/2022	☑ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 10,857,064 B2	12/8/2020	THERAGUN, INC.
2	US 11,160,722 B2	11/2/2021	THERAGUN, INC.
3			
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the District of Delaware on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
22-310-RGA	3/9/2022	for the District of Delaware

PLAINTIFF	DEFENDANT
THERABODY, INC.	THE TJX COMPANIES, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 10,945,915 B2	3/16/2021	Theragun, Inc.
2	US 10,702,448 B2	7/7/2020	Theragun, Inc.
3	US 10,918,565 B2	2/16/2021	Theragun, Inc.
4	US D849,261 S	5/21/2019	Theragun, LLC
5	US D861,182 S	9/24/2019	Theragun, LLC

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☑ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
5/13/2022			
	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 10,857,064 B2	12/8/2020	THERAGUN, INC.
2	US 11,160,722 B2	11/2/2021	THERAGUN, INC.
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

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☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
22-310-RGA	3/9/2022	for the District of Delaware

PLAINTIFF	DEFENDANT
THERABODY, INC.	THE TJX COMPANIES, INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US D890,943 S	7/21/2020	Theragun, Inc.
2	US D896,393 S	9/15/2020	Theragun, Inc.
3	US D845,500 S	4/9/2019	Theragun, LLC
4	US 10,557,490 B2	2/11/2020	Theragun, Inc.
5	US 11,160,723 B2	11/2/2021	Theragun, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☑ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading		
5/13/2022			
	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	US 10,857,064 B2	12/8/2020	THERAGUN, INC.
2	US 11,160,722 B2	11/2/2021	THERAGUN, INC.
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

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☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
22-310-RGA	3/9/2022	for the District of Delaware

PLAINTIFF	DEFENDANT
THERABODY, INC.	THE TJX COMPANIES, INC.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☑ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
5/13/2022		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 US 10,857,064 B2	12/8/2020	THERAGUN, INC.
2 US 11,160,722 B2	11/2/2021	THERAGUN, INC.
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

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Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

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	REQUEST ID
16/869,402	05/07/2020	Jason Wersland	76840-5077	161531

Acknowledgement of Loss of Entitlement to Entity Status Discount

The entity status change request below filed through Private PAIR on 03/18/2022 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

X Applicant changing to regular undiscounted fee status.

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

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Brennan C.Swain/
Name:	Brennan C. Swain
Registration Number:	43175

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
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☑ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:21-CV-09882	12/22/2021	Central District of California

PLAINTIFF	DEFENDANT
THERABODY, INC., a Delaware corporation	HOMEDICS USA, LLC; FKA DISTRIBUTING CO., LLC dba HOMEDICS LLC; and DOES 1 through 10, inclusive

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	10,702,448	7/7/2020	Therabody, Inc.
2	10,857,064	12/8/2020	Therabody, Inc.
3	10,918,565	2/16/2021	Therabody, Inc.
4	11,160,722	11/2/2021	Therabody, Inc.
5	D921,914	6/8/2021	Therabody, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK NAME
6 D880,714	04/07/2020	Therabody, Inc.
7 D880,715	04/07/2020	Therabody, Inc.
8 D885,601	05/26/2020	Therabody, Inc.
9 D887,573	06/16/2020	Therabody, Inc.
10 D880,716	04/07/2020	Therabody, Inc.
11 D896,396	09/15/2020	Therabody, Inc.
12 D879,985	03/31/2020	Therabody, Inc.
13 D879,986	03/31/2020	Therabody, Inc.
14 D884,915	05/19/2020	Therabody, Inc.
15 D849,260	05/21/2019	Therabody, Inc.

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☑ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:21-cv-09327	12/1/2021	Central District of California

PLAINTIFF	DEFENDANT
THERABODY, INC., a Delaware corporation	DJO, LLC, a Delaware LLC, dba COMPEX, and DOES 1 through 10, inclusive

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	10,918,565	2/16/2021	Therabody, Inc.
2	10,857.064	12/8/2020	Therabody, Inc.
3	D849,261	5/21/2019	Therabody, Inc.
4	D861,182	9/2/2019	Therabody, Inc.
5	D850,640	6/4/2019	Therabody, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
6 D859,680	09/10/2019	Therabody, Inc.
7 D845,500	04/09/2019	Therabody, Inc.

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☑ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:21-cv-09726	12/16/2021	Central District of California

PLAINTIFF	DEFENDANT
Therabody, Inc., a Delaware corporation	NJOIE, a California company of unknown type, BOSS AUDIO SYSTEMS, a California company of unknown type; AVA ENTERPRISES, INC., a California corporation; and DOES 1 through 10, inclusive

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	10,918,565	2/16/2021	Therabody, Inc.
2	10,857,064	12/8/2020	Therabody, Inc.
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In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
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AO 120 (Rev. 08/10)

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Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Central District of California on the following

☑ Trademarks or ☐ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
2:21-cv-09079	11/18/2021	Central District of California

PLAINTIFF	DEFENDANT
THERABODY, INC., a Delaware corporation	LEGEND GROUP INC., a New York corporation; and DOES 1 through 10, inclusive,

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 10,702.448	7/7/2020	Therabody, Inc.
2 10,857,064	12/8/2020	Therabody, Inc.
3 11,160,722	11/2/2021	Therabody, Inc.
4 D880,714	4/7/2020	Therabody, Inc.
5 D880,715	4/7/2020	Therabody, Inc.

See Attached for Additional Patents and Trademarks

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
6 D885,601	5/26/2020	Therabody, Inc.
7 D887,573	6/16/2020	Therabody, Inc.
8 D880,716	4/7/2020	Therabody, Inc.
9 D896,396	9/15/2020	Therabody, Inc.
10 D879,985	3/31/2020	Therabody, Inc.
11 D879,986	3/31/2020	Therabody, Inc.
12 D884,915	5/19/2020	Therabody, Inc.
13 6,043,891	4/28/2020	Therabody, Inc.
14 6,126,362	8/11/2020	Therabody, Inc.
15 6,126,363	8/11/2020	Therabody, Inc.

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6634052

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	RELEASE OF SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT	03/31/2021

RECEIVING PARTY DATA

Name:	THERAGUN, INC.
Street Address:	9420 WILSHIRE BLVD., FOURTH FLOOR
City:	BEVERLY HILLS
State/Country:	CALIFORNIA
Postal Code:	90212
Name:	THERABODY RESET, LLC
Street Address:	9420 WILSHIRE BLVD., FOURTH FLOOR
City:	BEVERLY HILLS
State/Country:	CALIFORNIA
Postal Code:	90212
Name:	FLEXIR RECOVERY, LLC
Street Address:	251 LITTLE FALLS DRIVE
City:	WILMINGTON
State/Country:	DELAWARE
Postal Code:	19890

PROPERTY NUMBERS Total: 90

Property Type	Number
PCT Number:	US1967624
PCT Number:	US2017645
PCT Number:	US2031339
PCT Number:	US2031347
PCT Number:	US2031936
Application Number:	16357984
Application Number:	16796143
Application Number:	16824328
Application Number:	16837230
Application Number:	16869389

Property Type	Number
Application Number:	16869402
Application Number:	16890544
Application Number:	16919588
Application Number:	16925597
Application Number:	17008175
Application Number:	29708815
Application Number:	29714241
Application Number:	29714244
Application Number:	29714246
Application Number:	29715953
Application Number:	29719057
Application Number:	29719062
Application Number:	29719066
Application Number:	29726240
Application Number:	29726245
Application Number:	29726305
Application Number:	29726330
Application Number:	29728608
Application Number:	29728609
Application Number:	29728611
Application Number:	29733496
Application Number:	29735185
Application Number:	29735691
Application Number:	29739186
Application Number:	29739906
Application Number:	29740763
Application Number:	29740766
Application Number:	29745555
Application Number:	62899098
Application Number:	62912392
Application Number:	62930415
Application Number:	62943639
Application Number:	62983959
Application Number:	62983964
Application Number:	63017472
Application Number:	63042740
Application Number:	63044860
Application Number:	63045365

Property Type	Number
Application Number:	63065114
Application Number:	63065326
Application Number:	63065348
Application Number:	63068123
Patent Number:	10357425
Patent Number:	10428850
Patent Number:	10470970
Patent Number:	10557490
Patent Number:	10617588
Patent Number:	10702448
Patent Number:	10714953
Patent Number:	10758452
Patent Number:	10774860
Patent Number:	D837636
Patent Number:	D845499
Patent Number:	D845500
Patent Number:	D849260
Patent Number:	D849261
Patent Number:	D850639
Patent Number:	D850640
Patent Number:	D859680
Patent Number:	D861182
Patent Number:	D865192
Patent Number:	D867860
Patent Number:	D869387
Patent Number:	D877351
Patent Number:	D879985
Patent Number:	D879986
Patent Number:	D880419
Patent Number:	D880714
Patent Number:	D880715
Patent Number:	D880716
Patent Number:	D884915
Patent Number:	D885601
Patent Number:	D887573
Patent Number:	D890090
Patent Number:	D890353
Patent Number:	D890942

Property Type	Number
Patent Number:	D890943
Patent Number:	D892042
Patent Number:	D896393
Patent Number:	D896396

CORRESPONDENCE DATA

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 3127018637
Email: IPDocket@mayerbrown.com
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ATTORNEY DOCKET NUMBER:	21672715
NAME OF SUBMITTER:	WILLIAM R. SIEGEL
SIGNATURE:	/william r siegel/
DATE SIGNED:	03/31/2021
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 16
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RELEASE OF SECURITY INTERESTS IN PATENTS

THIS RELEASE OF SECURITY INTERESTS IN PATENTS (this "Release"), dated as of March 31, 2021, is executed by JPMORGAN CHASE BANK, N.A., in its capacity as administrative agent (the "Administrative Agent"), in favor of THERAGUN, INC., a Delaware corporation (the "Company"), THERABODY RESET, LLC, a Delaware limited liability company ("Reset"), and FLEXIR RECOVERY, LLC, a Delaware limited liability company ("Flexir", and together with the Company and Reset, each a "Grantor", and collectively, the "Grantors"). All capitalized terms used in this Release and not otherwise defined herein, shall have the respective meanings given to such terms in the Patent Security Agreement (as defined below).

RECITALS

A. WHEREAS, the Grantors have, pursuant to that certain Confirmatory Grant of Security Interest in Patents dated as of October 30, 2020, recorded in the United States Patent and Trademark Office (the "USPTO") on November 2, 2020 at Reel 054280, Frame 0518 (as the same may be amended, amended and restated, restated, supplemented, modified or otherwise in effect prior to the date hereof, the "Patent Security Agreement"), granted to the Administrative Agent, on behalf of the Secured Parties, a Security Interest in and to all of the Grantors' right, title and interest, including goodwill, in and to the Patent Collateral, including without limitation those patents listed on Exhibit A attached hereto (collectively, the "Released Collateral"); and

B. WHEREAS, the Administrative Agent wishes to terminate and release, without representation or warranty, its Security Interest in and to the Released Collateral as provided in this Release.

C. NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Administrative Agent hereby (i) terminates, releases, discharges and cancels without recourse, representation or warranty, any and all Security Interest in and to the Released Collateral, (ii) reassigns, grants and conveys to the Grantors any and all right, title and interest that it may have in and to the Released Collateral and (iii) terminates the Patent Security Agreement. The Administrative Agent acknowledges that this Release may be filed along with any other necessary documentation with the USPTO or any other governmental office to evidence the release granted herein at the sole expense of the Grantors. The Administrative Agent authorizes the Grantors to record this Release with the USPTO and other applicable registry at the sole expense of the Grantors and agrees to provide the Grantors with any information and additional authorization necessary to effect the release of the Security Interest in the Released Collateral.

D. THIS RELEASE SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE INTERNAL LAWS (AND NOT THE LAW OF CONFLICTS) OF THE STATE OF CALIFORNIA, BUT GIVING EFFECT TO FEDERAL LAWS APPLICABLE TO NATIONAL BANKS.

[Signature page follows.]

IN WITNESS WHEREOF, the Administrative Agent has executed this Release of Security Interests in Patents as of the date first set forth above.

JPMORGAN CHASE BANK, N.A.

By: _____

Name: Terry Luh

Title: Authorized Officer

Exhibit A

Patents

[See attached]

Patents

Type of Intellectual Property	Registration Number and Date of Registration	Owned or Licensed	Name and Address of Licensor
Patent	Australia Appl. No. 2018301278, filed 07-Jan-2020 (reg. not yet issued)	Owned	N/A
Patent	Australia Appl. No. 2018301641, filed 07-Jan-2020 (reg. not yet issued)	Owned	N/A
Patent	Australia Appl. No. 202013483, filed 25-Jun-2020 (reg. not yet issued)	Owned	N/A
Patent	Australia Appl. No. tbd, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A
Patent	Australia Appl. No. tbd, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A
Patent	Australia Appl. No. tbd, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A
Patent	Australia Reg. No. 201814774, Issued 13-Nov-2018	Owned	N/A
Patent	Australia Reg. No. 201814778, Issued 13-Nov-2018	Owned	N/A
Patent	Australia Reg. No. 201814780, Issued 14-Nov-2018	Owned	N/A
Patent	Australia Reg. No. 201814786, Issued 14-Nov-2018	Owned	N/A
Patent	Australia Reg. No. 201913423, Issued 24-Sep-2019	Owned	N/A
Patent	Australia Reg. No. 201913427, Issued 04-Sep-2019	Owned	N/A
Patent	Australia Reg. No. 201913428, Issued 02-Sep-2019	Owned	N/A
Patent	Australia Reg. No. 201913594, Issued 29-Aug-2019	Owned	N/A
Patent	Australia Reg. No. 201913595, Issued 28-Aug-2019	Owned	N/A
Patent	Australia Reg. No. 201913596, Issued 29-Aug-2019	Owned	N/A
Patent	Australia Reg. No. 20201048, Issued 13-Mar-2020	Owned	N/A

Type of Intellectual Property	Registration Number and Date of Registration	Owned or Licensed	Name and Address of Licensor
Patent	Australia Reg. No. 202012039, Issued 02-Jun-2020	Owned	N/A
Patent	Australia Reg. No. 202012040, Issued 02-Jun-2020	Owned	N/A
Patent	Australia Reg. No. 202012042, Issued 02-Jun-2020	Owned	N/A
Patent	Australia Reg. No. 202013484, Issued 01-Sep-2020	Owned	N/A
Patent	Australia Reg. No. 202013485, Issued 01-Sep-2020	Owned	N/A
Patent	Brazil Appl. No. 3020180013204, filed 02-Apr-2018 (reg. not yet issued)	Owned	N/A
Patent	Brazil Reg. No. 3020190027550, Issued 22-Oct-2019	Owned	N/A
Patent	Brazil Reg. No. 3020190027569, Issued 22-Oct-2019	Owned	N/A
Patent	Brazil Reg. No. 3020190027577, Issued 22-Oct-2019	Owned	N/A
Patent	Canada Appl. No. 188392, filed 24-Jun-2019 (reg. not yet issued)	Owned	N/A
Patent	Canada Appl. No. 188394, filed 24-Jun-2019 (reg. not yet issued)	Owned	N/A
Patent	Canada Appl. No. 188544, filed 03-Jul-2019 (reg. not yet issued)	Owned	N/A
Patent	Canada Appl. No. 188545, filed 03-Jul-2019 (reg. not yet issued)	Owned	N/A
Patent	Canada Appl. No. 188553, filed 03-Jul-2019 (reg. not yet issued)	Owned	N/A
Patent	Canada Appl. No. 188935, filed 24-Jun-2019 (reg. not yet issued)	Owned	N/A
Patent	Canada Appl. No. 19700, filed 31-Aug-2020 (reg. not yet issued)	Owned	N/A
Patent	Canada Appl. No. 197898, filed 31-Aug-2020 (reg. not yet issued)	Owned	N/A
Patent	Canada Appl. No. 197899, filed 31-Aug-2020 (reg. not yet issued)	Owned	N/A
Patent	Canada Reg. No. 180651, Issued 13-Feb-2019	Owned	N/A
Patent	Canada Reg. No. 182942, Issued 02-Aug-2019	Owned	N/A
Patent	Canada Reg. No. 182943, Issued 02-Aug-2019	Owned	N/A

Type of Intellectual Property	Registration Number and Date of Registration	Owned or Licensed	Name and Address of Licensor
Patent	Canada Reg. No. 182944, Issued 02-Aug-2019	Owned	N/A
Patent	Canada Reg. No. 183019, Issued 02-Aug-2019	Owned	N/A
Patent	China (People's Republic) Appl. No. 201880045650.4, filed 08-Jan-2020 (reg. not yet issued)	Owned	N/A
Patent	China (People's Republic) Appl. No. 201880045653.8, filed 08-Jan-2020 (reg. not yet issued)	Owned	N/A
Patent	China (People's Republic) Appl. No. 202030237728.2, filed 21-May-2020 (reg. not yet issued)	Owned	N/A
Patent	China (People's Republic) Appl. No. 202030237734.8, filed 21-May-2020 (reg. not yet issued)	Owned	N/A
Patent	China (People's Republic) Appl. No. 202030343660.6, filed 30-Jun-2020 (reg. not yet issued)	Owned	N/A
Patent	China (People's Republic) Appl. No. 202030350124.9, filed 02-Jul-2020 (reg. not yet issued)	Owned	N/A
Patent	China (People's Republic) Appl. No. 202030513430.X, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A
Patent	China (People's Republic) Appl. No. 202030513431.4, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A
Patent	China (People's Republic) Appl. No. tbd, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A
Patent	China (People's Republic) Reg. No. 201830444539.5, Issued 07-Jun-2019	Owned	N/A
Patent	China (People's Republic) Reg. No. CN 305423265 S, Issued 11-May-2019	Owned	N/A
Patent	China (People's Republic) Reg. No. CN 305423266 S, Issued 05-Nov-2019	Owned	N/A
Patent	China (People's Republic) Reg. No. CN 305673900 S, Issued 31-Mar-2020	Owned	N/A
Patent	China (People's Republic) Reg. No. CN305423265 S, Issued 05-	Owned	N/A

Type of Intellectual Property	Registration Number and Date of Registration	Owned or Licensed	Name and Address of Licensor
	Nov-2019		
Patent	China (People's Republic) Reg. No. ZL201830127014.9, Issued 08-Sep-2018	Owned	N/A
Patent	China (People's Republic) Reg. No. ZL201830445201.1, Issued 30-Apr-2019	Owned	N/A
Patent	China (People's Republic) Reg. No. ZL201830445204.5, Issued 12-Apr-2019	Owned	N/A
Patent	China (People's Republic) Reg. No. ZL201830445206.4, Issued 12-Apr-2019	Owned	N/A
Patent	European Community Appl. No. 007957147-0001-0003, filed 20-May-2020 (reg. not yet issued)	Owned	N/A
Patent	European Community Appl. No. 008158430-0001-0002, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A
Patent	European Community Appl. No. 8156772-0001-0008, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A
Patent	European Community Reg. No. 005176500-0001-0002, Issued 03-Apr-2018	Owned	N/A
Patent	European Community Reg. No. 005602265-0001-0007, Issued 10-Aug-2018	Owned	N/A
Patent	European Community Reg. No. 006593059-001 to 006, Issued 06-Sep-2019	Owned	N/A
Patent	European Community Reg. No. 006629317-0001-0006, Issued 16-Sep-2019	Owned	N/A
Patent	European Community Reg. No. 007569025-0001-0002, Issued 30-Jan-2020	Owned	N/A
Patent	European Community Reg. No. 007798335-0001-0008, Issued 08-Apr-2020	Owned	N/A
Patent	European Patent Convention Appl. No. 18832923.9, filed 10-Feb-2020 (reg. not yet issued)	Owned	N/A

Type of Intellectual Property	Registration Number and Date of Registration	Owned or Licensed	Name and Address of Licensor
Patent	European Patent Convention Appl. No. 188832212.5, filed 10-Feb-2020 (reg. not yet issued)	Owned	N/A
Patent	European Patent Convention Appl. No. 20720323.3, filed 30-Apr-2020 (reg. not yet issued)	Owned	N/A
Patent	Hong Kong Appl. No. 18112827.4, filed 09-Oct-2018 (reg. not yet issued)	Owned	N/A
Patent	Hong Kong Appl. No. 62020013235.0, filed 05-Aug-2020 (reg. not yet issued)	Owned	N/A
Patent	Hong Kong Reg. No. 1800607.8, Issued 03-Apr-2018	Owned	N/A
Patent	India Appl. No. 319031-001, filed 25-Jun-2019 (reg. not yet issued)	Owned	N/A
Patent	India Appl. No. 319032-1, filed 25-Jun-2019 (reg. not yet issued)	Owned	N/A
Patent	India Appl. No. 319033-001, filed 25-Jun-2019 (reg. not yet issued)	Owned	N/A
Patent	India Reg. No. 304242, Issued 15-May-2019	Owned	N/A
Patent	India Reg. No. 304243, Issued 06-Jan-2020	Owned	N/A
Patent	Japan Appl. No. tbd, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A
Patent	Japan Appl. No. tbd, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A
Patent	Japan Appl. No. tbd, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A
Patent	Japan Reg. No. 1620980, Issued 30-Nov-2018	Owned	N/A
Patent	Japan Reg. No. 1651193, Issued 07-Jan-2020	Owned	N/A
Patent	Japan Reg. No. 1651194, Issued 07-Jan-2020	Owned	N/A
Patent	Japan Reg. No. 1651195, Issued 07-Jan-2020	Owned	N/A
Patent	Korea, Republic of Appl. No. , filed 02-Apr-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. 10-2020-7003547, filed 06-Feb-	Owned	N/A

Type of Intellectual Property	Registration Number and Date of Registration	Owned or Licensed	Name and Address of Licensor
	2020 (reg. not yet issued)		
Patent	Korea, Republic of Appl. No. 10-2020-7003581, filed 06-Feb-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. 10-2020-7013240, filed 08-May-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. 30-2020-14704, filed 02-Apr-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. 30-2020-14706, filed 02-Apr-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. 30-2020-22129, filed 20-May-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. 30-2020-22130, filed 20-May-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. 30-2020-22131, filed 20-May-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. 30-2020-29819, filed 30-Jun-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. 30-2020-29820, filed 30-Jun-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. 30-2020-29821, filed 30-Jun-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. 30-2020-3860, filed 29-Jan-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. tbd, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. tbd, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A
Patent	Korea, Republic of Appl. No. tbd, filed 02-Sep-2020 (reg. not yet issued)	Owned	N/A

Type of Intellectual Property	Registration Number and Date of Registration	Owned or Licensed	Name and Address of Licensor
Patent	Korea, Republic of Reg. No. 30-1012961, Issued 26-Jun-2019	Owned	N/A
Patent	Korea, Republic of Reg. No. 30-1012962, Issued 26-Jun-2019	Owned	N/A
Patent	Korea, Republic of Reg. No. 30-1012963, Issued 29-Jun-2019	Owned	N/A
Patent	Korea, Republic of Reg. No. 30-1019692, Issued 14-Aug-2019	Owned	N/A
Patent	Korea, Republic of Reg. No. 30-1052006, Issued 19-Mar-2020	Owned	N/A
Patent	Korea, Republic of Reg. No. 30-1052007, Issued 19-Mar-2020	Owned	N/A
Patent	Korea, Republic of Reg. No. 30-1052008, Issued 19-Mar-2020	Owned	N/A
Patent	Korea, Republic of Reg. No. 30-1058054, Issued 07-May-2020	Owned	N/A
Patent	Korea, Republic of Reg. No. 30-1058055, Issued 07-May-2020	Owned	N/A
Patent	Korea, Republic of Reg. No. 30-2019-31632, Issued 07-May-2020	Owned	N/A
Patent	Korea, Republic of Reg. No. 30-993357, Issued 08-Feb-2019	Owned	N/A
Patent	Mexico Appl. No. MX/f/2018/000943, filed 02-Apr-2018 (reg. not yet issued)	Owned	N/A
Patent	Patent Cooperation Treaty Appl. No. US19/67624, filed 19-Dec-2019 (reg. not yet issued)	Owned	N/A
Patent	Patent Cooperation Treaty Appl. No. US20/17645, filed 11-Feb-2020 (reg. not yet issued)	Owned	N/A
Patent	Patent Cooperation Treaty Appl. No. US20/31339, filed 04-May-2020 (reg. not yet issued)	Owned	N/A
Patent	Patent Cooperation Treaty Appl. No. US20/31347, filed 04-May-2020 (reg. not yet issued)	Owned	N/A
Patent	Patent Cooperation Treaty Appl. No. US20/31936, filed 07-May-2020 (reg. not yet issued)	Owned	N/A
Patent	Russian Federation Reg. No. 113355, Issued 25-Feb-2019	Owned	N/A
Patent	Russian Federation Reg. No. 118948, Issued 10-May-2020	Owned	N/A

Type of Intellectual Property	Registration Number and Date of Registration	Owned or Licensed	Name and Address of Licensor
Patent	Russian Federation Reg. No. 119576, Issued 27-Apr-2020	Owned	N/A
Patent	Russian Federation Reg. No. 119644, Issued 29-Apr-2020	Owned	N/A
Patent	Turkey Reg. No. 2019 03920, Issued 01-Jan-2020	Owned	N/A
Patent	Turkey Reg. No. 2019 03921, Issued 01-Jan-2020	Owned	N/A
Patent	Turkey Reg. No. 2019 03924, Issued 01-Jan-2020	Owned	N/A
Patent	United States of America Appl. No. 16/357984, filed 19-Mar-2019 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 16/796143, filed 20-Feb-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 16/824328, filed 19-Mar-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 16/837230, filed 01-Apr-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 16/869389, filed 07-May-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 16/869402, filed 07-May-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 16/890544, filed 02-Jun-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 16/919588, filed 02-Jul-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 16/925597, filed 10-Jul-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 17/008175, filed 31-Aug-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/708815, filed 09-Oct-2019 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/714241, filed 21-Nov-	Owned	N/A

Type of Intellectual Property	Registration Number and Date of Registration	Owned or Licensed	Name and Address of Licensor
	2019 (reg. not yet issued)		
Patent	United States of America Appl. No. 29/714244, filed 21-Nov-2019 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/714246, filed 21-Nov-2019 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/715953, filed 05-Dec-2019 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/719057, filed 31-Dec-2019 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/719062, filed 31-Dec-2019 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/719066, filed 31-Dec-2019 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/726240, filed 02-Mar-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/726245, filed 02-Mar-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/726305, filed 02-Mar-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/726330, filed 02-Mar-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/728608, filed 19-Mar-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/728609, filed 19-Mar-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/728611, filed 19-Mar-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/733496, filed 04-May-2020 (reg. not yet issued)	Owned	N/A

Type of Intellectual Property	Registration Number and Date of Registration	Owned or Licensed	Name and Address of Licensor
Patent	United States of America Appl. No. 29/735185, filed 19-May-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/735691, filed 22-May-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/739186, filed 23-Jun-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/739906, filed 30-Jun-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/740763, filed 07-Jul-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/740766, filed 07-Jul-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 29/745555, filed 06-Aug-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 62/899098, filed 11-Sep-2019 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 62/912392, filed 08-Oct-2019 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 62/930415, filed 04-Nov-2019 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 62/943639, filed 04-Dec-2019 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 62/983959, filed 02-Mar-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 62/983964, filed 02-Mar-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 63/017472, filed 29-Apr-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 63/042740, filed 23-Jun-2020 (reg. not yet issued)	Owned	N/A

Type of Intellectual Property	Registration Number and Date of Registration	Owned or Licensed	Name and Address of Licensor
Patent	United States of America Appl. No. 63/044860, filed 26-Jun-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 63/045365, filed 29-Jun-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 63/065114, filed 13-Aug-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 63/065326, filed 13-Aug-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 63/065348, filed 13-Aug-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Appl. No. 63/068123, filed 20-Aug-2020 (reg. not yet issued)	Owned	N/A
Patent	United States of America Reg. No. 10357425, Issued 23-Jul-2019	Owned	N/A
Patent	United States of America Reg. No. 10428850, Issued 01-Oct-2019	Owned	N/A
Patent	United States of America Reg. No. 10470970, Issued 12-Nov-2019	Owned	N/A
Patent	United States of America Reg. No. 10557490, Issued 11-Feb-2020	Owned	N/A
Patent	United States of America Reg. No. 10617588, Issued 14-Apr-2020	Owned	N/A
Patent	United States of America Reg. No. 10702448, Issued 07-Jul-2020	Owned	N/A
Patent	United States of America Reg. No. 10714953, Issued 14-Jul-2020	Owned	N/A
Patent	United States of America Reg. No. 10758452, Issued 01-Sep-2020	Owned	N/A
Patent	United States of America Reg. No. 10774860, Issued 15-Sep-2020	Owned	N/A
Patent	United States of America Reg. No. D837636, Issued 08-Jan-2019	Owned	N/A

Type of Intellectual Property	Registration Number and Date of Registration	Owned or Licensed	Name and Address of Licensor
Patent	United States of America Reg. No. D845499, Issued 09-Apr-2019	Owned	N/A
Patent	United States of America Reg. No. D845500, Issued 09-Apr-2019	Owned	N/A
Patent	United States of America Reg. No. D849260, Issued 21-May-2019	Owned	N/A
Patent	United States of America Reg. No. D849261, Issued 21-May-2019	Owned	N/A
Patent	United States of America Reg. No. D850639, Issued 04-Jun-2019	Owned	N/A
Patent	United States of America Reg. No. D850640, Issued 04-Jun-2019	Owned	N/A
Patent	United States of America Reg. No. D859680, Issued 10-Sep-2019	Owned	N/A
Patent	United States of America Reg. No. D861182, Issued 24-Sep-2019	Owned	N/A
Patent	United States of America Reg. No. D865192, Issued 29-Oct-2019	Owned	N/A
Patent	United States of America Reg. No. D867860, Issued 26-Nov-2019	Owned	N/A
Patent	United States of America Reg. No. D869387, Issued 10-Dec-2019	Owned	N/A
Patent	United States of America Reg. No. D877351, Issued 03-Mar-2020	Owned	N/A
Patent	United States of America Reg. No. D879985, Issued 31-Mar-2020	Owned	N/A
Patent	United States of America Reg. No. D879986, Issued 31-Mar-2020	Owned	N/A
Patent	United States of America Reg. No. D880419, Issued 07-Apr-2020	Owned	N/A
Patent	United States of America Reg. No. D880714, Issued 07-Apr-2020	Owned	N/A
Patent	United States of America Reg. No. D880715, Issued 04-Apr-2020	Owned	N/A
Patent	United States of America Reg. No. D880716, Issued 07-Apr-2020	Owned	N/A
Patent	United States of America Reg. No. D884915, Issued 19-May-	Owned	N/A

Type of Intellectual Property	Registration Number and Date of Registration	Owned or Licensed	Name and Address of Licensor
	2020		
Patent	United States of America Reg. No. D885601, Issued 26-May-2020	Owned	N/A
Patent	United States of America Reg. No. D887573, Issued 16-Jun-2020	Owned	N/A
Patent	United States of America Reg. No. D890090, Issued 14-Jul-2020	Owned	N/A
Patent	United States of America Reg. No. D890353, Issued 14-Jul-2020	Owned	N/A
Patent	United States of America Reg. No. D890942, Issued 21-Jul-2020	Owned	N/A
Patent	United States of America Reg. No. D890943, Issued 21-Jul-2020	Owned	N/A
Patent	United States of America Reg. No. D892042, Issued 04-Aug-2020	Owned	N/A
Patent	United States of America Reg. No. D896393, Issued 15-Sep-2020	Owned	N/A
Patent	United States of America Reg. No. D896396, Issued 15-Sep-2020	Owned	N/A

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

EPAS ID: PAT6632879

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST

CONVEYING PARTY DATA

Name	Execution Date
THERAGUN, INC.	03/31/2021
FLEXIR RECOVERY, LLC	03/31/2021

RECEIVING PARTY DATA

Name:	JPMORGAN CHASE BANK, N.A., AS ADMINISTRATIVE AGENT
Street Address:	10 SOUTH DEARBORN, FLOOR L2, SUITE IL1-1145
City:	CHICAGO
State/Country:	ILLINOIS
Postal Code:	60603

PROPERTY NUMBERS Total: 128

Property Type	Number
Application Number:	15647050
Application Number:	29619831
Application Number:	29619833
Application Number:	29637052
Application Number:	29637060
Application Number:	29637050
Application Number:	29637053
Application Number:	29637057
Application Number:	29637056
Application Number:	29639298
Application Number:	15920322
Application Number:	16027008
Application Number:	29655472
Application Number:	29674838
Application Number:	29674846
Application Number:	29674836
Application Number:	29674840
Application Number:	16241822
Application Number:	29676760

Property Type	Number
Application Number:	29677016
Application Number:	29677157
Application Number:	29679885
Application Number:	29679886
Application Number:	29679889
Application Number:	16357984
Application Number:	29690357
Application Number:	29690359
Application Number:	29699997
Application Number:	16526737
Application Number:	16568971
Application Number:	29708815
Application Number:	29708804
Application Number:	29708809
Application Number:	29708814
Application Number:	16675772
Application Number:	29714241
Application Number:	29714244
Application Number:	29714246
Application Number:	29715953
Application Number:	29719072
Application Number:	29719078
Application Number:	29719057
Application Number:	29719062
Application Number:	29719086
Application Number:	29719066
Application Number:	16787449
Application Number:	16796143
Application Number:	29726305
Application Number:	29726240
Application Number:	29726245
Application Number:	29726330
Application Number:	29728608
Application Number:	29728609
Application Number:	16824328
Application Number:	29728611
Application Number:	16826693
Application Number:	16837230

Property Type	Number
Application Number:	63017472
Application Number:	29733496
Application Number:	16869389
Application Number:	16869402
Application Number:	29735185
Application Number:	29735691
Application Number:	16890544
Application Number:	63042740
Application Number:	63044860
Application Number:	63045365
Application Number:	29739906
Application Number:	16919588
Application Number:	29740766
Application Number:	29740763
Application Number:	16925597
Application Number:	29745555
Application Number:	63065348
Application Number:	63065326
Application Number:	63065114
Application Number:	63068123
Application Number:	17008175
Application Number:	17018099
Application Number:	17018044
Application Number:	63086312
Application Number:	17066230
Application Number:	17066015
Application Number:	17087851
Application Number:	63112850
Application Number:	63112858
Application Number:	63114098
Application Number:	17111876
Application Number:	63125223
Application Number:	63126968
Application Number:	63126954
Application Number:	29763366
Application Number:	63133530
Application Number:	63133591
Application Number:	63135846

Property Type	Number
Application Number:	63143125
Application Number:	90014669
Application Number:	90014667
Application Number:	90014668
Application Number:	90014671
Application Number:	90014670
Application Number:	90014672
Application Number:	17167672
Application Number:	63147876
Application Number:	17184307
Application Number:	29771836
Application Number:	29772510
Application Number:	29772514
Application Number:	29772507
Application Number:	29772505
Application Number:	17190955
Application Number:	29773164
Application Number:	63164829
Application Number:	63165858
PCT Number:	US1967624
PCT Number:	US2017645
PCT Number:	US2031347
PCT Number:	US2031339
PCT Number:	US2031936
PCT Number:	US2050385
PCT Number:	US2050399
PCT Number:	US2054842
PCT Number:	US2054773
PCT Number:	US2058670
PCT Number:	US2063426
PCT Number:	US2122500
Application Number:	29739186
Application Number:	29766877

CORRESPONDENCE DATA

Fax Number:

Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.

Phone: 3127018637

Email:	IPDocket@mayerbrown.com
Correspondent Name:	WILLIAM R. SIEGEL, MAYER BROWN LLP
Address Line 1:	71 S. WACKER DRIVE
Address Line 4:	CHICAGO, ILLINOIS 60606

ATTORNEY DOCKET NUMBER:	21672715
NAME OF SUBMITTER:	WILLIAM R. SIEGEL
SIGNATURE:	/william r siegel/
DATE SIGNED:	03/31/2021
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 24

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CONFIRMATORY GRANT OF SECURITY INTEREST IN PATENTS

This CONFIRMATORY GRANT OF SECURITY INTEREST IN PATENTS (this "Confirmatory Grant") is made as of March 31, 2021, by and among **THERAGUN, INC.**, a Delaware corporation (the "Company"), **FLEXIR RECOVERY, LLC**, a Delaware limited liability company ("Flexir" and together with the Company, each a "Grantor," and collectively, the "Grantors") and **JPMORGAN CHASE BANK, N.A.**, in its capacity as administrative agent (together with its successors and assigns, the "Administrative Agent") for the lenders party to the Credit Agreement referred to below.

W I T N E S S E T H:

WHEREAS, pursuant to that certain Credit Agreement dated as of the date hereof (as amended, restated, amended and restated, supplemented, or otherwise modified from time to time, the "Credit Agreement"), by and among the Grantors, the Administrative Agent, the other Loan Parties party thereto, and the Lenders party thereto, the Lenders have agreed to make certain financial accommodations available to the Borrowers from time to time pursuant to the terms and conditions thereof;

WHEREAS, the Lenders are willing to make the financial accommodations to the Borrowers as provided for in the Credit Agreement, but only upon the condition, among others, that the Loan Parties shall have executed and delivered to the Administrative Agent, on behalf of the Secured Parties, that certain Pledge and Security Agreement, dated as of the date hereof (including all exhibits thereto, as from time to time amended, restated, amended and restated, supplemented or otherwise modified, the "Security Agreement");

WHEREAS, pursuant to the Security Agreement, each Grantor pledged and granted to the Administrative Agent, for the benefit of the Secured Parties, a security interest in the Patent Collateral (as defined below); and

WHEREAS, pursuant to the Security Agreement, each Grantor has agreed to execute and deliver this Confirmatory Grant in order to record the security interest granted to the Administrative Agent, for the benefit of the Secured Parties, with the United States Patent and Trademark Office;

NOW, THEREFORE, in consideration of the promises and mutual covenants herein contained and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each Grantor hereby agrees as follows:

1. DEFINED TERMS. All initially capitalized terms used but not otherwise defined herein have the meanings given to them in the Security Agreement or, if not defined therein, in the Credit Agreement.

2. GRANT OF SECURITY INTEREST IN PATENT COLLATERAL. Each of the Grantors hereby pledges, collaterally assigns and grants to the Administrative Agent, on behalf of the Secured Parties, to secure the prompt and complete payment and performance of the Secured Obligations, a security interest (referred to in this Confirmatory Grant as the "Security Interest") in all of Grantor's right, title and interest in, to and under the following, whether now owned or hereafter acquired or arising (collectively, the "Patent Collateral"):

(a) all of its Patents and IP Licenses with respect to Patents to which it is a party including those referred to on Schedule I;

(b) all divisionals, continuations, continuations in part, reissues, reexaminations, or extensions of the foregoing; and

(c) all products and proceeds (as that term is defined in the UCC) of the foregoing, including all rights to sue and recover at law or in equity for any past, present and future infringement, misappropriation, dilution, violation or other impairment of the foregoing and any claim by such Grantor against third parties for past, present or future (i) infringement or dilution of any Patent or any Patents exclusively licensed under any IP License, including right to receive any damages, or (ii) right to receive license fees, royalties, and other compensation under any IP License with respect to Patents;

Notwithstanding the foregoing, Patent Collateral shall not include any Excluded Collateral.

3. SECURITY FOR SECURED OBLIGATIONS. This Confirmatory Grant and the Security Interest created hereby secures the payment and performance of the Secured Obligations, whether now existing or arising hereafter. Without limiting the generality of the foregoing, this Confirmatory Grant secures the payment of all amounts which constitute part of the Secured Obligations and would be owed by each Grantor to the Secured Parties, whether or not they are unenforceable or not allowable due to the existence of an insolvency proceeding involving any Grantor.

4. SECURITY AGREEMENT. The Security Interest granted pursuant to this Confirmatory Grant is granted in conjunction with the security interests granted to the Administrative Agent, on behalf of the Secured Parties, pursuant to the Security Agreement. Each Grantor hereby acknowledges and affirms that the rights and remedies of the Administrative Agent with respect to the Security Interest in the Patent Collateral made and granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. To the extent there is any inconsistency between this Confirmatory Grant and the Security Agreement, the Security Agreement shall control.

5. AUTHORIZATION TO SUPPLEMENT. If any Grantor shall obtain rights to any new Patents or become entitled to the benefit of any Patent for any renewal or extension of any existing Patent, the provisions of this Confirmatory Grant shall automatically apply thereto. Each Grantor hereby authorizes the Administrative Agent unilaterally to modify this Confirmatory Grant by amending Schedule I to include any such new patent rights of such Grantor. Notwithstanding the foregoing, no failure to so modify or supplement this Confirmatory Grant or amend Schedule I shall in any way affect, invalidate or detract from the Administrative Agent's continuing security interest in all Collateral, whether or not listed on Schedule I.

6. COUNTERPARTS. This Confirmatory Grant may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, shall be deemed to be an original, and all of which, when taken together, shall constitute but one and the same Confirmatory Grant. Delivery of an executed counterpart of a signature page of this Confirmatory Grant by telecopy, emailed pdf. or any other electronic means that reproduces an image of the actual executed signature page shall be effective as delivery of a manually executed counterpart of this Confirmatory Grant. The words "execution," "signed," "signature," "delivery," and words of like import in or relating to any document to be signed in connection with this Confirmatory Grant and the transactions contemplated hereby or thereby shall be deemed to include Electronic Signatures, deliveries or the keeping of records in electronic form, each of which shall be of the same legal effect, validity or enforceability as a manually executed signature, physical delivery thereof or the use of a paper-based recordkeeping system, as the case may be, to the extent and as provided for in any applicable law, including the Federal Electronic Signatures in Global and National Commerce Act, the New York State Electronic Signatures and Records Act, or any other similar state laws based on the Uniform Electronic

Transactions Act; provided that nothing herein shall require the Administrative Agent to accept electronic signatures in any form or format without its prior written consent.

7. **CHOICE OF LAW. THIS CONFIRMATORY GRANT SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE INTERNAL LAWS (AND NOT THE LAW OF CONFLICTS) OF THE STATE OF NEW YORK, BUT GIVING EFFECT TO FEDERAL LAWS APPLICABLE TO NATIONAL BANKS.**

8. **MISCELLANEOUS. THIS CONFIRMATORY GRANT SHALL BE SUBJECT TO THE PROVISIONS REGARDING CONSENT TO JURISDICTION, JURY TRIAL WAIVER AND THE OTHER MATTERS SET FORTH IN SECTIONS 7.17 AND 7.18 OF THE SECURITY AGREEMENT, AND SUCH PROVISIONS ARE INCORPORATED HEREIN BY THIS REFERENCE, *MUTATIS MUTANDIS*.**

[*Remainder of Page Intentionally Left Blank; Signature Pages Follow.*]

IN WITNESS WHEREOF, the parties hereto have caused this Confirmatory Grant of Security Interest in Patents to be executed and delivered as of the day and year first above written.

GRANTOR:

THERAGUN, INC.,
a Delaware corporation

By: _____
Name: Benjamin Nazarian
Title: Chief Executive Officer

[Signature Page to Confirmatory Grant of Security Interest in Patents]

FLEXIR RECOVERY, LLC,
a Delaware limited liability company

By: Kevin Crowley
Name: Kevin Crowley
Title: President

ADMINISTRATIVE AGENT:

JPMORGAN CHASE BANK, N.A.

By:_____
Name: Jamal Toukhi
Title: Authorized Officer

SCHEDULE I
to
CONFIRMATORY GRANT

Patents

Country Name	Title	Serial #	Filed Date	Patent #	Issue Date	Owner Name
AUSTRALIA	TREATMENT ELEMENT ATTACHMENT SYSTEM	2018301641	6/26/2018	2018301641	10/8/2020	TheraGun, Inc.
AUSTRALIA	ATTACHMENT SYSTEM FOR A PLURALITY OF TREATMENT MEMBERS (AMPBIT ADAPTER-utility)	2018301278	7/3/2018	2018301278	10/15/2020	TheraGun, Inc.
AUSTRALIA	MASSAGE ELEMENT (DAMPENER)	201814780	8/10/2018	201814780	11/14/2018	TheraGun, Inc.
AUSTRALIA	MASSAGE ELEMENT (THUMB)	201814778	8/10/2018	201814778	11/13/2018	TheraGun, Inc.
AUSTRALIA	MASSAGE ELEMENT (WEDGE)	201814774	8/10/2018	201814774	11/13/2018	TheraGun, Inc.
AUSTRALIA	MASSAGE ELEMENT (CONE)	201814786	8/10/2018	201814786	11/14/2018	TheraGun, Inc.
AUSTRALIA	PERCUSSIIVE MASSAGE DEVICE (G3PRO-DESIGN)	201913423	6/19/2019	201913423	9/24/2019	TheraGun, Inc.
AUSTRALIA	PERCUSSIVE MASSAGE DEVICE (G3 - LIV DESIGN)	201913428	6/19/2019	201913428	9/2/2019	TheraGun, Inc.
AUSTRALIA	PERCUSSIVE MASSAGE DEVICE (G3 - DESIGN)	201913427	6/19/2019	201913427	9/4/2019	TheraGun, Inc.
AUSTRALIA	MASSAGE ELEMENT (NEW DAMPENER DESIGN)	201913595	6/27/2019	201913595	8/28/2019	TheraGun, Inc.
AUSTRALIA	MASSAGE ELEMENT (NEW LARGE BALL-DESIGN)	201913594	6/27/2019	201913594	8/29/2019	TheraGun, Inc.
AUSTRALIA	MASSAGE ELEMENT (NEW STANDARD BALL-DESIGN)	201913596	6/27/2019	201913596	8/29/2019	TheraGun, Inc.
AUSTRALIA	PERCUSSIVE MASSAGE DEVICE AND METHOD OF USE (G3 - utility)	2019417557	12/19/2019	2019417557	3/4/2021	TheraGun, Inc.

Country Name	Title	Serial #	Filed Date	Patent #	Issue Date	Owner Name
AUSTRALIA	ADAPTOR (updated two ambits - design)	202010148	1/13/2020	20201048	3/13/2020	TheraGun, Inc.
AUSTRALIA	PERCUSSIVE MASSAGE DEVICE (G4PRO design)	202012039	4/3/2020	202012039	6/2/2020	TheraGun, Inc.
AUSTRALIA	PERCUSSIVE MASSAGE DEVICE (prime - design)	202012040	4/3/2020	202012040	6/2/2020	TheraGun, Inc.
AUSTRALIA	VIBRATION MASSAGE DEVICE (Mini-design)	202012042	4/3/2020	202012042	6/2/2020	TheraGun, Inc.
AUSTRALIA	MOTOR (PRO - design)	202013483	6/25/2020	202013483	9/1/2020	TheraGun, Inc.
AUSTRALIA	MOTOR (ELITE - design)	202013484	6/25/2020	202013484	9/1/2020	TheraGun, Inc.
AUSTRALIA	MOTOR (PRIME - design)	202013485	6/25/2020	202013485	9/1/2020	TheraGun, Inc.
AUSTRALIA	MASSAGE ATTACHEMENT (Supersoft Design 1)	202014780	9/2/2020	202014780	12/3/2020	TheraGun, Inc.
AUSTRALIA	MASSAGE ATTACHEMENT (Supersoft Design 2)	202014781	9/2/2020	202014781	12/3/2020	TheraGun, Inc.
AUSTRALIA	MASSAGE ROLLER (Wave Roller design)	202014783	9/2/2020	202014783	12/3/2020	TheraGun, Inc.
AUSTRALIA	CHARGING STAND (Universal Charger)	202015868	10/28/2020	202015868	1/22/2021	TheraGun, Inc.
AUSTRALIA	MASSAGE ROLLER (WaveDuo - Design)	TBD	2/3/2021			TheraGun, Inc.
BRAZIL	THERAPEUTIC DEVICE	3020180013204	4/2/2018			TheraGun, Inc.
BRAZIL	THERAPEUTIC DEVICE (G3PRO-design))	3020190027550	6/25/2019	3020190027550	10/22/2019	TheraGun, Inc.
BRAZIL	THERPEUTIC DEVICE (G3 - LIV DESIGN)	3020190027569	6/25/2019	3020190027569	10/22/2019	TheraGun, Inc.
BRAZIL	THERAPEUTIC DEVICE (G3-DESIGN)	3020190027577	6/25/2019	3020190027577	10/22/2019	TheraGun, Inc.
CANADA	PERCUSSIVE MASSAGE DEVICE (as amended)	180651	4/3/2018	180651	2/13/2019	TheraGun, Inc.
CANADA	MASSAGE ELEMENT (CONE)	183019	8/10/2018	183019	8/2/2019	TheraGun, Inc.
CANADA	MASSAGE ELEMENT (WEDGE)	182944	8/10/2018	182944	8/2/2019	TheraGun, Inc.
CANADA	MASSAGE ELEMENT (THUMB)	182943	8/10/2018	182943	8/2/2019	TheraGun, Inc.

Country Name	Title	Serial #	Filed Date	Patent #	Issue Date	Owner Name
CANADA	MASSAGE ELEMENT (DAMPENER)	182942	8/10/2018	182942	8/2/2019	TheraGun, Inc.
CANADA	PERCUSSIVE MASSAGE DEVICE (G3 - design)	188392	6/24/2019	188392	2/18/2021	TheraGun, Inc.
CANADA	PERCUSSIVE MASSAGE DEVICE (G3 LIV - design)	188394	6/25/2019	188394	2/17/2021	TheraGun, Inc.
CANADA	THERAPEUTIC DEVICE (G3 PRO - design)	188935	6/25/2019	188395	2/19/2021	TheraGun, Inc.
CANADA	MASSAGE ELEMENT (NEW STANDARD BALL-DESIGN)	188545	7/3/2019	188545	10/13/2020	TheraGun, Inc.
CANADA	MASSAGE ELEMENT (NEW LARGE BALL)	188544	7/3/2019	188544	10/13/2020	TheraGun, Inc.
CANADA	MASSAGE ELEMENT (NEW DAMPENER DESIGN)	188553	7/3/2019	188553	10/13/2020	TheraGun, Inc.
CANADA	PERCUSSIVE MASSAGE DEVICE AND METHOD OF USE (G3 - utility)	3093587	12/19/2019			TheraGun, Inc.
CANADA	MASSAGE ATTACHEMENT (Supersoft Design 2)	197898	8/31/2020			TheraGun, Inc.
CANADA	MASSAGE ATTACHEMENT (Supersoft Design 1)	197899	8/31/2020			TheraGun, Inc.
CANADA	MASSAGE ROLLER (Wave Roller design)	197900	8/31/2020			TheraGun, Inc.
CANADA	CHARGING STAND (Universal Charger)	198924	10/23/2020			TheraGun, Inc.
CANADA	MASSAGE ROLLER (WaveDuo - Design)	201123	2/4/2021			TheraGun, Inc.
CHINA	MASSAGE EQUIPMENT	201930187488.7		TBA	11/5/2019	TheraGun, Inc.
CHINA	THERAPEUTIC DEVICE	201830127014.9	4/2/2018	ZL201830127014.9	9/8/2018	TheraGun, Inc.
CHINA	ATTACHMENT SYSTEM FOR A PLURALITY OF TREATMENT MEMBERS (AMPBIT ADAPTER-utility)	201880045650.4	7/3/2018	ZL201880045650.4	12/25/2020	TheraGun, Inc.
CHINA	MASSAGE ELEMENT (DAMPENER)	201830445201.1	8/13/2018	ZL201830445201.1	4/30/2019	TheraGun, Inc.

Country Name	Title	Serial #	Filed Date	Patent #	Issue Date	Owner Name
CHINA	MASSAGE ELEMENT (THUMB)	201830444539.5	8/13/2018	ZL201830444539.5	6/7/2019	TheraGun, Inc.
CHINA	MASSAGE ELEMENT (WEDGE)	201830445204.5	8/13/2018	ZL201830445204.5	4/12/2019	TheraGun, Inc.
CHINA	MASSAGE ELEMENT (CONE)	201830445206.4	8/13/2018	ZL201830445206.4	4/12/2019	TheraGun, Inc.
CHINA	THERAPEUTIC DEVICE (G3PRO-design))	201930187489.1	4/22/2019	CN 305423265 S	5/11/2019	TheraGun, Inc.
CHINA	PERCUSSIVE MASSAGE DEVICE (G3)	201930187490.4	4/22/2019	CN 305423266 S	11/5/2019	TheraGun, Inc.
CHINA	TREATMENT ELEMENT ATTACHMENT SYSTEM	201880045653.8	1/8/2020			TheraGun, Inc.
CHINA	CHARGING STAND (Prime - design)	202030237734.8	5/21/2020	ZL202030237734.8	9/15/2020	TheraGun, Inc.
CHINA	CHARGING STAND (G4PRO - design)	202030237728.2	5/21/2020	ZL202030237728.2	9/15/2020	TheraGun, Inc.
CHINA	MOTOR (PRO - design)	202030343660.6	6/30/2020			TheraGun, Inc.
CHINA	MASSAGE ATTACHEMENT (Supersoft Design 2)	202030513431.4	9/2/2020			TheraGun, Inc.
CHINA	MASSAGE ATTACHEMENT (Supersoft Design 1)	202030514031.5	9/2/2020			TheraGun, Inc.
CHINA	MASSAGE ROLLER (Wave Roller design)	202030513430.X	9/2/2020			TheraGun, Inc.
CHINA	PERCUSSIVE MASSAGE DEVICE AND METHOD OF USE (G3 - utility)	201980026487.1	10/16/2020			TheraGun, Inc.
CHINA	CHARGING STAND (Universal Charger)	202030663417.2	11/4/2020			TheraGun, Inc.
CHINA	STAND (Mini Stand - design)	202030701436.X	11/19/2020			TheraGun, Inc.
CHINA	MASSAGE ROLLER (WaveDuo - Design)	202130085200.2	2/5/2021			TheraGun, Inc.
EUROPEAN PATENT CONVENT	TREATMENT ELEMENT ATTACHMENT SYSTEM	188832213.5	6/26/2018			TheraGun, Inc.
EUROPEAN PATENT CONVENT	PERCUSSIVE MASSAGE DEVICE AND METHOD OF USE (G3 - utility)	19904459.5	12/19/2019			TheraGun, Inc.

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EUROPEAN PATENT CONVENT	ATTACHMENT SYSTEM FOR A PLURALITY OF TREATMENT MEMBERS (AMPBIT ADAPTER-utility)	18832923.9	2/10/2020			TheraGun, Inc.
EUROPEAN PATENT CONVENT	CHARGING STAND	20720323.3	4/30/2020			TheraGun, Inc.
EUROPEAN UNION (EUTM & RCD)	THERAPEUTIC DEVICE	005176500-0001-0002	4/3/2018	005176500-0001-0002	4/3/2018	TheraGun, Inc.
EUROPEAN UNION (EUTM & RCD)	MASSAGE ELEMENT (DAMPENER, THUMB, WEDGE, CONE)	005602265-0001-0007	8/10/2018	005602265-0001-0007	8/10/2018	TheraGun, Inc.
EUROPEAN UNION (EUTM & RCD)	THERAPEUTIC DESIGN (G3 - Design)	006593059-001-006	6/26/2019	006593059-001-006	9/6/2019	TheraGun, Inc.
EUROPEAN UNION (EUTM & RCD)	MASSAGE ELEMENT (NEW DAMPENER DESIGN)	006629317-001-006	7/15/2019	006629317-0001-0006	9/16/2019	TheraGun, Inc.
EUROPEAN UNION (EUTM & RCD)	ADAPTOR (updated two ambits - design)	007569025-0001-0002	1/30/2020	007569025-0001-0002	1/30/2020	TheraGun, Inc.
EUROPEAN UNION (EUTM & RCD)	VIBRATION MASSAGE DEVICE (Mini-design)	007798335-0001-0008	4/8/2020	007798335-0001-0008	4/8/2020	TheraGun, Inc.
EUROPEAN UNION (EUTM & RCD)	CHARGING STAND (Pro, Elite, Prime)	007957147-0001-0003	5/20/2020	007957147-0001-0003	5/20/2020	TheraGun, Inc.
EUROPEAN UNION (EUTM & RCD)	MASSAGE ATTACHEMENT (Supersoft Designs 1 & 2)	008156772-0001-0008	9/2/2020	008156772-0001-0008	9/2/2020	TheraGun, Inc.
EUROPEAN UNION (EUTM & RCD)	MASSAGE ROLLER (Wave Roller design)	008158430-0001-0002	9/2/2020	008158430-0001-0002	9/2/2020	TheraGun, Inc.
EUROPEAN UNION (EUTM & RCD)	CHARGING STAND (Universal Charger)	008248991-0001-0002	11/4/2020	008248991-0001-0002	11/4/2020	TheraGun, Inc.
EUROPEAN UNION (EUTM & RCD)	Stand (Mini Stand - design)	008276109-0001-0002	11/19/2020	008276109-0001-0002	11/19/2020	TheraGun, Inc.
EUROPEAN UNION (EUTM & RCD)	MASSAGE ROLLER (WaveDuo - Design)	008426548-0001-0002	2/5/2021			TheraGun, Inc.
HONG KONG	ATTACHMENT SYSTEM FOR A PLURALITY OF TREATMENT MEMEBERS					TheraGun, Inc.
HONG KONG	THERAPEUTIC DEVICE	1800607.8	4/3/2018	1800607.8	4/3/2018	TheraGun, Inc.

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HONG KONG	APPARATUS, SYSTEM AND METHOD FOR A RECIPROCATING THERAPEUTIC DEVICE	18112827.4	10/9/2018			TheraGun, Inc.
HONG KONG	TREATMENT ELEMENT ATTACHMENT SYSTEM	62020013235.0	8/5/2020			TheraGun, Inc.
HONG KONG	ATTACHMENT SYSTEM FOR A PLURALITY OF TREATMENT MEMBERS	62020015437.0	9/4/2020			TheraGun, Inc.
INDIA	THERAPEUTIC DEVICE	304243	4/2/2018	304243	1/6/2020	TheraGun, Inc.
INDIA	THERAPEUTIC DEVICE	304242	4/2/2018	304242	5/15/2019	TheraGun, Inc.
INDIA	THRAPEUTIC DEVICE (G3PRO-DESIGN))	319032-1	6/25/2019			TheraGun, Inc.
INDIA	THERAPEUTICE DEVICE (G3 - DESIGN)	319031-001	6/25/2019	319031-001	8/11/2020	TheraGun, Inc.
INDIA	THERPEUTIC DEVICE (G3 - LIV DESIGN)	319033-001	6/25/2019	319033-001	8/11/2020	TheraGun, Inc.
INDIA	PERCUSSIVE MASSAGE DEVICE AND METHOD OF USE (G3 - utility)	202017039966	12/19/2019			TheraGun, Inc.
JAPAN	PERCUSSIVE MASSAGER	2018-007286	4/2/2018	1620980	11/30/2018	TheraGun, Inc.
JAPAN	THERPEUTIC DEVICE (G3 - LIV DESIGN)	2019-014081	6/25/2019	1651193	1/7/2020	TheraGun, Inc.
JAPAN	THERAPEUTICE DEVICE (G3 - DESIGN)	2019-014082	6/25/2019	1651194	1/7/2020	TheraGun, Inc.
JAPAN	THRAPEUTIC DEVICE (G3PRO-Design)	2019-014083	6/25/2019	1651195	1/7/2020	TheraGun, Inc.
JAPAN	PERCUSSIVE MASSAGE DEVICE AND METHOD OF USE (G3 - utility)	2020-555400	12/19/2019			TheraGun, Inc.
JAPAN	MASSAGE ROLLER (Wave Roller design)	2020-018654	9/2/2020			TheraGun, Inc.
JAPAN	MASSAGE ATTACHEMENT (Supersoft Design 1)	2020-018644	9/2/2020			TheraGun, Inc.
JAPAN	MASSAGE ATTACHEMENT (Supersoft Design 2)	2020-018645	9/2/2020			TheraGun, Inc.

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JAPAN	MASSAGE ROLLER (WaveDuo - Design)	2021-002611	2/5/2021			TheraGun, Inc.
MEXICO	THERAPEUTIC DEVICE	MX/f/2018/000943	4/2/2018	58639	10/13/2020	TheraGun, Inc.
RUSSIA	THERAPEUTIC DEVICE	2018501504	4/2/2018	113355	2/25/2019	TheraGun, Inc.
RUSSIA	THERPEUTIC DEVICE (G3 - LIV DESIGN)	2019502635	6/20/2019	119576	4/27/2020	TheraGun, Inc.
RUSSIA	THERAPEUTICE DEVICE (G3 - DESIGN)	2019502630	6/20/2019	118948	5/10/2020	TheraGun, Inc.
RUSSIA	THRAPEUTIC DEVICE (G3PRO-DESIGN))	2019502628	6/20/2019	119644	4/29/2020	TheraGun, Inc.
RUSSIA	PERCUSSIVE MASSAGE DEVICE AND METHOD OF USE (G3 - utility)	2020134856	12/19/2019	2744207	3/3/2021	TheraGun, Inc.
SOUTH KOREA	MASSAGE APPARATUS	30-2018-15561	4/2/2018	30-993357	2/8/2019	TheraGun, Inc.
SOUTH KOREA	MASSAGE ELEMENT (DAMPENER)	30-2018-37536	8/13/2018	30-1012961	6/26/2019	TheraGun, Inc.
SOUTH KOREA	MASSAGE ELEMENT (CONE)	30-2018-37539	8/13/2018	30-1019692	8/14/2019	TheraGun, Inc.
SOUTH KOREA	MASSAGE ELEMENT (WEDGE)	30-2018-37538	8/13/2018	30-1012963	6/26/2019	TheraGun, Inc.
SOUTH KOREA	MASSAGE ELEMENT (THUMB)	30-2018-37537	8/13/2018	30-1012962	6/26/2019	TheraGun, Inc.
SOUTH KOREA	MASSAGE APPARATUS (G3 - LIV DESIGN)	30-2019-30193	6/25/2019	30-1052008	3/19/2020	TheraGun, Inc.
SOUTH KOREA	MASSAGE APPARATUS (G3 - DESIGN)	30-2019-30192	6/25/2019	30-1052007	3/19/2020	TheraGun, Inc.
SOUTH KOREA	MASSAGE APPARATUS (G3PRO-DESIGN)	30-2019-30191	6/25/2019	30-1052006	3/19/2020	TheraGun, Inc.
SOUTH KOREA	MASSAGE ELEMENT (NEW LARGE BALL-DESIGN)	30-2019-31631	7/2/2019	30-1058055	5/7/2020	TheraGun, Inc.
SOUTH KOREA	MASSAGE ELEMENT (NEW STANDARD BALL-DESIGN)	30-2019-31632	7/2/2019	30-1058056	5/7/2020	TheraGun, Inc.
SOUTH KOREA	MASSAGE ELEMENT (NEW DAMPENER DESIGN)	30-2019-31630	7/2/2019	30-1058054	5/7/2020	TheraGun, Inc.
SOUTH KOREA	ADAPTOR FOR MASSAGE APPARATUS (updated two ambits - design)	30-2020-3860	1/29/2020	30-1092953	1/22/2021	TheraGun, Inc.

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SOUTH KOREA	TREATMENT ELEMENT ATTACHMENT SYSTEM	10-2020-7003547	2/6/2020			TheraGun, Inc.
SOUTH KOREA	ATTACHMENT SYSTEM FOR A PLURALITY OF TREATMENT MEMBERS (AMPBIT ADAPTER-utility)	10-2020-7003581	2/6/2020			TheraGun, Inc.
SOUTH KOREA	PERCUSSIVE MASSAGE DEVICE (LIV2 - design)	30-2020-14706	4/2/2020			TheraGun, Inc.
SOUTH KOREA	VIBRATION MASSAGE DEVICE (Mini-design)	30-2020-14704	4/2/2020			TheraGun, Inc.
SOUTH KOREA	PERCUSSIVE MASSAGE DEVICE (LIV2 - design)	30-2020-14705	4/2/2020			TheraGun, Inc.
SOUTH KOREA	CHARGING STAND (G3/G4 - utiity)	10-2020-7013240	5/8/2020			TheraGun, Inc.
SOUTH KOREA	CHARGING STAND (Elite - design)	30-2020-22130	5/20/2020			TheraGun, Inc.
SOUTH KOREA	CHARGING STAND FOR MASSAGAE APPARATUS (Prime - design)	30-2020-22129	5/20/2020			TheraGun, Inc.
SOUTH KOREA	CHARGING STAND (PRO - design)	30-2020-22131	5/20/2020			TheraGun, Inc.
SOUTH KOREA	MOTOR (PRIME - design)	30-2020-29821	6/30/2020			TheraGun, Inc.
SOUTH KOREA	MOTOR (ELITE - design)	30-2020-29820	6/30/2020			TheraGun, Inc.
SOUTH KOREA	MOTOR (PRO - design)	30-2020-29819	6/30/2020			TheraGun, Inc.
SOUTH KOREA	MASSAGE ROLLER (Wave Roller design)	30-2020-41543	9/2/2020			TheraGun, Inc.
SOUTH KOREA	HEADS FOR MASSAGE APARATUS (Supersoft Design 2)	30-2020-41541	9/2/2020			TheraGun, Inc.
SOUTH KOREA	HEADS FOR MASSAGE APPARATUS (Supersoft Design 1)	30-2020-41542	9/2/2020			TheraGun, Inc.
SOUTH KOREA	PERCUSSIVE MASSAGE DEVICE AND METHOD OF USE (G3 - utility)	10-2020-7030932	10/27/2020			TheraGun, Inc.

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SOUTH KOREA	CHARGING STAND (Universal Charger)	30-2020-52105	10/30/2020			TheraGun, Inc.
SOUTH KOREA	MASSAGE ROLLER (WaveDuo - Design)	30-2021-6281	2/5/2021			TheraGun, Inc.
TURKEY	THERPEUTIC DEVICE (G3 - LIV DESIGN)	2019/03920	6/24/2019	2019 03920	1/1/2020	TheraGun, Inc.
TURKEY	THRAPEUTIC DEVICE (G3PRO-DESIGN))	2019/03921	6/24/2019	2019 03921	1/1/2020	TheraGun, Inc.
TURKEY	THERAPEUTICE DEVICE (G3 - DESIGN)	2019/03924	6/24/2019	2019 03924	1/1/2020	TheraGun, Inc.
UNITED KINGDOM	MASSAGE ROLLER (WaveDuo - Design)	6117423-4	2/5/2021	6117423	2/5/2021	TheraGun, Inc.
UNITED STATES	TREATMENT ELEMENT ATTACHMENT SYSTEM (AMPBIT MALE/FEMALE ATTACHMENT SYSTEM - UTILITY)	15/647050	7/11/2017	10557490	2/11/2020	TheraGun, Inc.
UNITED STATES	THERAPEUTIC DEVICE (G2PRO - DESIGN)	29/619831	10/2/2017	D877351	3/3/2020	TheraGun, Inc.
UNITED STATES	RECHARGEABLE BATTERY (G2PRO - DESIGN)	29/619833	10/2/2017	D869387	12/10/2019	TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (THUMB)	29/637052	2/13/2018	D850639	6/4/2019	TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (CONE)	29/637060	2/13/2018	D849261	5/21/2019	TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (DAMPENER)	29/637050	2/13/2018	D849260	5/21/2019	TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (PITCHFORK)	29/637053	2/13/2018	D845499	4/9/2019	TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT(BALL)	29/637057	2/13/2018	D850640	6/4/2019	TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (WEDGE)	29/637056	2/13/2018	D845500	4/9/2019	TheraGun, Inc.
UNITED STATES	CONNECTOR ELEMENT (MALE AMPBIT ATTACHMENT – DESIGN)	29/639298	3/5/2018	D837636	1/8/2019	TheraGun, Inc.
UNITED STATES	MASSAGE DEVICE AND METHOD OF USE	15/920322	3/13/2018	10357425	7/23/2019	TheraGun, Inc.

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UNITED STATES	ATTACHMENT SYSTEM FOR A PLURALITY OF TREATMENT MEMBERS	16/027008	7/3/2018	10470970	11/12/2019	TheraGun, Inc.
UNITED STATES	ADAPTER (First Design)	29/655472	7/3/2018	D865192	10/29/2019	TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE (G3 - design)	29/674838	12/26/2018	D880715	4/4/2020	TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE (G3 - design)	29/674846	12/26/2018	D880716	4/7/2020	TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE (G3 - design)	29/674836	12/26/2018	D880714	4/7/2020	TheraGun, Inc.
UNITED STATES	CONNECTOR ELEMENT (Male Ampbit Attachment - Design - G3)	29/674840	12/26/2018	D867860	11/26/2019	TheraGun, Inc.
UNITED STATES	TREATMENT ELEMENT ATTACHMENT SYSTEM	16/241822	1/7/2019	10428850	10/1/2019	TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (NEW DAMPENER)	29/676760	1/14/2019	D896393	9/15/2020	TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (NEW LARGE BALL)	29/677016	1/16/2019	D890942	7/21/2020	TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (NEW STANDARD BALL-DESIGN)	29/677157	1/17/2019	D890943	7/21/2020	TheraGun, Inc.
UNITED STATES	CHARGING STATION (G3 Pro - Design)	29/679885	2/11/2019	D880419	4/7/2020	TheraGun, Inc.
UNITED STATES	CHARGING STAND (G3 - Design)	29/679886	2/11/2019	D890090	7/14/2020	TheraGun, Inc.
UNITED STATES	CHARGING STAND (G3 Consumer - Design)	29/679889	2/11/2019	D892042	8/4/2020	TheraGun, Inc.
UNITED STATES	MASSAGE DEVICE AND METHOD OF USE (G2PRO - utility)	16/357984	3/19/2019	10912707	2/9/2021	TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT(BALL)	29/690357	5/7/2019	D859680	9/10/2019	TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (CONE)	29/690359	5/7/2019	D861182	9/24/2019	TheraGun, Inc.
UNITED STATES	ADAPTOR (updated two ambits - design)	29/699997	7/30/2019	D890353	7/14/2020	TheraGun, Inc.

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UNITED STATES	ATTACHMENT SYSTEM FOR A PLURALITY OF TREATMENT MEMBERS	16/526737	7/30/2019	10617588	4/14/2020	TheraGun, Inc.
UNITED STATES	TREATMENT ELEMENT ATTACHMENT SYSTEM	16/568971	9/12/2019	10774860	9/15/2020	TheraGun, Inc.
UNITED STATES	VIBRATION MASSAGE DEVICE (Mini-design)	29/708815	10/9/2019			TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE (G4 - design)	29/708804	10/9/2019	D879985	3/31/2020	TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE (G4PRO design)	29/708809	10/9/2019	D884915	5/19/2020	TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE (LIV2 - design)	29/708814	10/9/2019	D879986	3/31/2020	TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE AND METHOD OF USE (G3 - utility)	16/675772	11/6/2019	10702448	7/7/2020	TheraGun, Inc.
UNITED STATES	CHARGING STAND (G4PRO - design)	29/714241	11/21/2019	D915275	4/6/2021	TheraGun, Inc.
UNITED STATES	CHARGING STAND (G4 - design)	29/714244	11/21/2019	D916014	4/13/2021	TheraGun, Inc.
UNITED STATES	CHARGING STAND (LIV - design)	29/714246	11/21/2019	D904293	12/8/2020	TheraGun, Inc.
UNITED STATES	RECHARGEABLE BATTERY (G2PRO - design)	29/715953	12/5/2019	D911932	3/2/2021	TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE (G3 - design)	29/719072	12/31/2019	D887573	6/16/2020	TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE (G3 - design)	29/719078	12/31/2019	D896396	9/15/2020	TheraGun, Inc.
UNITED STATES	MOTOR AND FAN (G4PRO - design)	29/719057	12/31/2019			TheraGun, Inc.
UNITED STATES	MOTOR (Mini - design)	29/719062	12/31/2019			TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE (G3 - design)	29/719086	12/31/2019	D885601	5/26/2020	TheraGun, Inc.
UNITED STATES	MOTOR AND FAN (Mini - design)	29/719066	12/31/2019			TheraGun, Inc.
UNITED STATES	CHARGING STAND	16/787449	2/11/2020	10714953	7/14/2020	TheraGun, Inc.

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UNITED STATES	FORCE METER	16/796143	2/20/2020	10940081	3/9/2021	TheraGun, Inc.
UNITED STATES	MASSAGE ATTACHEMENT (Supersoft Design 1)	29/726305	3/2/2020			TheraGun, Inc.
UNITED STATES	THERAPEUTIC DEVICE (G2PRO - DESIGN)	29/726240	3/2/2020			TheraGun, Inc.
UNITED STATES	MASSAGE ROLLER	29/726245	3/2/2020			TheraGun, Inc.
UNITED STATES	MASSAGE ATTACHEMENT (Supersoft Design 2)	29/726330	3/2/2020			TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE (elite - design)	29/728608	3/19/2020			TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE (PRO design)	29/728609	3/19/2020			TheraGun, Inc.
UNITED STATES	PORTABLE PERCUSSIVE MASSAGE DEVICE (Mini - utility)	16/824328	3/19/2020	10945915	3/16/2021	TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE (prime - design)	29/728611	3/19/2020			TheraGun, Inc.
UNITED STATES	MASSAGE ATTACHEMENT ASSEMBLY WITH REMOVABLE CONTACT PORTION (Supersoft-Utility)	16/826693	3/23/2020	10758452	9/1/2020	TheraGun, Inc.
UNITED STATES	ATTACHMENT SYSTEM FOR A PLURALITY OF TREATMENT MEMBERS	16/837230	4/1/2020			TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE AND VIBRATING FOAM ROLLER FEATURES	63/017472	4/29/2020			TheraGun, Inc.
UNITED STATES	CHARGING STAND (Universal Charger - design)	29/733496	5/4/2020			TheraGun, Inc.
UNITED STATES	PERCUSSIVE THERAPY DEVICE WITH ACTIVE CONTROL	16/869389	5/7/2020	10959911	3/30/2021	TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE	16/869402	5/7/2020	10857064	12/8/2020	TheraGun, Inc.

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UNITED STATES	STAND (Mini-Stand - design)	29/735185	5/19/2020			TheraGun, Inc.
UNITED STATES	PECUSSIVE MASSAGE DEVICE	29/735691	5/22/2020			TheraGun, Inc.
UNITED STATES	PERCUSSIVE THERAPY DEVICE (G4 Internal Components - utility)	16/890544	6/2/2020			TheraGun, Inc.
UNITED STATES	VIBRATION THERAPY DEVICE WITH UNITARY MOTOR AND BUSH STRUCTURE	63/042740	6/23/2020			TheraGun, Inc.
UNITED STATES	PERCUSSIVE THERAPY DEVICE WITH VARIABLE AMPLITUDE	63/044860	6/26/2020			TheraGun, Inc.
UNITED STATES	VIBRATION THERAPY DEVICE WITH LIGHT THERAPY	63/045365	6/29/2020			TheraGun, Inc.
UNITED STATES	ADAPTOR (updated adaptor - design)	29/739906	6/30/2020			TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE AND METHOD OF USE (G3 - utility)	16/919588	7/2/2020	10918565	2/16/2021	TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (large ball - design)	29/740766	7/7/2020			TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (standard ball - design)	29/740763	7/7/2020			TheraGun, Inc.
UNITED STATES	CHARGING STAND FOR A PERCUSSIVE MESSAGE DEVICE	16/925597	7/10/2020	10847984	11/24/2020	TheraGun, Inc.
UNITED STATES	MASSAGE ROLLER (WaveDuo - Design)	29/745555	8/6/2020			TheraGun, Inc.
UNITED STATES	VIBRATION THERAPY DEVICE WITH INTERCHANGEABLE ATTACHMENTS (NANO)	63/065348	8/13/2020			TheraGun, Inc.
UNITED STATES	VIBRATION AND LIGHT THERAPY MASK SYSTEM	63/065326	8/13/2020			TheraGun, Inc.

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UNITED STATES	PERCUSSIVE THERAPY DEVICE WITH VARIABLE AMPLITUDE	63/065114	8/13/2020			TheraGun, Inc.
UNITED STATES	GARMENT INCLUDING VIBRATION THERAPY (Utility)	63/068123	8/20/2020			TheraGun, Inc.
UNITED STATES	MASSAGE ATTACHEMENT ASSEMBLY WITH REMOVABLE CONTACT PORTION (Supersoft-Utility)	17/008175	8/31/2020			TheraGun, Inc.
UNITED STATES	PERCUSSIVE THERAPY DEVICE	17/018099	9/11/2020			TheraGun, Inc.
UNITED STATES	PERCUSSIVE THERAPY DEVICE WITH VARIABLE AMPLITUDE	17/018044	9/11/2020			TheraGun, Inc.
UNITED STATES	VIBRATING MASSAGE ROLLER WITH MULTIPLE MOTORS	63/086312	10/1/2020			TheraGun, Inc.
UNITED STATES	INTELLIGENCE ENGINE SYSTEM AND METHOD	17/066230	10/8/2020			TheraGun, Inc.
UNITED STATES	NETWORKED THEFT PREVENTION AND MUTLI-USER SYNCHRONIZATION SYSTEM AND METHOD FOR PERCUSSIVE MASSAGE DEVICE (software)	17/066015	10/8/2020			TheraGun, Inc.
UNITED STATES	MASSAGE ROLLER ASSEMBLY	17/087851	11/3/2020			TheraGun, Inc.
UNITED STATES	MASSAGE ROLLER ASSEMBLY WITH INFRARED	63/112850	11/12/2020			TheraGun, Inc.
UNITED STATES	VIBRATING BALL ASSEMBLY (Wave Solo)	63/112858	11/12/2020			TheraGun, Inc.
UNITED STATES	SMART EXERCISE MAT	63/114098	11/16/2020			TheraGun, Inc.

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UNITED STATES	ASSISTED SPEED CONTROLLER FOR PERCUSSIVE MASSAGE DEVICES	17/111876	12/4/2020			TheraGun, Inc.
UNITED STATES	VIBRATING BALL ASSEMBLY WITH REDUCED VIBRATION SECTION (Wave Solo)	63/125223	12/14/2020			TheraGun, Inc.
UNITED STATES	PNEUMATIC COMPRESSSION DEVICE	63/126968	12/17/2020			TheraGun, Inc.
UNITED STATES	TEMPERATURE CONTROLLED AND VIBRATING THERAPEUTIC GARMENT	63/126954	12/17/2020			TheraGun, Inc.
UNITED STATES	VIBRATING BALL (Wave Solo Design)	29/763366	12/22/2020			TheraGun, Inc.
UNITED STATES	VIBRATION THERAPY DEVICE WITH INTERCHANGEABLE ATTACHMENTS (Nano - utility)	63/133530	1/4/2021			TheraGun, Inc.
UNITED STATES	ACCESSORY FOR PERCUSSIVE THERAPY DEVICE WITH THERMAL SENSOR AND GYROSCOPE	63/133591	1/5/2021			TheraGun, Inc.
UNITED STATES	VIBRATING MASSAGE ROLLER	63/135846	1/11/2021			TheraGun, Inc.
UNITED STATES	PNEUMATIC COMPRESSION DEVICE WITH INTEGRATED PUMP	63/143125	1/29/2021			TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (CONE)	90/014669	2/2/2021			TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT(BALL)	90/014667	2/2/2021			TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT(BALL)	90/014668	2/2/2021			TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (NEW STANDARD BALL-DESIGN)	90/014671	2/2/2021			TheraGun, Inc.
UNITED STATES	MASSAGE ELEMENT (CONE)	90/014670	2/2/2021			TheraGun, Inc.

Country Name	Title	Serial #	Filed Date	Patent #	Issue Date	Owner Name
UNITED STATES	RECHARGEABLE BATTERY (G2PRO - DESIGN)	90/014672	2/2/2021			TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE AND METHOD OF USE (G3 - utility)	17/167672	2/4/2021			TheraGun, Inc.
UNITED STATES	LUBRICATION ASSEMBLY FOR PERCUSSIVE MASSAGE DEVICE	63/147876	2/10/2021			TheraGun, Inc.
UNITED STATES	PERCUSSIVE MASSAGE DEVICE WITH FORCE METER	17/184307	2/24/2021			TheraGun, Inc.
UNITED STATES	RECHARGEABLE BATTERY (G2PRO - design)	29/771836	2/25/2021			TheraGun, Inc.
UNITED STATES	ATTACHMENT FOR FACIAL TREATMENT DEVICE (Light ring Nano - design)	29/772510	3/2/2021			TheraGun, Inc.
UNITED STATES	ATTACHMENT FOR FACIAL TREATMENT DEVICE (Standard Nano design)	29/772514	3/2/2021			TheraGun, Inc.
UNITED STATES	ATTACHMENT FOR FACIAL TREATMENT DEVICE (Microcurrent Nano-Design)	29/772507	3/2/2021			TheraGun, Inc.
UNITED STATES	FACIAL TREATMENT DEVICE (Nano – design)	29/772505	3/2/2021			TheraGun, Inc.
UNITED STATES	PORTABLE PERCUSSIVE MASSAGE DEVICE (Mini - utility)	17/190955	3/3/2021			TheraGun, Inc.
UNITED STATES	ATTACHMENT FOR FACIAL TREATMENT DEVICE (Pinpoint Nano – design)	29/773164	3/8/2021			TheraGun, Inc.
UNITED STATES	VIBRATING THERAPEUTIC GARMENT (Wearable - utility)	63/164829	3/23/2021			TheraGun, Inc.
UNITED STATES	SMART EXERCISE MAT	63/165858	3/25/2021			TheraGun, Inc.

Country Name	Title	Serial #	Filed Date	Patent #	Issue Date	Owner Name
WIPO	PERCUSSIVE MASSAGE DEVICE AND METHOD OF USE	US19/67624	12/19/2019			TheraGun, Inc.
WIPO	CHARGING STAND	US20/17645	2/11/2020			TheraGun, Inc.
WIPO	PERCUSSIVE MESSAGE DEVICE AND METHOD OF USE	US20/31347	5/4/2020			TheraGun, Inc.
WIPO	PERCUSSIVE MESSAGE DEVICE AND METHOD OF USE	US20/31339	5/4/2020			TheraGun, Inc.
WIPO	PERCUSSIVE THERAPY DEVICE WITH ACTIVE CONTROL	US20/31936	5/7/2020			TheraGun, Inc.
WIPO	PERCUSSIVE THERAPY DEVICE	US20/050385	9/11/2020			TheraGun, Inc.
WIPO	PERCUSSIVE THERAPY DEVICE WITH VARIABLE AMPLITUDE (G5-utility)	US20/050399	9/11/2020			TheraGun, Inc.
WIPO	INTELLIGENCE ENGINE SYSTEM AND METHOD	US20/54842	10/8/2020			TheraGun, Inc.
WIPO	NETWORKED THEFT PREVENTION AND MUTLI-USER SYNCHRONIZATION SYSTEM AND METHOD FOR PERCUSSIVE MASSAGE DEVICE	US20/54773	10/8/2020			TheraGun, Inc.
WIPO	MASSAGE ROLLER ASSEMBLY	US20/58670	11/3/2020			TheraGun, Inc.
WIPO	ASSISTED SPEED CONTROLLER FOR PERCUSSIVE MASSAGE DEVICES	US20/63426	12/4/2020			TheraGun, Inc.
WIPO	MASSAGE ATTACHEMENT ASSEMBLY WITH REMOVABLE CONTACT PORTION (Supersoft-Utility)	US21/22500	3/16/2021			TheraGun, Inc.

Country Name	Title	Serial #	Filed Date	Patent #	Issue Date	Owner Name
AUSTRALIA	VIBRATION THERAPY DEVICE	202017039	12/22/2020	202017039	3/17/2021	Flexir Recovery, LLC
CANADA	VIBRATION THERAPY DEVICE	200199	12/22/2020			Flexir Recovery, LLC
CHINA	VIBRATION THERAPY DEVICE	202030350124.9	7/2/2020			Flexir Recovery, LLC
EUROPEAN UNION (EUTM & RCD)	VIBRATION THERAPY DEVICE	008366009	12/23/2020			Flexir Recovery, LLC
SOUTH KOREA	VIBRATION THERAPY DEVICE	30-2020-0064182	12/22/2020			Flexir Recovery, LLC
UNITED STATES	VIBRATION THERAPY DEVICE	29/739186	6/23/2020			Flexir Recovery, LLC
UNITED STATES	MASSAGE ATTACHMENT (Flat Head)	29/766877	1/19/2021			Flexir Recovery, LLC

AO 120 (Rev. 08/10)

TO:	REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK
Mail Stop 8 Director of the U.S. Patent and Trademark Office P.O. Box 1450 Alexandria, VA 22313-1450	

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court for the District of Delaware on the following

☐ Trademarks or ☑ Patents. (☐ the patent action involves 35 U.S.C. § 292.):

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
	2/22/2021	for the District of Delaware

PLAINTIFF	DEFENDANT
THERAGUN, INC.	ECHELON FITNESS MULTIMEDIA, LLC and DOES 1 through 10

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	D869,387 S	12/10/2019	Theragun, Inc.
2	D879,985 S	3/31/2020	Theragun, Inc.
3	D880,714 S	4/7/2020	Theragun, Inc.
4	D880,715 S	4/7/2020	Theragun, Inc.
5	10,702,448 B2	7/7/2020	Theragun, Inc.
6	10,857,064 B2	12/8/2020	Theragun, Inc.

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED INCLUDED BY

☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1			
2			
3			
4			
5			

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director Copy 3—Upon termination of action, mail this copy to Director
Copy 2—Upon filing document adding patent(s), mail this copy to Director Copy 4—Case file copy

To: patentdocket@jmbm.com,,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 24574

Nov 19, 2020 09:36:55 AM

Dear PAIR Customer:

JEFFER, MANGELS, BUTLER & MITCHELL, LLP
1900 AVENUE OF THE STARS, 7TH FLOOR
LOS ANGELES, CA 90067
UNITED STATES

The following USPTO patent application(s) associated with your Customer Number, 24574 , have new outgoing correspondence. This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

Disclaimer:
The list of documents shown below is provided as a courtesy and is not part of the official file wrapper. The content of the images shown in PAIR is the official record.

Application	Document	Mailroom Date	Attorney Docket No.
16869402	ISSUE.NTF	11/18/2020	76840-5077

To view your correspondence online or update your email addresses, please visit us anytime at https://sportal.uspto.gov/secure/myportal/privatepair.

If you have any questions, please email the Electronic Business Center (EBC) at EBC@uspto.gov with 'e-Office Action' on the subject line or call 1-866-217-9197 during the following hours:

Monday - Friday 6:00 a.m. to 12:00 a.m.

Thank you for prompt attention to this notice,

UNITED STATES PATENT AND TRADEMARK OFFICE

PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

UNITED STATES PATENT AND TRADEMARK OFFICE

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

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/869,402	12/08/2020	10857064	76840-5077	4812

24574 7590 11/18/2020

JEFFER, MANGELS, BUTLER & MITCHELL, LLP
1900 AVENUE OF THE STARS, 7TH FLOOR
LOS ANGELES, CA 90067

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

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

The Patent Term Adjustment is 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 Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

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

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

Jason Wersland, Manhattan Beach, CA;
Theragun, Inc., Beverly Hills, CA
Benjamin Nazarian, Beverly Hills, CA;
Jaime Sanchez Solana, Los Angeles, CA;
Eduardo Merino, Beverly Hills, CA;

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

IR103 (Rev. 10/09)

PART B - FEE(S) TRANSMITTAL

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

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

By fax, send to: (571)-273-2885

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

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

24574 7590 09/18/2020
JEFFER, MANGELS, BUTLER & MITCHELL, LLP
1900 AVENUE OF THE STARS, 7TH FLOOR
LOS ANGELES, CA 90067

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

Susan Papp	(Typed or printed name)
/Susan Papp/	(Signature)
October 14, 2020	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/869,402	05/07/2020	Jason Wersland	76840-5077	4812

TITLE OF INVENTION: PERCUSSIVE THERAPY DEVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	12/18/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
STUART, COLIN W	3785	601-108000

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

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 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 Jeffer Mangels
2 Butler & Mitchell LLP
3 Brennan C. Swain, Esq.

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)
THERAGUN, INC.	BEVERLY HILLS, CALIFORNIA

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

4a. Fees submitted: ☒ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

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

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

☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. 10-0440

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 /Brennan C. Swain/ Date October 14, 2020

Typed or printed name Brennan C. Swain Registration No. 43,175

Electronic Patent Application Fee Transmittal					
Application Number:	16869402				
Filing Date:	07-May-2020				
Title of Invention:	PERCUSSIVE THERAPY DEVICE				
First Named Inventor/Applicant Name:	Jason Wersland				
Filer:	Brennan C. Swain/Susan Papp				
Attorney Docket Number:	76840-5077				
Filed as Small Entity					
Filing Fees for Utility under 35 USC 111(a)					
Description		**Fee Code**	**Quantity**	**Amount**	**Sub-Total in USD($)**
Basic Filing:					
Pages:					
Claims:					
Miscellaneous-Filing:					
Petition:					
Patent-Appeals-and-Interference:					
Post-Allowance-and-Post-Issuance:					
UTILITY APPL ISSUE FEE		2501	1	500	500

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**500**

Electronic Acknowledgement Receipt	
EFS ID:	40855173
Application Number:	16869402
International Application Number:	
Confirmation Number:	4812
Title of Invention:	PERCUSSIVE THERAPY DEVICE
First Named Inventor/Applicant Name:	Jason Wersland
Customer Number:	24574
Filer:	Brennan C. Swain/Susan Papp
Filer Authorized By:	Brennan C. Swain
Attorney Docket Number:	76840-5077
Receipt Date:	15-OCT-2020
Filing Date:	07-MAY-2020
Time Stamp:	16:38:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$500
RAM confirmation Number	E20200EG39269609
Deposit Account	100440
Authorized User	Susan Papp
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	76840_5077_IssueFee.pdf	119752 354d66417456276919 47de8b643121ad8a c3c138	no	1
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30177 5d73bc4d5062b1589b1dd71a43aa124e52 426ec9	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	149929		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

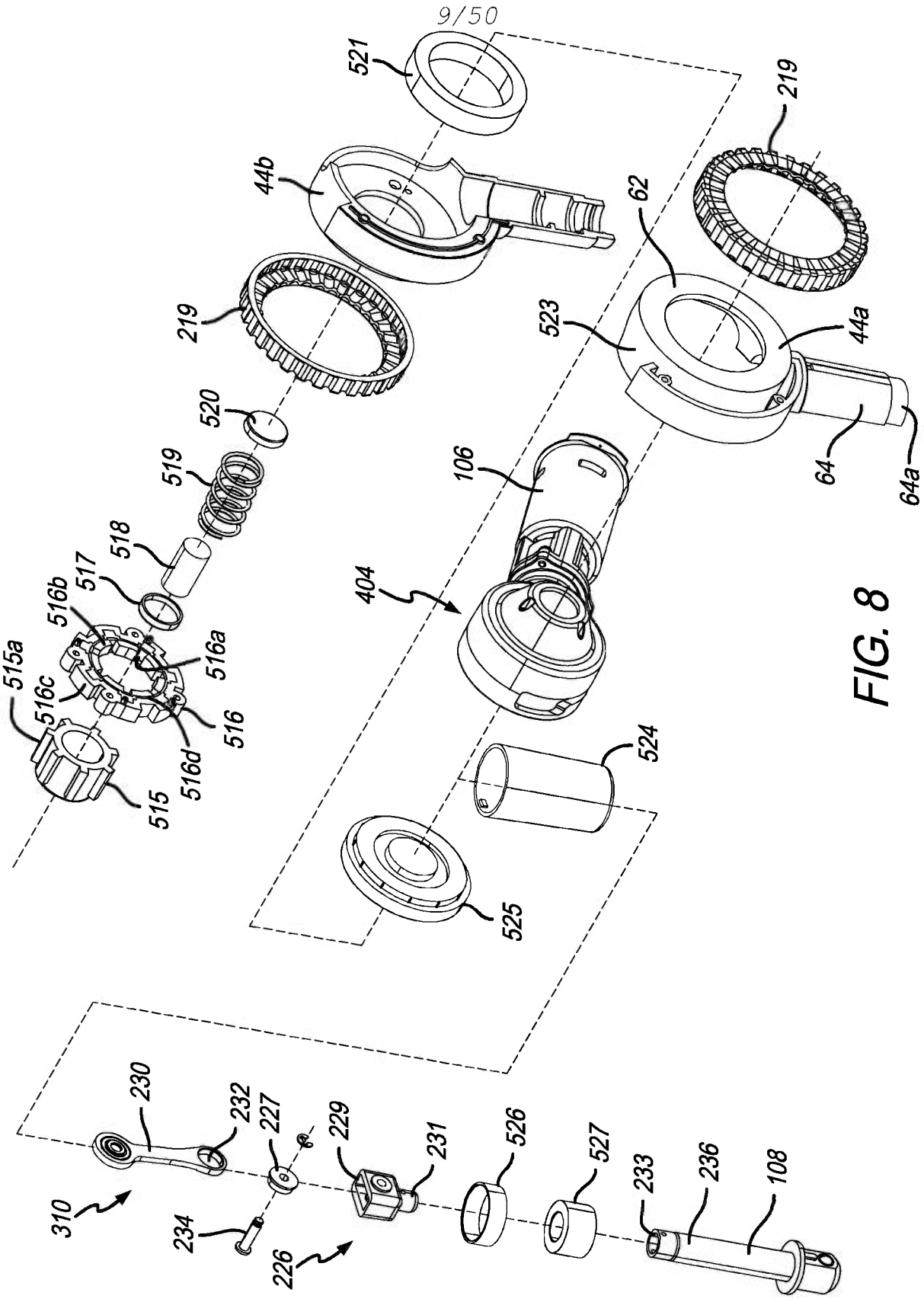

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FIG. 8

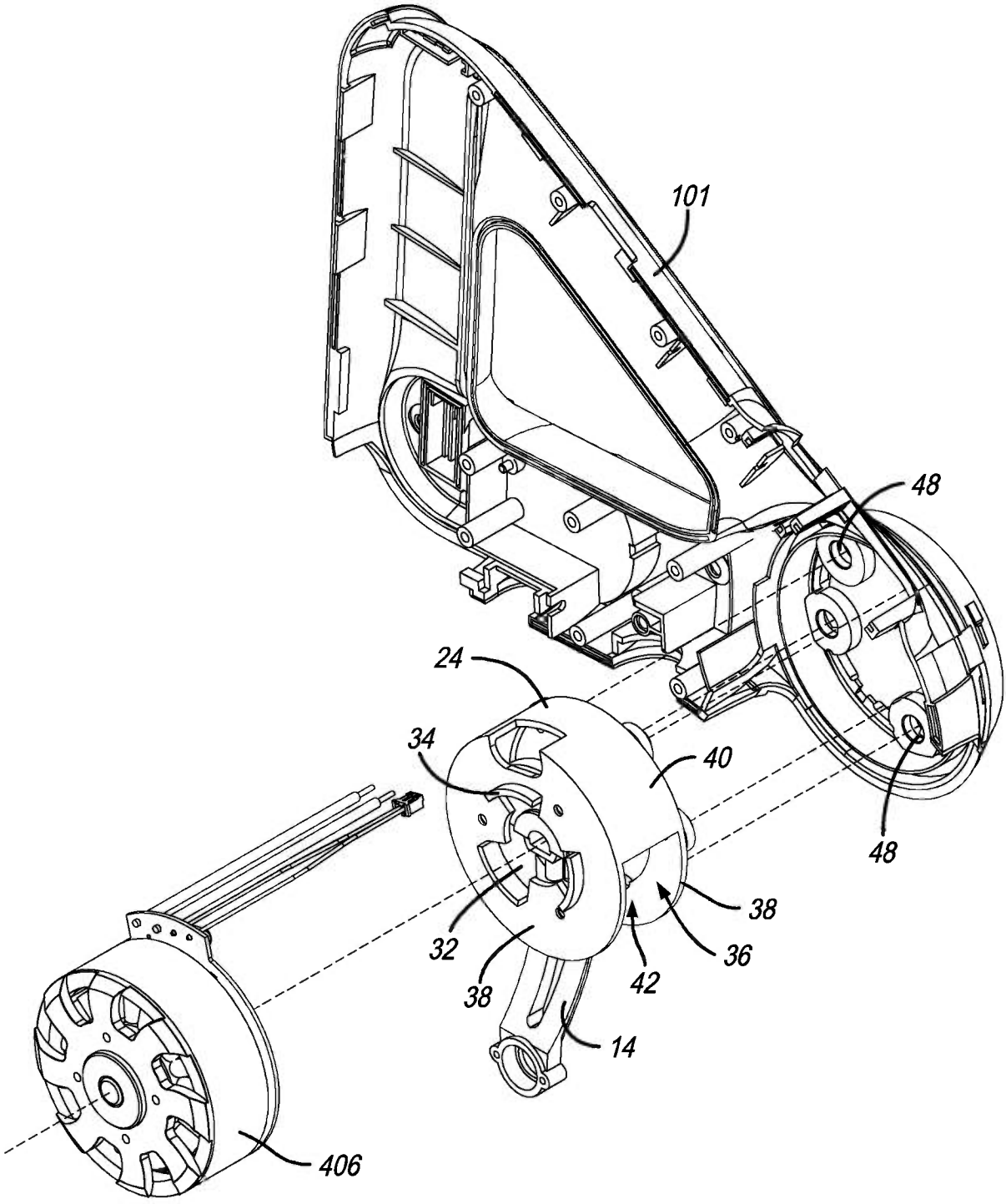


FIG. 43A

Electronic Acknowledgement Receipt	
EFS ID:	40832106
Application Number:	16869402
International Application Number:	
Confirmation Number:	4812
Title of Invention:	PERCUSSIVE THERAPY DEVICE
First Named Inventor/Applicant Name:	Jason Wersland
Customer Number:	24574
Filer:	Brennan C. Swain/Susan Papp
Filer Authorized By:	Brennan C. Swain
Attorney Docket Number:	76840-5077
Receipt Date:	13-OCT-2020
Filing Date:	07-MAY-2020
Time Stamp:	17:33:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment after Notice of Allowance (Rule 312)	76840_5077_Response.pdf	108022 ce5b60a3096d9a523b26ca461d3c4e927be8b843	no	3

Warnings:

Information:					
2	Drawings-only black and white line drawings	Fig_8_Replacement_.pdf	150977 57a3c6ecc47819fc32aa6197e7804ac52bf56a1a	no	1
Warnings:					
Information:					
3	Drawings-only black and white line drawings	Fig_43A_Replacement_.pdf	70186 c1dd9af24a981c6190b0f527dd348808185a51c0	no	1
Warnings:					
Information:					
		Total Files Size (in bytes):	329185		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Jason WERSLAND Serial No. 16/869,402 Filed: May 7, 2020 Title: PERCUSSIVE THERAPY DEVICE	**Confirmation No. 4812** Group Art Unit: 3785 Examiner: Stuart, Colin W. Customer No. 24,574 Docket No. 76840-5077

RESPONSE TO NOTICE OF ALLOWABILITY

AND AMENDMENT TO DRAWINGS

Dear Sir/Madam:

In response to the Examiner's Amendment in the Notice of Allowability, mailed on September 18, 2020, Applicant hereby amends the above-identified application, as follows:

Amendments to the Drawings begin on page 2 of this paper.

Remarks begin on page 3 of this paper.

AMENDMENT TO THE DRAWINGS

Applicant submits herewith replacement drawings for FIGS. 8 and 43A. No new matter has been added.

REMARKS

In accordance with the Examiner's Amendment in the Notice of Allowability, Applicant has revised FIGS. 8 and 43A. No new matter has been added.

Comments on Statement of Examiner's Reasons for Allowance

Regarding the Examiner's Statement of Reasons for Allowance accompanying the Notice of Allowability mailed September 18, 2020, to the extent that the Examiner has characterized the claims and/or the invention, characterized the prior art, paraphrased claim recitations, emphasized certain recitations over others, or otherwise made statements or notations purporting to limit the scope of the allowed claims, Applicant respectfully disagrees with any and all such statements and characterizations made by the Examiner. Further, Applicant submits that the claims are distinguishable from the prior art of record for the reasons specified by the Applicant during prosecution and for other reasons not mentioned by the Examiner in the Statement of Reasons for Allowance.

CONCLUSION

It is believed that no additional fee is due for submitting this response. However, in the event a fee is required, the Commissioner is authorized to charge any amounts due or credit any overpayments in connection with this matter to Deposit Account No. 10-0440.

Date: October 13, 2020

/Brennan C. Swain/

Brennan C. Swain, Esq.
Registration No. 43,175
Jeffer Mangels Butler & Mitchell LLP
1900 Avenue of the Stars, 7th Floor
Los Angeles, CA 90067
310-203-8080
Customer No. 24574



United States Patent and Trademark Office

Office of the Chief Financial Officer

Document Code:WFEE

User :C46472

Refund Accounting Date:09/22/2020

Effective Date	Sale Item Reference Number	Refund Total
05/07/2020	16869402	$80.00

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method	Account Number
I20209L910000464	2051	LATE FILING FEE FOR OATH OR DECLARATION	$80.00	DA	100440



United States Patent and Trademark Office

Office of the Chief Financial Officer

Document Code:WFEE

User :C46472

Sale Adjustment Accounting Date:09/22/2020

Effective Date	Sale Accounting Date	Sale Item Reference Number
05/07/2020	09/22/2020	16869402

Document Number	Fee Code	Fee Code Description	Amount Paid	Payment Method
I20209L910000464	2051	LATE FILING FEE FOR OATH OR DECLARATION	$80.00	DA

To: patentdocket@jmbm.com,,
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 24574

Sep 18, 2020 04:47:36 AM

Dear PAIR Customer:

JEFFER, MANGELS, BUTLER & MITCHELL, LLP
1900 AVENUE OF THE STARS, 7TH FLOOR
LOS ANGELES, CA 90067
UNITED STATES

The following USPTO patent application(s) associated with your Customer Number, 24574 , have new outgoing correspondence. This correspondence is now available for viewing in Private PAIR.

The official date of notification of the outgoing correspondence will be indicated on the form PTOL-90 accompanying the correspondence.

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Application	Document	Mailroom Date	Attorney Docket No.
16869402	NOA	09/18/2020	76840-5077
	EXIN	09/18/2020	76840-5077

To view your correspondence online or update your email addresses, please visit us anytime at https://sportal.uspto.gov/secure/myportal/privatepair.

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Thank you for prompt attention to this notice,

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NOTICE OF ALLOWANCE AND FEE(S) DUE

24574 7590 09/18/2020

JEFFER, MANGELS, BUTLER & MITCHELL, LLP
1900 AVENUE OF THE STARS, 7TH FLOOR
LOS ANGELES, CA 90067

EXAMINER	
STUART, COLIN W	
ART UNIT	PAPER NUMBER
3785	

DATE MAILED: 09/18/2020

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/869,402	05/07/2020	Jason Wersland	76840-5077	4812

TITLE OF INVENTION: PERCUSSIVE THERAPY DEVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	12/18/2020

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

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

HOW TO REPLY TO THIS NOTICE:

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

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

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

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

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

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

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

PART B - FEE(S) TRANSMITTAL

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

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

By fax, send to: (571)-273-2885

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

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

24574 7590 09/18/2020
JEFFER, MANGELS, BUTLER & MITCHELL, LLP
1900 AVENUE OF THE STARS, 7TH FLOOR
LOS ANGELES, CA 90067

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

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/869,402	05/07/2020	Jason Wersland	76840-5077	4812

TITLE OF INVENTION: PERCUSSIVE THERAPY DEVICE

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$500	$0.00	$0.00	$500	12/18/2020

EXAMINER	ART UNIT	CLASS-SUBCLASS
STUART, COLIN W	3785	601-108000

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

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 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) ❑ Advance Order - # of Copies _____

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

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

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

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

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

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

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/869,402	05/07/2020	Jason Wersland	76840-5077	4812

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LOS ANGELES, CA 90067

EXAMINER	
STUART, COLIN W	

ART UNIT	PAPER NUMBER
3785	

DATE MAILED: 09/18/2020

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

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

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

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

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

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

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

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

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

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

Notice of Allowability	Application No. 16/869,402	Applicant(s) Wersland et al.	
	Examiner COLIN W STUART	Art Unit 3785	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 filed 9/1/20 & interview on 9/11/20.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

3. ☑ The allowed claim(s) is/are 1-7,17-24 and 26-33 . 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 9/11/20 .

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. attached.
5. ☑ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/COLIN W STUART/
Primary Examiner, Art Unit 3785

Notice of Pre-AIA or AIA Status

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

This office action is in response to the amendment filed 9/1/20 and the interview on 9/11/20. As directed by the amendment: claims 1-3, 7, 17-19, 21-22, 24, and 26-27 have been amended, claims 8-9 and 25 have been cancelled, and claims 28-33 have been added. As per the examiner's amendment below, the application is in condition for allowance of claims 1-7, 17-24, and 26-33.

Terminal Disclaimer

2. The terminal disclaimer filed on 9/1/20 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 10,702,448 has been reviewed and is accepted. The terminal disclaimer has been recorded.

EXAMINER'S AMENDMENT

3. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in an interview with Brennan Swain 43,175 on 9/11/20.

The application has been amended as follows:

In claim 1 line 7, the language "device, and wherein the motor is positioned in the head portion of the housing," has been amended to read –device,--.

In claim 1 line 9, the language "a motor positioned in the housing," has been amended to read –a motor positioned in the head portion of the housing,--.

In claim 7 line 14, the language "axis extends generally parallel" has been amended to read –axis extends parallel--.

In claim 7 line 15-16, the language "the first side wall, and wherein at least a portion of the push rod assembly is positioned in the motor mount interior," has been amended to read –the first side wall,--.

In claim 7 line 19, the language "activation of the motor." has been amended to read –activation of the motor, wherein at least a portion of the push rod assembly is positioned in the motor mount interior.--.

In claim 18 line 3, the language "extends in a direction generally" has been amended to read –extends in a direction--.

In claim 31 line 2, the language "defines the handle portion," has been amended to read –defines the handle opening,--.

In claim 32 line 2, the language "defines the handle portion," has been amended to read –defines the handle opening,--.

Drawings

4. The following changes to the drawings have been approved by the examiner and agreed upon by applicant: correction of the missing lead line for reference character 38 in Fig. 43A, amendment to Fig. 8 to remove the reference character 228 and changing the lead line of reference character 310 to be

a lead arrow. In order to avoid abandonment of the application, applicant must make these above agreed upon drawing changes.

Reasons for Allowance

5. The following is an examiner's statement of reasons for allowance: when read in light of the limitations of the claimed percussive therapy device/method, the prior art does not disclose, either alone or in combination, a percussive therapy device including an electrical source, motor positioned in a head portion of a housing, a switch for actuation of the motor, a push rod assembly to reciprocate when actuated by the motor, the housing including a head portion and first, second, and third handle portions that define a handle opening and first, second, and third axes, respectively, which form a triangle such that the user can grasp any of the first, second, or third handle portions independently to use the device as set forth in independent claim 1. The prior art is likewise silent as to a device including a housing, electrical source, brushless motor positioned in the housing, switch, and push rod assembly to reciprocate when activated by the motor, and a motor mount having first and second side walls each having opposing inner and outer major surfaces, the inner surfaces defining a motor mount interior therebetween, the motor being secured to the outer major surface of the first side wall, the second side wall secured to the housing, the first side wall defines an axis that is normal to the first side wall outer major surface, the motor including a shaft with an axis which extends through a protrusion opening into the motor mount interior and the motor shaft extends parallel to the first side wall axis at least a portion of the push rod assembly positioned in the motor mount interior as set forth in independent claim 7. The prior art is likewise silent as to a device including a housing, electrical source, brushless motor positioned in the housing, switch, and push rod assembly to reciprocate when activated by the motor, and a motor mount having first and second side walls each having opposing inner and outer major surfaces, the inner surfaces defining a motor mount interior therebetween, the motor being directly

secured to the outer major surface of the first side wall and the second side wall is secured to the housing as set forth in independent claim 33. The prior art is likewise silent as to the method of using a percussive massage device including obtaining the device having an electrical source, motor positioned in a housing, a switch for actuation of the motor, a push rod assembly to reciprocate when actuated by the motor, the housing including first, second, and third handle portions that define a handle opening and each having handle portion interior edges of lengths which allow a user to grasp the respective handle portion such that at least a portion of three fingers extend through the opening and contact the interior edge, activating the motor via the switch, grasping the first handle portion using a first hand and massaging a first body part, reorienting the device and grasping the second handle portion with the first hand and massaging the first or a second body part, and reorienting the device, grasping the third handle portion using the first hand and massaging the first, second, or a third body part as set forth in claim 24.

The closest prior art references of record are: Rix (7,927,259), Stanbridge (2012/0253245), Haas (2005/0126018), Kehoe et al. (2013/0014968), Naughton et al. (2010/0162579), Neumeier (2005/0252011), Calvert (7,041,072), Marton et al. (10,314,762), Paul et al. (2018/0288160), Roberts (2015/0119771), and Pepe (2017/0304145).

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

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to COLIN W STUART whose telephone number is (571)270-7490. The examiner can normally be reached on M-F: 9-5.

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, Justine Yu can be reached on 571-272-4835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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

/COLIN W STUART/
Primary Examiner, Art Unit 3785

Examiner-Initiated Interview Summary	Application No. 16/869,402	Applicant(s) Wersland et al.		
	Examiner COLIN W STUART	Art Unit 3785	AIA (First Inventor to File) Status Yes	Page 1 of 1

All participants (applicant, applicants representative, PTO personnel):

1. COLIN W STUART (Primary Examiner); Telephonic 2. Brennan Swain 43,175 (Attorney of Record); Telephonic

Date of Interview: 11 September 2020

Claims Discussed: 1, 7, 18, 31-32

Brief Description of the main topic(s) of discussion: Examiner contacted attorney of record, Brennan Swain 43,175, on 9/11/20 to discuss proposed examiner's amendments to place the application in condition for allowance. An agreement was reached and is reflected in the attached notice of allowability.

Issues Discussed:

Other:
Examiner contacted attorney of record, Brennan Swain 43,175, on 9/11/20 to discuss proposed examiner's amendments to place the application in condition for allowance. An agreement was reached and is reflected in the attached notice of allowability.

/COLIN W STUART/ Primary Examiner, Art Unit 3785	

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview .

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/869,402	Wersland et al.
	Examiner	Art Unit
	COLIN W STUART	3785

✓	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	07/21/2020	09/11/2020							
1	1	✓	=							
2	2	✓	=							
3	3	✓	=							
4	4	✓	=							
5	5	✓	=							
6	6	✓	=							
12	7	✓	=							
	8	✓	-							
	9	✓	-							
	10	-	-							
	11	-	-							
	12	-	-							
	13	-	-							
	14	-	-							
	15	-	-							
	16	-	-							
7	17	✓	=							
13	18	✓	=							
14	19	✓	=							
15	20	✓	=							
8	21	✓	=							
9	22	✓	=							
10	23	✓	=							
16	24	✓	=							
	25	✓	-							
17	26	✓	=							
18	27	✓	=							
19	28		=							
20	29		=							
21	30		=							
22	31		=							
11	32		=							
23	33		=							

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/869,402	Wersland et al.
	Examiner	Art Unit
	COLIN W STUART	3785

CPC								
Symbol							Type	Version
A61H	/	23	/	006			F	2013-01-01
A61H	/	23	/	0254			I	2013-01-01
A61H	/	1	/	008			I	2013-01-01
A61H	/	23	/	00			I	2013-01-01
A61H	/	2201	/	0153			A	2013-01-01
A61H	/	2201	/	149			A	2013-01-01
A61H	/	2201	/	5097			A	2013-01-01
A61H	/	2201	/	5046			A	2013-01-01
A61H	/	2201	/	5035			A	2013-01-01
A61H	/	2201	/	5025			A	2013-01-01
B27B	/	19	/	002			A	2013-01-01
A61H	/	2201	/	1215			A	2013-01-01
A61H	/	2023	/	029			A	2013-01-01
A61H	/	2201	/	0165			A	2013-01-01
A61H	/	2201	/	12			A	2013-01-01
A61H	/	2201	/	1207			A	2013-01-01
A61H	/	2201	/	1481			A	2013-01-01
A61H	/	2201	/	14			A	2013-01-01
B23D	/	51	/	16			A	2013-01-01
A61H	/	2201	/	1664			A	2013-01-01
B27B	/	19	/	02			A	2013-01-01
B23D	/	49	/	007			A	2013-01-01
B23D	/	49	/	10			A	2013-01-01
A61B	/	17	/	142			A	2016-11-01
B27B	/	19	/	00			A	2013-01-01

CPC Combination Sets									
Symbol							Type	Set	Ranking	Version
	/		/							

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	23	
/COLIN W STUART/ Primary Examiner, Art Unit 3785	11 September 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1,12,16,23	1

U.S. Patent and Trademark Office — Part of Paper No.: 20200911

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/869,402	Wersland et al.
	Examiner	**Art Unit**
	COLIN W STUART	3785

INTERNATIONAL CLASSIFICATION					
CLAIMED					
A61H	/	23	/	00	
NON-CLAIMED					
	/		/		

US ORIGINAL CLASSIFICATION	
CLASS	**SUBCLASS**

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

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	23	
/COLIN W STUART/ Primary Examiner, Art Unit 3785	11 September 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1,12,16,23	1

U.S. Patent and Trademark Office — Part of Paper No.: 20200911

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/869,402	Wersland et al.
	Examiner	Art Unit
	COLIN W STUART	3785

☐ 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	1		10	14	19	19	28								
2	2		11	20	20	20	29								
3	3		12	8	21	21	30								
4	4		13	9	22	22	31								
5	5		14	10	23	11	32								
6	6		15	16	24	23	33								
12	7		16		25										
	8	7	17	17	26										
	9	13	18	18	27										

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	23	
/COLIN W STUART/ Primary Examiner, Art Unit 3785	11 September 2020	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1,12,16,23	1

U.S. Patent and Trademark Office Part of Paper No.: 20200911

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/869,402	Wersland et al.
	Examiner	Art Unit
	COLIN W STUART	3785

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61H: 1/00, 006, 008; 23/00, 004, 006, 02, 0218, 0254, 0263, 04, 06	07/21/2020	CWS
A61H: 2023/002, 0209, 0272, 0281, 029; 39/00, 002, 007, 04	07/21/2020	CWS
A61H: 2201/0165, 12, 1207, 1215, 1223, 123, 1238, 14, 1409, 1418, 1481, 149, 1664	07/21/2020	CWS
B23D: 51/16; 49/162, 165, 00, 007, 008, 10, 16, 167	07/21/2020	CWS
B26D: 7/2621, 2614; 5/14	07/21/2020	CWS
A61B: 17/148, 142, 14, 144	07/21/2020	CWS
B27B: 19/00, 002, 006, 09, 02; 11/06	07/21/2020	CWS
Updated above search	09/11/2020	CWS

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
83	615,623, 632, 626, 427	07/21/2020	CWS
30	392, 393, 394, 182, 208, 241, 217-220, 242	07/21/2020	CWS
173	49,114, 122, 205	07/21/2020	CWS
227	131	07/21/2020	CWS
D08	8,61, 64	07/21/2020	CWS
144	121, 122, 147	07/21/2020	CWS
125	16.01	07/21/2020	CWS
76	31, 36	07/21/2020	CWS
601	97,107	07/21/2020	CWS

/COLIN W STUART/ Primary Examiner, Art Unit 3785	

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/869,402	Wersland et al.
	Examiner	Art Unit
	COLIN W STUART	3785

* 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**
Inventor name search	07/21/2020	CWS
Assignee search	07/21/2020	CWS
EAST text search (see search history)	07/21/2020	CWS
PLUS search	07/21/2020	CWS
Updated above search	09/11/2020	CWS

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
	see Interference Search History Printout	09/11/2020	CWS

/COLIN W STUART/ Primary Examiner, Art Unit 3785	

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BIB DATA SHEET

CONFIRMATION NO. 4812

SERIAL NUMBER	FILING or 371(c) DATE RULE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
16/869,402	05/07/2020	601	3785	76840-5077

APPLICANTS
Theragun, Inc., Beverly Hills, CA

INVENTORS
Jason Wersland, Manhattan Beach, CA;
Benjamin Nazarian, Beverly Hills, CA;
Jaime Sanchez Solana, Los Angeles, CA;
Eduardo Merino, Beverly Hills, CA;

** **CONTINUING DATA** **********
This application is a CIP of 16/796,143 02/20/2020
which claims benefit of 62/844,424 05/07/2019
and claims benefit of 62/899,098 09/11/2019
and claims benefit of 62/912,392 10/08/2019
This application 16/869,402 05/07/2020
is a CIP of 16/675,772 11/06/2019 PAT 10702448
which claims benefit of 62/785,151 12/26/2018

YES /CWS/ 9/11/20

** **FOREIGN APPLICATIONS** **********

** **IF REQUIRED, FOREIGN FILING LICENSE GRANTED** ** ** SMALL ENTITY **
05/12/2020

Foreign Priority claimed ❑ Yes ☑ No 35 USC 119(a-d) conditions met ❑ Yes ☑ No Verified and Acknowledged /COLIN W STUART/ Examiner's Signature	❑ Met after Allowance Initials	STATE OR COUNTRY	SHEETS DRAWINGS	TOTAL CLAIMS	INDEPENDENT CLAIMS
		CA	50	23 ~~17~~	4 ~~1~~

ADDRESS

/CWS/ 9/11/20

JEFFER, MANGELS, BUTLER & MITCHELL, LLP
1900 AVENUE OF THE STARS, 7TH FLOOR
LOS ANGELES, CA 90067
UNITED STATES

TITLE

PERCUSSIVE THERAPY DEVICE

FILING FEE RECEIVED		
1325	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

BIB (Rev. 05/07).

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	35	((("Nazarian") near3 ("Benjamin"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/11 11:35
L3	43	((("Wersland") near3 ("Jason"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/11 11:36
L4	3	L2 not L3	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/11 11:36
L5	22	((("Solana") near3 ("Jaime") near3 ("Sanchez"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/11 11:36
L6	1	L5 not L3	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/11 11:37
L7	7	((("Merino") near3 ("Eduardo"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/11 11:37
L8	0	L7 not L3	US-PGPUB; USPAT	OR	ON	2020/09/11 11:38

			; USOCR			
L9	17	((("THERAGUN") near3 ("INC"))).AS,AANM.	USPAT	OR	ON	2020/09/11 11:38
L10	5	L9 not L3	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/11 11:38
S1	0	"15458920"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 08:50
S2	18	("20010016697" | "20030009116" | "20030195443" | "20060025710" | "20060123941" | "20060192527" | "20070150004" | "20080103419" | "20120253245" | "20130138023" | "20130261516" | "20140180331" | "4173217" | "4549535" | "5569168" | "5951501" | "6228042" | "6663657").PN.	US-PGPUB; USPAT	OR	ON	2018/03/19 09:23
S3	1	WO-2015038005-$.did.	EPO; JPO; DERWENT	OR	ON	2018/03/19 09:57
S4	1	2015-19392L.NRAN.	DERWENT	OR	ON	2018/03/19 09:58
S5	1	("20160206502").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/03/19 09:58
S6	1	WO-2014118596-$.did.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:12
S7	1	2014-P46661.NRAN.	DERWENT	OR	ON	2018/03/19 10:12
S8	99	(US-20160367425-$ or US-20140180331-$ or US-20080103419-$ or US-20030195443-$ or US-20160206502-$ or US-20140163442-$ or US-20070150004-$ or US-20120046694-$ or US-20100137907-$ or US-20090270915-$ or US-	US-PGPUB; USPAT	OR	ON	2018/03/19 10:14

		20060293711-$ or US-20050131461-$ or US-20050113870-$ or US-20050090863-$ or US-20020177795-$ or US-20100010399-$ or US-20050075591-$ or US-20050049531-$ or US-20110009691-$ or US-20090234182-$ or US-20090222024-$ or US-20050187431-$ or US-20030009116-$ or US-20040193080-$ or US-20020188233-$ or US-20130261516-$).did. or (US-20130138023-$ or US-20120253245-$ or US-20120101517-$ or US-20070244418-$ or US-20050187498-$ or US-20010016697-$ or US-20160338899-$ or US-20060025710-$ or US-20030028134-$ or US-20060192527-$ or US-20020107459-$ or US-20170027798-$ or US-20060123941-$ or US-20170304145-$ or US-20120330201-$ or US-20080200849-$ or US-20130281897-$).did. or (US-6663657-$ or US-6228042-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-9456950-$ or US-8083699-$ or US-8641648-$ or US-7144417-$ or US-7169169-$ or US-7503923-$ or US-6805700-$ or US-6503211-$ or US-6241693-$ or US-3880150-$ or US-4858600-$ or US-8398539-$ or US-6991599-$ or US-6758826-$ or US-7122015-$ or US-9265689-$ or US-8715161-$ or US-7662088-$ or US-7041072-$ or US-7491184-$ or US-7128722-$).did. or (US-6352518-$ or US-6027444-$ or US-5716332-$ or US-5063911-$ or US-4827914-$ or US-4777945-$ or US-3837335-$ or US-3724451-$ or US-3626934-$ or US-6976970-$ or US-6723060-$ or US-6602211-$ or US-5632765-$ or US-4461286-$ or US-4513737-$ or US-4790296-$ or US-6911013-$ or US-6165145-$ or US-5935089-$ or US-4703536-$ or US-7927259-$ or US-6875186-$ or US-6682496-$ or US-6537236-$ or US-6599260-$ or US-6733414-$ or US-2078159-$).did. or (US-5951501-$ or US-7749178-$).did. or (WO-2014118596-$ or WO-2015038005-$).did.	; USOCR			
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S10	2	(("WERSLAND") near3 ("Jason")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:15
S11	115	(US-20160367425-$ or US-20140180331-$ or US-20080103419-$ or US-20030195443-$ or US-20160206502-$ or US-20140163442-$ or US-	US-PGPUB;	OR	ON	2018/03/19 10:17

		20070150004-$ or US-20120046694-$ or US-20100137907-$ or US-20090270915-$ or US-20060293711-$ or US-20050131461-$ or US-20050113870-$ or US-20050090863-$ or US-20020177795-$ or US-20100010399-$ or US-20050075591-$ or US-20050049531-$ or US-20110009691-$ or US-20090234182-$ or US-20090222024-$ or US-20050187431-$ or US-20030009116-$ or US-20040193080-$ or US-20020188233-$ or US-20130261516-$).did. or (US-20130138023-$ or US-20120253245-$ or US-20120101517-$ or US-20070244418-$ or US-20050187498-$ or US-20010016697-$ or US-20160338899-$ or US-20060025710-$ or US-20030028134-$ or US-20060192527-$ or US-20020107459-$ or US-20170027798-$ or US-20060123941-$ or US-20170156974-$ or US-20160151238-$ or US-20130281897-$ or US-20100222723-$ or US-20090270773-$ or US-20050054958-$ or US-20080275343-$ or US-20070119625-$ or US-20040144572-$ or US-20170304144-$ or US-20170304145-$).did. or (US-6663657-$ or US-6228042-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-9456950-$ or US-8083699-$ or US-8641648-$ or US-7144417-$ or US-7169169-$ or US-7503923-$ or US-6805700-$ or US-6503211-$ or US-6241693-$ or US-3880150-$ or US-4858600-$ or US-8398539-$ or US-6991599-$ or US-6758826-$ or US-7122015-$ or US-9265689-$ or US-8715161-$ or US-7662088-$ or US-7041072-$ or US-7491184-$ or US-7128722-$).did. or (US-6352518-$ or US-6027444-$ or US-5716332-$ or US-5063911-$ or US-4827914-$ or US-4777945-$ or US-3837335-$ or US-3724451-$ or US-3626934-$ or US-6976970-$ or US-6723060-$ or US-6602211-$ or US-5632765-$ or US-4461286-$ or US-4513737-$ or US-4790296-$ or US-6911013-$ or US-6165145-$ or US-5935089-$ or US-4703536-$ or US-7927259-$ or US-6875186-$ or US-6682496-$ or US-6537236-$ or US-6599260-$ or US-6733414-$ or US-2078159-$).did. or (US-5951501-$ or US-4730605-$ or US-6374932-$ or US-7131506-$ or US-6619413-$ or US-5071005-$ or US-4615402-$).did. or (US-3094119-$ or US-2964037-$).did. or (WO-2014118596-$ or WO-2015038005-$).did.	USPAT; USOCR			
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S13	0	(("NAZARIAN") near3 ("Benjamin")).INV.	US-PGPUB; USPAT	OR	ON	2018/03/19 10:17

			; USOCR			
S14	0	(("NAZARIAN") near3 ("Benjamin")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:17
S15	0	(("ENSING") near3 ("Geert")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:17
S16	3	(("ENSING") near3 ("Geert")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:17
S17	573	(("LI") near3 ("Guang")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:18
S18	2	S17 and (massage reciprocat$).clm.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:18
S19	40	(("LI") near3 ("Guang")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:19
S20	43	(("FIRTH") near3 ("Robert")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:19
S21	8	(("FIRTH") near3 ("Robert")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:20
S22	24	(("LINTON") near3 ("Andrew")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:20

S23	6	(("LINTON") near3 ("Andrew")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:21
S24	148	(("COOPER") near3 ("Andrew")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:21
S25	57	(("COOPER") near3 ("Andrew")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:22
S26	84	(("WALDRON") near3 ("Michael")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:23
S27	5	(("WALDRON") near3 ("Michael")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:25
S28	50	(US-5727981-$ or US-5499775-$ or US-4388883-$ or US-4408378-$ or US-4435131-$ or US-4592143-$ or US-5217310-$ or US-5230314-$ or US-5273381-$ or US-5273479-$ or US-5316227-$ or US-5340227-$ or US-5896845-$ or US-5897027-$ or US-5951009-$ or US-5992972-$ or US-6080044-$ or US-5601533-$ or US-3877422-$ or US-3830233-$ or US-4136608-$ or US-4177147-$ or US-4297121-$ or US-4300937-$ or US-4309850-$ or US-4312685-$).did. or (US-4403953-$ or US-4416270-$ or US-4419875-$ or US-4463770-$ or US-4545736-$ or US-4590876-$ or US-4632094-$ or US-4757647-$ or US-4799419-$ or US-4840047-$ or US-4864965-$ or US-4922692-$ or US-4941382-$ or US-5361786-$ or US-5422147-$ or US-5423862-$ or US-5468217-$ or US-5571130-$ or US-5641405-$ or US-5641969-$ or US-5681453-$ or US-5707460-$ or US-5798523-$ or US-5863433-$).did.	USPAT	OR	ON	2018/03/19 17:04
S29	50	S28 and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 17:06
S30	99	(US-20160367425-$ or US-20140180331-$ or US-20080103419-$ or US-20030195443-$ or US-20160206502-$ or US-20140163442-$ or US-	US-PGPUB;	OR	ON	2018/03/20 12:13

		20070150004-$ or US-20120046694-$ or US-20100137907-$ or US-20090270915-$ or US-20060293711-$ or US-20050131461-$ or US-20050113870-$ or US-20050090863-$ or US-20020177795-$ or US-20100010399-$ or US-20050075591-$ or US-20050049531-$ or US-20110009691-$ or US-20090234182-$ or US-20090222024-$ or US-20050187431-$ or US-20030009116-$ or US-20040193080-$ or US-20020188233-$ or US-20130261516-$).did. or (US-20130138023-$ or US-20120253245-$ or US-20120101517-$ or US-20070244418-$ or US-20050187498-$ or US-20010016697-$ or US-20160338899-$ or US-20060025710-$ or US-20030028134-$ or US-20060192527-$ or US-20020107459-$ or US-20170027798-$ or US-20060123941-$ or US-20170304145-$ or US-20120330201-$ or US-20080200849-$ or US-20130281897-$).did. or (US-6663657-$ or US-6228042-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-9456950-$ or US-8083699-$ or US-8641648-$ or US-7144417-$ or US-7169169-$ or US-7503923-$ or US-6805700-$ or US-6503211-$ or US-6241693-$ or US-3880150-$ or US-4858600-$ or US-8398539-$ or US-6991599-$ or US-6758826-$ or US-7122015-$ or US-9265689-$ or US-8715161-$ or US-7662088-$ or US-7041072-$ or US-7491184-$ or US-7128722-$).did. or (US-6352518-$ or US-6027444-$ or US-5716332-$ or US-5063911-$ or US-4827914-$ or US-4777945-$ or US-3837335-$ or US-3724451-$ or US-3626934-$ or US-6976970-$ or US-6723060-$ or US-6602211-$ or US-5632765-$ or US-4461286-$ or US-4513737-$ or US-4790296-$ or US-6911013-$ or US-6165145-$ or US-5935089-$ or US-4703536-$ or US-7927259-$ or US-6875186-$ or US-6682496-$ or US-6537236-$ or US-6599260-$ or US-6733414-$ or US-2078159-$).did. or (US-5951501-$ or US-7749178-$).did. or (WO-2014118596-$ or WO-2015038005-$).did.	USPAT; USOCR			
S31	115	(US-20160367425-$ or US-20140180331-$ or US-20080103419-$ or US-20030195443-$ or US-20160206502-$ or US-20140163442-$ or US-20070150004-$ or US-20120046694-$ or US-20100137907-$ or US-20090270915-$ or US-20060293711-$ or US-20050131461-$ or US-20050113870-$ or US-20050090863-$ or US-20020177795-$ or US-20100010399-$ or US-20050075591-$ or US-20050049531-$ or US-20110009691-$ or US-20090234182-$ or US-20090222024-$ or US-20050187431-$ or US-20030009116-$ or US-20040193080-$ or US-20020188233-$ or US-20130261516-$).did. or (US-20130138023-$ or US-20120253245-$ or US-	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:13

		20120101517-$ or US-20070244418-$ or US-20050187498-$ or US-20010016697-$ or US-20160338899-$ or US-20060025710-$ or US-20030028134-$ or US-20060192527-$ or US-20020107459-$ or US-20170027798-$ or US-20060123941-$ or US-20170156974-$ or US-20160151238-$ or US-20130281897-$ or US-20100222723-$ or US-20090270773-$ or US-20050054958-$ or US-20080275343-$ or US-20070119625-$ or US-20040144572-$ or US-20170304144-$ or US-20170304145-$).did. or (US-6663657-$ or US-6228042-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-9456950-$ or US-8083699-$ or US-8641648-$ or US-7144417-$ or US-7169169-$ or US-7503923-$ or US-6805700-$ or US-6503211-$ or US-6241693-$ or US-3880150-$ or US-4858600-$ or US-8398539-$ or US-6991599-$ or US-6758826-$ or US-7122015-$ or US-9265689-$ or US-8715161-$ or US-7662088-$ or US-7041072-$ or US-7491184-$ or US-7128722-$).did. or (US-6352518-$ or US-6027444-$ or US-5716332-$ or US-5063911-$ or US-4827914-$ or US-4777945-$ or US-3837335-$ or US-3724451-$ or US-3626934-$ or US-6976970-$ or US-6723060-$ or US-6602211-$ or US-5632765-$ or US-4461286-$ or US-4513737-$ or US-4790296-$ or US-6911013-$ or US-6165145-$ or US-5935089-$ or US-4703536-$ or US-7927259-$ or US-6875186-$ or US-6682496-$ or US-6537236-$ or US-6599260-$ or US-6733414-$ or US-2078159-$).did. or (US-5951501-$ or US-4730605-$ or US-6374932-$ or US-7131506-$ or US-6619413-$ or US-5071005-$ or US-4615402-$).did. or (US-3094119-$ or US-2964037-$).did. or (WO-2014118596-$ or WO-2015038005-$).did.				
S32	19	S31 not S30	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:13
S33	411	A61H1/00.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:15
S34	57	S33 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:17

S35	163	A61H1/006.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:20
S36	734	A61H1/008.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:25
S37	73	S36 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:25
S38	223	S36 and (reciprocat$ translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:25
S39	14	S36 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:27
S40	566	A61H23/00.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:33
S41	26	S40 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:33
S42	56	S40 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:34

S43	88	A61H23/004.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:36
S44	167	A61H23/006.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:37
S45	1,323	A61H23/02.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 14:41
S46	37	S45 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 14:41
S47	123	S45 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 14:41
S48	372	A61H23/0218.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 16:21
S49	629	A61H23/0254.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 17:17
S50	37	S49 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 17:17

S51	226	S49 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 17:25
S52	1,078	A61H23/0263.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 17:56
S53	41	S52 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 17:56
S54	121	S52 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 17:57
S55	434	A61H23/04.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 18:21
S56	20	S55 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 18:21
S57	59	A61H23/06.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:05
S58	59	A61H2023/002.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:08

S59	39	A61H2023/0209.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:11
S60	104	A61H2023/0272.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:13
S61	50	A61H2023/0281.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:17
S62	36	A61H2023/029.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:20
S63	112	A61H39/00.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:21
S64	484	A61H39/002.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:31
S65	2	S64 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:31
S66	60	A61H39/007.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:40

S67	697	A61H39/04.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:41
S68	5	S64 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:41
S69	9	S67 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:42
S70	55	S67 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:42
S71	189	A61H2201/0165.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:57
S72	37	A61H2201/12.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:01
S73	493	A61H2201/1207.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:02
S74	12	S73 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:03

S75	41	S73 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:03
S76	1,249	A61H2201/1215.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:12
S77	52	S76 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:12
S78	250	S76 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:13
S79	16	A61H2201/1223.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:25
S80	158	A61H2201/123.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:26
S81	590	A61H2201/1238.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:32
S82	103	S81 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:32

S83	104	A61H2201/14.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:35
S84	67	A61H2201/1409.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:37
S85	224	A61H2201/1418.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:40
S86	73	A61H2201/1481.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:49
S87	358	A61H2201/149.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:52
S88	454	A61H2201/1664.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:59
S89	912	601/46.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:00
S90	19	S89 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:00

S91	19	S90 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:01
S92	54	601/67.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:01
S93	42	601/69.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:23
S94	322	601/70.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:29
S95	6	S94 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:30
S96	35	S94 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:30
S97	8	601/82.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:33
S98	311	601/84.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:34

S99	17	601/85.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:44
S100	52	601/89.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:46
S101	103	601/97.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:50
S102	245	601/101.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:54
S103	143	601/107.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 14:03
S104	161	601/108.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 14:06
S105	224	601/112.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 14:09
S106	542	601/134.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 14:21

S107	128	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$).did. or (US-2964037-$).did. or (EP-1313116-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2018/03/21 14:41

S108	43	S107 and ((axis axes) with (plane coplan$ co-plan$ parallel perpendicular$ orthogonal$))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 14:42
S109	116	S107 and (motor)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 14:45
S110	40	S108 and S109	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 14:46
S111	10	S107 and (gearbox gear-box (gear adj box))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 15:09
S112	2	S107 and ((shaft driveshaft drive-shaft) with damper)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 15:44
S113	54	("601".clas. or a61h.cpcl.) and ((shaft driveshaft drive-shaft) with damper)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 15:44
S114	52	S113 and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 15:45
S115	6,059	motor same ((shaft drive-shaft driveshaft) with damper)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 16:24

S116	7	motor same ((shaft drive-shaft driveshaft) with damper with compliant)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 16:24
S117	3,818	motor with ((shaft drive-shaft driveshaft) with damper)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 16:25
S118	1,195	motor with ((shaft drive-shaft driveshaft) with damper) with (gear gearbox gear-box)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 16:26
S119	115	motor with ((shaft drive-shaft driveshaft) with damper) with (gear gearbox gear-box) with vibrat$	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 16:27
S120	114	S119 and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 16:27
S121	12	motor with ((shaft drive-shaft driveshaft) with damper) and (a61h.cpcl. or "601".clas.)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 16:51
S122	3,818	motor with ((shaft drive-shaft driveshaft) with damper)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:44
S123	1,263	motor with ((shaft drive-shaft driveshaft) with damper) with gear$4	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:44

S124	0	motor with ((shaft drive-shaft driveshaft) with damper with (compliant)) with gear$4	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:45
S125	1	motor with ((shaft drive-shaft driveshaft) with damper with (compliant))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:45
S126	20	((shaft drive-shaft driveshaft) with damper with (compliant))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:46
S127	3,418	((shaft drive-shaft driveshaft) with damper with gear$3)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:53
S128	951	(((shaft drive-shaft driveshaft) near3 damper) with gear$3)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:56
S129	133	(((shaft drive-shaft driveshaft) adj damper) with gear$3)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:57
S130	116	S129 and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:57
S131	11	(a61h.cpcl. or "601".clas.) and (compliant with damper)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:00

S132	0	S107 and (bushing with (shaf drive-shaft driveshaft))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:14
S133	59	((shaft drive-shaft driveshaft) with bushing with (compliant))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:14
S134	54	S133 and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:14
S135	0	(a61h.cpcl. or "601".clas.) and (compliant with bushing)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:14
S136	293	(a61h.cpcl. or "601".clas.) and (bushing with (shaft driveshaft drive-shaft))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:14
S137	222	S136 and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:14
S138	51	S107 and (gear$3 same motor)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:45
S139	34	(a61h.cpcl. or "601".clas.) and (bushing with (shaft driveshaft drive-shaft) with gear$3)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 19:30

S140	144	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2018/03/21 19:41

		4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$).did. or (US-2964037-$).did. or (EP-1313116-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S141	0	S140 and (gear with (counterweight counter-weight (counter adj weight)))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 19:42
S142	6	S140 and ((counterweight counter-weight (counter adj weight)))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 19:42
S143	7	(a61h.cpcl. or "601".clas.) and (gear$3 with (counterweight counter-weight (counter adj weight)))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 19:47
S144	3,200	(gear$3 with (counterweight counter-weight (counter adj weight)))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 19:47
S145	298	(motor with (shaft driveshaft drive-shaft) with gear$3 with (counterweight counter-weight (counter adj weight)))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 19:47
S146	190	S145 and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 19:48
S147	0	S140 and ((gearbox gear-box (gear adj box)) with (damp$ bushing mount))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 20:19

S148	32	(a61h.cpcl. or "601".clas.) and ((gearbox gear-box (gear adj box)) with (damp$ bushing mount))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 20:19
S149	26	S148 and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 20:20
S150	156	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2018/03/22 09:57

		5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$).did. or (US-2964037-$).did. or (EP-1313116-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S151	6	S150 and (wobble)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 10:15
S152	1	("5085207").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/03/22 10:16
S153	21	("2122556" | "2156839" | "3993052" | "4964398").PN. OR ("5085207").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 10:20
S154	1	"14362581"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 10:33

S155	0	("2013/0261516").URPN.	USPAT	OR	ON	2018/03/22 11:17
S156	11	(US-0568503-$ | US-13636273-$ | US-1522935-$ | US-20020107459-$ | US-3837335-$ | US-3936632-$ | US-4432184-$ | US-4549535-$ | US-5167225-$ | US-5593381-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:19
S157	14	(US-0107459-$ | US-1579679-$ | US-20150615-$ | US-3837335-$ | US-4048989-$ | US-4291685-$ | US-4549535-$ | US-5088474-$ | US-5447491-$ | US-5593381-$ | US-6579251-$ | US-7503923-$ | US-20020107459-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:20
S158	1	("9265689").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/03/22 11:25
S159	17	("1955623" | "20010027280" | "20020161315" | "20030158505" | "20060047315" | "20090099485" | "20090306561" | "4513737" | "4604993" | "4742875" | "5413550" | "5803916" | "6440091" | "6500141" | "6568000" | "7435232").PN. OR ("9265689").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:25
S160	32	("1340959" | "3837335" | "3945076" | "3984890" | "4088128" | "4495940" | "4513737" | "4549535" | "4716890" | "4841955" | "5300095" | "5626615").PN. OR ("6228042").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:26
S161	17	("4730605" | "5167226" | "5447491" | "5626555").PN. OR ("5951501").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:27
S162	5	("20050090863" | "5399148" | "6228042" | "6805700").PN. OR ("7927259").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:28
S163	13	("1882040" | "3710875" | "3955563" | "4016873" | "4203431" | "4566442" | "4716890" | "4827914" | "5300095" | "6228042" | "6511445").PN. OR ("6723060").URPN.	US-PGPUB; USPAT	OR	ON	2018/03/22 11:28

			; USOCR			
S164	14	("1787211" | "4088128" | "4513737" | "4827914" | "4841955" | "4858600").PN. OR ("6682496").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:29
S165	25	("3710785" | "4513737").PN. OR ("4827914").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:29
S166	38	("1352894" | "1516717" | "1545027" | "1660821" | "3587588" | "3837335" | "4055343" | "4088128").PN. OR ("4513737").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:30
S167	18	("1660821" | "1796444" | "1833103" | "2706980" | "3626934").PN. OR ("3837335").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:30
S168	17	("1833103" | "2512536" | "3425410").PN. OR ("3626934").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:31
S169	47	("1599628" | "1657765" | "1796444" | "2067991" | "2076410" | "3837335").PN. OR ("4088128").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:33
S170	54	("0738357" | "0794003" | "0934662" | "2138815" | "3601122" | "3955563").PN. OR ("4079733").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:34
S171	57	("1818281" | "20030065280" | "20030084525" | "20040035439" | "20070068546" | "20080210252" | "20090083918" | "2465250" | "2806235" | "3150393" | "3204469" | "3272023" | "3358309" | "3384096" | "3517235" | "3794050" | "3850181" | "3853133" |	US-PGPUB; USPAT	OR	ON	2018/03/22 11:35

		"3897794" | "4139014" | "4158246" | "4585018" | "4651761" | "5078157" | "5297512" | "5343881" | "5471695" | "5502860" | "5511270" | "5603339" | "5622192" | "5632289" | "5647841" | "5839451" | "5915391" | "5918607" | "5967150" | "5987681" | "6283930" | "6575173" | "6668758" | "6997889" | "7356866" | "7805794" | "7814601" | "7865994").PN. OR ("8342187").URPN.	; USOCR			
S172	1	("9289348").PN.	US-PGPUB ; USPAT ; USOCR	OR	OFF	2018/03/22 11:37
S173	13	("20070015435" | "20080091128" | "20090005714" | "20100013610" | "20130116503" | "2263219" | "3504665" | "3978851" | "5460597" | "5470303" | "6632185").PN. OR ("9289348").URPN.	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/22 11:37
S174	7	(US-1579679-$ | US-1635917-$ | US-4603688-$ | US-5159922-$ | US-5447491-$).DID.	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/22 11:39
S175	3	(US-0158505-$ | US-20030158505-$).DID.	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/22 11:39
S176	11	("2196667" | "2517627" | "2657321" | "3511229").PN. OR ("3806980").URPN.	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/22 11:39
S177	43	("1796444" | "20010010105" | "20020082532" | "20020169400" | "20030009118" | "20050187498" | "20060041208" | "20060155224" | "20060173389" | "2017400" | "2048220" | "2076410" | "2078025" | "3900183" | "4088128" | "4479495" | "4549535" | "4716890" | "4841955" | "5140979" | "5305738" | "5519923" | "5618315" | "5673455" | "5817037" | "5843005" | "6228042" | "6244356" | "6368293" | "6537236" | "6602211" | "6830552" | "6964214" | "7122015" | "7144417" | "7169169").PN. OR ("7503923").URPN.	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/22 11:40

S178	0	"15920322"	US-PGPUB; USPAT; USOCR	OR	ON	2018/05/27 15:54
S179	2	((("Wersland") near3 ("Jason"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 09:27
S180	0	(("15458920") or ("15186859")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/11 09:28
S181	0	"15920322"	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 09:42
S182	415	A61H1/00.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 11:59
S183	0	((("Wersland") near3 ("Jason"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 11:59
S184	0	((("Nazarian") near3 ("Benjamin"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 11:59
S185	0	((("Nazarian") near3 ("Benjamin"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 11:59
S186	0	((("Ensing") near3 ("Geert"))).INV.	US-PGPUB; USPAT	OR	ON	2018/06/11 11:59

			; USOCR			
S187	3	((("Ensing") near3 ("Geert"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 12:00
S188	3	((("Li") near3 ("Guang") near3 ("Qing"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:00
S189	1	((("Li") near3 ("Guang") near3 ("Qing"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 12:01
S190	43	((("Firth") near3 ("Robert"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:01
S191	8	((("Firth") near3 ("Robert"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 12:03
S192	27	((("Linton") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:04
S193	6	((("Linton") near3 ("Andrew"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 12:04
S194	150	((("Cooper") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:04
S195	57	((("Cooper") near3 ("Andrew"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 12:05

S196	88	((("Waldron") near3 ("Michael"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:06
S197	5	((("Waldron") near3 ("Michael"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 12:07
S198	6	(("8342187") or ("20130138023") or ("20120253245") or ("20030144615") or ("5573500") or ("20150148592")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/11 12:10
S199	5	(("20130261516") or ("4549535") or ("20130138023") or ("20130281897") or ("20060123941")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/11 12:42
S200	57	S182 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:43
S201	165	A61H1/006.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:44
S202	18	S201 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:44
S203	752	A61H1/008.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:44
S204	75	S203 and (reciprocat$)	US-PGPUB;	OR	ON	2018/06/11 12:44

			USPAT ; USOCR			
S205	575	A61H23/00.cpc. and @ad<="20170314"	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/06/11 12:45
S206	57	S205 and (reciprocat$)	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/06/11 12:45
S207	92	A61H23/004.cpc. and @ad<="20170314"	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/06/11 12:47
S208	7	S207 and (reciprocat$)	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/06/11 12:47
S209	38	A61H23/006.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/06/11 12:47
S210	129	A61H23/02.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/06/11 12:48
S211	71	A61H23/0218.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/06/11 12:49
S212	227	A61H23/0254.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB ; USPAT	OR	ON	2018/06/11 13:06

			; USOCR			
S213	122	A61H23/0263.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:10
S214	82	A61H23/04.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:10
S215	7	A61H23/06.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:11
S216	8	A61H2023/002.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:11
S217	9	A61H2023/0209.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:11
S218	11	A61H2023/0272.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:12
S219	12	A61H2023/0281.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:12
S220	3	A61H39/00.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT	OR	ON	2018/06/11 13:12

			; USOCR			
S221	5	A61H39/002.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:12
S222	2	A61H39/007.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:13
S223	57	A61H39/04.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:13
S224	33	A61H2201/0165.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:13
S225	168	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2018/06/11 13:31

		20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$).did. or (US-2964037-$ or US-1882040-$).did. or (EP-1313116-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S226	2	A61H2201/12.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:32

S227	42	A61H2201/1207.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:32
S228	253	A61H2201/1215.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:33
S229	0	S225 and (rotat$4 same ((button switch) with teeth))	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:35
S230	4	A61H2201/1223.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:35
S231	33	A61H2201/123.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:35
S232	104	A61H2201/1238.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:35
S233	33	A61H2201/14.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:36
S234	14	A61H2201/1409.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:37

S235	0	A61H2201/1018.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:37
S236	110	A61H2201/1418.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:37
S237	20	A61H2201/1481.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:38
S238	93	A61H2201/149.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:38
S239	137	A61H2201/1664.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:38
S240	19	(("4847451") or ("5089729") or ("5265716") or ("5668357") or ("5041703") or ("4772765") or ("3654415") or ("6365855") or ("4847451") or ("5614701") or ("5414793") or ("6259047") or ("4772765") or ("4006334") or ("3952239") or ("1828903") or ("1502169") or ("2055867")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/11 13:44
S241	5	("2003/0094356").URPN.	USPAT	OR	ON	2018/06/11 13:46
S242	135	(powertool power-tool (power adj tool)) and (rotat$4 same ((button switch) with teeth))	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:48
S243	459	A61H1/00.cpc.	US-PGPUB; USPAT	OR	ON	2018/12/11 17:41

			; USOCR			
S244	217	A61H1/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:44
S245	914	A61H1/008.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:47
S246	683	A61H23/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:48
S247	119	A61H23/004.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:49
S248	207	A61H23/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:49
S249	1,647	A61H23/02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:50
S250	714	A61H23/0218.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:52
S251	1,066	A61H23/0254.cpc.	US-PGPUB; USPAT	OR	ON	2018/12/11 17:52

			; USOCR			
S252	1,432	A61H23/0263.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:53
S253	589	A61H23/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:01
S254	111	A61H23/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:04
S255	78	A61H2023/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:04
S256	49	A61H2023/0209.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:05
S257	138	A61H2023/0272.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:05
S258	93	A61H2023/0281.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:06
S259	41	A61H2023/029.cpc.	US-PGPUB; USPAT	OR	ON	2018/12/11 18:06

			; USOCR			
S260	135	A61H39/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:06
S261	547	A61H39/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:07
S262	69	A61H39/007.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:07
S263	764	A61H39/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:08
S264	273	A61H2201/0165.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:08
S265	57	A61H2201/12.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:16
S266	693	A61H2201/1207.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:16
S267	1,505	A61H2201/1215.cpc.	US-PGPUB; USPAT	OR	ON	2018/12/11 18:18

			; USOCR			
S268	43	A61H2201/1223.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:20
S269	204	A61H2201/123.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:21
S270	733	A61H2201/1238.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:22
S271	142	A61H2201/14.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:23
S272	100	A61H2201/1409.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:24
S273	305	A61H2201/1418.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:25
S274	95	A61H2201/1481.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:25
S275	434	A61H2201/149.cpc.	US-PGPUB; USPAT	OR	ON	2018/12/11 18:26

			; USOCR			
S276	548	A61H2201/1664.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:26
S277	0	D08/8.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/12 17:32
S278	513	D8/8.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/12 17:33
S279	6	S278 and (reciprocat$ articulat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/12 17:33
S280	10	(US-2240755-$ or US-2808082-$ or US-2822005-$ or US-2868248-$ or US-2902067-$).did.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 11:03
S281	1	("7996996").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/13 11:05
S282	28	("20020014129" | "20030051352" | "20040117993" | "20040187324" | "20040255474" | "20040255475" | "20090151486" | "2970484" | "3309932" | "3827323" | "3945120" | "4344729" | "4763760" | "5079844" | "5099705" | "5134777" | "5212887" | "5735165" | "6352004" | "6568089" | "6601465" | "6763897").PN. OR ("7996996").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 11:42
S283	616	D8/61.ccls. and @ad<="20180313"	US-PGPUB; USPAT	OR	ON	2018/12/13 11:49

			; USOCR			
S284	16	S283 and (reciprocat$ articulat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 11:49
S285	246	D8/64.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 12:20
S286	58	S285 and (reciprocat$ articulat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 12:20
S287	709	30/392.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 13:47
S288	240	S287 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 14:05
S289	53	S287 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 14:30
S290	133	30/393.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 14:53
S291	87	S290 and (articulat$ eccentric$)	US-PGPUB; USPAT	OR	ON	2018/12/13 14:53

			; USOCR			
S292	14	S290 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 14:53
S293	43	(worx).as.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:01
S294	8	76/31.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:05
S295	10,210	(rockwell).as.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:07
S296	146	S295 and (saw jigsaw jig-saw)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:07
S297	169	30/394.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:16
S298	82	S297 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:16
S299	23	S297 and (adjust$4 near3 angle)	US-PGPUB; USPAT	OR	ON	2018/12/13 17:16

			; USOCR			
S300	40	30/182.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:34
S301	82	30/208.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:34
S302	125	30/241.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:35
S303	66	83/615.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:40
S304	104	83/623.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:41
S305	386	B23D51/16.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:44
S306	230	S305 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:44
S307	40	S305 and (adjust$4 near3 angle)	US-PGPUB; USPAT	OR	ON	2018/12/13 17:45

			; USOCR			
S308	218	B23D49/162.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:57
S309	74	S308 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:57
S310	21	S308 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:57
S311	200	173/49.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 08:28
S312	141	S311 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 08:28
S313	11	S311 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 08:28
S314	164	173/114.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 08:46
S315	29	S314 and (articulat$ eccentric$)	US-PGPUB; USPAT	OR	ON	2018/12/14 08:46

			; USOCR			
S316	2	S314 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 08:46
S317	124	173/122.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 16:44
S318	47	S317 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 16:54
S319	5	S317 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 16:55
S320	157	173/205.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 16:59
S321	47	S320 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 16:59
S322	2	S321 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 16:59
S324	3	S320 and (adjust$4 near3 angle)	US-PGPUB; USPAT	OR	ON	2018/12/14 16:59

			; USOCR			
S325	563	227/131.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:02
S326	3	S325 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:02
S327	99	S325 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:02
S328	0	A61B17/148.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:26
S329	447	A61B17/142.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:27
S330	136	S329 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:27
S331	4	S329 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:27
S332	15	B23D49/00.cpc. and @ad<="20180313"	US-PGPUB; USPAT	OR	ON	2018/12/14 17:31

			; USOCR			
S333	81	B23D49/007.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:31
S334	2	B23D49/008.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:36
S335	53	B23D49/10.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:37
S336	67	B23D49/16.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:40
S337	185	B23D49/167.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:45
S338	386	B23D51/16.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:52
S339	40	S338 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:52
S340	230	S338 and (articulat$ eccentric$)	US-PGPUB; USPAT	OR	ON	2018/12/14 17:52

			; USOCR			
S341	7	B27B19/00.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:58
S342	1	B27B19/002.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:58
S343	261	B27B19/006.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:58
S344	4	B27B19/02.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 18:00
S345	14	B27B19/09.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 18:00
S346	1	("20030094356").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/15 15:27
S347	2	(("5832611") or ("6264211")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/15 15:42
S348	10	("5832611" | "5940977" | "6138364" | "6671969" | "7096589" | "7204026" | "7251896" | "7430807" | "7818887" | "7926585").PN.	US-PGPUB; USPAT	OR	ON	2018/12/15 16:19

S349	21	(US-0133210-$ | US-2337769-$ | US-2630148-$ | US-20140327-$ | US-5832611-$ | US-5940977-$ | US-6098288-$ | US-6138364-$ | US-6264211-$ | US-6550147-$ | US-6671969-$ | US-7204026-$ | US-7251896-$ | US-7370423-$ | US-7752760-$ | US-8205342-$ | US-8291603-$ | US-8549762-$ | US-20130133210-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:21
S350	9	(US-00000028-$ | US-0936032-$ | US-10109133-$ | US-10289878-$ | US-1132176-$ | US-19627691-$ | US-2334630-$ | US-4128651-$ | US-4219942-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:27
S351	14	(US-1502169-$ | US-1828903-$ | US-2055867-$ | US-3952239-$ | US-4006334-$ | US-4772765-$ | US-4847451-$ | US-5414793-$ | US-5614701-$ | US-6259047-$ | US-6365855-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:28
S352	5	(US-20031203-$ | US-3654415-$ | US-4772765-$ | US-5041703-$ | US-5265716-$ | US-5668357-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:29
S353	2	(US-20040701-$ | US-4847451-$ | US-5089729-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:30
S354	229	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2018/12/15 16:53

20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$ or US-20070144310-$ or US-20180263845-$ or US-20150005682-$).did. or (US-20180200141-$ or US-20040255475-$ or US-20040255474-$ or US-20040187324-$ or US-20040117993-$ or US-20150367494-$ or US-20150033564-$ or US-20130133210-$ or US-20090100690-$ or US-20060260141-$ or US-20050178012-$ or US-20080047150-$ or US-20120192440-$ or US-20120030955-$ or US-20030070307-$ or US-20090272617-$ or US-20180099339-$ or US-20110265335-$ or US-20110131820-$ or US-20060288594-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-

		9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$).did. or (EP-1313116-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S355	17	S354 and (male with female)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:53
S356	3	S354 and (connector with bearing)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:56
S357	2	30/$.ccls. and ((male with female) same (connector with bearing))	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:57
S358	1	("20150005682").PN.	US-PGPUB; USPAT	OR	ON	2018/12/15 17:03
S359	2	WO-2009014727-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/15 17:04
S360	1	("20090270915").PN.	US-PGPUB;	OR	OFF	2018/12/15 17:04

			USPAT ; USOCR			
S361	1	("6228042").PN.	US-PGPUB ; USPAT ; USOCR	OR	OFF	2018/12/15 17:09
S362	3	("20030195443" | "20150005682" | "6682496").PN.	US-PGPUB ; USPAT	OR	ON	2018/12/15 17:12
S363	23	("20010016697" | "20030009116" | "20030195443" | "20060025710" | "20060192527" | "20070150004" | "20080103419" | "20120253245" | "20140180331" | "20150148592" | "3626934" | "4150668" | "4173217" | "4566442" | "4730605" | "5085207" | "5417644" | "5569168" | "5573500" | "5951501" | "6228042" | "6663657" | "8951216").PN.	US-PGPUB ; USPAT	OR	ON	2018/12/15 17:14
S364	0	"601".clas. and ((male with female) same (connector with bearing))	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/12/15 17:45
S365	909	((male with female) same (connector with bearing))	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/12/15 17:45
S366	39	((male with female) same (connector with bias$ with bearing))	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/12/15 17:45
S367	231	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-	US-PGPUB ; USPAT ; USOCR ; EPO; DERWENT	OR	ON	2018/12/17 11:23

20020107459-$ or US-20170304144-$).did. or (US-
20170156974-$ or US-20160346152-$ or US-
20160271009-$ or US-20170156975-$ or US-
20030149381-$ or US-20150202114-$ or US-
20130012849-$ or US-20020072693-$ or US-
20130123677-$ or US-20130072837-$ or US-
20100331745-$ or US-20010027280-$ or US-
20030028134-$ or US-20030065280-$ or US-
20020183668-$ or US-20020082536-$ or US-
20140323931-$ or US-20110137217-$ or US-
20110041864-$ or US-20050113636-$ or US-
20090038069-$ or US-20040064074-$ or US-
20090086569-$ or US-20120253246-$ or US-
20170281457-$ or US-20170105896-$ or US-
20070299378-$).did. or (US-20100125228-$ or US-
20060074362-$ or US-20170281459-$ or US-
20040176710-$ or US-20150148592-$ or US-
20080262397-$ or US-20100145242-$ or US-
20030144615-$ or US-20090177128-$ or US-
20170241201-$ or US-20150198219-$ or US-
20090165387-$ or US-20070175647-$ or US-
20050217900-$ or US-20050015030-$ or US-
20100024571-$ or US-20150305973-$ or US-
20160015596-$ or US-20150182411-$ or US-
20160131228-$ or US-20090032275-$ or US-
20030019799-$ or US-20130245511-$ or US-
20040039314-$ or US-20070144310-$ or US-
20180263845-$ or US-20150005682-$).did. or (US-
20180200141-$ or US-20040255475-$ or US-
20040255474-$ or US-20040187324-$ or US-
20040117993-$ or US-20150367494-$ or US-
20150033564-$ or US-20130133210-$ or US-
20090100690-$ or US-20060260141-$ or US-
20050178012-$ or US-20080047150-$ or US-
20120192440-$ or US-20120030955-$ or US-
20030070307-$ or US-20090272617-$ or US-
20180099339-$ or US-20110265335-$ or US-
20110131820-$ or US-20060288594-$).did. or (US-
6663657-$ or US-6228042-$ or US-5951501-$ or US-
5569168-$ or US-4549535-$ or US-4173217-$ or US-
5273479-$ or US-8715161-$ or US-7927259-$ or US-
7041072-$ or US-6733414-$ or US-6723060-$ or US-
6682496-$ or US-6599260-$ or US-6352518-$ or US-
6027444-$ or US-5716332-$ or US-4827914-$ or US-
4790296-$ or US-4513737-$ or US-3837335-$ or US-
3626934-$ or US-9827159-$ or US-4716890-$ or US-
5140979-$ or US-3754548-$).did. or (US-6786878-$ or
US-7238162-$ or US-7128722-$ or US-8951216-$ or US-
5460597-$ or US-5417644-$ or US-6730050-$ or US-
6432072-$ or US-5695451-$ or US-5475883-$ or US-
5085207-$ or US-4162675-$ or US-4088128-$ or US-
4079733-$ or US-3724451-$ or US-8342187-$ or US-
7590445-$ or US-4730605-$ or US-7951098-$ or US-

		4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S368	38	S367 and (damp$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 11:23
S369	35	30/$.ccls. and (damp$ with motor with shaft)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 11:35
S370	3	(("3545301") or ("6557816")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/17 12:00
S371	16	("3545301").URPN.	USPAT	OR	ON	2018/12/17 12:03

S372	95	((("Waldron") near3 ("Michael"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:06
S373	160	((("Cooper") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:08
S374	31	((("Linton") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:10
S375	47	((("Firth") near3 ("Robert"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:12
S376	5	((("Li") near3 ("Guang") near3 ("Qing"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:17
S377	2	((("Ensing") near3 ("Geert"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:18
S378	2	((("Nazarian") near3 ("Benjamin"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:18
S379	4	((("Wersland") near3 ("Jason"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:18

S380	0	B27B11/06.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:18
S381	0	B27B11/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:18
S383	471	B26D7/2621.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:19
S384	244	B26D7/2621.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:19
S385	326	(bosch near3 tool).as.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:32
S386	37	("20040261273" | "20050178223" | "20060005402" | "20070074405" | "2596481" | "2764188" | "3579827" | "3785053" | "3945120" | "4385443" | "4419904" | "5398417" | "5782000" | "5940977" | "6233833" | "6269888" | "6772662" | "6912790" | "7093668" | "7096590" | "7204026" | "7246533" | "7290343" | "7506447").PN. OR ("7818887").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:53
S387	237	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2018/12/17 14:58

20170156974-$ or US-20160346152-$ or US-
20160271009-$ or US-20170156975-$ or US-
20030149381-$ or US-20150202114-$ or US-
20130012849-$ or US-20020072693-$ or US-
20130123677-$ or US-20130072837-$ or US-
20100331745-$ or US-20010027280-$ or US-
20030028134-$ or US-20030065280-$ or US-
20020183668-$ or US-20020082536-$ or US-
20140323931-$ or US-20110137217-$ or US-
20110041864-$ or US-20050113636-$ or US-
20090038069-$ or US-20040064074-$ or US-
20090086569-$ or US-20120253246-$ or US-
20170281457-$ or US-20170105896-$ or US-
20070299378-$).did. or (US-20100125228-$ or US-
20060074362-$ or US-20170281459-$ or US-
20040176710-$ or US-20150148592-$ or US-
20080262397-$ or US-20100145242-$ or US-
20030144615-$ or US-20090177128-$ or US-
20170241201-$ or US-20150198219-$ or US-
20090165387-$ or US-20070175647-$ or US-
20050217900-$ or US-20050015030-$ or US-
20100024571-$ or US-20150305973-$ or US-
20160015596-$ or US-20150182411-$ or US-
20160131228-$ or US-20090032275-$ or US-
20030019799-$ or US-20130245511-$ or US-
20040039314-$ or US-20070144310-$ or US-
20180263845-$ or US-20150005682-$).did. or (US-
20180200141-$ or US-20040255475-$ or US-
20040255474-$ or US-20040187324-$ or US-
20040117993-$ or US-20150367494-$ or US-
20150033564-$ or US-20130133210-$ or US-
20090100690-$ or US-20060260141-$ or US-
20050178012-$ or US-20080047150-$ or US-
20120192440-$ or US-20120030955-$ or US-
20030070307-$ or US-20090272617-$ or US-
20180099339-$ or US-20110265335-$ or US-
20110131820-$ or US-20060288594-$ or US-
20080016705-$ or US-20070209217-$).did. or (US-
6663657-$ or US-6228042-$ or US-5951501-$ or US-
5569168-$ or US-4549535-$ or US-4173217-$ or US-
5273479-$ or US-8715161-$ or US-7927259-$ or US-
7041072-$ or US-6733414-$ or US-6723060-$ or US-
6682496-$ or US-6599260-$ or US-6352518-$ or US-
6027444-$ or US-5716332-$ or US-4827914-$ or US-
4790296-$ or US-4513737-$ or US-3837335-$ or US-
3626934-$ or US-9827159-$ or US-4716890-$ or US-
5140979-$ or US-3754548-$).did. or (US-6786878-$ or
US-7238162-$ or US-7128722-$ or US-8951216-$ or US-
5460597-$ or US-5417644-$ or US-6730050-$ or US-
6432072-$ or US-5695451-$ or US-5475883-$ or US-
5085207-$ or US-4162675-$ or US-4088128-$ or US-
4079733-$ or US-3724451-$ or US-8342187-$ or US-
7590445-$ or US-4730605-$ or US-7951098-$ or US-

		4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S388	39	S387 and (counterweight counter-weight (counter adj weight))	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:58
S389	71	("1643721" | "1648008" | "3729823" | "3971132" | "4145811" | "4238884" | "4272996" | "4545123" | "4628605" | "4976164" | "5079844").PN. OR ("5212887").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 17:07
S390	2	(("5129118") or ("4420995")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/18 08:33

S391	80	("2008367" | "3172675" | "3208318" | "3438291" | "3532013" | "4187747" | "4245528" | "4317392").PN. OR ("4420995").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/18 08:39
S392	3	144/121.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/19 10:51
S393	2	144/122.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/19 10:52
S394	5	144/147.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/19 10:53
S395	0	(theragun).as.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/19 10:53
S396	192	125/16.01.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/19 10:53
S397	8	76/31.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/19 10:56
S398	2	"15458920"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/20 17:24

S399	166	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/21 12:58

		4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$).did. or (US-2964037-$ or US-1882040-$).did. or (EP-1313116-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S400	1	("20150005682").PN.	US-PGPUB; USPAT	OR	ON	2018/12/21 13:45
S401	0	JP-1995051393-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:48
S402	1	JP-95051393-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:48
S403	1	JP-07051393-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:49
S404	1	JP-02019157-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:50
S405	1	JP-2010534110-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:51
S406	1	2009-E41378.NRAN.	DERWENT	OR	ON	2018/12/21 13:51
S407	1	("20090270915").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/21 13:52

S408	0	KR-101123926-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:53
S409	2	JP-2005204777-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:55
S410	1	("6682496").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/21 13:56
S411	6	("4150668" | "4566442" | "4730605" | "5085207" | "5417644" | "8951216").PN.	US-PGPUB; USPAT	OR	ON	2018/12/21 13:59
S412	252	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2018/12/21 14:08

20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$ or US-20070144310-$ or US-20180263845-$ or US-20150005682-$).did. or (US-20180200141-$ or US-20040255475-$ or US-20040255474-$ or US-20040187324-$ or US-20040117993-$ or US-20150367494-$ or US-20150033564-$ or US-20130133210-$ or US-20090100690-$ or US-20060260141-$ or US-20050178012-$ or US-20080047150-$ or US-20120192440-$ or US-20120030955-$ or US-20030070307-$ or US-20090272617-$ or US-20180099339-$ or US-20110265335-$ or US-20110131820-$ or US-20060288594-$ or US-20080016705-$ or US-20070209217-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-

		8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$ or US-5129118-$ or US-4420995-$ or US-9333628-$ or US-8475076-$ or US-7954402-$ or US-6971285-$ or US-6964216-$ or US-5660491-$ or US-2964037-$ or US-1882040-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$ or US-3172675-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$).did.				
S413	49	S412 and (balanc$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/21 15:30
S414	9	S412 and (balanc$ with surface)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/21 15:32
S415	22	(a61h.cpcl.) and (balanc$ with surface)	EPO; JPO; DERWENT	OR	ON	2018/12/21 15:34
S416	17	S412 and (rest$3 with surface)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/21 15:36
S417	110	(a61h.cpcl.) and (rest$3 with surface)	EPO; JPO; DERWENT	OR	ON	2018/12/21 15:36
S418	2,863	(a61h.cpcl.) and (rest$3 with surface)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/21 15:39

S419	72	(a61h.cpcl.) and ((rest$3 with surface) same gravity)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/21 15:39
S420	158	(a61h.cpcl.) and (rest$3 with surface with force)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/21 15:40
S421	474	A61H1/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 08:54
S422	224	A61H1/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:01
S423	926	A61H1/008.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:02
S424	702	A61H23/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:03
S425	121	A61H23/004.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:06
S426	213	A61H23/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:07

S427	1,689	A61H23/02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:09
S428	721	A61H23/0218.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:10
S429	1,073	A61H23/0254.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:11
S430	1,453	A61H23/0263.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:13
S431	592	A61H23/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:14
S432	113	A61H23/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:16
S433	78	A61H2023/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:17
S434	50	A61H2023/0209.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:18

S435	140	A61H2023/0272.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:20
S436	95	A61H2023/0281.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:23
S437	41	A61H2023/029.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:24
S438	136	A61H39/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:25
S439	559	A61H39/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:26
S440	73	A61H39/007.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:27
S441	775	A61H39/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:28
S442	286	A61H2201/0165.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:29

S443	65	A61H2201/12.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:29
S444	730	A61H2201/1207.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:30
S445	1,553	A61H2201/1215.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:32
S446	47	A61H2201/1223.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:33
S447	216	A61H2201/123.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:33
S448	0	A61H2201/12387.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:34
S449	749	A61H2201/1238.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:34
S450	151	A61H2201/14.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:34

S451	106	A61H2201/1409.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:35
S452	310	A61H2201/1418.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:43
S453	101	A61H2201/1481.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:43
S454	446	A61H2201/149.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:44
S455	566	A61H2201/1664.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:44
S456	760	B23D51/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:45
S457	445	B23D49/162.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:45
S458	191	B23D49/165.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:47

S459	472	B26D7/2621.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:47
S460	0	A61B17/148.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:48
S461	478	A61B17/142.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:48
S462	33	B23D49/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:49
S463	866	B23D49/007.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:49
S464	62	B23D49/008.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:50
S465	105	B23D49/10.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:50
S466	126	B23D49/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:51

S467	255	B23D49/167.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:52
S468	760	B23D51/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:52
S469	9	B27B19/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:53
S470	1	B27B19/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:53
S471	300	B27B19/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:53
S472	48	B27B19/09.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:53
S473	30	B27B19/02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:54
S474	0	B27B11/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/02/22 09:54

S475	489	A61H1/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 15:08
S476	232	A61H1/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 15:10
S477	956	A61H1/008.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 15:10
S478	719	A61H23/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 15:11
S479	129	A61H23/004.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 15:12
S480	226	A61H23/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 15:12
S481	1,747	A61H23/02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 15:13
S482	731	A61H23/0218.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 15:13

S483	1	"15920322"	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:15
S484	1,088	A61H23/0254.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:19
S485	1,470	A61H23/0263.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:21
S486	598	A61H23/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:25
S487	112	A61H23/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:29
S488	80	A61H2023/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:33
S489	50	A61H2023/0209.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:42
S490	143	A61H2023/0272.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:42

S491	97	A61H2023/0281.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:42
S492	42	A61H2023/029.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:43
S493	139	A61H39/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:47
S494	573	A61H39/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:47
S495	0	A61H39/0027.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:47
S496	80	A61H39/007.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:48
S497	798	A61H39/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:48
S498	302	A61H2201/0165.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:54

S499	68	A61H2201/12.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:54
S500	786	A61H2201/1207.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:57
S501	1,600	A61H2201/1215.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:58
S502	53	A61H2201/1223.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 16:59
S503	231	A61H2201/123.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:00
S504	762	A61H2201/1238.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:00
S505	159	A61H2201/14.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:01
S506	115	A61H2201/1409.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:01

S507	318	A61H2201/1418.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:02
S508	103	A61H2201/1481.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:02
S509	464	A61H2201/149.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:02
S510	581	A61H2201/1664.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:03
S511	768	B23D51/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:09
S512	449	B23D49/162.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:10
S513	191	B23D49/165.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:11
S514	477	B26D7/2621.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:11

S515	0	A61B17/148.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:21
S516	495	A61B17/142.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:21
S517	34	B23D49/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:23
S518	868	B23D49/007.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:23
S519	62	B23D49/008.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:23
S520	105	B23D49/10.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:24
S521	127	B23D49/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:24
S522	256	B23D49/167.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:24

S523	768	B23D51/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:25
S524	9	B27B19/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:25
S525	2	B27B19/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:26
S526	312	B27B19/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:26
S527	51	B27B19/09.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:26
S528	30	B27B19/02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:27
S529	0	B27B11/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 17:27
S530	18	(a61h.cpcl. or "601".clas. or b23d.cpcl. or b27b.cpcl.) and ((containment (scotch adj yoke)) with (step$3))	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 18:10

S531	228	(a61h.cpcl. or "601".clas. or b23d.cpcl. or b27b.cpcl.) and (((containment with (bracket strut)) (scotch adj yoke)))	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/25 18:12
S538	227	(a61h.cpcl. or "601".clas. or b23d.cpcl. or b27b.cpcl.) and ((scotch adj yoke))	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/26 11:54
S539	201	S538 and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/26 11:57
S540	4	((scotch adj yoke) with (notch$ step$3) with (track guide containment))	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/26 12:07
S541	5	(TheraGun).as.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/26 14:51
S542	12	((("Wersland") near3 ("Jason"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/26 14:51
S543	6	((("Nazarian") near3 ("Benjamin"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/26 14:52
S544	10	((("Ensing") near3 ("Geert"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/26 14:52

S545	5	((("Li") near3 ("Guang") near3 ("Qing"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/26 14:52
S546	48	((("Firth") near3 ("Robert"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/26 14:52
S547	34	((("Linton") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/26 14:54
S548	170	((("Cooper") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/26 14:55
S549	107	((("Waldron") near3 ("Michael"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/05/26 15:00
S550	41	("20010016697" | "20030009116" | "20030094356" | "20030144615" | "20030195443" | "20060025710" | "20060123941" | "20060192527" | "20070144310" | "20070150004" | "20080103419" | "20120253245" | "20130133210" | "20130138023" | "20130261516" | "20130281897" | "20140180331" | "20150005682" | "20150148592" | "3172675" | "3545301" | "3626934" | "3942251" | "4150668" | "4173217" | "4549535" | "4566442" | "4730605" | "5085207" | "5212887" | "5417644" | "5569168" | "5573500" | "5951501" | "6228042" | "6663657" | "6682496" | "7927259" | "7996996" | "8342187" | "8951216").PN.	US-PGPUB; USPAT	OR	ON	2019/10/09 08:20
S551	1	("20150005682").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/10/09 08:28

S552	605	A61H1/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:42
S553	238	A61H1/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:43
S554	995	A61H1/008.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:43
S555	757	A61H23/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:44
S556	149	A61H23/004.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:47
S557	258	A61H23/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:47
S558	1,824	A61H23/02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:48
S559	748	A61H23/0218.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:50

S560	1,111	A61H23/0254.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:51
S561	1,586	A61H23/0263.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:51
S562	610	A61H23/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:52
S563	114	A61H23/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:53
S564	86	A61H2023/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:53
S565	51	A61H2023/0209.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:53
S566	153	A61H2023/0272.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:54
S567	97	A61H2023/0281.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:55

S568	45	A61H2023/029.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:55
S569	150	A61H39/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:56
S570	597	A61H39/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:56
S571	86	A61H39/007.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:59
S572	826	A61H39/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 08:59
S573	327	A61H2201/0165.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 09:00
S574	76	A61H2201/12.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 09:01
S575	901	A61H2201/1207.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 11:13

S576	1,723	A61H2201/1215.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 11:19
S577	63	A61H2201/1223.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 11:20
S578	268	A61H2201/123.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 11:21
S579	802	A61H2201/1238.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 11:23
S580	184	A61H2201/14.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 11:23
S581	130	A61H2201/1409.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 11:24
S582	328	A61H2201/1418.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 11:25
S583	117	A61H2201/1481.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 11:25

S584	497	A61H2201/149.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 11:26
S585	618	A61H2201/1664.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 11:26
S586	783	B23D51/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:06
S587	457	B23D49/162.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:07
S588	191	B23D49/165.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:08
S589	34	B23D49/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:08
S590	872	B23D49/007.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:08
S591	62	B23D49/008.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:09

S592	119	B23D49/10.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:09
S593	132	B23D49/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:10
S594	260	B23D49/167.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:11
S595	478	B26D7/2621.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:11
S596	0	A61B17/148.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:12
S597	0	A61B17/0148.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:12
S598	368	A61B17/14.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:13
S599	520	A61B17/142.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:14

S600	12	B27B19/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:14
S601	5	B27B19/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:14
S602	324	B27B19/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:16
S603	51	B27B19/09.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:16
S604	33	B27B19/02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:16
S605	1	"16357984"	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 12:20
S606	5	(("20030094356") or ("20070144310") or ("10027201") or ("20060260141") or ("20050178012")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/10/09 16:58
S607	1	("8322456").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/10/09 16:59

S608	114	("0066052" | "0661418" | "1324258" | "1806582" | "20020151262" | "20030015066" | "20030034164" | "20030042859" | "20030110645" | "20030190877" | "20030202851" | "20040069512" | "20040159172" | "20040211576" | "20050103510" | "20050127862" | "20050225183" | "20060123941" | "20060192527" | "20060213333" | "20060219059" | "20060220612" | "2106937" | "2155082" | "2348266" | "2414637" | "2546655" | "2791142" | "3109238" | "3427520" | "3475676" | "3477007" | "3904943" | "4267914" | "4296654" | "4332147" | "4347450" | "4463293" | "4527103" | "4528486" | "4544869" | "4554980" | "4581565" | "4677356" | "4705997" | "4816726" | "4901366" | "5122146" | "5149230" | "5165172" | "5177424" | "5251706" | "5309899" | "5327794" | "5331258" | "5332954" | "5365155" | "5410229" | "5428522" | "5533581" | "5563482" | "5784934" | "5889376" | "5892885" | "6102632" | "6105263" | "6296427" | "6307337" | "6364033" | "6461088" | "6479958" | "6528968" | "6617913" | "6687567" | "6702090" | "6741051" | "6749028" | "6929074" | "6938706" | "6973748" | "7055622" | "7064462" | "D377303" | "D414093" | "D444363" | "D458101" | "D479455").PN. OR ("8322456").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 16:59
S609	19	((("Wersland") near3 ("Jason"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/09 17:48
S610	39	((("Linton") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/10 16:21
S611	19	((("Wersland") near3 ("Jason"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/10 16:21
S612	35	S610 not S611	US-PGPUB; USPAT; USOCR	OR	ON	2019/10/10 16:21
S613	179	((("Cooper") near3 ("Andrew"))).INV.	US-PGPUB;	OR	ON	2019/10/10 16:22

			USPAT ; USOCR			
S614	175	S613 not S611	US-PGPUB ; USPAT ; USOCR	OR	ON	2019/10/10 16:23
S615	120	((("Waldron") near3 ("Michael"))).INV.	US-PGPUB ; USPAT ; USOCR	OR	ON	2019/10/10 16:24
S616	0	S611 not S611	US-PGPUB ; USPAT ; USOCR	OR	ON	2019/10/10 16:24
S617	103	S615 not S611	US-PGPUB ; USPAT ; USOCR	OR	ON	2019/10/10 16:24
S618	673	A61H1/00.cpc.	US-PGPUB ; USPAT ; USOCR	OR	ON	2019/12/16 16:37
S619	244	A61H1/006.cpc.	US-PGPUB ; USPAT ; USOCR	OR	ON	2019/12/16 16:44
S620	1,016	A61H1/008.cpc.	US-PGPUB ; USPAT ; USOCR	OR	ON	2019/12/16 16:45
S621	773	A61H23/00.cpc.	US-PGPUB ; USPAT	OR	ON	2019/12/16 16:48

			; USOCR			
S622	152	A61H23/004.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:49
S623	280	A61H23/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:50
S624	1,877	A61H23/02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:50
S625	757	A61H23/0218.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:52
S626	1,134	A61H23/0254.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:52
S627	1,626	A61H23/0263.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:53
S628	618	A61H23/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:54
S629	115	A61H23/06.cpc.	US-PGPUB; USPAT	OR	ON	2019/12/16 16:55

			; USOCR			
S630	88	A61H2023/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:56
S631	51	A61H2023/0209.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:56
S632	160	A61H2023/0272.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:57
S633	108	A61H2023/0281.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:57
S634	45	A61H2023/029.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:58
S635	155	A61H39/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:59
S636	601	A61H39/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 16:59
S637	90	A61H39/007.cpc.	US-PGPUB; USPAT	OR	ON	2019/12/16 17:00

			; USOCR			
S638	854	A61H39/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:01
S639	334	A61H2201/0165.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:02
S640	78	A61H2201/12.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:02
S641	957	A61H2201/1207.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:03
S642	1,780	A61H2201/1215.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:03
S643	65	A61H2201/1223.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:04
S644	284	A61H2201/123.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:05
S645	833	A61H2201/1238.cpc.	US-PGPUB; USPAT	OR	ON	2019/12/16 17:06

			; USOCR			
S646	197	A61H2201/14.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:07
S647	139	A61H2201/1409.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:08
S649	339	A61H2201/1418.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:09
S650	125	A61H2201/1481.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:10
S651	509	A61H2201/149.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:12
S653	648	A61H2201/1664.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:12
S654	790	B23D51/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:13
S655	460	B23D49/162.cpc.	US-PGPUB; USPAT	OR	ON	2019/12/16 17:14

			; USOCR			
S656	192	B23D49/165.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:15
S657	34	B23D49/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:15
S658	872	B23D49/007.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:17
S659	62	B23D49/008.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:19
S660	120	B23D49/10.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:20
S661	133	B23D49/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:21
S662	261	B23D49/167.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:21
S663	482	B26D7/2621.cpc.	US-PGPUB; USPAT	OR	ON	2019/12/16 17:22

			; USOCR			
S664	0	A61B17/148.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:23
S665	374	A61B17/14.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:24
S666	542	A61B17/142.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:25
S667	12	B27B19/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:26
S668	5	B27B19/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:27
S669	335	B27B19/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:27
S670	52	B27B19/09.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:27
S671	33	B27B19/02.cpc.	US-PGPUB; USPAT	OR	ON	2019/12/16 17:28

			; USOCR			
S672	0	B27B11/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/16 17:28
S673	4	"15458920"	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 09:01
S674	22	((("Wersland") near3 ("Jason"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:08
S675	15	(TheraGun).as.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:19
S676	2	S675 not S674	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:19
S677	12	((("Nazarian") near3 ("Benjamin"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:20
S678	1	S677 not S674	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:21
S679	21	((("Ensing") near3 ("Geert"))).INV.	US-PGPUB; USPAT	OR	ON	2019/12/17 11:21

			; USOCR			
S680	2	S679 not S674	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:21
S681	7	((("Li") near3 ("Guang") near3 ("Qing"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:21
S682	3	S681 not S674	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:21
S683	56	((("Firth") near3 ("Robert"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:22
S684	52	S683 not S674	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:22
S685	42	((("Linton") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:22
S686	38	S685 not S674	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:23
S687	181	((("Cooper") near3 ("Andrew"))).INV.	US-PGPUB; USPAT	OR	ON	2019/12/17 11:23

			; USOCR			
S688	177	S687 not S674	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:23
S689	126	((("Waldron") near3 ("Michael"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:24
S690	107	S689 not S674	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 11:24
S691	4	(("7927259") or ("5212887") or ("20130133210") or ("20030094356")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/12/17 16:32
S692	267	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2019/12/17 17:51

20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$ or US-20070144310-$ or US-20180263845-$ or US-20150005682-$).did. or (US-20180200141-$ or US-20040255475-$ or US-20040255474-$ or US-20040187324-$ or US-20040117993-$ or US-20150367494-$ or US-20150033564-$ or US-20130133210-$ or US-20090100690-$ or US-20060260141-$ or US-20050178012-$ or US-20080047150-$ or US-20120192440-$ or US-20120030955-$ or US-20030070307-$ or US-20090272617-$ or US-20180099339-$ or US-20110265335-$ or US-20110131820-$ or US-20060288594-$ or US-20080016705-$ or US-20070209217-$ or US-20190017528-$ or US-20190015294-$ or US-20130019483-$ or US-20150375315-$ or US-20110185582-$).did. or (US-20190224765-$ or US-20180236572-$ or US-20190209424-$ or US-20180370012-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-

		7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$ or US-5129118-$ or US-4420995-$ or US-9333628-$ or US-8475076-$ or US-7954402-$ or US-6971285-$ or US-6964216-$ or US-5660491-$ or US-2964037-$ or US-1882040-$ or US-8322456-$ or US-6938706-$).did. or (US-8561717-$ or US-10357425-$ or US-10428850-$ or US-10470970-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$ or US-3172675-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$).did.				
S693	98	S692 and (battery)	US-PGPUB; USPAT; USOCR	OR	ON	2019/12/17 17:52
S694	7	(("7927259") or ("5212887") or ("20130133210") or ("20030094356") or ("20180236572") or ("20070150004") or ("20150375315")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2019/12/18 07:50
S695	0	"16675772"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/16 10:12

S696	1	("20190017528").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/01/16 12:24
S697	4	"15458920"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/16 15:58
S698	522	A61H1/00.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/16 16:03
S699	217	A61H1/006.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 08:44
S700	883	A61H1/008.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 08:57
S701	699	A61H23/00.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 09:06
S702	139	A61H23/004.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 09:14
S703	240	A61H23/006.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:00

S704	1,663	A61H23/02.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:03
S705	0	A61H23/00218.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:14
S706	426	A61H23/0218.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:14
S707	714	A61H23/0254.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:16
S708	1,308	A61H23/0263.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:24
S709	487	A61H23/04.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:34
S710	70	A61H23/06.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:38
S711	83	A61H2023/002.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:40

S712	47	A61H2023/0209.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:41
S713	127	A61H2023/0272.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:43
S714	58	A61H2023/0281.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:43
S715	40	A61H2023/029.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:44
S716	144	A61H39/00.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:46
S717	562	A61H39/002.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 10:57
S718	86	A61H39/007.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 11:00
S719	817	A61H39/04.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 11:00

S720	291	A61H2201/0165.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 11:09
S721	71	A61H2201/12.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 11:24
S722	841	A61H2201/1207.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 11:24
S723	1,605	A61H2201/1215.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 11:30
S724	57	A61H2201/1223.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 11:51
S725	248	A61H2201/123.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 11:54
S726	722	A61H2201/1238.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 11:57
S727	163	A61H2201/14.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 12:03

S728	120	A61H2201/1409.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 12:06
S729	264	A61H2201/1418.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 12:08
S730	117	A61H2201/1481.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 12:12
S731	464	A61H2201/149.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 12:12
S732	604	A61H2201/1664.cpc. and @ad<="20180404"	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 12:17
S733	792	B23D51/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 12:30
S734	172	S733 and (balanc$ (rest$3 adj surface) (flat$5 near5 upright))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 12:54
S735	217	S733 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 12:57

S736	2	S733 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 12:58
S737	153	S733 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 13:04
S738	464	B23D49/162.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 13:24
S739	0	S738 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 13:24
S740	106	S738 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 13:24
S741	115	S738 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 13:24
S742	192	B23D49/165.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 13:32
S743	0	S742 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 13:32

S744	54	S742 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 13:32
S745	78	S742 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 13:32
S746	34	B23D49/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 14:59
S747	873	B23D49/007.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:07
S748	0	S747 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:07
S749	72	S747 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:07
S750	17	S747 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:07
S751	62	B23D49/008.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:09

S752	122	B23D49/10.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:10
S753	134	B23D49/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:13
S754	0	B23D49/1674.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:17
S755	261	B23D49/167.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:17
S756	0	S755 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:17
S757	95	S755 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:17
S758	50	S755 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:17
S759	486	B26D7/2621.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:22

S760	0	S759 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:22
S761	104	S759 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:22
S762	29	S759 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:22
S763	1,439	B26D7/2614.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:27
S764	5	S763 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:27
S765	529	S763 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:27
S766	79	S763 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:28
S767	305	B26D5/14.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:31

S768	3	S767 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:31
S769	93	S767 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:32
S770	68	S767 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:32
S771	0	A61B17/148.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:33
S772	545	A61B17/142.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:41
S773	0	S772 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:41
S774	185	S772 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:41
S775	38	S772 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:42

S776	376	A61B17/14.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:43
S777	1	S776 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:43
S778	150	S776 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:43
S779	55	S776 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:44
S780	204	A61B17/144.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:58
S781	0	S780 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:58
S782	76	S780 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:58
S783	31	S780 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 15:58

S784	12	B27B19/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:11
S785	5	B27B19/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:14
S786	336	B27B19/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:14
S787	1	S786 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:14
S788	112	S786 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:15
S789	52	B27B19/09.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:35
S790	33	B27B19/02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:38
S791	0	B27B11/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:40

S792	0	B27B11/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:44
S793	143	83/615.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:44
S794	476	83/623.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:46
S795	0	S794 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:46
S796	72	S794 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:46
S797	43	S794 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:46
S798	516	83/632.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:47
S799	0	S798 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:47

S800	44	S798 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:47
S801	31	S798 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:48
S802	239	83/62.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:49
S803	196	83/626.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:49
S804	0	S803 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:49
S805	18	S803 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:49
S806	15	S803 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:49
S807	247	83/427.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:50

S808	0	S807 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:50
S809	24	S807 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:50
S810	18	S807 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:50
S811	931	30/392.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:52
S812	2	S811 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:52
S813	318	S811 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:52
S814	180	S811 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 16:52
S815	189	30/393.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 17:34

S816	1	S815 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 17:34
S817	50	S815 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 17:34
S818	64	S815 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/17 17:34
S819	315	30/394.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:14
S820	1	S819 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:14
S821	71	S819 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:15
S822	76	S819 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:15
S823	224	30/182.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:21

S824	0	S823 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:21
S825	35	S823 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:21
S826	5	S823 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:22
S827	171	30/208.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:23
S828	0	S827 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:23
S829	549	30/241.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:24
S830	0	S829 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:25
S831	105	S829 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:25

S832	23	S829 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:25
S833	43	30/217.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:27
S834	170	30/218.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:27
S835	207	30/219.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:28
S836	267	30/220.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:35
S837	0	S836 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:35
S838	49	S836 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:35
S839	27	S836 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:36

S840	160	30/242.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:38
S841	394	173/49.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:39
S842	0	S841 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:40
S843	47	S841 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:40
S844	52	S841 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:40
S845	181	173/144.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:41
S846	304	173/114.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:41
S847	0	S846 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:41

S848	44	S846 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:41
S849	30	S846 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:42
S850	592	173/122.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:44
S851	1	S850 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:45
S852	86	S850 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:46
S853	49	S850 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:46
S854	459	173/205.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:48
S855	0	S854 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:48

S856	83	S854 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:48
S857	72	S854 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:49
S858	771	227/131.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:55
S859	10	S858 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:55
S860	269	S858 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:55
S861	91	S858 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 12:55
S862	754	D8/8.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:02
S863	0	S862 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:02

S864	32	S862 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:02
S865	3	S862 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:03
S866	906	D8/61.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:29
S867	0	S866 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:29
S868	33	S866 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:29
S869	4	S868 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:29
S870	325	D8/64.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:30
S871	0	S870 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:30

S872	11	S870 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:30
S873	2	S870 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:31
S874	191	144/121.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:31
S875	0	S874 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:31
S876	4	S874 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:31
S877	2	S874 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:31
S878	50	144/122.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:32
S879	165	144/147.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:32

S880	588	125/16.01.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:34
S881	1	S880 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:34
S882	41	S880 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:34
S883	32	S880 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:34
S884	566	76/31.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:37
S885	0	S884 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:37
S886	75	S884 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:37
S887	3	S884 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:37

S888	339	76/36.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:39
S889	0	S888 and ((housing handle frame) with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:39
S890	70	S888 and ((hold$3 grasp$ handle) with (position))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:40
S891	2	S888 and (pinion (pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:40
S892	235	601/97.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:50
S893	256	601/107.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 13:51
S894	324	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2020/01/18 14:06

20160271009-$ or US-20170156975-$ or US-
20030149381-$ or US-20150202114-$ or US-
20130012849-$ or US-20020072693-$ or US-
20130123677-$ or US-20130072837-$ or US-
20100331745-$ or US-20010027280-$ or US-
20030028134-$ or US-20030065280-$ or US-
20020183668-$ or US-20020082536-$ or US-
20140323931-$ or US-20110137217-$ or US-
20110041864-$ or US-20050113636-$ or US-
20090038069-$ or US-20040064074-$ or US-
20090086569-$ or US-20120253246-$ or US-
20170281457-$ or US-20170105896-$ or US-
20070299378-$).did. or (US-20100125228-$ or US-
20060074362-$ or US-20170281459-$ or US-
20040176710-$ or US-20150148592-$ or US-
20080262397-$ or US-20100145242-$ or US-
20030144615-$ or US-20090177128-$ or US-
20170241201-$ or US-20150198219-$ or US-
20090165387-$ or US-20070175647-$ or US-
20050217900-$ or US-20050015030-$ or US-
20100024571-$ or US-20150305973-$ or US-
20160015596-$ or US-20150182411-$ or US-
20160131228-$ or US-20090032275-$ or US-
20030019799-$ or US-20130245511-$ or US-
20040039314-$ or US-20070144310-$ or US-
20180263845-$ or US-20150005682-$).did. or (US-
20180200141-$ or US-20040255475-$ or US-
20040255474-$ or US-20040187324-$ or US-
20040117993-$ or US-20150367494-$ or US-
20150033564-$ or US-20130133210-$ or US-
20090100690-$ or US-20060260141-$ or US-
20050178012-$ or US-20080047150-$ or US-
20120192440-$ or US-20120030955-$ or US-
20030070307-$ or US-20090272617-$ or US-
20180099339-$ or US-20110265335-$ or US-
20110131820-$ or US-20060288594-$ or US-
20080016705-$ or US-20070209217-$ or US-
20190017528-$ or US-20190015294-$ or US-
20130019483-$ or US-20150375315-$ or US-
20110185582-$).did. or (US-20190224765-$ or US-
20180236572-$ or US-20190209424-$ or US-
20180370012-$ or US-20190254921-$ or US-
20060047315-$ or US-20050131461-$ or US-
20020082532-$ or US-20180031089-$ or US-
20190175434-$ or US-20080004554-$ or US-
20050159689-$ or US-20170079865-$ or US-
20190083352-$ or US-20140283394-$ or US-
20170361386-$ or US-20170173711-$ or US-
20140182871-$ or US-20090188119-$ or US-
20080189961-$ or US-20050126018-$ or US-
20010011420-$ or US-20020138991-$ or US-
20190351539-$ or US-20160199924-$ or US-
20100162579-$ or US-20130014968-$).did. or (US-

20080229591-$ or US-20050257385-$ or US-20050257384-$ or US-20110107608-$ or US-20140360335-$ or US-20130204255-$ or US-20090326540-$ or US-20050252011-$ or US-20150113815-$ or US-20140007436-$ or US-20070289149-$ or US-20050262710-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$ or US-5129118-$ or US-4420995-$ or US-9333628-$ or US-8475076-$ or US-7954402-$ or US-6971285-$ or US-6964216-$ or US-5660491-$ or US-2964037-$ or US-1882040-$ or US-8322456-$ or US-6938706-$).did. or (US-8561717-$ or US-10357425-$ or US-10428850-$ or US-10470970-$ or US-4283855-$ or US-10525541-$ or US-3876015-$ or US-

		3834019-$ or US-3805383-$ or US-6357124-$ or US-4240204-$ or US-7509744-$ or US-5007172-$ or US-3706474-$ or US-4991298-$ or US-8960323-$ or US-8578615-$ or US-6282797-$ or US-6634107-$ or US-6662455-$ or US-6758119-$ or US-3785053-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$ or US-3172675-$ or US-2839101-$ or US-3050093-$ or US-3340612-$ or US-3623223-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$).did.				
S895	11	S894 and ((pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 14:10
S896	51	S894 and ((switch button trigger) with (PCB circuit electronic$ processor))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 14:18
S897	32	S896 and (battery)	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 14:21
S898	19	S896 and (pivot pivoting)	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 15:33
S899	20	S896 and (pivot pivoting pivotabl$ pivoted)	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 15:34
S900	132	S894 and (pivot pivoting pivotabl$ pivoted)	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 15:43

S901	2	((pushrod push-rod (push adj rod))) same ((pivot pivoting pivotabl$ pivoted) with pin) same (adapter) same (socket pocket) same (protrusion projection)	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 16:35
S902	73	((pushrod push-rod (push adj rod))) same ((pivot pivoting pivotabl$ pivoted) with pin) same (socket pocket) same (protrusion projection)	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 16:35
S903	230	S894 and (motor same (shaft axle))	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 16:53
S904	1	("9221112").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/01/18 17:24
S905	48	("20040064907" | "20040074025" | "20040232194" | "20070180711" | "20080017689" | "20080048000" | "20090236387" | "20090250500" | "20100162579" | "20100213236" | "20100276168" | "2373842" | "2726689" | "2894489" | "3939599" | "4081704" | "4323127" | "5246414" | "5479709" | "5558166" | "5581891" | "5624000" | "5692421" | "5960687" | "6520397" | "6619527" | "6935547" | "6971951" | "7011243" | "7040520" | "7107670" | "7107944" | "7109613" | "7117582" | "7118018" | "7140331" | "7305941" | "7513845" | "7568602" | "7690283" | "7703856" | "7850145" | "7938305" | "7959415" | "RE40643").PN. OR ("9221112").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 17:24
S906	15	(Theragun).as.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 17:42
S907	0	((("McCaslin") near3 ("Chris"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 17:43

S908	0	((("McCaslin") near3 ("Chris"))).INV.	EPO; JPO; DERWENT	OR	ON	2020/01/18 17:46
S909	146	((("Parker") near3 ("Anthony"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 17:46
S910	45	((("Parker") near3 ("Anthony"))).INV.	EPO; JPO; DERWENT	OR	ON	2020/01/18 17:48
S911	24	((("Quintus-Bosz") near3 ("Harald"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 17:50
S912	2	((("Quintus-Bosz") near3 ("Harald"))).INV.	EPO; JPO; DERWENT	OR	ON	2020/01/18 17:51
S913	3	((("Solana") near3 ("Jaime") near3 ("Sanchez"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 17:55
S914	0	((("Solana") near3 ("Jaime") near3 ("Sanchez"))).INV.	EPO; JPO; DERWENT	OR	ON	2020/01/18 17:56
S915	12	((("Nazarian") near3 ("Benjamin"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 17:56
S916	0	((("Nazarian") near3 ("Benjamin"))).INV.	EPO; JPO; DERWENT	OR	ON	2020/01/18 18:00
S917	0	((("Wersland") near3 ("Jason"))).INV.	EPO; JPO; DERWENT	OR	ON	2020/01/18 18:00

S918	22	((("Wersland") near3 ("Jason"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2020/01/18 18:01
S919	0	"16796143"	US-PGPUB; USPAT; USOCR	OR	ON	2020/04/20 11:52
S920	0	"16869389"	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/07 09:08
S921	1	("20190017528").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/07 15:10
S922	44	("10314762" | "20010016697" | "20030009116" | "20030094356" | "20030144615" | "20030195443" | "20060025710" | "20060123941" | "20060192527" | "20070144310" | "20070150004" | "20080103419" | "20120253245" | "20130133210" | "20130138023" | "20130261516" | "20130281897" | "20140180331" | "20150005682" | "20150148592" | "20150375315" | "20180236572" | "3172675" | "3545301" | "3626934" | "3942251" | "4150668" | "4173217" | "4549535" | "4566442" | "4730605" | "5085207" | "5212887" | "5417644" | "5569168" | "5573500" | "5951501" | "6228042" | "6663657" | "6682496" | "7927259" | "7996996" | "8342187" | "8951216").PN.	US-PGPUB; USPAT	OR	ON	2020/07/07 15:18
S923	0	JP-201535844-$.did.	EPO; JPO; DERWENT	OR	ON	2020/07/07 15:35
S924	2	JP-2015035844-$.did.	EPO; JPO; DERWENT	OR	ON	2020/07/07 15:35
S925	5	(("3545301") or ("3172675") or ("9543871")).PN.	US-PGPUB; USPAT	OR	OFF	2020/07/07 15:35

			; USOCR			
S926	8	(("6228042") or ("20140180331") or ("4173217") or ("20080103419") or ("20030195443") or ("5569168") or ("6663657") or ("4549535")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/07 15:37
S927	0	JP-003077837-$.did.	EPO; JPO; DERWENT	OR	ON	2020/07/07 16:18
S928	0	JP-3077837-$.did.	EPO; JPO; DERWENT	OR	ON	2020/07/07 16:18
S929	2	JP-03077837-$.did.	EPO; JPO; DERWENT	OR	ON	2020/07/07 16:19
S930	0	JP-3077837-U.did.	EPO; JPO; DERWENT	OR	ON	2020/07/07 16:19
S931	36	((("Wersland") near3 ("Jason"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/07 16:21
S932	0	"16796143"	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/07 17:06
S933	907	A61H1/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:00
S934	25	S933 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:29

S935	14	S933 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:31
S936	28	S933 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:34
S937	8	S933 and (motor adj mount)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:34
S938	5	S933 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:38
S939	23	S933 and (target near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:39
S940	523	S933 and ((control$4 routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:41
S941	219	S933 and ((sensor monitor$ sensing) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:41
S942	112	S933 and (((sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:44

S943	122	S933 and ((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:48
S944	272	A61H1/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:52
S945	12	S944 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:52
S946	0	S944 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:52
S947	13	S944 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:52
S948	0	S944 and (motor adj mount)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:54
S949	0	S944 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:54
S950	10	S944 and (target near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:54

S951	40	S944 and ((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:55
S952	40	S944 and (((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:56
S953	1,088	A61H1/008.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:57
S954	16	S953 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 10:57
S955	4	S953 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:13
S956	20	S953 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:15
S957	7	S953 and (motor adj mount)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:19
S958	0	S953 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:19

S959	60	S953 and (target near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:20
S960	152	S953 and ((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:23
S961	84	S953 and (((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:27
S962	840	A61H23/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:29
S963	17	S962 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:29
S964	28	S962 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:32
S965	31	S962 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:36
S966	19	S962 and (motor adj mount)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:39

S967	0	S962 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:39
S968	50	S962 and (target near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:41
S969	124	S962 and ((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 11:44
S970	95	S962 and (((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:19
S971	173	A61H23/004.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:22
S972	2	S971 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:22
S973	6	S971 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:22
S974	8	S971 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:24

S975	0	S971 and (motor adj mount)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:29
S976	0	S971 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:29
S977	4	S971 and (target near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:30
S978	24	S971 and ((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:30
S979	14	S971 and (((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:31
S980	5,668	A61H23/006,02,0218,0254,0263,04,06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:33
S981	91	S980 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:33
S982	82	S980 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:39

S983	264	S980 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 12:43
S984	92	S980 and (motor adj mount)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 13:04
S985	25	S980 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 13:33
S986	102	S980 and (target near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 13:36
S987	139	S980 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 13:38
S988	604	S980 and ((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 13:46
S989	543	S988 and (vibrat$ percussion percussive)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 13:49
S990	46	S988 and (percussion percussive)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 13:49

S991	188	S980 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 13:49
S992	401	S980 and (((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 13:57
S993	115	S980 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 13:58
S994	439	A61H2023/002,0209,0272,0281,029.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:00
S995	20	S994 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:00
S996	0	S995 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:01
S997	2	S994 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:02
S998	10	S994 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:05

S999	23	S994 and (motor adj mount)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:06
S1000	65	S994 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:09
S1001	0	S994 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:15
S1002	28	S994 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:16
S1003	21	S994 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:33
S1004	9	S994 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:34
S1005	1,678	A61H39/00,002,007,04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:36
S1006	4	S1005 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:37

S1007	17	S1005 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:37
S1008	27	S1005 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:42
S1009	14	S1005 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:47
S1010	2	S1005 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:50
S1011	76	S1005 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:50
S1012	18	S1005 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:52
S1013	17	S1005 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:55
S1014	4,819	A61H2201/0165,12,1207,1215,1223,123,1238,14,1409,1418,1481,149,1664.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:58

S1015	271	S1014 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 14:58
S1016	135	S1014 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 15:02
S1017	141	S1014 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 15:04
S1018	324	S1014 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 15:09
S1019	3	S1014 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 15:11
S1020	7	S1014 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 15:14
S1021	216	S1014 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 15:18
S1022	55	S1014 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 15:20

S1023	50	S1014 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 15:23
S1024	807	B23D51/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 15:25
S1025	25	S1024 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:00
S1026	0	S1024 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:01
S1027	0	S1024 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:02
S1028	3	S1024 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:02
S1029	45	S1024 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:03
S1030	0	S1024 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:06

S1031	0	S1024 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:06
S1032	0	S1024 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:07
S1033	0	S1024 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:07
S1034	2,010	B23D49/162,165,00,007,008,10,16,167.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:09
S1035	17	S1034 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:10
S1036	0	S1034 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:12
S1037	0	S1034 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:12
S1038	7	S1034 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:21

S1039	90	S1034 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:22
S1040	0	S1034 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:30
S1041	0	S1034 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:32
S1042	0	S1034 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:32
S1043	0	S1034 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:35
S1044	1,939	B26D7/2621,2614.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:36
S1045	1	S1044 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:37
S1046	0	S1044 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:38

S1047	0	S1044 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:53
S1048	4	S1044 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:53
S1049	37	S1044 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:55
S1050	1	S1044 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:57
S1051	0	S1044 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:58
S1052	0	S1044 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:58
S1053	0	S1044 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:59
S1054	310	B26D5/14.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:59

S1055	12	S1054 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 16:59
S1056	0	S1054 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:00
S1057	0	S1054 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:00
S1058	0	S1054 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:01
S1059	14	S1054 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:02
S1060	0	S1054 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:02
S1061	0	S1054 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:03
S1062	0	S1054 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:04

S1063	0	S1054 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:04
S1064	954	A61B17/148,142,14,144.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:05
S1065	56	S1064 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:05
S1066	37	S1064 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:06
S1067	5	S1064 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:07
S1068	0	S1064 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:08
S1069	12	S1064 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:08
S1070	0	S1064 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:09

S1071	7	S1064 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:09
S1072	2	S1064 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:09
S1073	4	S1064 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:10
S1074	448	B27B19/00,002,006,09,02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:11
S1075	19	S1074 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:11
S1076	0	S1074 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:12
S1077	0	S1074 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:13
S1078	0	S1074 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:13

S1079	25	S1074 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:13
S1080	0	S1074 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:15
S1081	0	S1074 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:15
S1082	0	S1074 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:16
S1083	0	S1074 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:16
S1084	0	B27B11/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:17
S1085	0	B27B11/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:18
S1086	1,502	83/615,623,632,626,427.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:18

S1087	1	S1086 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:18
S1088	0	S1086 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:19
S1089	0	S1086 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:19
S1090	0	S1086 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:20
S1091	18	S1086 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:20
S1092	0	S1086 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:21
S1093	0	S1086 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:21
S1094	0	S1086 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:21

S1095	0	S1086 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:22
S1096	3,005	30/392,393,394,182,208,241,217,218,219,220,242.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:22
S1097	2	S1096 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:23
S1098	0	S1096 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:23
S1099	0	S1096 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:24
S1100	1	S1096 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:28
S1101	115	S1096 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:29
S1102	0	S1097 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:38

S1103	0	S1096 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:38
S1104	0	S1096 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:39
S1105	0	S1096 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:39
S1106	0	S1096 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:40
S1107	1,686	173/49,114,122,205.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:40
S1108	7	S1107 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:41
S1109	0	S1107 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:42
S1110	0	S1107 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:42

S11 11	1	S1107 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:42
S11 12	79	S1107 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:43
S11 13	0	S1107 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:47
S11 14	3	S1107 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:47
S11 15	0	S1107 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:51
S11 16	5	S1107 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:52
S11 17	771	227/131.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:53
S11 18	11	S1117 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:53

S1119	0	S1117 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:54
S1120	0	S1117 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:54
S1121	18	S1117 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:54
S1122	6	S1117 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:55
S1123	4	S1117 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:56
S1124	0	S1117 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:57
S1125	0	S1117 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 17:59
S1126	0	D08/8,61,64.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:00

S1127	2,005	D8/8,61,64.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:01
S1128	3	S1127 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:01
S1129	0	S1127 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:01
S1130	0	S1127 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:01
S1131	1	S1127 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:02
S1132	15	S1127 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:02
S1133	0	S1127 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:03
S1134	0	S1127 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:03

S1135	0	S1127 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:03
S1136	0	S1127 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:04
S1137	400	144/121,122,147.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:05
S1138	0	S1137 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:05
S1139	0	S1137 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:05
S1140	0	S1137 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:05
S1141	0	S1137 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:05
S1142	3	S1137 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:05

S1143	0	S1137 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:05
S1144	0	S1137 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:06
S1145	0	S1137 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:06
S1146	0	S1137 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:06
S1147	588	125/16.01.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:15
S1148	0	S1147 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:15
S1149	0	S1147 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:15
S1150	0	S1147 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:15

S1151	0	S1147 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:15
S1152	9	S1147 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:16
S1153	0	S1147 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:16
S1154	0	S1147 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:16
S1155	0	S1147 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:17
S1156	0	S1147 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:22
S1157	867	76/31,36.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:23
S1158	0	S1157 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:23

S1159	0	S1157 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:23
S1160	0	S1157 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:23
S1161	0	S1157 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:24
S1162	1	S1157 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:24
S1163	0	S1157 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:24
S1164	0	S1157 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:24
S1165	0	S1157 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:25
S1166	0	S1157 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:25

S1167	478	601/97,107.ccls.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:25
S1168	2	S1167 and (brushless near3 motor)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:25
S1169	0	S1167 and (haptic$ with (instruct$4 feedback$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:26
S1170	0	S1167 and (((software phone smartphone smart-phone) near3 (app application)) with (control$4 routine protocol instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:26
S1171	0	S1167 and ((motor adj mount$3) with flange)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:26
S1172	15	S1167 and (motor adj mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:26
S1173	0	S1167 and ((frame handle) with shape with (triangl$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:27
S1174	13	S1167 and ((target$3 desired) near3 (force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:30

S1175	4	S1167 and (((routine protocol instruction) with (duration time intensity force pressure direction path frequency amplitude)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:33
S1176	3	S1167 and ((((meter sensor monitor$ sensing) near3 (force pressure)) with (feedback control$4)) same (vibrat$ percussion percussive))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:35
S1177	377	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$ or US-20070144310-$ or US-20180263845-$ or US-20150005682-$).did. or (US-	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2020/07/09 18:57

20180200141-$ or US-20040255475-$ or US-
20040255474-$ or US-20040187324-$ or US-
20040117993-$ or US-20150367494-$ or US-
20150033564-$ or US-20130133210-$ or US-
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20120192440-$ or US-20120030955-$ or US-
20030070307-$ or US-20090272617-$ or US-
20180099339-$ or US-20110265335-$ or US-
20110131820-$ or US-20060288594-$ or US-
20080016705-$ or US-20070209217-$ or US-
20190017528-$ or US-20190015294-$ or US-
20130019483-$ or US-20150375315-$ or US-
20110185582-$).did. or (US-20190224765-$ or US-
20180236572-$ or US-20190209424-$ or US-
20180370012-$ or US-20190254921-$ or US-
20060047315-$ or US-20050131461-$ or US-
20020082532-$ or US-20180031089-$ or US-
20190175434-$ or US-20080004554-$ or US-
20050159689-$ or US-20170079865-$ or US-
20190083352-$ or US-20140283394-$ or US-
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20080189961-$ or US-20050126018-$ or US-
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20190351539-$ or US-20160199924-$ or US-
20100162579-$ or US-20130014968-$).did. or (US-
20080229591-$ or US-20050257385-$ or US-
20050257384-$ or US-20110107608-$ or US-
20140360335-$ or US-20130204255-$ or US-
20090326540-$ or US-20050252011-$ or US-
20150113815-$ or US-20140007436-$ or US-
20070289149-$ or US-20050262710-$ or US-
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20200000678-$ or US-20130110017-$ or US-
20150297437-$ or US-20110224580-$ or US-
20190307631-$ or US-20120215141-$ or US-
20120215280-$ or US-20150133832-$ or US-
20150005672-$).did. or (US-20160278584-$ or US-
20130237751-$ or US-20050207609-$ or US-
20150335520-$ or US-20150169124-$ or US-
20160213558-$ or US-20150119771-$ or US-
20190290076-$ or US-20170095398-$ or US-
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20200038530-$ or US-20180288160-$ or US-
20180279843-$ or US-20170049278-$ or US-
20180243158-$ or US-20160303668-$ or US-
20180326568-$ or US-20140360029-$ or US-

		20140194790-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$ or US-5129118-$ or US-4420995-$ or US-9333628-$ or US-8475076-$ or US-7954402-$ or US-6971285-$ or US-6964216-$ or US-5660491-$ or US-2964037-$ or US-1882040-$ or US-8322456-$ or US-6938706-$).did. or (US-8561717-$ or US-10357425-$ or US-10428850-$ or US-10470970-$ or US-4283855-$ or US-10525541-$ or US-3876015-$ or US-3834019-$ or US-3805383-$ or US-6357124-$ or US-4240204-$ or US-7509744-$ or US-5007172-$ or US-3706474-$ or US-4991298-$ or US-8960323-$ or US-8578615-$ or US-6282797-$ or US-6634107-$ or US-6662455-$ or US-6758119-$ or US-3785053-$ or US-9221112-$ or US-7109613-$ or US-				

		5624000-$ or US-10314762-$ or US-9543871-$).did. or (US-10702448-$ or US-10517790-$ or US-10420700-$ or US-6648840-$ or US-4697580-$ or US-6568089-$ or US-8702633-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$ or US-3172675-$ or US-2839101-$ or US-3050093-$ or US-3340612-$ or US-3623223-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$).did.				
S1178	39	S1177 and ((controller processor control controlling microprocessor micro-processor CPU) same (protocol routine instruction))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:58
S1179	69	S1177 and ((controller processor control controlling microprocessor micro-processor CPU) same (protocol routine instruction mode))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 18:58
S1180	61	S1179 and (vibrat$ percussion percussive massag$)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 19:01
S1181	52	S1177 and ((controller processor control controlling microprocessor micro-processor CPU) same (protocol routine instruction mode) same (speed frequency duration time amplitude force pressure))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/09 19:03
S1182	377	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2020/07/10 15:27

20030149381-$ or US-20150202114-$ or US-
20130012849-$ or US-20020072693-$ or US-
20130123677-$ or US-20130072837-$ or US-
20100331745-$ or US-20010027280-$ or US-
20030028134-$ or US-20030065280-$ or US-
20020183668-$ or US-20020082536-$ or US-
20140323931-$ or US-20110137217-$ or US-
20110041864-$ or US-20050113636-$ or US-
20090038069-$ or US-20040064074-$ or US-
20090086569-$ or US-20120253246-$ or US-
20170281457-$ or US-20170105896-$ or US-
20070299378-$).did. or (US-20100125228-$ or US-
20060074362-$ or US-20170281459-$ or US-
20040176710-$ or US-20150148592-$ or US-
20080262397-$ or US-20100145242-$ or US-
20030144615-$ or US-20090177128-$ or US-
20170241201-$ or US-20150198219-$ or US-
20090165387-$ or US-20070175647-$ or US-
20050217900-$ or US-20050015030-$ or US-
20100024571-$ or US-20150305973-$ or US-
20160015596-$ or US-20150182411-$ or US-
20160131228-$ or US-20090032275-$ or US-
20030019799-$ or US-20130245511-$ or US-
20040039314-$ or US-20070144310-$ or US-
20180263845-$ or US-20150005682-$).did. or (US-
20180200141-$ or US-20040255475-$ or US-
20040255474-$ or US-20040187324-$ or US-
20040117993-$ or US-20150367494-$ or US-
20150033564-$ or US-20130133210-$ or US-
20090100690-$ or US-20060260141-$ or US-
20050178012-$ or US-20080047150-$ or US-
20120192440-$ or US-20120030955-$ or US-
20030070307-$ or US-20090272617-$ or US-
20180099339-$ or US-20110265335-$ or US-
20110131820-$ or US-20060288594-$ or US-
20080016705-$ or US-20070209217-$ or US-
20190017528-$ or US-20190015294-$ or US-
20130019483-$ or US-20150375315-$ or US-
20110185582-$).did. or (US-20190224765-$ or US-
20180236572-$ or US-20190209424-$ or US-
20180370012-$ or US-20190254921-$ or US-
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20020082532-$ or US-20180031089-$ or US-
20190175434-$ or US-20080004554-$ or US-
20050159689-$ or US-20170079865-$ or US-
20190083352-$ or US-20140283394-$ or US-
20170361386-$ or US-20170173711-$ or US-
20140182871-$ or US-20090188119-$ or US-
20080189961-$ or US-20050126018-$ or US-
20010011420-$ or US-20020138991-$ or US-
20190351539-$ or US-20160199924-$ or US-
20100162579-$ or US-20130014968-$).did. or (US-
20080229591-$ or US-20050257385-$ or US-

20050257384-$ or US-20110107608-$ or US-20140360335-$ or US-20130204255-$ or US-20090326540-$ or US-20050252011-$ or US-20150113815-$ or US-20140007436-$ or US-20070289149-$ or US-20050262710-$ or US-20200069510-$ or US-20190365598-$ or US-20200046602-$ or US-20200093682-$ or US-20180256432-$ or US-20200060918-$ or US-20200000678-$ or US-20130110017-$ or US-20150297437-$ or US-20110224580-$ or US-20190307631-$ or US-20120215141-$ or US-20120215280-$ or US-20150133832-$ or US-20150005672-$).did. or (US-20160278584-$ or US-20130237751-$ or US-20050207609-$ or US-20150335520-$ or US-20150169124-$ or US-20160213558-$ or US-20150119771-$ or US-20190290076-$ or US-20170095398-$ or US-20160151238-$ or US-20160000642-$ or US-20050054958-$ or US-20150290076-$ or US-20160158097-$ or US-20190099327-$ or US-20200214934-$ or US-20070179414-$ or US-20200038530-$ or US-20180288160-$ or US-20180279843-$ or US-20170049278-$ or US-20180243158-$ or US-20160303668-$ or US-20180326568-$ or US-20140360029-$ or US-20140194790-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-

		9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$ or US-5129118-$ or US-4420995-$ or US-9333628-$ or US-8475076-$ or US-7954402-$ or US-6971285-$ or US-6964216-$ or US-5660491-$ or US-2964037-$ or US-1882040-$ or US-8322456-$ or US-6938706-$).did. or (US-8561717-$ or US-10357425-$ or US-10428850-$ or US-10470970-$ or US-4283855-$ or US-10525541-$ or US-3876015-$ or US-3834019-$ or US-3805383-$ or US-6357124-$ or US-4240204-$ or US-7509744-$ or US-5007172-$ or US-3706474-$ or US-4991298-$ or US-8960323-$ or US-8578615-$ or US-6282797-$ or US-6634107-$ or US-6662455-$ or US-6758119-$ or US-3785053-$ or US-9221112-$ or US-7109613-$ or US-5624000-$ or US-10314762-$ or US-9543871-$).did. or (US-10702448-$ or US-10517790-$ or US-10420700-$ or US-6648840-$ or US-4697580-$ or US-6568089-$ or US-8702633-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$ or US-3172675-$ or US-2839101-$ or US-3050093-$ or US-3340612-$ or US-3623223-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$).did.				
S1183	16	S1182 and (touchscreen touch-screen (touch adj screen))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/10 15:27
S1184	55	S1182 and (instruct$5 prompt$)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/10 15:38

S1185	10	S1182 and (display$ with force)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/10 15:50
S1186	3	S1182 and (tutorial)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/10 16:00
S1187	595	(a61h.cpcl. or "601".clas.) and (massag$ same (instruct$5 prompt$ tutorial))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/10 16:26
S1188	413	(a61h.cpcl. or "601".clas.) and (massag$ with (instruct$5 prompt$ tutorial))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/10 16:27
S1189	80	(a61h.cpcl. or "601".clas.) and (massag$ with (instruct$5 prompt$ tutorial) with (use operation grip$3 hold$3))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/10 16:28
S1190	196	(a61h.cpcl. or "601".clas.) and (massag$ with (instruct$5 prompt$ tutorial guide step$1by$1step) with (use operation grip$3 hold$3))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/10 16:29
S1191	4	(a61h.cpcl. or "601".clas.) and (massag$ same (step$1by$1step))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/10 17:44
S1192	33	(a61h.cpcl. or "601".clas.) and (guide with (step$1by$1step))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/10 17:46

S1193	57	(a61h.cpcl. or "601".clas.) and ((instruct$4 guide tutorial prompt$) with (step$1by$1step))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/10 17:47
S1194	377	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$ or US-20070144310-$ or US-20180263845-$ or US-20150005682-$).did. or (US-20180200141-$ or US-20040255475-$ or US-20040255474-$ or US-20040187324-$ or US-20040117993-$ or US-20150367494-$ or US-20150033564-$ or US-20130133210-$ or US-20090100690-$ or US-20060260141-$ or US-20050178012-$ or US-	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2020/07/11 11:20

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4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$ or US-5129118-$ or US-4420995-$ or US-9333628-$ or US-8475076-$ or US-7954402-$ or US-6971285-$ or US-6964216-$ or US-5660491-$ or US-2964037-$ or US-1882040-$ or US-8322456-$ or US-6938706-$).did. or (US-8561717-$ or US-10357425-$ or US-10428850-$ or US-10470970-$ or US-4283855-$ or US-10525541-$ or US-3876015-$ or US-3834019-$ or US-3805383-$ or US-6357124-$ or US-4240204-$ or US-7509744-$ or US-5007172-$ or US-3706474-$ or US-4991298-$ or US-8960323-$ or US-8578615-$ or US-6282797-$ or US-6634107-$ or US-6662455-$ or US-6758119-$ or US-3785053-$ or US-9221112-$ or US-7109613-$ or US-5624000-$ or US-10314762-$ or US-9543871-$).did. or (US-10702448-$ or US-10517790-$ or US-10420700-$ or US-6648840-$ or US-4697580-$ or US-6568089-$ or US-8702633-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-

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		3785053-$ or US-9221112-$ or US-7109613-$ or US-5624000-$ or US-10314762-$ or US-9543871-$).did. or (US-10702448-$ or US-10517790-$ or US-10420700-$ or US-6648840-$ or US-4697580-$ or US-6568089-$ or US-8702633-$ or US-5113847-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$ or US-3172675-$ or US-2839101-$ or US-3050093-$ or US-3340612-$ or US-3623223-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$).did.				
S1197	4	S1196 and ((instruct$4 guide tutorial prompt$) with (step$1by$1step))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/13 11:25
S1198	124	((instruct$4 guide tutorial prompt$) with (step$1by$1step) with (phone smart-phone smartphone cell-phone cellphone tablet))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/13 11:28
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S1201	136	S1196 and ((direct$4 instruct$ prompt$ guid$4 tutorial$) with ((body adj part) area arm leg face))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/13 11:57
S1202	1	("9907439").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/13 12:40

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20150005672-$).did. or (US-20160278584-$ or US-
20130237751-$ or US-20050207609-$ or US-
20150335520-$ or US-20150169124-$ or US-
20160213558-$ or US-20150119771-$ or US-
20190290076-$ or US-20170095398-$ or US-
20160151238-$ or US-20160000642-$ or US-
20050054958-$ or US-20150290076-$ or US-
20160158097-$ or US-20190099327-$ or US-
20200214934-$ or US-20200038530-$ or US-
20180288160-$ or US-20180279843-$ or US-
20170049278-$ or US-20180243158-$ or US-
20160303668-$ or US-20180326568-$ or US-
20140360029-$ or US-20140194790-$ or US-

20090240177-$ or US-20190066833-$).did. or (US-20180008512-$ or US-20100274162-$ or US-20180196395-$ or US-20150310634-$ or US-20150040685-$ or US-20140194900-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$ or US-5129118-$ or US-4420995-$ or US-9333628-$ or US-8475076-$ or US-7954402-$ or US-6971285-$ or US-6964216-$ or US-5660491-$ or US-2964037-$ or US-1882040-$ or US-8322456-$ or US-6938706-$).did. or (US-8561717-$ or US-10357425-$ or US-10428850-$ or US-10470970-$ or US-4283855-$ or US-10525541-$ or US-3876015-$ or US-3834019-$ or US-3805383-$ or US-6357124-$ or US-4240204-$ or US-7509744-$ or US-5007172-$ or US-

		3706474-$ or US-4991298-$ or US-8960323-$ or US-8578615-$ or US-6282797-$ or US-6634107-$ or US-6662455-$ or US-6758119-$ or US-3785053-$ or US-9221112-$ or US-7109613-$ or US-5624000-$ or US-10314762-$ or US-9543871-$).did. or (US-10702448-$ or US-10517790-$ or US-10420700-$ or US-6648840-$ or US-4697580-$ or US-6568089-$ or US-8702633-$ or US-5113847-$ or US-5501657-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$ or US-3172675-$ or US-2839101-$ or US-3050093-$ or US-3340612-$ or US-3623223-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$).did.				
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20090100690-$ or US-20060260141-$ or US-
20050178012-$ or US-20080047150-$ or US-
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20110131820-$ or US-20060288594-$ or US-
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20020082532-$ or US-20180031089-$ or US-
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20050159689-$ or US-20170079865-$ or US-
20190083352-$ or US-20140283394-$ or US-
20170361386-$ or US-20170173711-$ or US-
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20190290076-$ or US-20170095398-$ or US-
20160151238-$ or US-20160000642-$ or US-
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		US-10357425-$ or US-10428850-$ or US-10470970-$ or US-4283855-$ or US-10525541-$ or US-3876015-$ or US-3834019-$ or US-3805383-$ or US-6357124-$ or US-4240204-$ or US-7509744-$ or US-5007172-$ or US-3706474-$ or US-4991298-$ or US-8960323-$ or US-8578615-$ or US-6282797-$ or US-6634107-$ or US-6662455-$ or US-6758119-$ or US-3785053-$ or US-9221112-$ or US-7109613-$ or US-5624000-$ or US-10314762-$ or US-9543871-$).did. or (US-10702448-$ or US-10517790-$ or US-10420700-$ or US-6648840-$ or US-4697580-$ or US-6568089-$ or US-8702633-$ or US-5113847-$ or US-5501657-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$ or US-3172675-$ or US-2839101-$ or US-3050093-$ or US-3340612-$ or US-3623223-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$).did.				
S1207	145	S1206 and ((grip$5 hold$4 handle) with (adjust adjusting adjusted adjustment adjustable position$4 chang$4))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/14 10:59
S1208	158	S1206 and ((grip$5 hold$4 handle) with (select$5 adjust adjusting adjusted adjustment adjustable position$4 chang$4))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/14 11:00
S1209	2	(("20080177207") or ("20100145242")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/14 11:40
S1210	387	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2020/07/14 15:27

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20100024571-$ or US-20150305973-$ or US-
20160015596-$ or US-20150182411-$ or US-
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20020082532-$ or US-20180031089-$ or US-
20190175434-$ or US-20080004554-$ or US-
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20170361386-$ or US-20170173711-$ or US-
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20190351539-$ or US-20160199924-$ or US-

20100162579-$ or US-20130014968-$).did. or (US-20080229591-$ or US-20050257385-$ or US-20050257384-$ or US-20110107608-$ or US-20140360335-$ or US-20130204255-$ or US-20090326540-$ or US-20050252011-$ or US-20150113815-$ or US-20140007436-$ or US-20070289149-$ or US-20050262710-$ or US-20200069510-$ or US-20190365598-$ or US-20200046602-$ or US-20200093682-$ or US-20180256432-$ or US-20200060918-$ or US-20200000678-$ or US-20130110017-$ or US-20150297437-$ or US-20110224580-$ or US-20190307631-$ or US-20120215141-$ or US-20120215280-$ or US-20150133832-$ or US-20150005672-$).did. or (US-20160278584-$ or US-20130237751-$ or US-20050207609-$ or US-20150335520-$ or US-20150169124-$ or US-20160213558-$ or US-20150119771-$ or US-20190290076-$ or US-20170095398-$ or US-20160151238-$ or US-20160000642-$ or US-20050054958-$ or US-20150290076-$ or US-20160158097-$ or US-20190099327-$ or US-20200214934-$ or US-20200038530-$ or US-20180288160-$ or US-20180279843-$ or US-20170049278-$ or US-20180243158-$ or US-20160303668-$ or US-20180326568-$ or US-20140360029-$ or US-20140194790-$ or US-20090240177-$ or US-20190066833-$).did. or (US-20180008512-$ or US-20100274162-$ or US-20180196395-$ or US-20150310634-$ or US-20150040685-$ or US-20140194900-$ or US-20080177207-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-

		5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$ or US-5129118-$ or US-4420995-$ or US-9333628-$ or US-8475076-$ or US-7954402-$ or US-6971285-$ or US-6964216-$ or US-5660491-$ or US-2964037-$ or US-1882040-$ or US-8322456-$ or US-6938706-$).did. or (US-8561717-$ or US-10357425-$ or US-10428850-$ or US-10470970-$ or US-4283855-$ or US-10525541-$ or US-3876015-$ or US-3834019-$ or US-3805383-$ or US-6357124-$ or US-4240204-$ or US-7509744-$ or US-5007172-$ or US-3706474-$ or US-4991298-$ or US-8960323-$ or US-8578615-$ or US-6282797-$ or US-6634107-$ or US-6662455-$ or US-6758119-$ or US-3785053-$ or US-9221112-$ or US-7109613-$ or US-5624000-$ or US-10314762-$ or US-9543871-$).did. or (US-10702448-$ or US-10517790-$ or US-10420700-$ or US-6648840-$ or US-4697580-$ or US-6568089-$ or US-8702633-$ or US-5113847-$ or US-5501657-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$ or US-3172675-$ or US-2839101-$ or US-3050093-$ or US-3340612-$ or US-3623223-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$).did.				
S1211	15	S1210 and ((control controlling controlled controller) with (phone smart-phone smartphone cell-phone cellphone tablet))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/14 15:28

S12 12	7	S1211 and (touchscreen touch-screen (touch adj screen) touchdisplay touch-display (touch adj display))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/14 15:30
S12 13	190	(a61h.cpcl. or "601".clas.) and (((control controlling controlled controller) with (phone smart-phone smartphone cell-phone cellphone tablet)) same (touchscreen touch-screen (touch adj screen) touchdisplay touch-display (touch adj display)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/14 15:44
S12 14	91	(a61h.cpcl. or "601".clas.) and massag$ and (((control controlling controlled controller) with (phone smart-phone smartphone cell-phone cellphone tablet)) same (touchscreen touch-screen (touch adj screen) touchdisplay touch-display (touch adj display)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/14 15:53
S12 16	15	S1210 and (kit)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/14 16:29
S12 17	980	(a61h.cpcl. or "601".clas.) and ((treatment massag$) with (head applicator) with (different plural$))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/14 16:31
S12 18	6	(a61h.cpcl. or "601".clas.) and ((treatment massag$) with (head applicator) with (different plural$) with kit)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/14 16:32
S12 19	12	S1210 and ((plural$ different) with (body adj part))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/14 17:08
S12 20	13	S1210 and ((plural$ different multiple) with (body adj part))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/14 17:08

S1221	37	((("Wersland") near3 ("Jason"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/14 17:14
S1222	9	S1221 and (protocol routine step).clm.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/14 17:14
S1223	5,287	(massag$ percussiv$ percussion$) same (tutorial instruct$4 guide tutorial prompt$ step$1by$1step)	EPO; JPO; DERWENT	OR	ON	2020/07/15 13:51
S1224	123	(massag$ percussiv$ percussion$) same (tutorial instruct$4 guide tutorial prompt$ step$1by$1step) same (phone cellphone cell-phone smart-phone smartphone application)	EPO; JPO; DERWENT	OR	ON	2020/07/15 13:52
S1225	13	((("THERAGUN") near3 ("INC"))).AS,AANM.	USPAT	OR	ON	2020/07/15 16:49
S1226	2	S1225 and (protocol routine step).clm.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/15 16:50
S1227	49	(US-20080071203-$ or US-20010027280-$ or US-20020161315-$ or US-20020169400-$ or US-20020193712-$ or US-20030028134-$ or US-20040049137-$ or US-20050010141-$ or US-20050049529-$ or US-20050054958-$ or US-20050187498-$ or US-20050222525-$ or US-20060094994-$ or US-20060155224-$).did. or (US-4098266-$ or US-4102334-$ or US-4919117-$ or US-5235967-$ or US-5951501-$ or US-5454779-$ or US-5716332-$ or US-6165145-$ or US-6415814-$ or US-6432072-$ or US-6500135-$ or US-6733466-$ or US-6875186-$ or US-6981954-$ or US-7025736-$ or US-7041072-$ or US-7125390-$ or US-7128722-$ or US-7354408-$ or US-7491184-$ or US-7517328-$ or US-7707654-$ or US-8079968-$ or US-8512265-$ or US-8715161-$ or US-8870796-$).did. or (US-9782324-$ or US-10201470-$ or US-10314762-$ or US-10342649-$ or US-10406065-$ or US-10492984-$ or US-10561574-$ or US-10682281-$ or US-10702448-$).did.	US-PGPUB; USPAT	OR	ON	2020/07/15 16:50

S12 28	395	(US-20140180331-$ or US-20130261516-$ or US- 20130138023-$ or US-20120253245-$ or US- 20080103419-$ or US-20070150004-$ or US- 20060192527-$ or US-20060123941-$ or US- 20060025710-$ or US-20030195443-$ or US- 20030009116-$ or US-20010016697-$ or US- 20160206502-$ or US-20160367425-$ or US- 20170027798-$ or US-20030094356-$ or US- 20170304145-$ or US-20140163442-$ or US- 20130281897-$ or US-20120101517-$ or US- 20100137907-$ or US-20100010399-$ or US- 20090270915-$ or US-20090222024-$ or US- 20020107459-$ or US-20170304144-$).did. or (US- 20170156974-$ or US-20160346152-$ or US- 20160271009-$ or US-20170156975-$ or US- 20030149381-$ or US-20150202114-$ or US- 20130012849-$ or US-20020072693-$ or US- 20130123677-$ or US-20130072837-$ or US- 20100331745-$ or US-20010027280-$ or US- 20030028134-$ or US-20030065280-$ or US- 20020183668-$ or US-20020082536-$ or US- 20140323931-$ or US-20110137217-$ or US- 20110041864-$ or US-20050113636-$ or US- 20090038069-$ or US-20040064074-$ or US- 20090086569-$ or US-20120253246-$ or US- 20170281457-$ or US-20170105896-$ or US- 20070299378-$).did. or (US-20100125228-$ or US- 20060074362-$ or US-20170281459-$ or US- 20040176710-$ or US-20150148592-$ or US- 20080262397-$ or US-20100145242-$ or US- 20030144615-$ or US-20090177128-$ or US- 20170241201-$ or US-20150198219-$ or US- 20090165387-$ or US-20070175647-$ or US- 20050217900-$ or US-20050015030-$ or US- 20100024571-$ or US-20150305973-$ or US- 20160015596-$ or US-20150182411-$ or US- 20160131228-$ or US-20090032275-$ or US- 20030019799-$ or US-20130245511-$ or US- 20040039314-$ or US-20070144310-$ or US- 20180263845-$ or US-20150005682-$).did. or (US- 20180200141-$ or US-20040255475-$ or US- 20040255474-$ or US-20040187324-$ or US- 20040117993-$ or US-20150367494-$ or US- 20150033564-$ or US-20130133210-$ or US- 20090100690-$ or US-20060260141-$ or US- 20050178012-$ or US-20080047150-$ or US- 20120192440-$ or US-20120030955-$ or US- 20030070307-$ or US-20090272617-$ or US- 20180099339-$ or US-20110265335-$ or US- 20110131820-$ or US-20060288594-$ or US- 20080016705-$ or US-20070209217-$ or US- 20190017528-$ or US-20190015294-$ or US- 20130019483-$ or US-20150375315-$ or US-	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2020/07/17 13:49

20110185582-$).did. or (US-20190224765-$ or US-20180236572-$ or US-20190209424-$ or US-20180370012-$ or US-20190254921-$ or US-20060047315-$ or US-20050131461-$ or US-20020082532-$ or US-20180031089-$ or US-20190175434-$ or US-20080004554-$ or US-20050159689-$ or US-20170079865-$ or US-20190083352-$ or US-20140283394-$ or US-20170361386-$ or US-20170173711-$ or US-20140182871-$ or US-20090188119-$ or US-20080189961-$ or US-20050126018-$ or US-20010011420-$ or US-20020138991-$ or US-20190351539-$ or US-20160199924-$ or US-20100162579-$ or US-20130014968-$).did. or (US-20080229591-$ or US-20050257385-$ or US-20050257384-$ or US-20110107608-$ or US-20140360335-$ or US-20130204255-$ or US-20090326540-$ or US-20050252011-$ or US-20150113815-$ or US-20140007436-$ or US-20070289149-$ or US-20050262710-$ or US-20200069510-$ or US-20190365598-$ or US-20200046602-$ or US-20200093682-$ or US-20180256432-$ or US-20200060918-$ or US-20200000678-$ or US-20130110017-$ or US-20150297437-$ or US-20110224580-$ or US-20190307631-$ or US-20120215141-$ or US-20120215280-$ or US-20150133832-$ or US-20150005672-$).did. or (US-20160278584-$ or US-20130237751-$ or US-20050207609-$ or US-20150335520-$ or US-20150169124-$ or US-20160213558-$ or US-20150119771-$ or US-20190290076-$ or US-20170095398-$ or US-20160151238-$ or US-20160000642-$ or US-20050054958-$ or US-20150290076-$ or US-20160158097-$ or US-20190099327-$ or US-20200214934-$ or US-20200038530-$ or US-20180288160-$ or US-20180279843-$ or US-20170049278-$ or US-20180243158-$ or US-20160303668-$ or US-20180326568-$ or US-20140360029-$ or US-20140194790-$ or US-20090240177-$ or US-20190066833-$).did. or (US-20180008512-$ or US-20100274162-$ or US-20180196395-$ or US-20150310634-$ or US-20150040685-$ or US-20140194900-$ or US-20080177207-$ or US-20150126916-$ or US-20140207032-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-

		4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$ or US-5129118-$ or US-4420995-$ or US-9333628-$ or US-8475076-$ or US-7954402-$ or US-6971285-$ or US-6964216-$ or US-5660491-$ or US-2964037-$ or US-1882040-$ or US-8322456-$ or US-6938706-$).did. or (US-8561717-$ or US-10357425-$ or US-10428850-$ or US-10470970-$ or US-4283855-$ or US-10525541-$ or US-3876015-$ or US-3834019-$ or US-3805383-$ or US-6357124-$ or US-4240204-$ or US-7509744-$ or US-5007172-$ or US-3706474-$ or US-4991298-$ or US-8960323-$ or US-8578615-$ or US-6282797-$ or US-6634107-$ or US-6662455-$ or US-6758119-$ or US-3785053-$ or US-9221112-$ or US-7109613-$ or US-5624000-$ or US-10314762-$ or US-9543871-$).did. or (US-10702448-$ or US-10517790-$ or US-10420700-$ or US-6648840-$ or US-4697580-$ or US-6568089-$ or US-8702633-$ or US-5113847-$ or US-5501657-$ or US-6562013-$ or US-10492984-$ or US-10561574-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$ or US-				

		3172675-$ or US-2839101-$ or US-3050093-$ or US-3340612-$ or US-3623223-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$ or CN-210728184-$ or DE-102015226084-$ or WO-2006122435-$).did.				
S1229	99	S1228 and (duration (period near3 time))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/17 13:49
S1230	5	S1228 and ((duration (period near3 time)) with (instruct$5 prompt$4))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/17 13:54
S1231	27	S1228 and ((body near3 part) with (second different differ$4))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/17 13:59
S1232	9	S1228 and (haptic$)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/17 14:12
S1233	395	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2020/07/20 14:07

20020183668-$ or US-20020082536-$ or US-
20140323931-$ or US-20110137217-$ or US-
20110041864-$ or US-20050113636-$ or US-
20090038069-$ or US-20040064074-$ or US-
20090086569-$ or US-20120253246-$ or US-
20170281457-$ or US-20170105896-$ or US-
20070299378-$).did. or (US-20100125228-$ or US-
20060074362-$ or US-20170281459-$ or US-
20040176710-$ or US-20150148592-$ or US-
20080262397-$ or US-20100145242-$ or US-
20030144615-$ or US-20090177128-$ or US-
20170241201-$ or US-20150198219-$ or US-
20090165387-$ or US-20070175647-$ or US-
20050217900-$ or US-20050015030-$ or US-
20100024571-$ or US-20150305973-$ or US-
20160015596-$ or US-20150182411-$ or US-
20160131228-$ or US-20090032275-$ or US-
20030019799-$ or US-20130245511-$ or US-
20040039314-$ or US-20070144310-$ or US-
20180263845-$ or US-20150005682-$).did. or (US-
20180200141-$ or US-20040255475-$ or US-
20040255474-$ or US-20040187324-$ or US-
20040117993-$ or US-20150367494-$ or US-
20150033564-$ or US-20130133210-$ or US-
20090100690-$ or US-20060260141-$ or US-
20050178012-$ or US-20080047150-$ or US-
20120192440-$ or US-20120030955-$ or US-
20030070307-$ or US-20090272617-$ or US-
20180099339-$ or US-20110265335-$ or US-
20110131820-$ or US-20060288594-$ or US-
20080016705-$ or US-20070209217-$ or US-
20190017528-$ or US-20190015294-$ or US-
20130019483-$ or US-20150375315-$ or US-
20110185582-$).did. or (US-20190224765-$ or US-
20180236572-$ or US-20190209424-$ or US-
20180370012-$ or US-20190254921-$ or US-
20060047315-$ or US-20050131461-$ or US-
20020082532-$ or US-20180031089-$ or US-
20190175434-$ or US-20080004554-$ or US-
20050159689-$ or US-20170079865-$ or US-
20190083352-$ or US-20140283394-$ or US-
20170361386-$ or US-20170173711-$ or US-
20140182871-$ or US-20090188119-$ or US-
20080189961-$ or US-20050126018-$ or US-
20010011420-$ or US-20020138991-$ or US-
20190351539-$ or US-20160199924-$ or US-
20100162579-$ or US-20130014968-$).did. or (US-
20080229591-$ or US-20050257385-$ or US-
20050257384-$ or US-20110107608-$ or US-
20140360335-$ or US-20130204255-$ or US-
20090326540-$ or US-20050252011-$ or US-
20150113815-$ or US-20140007436-$ or US-
20070289149-$ or US-20050262710-$ or US-

20200069510-$ or US-20190365598-$ or US-20200046602-$ or US-20200093682-$ or US-20180256432-$ or US-20200060918-$ or US-20200000678-$ or US-20130110017-$ or US-20150297437-$ or US-20110224580-$ or US-20190307631-$ or US-20120215141-$ or US-20120215280-$ or US-20150133832-$ or US-20150005672-$).did. or (US-20160278584-$ or US-20130237751-$ or US-20050207609-$ or US-20150335520-$ or US-20150169124-$ or US-20160213558-$ or US-20150119771-$ or US-20190290076-$ or US-20170095398-$ or US-20160151238-$ or US-20160000642-$ or US-20050054958-$ or US-20150290076-$ or US-20160158097-$ or US-20190099327-$ or US-20200214934-$ or US-20200038530-$ or US-20180288160-$ or US-20180279843-$ or US-20170049278-$ or US-20180243158-$ or US-20160303668-$ or US-20180326568-$ or US-20140360029-$ or US-20140194790-$ or US-20090240177-$ or US-20190066833-$).did. or (US-20180008512-$ or US-20100274162-$ or US-20180196395-$ or US-20150310634-$ or US-20150040685-$ or US-20140194900-$ or US-20080177207-$ or US-20150126916-$ or US-20140207032-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-

		9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$ or US-5129118-$ or US-4420995-$ or US-9333628-$ or US-8475076-$ or US-7954402-$ or US-6971285-$ or US-6964216-$ or US-5660491-$ or US-2964037-$ or US-1882040-$ or US-8322456-$ or US-6938706-$).did. or (US-8561717-$ or US-10357425-$ or US-10428850-$ or US-10470970-$ or US-4283855-$ or US-10525541-$ or US-3876015-$ or US-3834019-$ or US-3805383-$ or US-6357124-$ or US-4240204-$ or US-7509744-$ or US-5007172-$ or US-3706474-$ or US-4991298-$ or US-8960323-$ or US-8578615-$ or US-6282797-$ or US-6634107-$ or US-6662455-$ or US-6758119-$ or US-3785053-$ or US-9221112-$ or US-7109613-$ or US-5624000-$ or US-10314762-$ or US-9543871-$).did. or (US-10702448-$ or US-10517790-$ or US-10420700-$ or US-6648840-$ or US-4697580-$ or US-6568089-$ or US-8702633-$ or US-5113847-$ or US-5501657-$ or US-6562013-$ or US-10492984-$ or US-10561574-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$ or US-3172675-$ or US-2839101-$ or US-3050093-$ or US-3340612-$ or US-3623223-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$ or CN-210728184-$ or DE-102015226084-$ or WO-2006122435-$).did.				
S1234	2	S1233 and ((wireless wire-less (wire adj less)) near3 charg$4)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/20 14:15
S1235	106	S1233 and (motor near3 mount$3)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/20 14:40

S1236	23	S1233 and (motor near3 (brushless brush-less (brush adj less)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/20 14:41
S1237	8	S1236 and S1235	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/20 14:43
S1239	9,092	(a61h.cpcl. or b23d.cpcl. or b26d.cpcl. or a61b.cpcl. or b27b.cpcl. or "83".clas. or "30".clas. or "173".clas. or "227".clas. or "144".clas. or "125".clas. or "76".clas. or "601".clas.) and (motor adj (mount$3 bracket plate frame))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/20 17:47
S1240	1,005	(a61h.cpcl. or b23d.cpcl. or b26d.cpcl. or a61b.cpcl. or b27b.cpcl. or "83".clas. or "30".clas. or "173".clas. or "227".clas. or "144".clas. or "125".clas. or "76".clas. or "601".clas.) and ((motor adj (mount$3 bracket plate frame)) same (reciprocat$ pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/20 17:48
S1241	296	(a61h.cpcl. or b23d.cpcl. or b26d.cpcl. or a61b.cpcl. or b27b.cpcl. or "83".clas. or "30".clas. or "173".clas. or "227".clas. or "144".clas. or "125".clas. or "76".clas. or "601".clas.) and ((motor adj (mount mounting bracket plate frame)) same (reciprocat$ pushrod push-rod (push adj rod)))	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/20 17:50
S1242	49	("20040064907" | "20040074025" | "20040232194" | "20070180711" | "20080017689" | "20080048000" | "20090236387" | "20090250500" | "20100162579" | "20100213236" | "20100276168" | "2373842" | "2726689" | "2894489" | "3939599" | "4081704" | "4323127" | "5246414" | "5479709" | "5558166" | "5581891" | "5624000" | "5692421" | "5960687" | "6520397" | "6619527" | "6935547" | "6971951" | "7011243" | "7040520" | "7107670" | "7107944" | "7109613" | "7117582" | "7118018" | "7140331" | "7305941" | "7513845" | "7568602" | "7690283" | "7703856" | "7850145" | "7938305" | "7959415" | "RE40643").PN. OR ("9221112").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/20 17:56
S1243	395	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-	US-PGPUB; USPAT; USOCR; EPO;	OR	ON	2020/07/21 13:02

		20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$ or US-20070144310-$ or US-20180263845-$ or US-20150005682-$).did. or (US-20180200141-$ or US-20040255475-$ or US-20040255474-$ or US-20040187324-$ or US-20040117993-$ or US-20150367494-$ or US-20150033564-$ or US-20130133210-$ or US-20090100690-$ or US-20060260141-$ or US-20050178012-$ or US-20080047150-$ or US-20120192440-$ or US-20120030955-$ or US-20030070307-$ or US-20090272617-$ or US-20180099339-$ or US-20110265335-$ or US-20110131820-$ or US-20060288594-$ or US-20080016705-$ or US-20070209217-$ or US-20190017528-$ or US-20190015294-$ or US-20130019483-$ or US-20150375315-$ or US-20110185582-$).did. or (US-20190224765-$ or US-20180236572-$ or US-20190209424-$ or US-20180370012-$ or US-20190254921-$ or US-20060047315-$ or US-20050131461-$ or US-20020082532-$ or US-20180031089-$ or US-20190175434-$ or US-20080004554-$ or US-20050159689-$ or US-20170079865-$ or US-	JPO; DERWENT			

20190083352-$ or US-20140283394-$ or US-20170361386-$ or US-20170173711-$ or US-20140182871-$ or US-20090188119-$ or US-20080189961-$ or US-20050126018-$ or US-20010011420-$ or US-20020138991-$ or US-20190351539-$ or US-20160199924-$ or US-20100162579-$ or US-20130014968-$).did. or (US-20080229591-$ or US-20050257385-$ or US-20050257384-$ or US-20110107608-$ or US-20140360335-$ or US-20130204255-$ or US-20090326540-$ or US-20050252011-$ or US-20150113815-$ or US-20140007436-$ or US-20070289149-$ or US-20050262710-$ or US-20200069510-$ or US-20190365598-$ or US-20200046602-$ or US-20200093682-$ or US-20180256432-$ or US-20200060918-$ or US-20200000678-$ or US-20130110017-$ or US-20150297437-$ or US-20110224580-$ or US-20190307631-$ or US-20120215141-$ or US-20120215280-$ or US-20150133832-$ or US-20150005672-$).did. or (US-20160278584-$ or US-20130237751-$ or US-20050207609-$ or US-20150335520-$ or US-20150169124-$ or US-20160213558-$ or US-20150119771-$ or US-20190290076-$ or US-20170095398-$ or US-20160151238-$ or US-20160000642-$ or US-20050054958-$ or US-20150290076-$ or US-20160158097-$ or US-20190099327-$ or US-20200214934-$ or US-20200038530-$ or US-20180288160-$ or US-20180279843-$ or US-20170049278-$ or US-20180243158-$ or US-20160303668-$ or US-20180326568-$ or US-20140360029-$ or US-20140194790-$ or US-20090240177-$ or US-20190066833-$).did. or (US-20180008512-$ or US-20100274162-$ or US-20180196395-$ or US-20150310634-$ or US-20150040685-$ or US-20140194900-$ or US-20080177207-$ or US-20150126916-$ or US-20140207032-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-

		7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$ or US-5129118-$ or US-4420995-$ or US-9333628-$ or US-8475076-$ or US-7954402-$ or US-6971285-$ or US-6964216-$ or US-5660491-$ or US-2964037-$ or US-1882040-$ or US-8322456-$ or US-6938706-$).did. or (US-8561717-$ or US-10357425-$ or US-10428850-$ or US-10470970-$ or US-4283855-$ or US-10525541-$ or US-3876015-$ or US-3834019-$ or US-3805383-$ or US-6357124-$ or US-4240204-$ or US-7509744-$ or US-5007172-$ or US-3706474-$ or US-4991298-$ or US-8960323-$ or US-8578615-$ or US-6282797-$ or US-6634107-$ or US-6662455-$ or US-6758119-$ or US-3785053-$ or US-9221112-$ or US-7109613-$ or US-5624000-$ or US-10314762-$ or US-9543871-$).did. or (US-10702448-$ or US-10517790-$ or US-10420700-$ or US-6648840-$ or US-4697580-$ or US-6568089-$ or US-8702633-$ or US-5113847-$ or US-5501657-$ or US-6562013-$ or US-10492984-$ or US-10561574-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$ or US-3172675-$ or US-2839101-$ or US-3050093-$ or US-3340612-$ or US-3623223-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$ or CN-210728184-$ or DE-102015226084-$ or WO-2006122435-$).did.				

S1244	265	S1243 and (grasp$ grip$4 handl$4)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/21 13:02
S1245	163	S1243 and (grasp$ grip$4)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/21 13:06
S1246	9	(("20190175434") or ("20170304145") or ("20050252011") or ("20200060918") or ("20150005682") or ("20080177207") or ("20100145242") or ("20050159689") or ("7041072")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/21 14:49
S1247	1	"16869402"	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 11:15
S1248	978	A61H1/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:06
S1249	273	A61H1/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:08
S1250	1,094	A61H1/008.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:08
S1251	863	A61H23/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:09

S1252	182	A61H23/004.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:10
S1253	350	A61H23/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:11
S1254	2,062	A61H23/02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:12
S1255	787	A61H23/0218.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:13
S1256	1,184	A61H23/0254.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:14
S1257	1,714	A61H23/0263.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:15
S1258	647	A61H23/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:16
S1259	124	A61H23/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:17

S1260	101	A61H2023/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:18
S1261	58	A61H2023/0209.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:20
S1262	174	A61H2023/0272.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:20
S1263	120	A61H2023/0281.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:21
S1264	51	A61H2023/029.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:21
S1265	177	A61H39/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:23
S1266	634	A61H39/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:23
S1267	118	A61H39/007.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:24

S1268	931	A61H39/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:24
S1269	392	A61H2201/0165.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:25
S1270	106	A61H2201/12.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:26
S1271	1,238	A61H2201/1207.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:26
S1272	2,044	A61H2201/1215.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:27
S1273	85	A61H2201/1223.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:32
S1274	342	A61H2201/123.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:33
S1275	966	A61H2201/1238.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:34

S1276	251	A61H2201/14.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:34
S1277	198	A61H2201/1409.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:35
S1278	384	A61H2201/1418.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:35
S1279	142	A61H2201/1481.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:36
S1280	581	A61H2201/149.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:36
S1281	719	A61H2201/1664.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:37
S1282	804	B23D51/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:37
S1283	469	B23D49/162.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:38

S1284	196	B23D49/165.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:40
S1285	33	B23D49/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:40
S1286	870	B23D49/007.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:41
S1287	94	B23D49/08.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:41
S1288	62	B23D49/008.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:41
S1289	127	B23D49/10.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:42
S1290	137	B23D49/16.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:42
S1291	0	B23D49/1674.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:43

S1292	261	B23D49/167.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:43
S1293	495	B26D7/2621.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:43
S1294	1,485	B26D7/2614.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:44
S1295	310	B26D5/14.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:45
S1296	0	A61B17/148.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:45
S1297	961	A61B17/148,142,14,144.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:47
S1298	446	B27B19/00,002,006,09,02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:48
S1299	0	B27B11/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/09 12:49

S1300	396	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$ or US-20070144310-$ or US-20180263845-$ or US-20150005682-$).did. or (US-20180200141-$ or US-20040255475-$ or US-20040255474-$ or US-20040187324-$ or US-20040117993-$ or US-20150367494-$ or US-20150033564-$ or US-20130133210-$ or US-20090100690-$ or US-20060260141-$ or US-20050178012-$ or US-20080047150-$ or US-20120192440-$ or US-20120030955-$ or US-20030070307-$ or US-20090272617-$ or US-20180099339-$ or US-20110265335-$ or US-20110131820-$ or US-20060288594-$ or US-20080016705-$ or US-20070209217-$ or US-20190017528-$ or US-20190015294-$ or US-20130019483-$ or US-20150375315-$ or US-	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2020/09/09 15:13

20110185582-$).did. or (US-20190224765-$ or US-20180236572-$ or US-20190209424-$ or US-20180370012-$ or US-20190254921-$ or US-20060047315-$ or US-20050131461-$ or US-20020082532-$ or US-20180031089-$ or US-20190175434-$ or US-20080004554-$ or US-20050159689-$ or US-20170079865-$ or US-20190083352-$ or US-20140283394-$ or US-20170361386-$ or US-20170173711-$ or US-20140182871-$ or US-20090188119-$ or US-20080189961-$ or US-20050126018-$ or US-20010011420-$ or US-20020138991-$ or US-20190351539-$ or US-20160199924-$ or US-20100162579-$ or US-20130014968-$).did. or (US-20080229591-$ or US-20050257385-$ or US-20050257384-$ or US-20110107608-$ or US-20140360335-$ or US-20130204255-$ or US-20090326540-$ or US-20050252011-$ or US-20150113815-$ or US-20140007436-$ or US-20070289149-$ or US-20050262710-$ or US-20200069510-$ or US-20190365598-$ or US-20200046602-$ or US-20200093682-$ or US-20180256432-$ or US-20200060918-$ or US-20200000678-$ or US-20130110017-$ or US-20150297437-$ or US-20110224580-$ or US-20190307631-$ or US-20120215141-$ or US-20120215280-$ or US-20150133832-$ or US-20150005672-$).did. or (US-20160278584-$ or US-20130237751-$ or US-20050207609-$ or US-20150335520-$ or US-20150169124-$ or US-20160213558-$ or US-20150119771-$ or US-20190290076-$ or US-20170095398-$ or US-20160151238-$ or US-20160000642-$ or US-20050054958-$ or US-20150290076-$ or US-20160158097-$ or US-20190099327-$ or US-20200214934-$ or US-20200038530-$ or US-20180288160-$ or US-20180279843-$ or US-20170049278-$ or US-20180243158-$ or US-20160303668-$ or US-20180326568-$ or US-20140360029-$ or US-20140194790-$ or US-20090240177-$ or US-20190066833-$).did. or (US-20180008512-$ or US-20100274162-$ or US-20180196395-$ or US-20150310634-$ or US-20150040685-$ or US-20140194900-$ or US-20080177207-$ or US-20150126916-$ or US-20140207032-$ or US-20200261307-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-

3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$ or US-5129118-$ or US-4420995-$ or US-9333628-$ or US-8475076-$ or US-7954402-$ or US-6971285-$ or US-6964216-$ or US-5660491-$ or US-2964037-$ or US-1882040-$ or US-8322456-$ or US-6938706-$).did. or (US-8561717-$ or US-10357425-$ or US-10428850-$ or US-10470970-$ or US-4283855-$ or US-10525541-$ or US-3876015-$ or US-3834019-$ or US-3805383-$ or US-6357124-$ or US-4240204-$ or US-7509744-$ or US-5007172-$ or US-3706474-$ or US-4991298-$ or US-8960323-$ or US-8578615-$ or US-6282797-$ or US-6634107-$ or US-6662455-$ or US-6758119-$ or US-3785053-$ or US-9221112-$ or US-7109613-$ or US-5624000-$ or US-10314762-$ or US-9543871-$).did. or (US-10702448-$ or US-10517790-$ or US-10420700-$ or US-6648840-$ or US-4697580-$ or US-6568089-$ or US-8702633-$ or US-5113847-$ or US-5501657-$ or US-6562013-$ or US-10492984-$ or US-10561574-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-

		3309932-$ or US-3545301-$ or US-3172675-$ or US-2839101-$ or US-3050093-$ or US-3340612-$ or US-3623223-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$ or CN-210728184-$ or DE-102015226084-$ or WO-2006122435-$).did.				
S1301	396	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$ or US-20070144310-$ or US-20180263845-$ or US-20150005682-$).did. or (US-20180200141-$ or US-20040255475-$ or US-20040255474-$ or US-20040187324-$ or US-20040117993-$ or US-20150367494-$ or US-20150033564-$ or US-20130133210-$ or US-20090100690-$ or US-20060260141-$ or US-	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2020/09/10 14:36

20050178012-$ or US-20080047150-$ or US-
20120192440-$ or US-20120030955-$ or US-
20030070307-$ or US-20090272617-$ or US-
20180099339-$ or US-20110265335-$ or US-
20110131820-$ or US-20060288594-$ or US-
20080016705-$ or US-20070209217-$ or US-
20190017528-$ or US-20190015294-$ or US-
20130019483-$ or US-20150375315-$ or US-
20110185582-$).did. or (US-20190224765-$ or US-
20180236572-$ or US-20190209424-$ or US-
20180370012-$ or US-20190254921-$ or US-
20060047315-$ or US-20050131461-$ or US-
20020082532-$ or US-20180031089-$ or US-
20190175434-$ or US-20080004554-$ or US-
20050159689-$ or US-20170079865-$ or US-
20190083352-$ or US-20140283394-$ or US-
20170361386-$ or US-20170173711-$ or US-
20140182871-$ or US-20090188119-$ or US-
20080189961-$ or US-20050126018-$ or US-
20010011420-$ or US-20020138991-$ or US-
20190351539-$ or US-20160199924-$ or US-
20100162579-$ or US-20130014968-$).did. or (US-
20080229591-$ or US-20050257385-$ or US-
20050257384-$ or US-20110107608-$ or US-
20140360335-$ or US-20130204255-$ or US-
20090326540-$ or US-20050252011-$ or US-
20150113815-$ or US-20140007436-$ or US-
20070289149-$ or US-20050262710-$ or US-
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20200046602-$ or US-20200093682-$ or US-
20180256432-$ or US-20200060918-$ or US-
20200000678-$ or US-20130110017-$ or US-
20150297437-$ or US-20110224580-$ or US-
20190307631-$ or US-20120215141-$ or US-
20120215280-$ or US-20150133832-$ or US-
20150005672-$).did. or (US-20160278584-$ or US-
20130237751-$ or US-20050207609-$ or US-
20150335520-$ or US-20150169124-$ or US-
20160213558-$ or US-20150119771-$ or US-
20190290076-$ or US-20170095398-$ or US-
20160151238-$ or US-20160000642-$ or US-
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20140360029-$ or US-20140194790-$ or US-
20090240177-$ or US-20190066833-$).did. or (US-
20180008512-$ or US-20100274162-$ or US-
20180196395-$ or US-20150310634-$ or US-
20150040685-$ or US-20140194900-$ or US-
20080177207-$ or US-20150126916-$ or US-

20140207032-$ or US-20200261307-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$ or US-5129118-$ or US-4420995-$ or US-9333628-$ or US-8475076-$ or US-7954402-$ or US-6971285-$ or US-6964216-$ or US-5660491-$ or US-2964037-$ or US-1882040-$ or US-8322456-$ or US-6938706-$).did. or (US-8561717-$ or US-10357425-$ or US-10428850-$ or US-10470970-$ or US-4283855-$ or US-10525541-$ or US-3876015-$ or US-3834019-$ or US-3805383-$ or US-6357124-$ or US-4240204-$ or US-7509744-$ or US-5007172-$ or US-3706474-$ or US-4991298-$ or US-8960323-$ or US-8578615-$ or US-6282797-$ or US-6634107-$ or US-6662455-$ or US-6758119-$ or US-3785053-$ or US-

		9221112-$ or US-7109613-$ or US-5624000-$ or US-10314762-$ or US-9543871-$).did. or (US-10702448-$ or US-10517790-$ or US-10420700-$ or US-6648840-$ or US-4697580-$ or US-6568089-$ or US-8702633-$ or US-5113847-$ or US-5501657-$ or US-6562013-$ or US-10492984-$ or US-10561574-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$ or US-3172675-$ or US-2839101-$ or US-3050093-$ or US-3340612-$ or US-3623223-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (JP-07051393-$ or JP-02019157-$ or JP-2005204777-$).did. or (WO-2015038005-$ or WO-2014118596-$ or JP-2010534110-$ or CN-210728184-$ or DE-102015226084-$ or WO-2006122435-$).did.				
S1302	45	S1301 and ((motor adj (mount$3)) motor-mount)	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/10 14:38
S1303	43	((("Wersland") near3 ("Jason"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2020/09/10 16:04

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L12	1	(((percussive percussion gun) near3 (massag$ therapy)) and ((housing casing frame handle grip$4) near5 (triangle triangular)) and (power battery electrical electric) and (switch button trigger) and ((pushrod push-rod (push adj rod) output) near5 (reciprocat$)) and (motor)).clm.	US-PGPUB; USPAT	OR	ON	2020/09/11 11:45
L13	1	(((percussive percussion gun) near3 (massag$ therapy)) and ((housing casing frame handle grip$4) near5 (triangle triangular)) and (switch button trigger) and ((pushrod push-rod (push adj rod) output) near5 (reciprocat$)) and (motor)).clm.	US-PGPUB; USPAT	OR	ON	2020/09/11 11:47
L14	0	(((percussive percussion gun) near3 (massag$ therapy)) and ((housing casing frame handle grip$4)) and (power battery electrical electric) and (switch button trigger) and ((pushrod push-rod (push adj rod) output) near5	US-PGPUB; USPAT	OR	ON	2020/09/11 11:51

		(reciprocat$)) and (motor) and ((motor-mount$3 (motor adj mount$3)) with (major near3 (surface side face facing) near3 (inner inside interior))) with (major near3 (surface side face facing) near3 (outer exterior outside))).clm.				
L15	0	(((percussive percussion gun) near3 (massag$ therapy)) and ((housing casing frame handle grip$4)) and (power battery electrical electric) and (switch button trigger) and ((pushrod push-rod (push adj rod) output) near5 (reciprocat$)) and (motor) and ((motor-mount$3 (motor adj mount$3)) with (opening port aperture) with (motor adj (axle shaft)))).clm.	US-PGPUB; USPAT	OR	ON	2020/09/11 11:53
L16	0	(((percussive percussion gun) near3 (massag$ therapy)) and ((housing casing frame handle grip$4)) and (power battery electrical electric) and (switch button trigger) and ((pushrod push-rod (push adj rod) output) near5 (reciprocat$)) and (motor) and ((motor-mount$3 (motor adj mount$3)) near5 (pushrod push-rod (push adj rod) output) near5 (interior inside inner))).clm.	US-PGPUB; USPAT	OR	ON	2020/09/11 11:54
L17	0	(((percussive percussion gun) near3 (massag$ therapy)) and ((housing casing frame handle grip$4)) and (power battery electrical electric) and (switch button trigger) and ((pushrod push-rod (push adj rod) output) near5 (reciprocat$)) and (motor) and ((motor-mount$3 (motor adj mount$3)) with (wall side surface) with (major) with (direct$3) with (secur$4 attach$4 connect$4 engag$4))).clm.	US-PGPUB; USPAT	OR	ON	2020/09/11 11:56
S533	0	(massag$ and (housing cover$) and motor and (power electrical battery) and (trigger switch button) and (output) and (treatment adj (structure head element)) and (frequency with amplitude with reciprocat$) and (shaft drive) and (gear$) and (eccentric$) and ((containment (scotch adj yoke)) with (bracket strut) with (step$3))).clm.	US-PGPUB; USPAT	OR	ON	2019/05/25 18:08
S534	0	((housing cover$) and motor and (power electrical battery) and (trigger switch button) and (output) and (treatment adj (structure head element)) and (frequency with amplitude with reciprocat$) and (shaft drive) and (gear$) and (eccentric$) and ((containment (scotch adj yoke)) with (bracket strut) with (step$3))).clm.	US-PGPUB; USPAT	OR	ON	2019/05/25 18:08

S535	0	((output) and (treatment adj (structure head element)) and (frequency with amplitude with reciprocat$) and (shaft drive) and (gear$) and (eccentric$) and ((containment (scotch adj yoke)) with (bracket strut) with (step$3))).clm.	US-PGPUB; USPAT	OR	ON	2019/05/25 18:08
S536	0	((frequency with amplitude with reciprocat$) and (shaft drive) and (gear$) and (eccentric$) and ((containment (scotch adj yoke)) with (bracket strut) with (step$3))).clm.	US-PGPUB; USPAT	OR	ON	2019/05/25 18:08
S537	0	((frequency with amplitude with reciprocat$) and (shaft drive) and (gear$) and (eccentric$) and ((containment (scotch adj yoke)) with (step$3))).clm.	US-PGPUB; USPAT	OR	ON	2019/05/25 18:10

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PERCUSSIVE THERAPY DEVICE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of U.S. Patent Application No. 16/796,143, filed February 20, 2020, which claims the benefit of U.S. Provisional Application No. 62/844,424, filed May 7, 2019, U.S. Provisional Application No. 62/899,098, filed September 11, 2019 and U.S. Provisional Application No. 62/912,392, filed October 8, 2019. This application is also a continuation-in-part of U.S. Patent Application No. 16/675,772, filed November 6, 2019, which claims the benefit of U.S. Provisional Application No. 62/785,151, filed on December 26, 2018. All applications listed above are incorporated by reference herein in their entireties.

FIELD OF THE INVENTION

[0002] The present invention relates generally to massage devices and more particularly to a percussive therapy device that provides reciprocating motion.

BACKGROUND OF THE INVENTION

[0003] Massage devices often provide ineffective massages that are superficial and do not provide any real benefit. Accordingly, there is a need for an improved massage device. Furthermore, percussive massage devices are often used in an ineffective manner. Accordingly, there is a need for a percussive therapy device to be automated to provide effective massage or recovery.

SUMMARY OF THE PREFERRED EMBODIMENTS

[0004] In accordance with a first aspect of the present invention there is provided a percussive therapy or percussive massage device that includes a housing, an electrical source, a motor positioned in the housing, a switch for activating the motor, and a routine controller configured to initiate a protocol configured to apply at least one output of the percussive therapy device in response to user input, and initiate at least one step of the

protocol in which the percussive therapy device is applied in accordance with the at least one output. It will be appreciated that the terms percussive massage device and percussive therapy device are used interchangeably throughout. The terms are synonymous and generally have the same meaning. Commercial embodiments of the applicant's devices are generally being called percussive therapy devices in the market and therefore this term is used therein.

[0005] In a preferred embodiment, the at least one output comprises one or more of a time period the percussive therapy device is activated (either automatically or by the user turning it on and off via a prompt), a speed of an attachment of the percussive therapy device (either automatically or by the user switching from one speed to another via a prompt), a force applied by the attachment (by the user using the device), an amplitude of the attachment, and a temperature of the attachment.

[0006] In a preferred embodiment, the percussive therapy device includes a force meter configured to monitor and display a force applied by an attachment of the percussive therapy device. The display of the force is provided to a user and configured so that the user may adjust the force to correspond to a target force (which may be defined to include a target force range) to be applied during the at least one step of the protocol.

[0007] In a preferred embodiment, the percussive therapy device includes or is configured to communicated with an application (software application or app) configured to provide a user interface (e.g., on a user mobile device such as a phone or tablet). Preferably, the percussive therapy device includes a touch screen configured to provide or that does provide a user interface. In a preferred embodiment, a user is prompted to use a specified grip of the percussive therapy device (e.g., via the app visually, audibly or haptically, the touch screen on the percussive therapy device visually, audibly or haptically or via another screen or audible prompt).

[0008] In a preferred embodiment, a user is prompted (e.g., visually, audibly or haptically) to apply an attachment of the percussive therapy device to a specified body part. Preferably, the user is prompted (e.g., visually, audibly or haptically) to set an arm position of the percussive therapy device. The percussive therapy generally wherein a user is prompted through at least one of haptic feedback, sound, visual representation (e.g., a picture, graphic, etc.) and text during the at least one step to apply the at least one output. In a preferred embodiment, the user is prompted to move the attachment from a start point to an end point (e.g., visually, audibly or haptically) on a specified body part during the at least one step of the protocol.

[0009] In accordance with another aspect of the present invention there is provided a method of executing a routine for a percussive therapy device. The method includes initiating a protocol configured to apply at least one output of the percussive therapy device in response to user input; and executing at least one step of the protocol in which the percussive therapy device is applied in accordance with the at least one output. In a preferred embodiment, the at least one output includes one or more of a specified time period the percussive therapy device is activated (either automatically or by the user), a speed of an attachment of the percussive therapy device, a force of the attachment, an amplitude of the attachment, a type of attachment, a temperature of the attachment, an arm position of the percussive therapy device, and a grip of the percussive therapy device.

[0010] In a preferred embodiment, the method includes monitoring a force being applied by an attachment of the percussive therapy device; and displaying the force to a user. Preferably, the force is configured to be displayed to the user so that the user may adjust the force to correspond to a target force (which may be a range) predetermined by the at least one step of the protocol. Preferably, the user is prompted to apply one or more of the at least one output during the at least one step of the protocol. In a preferred embodiment,

the user input initiates the protocol via at least one of an application interface and a touch screen. In a preferred embodiment, the protocol is configured to provide therapeutic effect to one or more body parts of a user.

[0011] In accordance with another aspect of the present invention there is provided a method of executing a routine for a percussive therapy device that includes initiating a protocol configured to apply at least one output of the percussive therapy device in response to user input, and initiating at least one step of the protocol in which the percussive therapy device is applied in accordance with the at least one output. The at least one output comprises a time period the percussive therapy device is activated, a speed of an attachment of the percussive therapy device, an amplitude of the attachment, a force applied by the attachment, and a temperature applied by the attachment. The percussive therapy device is configured to provide a prompt to use a specified grip of the percussive therapy device and apply the attachment to a specified body part upon initiating the protocol, monitoring a measured force being applied by the attachment, and displaying the measured force to a user, wherein the measured force is configured to be displayed to the user so that the user may adjust an applied force to correspond to a target force predetermined by the at least one step of the protocol.

[0012] In a preferred embodiment, the user is prompted to set an arm position of the percussive therapy device, and/or the user is prompted to apply the attachment to a new specified body part during the at least one step of the protocol, and/or the user is prompted to affix a new attachment to the percussive therapy device during the at least one step of the protocol, and/or the user is prompted to move the attachment from one predetermined point of a body part to a second predetermined body part during the at least one step of the protocol.

[0013] In accordance with another aspect of the present invention there is provided a percussive therapy device that includes a housing, an electrical source, a motor positioned in the housing, a switch for activating the motor, and a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor. In a preferred embodiment, the housing includes first, second and third handle portions and a head portion that cooperate to define a handle opening. The first handle portion defines a first axis, the second handle portion defines a second axis and the third handle portion defines a third axis and the first, second and third axes cooperate to form a triangle. The motor is positioned in the head portion of the housing, and at least a portion of the push rod assembly extends outside of the head portion. In a preferred embodiment the first handle portion is generally straight, the second handle portion is generally straight, and the third handle portion is generally straight.

[0014] In a preferred embodiment, the percussive therapy device incudes a wireless connection device (e.g., Bluetooth or the like) for connecting to a remote device. Remote means that any device separate from the percussive therapy device. The device does not need to be far away to be remote. Preferably, the electrical source is an optional rechargeable battery, and the percussive massage device further includes an optional wireless charging receiver that is in electrical communication with the battery. Preferably, the percussive therapy device includes and optional touchscreen.

[0015] In a preferred embodiment, the motor is a brushless motor, a motor mount is positioned in the housing, the motor is secured to the motor mount, and the motor mount is secured to the housing. Preferably, the motor mount includes first and second side walls that define a motor mount interior therebetween. The motor is secured to the first side wall and the second side wall is secured to the housing. In a preferred embodiment, the motor includes a motor shaft that extends through a protrusion opening defined in the first side

wall of the motor mount and into the motor mount interior, and at least a portion of the push rod assembly is positioned in the motor mount interior.

[0016] In a preferred embodiment, the percussive therapy device includes an attachment connected to a distal end of the push rod assembly, and a routine controller that is configured to initiate a protocol configured to provide user instructions to apply the attachment to a first body part for a first period of time along a first treatment path and to apply the attachment to the first or a second body part for a second period of a time along a second treatment path. Preferably, the user instructions are provided via a touch screen on the percussive therapy device or on an application on a remote electronic device. In a preferred embodiment, the percussive therapy device includes an attachment connected to a distal end of the push rod assembly, and a routine controller that is configured to initiate a protocol configured to provide user instructions to apply the attachment to a first body part for a first period of time and to apply the attachment to the first or a second body part for a second period of a time. The routine controller is configured to reciprocate the attachment at a first speed during the first period of time and at a second speed during the second period of time.

[0017] In a preferred embodiment, the percussive therapy device includes a routine controller that is configured to initiate a protocol to activate the motor for at least a first period of a time and a subsequent second period of time During the first period of time the routine controller is configured to provide first user instructions to perform a first task comprising at least one of treating a first body part, moving the attachment along a first treatment path, and connecting a first attachment to a distal end of the push rod assembly, and during the second period of time the routine controller is configured to provide second user instructions to perform a second task comprising at least one of treating a second body part, moving the attachment along a second treatment path, and connecting a second

attachment to the distal end of the push rod assembly. The first user instructions may also include instructions regarding grasping one of a first, second or third handle portion, and the second user instructions may also include instructions regarding grasping the same or another of the first, second or third handle portions. Preferably, the first and second user instructions are provided via a touch screen on the percussive therapy device or on an application on a remote electronic device. The first user instructions may also include instructions regarding applying a first target force (based on readings by the force meter), and the second user instructions may also include instructions regarding applying the first target force or a second target force (based on readings by the force meter).

[0018] In a preferred embodiment, the electrical source is a battery that is positioned in the second handle portion, and a wireless charging receiver that is in electrical communication with the battery is positioned in the third handle portion.

[0019] In accordance with another aspect of the present invention there is provided a method of using a percussive massage device that includes obtaining the percussive massage device that includes a housing having first, second and third handle portions that cooperate to define a handle opening, an electrical source, a motor positioned in the housing, a switch for activating the motor, and a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor. The method also includes activating the motor using the switch, grasping the first handle portion, massaging a first body part, alternatively grasping the second handle portion and massaging the first body part, and alternatively grasping the third handle portion and massaging the first body part. In a preferred embodiment, the first handle portion defines a first axis, the second handle portion defines a second axis and the third handle portion defines a third axis, and the first, second and third axes cooperate to form a triangle. In a preferred embodiment, the method

also includes grasping the second handle portion, massaging a second body part, grasping the third handle portion, and massaging a third body part.

[0020] In accordance with another aspect of the present invention there is provided percussive massage device that includes a housing, an electrical source, a motor positioned in the housing, a switch for activating the motor, and a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor. In a preferred embodiment, the housing includes first, second and third handle portions that cooperate to define a handle opening, wherein the first handle portion defines a first axis, the second handle portion defines a second axis and the third handle portion defines a third axis, and wherein the first, second and third axes cooperate to form a triangle.

[0021] Preferably, the first handle portion includes a first handle portion interior edge and defines a first handle portion length and the first handle portion length is long enough that when a user grasps the first handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the first handle portion interior edge. Preferably, the second handle portion includes a second handle portion interior edge and defines a second handle portion length and the second handle portion length is long enough that when a user grasps the second handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the second handle portion interior edge. Preferably, the third handle portion includes a third handle portion interior edge and defines a third handle portion length and the third handle portion length is long enough that when a user grasps the third handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the third handle portion interior edge. In a preferred embodiment, the first handle portion is generally straight, the second handle portion is generally straight and the third handle portion is generally straight. Generally

straight means that the majority of the handle portion is straight, but can include rounded edges or corners where the different handle portions meet or where the handle portions meet the bulge portion or the finger protrusion, etc.

[0022] In a preferred embodiment, the switch includes switch electronics associated therewith, the electrical source is a battery that is housed in the second handle portion and the switch electronics are housed in the first handle portion. Preferably, the motor is configured to rotate a pinion shaft having a pinion gear thereon about a shaft rotation axis. The housing includes a gear member disposed therein that is operatively engaged with the pinion gear and rotates about a gear rotation axis. The push rod assembly is operatively connected to the gear member, and rotational motion of the pinion shaft is converted to reciprocating motion of the push rod assembly through the engagement of the pinion gear and the gear member. The motor includes a motor shaft extending outwardly therefrom and a pinion coupling assembly is positioned between the motor shaft and the pinion shaft. The pinion coupling includes a lower connector that is operatively connected to the motor shaft, an upper connector that is operatively connected to the pinion shaft, and a cross coupling positioned between the lower connector and the upper connector. In a preferred embodiment, the lower connector includes a main body portion that defines a central opening that receives the motor shaft and first and second lower connector arms extending outwardly from the main body portion, the upper connector includes a main body portion that defines a central opening that receives the pinion shaft and first and second upper connector arms extending outwardly from the main body portion, the cross coupling includes radially extending ribs, and the first and second lower connector members and the first and second upper connector members operatively engage the radially extending ribs. Preferably, the lower and upper connectors comprise a plastic and the cross coupling comprises an elastomer.

[0023] In a preferred embodiment, the gear member is disposed in a rotation housing that is rotatable between at least first and second positions. A gearbox housing that houses the gear member is disposed in the rotation housing. The gearbox housing includes a clearance slot having first and second ends defined therein. The push rod assembly extends through the clearance slot, such that when the rotation housing is rotated from the first position to the second position the push rod assembly moves within the clearance slot from adjacent the first end to adjacent the second end.

[0024] In a preferred embodiment, the push rod assembly includes a first rod portion having a proximal end and a distal end and a second rod portion having a proximal end and a distal end. The proximal end of the first rod portion is operatively connected to the motor. An adapter assembly is positioned between the first and second rod portions. The adapter assembly allows the first rod portion to pivot with respect to the second rod portion. Preferably, the adapter assembly includes an adapter member that includes a pocket that receives the distal end of the first rod portion therein. A pivot pin spans the pocket and extends through the distal end of the first rod portion. In a preferred embodiment, the adapter member includes a protrusion that is received in the proximal end of the second rod portion.

[0025] In accordance with another aspect of the present invention there is provided a massage device that includes a housing, an electrical input, a motor, a switch in electrical communication with the electrical input and the motor and configured to selectively provide power from the electrical input to the motor, an actuated output operatively connected to the motor and configured to reciprocate in response to activation of the motor, and a treatment structure operatively connected to a distal end of the actuated output. The actuated output is configured to reciprocate the treatment structure at a frequency of between about 15 Hz and about 100 Hz, and at an amplitude of between

about 0.15 and about 1.0 inches. The combination of amplitude and frequency provides efficient reciprocation of the treatment structure such that the treatment structure provides therapeutically beneficial treatment to a targeted muscle of a user.

[0026] In a preferred embodiment, the actuated output is configured to reciprocate the treatment structure at a frequency of between about 25 Hz and about 48 Hz, and at an amplitude of between about 0.23 and about 0.70 inches. In another preferred embodiment, the actuated output is configured to reciprocate the treatment structure at a frequency of between about 33 Hz and about 42 Hz, and at an amplitude of between about 0.35 and about 0.65 inches.

[0027] In accordance with another aspect of the present invention there is provided a percussive massage device with a force meter that includes a housing, an electrical source, a motor positioned in the housing, a switch for activating the motor, and a controller configured to obtain a voltage of the motor, generate a lookup table correlating voltage to force applied by the percussive massage device, and display a force magnitude corresponding to the obtained voltage using the lookup table. In a preferred embodiment, the lookup table is generated by determining a maximum magnitude of force configured to be applied by the percussive massage device, determining a maximum magnitude of voltage configured to be applied to the percussive massage device from a power source, dividing the maximum magnitude of force into equal force increments, and dividing the maximum magnitude of voltage into equal voltage increments. The number of equal force increments and the number of equal voltage increments is the same. Preferably, the percussive massage device includes a battery pack and a display configured to depict an amount of force applied by the percussive massage device. In a preferred embodiment, the display includes a series of LEDs. In a preferred embodiment, the percussive massage device includes an organic light-emitting diode screen.

[0028] In a preferred embodiment, the motor is a brushless direct-current (BLDC) motor. Preferably, the percussive massage device includes a voltage-sensing resistor electrically coupled to the BLDC motor and the controller.

[0029] In accordance with another aspect of the present invention there is provided a method of displaying force of a percussive massage device that includes obtaining a voltage of a motor of the percussive massage device, generating a lookup table correlating voltage to force applied by the percussive massage device, and displaying a force magnitude corresponding to the obtained voltage using the lookup table. In a preferred embodiment, the lookup table correlating voltage to force is linear. Preferably, the lookup table is generated by determining a maximum magnitude of force configured to be applied by the percussive massage device, determining a maximum magnitude of voltage configured to be applied to the percussive massage device from a power source, dividing the maximum magnitude of force into equal force increments, and dividing the maximum magnitude of voltage into equal voltage increments, wherein the number of equal force increments and the number of equal voltage increments is the same.

[0030] In a preferred embodiment, the method includes obtaining a maximum power source voltage of the percussive massage device, setting the maximum power source voltage to be the maximum magnitude of voltage, dividing the maximum magnitude of voltage into equal voltage increments, wherein the number of equal force increments and the number of equal voltage increments is the same, generating an updated lookup table correlating voltage to force applied by the percussive massage device corresponding to the range of voltages determined by the maximum power source voltage, and displaying a calibrated force magnitude corresponding to the power source voltage using the updated lookup table. In a preferred embodiment, the method includes obtaining at least two power source voltages each corresponding to a magnitude of force, wherein the magnitude of force is

determined from the displayed force magnitude, measuring a magnitude of force exerted by the percussive massage device using an external force meter for each of the at least two power source voltages, and generating an updated lookup table correlating voltage to force applied by the percussive massage device corresponding to the measured magnitudes of force.

[0031] In a preferred embodiment, the method includes displaying a calibrated force magnitude corresponding to the measured magnitudes of force using the updated lookup table. Preferably, the lookup table is updated for each magnitude of force capable of being displayed on the percussive massage device.

[0032] In accordance with another aspect of the present invention there is provided a method of displaying force of a percussive massage device that includes obtaining a current magnitude of a battery pack of the percussive massage device, obtaining a voltage magnitude of the battery pack, determining a power magnitude using the current magnitude and voltage magnitude of the battery pack, generating a lookup table correlating power magnitude to force magnitude applied by the percussive massage device, and displaying a force magnitude corresponding to the obtained power magnitude using the lookup table. In a preferred embodiment, the force magnitude is displayed utilizing a series of LEDs which are activated corresponding with the force magnitude. Preferably, the lookup table is generated by determining a maximum power magnitude to be input into the percussive massage device, determining a minimum power magnitude of the percussive massage device when no load is applied to the percussive massage device, determining a maximum force magnitude configured to be applied to the percussive massage device from a power source, dividing the maximum power magnitude into equal power increments, and dividing the maximum force magnitude into equal force increments. The number of equal power increments and the number of equal force increments is the same. Preferably, the

maximum power magnitude is a maximum effective power magnitude derived from a total effective power.

[0033] In a preferred embodiment, the method includes determining at least two power magnitudes using current and voltage measurements of the battery pack, each corresponding to a magnitude of force. The magnitude of force is determined from the displayed force magnitude. Measuring a magnitude of force exerted by the percussive massage device using an external force meter for each of the at least two power magnitudes, and generating an updated lookup table correlating power to force applied by the percussive massage device corresponding to the measured magnitudes of force. In a preferred embodiment, the method includes displaying a calibrated force magnitude corresponding to the measured magnitudes of force using the updated lookup table. Preferably, the lookup table is updated for each magnitude of force capable of being displayed on the percussive massage device.

[0034] It will be appreciated that the inventive features discussed herein can be used with any type of percussive massage device. For example, the force meter and other features taught herein can be used with the percussive massage device disclosed in U.S. Patent No. 10,357,425 ("the '425 patent"), the entirety of which is incorporated herein by reference.

[0035] In an embodiment, a non-transitory computer-readable medium has stored thereon software instructions that, when executed by a processor, cause the processor to obtain a voltage of a motor of the percussive massage device, generate a lookup table correlating voltage to force applied by the percussive massage device, and display a force magnitude corresponding to the obtained voltage using the lookup table.

[0036] In an embodiment, the lookup table is generated by determining a maximum magnitude of force configured to be applied by the percussive massage device, determining a maximum magnitude of voltage configured to be applied to the percussive

massage device from a power source, dividing the maximum magnitude of force into equal force increments, and dividing the maximum magnitude of voltage into equal voltage increments. In an embodiment, the number of equal force increments and the number of equal voltage increments is the same.

[0037] In another embodiment, a non-transitory computer-readable medium has stored thereon software instructions that, when executed by a processor, cause the processor to obtain a maximum power source voltage of the percussive massage device, set the maximum power source voltage to be the maximum magnitude of voltage, and divide the maximum magnitude of voltage into equal voltage increments, generate an updated lookup table correlating voltage to force applied by the percussive massage device corresponding to the range of voltages determined by the maximum power source voltage, and display a calibrated force magnitude corresponding to the power source voltage using the updated lookup table.

[0038] In another embodiment, a non-transitory computer-readable medium has stored thereon software instructions that, when executed by a processor, cause the processor to obtain at least two power source voltages each corresponding to a magnitude of force, wherein the magnitude of force is determined from the displayed force magnitude, measure a magnitude of force exerted by the percussive massage device using an external force meter for each of the at least two power source voltages; and generate an updated lookup table correlating voltage to force applied by the percussive massage device corresponding to the measured magnitudes of force.

[0039] In an embodiment, a non-transitory computer-readable medium has stored thereon software instructions that, when executed by a processor, cause the processor to obtain a current magnitude of a battery pack of the percussive massage device, obtain a voltage magnitude of the battery pack, determine a power magnitude using the current magnitude

and voltage magnitude of the battery pack, generate a lookup table correlating power magnitude to force magnitude applied by the percussive massage device, and display a force magnitude corresponding to the obtained power magnitude using the lookup table.

[0040] In an embodiment, a non-transitory computer-readable medium has stored thereon software instructions that, when executed by a processor, cause the processor to determine at least two power magnitudes using current and voltage measurements of the battery pack, each corresponding to a magnitude of force, wherein the magnitude of force is determined from the displayed force magnitude, measure a magnitude of force exerted by the percussive massage device using an external force meter for each of the at least two power magnitudes, and generate an updated lookup table correlating power to force applied by the percussive massage device corresponding to the measured magnitudes of force.

[0041] In a preferred embodiment, the motor, in one embodiment, converts power from the power source into motion. In some embodiments, the motor is an electric motor. The electric motor may be any type of electric motor known in the art, including, but not limited to, a brushed motor, a brushless motor, a direct current (DC) motor, an alternating current (AC) motor, a mechanical-commutator motor, an electronic commutator motor, or an externally commutated motor.

[0042] In some embodiments, the actuated output or output shaft reciprocates at a rate of approximately 65 Hz. The actuated output, in some embodiments, reciprocates at a rate over 50 Hz. The reciprocating treatment device, in some embodiments, provides reciprocation at a rate ranging between 50 Hz and 80 Hz. In some embodiments, the actuated output has a maximum articulation rate of between 50 Hz and 80 Hz. In another embodiment, the actuated output has an articulation rate of between 30 Hz and 80 Hz. In certain embodiments, the actuated output has an articulation rate of approximately 37 Hz. In one embodiment, the actuated output has an articulation rate of approximately 60 Hz. In

a preferred embodiment, the actuated output articulates or reciprocates at a frequency of between about 15 Hz and about 100 Hz. In a more preferred embodiment, the actuated output articulates or reciprocates at a frequency of between about 25 Hz and about 48 Hz. In the most preferred embodiment, the actuated output articulates or reciprocates at a frequency of between about 33 Hz and about 42 Hz. Any chosen range within the specified ranges is within the scope of the present invention.

[0043] The actuated output may move through a predetermined range of reciprocation. For example, the actuated output may be configured to have an amplitude of one half inch. In another embodiment, the actuated output may be configured to have an amplitude of one quarter inch. As will be appreciated by one skilled in the art, the actuated output may be configured to have any amplitude deemed therapeutically beneficial.

[0044] In some embodiments, the actuated output may be adjustable through a variable range of reciprocation. For example, the reciprocating treatment device may include an input to adjust the reciprocation amplitude from one quarter of an inch through a range of up to one inch. In a preferred embodiment, the actuated output moves through an amplitude of between about 0.15 inches and about 1.0 inches. In a more preferred embodiment, the actuated output articulates or reciprocates at a frequency of between about 0.23 inches and about 0.70 inches. In the most preferred embodiment, the actuated output articulates or reciprocates at a frequency of between about 0.35 inches and about 0.65 inches. Any chosen range within the specified ranges is within the scope of the present invention.

[0045] It will be appreciated that the device operates most effectively within the combined frequency and amplitude ranges. When developing the invention, the inventor determined that if the frequency and amplitude are above the ranges set forth above the device can cause pain and below the ranges the device is ineffective and does not provide effective

therapeutic relief or massage. Only when the device operates within the disclosed combination of frequency and amplitude ranges does it provide efficient and therapeutically beneficial treatment to the muscles targeted by the device.

[0046] In certain embodiments, the reciprocating treatment device includes one or more components to regulate the articulation rate of the actuated output in response to varying levels of power provided at the power input. For example, the reciprocating treatment device may include a voltage regulator (not shown) to provide a substantially constant voltage to the motor over a range of input voltages. In another embodiment, the current provided to the motor may be regulated. In some embodiments, operation of the reciprocating treatment device may be restricted in response to an input voltage being below a preset value.

[0047] In a preferred embodiment, the percussive massage device includes a brushless motor. It will be appreciated that the brushless motor does not include any gears and is quieter than geared motors.

[0048] The device includes a push rod or shaft that is connected directly to the motor by a pin. In a preferred embodiment, the push rod is L-shaped or includes an arc shape. Preferably, the point where the push rod is connected to the pin is offset from reciprocating path that the distal end 40 of the push rod (and the massage attachment) travel. This capability is provided by the arc or L-shape. It should be appreciated that the push rod is designed such that it can transmit the force diagonally instead of vertically so the motor can be located at or near the middle of the device, otherwise a protrusion would be necessary to keep the shaft in the center with the motor offset therefrom (and positioned in the protrusion). The arc also allows the push rod to have a close clearance with the motor and allows the outer housing to be smaller than similar prior art devices, therefore making the device lower profile. Preferably two bearings are included at the proximal end of the

push rod where it connects to the motor to counteract the diagonal forces and preventing the push rod for moving and touching the motor.

[0049] In a preferred embodiment, the device includes a touch screen for stopping, starting, activating, etc. The touch screen can also include other functions. Preferably, the device includes a thumbwheel or rolling button positioned near the touch screen/on off button to allow the user to scroll or navigate through the different functions. Preferably, the device also includes variable amplitude or stroke. For example, the stroke can change or be changed between about 8-16 mm.

[0050] In a preferred embodiment, the device is associated with and can be operated by an app or software that runs on a mobile device such as a phone, watch or tablet (or any computer). The app can connect to the device via bluetooth or other connection protocol. The app can have any or all of the following functions. Furthermore, any of the functions discussed herein can be added to the touch screen/scroll wheel or button(s) capability directly on the device. If the user walks or is located too far away from the device, the device will not work or activate. The device can be turned on an off using the app as well as the touch screen or button on the device. The app can control the variable speeds (e.g., anywhere between 1750-3000 RPM). A timer so the device stops after a predetermined period of time. The app can also include different treatment protocols associated therewith. This will allow the user to choose a protocol or area of the body they want to work on. When the start of the protocol is selected, the device will run through a routine. For example, the device may run at a first RPM for a first period of time and then run at a second RPM for a second period of time and/or at a first amplitude for a first period of time and then run at a second amplitude for a second period of time. The routines can also include prompts (e.g., haptic feedback) for letting the user to know to move to a new body part. These routines or treatments can be related to recovery, blood flow increase,

performance, etc. and can each include a preprogrammed routine. The routines can also prompt or instruct the user to switch treatment structures (AmpBITS) or positions of the arm or rotation head. The prompts can include sounds, haptic feedback (e.g., vibration of the device or mobile device), textual instructions on the app or touch screen, etc. For example, the app may instruct the user to start with the ball treatment structure with the arm in position two. Then the user hits start and the device runs at a first frequency for a predetermined amount of time. The app or device then prompts the user to begin the next step in the routine and instructs the user to change to the cone treatment structure and to place the arm in position 1. The user hits start again and the device runs at a second frequency for a predetermined amount of time.

[0051] In a preferred embodiment, the app includes near field communication ("NFC") capability or other capability that allows the user's mobile device with the app thereon to scan an identifier, such as a barcode or a QR code that prompts the app to display certain information, such as the routines discussed above. In use, a user will be able to tap or place their mobile device near an NFC tag (or scan a QR code) on a piece of gym equipment and the app will show instructions, content or a lesson that is customized for using the device with that piece of equipment. For example, on a treadmill, the user scans the QR code or NFC tag and the app recognizes that the user is about to use the treadmill. The app can then provide instructions for how to use the device in conjunction with the treadmill and can initiate a preprogrammed routine for using the treadmill. For example, the user can be instructed to start with the left quad. Then, after a predetermined period of time (e.g., 15 seconds), the device, or the mobile device that includes the app software thereon, vibrates or provides other haptic feedback. The user then switches to their left quad and after a predetermined period of time the device again vibrates. The user can then begin using the treadmill. Any routine is within the scope of the present invention. In an embodiment, the

device and/or app (i.e., the mobile device containing the app) can also communicate (via bluetooth or the like) with the gym equipment (e.g., treadmill).

[0052] The device can also include a torque or force meter to let the user know how much force they are applying. The display associated with the force meter shows how much force is being applied on the muscle. The force meter allows for a more precise and effective treatment. The device includes a torque measuring sensor and display. Depending on the muscle the device is being used on and the benefit the user is looking to get (prepare, perform, recover) the force that should be applied varies. By having a torque sensor, the user is able to get a more precise and personalized treatment. The app and the touchscreen can provide the force information to the user. The force meter can be integrated with the routines and the user can be provided feedback with whether they are applying too much or too little pressure. The device can also include a thermal sensor or thermometer that can determine the temperature of the user's muscle and to provide feedback to the device and/or app. The haptic feedback can also provide feedback for too much pressure or force.

[0053] In a preferred embodiment, the percussive massage device includes a motor mount for mounting the brushless motor within the housing and for distributing forces from the motor as it operates to the housing. The motor is secured to a first side of the motor mount and the second or opposing side of the motor mount is secured to the housing. The motor mount includes a plurality of arms that space the motor from the housing and define a reciprocation space in which the push rod and associated components (counterweight, etc.) reciprocate. Threaded fasteners connect the motor mount to the housing. In a preferred embodiment, dampening members or feet are received on the shaft of the threaded fastener. The dampening members each include an annular slot defined therein. The annular slots receive housing. This prevents direct contact of the threaded fasteners with

the housing and reduces sound from vibrations. The threaded fasteners are received in openings in tabs at the end of the arms.

[0054] In a preferred embodiment, the motor is housed in a motor housing that is rotatable within the main housing. The motor housing is basically the equivalent of the gear box housing in related embodiments. In a preferred embodiment, there are opposite openings in the outside of the motor housing that expose the motor on one side and the motor mount on the other. The openings provide ventilation for the motor and allow the motor mount to connect directly to the main housing.

[0055] In a preferred embodiment, the device includes a touch screen as well as button(s) for operating the device. For example, the device can include a touch screen, a center button for turning the device on and off and a ring/rocker button that provides the ability to scroll left and right (e.g., to the preset treatments discussed herein) and up and down (e.g., to control the speed or frequency). The screen can also be a non-touch screen.

[0056] In another preferred embodiment, any of the devices taught herein can include the ability to vary the amplitude, thus providing a longer or shorter stroke depending on the application or needs of the user. The amplitude variability can also be part of the routines or presets discussed herein. For example, the device can include a mechanical switch that allows the eccentricity of the connector to be modified (e.g., between 4mm and 8mm). The mechanism can include a push button and a slider. The pin structure has a spring that lets it fall back into the locked position.

[0057] In a preferred embodiment, the device includes a touch screen for stopping, starting, activating, etc. The touch screen can also include other functions. Preferably, the device includes a thumbwheel or rolling button positioned near the touch screen/on off button to allow the user to scroll or navigate through the different functions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0058] The invention may be more readily understood by referring to the accompanying drawings in which:

[0059] FIG. 1 is a side elevational view of a percussive massage device in accordance with a preferred embodiment of the present invention;

[0060] FIG. 1A is another side elevational view of the percussive massage device of FIG. 1;

[0061] FIG. 2 is a perspective view of the percussive massage device;

[0062] FIG. 3 is a side elevational view of the percussive massage device showing a user grasping the first handle portion;

[0063] FIG. 4 is a side elevational view of the percussive massage device showing a user grasping the third handle portion;

[0064] FIG. 5 is a side elevational view of the percussive massage device showing a user grasping the second handle portion;

[0065] FIG. 6 is an exploded perspective view of the percussive massage device;

[0066] FIG. 7 is an exploded perspective view of a portion of the drive train components of the percussive massage device;

[0067] FIG. 8 is another an exploded perspective view of a portion of the percussive massage device;

[0068] FIG. 9 is a perspective view of the drive train components of the percussive massage device;

[0069] FIG. 10 is a perspective view of the push rod assembly of the percussive massage device;

[0070] FIG. 11 is a perspective view of another percussive massage device;

[0071] FIG. 12 is a side elevational view of the percussive massage device of FIG. 11;

[0072] FIG. 13 is a side elevational view of the percussive massage device showing some internal components in hidden lines;

[0073] FIG. 14 is an exploded perspective view of some of the internal components of the percussive massage device;

[0074] FIG. 15 is a perspective view of another percussive massage device; and

[0075] FIG. 16 is a side elevational view of the percussive massage device of FIG. 15.

[0076] FIG. 17 is a block diagram showing interconnected components of a percussive massage device with a force meter;

[0077] FIG. 18 is a circuit diagram of a microcontroller unit with pin outputs in accordance with one embodiment;

[0078] FIG. 19 is a circuit diagram used for battery voltage detection in accordance with one embodiment;

[0079] FIG. 20 is a circuit diagram for detection and measurement of voltage of the motor of the percussive massage device in accordance with one embodiment;

[0080] FIG. 21 is a flow diagram showing a method of detecting force applied by the percussive massage device in accordance with a preferred embodiment;

[0081] FIG. 22 is a flow diagram showing a method of generating a lookup table correlating voltage to force in accordance with a preferred embodiment;

[0082] FIG. 23 is a graph plotting a lookup table for use by a method of detecting force applied by the percussive massage device that was generated by correlating voltage to force in accordance with a preferred embodiment;

[0083] FIG. 24 is a flow diagram showing a method of calibrating a lookup table according to a preferred embodiment;

[0084] FIG. 25 is a graph plotting a lookup table generated by a method of detecting force applied by the percussive massage device against a lookup table calibrated by using a method of calibrating a lookup table according to a preferred embodiment;

[0085] FIG. 26 is a flow diagram showing a method of calibrating a lookup table;

[0086] FIG. 27 is a graph plotting a lookup table after being calibrated in accordance with a preferred embodiment;

[0087] FIG. 28 is a flow diagram showing a method of detecting force applied by a percussive massage device in accordance with a preferred embodiment;

[0088] FIG. 29 is a flow diagram showing a method of generating a lookup table correlating power to force in accordance with a preferred embodiment;

[0089] FIG. 30 is a graph plotting a lookup table for use by a method of detecting force of that was generated by correlating power to force in accordance with a preferred embodiment;

[0090] FIG. 31 is a flow diagram showing a method of calibrating a lookup table in accordance with a preferred embodiment;

[0091] FIG. 32 is a graph plotting a lookup table after being calibrated in accordance with a preferred embodiment;

[0092] FIG. 33 is a perspective view of a percussive massage device in accordance with a preferred embodiment of the present invention;

[0093] FIG. 34 is a perspective view of the percussive massage device of FIG. 13 with a portion of the housing removed;

[0094] FIG. 35 is a perspective view of the motor;

[0095] FIG. 36 is a side elevational view of the percussive massage device in accordance with a preferred embodiment of the present invention;

[0096] FIG. 37 is another side elevational view of the percussive massage device;

[0097] FIG. 38 is a side elevational view of the percussive massage device showing a user grasping the first handle portion;

[0098] FIG. 39 is a side elevational view of the percussive massage device showing a user grasping the third handle portion;

[0099] FIG. 40 is a side elevational view of the percussive massage device showing a user grasping the second handle portion;

[00100] FIG. 41 is a perspective view of the percussive massage device of FIG. 18 with a portion of the housing removed;

[00101] FIGS. 42A and 42B are cross sectional views of the head portion and motor;

[00102] FIG. 43 is an exploded view of some of the internal components of percussive massage device of FIG. 33;

[00103] FIG. 43A is an exploded view of the motor and motor mount;

[00104] FIG. 44 is a chart showing steps of Protocol 1 in accordance with a method of performing a routine for a percussive massage device;

[00105] FIG. 45 is a chart showing steps of a "Shin Splints" protocol in accordance with a method of performing a routine for a percussive massage device;

[00106] FIGS. 46A, 46B, 46C, and 46D are methods of performing a routine for a percussive massage device;

[00107] FIG. 47 is a front view of a graphical user interface showing a "Tech Neck" protocol; and

[00108] FIG. 48 is a front view of a graphical user interface showing a "Right Bicep" protocol.

[00109] Like numerals refer to like parts throughout the several views of the drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[00110] The following description and drawings are illustrative and are not to be construed as limiting. Numerous specific details are described to provide a thorough understanding of the disclosure. However, in certain instances, well-known or conventional details are not described in order to avoid obscuring the description. References to one or another embodiment in the present disclosure can be, but not necessarily are, references to the same embodiment; and, such references mean at least one of the embodiments.

[00111] Reference in this specification to "one embodiment" or "an embodiment" means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the disclosure. Appearances of the phrase "in one embodiment" in various places in the specification do not necessarily refer to the same embodiment, nor are separate or alternative embodiments mutually exclusive of other embodiments. Moreover, various features are described which may be exhibited by some embodiments and not by others. Similarly, various requirements are described which may be requirements for some embodiments but not other embodiments.

[00112] The terms used in this specification generally have their ordinary meanings in the art, within the context of the disclosure, and in the specific context where each term is used. Certain terms that are used to describe the disclosure are discussed below, or elsewhere in the specification, to provide additional guidance to the practitioner regarding the description of the disclosure. For convenience, certain terms may be highlighted, for example using italics and/or quotation marks: The use of highlighting has no influence on the scope and meaning of a term; the scope and meaning of a term is the same, in the same context, whether or not it is highlighted. It will be appreciated that the same thing can be said in more than one way.

[00113] Consequently, alternative language and synonyms may be used for any one or more of the terms discussed herein. Nor is any special significance to be placed upon whether or

not a term is elaborated or discussed herein. Synonyms for certain terms are provided. A recital of one or more synonyms does not exclude the use of other synonyms. The use of examples anywhere in this specification including examples of any terms discussed herein is illustrative only, and is not intended to further limit the scope and meaning of the disclosure or of any exemplified term. Likewise, the disclosure is not limited to various embodiments given in this specification.

[00114] Without intent to further limit the scope of the disclosure, examples of instruments, apparatus, methods and their related results according to the embodiments of the present disclosure are given below. Note that titles or subtitles may be used in the examples for convenience of a reader, which in no way should limit the scope of the disclosure. Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this disclosure pertains. In the case of conflict, the present document, including definitions, will control.

[00115] It will be appreciated that terms such as "front," "back," "top," "bottom," "side," "short," "long," "up," "down," and "below" used herein are merely for ease of description and refer to the orientation of the components as shown in the figures. It should be understood that any orientation of the components described herein is within the scope of the present invention.

[00116] While many embodiments are described herein, at least some of the described embodiments provide an apparatus, system, and method for a reciprocating treatment device.

[00117] FIGS. 1-10 show an embodiment of a percussive massage device 212 that includes a rechargeable battery (and replaceable or removable battery) 114. Device 212 is referred to commercially as the G3PRO. As shown in FIGS. 1-1A, in a preferred embodiment, the percussive massage device 212 includes three handle portions (referred to herein as first

handle portion 143, second handle portion 145 and third handle portion 147) that cooperate to define a central or handle opening 149. All of the handle portions are long enough that they are configured such that a person can grasp that particular handle portion to utilize the device. The ability to grasp the different handle portions allows a person (when using the device on their own body) to use the device on different body parts and from different angles, thus providing the ability to reach body parts, such as the back, that might not be possible without the three handle portions.

[00118] As shown in FIG. 1, the first handle portion 143 defines a first handle portion axis A1, the second handle portion 145 defines a second handle portion axis A2 and the third handle portion 147 defines a third handle portion axis A3 that cooperate to form a triangle. In a preferred embodiment, the battery 114 is housed in the second handle portion 145 and the motor 106 is housed in the third handle portion 147.

[00119] FIGS. 3-5 show a user's hand grasping the various handle portions. The length of each of the first, second and third handle portions is long enough so that a person with a large hand can comfortably grasp each handle portion with at least three to four fingers extending through the handle opening, as shown in FIGS. 3-5. In a preferred embodiment, the first handle portion 143 has an interior edge 143a, the second handle portion 145 has an interior edge 145a and the third handle portion 147 has an interior edge 147a, which all cooperate to at least partially define the handle opening 149. As shown in FIG. 1, in a preferred embodiment, the first handle portion 143 includes a finger protrusion 151 that includes a finger surface or fourth interior surface 151a that extends between the interior edge 143a of the first handle portion and the interior edge 147a of the third handle portion 147 and at least partially defines the handle opening 149. As shown in FIG. 3, in use, a user can place their index finger against the finger surface 151a. The finger protrusion and surface provide a feedback point or support surface such that when a user places their

index finger against the surface it helps the user with control and comfort of using the[[ ]] device. In a preferred embodiment, at least a portion of the finger surface 151a is straight, as shown in FIG. 1 (as opposed to the other "comers" of the handle opening 149 being rounded).

[00120] FIG. 1A shows the preferred dimensions of the interior surfaces of the handle opening 149. It will be appreciated that the interior surfaces comprise a series of flat and curved surfaces. H1 is the dimension of the interior edge 143a of the first handle portion 143 (the first handle portion length). H2 is the dimension of the interior edge 145a of the second handle portion 145 [[f]](the second handle portion length). H3 is the dimension of the interior edge 147a of the third handle portion 147 (the third handle portion length). H4 is the dimension of the finger surface 151a (the finger protrusion length). R1 is the dimension of the radius between interior edges 143a and 145a and R2 is the dimension of the radius between interior edges 145a and 147a. In a preferred embodiment, H1 is about 94 mm, H2 is about 66 mm, H3 is about 96 mm, H4 is about 12 mm, R1 is about 6.5 mm and R2 is about 6.5 mm, which provides an arc length of about 10.2 mm. In the context herein, "about" is within 5 mm. In a preferred embodiment, the length of the interior edge of the handle opening is about 289 mm. The length of the interior edge of the handle opening can be between about 260 mm and about 320 mm, with any combination of H1, H2, H3, H4, R1 and R2. It will be appreciated that these dimensions are optimized so that a 95th percentile male can grip any of the three handle portions with at least three and preferably four fingers extending through the handle opening to utilize the device. It will be appreciated that any or all of surfaces R1 and R2 can be considered a part of any of the three adjacent handle portions. As shown in FIGS. 1 and 1A, with the finger surface 151a being straight, the first handle portion interior surface, second handle portion interior

surface, third handle portion interior surface and finger surface cooperate to define a quadrilateral with radii or rounded edges between each of the straight surfaces.

[00121] Device 212 also includes multiple speed settings (preferably 1500 and 2400 RPM, but can be any speed or frequency taught herein). Furthermore, those of ordinary skill in the art will appreciate that although the RPM is listed as a specific number that, due to manufacturing tolerances, the RPM may oscillate during use. For example, at the 2400 RPM setting the RPM may actually oscillate between 2260 and 2640.

[00122] FIGS. 6-10 show some of the interior and exterior components that are included in the treatment devices 212 (208 and 210) shown in FIGS. 1-5 and 11-16. As shown in FIG. 6, the percussive massage device 212 includes a housing 101 that is comprised of first and second housing halves 103. Outer covers 213 and top cover 215 are received on and connected to the first and second housing halves 103, via tabs 105 or other mechanism or attachment method (e.g., threaded fasteners, clips, adhesive, sonic welding, etc.). The percussive massage device 212 also includes a tambour door 217, battery 114, inner suspension rings 219 and rotation housing 44 (with first and second rotation housing halves 44a and 44b) that houses the gearbox 404.

[00123] As shown in FIG. 7, the device includes a pinion coupling assembly 216 that is disposed between the motor and the ~~pinion shaft or~~ shaft gear 117 (located on the shaft or pinion shaft 116). The pinion coupling assembly 216 is used to couple the motor to the gearbox so that the torque is fully transmitted, such that there is no radial movement and the vibrations and noise are minimized. The pinion coupling assembly 216 preferably includes three separate components, a lower connector 218, a cross coupling 220 and an upper connector 222. In a preferred embodiment, the lower connector 218 includes a main body portion 218a that defines a central opening 218b that receives the motor shaft 248 and first and second lower connector arms 218c extending outwardly from the main body

portion 218a. The upper connector 222 includes a main body portion 222a that defines a central opening 222b that[[ ]] receives the pinion shaft ~~117~~ 116 and first and second upper connector arms 222c extending outwardly from the main body portion 222a. Preferably, the cross coupling 220 includes radially extending ribs 220a that define channels 220b therebetween. The first and second lower connector arms 218c and the first and second upper connector arms 222c are sized and shaped to be received in the channels 220b to operatively engage the radially extending ribs. In use, the motor shaft 248 rotates the pinion coupling assembly, which rotates the pinion shaft ~~117~~ 116. These components work together to reduce noise and vibration. In a preferred embodiment, the lower and upper connectors are made of plastic and the cross coupling is made of an elastomer. In a preferred embodiment, the cross coupling 220 is made of rubber that includes a hardness where vibrations generated by the motor are isolated while keeping the strength and transmitting the torque efficiently (without significant energy dissipation). However, the materials are not a limitation on the present invention.

[00124] In a preferred embodiment, the pinion shaft 116 is received in and extends through bearings 224 and 225. Preferably, bearing 224 includes ball bearings (and provides radial support) and bearing 225 includes needle bearings (and provides radial support, but can withstand higher temperatures). The pinion coupling assembly 216 is housed in motor mount 250, which is connected to the motor 106 and through which the motor shaft 248 extends. The motor mount 250 is connected to the gear box mount 252, as shown in FIG. 9.

[00125] As shown in FIGS. 7-9, the gearbox 404, in one embodiment, includes the gear member 304 and the reciprocator or push rod ~~230/~~310. Preferably, the gear member 304 includes a shaft 246 extending therefrom to which the reciprocator 310 is connected. The gearbox 404 may provide mounting points for the gear member 304 and the reciprocator

310. The gearbox 404 may restrict the motion of the gear member 304 and the reciprocator to certain directions or rotational axes. The gearbox 404 may be mounted to the housing 101. In some[[ ]] embodiments, the gearbox 404 is separated from the housing 101 by the one or more compliant dampening blocks ~~402~~.

[00126] As shown in FIGS. 6 and 8, in a preferred embodiment, to prevent the gearbox from transmitting vibrations to the housing a rubber cover can be provided. Further inner suspension rings 219 isolate vibration of the gearbox from handle and the treatment structures. Preferably, the rings 219 are made of an elastomer and act as a cushion to dampen vibrations between the rotation housing and the housing 101. In a preferred embodiment, the inner suspension rings 219 surround the outer radial surface of the main body portion 62 (see seat surface 523 in FIG. 8).

[00127] In one embodiment, rotation of the actuated output or shaft 108 may be selectively locked and unlocked by a user. For example, the user may unlock rotation of the shaft 108, rotate the actuated output 108 to a desired position relative to the housing 101, lock rotation of the actuated output 108, and operate the reciprocating treatment device 100. FIG. 8 shows the components that allow rotation of the rotation housing 44 together with the push rod assembly 108 and related components. Button 515 includes radially extending teeth 515a and is biased outwardly by spring 519, which surrounds and is seated on spacer 518 (which is preferably made of foam). Spring 519 is seated against dampening members 520 and 517, which are preferably made of rubber to dampen any vibrations of the spring 519. The assembly also includes a gear box cover 525 and dampening ring 521. Button 515 is outwardly biased by spring 519 to a position where teeth 515a are engaged with teeth 516a, which are defined hoop 516, which is connected to housing 101. Preferably hoop 516 includes inner and outer plastic rings 516b and 516c that sandwich a rubber ring 516d therebetween to help dampen vibrations and reduce noise. The button 515 is movable

between a first position where teeth 515a are engaged with teeth 516a and a second position where teeth 515 are not engaged with teeth 516a. When the button 515 is in the first position, the rotation assembly 47 cannot rotate. When the button is pushed to the second position, the teeth 515a disengage from teeth 516a, thereby allowing the entire rotation assembly 47 to rotate. The rotation housing 44 includes a main body portion 62 disposed in the housing and an arm portion 64 extending through the rotation space 60 and outside the housing. The arm portion 64 rotates within the rotation space 60 defined in the housing 101. As shown in FIG. 2, in a preferred embodiment, the device 212 includes a tambour door 217 that unfolds within the rotation space 60 as the rotation assembly is moved from the position shown in FIG. 1 to the position shown in FIG. 2. The tambour door 217 covers slot 214. As shown in FIG. 2, an arm cover 524 covers the arm portion 64 of the rotation housing 44.

[00128] As shown in FIG. 9, the gearbox housing 404 includes a clearance slot 214 defined therein for the push rod assembly 108. The slot 214 is provided so the push rod assembly 108 can move freely and allow the rotation housing 44 to articulate. The clearance slot 214 has first and second ends 214a and 214b. As shown in FIG. 9, the push rod assembly 108 extends through the clearance slot 214. it will be appreciated that when the rotation housing 44 is rotated from a first position to a second position the push rod assembly 108 moves within the clearance slot 214 from the first end to the second end thereof.

[00129] As shown in FIGS. 8-10, in a preferred embodiment, the pushrod assembly or output shaft 108 includes two halves or rods with an adapter member 226 therebetween to also help reduce noise and vibration. The adapter member 226 isolates the vibrations generated in the gearbox and prevents them from being transmitted down the shaft to the treatment structure. The adapter member 226 can include anti-rotation tabs to protect the push rod from user applied torque during use. The first rod portion 230 of the output shaft 108 (push

rod or reciprocator 310) includes an opening 232 on an end thereof that receives a pivot pin 234. The connection between the first rod portion 230 and the adapter member[[ ]] 226 includes a bushing 227 with the pin 234 and elastomeric material to dampen vibrations. The end of first rod portion 230 that includes opening 232 is received in a pocket 229 in adapter member 226. The pin 234 extends through openings in the side walls of adapter member 226, through bushing 227 and through opening 232, to secure first rod portion 230 to adapter member 226. Adapter member 226 includes a protrusion 231 extending therefrom that is received in an opening 233 in an end of the second rod portion 236, to connect the adapter member 226 to the second rod portion 236. In another embodiment, the end of the second rod portion 236 can be received in an opening in the adapter member 226. In use, the size of the top opening of pocket 229 allows the first rod portion to move side to side as the opening 232 pivots on pin 234 and first rod portion ~~231~~ 230 reciprocates. This translates to linear reciprocation of second rod portion 236. Because the bushing 227 comprises at least some elastomeric material, vibrations are dampened (and noise reduced) as the push rod assembly 108 reciprocates.

[00130] Ring 526 is seated on and surrounds the bottom portion of the arm portion 64 (see seat 64a in FIG. 8) to help hold the first and second housing halves 44a and 44b together. Washer or guide member 527 is received in the rotation housing 44 and provides stability and a path for the reciprocating push rod assembly or output shaft 108.

[00131] As shown in FIG. 9, in this embodiment, the first rod portion 230 or push rod assembly 108 extends through clearance slot 214. It will be appreciated that the term pushrod assembly includes any of the embodiments described herein and can include a shaft with an adapter member allowing pivoting between two halves or can include a single shaft that does not include any pivoting.

[00132] As shown in FIGS. 9-10, in a preferred embodiment, the male connector 110 includes an alignment tab 497 above each ball that mates with a slot in the female opening. These tabs 497 help with proper alignment with the treatment structure. See U.S. Patent App. No. 2019/0017528, the entirety of which is incorporated herein by reference.

[00133] FIGS. 11-16 show embodiments of percussive massage devices similar to percussive massage device 212 above, but without a rotation assembly. Device 208, shown in FIGS. 11-14 is referred to commercially as the G3. Device 210, shown in FIGS. 15-16 is referred to commercially as the LIV. As is shown in FIG. 13, in a preferred embodiment, switch 104 includes switch electronics 575 associated therewith. The switch electronics 575 may include a printed circuit board (PCB) and other components to allow the switch 104 to activate the motor 106 and to change the speed of the motor, turn the device on and off, among other tasks. As shown in FIG. 13, in a preferred embodiment, the motor 106 is housed in the third handle portion 147, the battery 114 is housed in the second handle portion 145 and the switch electronics 575 are housed in the first handle portion 143. This configuration also applies to devices 210 and 212. FIG. 14 shows cushion members 577 that surround the gearbox 404 and help dampen and reduce noise and vibration generated by the components in the gearbox. Cushion members 577 are similar to inner suspension rings 219 in device 212. However, cushion members 577 are thicker and do not need to rotate due to the exclusion of the rotation housing in devices 208 and 210. Cushion members 577 include cutouts or channels 579 therein to allow clearance of components such as the push rod assembly and pinion shaft.

[00134] FIGS. 17-35 show embodiments in accordance with a percussion massage device with a force meter. FIG. 17 is a block diagram showing interconnected components of a percussive therapy device with a force meter 400 (see also FIG. 33) ~~700~~. In an embodiment, the percussive therapy device with force meter 400 ~~700~~ includes a

microcontroller unit 701, a battery pack management unit 702, an NTC sensor 703, a power charging management unit 704, a wireless charging management unit 705, a wireless charging receiving system 706, a voltage management unit 707 (5V 3.3V Voltage Management in drawings), battery charging inputs 708 (20V 2.25A Charging Inputs in drawings), a display 709 (Force/Battery/Speed Display in drawings), a wireless control unit 710 (Bluetooth Control in drawings), an OLED screen 711, an OLED screen control system 712, a motor 713, a motor drive system 714, a PWM speed setup unit 715, an over-current protection unit 716, and a power switch unit 717 (Power On/Off OLED Screen SW in drawings). In the embodiment shown in accordance with FIG. 17, each block in the diagram is shown as a separate component. In alternative embodiments, however, certain components may be combined without departing from the scope of the present disclosure.

[00135] The microcontroller unit 701, in an embodiment, is a microcontroller unit including a processor, a memory, and input/output peripherals. In other embodiments, however the microcontroller unit 701 is an ST Microelectronics STM32F030K6 series of microcontroller units, STM32F030C8T6 series of microcontrollers, STM32F030CCT6 series of microcontrollers, or an equivalent microcontroller.

[00136] One of ordinary skill would understand that the memory of the microcontroller unit 701 is configured to store machine-readable code for processing by the processor of the microcontroller unit 701. Various other configurations may exist depending on whether the designer of the percussive massage device with force meter <u>400</u> ~~700~~ desires to implement the machine-readable code in software, firmware, or both. In an embodiment, the machine-readable code is stored on the memory and configured to be executed by a processor of the microcontroller 701. In an embodiment, the machine-readable code is stored on computer-readable media.

[00137] The battery pack management unit 702, in an embodiment, is implemented in firmware or software and configured to be used in connection with the microcontroller unit 701. In this embodiment, the firmware or software is stored in memory (not shown) and configured to be obtainable by the microcontroller unit 701. The battery pack management unit 702 may also be a combination of firmware, software, and hardware, in another embodiment. The battery pack management unit 702 is coupled with the NTC sensor 703. The NTC sensor 703 is a negative temperature coefficient thermistor used by the battery pack management unit 702 to sense temperature of the battery pack. For example, the NTC sensor 703 is a thermistor with B value of 3950 +/- 1%, and a resistance of 10 kΩ. In another example, the thermistor has a resistance of 100 kΩ. One of ordinary skill in the art would recognize that a thermistor is a resistor whose resistance is dependent upon temperature. In other embodiments, however, the NTC sensor 703 may be another type of temperature sensing device or component used in connection with the battery pack management unit 702.

[00138] The power charging management unit 704, in an embodiment, is implemented in firmware or software and configured to be used in connection with the microcontroller unit 701. Similarly to the battery pack management unit 702, the power charging management unit 704 firmware or software is stored in memory (not shown) and configured to be obtainable by the microcontroller unit 701. The power charging management unit 704 may also be a combination of firmware, software, and hardware, in another embodiment. In various embodiments, the power charging management unit 704 is configured to charge a battery pack via a direct connection or through an external charger, such as when configured to be operable with rechargeable batteries.

[00139] The wireless charging management unit 705, in an embodiment, is coupled to the battery pack management unit 702 and the battery charging inputs 708. In other

embodiments, the battery or battery pack is charged using other conventional methodologies, such as, for example, charging the battery or battery pack using a wire or cord coupled to the battery charging inputs 708.

[00140] The wireless charging receiving system 706, in an embodiment, is coupled to the power charging management unit 704 and the display 709. The wireless charging receiving system 706 includes one or more of firmware, software, and hardware. In an embodiment, the wireless charging receiving system 706 is configured to receive information pertaining to battery capacity, charging metrics, and other information pertaining to wireless charging, and to pass along the information to the power charging management unit 704. The wireless charging receiving system 706 preferably includes a wireless charging pad used to charge the percussive massage device with force meter 400 ~~700~~. One of ordinary skill in the art would understand that a variety of wireless charging devices may be utilized to wirelessly charge the percussive massage device with force meter 400 ~~700~~. As one example, the Qi wireless charging standard and related devices may be utilized to wirelessly charge the percussive massage device with force meter 400 ~~700~~.

[00141] The voltage management unit 707, in an embodiment, is a DC voltage regulator that steps down 5 volt to 3.3 volt power for use by the microcontroller unit 701. The voltage management unit 707 may also perform additional functions for management of 3.3 volt power for use by the microcontroller unit 701. In an embodiment, the voltage management unit 707 is implemented using a series of electronic components such as, for example, implementing a resistive divider using electronic components. In another embodiment, the voltage management unit 707 is a stand-alone voltage regulator module and/or device designed to step down voltage from 5 volts to 3.3 volts. One of ordinary skill in the art would understand the various methodologies and devices available to step down 5 volts to 3.3 volts.

[00142] The battery charging inputs 708, in an embodiment, are interfaces by which a wire or cord may be inserted for charging the percussive massage device with force meter 400 ~~700~~. For example, a standardized barrel connector is the battery charging inputs 708. In another example, the battery charging inputs 708 is a USB connector. Other more specialized charging methodologies may require a particular battery charging input not described above.

[00143] The display 709, in an embodiment, displays a series of LEDs depicting an amount of force applied by the percussive massage device with force meter 400 ~~700~~. In an alternative embodiment, the display 709 displays a series of LEDs depicting the current battery or battery pack charge of the percussive massage device with force meter 400 ~~700~~. In yet another embodiment, the display 709 displays a series of LEDs depicting the current speed of the percussive massage device with force meter 400 ~~700~~. One of ordinary skill in the art would recognize that while LEDs have been specified in the above-referenced embodiments, other embodiments not using LEDs are within the scope of this disclosure, such as, for example, liquid crystal displays, OLEDs, CRT displays, or plasma displays. One of ordinary skill in the art would also understand that it may be advantageous in an embodiment utilizing a battery or battery pack to use low-power options to ensure battery power longevity. In an embodiment, the display 709 is a 128x64 pixel OLED display.

[00144] The wireless control unit 710 is a wireless connectivity device that may be implemented in a wireless microcontroller unit. In an embodiment, the wireless control unit 710 is a Bluetooth transceiver module configured to couple, via Bluetooth, to a remote device. In an embodiment, the Bluetooth module is a Bluetooth Low-Energy (BLE) module configured to be run in broadcast mode. The wireless control unit 710 is coupled to the microcontroller unit 701. In an embodiment, the remote device is a smartphone having an embedded Bluetooth module. In an alternative embodiment, the remote device is a

personal computer having Bluetooth connectivity. In other embodiments, other wireless connectivity standards besides the Bluetooth wireless standard may be utilized. It will be appreciated that the Bluetooth connectivity or other wireless connectivity may be described herein as being implemented in a wireless connection device. The wireless connection device can be a separate module, can be included in the MCU or other component of the device, or can be a separate chip. In summary, the percussive therapy device including a wireless connection device means that the percussive massage device can connect to another electronic device wirelessly (e.g., a phone, tablet, computer, computer, voice controlled speaker, regular speaker, etc.). One of ordinary skill in the art would recognize that low-power wireless control modules may be advantageous when the percussive massage device with force meter 400 ~~700~~ is utilizing a battery or battery pack.

[00145] The OLED screen 711 and the OLED screen control system 712, in an embodiment, are configured to display substantially the same information as the display 709 referenced above. The OLED screen 711 is coupled to the OLED screen control system 511. The OLED screen control system 712 is coupled to the microcontroller unit 701, the OLED screen 711, and the power switch unit 717. In an embodiment, the display 709 and the OLED screen 711 may be redundant and it may only be necessary to utilize one or the other.

[00146] The motor 713, in an embodiment, is a brushless direct current (BLDC) motor. The motor 713 and the motor drive system 714, in an embodiment, are configured to vary the speed (i.e., rotational motion) that may be converted to reciprocal motion. In other embodiments, the motor 713 is a brushed DC motor, a brushed AC motor, or a brushless AC motor. One of ordinary skill in the art would understand that choosing a brushless or brushed motor, or direct current or alternating current, may vary depending on the application and intended size, battery power, and use.

[00147] The PWM speed setup unit 715, in an embodiment, is used to control pulse width modulation utilized to drive the motor 713. The PWM speed setup unit 715 is coupled to the microcontroller unit 701 and the over-current protection unit 716. One of ordinary skill in the art would understand that pulse width modulation is one way to vary the average power applied to the motor 713, resulting in varying speed as desired. In alternative embodiments, one of ordinary skill in the art would understand that there are a variety of methods to vary the speed of a brushless DC motor. For example, voltage to the motor 713 may be controlled in other non-PWM methods.

[00148] The over-current protection unit 716, in an embodiment, may be a feature of an integrated system-in-package to prevent damage caused by high currents to the motor. In other embodiments, the over-current protection unit 716 is implemented using a series of electronic components configured to protect the motor from excessively high current.

[00149] The power switch unit 717, in an embodiment, is configured to turn on and turn off the percussive massage device with force meter 400 ~~700~~. The power switch unit 717 is coupled to the OLED screen control system 712 and the microcontroller unit 701. In an embodiment, the power switch unit 717 is the switch 405.

[00150] FIG. 18 shows a circuit diagram of the microcontroller unit 701 with pin outputs. In this embodiment, the STM32F030K6 series of microcontroller units is utilized. The circuit diagram depicts +3.3 volt power being provided to the VDD inputs of the microcontroller unit 701. Input PA3 is labeled "Motor_VOL", the voltage of the motor 713. Input PA2 is "bt_v", the battery or battery pack voltage. The microcontroller unit is configured to receive analog voltage on inputs PA2 and PA3 and to convert it to digital voltage using the microcontroller's analog-to-digital converter. In this embodiment, the analog-to-digital converter is a 12-bit ADC. One of ordinary skill in the art would understand that other microcontrollers may utilize voltage sensing and analog-to-digital converters to perform

similar functions. In yet other embodiments, an analog-to-digital converter module separate from a microcontroller may be utilized.

[00151] FIG. 19 shows a circuit diagram used for battery voltage detection. In this embodiment, +BT, the positive battery terminal 518, is coupled to a circuit consisting of a P-channel MOSFET 519, an N-Channel MOSFET 520, 0.1 μF capacitor 521, 100 kΩ resistors 522, 523, 68 kΩ resistor 524, 1 kΩ resistors 525, 526, and 10 kΩ resistors 527, 528. The circuit is configured to provide an input analog voltage of the battery or battery pack, or bt_v, to the microcontroller unit 701 of FIG. 18. In other embodiments, voltage of the battery or battery pack may be achieved using a voltage reader coupled to the terminals of the battery or battery pack.

[00152] FIG. 20 shows a circuit diagram for detection and measurement of voltage of the motor 713 of the percussive massage device. In this embodiment, voltage sensing resistor 529 is coupled in parallel with the microcontroller unit 701, and coupled to the motor 713. In an embodiment, the voltage sensing resistor has a value of 0.0025 Ω. The circuit depicted in FIG. 20 is configured to provide the Motor_VOL input into the microcontroller unit 701 of FIG. 17. In an embodiment, the input analog voltage is amplified. In another embodiment, the voltage of the motor 713 is measured or sensed using a separate series of electronic components or a standalone device and input into a microprocessor for use with the method of displaying a force on the percussive massage device.

[00153] FIG. 21 is a flow diagram showing a method 800 of detecting force applied by the percussive massage device in accordance with a preferred embodiment. At Step 802, a voltage magnitude V is obtained. In an embodiment, voltage magnitude V is an analog voltage obtained by using the circuit disclosed in FIG. 17. In that circuit, a block curve signal from the motor 713 (i.e., a Hall effect sensor) is simulated in the circuit as current using the resistor R, which is placed in parallel with the microcontroller unit 701. In other

embodiments, voltage that corresponds to the current operating speed of the motor 713 may be generated in a variety of other ways. The voltage magnitude V may be input to a microcontroller unit 701 that converts analog voltage to digital voltage using an analog-to-digital converter, such as that implemented in the STM32F030K6 microcontroller unit. The STM32F030K6 microcontroller unit coverts analog voltage magnitude to a digital code corresponding to the 12-bit ADC (i.e., 0 to 4096). The digital code represents a voltage magnitude corresponding to the original voltage magnitude V obtained.

[00154] At Step 804, a lookup table is generated that correlates voltage V to force magnitude F. In an embodiment, the lookup table is generated using a method 900 of generating a lookup table correlating voltage to force. For example, the force magnitude F may be expressed in pounds of force. In an alternative embodiment, the force magnitude F may be expressed in Newtons of force.

[00155] At Step 806, the force magnitude F corresponding to voltage magnitude V is displayed on the percussive massage device with force meter 400 ~~700~~. In an embodiment, a series of LED lights may be utilized to depict varying amounts of force as the force is being applied by the percussive massage device with force meter 400 ~~700~~. Thus, as the amount of force magnitude F increases, more LEDs on the series of LED lights will be lit. Preferably, the series of LED lights consists of 12 LED lights.

[00156] FIG. 22 is a flow diagram showing a method 900 of generating a lookup table correlating voltage to force. At Step 902, a maximum magnitude of force, F_{MAX}, is determined. The magnitude of F_{MAX} may be determined by assessing the maximum desired force to apply using the percussive massage device with force meter 400 ~~700~~. As an example, F_{MAX} is 60 pounds of force.

[00157] At Step 904, a maximum magnitude of voltage, V_{MAX}, is determined. The magnitude of V_{MAX} may be determined by assessing the maximum theoretical voltage change possible

by the percussive massage device with force meter 400 ~~700~~. As an example, V_{MAX} is 1.8 volts.

[00158] At Step 906, F_{MAX} is divided into equal increments. Using the above example from Step 902, 60 pounds of force is divided into 60 one-pound increments.

[00159] At Step 908, V_{MAX} is divided into the same amount of increments as determined in Step 906 above. Thus, using the above example from Step 904, 1.8 volts is divided into 60 [[0.3]] 0.03-volt increments.

[00160] At Step 910, a lookup table (LUT) is generated that correlates the increments of pounds of force with the increments of voltage. This necessarily creates a linear relationship between force and voltage. FIG. 23 is a graph plotting the LUT for use by the method of detecting force of FIG. 21 that was generated using the specific example identified in FIG. 22. The graph depicts calculated force that was calculated using the method 900.

[00161] A problem may arise in that the theoretical maximum voltage assumption at Step 904 in the method 900 is inaccurate. It may also be the case that as the percussive massage device with force meter 400 ~~700~~ is used, the maximum available voltage degrades over time. In other words, the battery or battery pack voltage may decrease.

[00162] Accordingly, a method 1000 of calibrating the LUT generated by method 900 may be advantageous. FIG. 24 is a flow diagram showing a method 1000 of calibrating a LUT. At Step 1002, battery pack voltage BV is obtained. In an embodiment, battery pack voltage magnitude BV is an analog voltage obtained by using the circuit disclosed in FIG. 19. In that circuit, the battery pack voltage magnitude BV may be input to a microcontroller unit 701 that converts analog voltage to digital voltage using an analog-to-digital converter, such as that implemented in the STM32F030K6 microcontroller unit. The STM32F030K6 microcontroller unit coverts analog voltage magnitude to a digital code corresponding to

the 12-bit ADC (i.e., 0 to 4096). The digital code represents a voltage magnitude corresponding to the original battery pack voltage magnitude BV obtained.

[00163] At Step 1004, V_{MAX} is set to the actual battery voltage magnitude BV output. As an example, may decrease from 1.8 volts to 1.74 volts, a 0.6 volt decrease. At Step 1006, the LUT linear correlation is adjusted to reflect the lower V_{MAX}. FIG. 25 is a graph plotting the LUT calculated by the method 900 against the LUT calibrated by using the method 1000. The LUT resulting from method 1000 depicts a calibrated force rather than a calculated force.

[00164] FIG. 26 is a flow diagram showing a method 1100 of calibrating a LUT. The method 1100 may be performed after the method 900, or entirely separately from the method 900. At Step 1102, battery pack voltage BV is measured. In an embodiment, the measurement is done without applying any force from the percussive massage device with force meter 400 ~~700~~. In an embodiment, the battery pack voltage BV is measured using an external voltage meter. In another embodiment, the battery pack and/or microcontroller unit 701 have embedded solutions for directly measuring battery pack voltage BV.

[00165] At Step 1104, the display on the percussive massage device with force meter 400 ~~700~~ that displays the force magnitude F is read to determine the force magnitude F corresponding to the measured battery pack voltage BV.

[00166] At Step 1106, a force meter is used to measure actual force being applied. In an embodiment, the force meter is a push/pull force meter. The direct measurement of force allows calibration of the LUT by comparing the displayed force magnitude F with the measured actual force. At Step 1108, the LUT is updated with a corrected force corresponding with the measured battery pack voltage BV. After Step 1108, Steps 1102-1106 are repeated for each successive voltage increment. In the embodiment depicted in accordance with the method 900, Steps 1102-1106 are repeated for every [[3]] 0.03-volt

increment. FIG. 27 is a graph plotting the LUT calculated by the method 1100 after all 3-volt increments had been updated.

[00167] FIG. 28 is a flow diagram showing a method 1200 of detecting force applied by a percussive massage device in accordance with a preferred embodiment. At Step 1202, current magnitude C of a battery pack is obtained. In an embodiment, current magnitude C is input into the microcontroller unit 701. At Step 1204, voltage magnitude BV of a battery pack is obtained. In an embodiment, voltage magnitude BV is input into the microcontroller unit 701. At Step 1206, power is calculated using the product of C and BV. In an embodiment, the microcontroller unit 701 is configured to calculate power by multiplying C and BV. At Step 1208, a lookup table is generated that correlates power magnitude P to force magnitude F. In an embodiment, the lookup table is generated using a method 1300 of generating a lookup table correlating power to force. For example, the power magnitude P may be expressed in watts. In an alternative embodiment, force magnitude F may be expressed in pounds of force or Newtons of force.

[00168] At Step 1210, the force magnitude F corresponding to power magnitude P is displayed on the percussive massage device with force meter 400 ~~700~~. In an embodiment, a series of LED lights may be utilized to depict varying amounts of force as the force is being applied by the percussive massage device with force meter 400 ~~700~~. Thus, as the amount of force magnitude F increases, more LEDs on the series of LED lights will be lit. Preferably, the series of LED lights consists of 12 LED lights.

[00169] FIG. 29 is a flow diagram showing a method 1300 of generating a lookup table correlating power to force. At Step 1302, a maximum magnitude of power, F_{MAX}, is determined. A theoretical maximum magnitude of power, however, is not a reasonable assumption if the total effective power may be calculated. Equation 1 may be utilized to determine Total Maximum Effective Power (EP_{MAX}).

$$Equation\ 1: Total\ EP_{MAX} = P_{MAX} \times Total\ EP$$

[00170] Equation 2 may be utilized to calculate Total EP, which is then input into Equation 1 above.

$$Equation\ 2: Total\ EP = EP_{BATTERY} \times EP_{PCBA} \times EP_{MOTOR}$$

where Total EP, $EP_{BATTERY}$, EP_{PCBA}, and EP_{MOTOR} are all expressed in percentages, and where PCBA is a printed circuit board assembly.

[00171] In an embodiment, EP (Battery) is 85%, EP (PCBA) is 95%, and EP (Motor) is 75%. Thus, using Equation 2, Total EP is 85% * 95% * 75% = 60.5625%.

[00172] In this embodiment, P_{MAX} is calculated by multiplying the maximum voltage V_{MAX} and the maximum amperage C_{MAX} of the battery pack such as in Equation 3. P_{MAX} is then input into Equation 1.

$$P_{MAX} = V_{MAX} \times C_{MAX}$$

[00173] In this embodiment, V_{MAX} is 16.8 volts and C_{MAX} is 20 amperes. Thus, P_{MAX} is 336 watts.

[00174] Turning back now to Equation 1, if P_{MAX} is 336 watts and Total EP is 60.5625%, then Total EP_{MAX} is 203 watts.

[00175] At Step 1304, a minimum amount of power P_{MIN}, is determined. It will be recognized by one of ordinary skill in the art that the power without any force being applied (i.e., no load) will be non-zero. Thus, P_{MIN} of 12 watts is assumed. One of ordinary skill will also understand that the value of is equivalent to the rated power without load, which may be derived from V_{MAX} and C_{MIN}.

[00176] At Step 1306, a maximum magnitude of force, F_{MAX}, is determined. The magnitude of F_{MAX} may be determined by assessing the maximum desired force to apply using the

percussive massage device with force meter 400 ~~700~~. As an example, F_{MAX} is 60 pounds of force.

[00177] At Step 1308, Total EP_{MAX} is divided into equal increments. In an embodiment, Total EP_{MAX} is divided in 3 watt increments per one pound of force, starting at P_{MIN} (12 watts). It will be recognized by one of ordinary skill in the art that if F_{MAX} is 60 pounds of force, the total desired force output of the percussive massage device with force meter 400 ~~700~~, then 60 pounds of force correlates to 189 watts, within the calculated Total EP_{MAX}.

[00178] At Step 1310, a LUT is generated that correlates the increments of pounds of force with the increments of power in watts. This necessarily creates a linear relationship between force and voltage. FIG. 30 is a graph plotting the LUT for use by the method of detecting force of FIG. 28 that was generated using the specific example identified in FIG. 25. The graph depicts calculated force that was calculated using the method 1200.

[00179] Similarly to the method 900, a problem may arise in that the measured voltage of the battery pack at Step 1204 in the method 1200 is inaccurate. It may also be the case that as the percussive massage device with force meter 400 ~~700~~ is used, the maximum available voltage degrades over time. In other words, the battery or battery pack voltage may decrease.

[00180] FIG. 31 is a flow diagram showing a method 1400 of calibrating a LUT. The method 1400 may be performed after the method 900 or the method 1200, or entirely separately from the method 900 or the method 1200. At Step 1402, current magnitude C of a battery pack is obtained. In an embodiment, current magnitude C is input into the microcontroller unit 701.

[00181] At Step 1404, battery pack voltage BV is measured. In an embodiment, the measurement is done without applying any force from the percussive massage device with force meter 400 ~~700~~. In an embodiment, the battery pack voltage BV is measured using an

external voltage meter. In another embodiment, the battery pack and/or microcontroller unit 701 have embedded solutions for directly measuring battery pack voltage BV. At Step 1406, power is calculated using the product of C and BV. In an embodiment, the microcontroller unit 701 is configured to calculate power by multiplying C and BV.

[00182] At Step 1408, the display on the percussive massage device with force meter 400 ~~700~~ that displays the force magnitude F is read to determine the force magnitude F corresponding to the calculated power. At Step 1410, a force meter is used to measure actual force being applied. In an embodiment, the force meter is a push/pull force meter. The direct measurement of force allows calibration of the LUT by comparing the displayed force magnitude F with the measured actual force. At Step 1412, the LUT is updated with a corrected force corresponding with the measured power. After Step 1412, Steps 1402-1410 are repeated for each power or force increment. In the embodiment depicted in accordance with the method 900, Steps 1402-1410 are repeated for every 3-watt increment. FIG. 32 is a graph plotting the LUT calculated by the method 1400 after all 3-watt increments had been updated.

[00183] FIGS. 33-35 show an exemplary percussive massage device 400 that embodies the features disclosed herein, and, in particular, in FIGS. 17-48 (or FIGS. 1-16). Generally, the percussive massage device 400 includes a housing 101 ~~402~~, an electrical source or battery pack 114, a motor 406 positioned in the housing 101, and a switch 405 for activating the motor 406. The electronics (see printed circuit board 408 in FIG. 34) includes the controller that is configured to obtain a voltage of the motor, generate a lookup table correlating voltage to force applied by the percussive massage device, and display a force magnitude corresponding to the obtained voltage using the lookup table. ~~[END OF 5063]~~

[00184] FIGS. 36-43A show further views of percussive massage device 400. FIGS. 36 and 37 are similar to FIGS. 1 and 1A and show that percussive massage device 400 includes a

similar triangle shape with first, second and third handle portions 143, 145 and 147 that cooperate to define the handle portion 149. Refer to the description of at least FIGS. 1-5 for an explanation of the other reference numerals and features shown in FIGS. 36-40. All features and components described above with respect to any percussive therapy or massage devices may be included in percussive massage device 400.

[00185] As shown in FIGS. 41-43, in a preferred embodiment, the brushless motor 406 is located in the head portion 12. The percussive massage device 400 can include a rotatable arm that is part of rotation housing 44. The motor 406 is located in the rotation housing 44, which is housed with the head portion 12 of the housing 101. In another embodiment, the rotation capability can be omitted.

[00186] In a preferred embodiment, the device includes a push rod or shaft 14 that is connected directly to a shaft 16 that is rotated by the motor 406 and the motor shaft 21 extending therefrom. The shaft 16 can be part of a counterweight assembly 17 that includes a counterweight 19. In a preferred embodiment, the push rod 14 is L-shaped or includes an arc shape, as shown in FIGS. 42A-42B. Preferably, the point where the push rod 14 is connected to the shaft 16 is offset from the reciprocating path that the distal end 18 of the push rod 14 (and the massage attachment 628) travel. This capability is provided by the arc or L-shape. It should be appreciated that the push rod 14 is designed such that it can transmit the force at least partially diagonally or in an arc along its shape instead of vertically so the motor can be located at or near the middle of the device, otherwise a large protrusion would be necessary to keep the shaft in the center with the motor offset therefrom (and positioned in the protrusion). The arc also allows the push rod 14 to have a close clearance with the motor, as shown in FIGS. 42A and 42B and allows the outer housing to be smaller than similar prior art devices, therefore making the device 400 lower profile. FIG. 42A shows the push rod 14 at the bottom dead center of its travel and FIG.

42B shows the push rod 14 at the top dead center of its travel. Preferably one or more bearings 20 are included at the proximal end of the push rod 14 where it connects to the motor to counteract the diagonal forces and preventing the push rod 14 from moving and touching the motor 406. The bearing 20 is received on shaft 16 and a threaded fastener 26 is received in a co-axial opening 16a in shaft 16. The proximal end of the push rod 14 is received on bearing 20. These components are all shown in FIG. 43.

[00187] As shown in FIG. 33, in a preferred embodiment, the device 400 includes a touch screen 409 (also referred to herein as touch screen 1582 in association with method steps) as well as button(s) for operating the device (e.g., stopping, starting, activating, changing speeds, amplitudes, etc.). The touch screen 409 can also include other functions. The device 400 can also include a thumbwheel or rolling button positioned near the touch screen/on off button to allow the user to scroll or navigate through the different functions. touch screen 409 for operating the device. In the embodiment, shown in FIG. 33, the device 400 includes touch screen 409, a center button 404 for turning the device on and off and a ring/rocker button 447 that provides the ability to scroll left and right (e.g., to the preset treatments discussed herein) and up and down (e.g., to control the speed or frequency). The screen can also be a non-touch screen or just used for display.

[00188] In another preferred embodiment, any of the devices taught herein can include the ability to vary the amplitude or stroke, thus providing a longer or shorter stroke depending on the application or needs of the user. For example, the stroke can change or be changed between about 8-16 mm. In another embodiment, the stroke can be varied up to 25 or more mm. The amplitude/stroke variability can also be part of the routines, presets or protocols discussed herein. For example, the device can include a mechanical switch that allows the eccentricity of the connector to be modified (e.g., between 4mm and 8mm). The

mechanism can include a push button and a slider. The pin structure has a spring that lets it fall back into the locked position.

[00189] Similar to percussive massage devices 208, 210 and 212 above, in a preferred embodiment, device 400 includes a number of dampening components that are made of an elastomer or the like and damp vibrations to keep the device relatively quiet. For example, as shown in FIG. 43, device 400 includes dampening rings 426 (similar to inner suspension rings 219) that surround the rotation housing 44 (with first and second rotation housing halves 44a and 44b) and help dampen the sound of vibration between the rotation housing and outer housing 101.

[00190] As shown in FIGS. 43 and 43A, the device 400 preferably also includes a motor mount 24 that secures the motor 406 in place and is secured to the housing 101~~/402~~. Motor 406 includes a receiving member 28 with three protrusions 30 (and number between one and ten can be included) that is received in a protrusion opening 32 defined in the motor mount 24 (in first wall 38). Flanges 34 extending from the motor mount 24 help keep the protrusions 30 in place. The motor 406 is preferably secured via threaded fasteners or the like to the motor mount 24. Motor shaft 21 extends into the motor mount interior 36, which is defined between first and second walls 38 and a side 40 that extends part of the way around the circumference. The counterweight assembly 17, proximal end of the push rod 14 and related components for converting the rotation of the motor shaft 21 to reciprocating motion are position in the motor mount interior 36. The push rod 14 extends downwardly out of the motor mount interior and through a push rod opening 42 in the side 40. In a preferred embodiment, the motor mount 24 is connected directly to the housing ~~402/~~101 via fasteners 46 that are secured to mounting members 48 in the housing (see FIG. 43A). It will be appreciated that the term push rod assembly used herein includes any of the components discussed herein or combinations thereof, e.g., push rod 14, output shaft

108, reciprocator 310, second rod portion 236, that extend from the rotating motor shaft 21, shaft 246 or the like that provide reciprocating motion and include the attachment on the distal end thereof. The push rod assembly also includes the male connector 110 (and any related components) or any other connector at the end of the reciprocating components that allows connection of an attachment to be used for massage or therapy.

[00191] Preferably the device can be wirelessly charged. FIG. 34 shows the wireless charging receiver 22, which is positioned in the third handle portion 147. In another embodiment, the wireless charging receiver 22 can be located either of the first and second handle portions 143 and 145 or in the head portion 12.

[00192] In a preferred embodiment, the device 400 is associated with and can be operated by an app or software that runs on a mobile device such as a phone, watch or tablet (or any computer). The app can connect to the device 400 via bluetooth or other wireless connection protocol. The app can have any or all of the following functions. Furthermore, any of the functions discussed herein can be added to the touch screen/scroll wheel or button(s) capability directly on the device. If the user walks or is located too far away from the device, the device will not work or activate. The device can be tumed on an off using the app as well as the touch screen or button on the device. The app can control the variable speeds (e.g., anywhere between 1750-3000 RPM). A timer can be implemented so the device stops after a predetermined period of time.

[00193] In a preferred embodiment the device, via the app or the touch screen and other functional buttons, etc. includes different treatment protocols or routines associated therewith. During the routine, the device can vary different aspects or outputs of the device or make changes based on time, speed (frequency), amplitude (stroke), arm position, force, temperature, grip (i.e., which handle portion to grip), attachment (e.g., cone, ball, dampener, etc.) and body part. The device (via the app, touch screen, haptic feedback or

audibly via a speaker) can also prompt the user to make some of these changes at certain points throughout the routine, e.g., arm position, grip, attachment changes and body part changes. One of ordinary skill in the art will understand that, depending upon the particular design of the device, one or more of these outputs are applicable, while in other devices, all options described are applicable.

[00194] When the start of the protocol is selected, the device runs through a preprogrammed routine. For example, the device may operate at a first RPM for a first period of time and then operate at a second RPM for a second period of time and/or at a first amplitude for a first period of time and then operate at a second amplitude for a second period of time. The routines can also include prompts (e.g., haptic feedback) for letting the user to know to move to a new body part. These routines or treatments can be related to recovery, blood flow increase, performance, etc. and can each include a preprogrammed routine or protocol. These routines can also help facilitate certain activities, such as sleep, interval training, stairs, post-run, post-workout, recovery, wellness, post-core exercise, high intensity (plyometric) workouts, among others. The routines can also assist in providing relief and recovery from ailments such as plantar fasciitis, "tech neck," muscle cramps, jet lag, sciatica, carpal tunnel, knots, and shin splints, among others. The routines can also prompt or instruct the user to switch attachments (e.g., attachment 628 shown in FIG. 40) or positions of the arm or rotation housing. The prompts can include sounds, haptic feedback (e.g., vibration of the device or mobile device), textual instructions or visual representation such as a graphic or picture on the app or touch screen, etc. For example, the app may instruct the user to start with the ball attachment with the arm in position two. Then the user hits start and the device runs at a first frequency for a predetermined amount of time. The app or device then prompts the user to begin the next step in the routine and instructs the user to change to the cone attachment and to place the arm in position 1 (e.g.,

see the arm position in FIG. 38). The arm can include any number of positions, e.g., 1-10 positions or 1-3 positions or 1-2 positions. FIGS. 38-40 show the arm in three different positions. The user hits start again and the device runs at a second frequency for a predetermined amount of time. The protocol can be divided into steps where, at each step, varied outputs are predetermined or specified.

[00195] In a preferred embodiment, the device 400 includes a housing ~~402 (or~~ 101[[)]], an electrical source 114, a motor 406 positioned in the housing 101 ~~402~~, a switch 405 (which can be any of the touch screen 409, rocker button 447, button 404 or any other switch or button) for activating the motor 406, and a routine controller 630. The device 400 is configured to mate with an attachment 628. The attachment can be, for example, the attachment 628 shown in FIG. 38. The attachment is affixed to the male connector 110 so that the shaft or push rod assembly 108 moves the attachment reciprocally in accordance with a specified amplitude. For example, the amplitude is depicted in FIGS. 42A and 42B, where FIG. 42A shows the attachment at a maximum extended position and FIG. 42B shows the attachment at a minimum extended position. The distance between maximum and minimum extended positions can, in an embodiment, define the amplitude.

[00196] The attachment 628 can be a variety of attachments configured to provide therapeutic relief to specified portions of the body. For example, the attachment 628 can be a standard ball (see U.S. Patent App. No. 29/677,157, the entirety of which is incorporated herein by reference) attachment targeted for overall use on both large and small muscle groups. The attachment 628 can be a cone attachment (see U.S. Patent No. D849,261, the entirety of which is incorporated herein by reference) for pinpoint muscle treatment, trigger points, and small muscle areas like the hands and feet. The attachment 628 can also be a dampener attachment (see U.S. Patent App. No. 29/676,670, the entirety of which is incorporated herein by reference) used for tender or bony areas, but also for overall uses. The

attachment 628 can be a wedge attachment (see U.S. Patent No. D845,500, the entirety of which is incorporated herein by reference) for use on shoulder blades ant IT bands, used for "scraping" and "flushing" motions that help to flush lactic acid out of muscles. The attachment 628 can be a large ball (see U.S. Patent App. No. 29/677,016, the entirety of which is incorporated herein by reference) for large muscle groups like glutes and quads. The attachment 628 can be a thumb attachment (see U.S. Patent No. D850,639, the entirety of which is incorporated herein by reference) used on trigger points and the lower back. The attachment 628 can be a Supersoft™ attachment (see U.S. Patent App. No. 29/726,305, the entirety of which is incorporated herein by reference), designed to provide therapeutic relief to sensitive areas, including bones. One of ordinary skill in the art would recognize that the attachments described herein are non-limiting and other configurations of attachments, including varying materials and shapes, may be utilized in accordance with this embodiment. Spherical, forked, flat or other shaped attachments are all within the scope of the invention.

[00197] The routine controller 630 is configured to perform a routine in connection with one or more specified protocols. The routine controller 630 can be, for example, the microcontroller unit 701 depicted in FIG. 17. The routine controller 630 can also be a standalone microcontroller separate from the microcontroller 701. The routine controller can step through different steps of a specified protocol designed to target specified muscle groups and to provide certain therapeutic effects, as described herein.

[00198] FIG. 44 is a table showing an example of a protocol in accordance with a preferred embodiment. Protocol 1 is divided into four steps, each depicting a specified time, speed, amplitude, attachment, force, temperature, and grip. At Step 1, the device 400 is activated for 30 seconds at a speed of 1550 RPM. A routine controller 630 may be utilized to turn on the percussive massage device and implement a speed of the attachment 628 of 1550 RPM.

One of ordinary skill in the art would understand that the speed of the attachment 628 is directly proportional to the speed of the motor 406. The amplitude of the percussive massage device is set to be 2 in accordance with Protocol 1. This may translate to a specified distance that an attachment 628 moves while in use, as described above. Step 1 also specifies a dampener attachment affixed to the device 400, a force of "1" be applied by the device 400, and a temperature of 21 °C be applied to the attachment.

[00199] One of ordinary skill in the art would understand that the force to be applied by the device 400 may depend upon the pressure exerted by the user in pressing the attachment onto a person's body part. As described more fully herein, the force to be applied by the device 400 may be the target force. In an embodiment where the user provides pressure to exert a particular force upon a person's body part, the routine controller 630 may adjust the output of the device 400 to ensure that the force actually applied by the attachment is the target force. The routine controller 630 may also be configured to provide feedback to the user to increase or decrease pressure on a person's body part to meet the target force. Each of these embodiments is applicable to each of the steps of a given protocol, including in Steps 2-4 below, as well as Steps 1-4 of the protocol shown in FIG. 45.

[00200] Step 1 also specifies that the device 400 is to be operated using grip 1. Grip 1, for example, may be the grip shown on the first handle portion 143 depicted in FIG. [[39]] 38, otherwise referred to as a "regular" or "standard" grip. Grip 2, for example, may be the grip shown on the third handle portion 147 depicted in FIG. [[40]] 39, otherwise referred to as a "reverse" grip. An "inverse" grip can also be used on third handle portion 147 (not shown). Grip 3, for example, may be the grip shown on the second handle portion 145 depicted in FIG. [[41]] 40, otherwise referred to as a "base" grip.

[00201] At Step 2, Protocol 1 specifies that the device 400 be activated for 15 seconds at 2100 RPM, with an amplitude of "3", a force of "3", and a temperature of 26 °C. Step 2

specifies that the small ball attachment 628 be used, and that the device 400 is to be operated using grip 1. Step 2 therefore requires that the dampener attachment in Step 1 be replaced by the small ball attachment, but specifies that the same grip is to be used.

[00202] At Step 3, Protocol 1 specifies that the device 400 be activated for 30 seconds, at 2200 RPM, with an amplitude of "1", a force of "3", and a temperature of 29 °C. Step 3 specifies that the dampener attachment 628 be used, and that the device 400 is to be operated using grip 1. Step 3 therefore requires that the small ball attachment in Step 2 be replaced by the dampener attachment, but specifies that the same grip is to be used.

[00203] At Step 4, Protocol 1 specifies that the device 400 be activated for 45 seconds, at 2400 RPM, with an amplitude of "4", a force of "2", and a temperature of 32 °C. Step 3 specifies that the large ball attachment be used, and that the device 400 is to be operated using grip 1. Step 3 therefore requires that the dampener attachment in Step 2 be replaced by the large ball attachment, but specifies that the same grip is to be used. It will be appreciated that Protocol 1 is provided as an example to the reader of many of the different outputs that can be changed during a myriad of treatment protocols that can be provided or developed. It will be further appreciated that any one or more of the outputs can be a part of a protocol or routine and any of the outputs discussed herein can be omitted. For example, a protocol may only include time and speed or only time speed and force, or only time, speed and grip or any other combination of the outputs described herein.

[00204] FIG. 45 is a table showing an example of a "Shin Splints" protocol in accordance with a preferred embodiment. Like Protocol 1, the Shin Splints protocol is divided into four steps, each depicting a specified time, speed, amplitude, attachment, force, temperature, and grip, but also specifying a particular arm position and body part to which to apply the attachment. At Step 1, the device 400 is activated for 1 minute at a speed of 1500 RPM, with an amplitude of "1", a force of "2", and a temperature of 21 °C. Step 1

specifies that the dampener attachment be used, and that the device 400 is to be operated using grip 2 ("Reverse"), to the right shin.

[00205] Step 1 also specifies the arm position 632, 634, 636 to be used is arm position 1. One of ordinary skill in the art would understand that the numbers of arm position (e.g., 1, 2, 3, 4, etc.) are predetermined arm positions intended to be used during a particular protocol. The part of the body to which the attachment 628 is to be applied is one of the factors in determining an optimal arm position. The arm position, however, may be determined by the user and is not required to otherwise implement a protocol. As shown in FIG. [[39]] 38, a "standard" grip may be utilized with arm position 632 to apply to specific parts of the body. As shown in FIG. [[40]] 39, a "reverse" grip may be utilized with arm position 634 to apply to specific parts of the body. As shown in FIG. [[41]] 40, a "base" grip may be utilized with arm position 636 to apply to specific parts of the body. One of ordinary skill in the art would recognize that the arm position 632, 634, 636 in combination with the particular grip 143, 145, 147 may vary depending on the application. One of ordinary skill in the art will understand that setting the arm position of a device 400 depends upon the specific device. For example, certain devices may allow a user to adjust arm position while others do not. For those that do not, this step does not apply. In other embodiments, this step may be performed during execution of the steps of the particular protocol.

[00206] At Step 2, the Shin Splints protocol specifies that the device 400 be activated for 1 minute at 1500 RPM, with an amplitude of "1", a force of "2", and a temperature of 21 °C. Step 2 specifies that the dampener attachment be used, and that the device 400 is to be operated using grip 2 ("Reverse"), at an arm position 1, to the left shin. Step 2 therefore uses the same attachment, grip, and arm position as Step 1, but is applied to the other shin.

[00207] At Step 3, the Shin Splints protocol specifies that the device 400 be activated for 1 minute at 2000 RPM, with an amplitude of "3", a force of "3", and a temperature of 24 °C.

Step 2 specifies that the dampener attachment be used, and that the device 400 is to be operated using grip 3 ("Base"), at an arm position 1, to the right calf. Step 3 therefore requires that the user change grips from "reverse" to "base" grips, but specifies that the same attachment and arm position be used.

[00208] At Step 4, the Shin Splints protocol specifies that the device 400 be activated for 1 minute at 2000 RPM, with an amplitude of "3", a force of "3", and a temperature of 24 °C. Step 2 specifies that the dampener attachment be used, and that the device 400 is to be operated using grip 3 ("Base"), at an arm position 1, to the left calf. Step 2 therefore uses the same attachment, grip, and arm position as Step 1, but is applied to the other calf.

[00209] FIG. 46 is a series of flow diagrams (FIGS. 46A, 46B, 46C) showing a method 1500 of executing a routine for a percussive massage device.

[00210] FIG. 46A is a flow diagram showing an exemplary protocol initiation. At Step 1502, Protocol 1 is initiated. Protocol 1, for example, is the Protocol 1 depicted in FIG. 44 or the "Shin Splints" Protocol depicted in FIG. 45. One of ordinary skill in the art would understand that Protocol 1 depicted in FIG. 44 does not include all of the outputs that are specified in the Shin Splints Protocol depicted in FIG. 45, and thus, not all steps of the method 1500 apply to the Protocol 1 depicted in FIG. 44.

[00211] At Step 1504, a user is prompted to set the arm position to the specified arm position 632, 634, 636. The user may be the person using the device 400 on their own body or on the body of another person. The arm position 632, 634, 636 specified in the Shin Splints Protocol is arm position 1, for example.

[00212] At Step 1506, the user is prompted to use a specified grip or handle portion 143, 145, 147 on the device 400. The grip specified in the Shin Splints Protocol is the third handle portion 147, for example. As described herein, the grip may vary depending on the particular protocol or step.

[00213] At Step 1508, the user is prompted to affix a specified attachment to the device 400. As described herein, the attachment may vary depending on the particular protocol or step.

[00214] At Step 1510, the method determines whether the arm position 632, 634, 636 and the grip position 143, 145, 147 are configured appropriately and whether the attachment 628 is affixed. Step 1510 may involve a prompt to the user by haptic feedback, application interface, or touch screen (among other types of prompts) in which the user is asked to proceed when the appropriate arm position, grip, and attachment are ready. In other embodiments, the device 400 may sense that the arm position and grip are appropriate and that an attachment is affixed before proceeding automatically. In an embodiment, Step 1510 is repeated until the arm position, grip, and attachment are ready.

[00215] FIG. 46B is a flow diagram showing an exemplary Step 1 of the protocol, continuing the method 1500 where FIG. 46A left off.

[00216] At Step 1512, Step 1 of the protocol is initiated. Step 1, for example, is Step 1 depicted in FIGS. 44 and 45, for example.

[00217] At Step 1514, the method 1500 applies a specified time period (T_1) in which the device 400 is activated, a speed of the attachment, an amplitude of the attachment, a force of the attachment, and a temperature of the attachment. In an embodiment, one or more of these outputs of the device 400 are applied. These outputs may be applied by the routine controller 630. One of ordinary skill in the art would understand that a user's implementation of the device 400 on a body part is not required to apply certain of these outputs. For example, the time period, speed, amplitude, and temperature are not necessarily dependent upon a user applying pressure to a body part. On the other hand, the force applied by the attachment 628 may require a user to exert pressure on a body part for a target force (or a target force range) to be reached. Further, the temperature may vary depending on whether the attachment 628 is applied to a body part, or not, and to which

body part it is applied. Thus, the temperature may need to be adjusted during application of the attachment 628 to reach a desired temperature predetermined by the protocol. In another embodiment, the temperature may be adjusted by a user.

[00218] After time period T_1, the user may be prompted to change the attachment 628, arm position 632, 634, 636, and/or grip position 143, 145, 147. These outputs may need to be implemented prior to the start of Step 2 of a protocol. In the Shin Splints Protocol depicted in FIG. 45, the attachment 628, arm position 632, 634, 636 and grip position 143, 145, 147 remain the same. At Step 1516, after time period T_1, the user is prompted to set the arm position to the specified arm position 632, 634, 636. The user may be the person using the device 400 on their own body or on the body of another person.

[00219] At Step 1518, the user is prompted to use a specified grip 143, 145, 147 on the device 400. As described herein, the grip may vary depending on the particular protocol or step.

[00220] At Step 1520, the user is prompted to affix a specified attachment 628 to the device 400. As described herein, the attachment 628 may vary depending on the particular protocol or step.

[00221] At Step 1522, the method determines whether the arm position 632, 634, 636 and the grip position 143, 145, 147 are configured appropriately and whether the attachment 628 is affixed. This step and all other like steps are optional. Step 1510 may involve a prompt to the user by haptic feedback, application interface, or touch screen (among other types of prompts) in which the user is prompted to move to the next step in the routine and/or requested to proceed when the appropriate arm position, grip, and attachment are ready. In other embodiments, the device 400 may sense that the arm position and grip are appropriate and that an attachment is affixed before proceeding automatically. In an embodiment, Step 1522 is repeated until the arm position, grip, and attachment are ready.

[00222] FIG. 46C is a flow diagram showing an exemplary Step 2 of the protocol, continuing the method 1500 where FIG. 46B left off.

[00223] At Step 1524, Step 2 of the protocol is initiated. Step 2, for example, is Step 2 depicted in FIGS. 44 and 45, for example.

[00224] At Step 1526, the method 1500 applies a specified time period (T_2) in which the device 400 is activated, a speed of the attachment, an amplitude of the attachment, a force of the attachment, and a temperature of the attachment. In an embodiment, one or more of these outputs of the device 400 are applied. These outputs may be applied by the routine controller 630. One of ordinary skill in the art would understand that a user's implementation of the device 400 on a body part is not required to apply certain of these outputs. For example, the time period, speed, amplitude, and temperature are not necessarily dependent upon a user applying pressure to a body part. On the other hand, the force applied by the attachment 628 may require a user to exert pressure on a body part for a target force to be reached. Further, the temperature may vary depending on whether the attachment 628 is applied to a body part, or not, and to which body part it is applied. Thus, the temperature may need to be adjusted during application of the attachment 628 to reach a desired temperature predetermined by the protocol. In another embodiment, the temperature may be adjusted by a user.

[00225] After time period T_2, the user may be prompted to change the attachment 628, arm position 632, 634, 636, and/or grip position 143, 145, 147. These outputs may need to be implemented prior to the start of Step 3 of a protocol. In the Shin Splints Protocol depicted in FIG. 45, the attachment 628 and arm position 632, 634, 636 remain the same, but the grip 143, 145, 147 is adjusted to the base grip. At Step 1528, after time period T_2, the user is prompted to set the arm position to the specified arm position 632, 634, 636. The user

may be the person using the device 400 on their own body or on the body of another person.

[00226] At Steps 1528-1534, therefore, steps substantially the same as Steps 1516-1522 are performed. After Step 1534, Steps 3-4 are initiated in substantially the same manner as Steps 1-2. For example, Steps 3 and 4 may be Steps 3 and 4 of the Protocol 1 depicted in FIG. 44 or the Shin Splints Protocol depicted in FIG. 45. Furthermore, Step 1534 can be omitted in a device where none of the grip, arm position or attachment can be sensed by the device. In this embodiment, the given protocol simply moves from step 1 to step 2 prompting the user to make a change (but regardless of whether the user has actually made a change).

[00227] As an alternative to FIG. 46C, FIG. 46D is a flow diagram depicting an alternative Step 2 of a protocol. In the alternative Step 2, a force meter adjustment is implemented.

[00228] Steps 1536-1538 are performed substantially the same as Steps 1524-1526 in previous Step 2 above.

[00229] At Step 1540, the force being applied by the attachment 628 is monitored. In the embodiment shown in FIG. 46D, the method 1500 utilizes the force meter <u>400</u> ~~700~~ to monitor the force actually being applied by the user.

[00230] At Step 1542, the force is displayed to the user. In an embodiment, the force is displayed on an application interface 1584 such as a graphical user interface. In other embodiments, individual use or combined use of the application interface 1584, touch screen 1582, the OLED screen 711, or the like, may be used to display the force.

[00231] At Step 1546, the user is prompted to increase or decrease the force being applied to a body part according to the specified protocol during T_2. FIG. 48 is a diagram showing a touch screen 1582 in accordance with an exemplary embodiment of the display of the force. A force display 1590 shows an exemplary embodiment of Step 1546. The force

display 1590 shows a series of force measurements over the course of the "Right Bicep" step of a protocol. A force display prompt 1592 is used to display a message to the user such as "PERFECT PRESSURE: WELL DONE" when the force applied by the attachment 628 matches or corresponds to a target force predetermined by the protocol. In this embodiment, the force display prompt 1592 may recite "INCREASE PRESSURE" or the like if the measured force applied by the attachment 628 is lower than the target force predetermined by the protocol. Consequently, if the measured force applied by the attachment 628 is higher than the target force predetermined by the protocol, then the force display prompt 1592 may recite "DECREASE PRESSURE" or the like. The user may then adjust the pressure the user is exerting on the body part to either increase pressure or decrease pressure according to the force display prompt 1592 so that the measured force is equivalent or substantially equivalent to the target force.

[00232] After time period T_2, the user may be prompted to change the attachment 628, arm position 632, 634, 636, and/or grip position 143, 145, 147. These outputs may need to be implemented prior to the start of Step 3 of a protocol. In the Shin Splints Protocol depicted in FIG. 45, the attachment 628 and arm position 632, 634, 636 remain the same, but the grip 143, 145, 147 is adjusted to the base grip. At Step 1528, after time period T_2, the user is prompted to set the arm position to the specified arm position 632, 634, 636. The user may be the person using the device 400 on their own body or on the body of another person.

[00233] At Steps 1548-1552, therefore, steps substantially the same as Steps 1516-1522 are performed. After Step 1534, Steps 3-4 are initiated in substantially the same manner as Steps 1-2. For example, Steps 3 and 4 may be Steps 3 and 4 of the Protocol 1 depicted in FIG. 44 or the Shin Splints Protocol depicted in FIG. 45.

[00234] FIG. 47 is a diagram in accordance with an exemplary embodiment of an application interface 1584. At the top of the interface 1584, a protocol field 1556 is displayed to the user. In this embodiment, the protocol field 1556 is "TECH NECK." The protocol title 1556 also shows the overall time period of the protocol.

[00235] The next portion of the interface 1584 shows step fields 1558-1568 of the protocol that are displayed to the user. In this embodiment, the step fields identify the title of the step and time period of the step. For example, step field 1558 is titled "RIGHT BICEP" (where the treatment will be provided) and the time period of activation is "0:30 MIN."

[00236] The interface 1584 also includes a current step field 1570 that identifies the current step title 1570, a grip title display 1572, and an attachment title display 1574.

[00237] The interface 1584 also includes a time display 1576 and a time remaining display 1578 to show the user how much time has occurred during that step and the time remaining in that step. Finally, the interface 1584 includes a control field 1580 to play, skip back, and skip forward from step to step.

[00238] As described above, FIG. [[46]] 47 shows a touch screen 1582 on a mobile device. The touch screen 1582 displays a graphic depicting a starting point 1586 "A" and an end point 1588 "B" (thereby defining a treatment path) showing the user where to apply the attachment 628 to the specified body part. In FIG. [[46]] 47, the display instructs the user to move the attachment from the lower portion of the right bicep to the upper portion of the right bicep (the treatment path) during the current step. In some embodiments, during a single step, the user may be prompted or shown on the graphical user interface more than one treatment path (or a first treatment path and a second treatment path) on the same body part/muscle or on different body parts/muscles. For example, during the right bicep step, the user may be prompted to first move the device along the path shown in FIG. 47, but,

during the same 30 second step may also be prompted or shown a path that is parallel to the path shown in FIG. 47.

[00239] Although the operations of the method(s) herein are shown and described in a particular order, the order of the operations of each method may be altered so that certain operations may be performed in an inverse order or so that certain operations may be performed, at least in part, concurrently with other operations. In another embodiment, instructions or sub-operations of distinct operations may be implemented in an intermittent and/or alternating manner.

[00240] Unless the context clearly requires otherwise, throughout the description and the claims, the words "comprise," "comprising," and the like are to be construed in an inclusive sense, as opposed to an exclusive or exhaustive sense; that is to say, in the sense of "including, but not limited to." As used herein, the terms "connected," "coupled," or any variant thereof, means any connection or coupling, either direct or indirect, between two or more elements; the coupling of connection between the elements can be physical, logical, or a combination thereof. Additionally, the words "herein," "above," "below," and words of similar import, when used in this application, shall refer to this application as a whole and not to any particular portions of this application. Where the context permits, words in the above Detailed Description of the Preferred Embodiments using the singular or plural number may also include the plural or singular number respectively. The word "or" in reference to a list of two or more items, covers all of the following interpretations of the word: any of the items in the list, all of the items in the list, and any combination of the items in the list.

[00241] Embodiments are envisioned where any of the aspects, features, component or steps herein may be omitted and/or are option. Furthermore, where appropriate any of

these optional aspects, features, component or steps discussed herein in relation to one aspect of the invention may be applied to another aspect of the invention.

[00242] The above-detailed description of embodiments of the disclosure is not intended to be exhaustive or to limit the teachings to the precise form disclosed above. While specific embodiments of and examples for the disclosure are described above for illustrative purposes, various equivalent modifications are possible within the scope of the disclosure, as those skilled in the relevant art will recognize. For example, while processes or blocks are presented in a given order, alternative embodiments may perform routines having steps, or employ systems having blocks, in a different order, and some processes or blocks may be deleted, moved, added, subdivided, combined, and/or modified to provide alternative or subcombinations. Each of these processes or blocks may be implemented in a variety of different ways. Also, while processes or blocks are at times shown as being performed in series, these processes or blocks may instead be performed in parallel, or may be performed, at different times. Further any specific numbers noted herein are only examples: alternative implementations may employ differing values or ranges.

[00243] The above-detailed description of embodiments of the disclosure is not intended to be exhaustive or to limit the teachings to the precise form disclosed above. While specific embodiments of and examples for the disclosure are described above for illustrative purposes, various equivalent modifications are possible within the scope of the disclosure, as those skilled in the relevant art will recognize. Further, any specific numbers noted herein are only examples: alternative implementations may employ differing values, measurements or ranges. It will be appreciated that any dimensions given herein are only exemplary and that none of the dimensions or descriptions are limiting on the present invention.

[00244] The teachings of the disclosure provided herein can be applied to other systems, not necessarily the system described above. The elements and acts of the various embodiments described above can be combined to provide further embodiments.

[00245] Any patents and applications and other references noted above, including any that may be listed in accompanying filing papers, are incorporated herein by reference in their entirety. Aspects of the disclosure can be modified, if necessary, to employ the systems, functions, and concepts of the various references described above to provide yet further embodiments of the disclosure.

[00246] These and other changes can be made to the disclosure in light of the above Detailed Description of the Preferred Embodiments. While the above description describes certain embodiments of the disclosure, and describes the best mode contemplated, no matter how detailed the above appears in text, the teachings can be practiced in many ways. Details of the system may vary considerably in its implementation details, while still being encompassed by the subject matter disclosed herein. As noted above, particular terminology used when describing certain features or aspects of the disclosure should not be taken to imply that the terminology is being redefined herein to be restricted to any specific characteristics, features or aspects of the disclosure with which that terminology is associated. In general, the terms used in the following claims should not be construed to limit the disclosures to the specific embodiments disclosed in the specification unless the above Detailed Description of the Preferred Embodiments section explicitly defines such terms. Accordingly, the actual scope of the disclosure encompasses not only the disclosed embodiments, but also all equivalent ways of practicing or implementing the disclosure under the claims.

[00247] While certain aspects of the disclosure are presented below in certain claim forms, the inventors contemplate the various aspects of the disclosure in any number of claim

forms. For example, while only one aspect of the disclosure is recited as a means-plus-function claim under 35 U.S.C. §112, ¶6, other aspects may likewise be embodied as a means-plus-function claim, or in other forms, such as being embodied in a computer-readable medium. (Any claims intended to be treated under 35 U.S.C. §112, ¶6 will begin with the words "means for"). Accordingly, the applicant reserves the right to add additional claims after filing the application to pursue such additional claim forms for other aspects of the disclosure.

[00248] Accordingly, although exemplary embodiments of the invention have been shown and described, it is to be understood that all the terms used herein are descriptive rather than limiting, and that many changes, modifications, and substitutions may be made by one having ordinary skill in the art without departing from the spirit and scope of the invention.

PERCUSSIVE THERAPY DEVICE

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is a continuation-in-part of U.S. Patent Application No. 16/796,143, filed February 20, 2020, which claims the benefit of U.S. Provisional Application No. 62/844,424, filed May 7, 2019, U.S. Provisional Application No. 62/899,098, filed September 11, 2019 and U.S. Provisional Application No. 62/912,392, filed October 8, 2019. This application is also a continuation-in-part of U.S. Patent Application No. 16/675,772, filed November 6, 2019, which claims the benefit of U.S. Provisional Application No. 62/785,151, filed on December 26, 2018. All applications listed above are incorporated by reference herein in their entireties.

FIELD OF THE INVENTION

[0002] The present invention relates generally to massage devices and more particularly to a percussive therapy device that provides reciprocating motion.

BACKGROUND OF THE INVENTION

[0003] Massage devices often provide ineffective massages that are superficial and do not provide any real benefit. Accordingly, there is a need for an improved massage device. Furthermore, percussive massage devices are often used in an ineffective manner. Accordingly, there is a need for a percussive therapy device to be automated to provide effective massage or recovery.

SUMMARY OF THE PREFERRED EMBODIMENTS

[0004] In accordance with a first aspect of the present invention there is provided a percussive therapy or percussive massage device that includes a housing, an electrical source, a motor positioned in the housing, a switch for activating the motor, and a routine controller configured to initiate a protocol configured to apply at least one output of the percussive therapy device in response to user input, and initiate at least one step of the

protocol in which the percussive therapy device is applied in accordance with the at least one output. It will be appreciated that the terms percussive massage device and percussive therapy device are used interchangeably throughout. The terms are synonymous and generally have the same meaning. Commercial embodiments of the applicant's devices are generally being called percussive therapy devices in the market and therefore this term is used therein.

[0005] In a preferred embodiment, the at least one output comprises one or more of a time period the percussive therapy device is activated (either automatically or by the user turning it on and off via a prompt), a speed of an attachment of the percussive therapy device (either automatically or by the user switching from one speed to another via a prompt), a force applied by the attachment (by the user using the device), an amplitude of the attachment, and a temperature of the attachment.

[0006] In a preferred embodiment, the percussive therapy device includes a force meter configured to monitor and display a force applied by an attachment of the percussive therapy device. The display of the force is provided to a user and configured so that the user may adjust the force to correspond to a target force (which may be defined to include a target force range) to be applied during the at least one step of the protocol.

[0007] In a preferred embodiment, the percussive therapy device includes or is configured to communicated with an application (software application or app) configured to provide a user interface (e.g., on a user mobile device such as a phone or tablet). Preferably, the percussive therapy device includes a touch screen configured to provide or that does provide a user interface. In a preferred embodiment, a user is prompted to use a specified grip of the percussive therapy device (e.g., via the app visually, audibly or haptically, the touch screen on the percussive therapy device visually, audibly or haptically or via another screen or audible prompt).

[0008] In a preferred embodiment, a user is prompted (e.g., visually, audibly or haptically) to apply an attachment of the percussive therapy device to a specified body part. Preferably, the user is prompted (e.g., visually, audibly or haptically) to set an arm position of the percussive therapy device. The percussive therapy generally wherein a user is prompted through at least one of haptic feedback, sound, visual representation (e.g., a picture, graphic, etc.) and text during the at least one step to apply the at least one output. In a preferred embodiment, the user is prompted to move the attachment from a start point to an end point (e.g., visually, audibly or haptically) on a specified body part during the at least one step of the protocol.

[0009] In accordance with another aspect of the present invention there is provided a method of executing a routine for a percussive therapy device. The method includes initiating a protocol configured to apply at least one output of the percussive therapy device in response to user input; and executing at least one step of the protocol in which the percussive therapy device is applied in accordance with the at least one output. In a preferred embodiment, the at least one output includes one or more of a specified time period the percussive therapy device is activated (either automatically or by the user), a speed of an attachment of the percussive therapy device, a force of the attachment, an amplitude of the attachment, a type of attachment, a temperature of the attachment, an arm position of the percussive therapy device, and a grip of the percussive therapy device.

[0010] In a preferred embodiment, the method includes monitoring a force being applied by an attachment of the percussive therapy device; and displaying the force to a user. Preferably, the force is configured to be displayed to the user so that the user may adjust the force to correspond to a target force (which may be a range) predetermined by the at least one step of the protocol. Preferably, the user is prompted to apply one or more of the at least one output during the at least one step of the protocol. In a preferred embodiment,

the user input initiates the protocol via at least one of an application interface and a touch screen. In a preferred embodiment, the protocol is configured to provide therapeutic effect to one or more body parts of a user.

[0011] In accordance with another aspect of the present invention there is provided a method of executing a routine for a percussive therapy device that includes initiating a protocol configured to apply at least one output of the percussive therapy device in response to user input, and initiating at least one step of the protocol in which the percussive therapy device is applied in accordance with the at least one output. The at least one output comprises a time period the percussive therapy device is activated, a speed of an attachment of the percussive therapy device, an amplitude of the attachment, a force applied by the attachment, and a temperature applied by the attachment. The percussive therapy device is configured to provide a prompt to use a specified grip of the percussive therapy device and apply the attachment to a specified body part upon initiating the protocol, monitoring a measured force being applied by the attachment, and displaying the measured force to a user, wherein the measured force is configured to be displayed to the user so that the user may adjust an applied force to correspond to a target force predetermined by the at least one step of the protocol.

[0012] In a preferred embodiment, the user is prompted to set an arm position of the percussive therapy device, and/or the user is prompted to apply the attachment to a new specified body part during the at least one step of the protocol, and/or the user is prompted to affix a new attachment to the percussive therapy device during the at least one step of the protocol, and/or the user is prompted to move the attachment from one predetermined point of a body part to a second predetermined body part during the at least one step of the protocol.

[0013] In accordance with another aspect of the present invention there is provided a percussive therapy device that includes a housing, an electrical source, a motor positioned in the housing, a switch for activating the motor, and a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor. In a preferred embodiment, the housing includes first, second and third handle portions and a head portion that cooperate to define a handle opening. The first handle portion defines a first axis, the second handle portion defines a second axis and the third handle portion defines a third axis and the first, second and third axes cooperate to form a triangle. The motor is positioned in the head portion of the housing, and at least a portion of the push rod assembly extends outside of the head portion. In a preferred embodiment the first handle portion is generally straight, the second handle portion is generally straight, and the third handle portion is generally straight.

[0014] In a preferred embodiment, the percussive therapy device incudes a wireless connection device (e.g., Bluetooth or the like) for connecting to a remote device. Remote means that any device separate from the percussive therapy device. The device does not need to be far away to be remote. Preferably, the electrical source is an optional rechargeable battery, and the percussive massage device further includes an optional wireless charging receiver that is in electrical communication with the battery. Preferably, the percussive therapy device includes and optional touchscreen.

[0015] In a preferred embodiment, the motor is a brushless motor, a motor mount is positioned in the housing, the motor is secured to the motor mount, and the motor mount is secured to the housing. Preferably, the motor mount includes first and second side walls that define a motor mount interior therebetween. The motor is secured to the first side wall and the second side wall is secured to the housing. In a preferred embodiment, the motor includes a motor shaft that extends through a protrusion opening defined in the first side

wall of the motor mount and into the motor mount interior, and at least a portion of the push rod assembly is positioned in the motor mount interior.

[0016] In a preferred embodiment, the percussive therapy device includes an attachment connected to a distal end of the push rod assembly, and a routine controller that is configured to initiate a protocol configured to provide user instructions to apply the attachment to a first body part for a first period of time along a first treatment path and to apply the attachment to the first or a second body part for a second period of a time along a second treatment path. Preferably, the user instructions are provided via a touch screen on the percussive therapy device or on an application on a remote electronic device. In a preferred embodiment, the percussive therapy device includes an attachment connected to a distal end of the push rod assembly, and a routine controller that is configured to initiate a protocol configured to provide user instructions to apply the attachment to a first body part for a first period of time and to apply the attachment to the first or a second body part for a second period of a time. The routine controller is configured to reciprocate the attachment at a first speed during the first period of time and at a second speed during the second period of time.

[0017] In a preferred embodiment, the percussive therapy device includes a routine controller that is configured to initiate a protocol to activate the motor for at least a first period of a time and a subsequent second period of time During the first period of time the routine controller is configured to provide first user instructions to perform a first task comprising at least one of treating a first body part, moving the attachment along a first treatment path, and connecting a first attachment to a distal end of the push rod assembly, and during the second period of time the routine controller is configured to provide second user instructions to perform a second task comprising at least one of treating a second body part, moving the attachment along a second treatment path, and connecting a second

attachment to the distal end of the push rod assembly. The first user instructions may also include instructions regarding grasping one of a first, second or third handle portion, and the second user instructions may also include instructions regarding grasping the same or another of the first, second or third handle portions. Preferably, the first and second user instructions are provided via a touch screen on the percussive therapy device or on an application on a remote electronic device. The first user instructions may also include instructions regarding applying a first target force (based on readings by the force meter), and the second user instructions may also include instructions regarding applying the first target force or a second target force (based on readings by the force meter).

[0018] In a preferred embodiment, the electrical source is a battery that is positioned in the second handle portion, and a wireless charging receiver that is in electrical communication with the battery is positioned in the third handle portion.

[0019] In accordance with another aspect of the present invention there is provided a method of using a percussive massage device that includes obtaining the percussive massage device that includes a housing having first, second and third handle portions that cooperate to define a handle opening, an electrical source, a motor positioned in the housing, a switch for activating the motor, and a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor. The method also includes activating the motor using the switch, grasping the first handle portion, massaging a first body part, alternatively grasping the second handle portion and massaging the first body part, and alternatively grasping the third handle portion and massaging the first body part. In a preferred embodiment, the first handle portion defines a first axis, the second handle portion defines a second axis and the third handle portion defines a third axis, and the first, second and third axes cooperate to form a triangle. In a preferred embodiment, the method

also includes grasping the second handle portion, massaging a second body part, grasping the third handle portion, and massaging a third body part.

[0020] In accordance with another aspect of the present invention there is provided percussive massage device that includes a housing, an electrical source, a motor positioned in the housing, a switch for activating the motor, and a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor. In a preferred embodiment, the housing includes first, second and third handle portions that cooperate to define a handle opening, wherein the first handle portion defines a first axis, the second handle portion defines a second axis and the third handle portion defines a third axis, and wherein the first, second and third axes cooperate to form a triangle.

[0021] Preferably, the first handle portion includes a first handle portion interior edge and defines a first handle portion length and the first handle portion length is long enough that when a user grasps the first handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the first handle portion interior edge. Preferably, the second handle portion includes a second handle portion interior edge and defines a second handle portion length and the second handle portion length is long enough that when a user grasps the second handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the second handle portion interior edge. Preferably, the third handle portion includes a third handle portion interior edge and defines a third handle portion length and the third handle portion length is long enough that when a user grasps the third handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the third handle portion interior edge. In a preferred embodiment, the first handle portion is generally straight, the second handle portion is generally straight and the third handle portion is generally straight. Generally

straight means that the majority of the handle portion is straight, but can include rounded edges or corners where the different handle portions meet or where the handle portions meet the bulge portion or the finger protrusion, etc.

[0022] In a preferred embodiment, the switch includes switch electronics associated therewith, the electrical source is a battery that is housed in the second handle portion and the switch electronics are housed in the first handle portion. Preferably, the motor is configured to rotate a pinion shaft having a pinion gear thereon about a shaft rotation axis. The housing includes a gear member disposed therein that is operatively engaged with the pinion gear and rotates about a gear rotation axis. The push rod assembly is operatively connected to the gear member, and rotational motion of the pinion shaft is converted to reciprocating motion of the push rod assembly through the engagement of the pinion gear and the gear member. The motor includes a motor shaft extending outwardly therefrom and a pinion coupling assembly is positioned between the motor shaft and the pinion shaft. The pinion coupling includes a lower connector that is operatively connected to the motor shaft, an upper connector that is operatively connected to the pinion shaft, and a cross coupling positioned between the lower connector and the upper connector. In a preferred embodiment, the lower connector includes a main body portion that defines a central opening that receives the motor shaft and first and second lower connector arms extending outwardly from the main body portion, the upper connector includes a main body portion that defines a central opening that receives the pinion shaft and first and second upper connector arms extending outwardly from the main body portion, the cross coupling includes radially extending ribs, and the first and second lower connector members and the first and second upper connector members operatively engage the radially extending ribs. Preferably, the lower and upper connectors comprise a plastic and the cross coupling comprises an elastomer.

[0023] In a preferred embodiment, the gear member is disposed in a rotation housing that is rotatable between at least first and second positions. A gearbox housing that houses the gear member is disposed in the rotation housing. The gearbox housing includes a clearance slot having first and second ends defined therein. The push rod assembly extends through the clearance slot, such that when the rotation housing is rotated from the first position to the second position the push rod assembly moves within the clearance slot from adjacent the first end to adjacent the second end.

[0024] In a preferred embodiment, the push rod assembly includes a first rod portion having a proximal end and a distal end and a second rod portion having a proximal end and a distal end. The proximal end of the first rod portion is operatively connected to the motor. An adapter assembly is positioned between the first and second rod portions. The adapter assembly allows the first rod portion to pivot with respect to the second rod portion. Preferably, the adapter assembly includes an adapter member that includes a pocket that receives the distal end of the first rod portion therein. A pivot pin spans the pocket and extends through the distal end of the first rod portion. In a preferred embodiment, the adapter member includes a protrusion that is received in the proximal end of the second rod portion.

[0025] In accordance with another aspect of the present invention there is provided a massage device that includes a housing, an electrical input, a motor, a switch in electrical communication with the electrical input and the motor and configured to selectively provide power from the electrical input to the motor, an actuated output operatively connected to the motor and configured to reciprocate in response to activation of the motor, and a treatment structure operatively connected to a distal end of the actuated output. The actuated output is configured to reciprocate the treatment structure at a frequency of between about 15 Hz and about 100 Hz, and at an amplitude of between

about 0.15 and about 1.0 inches. The combination of amplitude and frequency provides efficient reciprocation of the treatment structure such that the treatment structure provides therapeutically beneficial treatment to a targeted muscle of a user.

[0026] In a preferred embodiment, the actuated output is configured to reciprocate the treatment structure at a frequency of between about 25 Hz and about 48 Hz, and at an amplitude of between about 0.23 and about 0.70 inches. In another preferred embodiment, the actuated output is configured to reciprocate the treatment structure at a frequency of between about 33 Hz and about 42 Hz, and at an amplitude of between about 0.35 and about 0.65 inches.

[0027] In accordance with another aspect of the present invention there is provided a percussive massage device with a force meter that includes a housing, an electrical source, a motor positioned in the housing, a switch for activating the motor, and a controller configured to obtain a voltage of the motor, generate a lookup table correlating voltage to force applied by the percussive massage device, and display a force magnitude corresponding to the obtained voltage using the lookup table. In a preferred embodiment, the lookup table is generated by determining a maximum magnitude of force configured to be applied by the percussive massage device, determining a maximum magnitude of voltage configured to be applied to the percussive massage device from a power source, dividing the maximum magnitude of force into equal force increments, and dividing the maximum magnitude of voltage into equal voltage increments. The number of equal force increments and the number of equal voltage increments is the same. Preferably, the percussive massage device includes a battery pack and a display configured to depict an amount of force applied by the percussive massage device. In a preferred embodiment, the display includes a series of LEDs. In a preferred embodiment, the percussive massage device includes an organic light-emitting diode screen.

[0028] In a preferred embodiment, the motor is a brushless direct-current (BLDC) motor. Preferably, the percussive massage device includes a voltage-sensing resistor electrically coupled to the BLDC motor and the controller.

[0029] In accordance with another aspect of the present invention there is provided a method of displaying force of a percussive massage device that includes obtaining a voltage of a motor of the percussive massage device, generating a lookup table correlating voltage to force applied by the percussive massage device, and displaying a force magnitude corresponding to the obtained voltage using the lookup table. In a preferred embodiment, the lookup table correlating voltage to force is linear. Preferably, the lookup table is generated by determining a maximum magnitude of force configured to be applied by the percussive massage device, determining a maximum magnitude of voltage configured to be applied to the percussive massage device from a power source, dividing the maximum magnitude of force into equal force increments, and dividing the maximum magnitude of voltage into equal voltage increments, wherein the number of equal force increments and the number of equal voltage increments is the same.

[0030] In a preferred embodiment, the method includes obtaining a maximum power source voltage of the percussive massage device, setting the maximum power source voltage to be the maximum magnitude of voltage, dividing the maximum magnitude of voltage into equal voltage increments, wherein the number of equal force increments and the number of equal voltage increments is the same, generating an updated lookup table correlating voltage to force applied by the percussive massage device corresponding to the range of voltages determined by the maximum power source voltage, and displaying a calibrated force magnitude corresponding to the power source voltage using the updated lookup table. In a preferred embodiment, the method includes obtaining at least two power source voltages each corresponding to a magnitude of force, wherein the magnitude of force is

determined from the displayed force magnitude, measuring a magnitude of force exerted by the percussive massage device using an external force meter for each of the at least two power source voltages, and generating an updated lookup table correlating voltage to force applied by the percussive massage device corresponding to the measured magnitudes of force.

[0031] In a preferred embodiment, the method includes displaying a calibrated force magnitude corresponding to the measured magnitudes of force using the updated lookup table. Preferably, the lookup table is updated for each magnitude of force capable of being displayed on the percussive massage device.

[0032] In accordance with another aspect of the present invention there is provided a method of displaying force of a percussive massage device that includes obtaining a current magnitude of a battery pack of the percussive massage device, obtaining a voltage magnitude of the battery pack, determining a power magnitude using the current magnitude and voltage magnitude of the battery pack, generating a lookup table correlating power magnitude to force magnitude applied by the percussive massage device, and displaying a force magnitude corresponding to the obtained power magnitude using the lookup table. In a preferred embodiment, the force magnitude is displayed utilizing a series of LEDs which are activated corresponding with the force magnitude. Preferably, the lookup table is generated by determining a maximum power magnitude to be input into the percussive massage device, determining a minimum power magnitude of the percussive massage device when no load is applied to the percussive massage device, determining a maximum force magnitude configured to be applied to the percussive massage device from a power source, dividing the maximum power magnitude into equal power increments, and dividing the maximum force magnitude into equal force increments. The number of equal power increments and the number of equal force increments is the same. Preferably, the

maximum power magnitude is a maximum effective power magnitude derived from a total effective power.

[0033] In a preferred embodiment, the method includes determining at least two power magnitudes using current and voltage measurements of the battery pack, each corresponding to a magnitude of force. The magnitude of force is determined from the displayed force magnitude. Measuring a magnitude of force exerted by the percussive massage device using an external force meter for each of the at least two power magnitudes, and generating an updated lookup table correlating power to force applied by the percussive massage device corresponding to the measured magnitudes of force. In a preferred embodiment, the method includes displaying a calibrated force magnitude corresponding to the measured magnitudes of force using the updated lookup table. Preferably, the lookup table is updated for each magnitude of force capable of being displayed on the percussive massage device.

[0034] It will be appreciated that the inventive features discussed herein can be used with any type of percussive massage device. For example, the force meter and other features taught herein can be used with the percussive massage device disclosed in U.S. Patent No. 10,357,425 ("the '425 patent"), the entirety of which is incorporated herein by reference.

[0035] In an embodiment, a non-transitory computer-readable medium has stored thereon software instructions that, when executed by a processor, cause the processor to obtain a voltage of a motor of the percussive massage device, generate a lookup table correlating voltage to force applied by the percussive massage device, and display a force magnitude corresponding to the obtained voltage using the lookup table.

[0036] In an embodiment, the lookup table is generated by determining a maximum magnitude of force configured to be applied by the percussive massage device, determining a maximum magnitude of voltage configured to be applied to the percussive

massage device from a power source, dividing the maximum magnitude of force into equal force increments, and dividing the maximum magnitude of voltage into equal voltage increments. In an embodiment, the number of equal force increments and the number of equal voltage increments is the same.

[0037] In another embodiment, a non-transitory computer-readable medium has stored thereon software instructions that, when executed by a processor, cause the processor to obtain a maximum power source voltage of the percussive massage device, set the maximum power source voltage to be the maximum magnitude of voltage, and divide the maximum magnitude of voltage into equal voltage increments, generate an updated lookup table correlating voltage to force applied by the percussive massage device corresponding to the range of voltages determined by the maximum power source voltage, and display a calibrated force magnitude corresponding to the power source voltage using the updated lookup table.

[0038] In another embodiment, a non-transitory computer-readable medium has stored thereon software instructions that, when executed by a processor, cause the processor to obtain at least two power source voltages each corresponding to a magnitude of force, wherein the magnitude of force is determined from the displayed force magnitude, measure a magnitude of force exerted by the percussive massage device using an external force meter for each of the at least two power source voltages; and generate an updated lookup table correlating voltage to force applied by the percussive massage device corresponding to the measured magnitudes of force.

[0039] In an embodiment, a non-transitory computer-readable medium has stored thereon software instructions that, when executed by a processor, cause the processor to obtain a current magnitude of a battery pack of the percussive massage device, obtain a voltage magnitude of the battery pack, determine a power magnitude using the current magnitude

and voltage magnitude of the battery pack, generate a lookup table correlating power magnitude to force magnitude applied by the percussive massage device, and display a force magnitude corresponding to the obtained power magnitude using the lookup table.

[0040] In an embodiment, a non-transitory computer-readable medium has stored thereon software instructions that, when executed by a processor, cause the processor to determine at least two power magnitudes using current and voltage measurements of the battery pack, each corresponding to a magnitude of force, wherein the magnitude of force is determined from the displayed force magnitude, measure a magnitude of force exerted by the percussive massage device using an external force meter for each of the at least two power magnitudes, and generate an updated lookup table correlating power to force applied by the percussive massage device corresponding to the measured magnitudes of force.

[0041] In a preferred embodiment, the motor, in one embodiment, converts power from the power source into motion. In some embodiments, the motor is an electric motor. The electric motor may be any type of electric motor known in the art, including, but not limited to, a brushed motor, a brushless motor, a direct current (DC) motor, an alternating current (AC) motor, a mechanical-commutator motor, an electronic commutator motor, or an externally commutated motor.

[0042] In some embodiments, the actuated output or output shaft reciprocates at a rate of approximately 65 Hz. The actuated output, in some embodiments, reciprocates at a rate over 50 Hz. The reciprocating treatment device, in some embodiments, provides reciprocation at a rate ranging between 50 Hz and 80 Hz. In some embodiments, the actuated output has a maximum articulation rate of between 50 Hz and 80 Hz. In another embodiment, the actuated output has an articulation rate of between 30 Hz and 80 Hz. In certain embodiments, the actuated output has an articulation rate of approximately 37 Hz. In one embodiment, the actuated output has an articulation rate of approximately 60 Hz. In

a preferred embodiment, the actuated output articulates or reciprocates at a frequency of between about 15 Hz and about 100 Hz. In a more preferred embodiment, the actuated output articulates or reciprocates at a frequency of between about 25 Hz and about 48 Hz. In the most preferred embodiment, the actuated output articulates or reciprocates at a frequency of between about 33 Hz and about 42 Hz. Any chosen range within the specified ranges is within the scope of the present invention.

[0043] The actuated output may move through a predetermined range of reciprocation. For example, the actuated output may be configured to have an amplitude of one half inch. In another embodiment, the actuated output may be configured to have an amplitude of one quarter inch. As will be appreciated by one skilled in the art, the actuated output may be configured to have any amplitude deemed therapeutically beneficial.

[0044] In some embodiments, the actuated output may be adjustable through a variable range of reciprocation. For example, the reciprocating treatment device may include an input to adjust the reciprocation amplitude from one quarter of an inch through a range of up to one inch. In a preferred embodiment, the actuated output moves through an amplitude of between about 0.15 inches and about 1.0 inches. In a more preferred embodiment, the actuated output articulates or reciprocates at a frequency of between about 0.23 inches and about 0.70 inches. In the most preferred embodiment, the actuated output articulates or reciprocates at a frequency of between about 0.35 inches and about 0.65 inches. Any chosen range within the specified ranges is within the scope of the present invention.

[0045] It will be appreciated that the device operates most effectively within the combined frequency and amplitude ranges. When developing the invention, the inventor determined that if the frequency and amplitude are above the ranges set forth above the device can cause pain and below the ranges the device is ineffective and does not provide effective

therapeutic relief or massage. Only when the device operates within the disclosed combination of frequency and amplitude ranges does it provide efficient and therapeutically beneficial treatment to the muscles targeted by the device.

[0046] In certain embodiments, the reciprocating treatment device includes one or more components to regulate the articulation rate of the actuated output in response to varying levels of power provided at the power input. For example, the reciprocating treatment device may include a voltage regulator (not shown) to provide a substantially constant voltage to the motor over a range of input voltages. In another embodiment, the current provided to the motor may be regulated. In some embodiments, operation of the reciprocating treatment device may be restricted in response to an input voltage being below a preset value.

[0047] In a preferred embodiment, the percussive massage device includes a brushless motor. It will be appreciated that the brushless motor does not include any gears and is quieter than geared motors.

[0048] The device includes a push rod or shaft that is connected directly to the motor by a pin. In a preferred embodiment, the push rod is L-shaped or includes an arc shape. Preferably, the point where the push rod is connected to the pin is offset from reciprocating path that the distal end 40 of the push rod (and the massage attachment) travel. This capability is provided by the arc or L-shape. It should be appreciated that the push rod is designed such that it can transmit the force diagonally instead of vertically so the motor can be located at or near the middle of the device, otherwise a protrusion would be necessary to keep the shaft in the center with the motor offset therefrom (and positioned in the protrusion). The arc also allows the push rod to have a close clearance with the motor and allows the outer housing to be smaller than similar prior art devices, therefore making the device lower profile. Preferably two bearings are included at the proximal end of the

push rod where it connects to the motor to counteract the diagonal forces and preventing the push rod for moving and touching the motor.

[0049] In a preferred embodiment, the device includes a touch screen for stopping, starting, activating, etc. The touch screen can also include other functions. Preferably, the device includes a thumbwheel or rolling button positioned near the touch screen/on off button to allow the user to scroll or navigate through the different functions. Preferably, the device also includes variable amplitude or stroke. For example, the stroke can change or be changed between about 8-16 mm.

[0050] In a preferred embodiment, the device is associated with and can be operated by an app or software that runs on a mobile device such as a phone, watch or tablet (or any computer). The app can connect to the device via bluetooth or other connection protocol. The app can have any or all of the following functions. Furthermore, any of the functions discussed herein can be added to the touch screen/scroll wheel or button(s) capability directly on the device. If the user walks or is located too far away from the device, the device will not work or activate. The device can be turned on an off using the app as well as the touch screen or button on the device. The app can control the variable speeds (e.g., anywhere between 1750-3000 RPM). A timer so the device stops after a predetermined period of time. The app can also include different treatment protocols associated therewith. This will allow the user to choose a protocol or area of the body they want to work on. When the start of the protocol is selected, the device will run through a routine. For example, the device may run at a first RPM for a first period of time and then run at a second RPM for a second period of time and/or at a first amplitude for a first period of time and then run at a second amplitude for a second period of time. The routines can also include prompts (e.g., haptic feedback) for letting the user to know to move to a new body part. These routines or treatments can be related to recovery, blood flow increase,

performance, etc. and can each include a preprogrammed routine. The routines can also prompt or instruct the user to switch treatment structures (AmpBITS) or positions of the arm or rotation head. The prompts can include sounds, haptic feedback (e.g., vibration of the device or mobile device), textual instructions on the app or touch screen, etc. For example, the app may instruct the user to start with the ball treatment structure with the arm in position two. Then the user hits start and the device runs at a first frequency for a predetermined amount of time. The app or device then prompts the user to begin the next step in the routine and instructs the user to change to the cone treatment structure and to place the arm in position 1. The user hits start again and the device runs at a second frequency for a predetermined amount of time.

[0051] In a preferred embodiment, the app includes near field communication ("NFC") capability or other capability that allows the user's mobile device with the app thereon to scan an identifier, such as a barcode or a QR code that prompts the app to display certain information, such as the routines discussed above. In use, a user will be able to tap or place their mobile device near an NFC tag (or scan a QR code) on a piece of gym equipment and the app will show instructions, content or a lesson that is customized for using the device with that piece of equipment. For example, on a treadmill, the user scans the QR code or NFC tag and the app recognizes that the user is about to use the treadmill. The app can then provide instructions for how to use the device in conjunction with the treadmill and can initiate a preprogrammed routine for using the treadmill. For example, the user can be instructed to start with the left quad. Then, after a predetermined period of time (e.g., 15 seconds), the device, or the mobile device that includes the app software thereon, vibrates or provides other haptic feedback. The user then switches to their left quad and after a predetermined period of time the device again vibrates. The user can then begin using the treadmill. Any routine is within the scope of the present invention. In an embodiment, the

device and/or app (i.e., the mobile device containing the app) can also communicate (via bluetooth or the like) with the gym equipment (e.g., treadmill).

[0052] The device can also include a torque or force meter to let the user know how much force they are applying. The display associated with the force meter shows how much force is being applied on the muscle. The force meter allows for a more precise and effective treatment. The device includes a torque measuring sensor and display. Depending on the muscle the device is being used on and the benefit the user is looking to get (prepare, perform, recover) the force that should be applied varies. By having a torque sensor, the user is able to get a more precise and personalized treatment. The app and the touchscreen can provide the force information to the user. The force meter can be integrated with the routines and the user can be provided feedback with whether they are applying too much or too little pressure. The device can also include a thermal sensor or thermometer that can determine the temperature of the user's muscle and to provide feedback to the device and/or app. The haptic feedback can also provide feedback for too much pressure or force.

[0053] In a preferred embodiment, the percussive massage device includes a motor mount for mounting the brushless motor within the housing and for distributing forces from the motor as it operates to the housing. The motor is secured to a first side of the motor mount and the second or opposing side of the motor mount is secured to the housing. The motor mount includes a plurality of arms that space the motor from the housing and define a reciprocation space in which the push rod and associated components (counterweight, etc.) reciprocate. Threaded fasteners connect the motor mount to the housing. In a preferred embodiment, dampening members or feet are received on the shaft of the threaded fastener. The dampening members each include an annular slot defined therein. The annular slots receive housing. This prevents direct contact of the threaded fasteners with

the housing and reduces sound from vibrations. The threaded fasteners are received in openings in tabs at the end of the arms.

[0054] In a preferred embodiment, the motor is housed in a motor housing that is rotatable within the main housing. The motor housing is basically the equivalent of the gear box housing in related embodiments. In a preferred embodiment, there are opposite openings in the outside of the motor housing that expose the motor on one side and the motor mount on the other. The openings provide ventilation for the motor and allow the motor mount to connect directly to the main housing.

[0055] In a preferred embodiment, the device includes a touch screen as well as button(s) for operating the device. For example, the device can include a touch screen, a center button for turning the device on and off and a ring/rocker button that provides the ability to scroll left and right (e.g., to the preset treatments discussed herein) and up and down (e.g., to control the speed or frequency). The screen can also be a non-touch screen.

[0056] In another preferred embodiment, any of the devices taught herein can include the ability to vary the amplitude, thus providing a longer or shorter stroke depending on the application or needs of the user. The amplitude variability can also be part of the routines or presets discussed herein. For example, the device can include a mechanical switch that allows the eccentricity of the connector to be modified (e.g., between 4mm and 8mm). The mechanism can include a push button and a slider. The pin structure has a spring that lets it fall back into the locked position.

[0057] In a preferred embodiment, the device includes a touch screen for stopping, starting, activating, etc. The touch screen can also include other functions. Preferably, the device includes a thumbwheel or rolling button positioned near the touch screen/on off button to allow the user to scroll or navigate through the different functions.

BRIEF DESCRIPTION OF THE DRAWINGS

[0058] The invention may be more readily understood by referring to the accompanying drawings in which:

[0059] FIG. 1 is a side elevational view of a percussive massage device in accordance with a preferred embodiment of the present invention;

[0060] FIG. 1A is another side elevational view of the percussive massage device of FIG. 1;

[0061] FIG. 2 is a perspective view of the percussive massage device;

[0062] FIG. 3 is a side elevational view of the percussive massage device showing a user grasping the first handle portion;

[0063] FIG. 4 is a side elevational view of the percussive massage device showing a user grasping the third handle portion;

[0064] FIG. 5 is a side elevational view of the percussive massage device showing a user grasping the second handle portion;

[0065] FIG. 6 is an exploded perspective view of the percussive massage device;

[0066] FIG. 7 is an exploded perspective view of a portion of the drive train components of the percussive massage device;

[0067] FIG. 8 is another an exploded perspective view of a portion of the percussive massage device;

[0068] FIG. 9 is a perspective view of the drive train components of the percussive massage device;

[0069] FIG. 10 is a perspective view of the push rod assembly of the percussive massage device;

[0070] FIG. 11 is a perspective view of another percussive massage device;

[0071] FIG. 12 is a side elevational view of the percussive massage device of FIG. 11;

[0072] FIG. 13 is a side elevational view of the percussive massage device showing some internal components in hidden lines;

[0073] FIG. 14 is an exploded perspective view of some of the internal components of the percussive massage device;

[0074] FIG. 15 is a perspective view of another percussive massage device; and

[0075] FIG. 16 is a side elevational view of the percussive massage device of FIG. 15.

[0076] FIG. 17 is a block diagram showing interconnected components of a percussive massage device with a force meter;

[0077] FIG. 18 is a circuit diagram of a microcontroller unit with pin outputs in accordance with one embodiment;

[0078] FIG. 19 is a circuit diagram used for battery voltage detection in accordance with one embodiment;

[0079] FIG. 20 is a circuit diagram for detection and measurement of voltage of the motor of the percussive massage device in accordance with one embodiment;

[0080] FIG. 21 is a flow diagram showing a method of detecting force applied by the percussive massage device in accordance with a preferred embodiment;

[0081] FIG. 22 is a flow diagram showing a method of generating a lookup table correlating voltage to force in accordance with a preferred embodiment;

[0082] FIG. 23 is a graph plotting a lookup table for use by a method of detecting force applied by the percussive massage device that was generated by correlating voltage to force in accordance with a preferred embodiment;

[0083] FIG. 24 is a flow diagram showing a method of calibrating a lookup table according to a preferred embodiment;

[0084] FIG. 25 is a graph plotting a lookup table generated by a method of detecting force applied by the percussive massage device against a lookup table calibrated by using a method of calibrating a lookup table according to a preferred embodiment;

[0085] FIG. 26 is a flow diagram showing a method of calibrating a lookup table;

[0086] FIG. 27 is a graph plotting a lookup table after being calibrated in accordance with a preferred embodiment;

[0087] FIG. 28 is a flow diagram showing a method of detecting force applied by a percussive massage device in accordance with a preferred embodiment;

[0088] FIG. 29 is a flow diagram showing a method of generating a lookup table correlating power to force in accordance with a preferred embodiment;

[0089] FIG. 30 is a graph plotting a lookup table for use by a method of detecting force of that was generated by correlating power to force in accordance with a preferred embodiment;

[0090] FIG. 31 is a flow diagram showing a method of calibrating a lookup table in accordance with a preferred embodiment;

[0091] FIG. 32 is a graph plotting a lookup table after being calibrated in accordance with a preferred embodiment;

[0092] FIG. 33 is a perspective view of a percussive massage device in accordance with a preferred embodiment of the present invention;

[0093] FIG. 34 is a perspective view of the percussive massage device of FIG. 13 with a portion of the housing removed;

[0094] FIG. 35 is a perspective view of the motor;

[0095] FIG. 36 is a side elevational view of the percussive massage device in accordance with a preferred embodiment of the present invention;

[0096] FIG. 37 is another side elevational view of the percussive massage device;

[0097] FIG. 38 is a side elevational view of the percussive massage device showing a user grasping the first handle portion;

[0098] FIG. 39 is a side elevational view of the percussive massage device showing a user grasping the third handle portion;

[0099] FIG. 40 is a side elevational view of the percussive massage device showing a user grasping the second handle portion;

[00100] FIG. 41 is a perspective view of the percussive massage device of FIG. 18 with a portion of the housing removed;

[00101] FIGS. 42A and 42B are cross sectional views of the head portion and motor;

[00102] FIG. 43 is an exploded view of some of the internal components of percussive massage device of FIG. 33;

[00103] FIG. 43A is an exploded view of the motor and motor mount;

[00104] FIG. 44 is a chart showing steps of Protocol 1 in accordance with a method of performing a routine for a percussive massage device;

[00105] FIG. 45 is a chart showing steps of a "Shin Splints" protocol in accordance with a method of performing a routine for a percussive massage device;

[00106] FIGS. 46A, 46B, 46C, and 46D are methods of performing a routine for a percussive massage device;

[00107] FIG. 47 is a front view of a graphical user interface showing a "Tech Neck" protocol; and

[00108] FIG. 48 is a front view of a graphical user interface showing a "Right Bicep" protocol.

[00109] Like numerals refer to like parts throughout the several views of the drawings.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[00110] The following description and drawings are illustrative and are not to be construed as limiting. Numerous specific details are described to provide a thorough understanding of the disclosure. However, in certain instances, well-known or conventional details are not described in order to avoid obscuring the description. References to one or another embodiment in the present disclosure can be, but not necessarily are, references to the same embodiment; and, such references mean at least one of the embodiments.

[00111] Reference in this specification to "one embodiment" or "an embodiment" means that a particular feature, structure, or characteristic described in connection with the embodiment is included in at least one embodiment of the disclosure. Appearances of the phrase "in one embodiment" in various places in the specification do not necessarily refer to the same embodiment, nor are separate or alternative embodiments mutually exclusive of other embodiments. Moreover, various features are described which may be exhibited by some embodiments and not by others. Similarly, various requirements are described which may be requirements for some embodiments but not other embodiments.

[00112] The terms used in this specification generally have their ordinary meanings in the art, within the context of the disclosure, and in the specific context where each term is used. Certain terms that are used to describe the disclosure are discussed below, or elsewhere in the specification, to provide additional guidance to the practitioner regarding the description of the disclosure. For convenience, certain terms may be highlighted, for example using italics and/or quotation marks: The use of highlighting has no influence on the scope and meaning of a term; the scope and meaning of a term is the same, in the same context, whether or not it is highlighted. It will be appreciated that the same thing can be said in more than one way.

[00113] Consequently, alternative language and synonyms may be used for any one or more of the terms discussed herein. Nor is any special significance to be placed upon whether or

not a term is elaborated or discussed herein. Synonyms for certain terms are provided. A recital of one or more synonyms does not exclude the use of other synonyms. The use of examples anywhere in this specification including examples of any terms discussed herein is illustrative only, and is not intended to further limit the scope and meaning of the disclosure or of any exemplified term. Likewise, the disclosure is not limited to various embodiments given in this specification.

[00114] Without intent to further limit the scope of the disclosure, examples of instruments, apparatus, methods and their related results according to the embodiments of the present disclosure are given below. Note that titles or subtitles may be used in the examples for convenience of a reader, which in no way should limit the scope of the disclosure. Unless otherwise defined, all technical and scientific terms used herein have the same meaning as commonly understood by one of ordinary skill in the art to which this disclosure pertains. In the case of conflict, the present document, including definitions, will control.

[00115] It will be appreciated that terms such as "front," "back," "top," "bottom," "side," "short," "long," "up," "down," and "below" used herein are merely for ease of description and refer to the orientation of the components as shown in the figures. It should be understood that any orientation of the components described herein is within the scope of the present invention.

[00116] While many embodiments are described herein, at least some of the described embodiments provide an apparatus, system, and method for a reciprocating treatment device.

[00117] FIGS. 1-10 show an embodiment of a percussive massage device 212 that includes a rechargeable battery (and replaceable or removable battery) 114. Device 212 is referred to commercially as the G3PRO. As shown in FIGS. 1-1A, in a preferred embodiment, the percussive massage device 212 includes three handle portions (referred to herein as first

handle portion 143, second handle portion 145 and third handle portion 147) that cooperate to define a central or handle opening 149. All of the handle portions are long enough that they are configured such that a person can grasp that particular handle portion to utilize the device. The ability to grasp the different handle portions allows a person (when using the device on their own body) to use the device on different body parts and from different angles, thus providing the ability to reach body parts, such as the back, that might not be possible without the three handle portions.

[00118] As shown in FIG. 1, the first handle portion 143 defines a first handle portion axis A1, the second handle portion 145 defines a second handle portion axis A2 and the third handle portion 147 defines a third handle portion axis A3 that cooperate to form a triangle. In a preferred embodiment, the battery 114 is housed in the second handle portion 145 and the motor 106 is housed in the third handle portion 147.

[00119] FIGS. 3-5 show a user's hand grasping the various handle portions. The length of each of the first, second and third handle portions is long enough so that a person with a large hand can comfortably grasp each handle portion with at least three to four fingers extending through the handle opening, as shown in FIGS. 3-5. In a preferred embodiment, the first handle portion 143 has an interior edge 143a, the second handle portion 145 has an interior edge 145a and the third handle portion 147 has an interior edge 147a, which all cooperate to at least partially define the handle opening 149. As shown in FIG. 1, in a preferred embodiment, the first handle portion 143 includes a finger protrusion 151 that includes a finger surface or fourth interior surface 151a that extends between the interior edge 143a of the first handle portion and the interior edge 147a of the third handle portion 147 and at least partially defines the handle opening 149. As shown in FIG. 3, in use, a user can place their index finger against the finger surface 151a. The finger protrusion and surface provide a feedback point or support surface such that when a user places their

index finger against the surface it helps the user with control and comfort of using the[[ ]] device. In a preferred embodiment, at least a portion of the finger surface 151a is straight, as shown in FIG. 1 (as opposed to the other "corners" of the handle opening 149 being rounded).

[00120] FIG. 1A shows the preferred dimensions of the interior surfaces of the handle opening 149. It will be appreciated that the interior surfaces comprise a series of flat and curved surfaces. H1 is the dimension of the interior edge 143a of the first handle portion 143 (the first handle portion length). H2 is the dimension of the interior edge 145a of the second handle portion 145 (the second handle portion length). H3 is the dimension of the interior edge 147a of the third handle portion 147 (the third handle portion length). H4 is the dimension of the finger surface 151a (the finger protrusion length). R1 is the dimension of the radius between interior edges 143a and 145a and R2 is the dimension of the radius between interior edges 145a and 147a. In a preferred embodiment, H1 is about 94 mm, H2 is about 66 mm, H3 is about 96 mm, H4 is about 12 mm, R1 is about 6.5 mm and R2 is about 6.5 mm, which provides an arc length of about 10.2 mm. In the context herein, "about" is within 5 mm. In a preferred embodiment, the length of the interior edge of the handle opening is about 289 mm. The length of the interior edge of the handle opening can be between about 260 mm and about 320 mm, with any combination of H1, H2, H3, H4, R1 and R2. It will be appreciated that these dimensions are optimized so that a 95th percentile male can grip any of the three handle portions with at least three and preferably four fingers extending through the handle opening to utilize the device. It will be appreciated that any or all of surfaces R1 and R2 can be considered a part of any of the three adjacent handle portions. As shown in FIGS. 1 and 1A, with the finger surface 151a being straight, the first handle portion interior surface, second handle portion interior

surface, third handle portion interior surface and finger surface cooperate to define a quadrilateral with radii or rounded edges between each of the straight surfaces.

[00121] Device 212 also includes multiple speed settings (preferably 1500 and 2400 RPM, but can be any speed or frequency taught herein). Furthermore, those of ordinary skill in the art will appreciate that although the RPM is listed as a specific number that, due to manufacturing tolerances, the RPM may oscillate during use. For example, at the 2400 RPM setting the RPM may actually oscillate between 2260 and 2640.

[00122] FIGS. 6-10 show some of the interior and exterior components that are included in the treatment devices 212 (208 and 210) shown in FIGS. 1-5 and 11-16. As shown in FIG. 6, the percussive massage device 212 includes a housing 101 that is comprised of first and second housing halves 103. Outer covers 213 and top cover 215 are received on and connected to the first and second housing halves 103, via tabs 105 or other mechanism or attachment method (e.g., threaded fasteners, clips, adhesive, sonic welding, etc.). The percussive massage device 212 also includes a tambour door 217, battery 114, inner suspension rings 219 and rotation housing 44 (with first and second rotation housing halves 44a and 44b) that houses the gearbox 404.

[00123] As shown in FIG. 7, the device includes a pinion coupling assembly 216 that is disposed between the motor and the shaft gear 117 (located on the shaft or pinion shaft 116). The pinion coupling assembly 216 is used to couple the motor to the gearbox so that the torque is fully transmitted, such that there is no radial movement and the vibrations and noise are minimized. The pinion coupling assembly 216 preferably includes three separate components, a lower connector 218, a cross coupling 220 and an upper connector 222. In a preferred embodiment, the lower connector 218 includes a main body portion 218a that defines a central opening 218b that receives the motor shaft 248 and first and second lower connector arms 218c extending outwardly from the main body portion 218a. The upper

connector 222 includes a main body portion 222a that defines a central opening 222b that receives the pinion shaft 116 and first and second upper connector arms 222c extending outwardly from the main body portion 222a. Preferably, the cross coupling 220 includes radially extending ribs 220a that define channels 220b therebetween. The first and second lower connector arms 218c and the first and second upper connector arms 222c are sized and shaped to be received in the channels 220b to operatively engage the radially extending ribs. In use, the motor shaft 248 rotates the pinion coupling assembly, which rotates the pinion shaft 116. These components work together to reduce noise and vibration. In a preferred embodiment, the lower and upper connectors are made of plastic and the cross coupling is made of an elastomer. In a preferred embodiment, the cross coupling 220 is made of rubber that includes a hardness where vibrations generated by the motor are isolated while keeping the strength and transmitting the torque efficiently (without significant energy dissipation). However, the materials are not a limitation on the present invention.

[00124] In a preferred embodiment, the pinion shaft 116 is received in and extends through bearings 224 and 225. Preferably, bearing 224 includes ball bearings (and provides radial support) and bearing 225 includes needle bearings (and provides radial support, but can withstand higher temperatures). The pinion coupling assembly 216 is housed in motor mount 250, which is connected to the motor 106 and through which the motor shaft 248 extends. The motor mount 250 is connected to the gear box mount 252, as shown in FIG. 9.

[00125] As shown in FIGS. 7-9, the gearbox 404, in one embodiment, includes the gear member 304 and the reciprocator or push rod ~~230~~/310. Preferably, the gear member 304 includes a shaft 246 extending therefrom to which the reciprocator 310 is connected. The gearbox 404 may provide mounting points for the gear member 304 and the reciprocator

310. The gearbox 404 may restrict the motion of the gear member 304 and the reciprocator to certain directions or rotational axes. The gearbox 404 may be mounted to the housing 101. In some embodiments, the gearbox 404 is separated from the housing 101 by the one or more compliant dampening blocks.

[00126] As shown in FIGS. 6 and 8, in a preferred embodiment, to prevent the gearbox from transmitting vibrations to the housing a rubber cover can be provided. Further inner suspension rings 219 isolate vibration of the gearbox from handle and the treatment structures. Preferably, the rings 219 are made of an elastomer and act as a cushion to dampen vibrations between the rotation housing and the housing 101. In a preferred embodiment, the inner suspension rings 219 surround the outer radial surface of the main body portion 62 (see seat surface 523 in FIG. 8).

[00127] In one embodiment, rotation of the actuated output or shaft 108 may be selectively locked and unlocked by a user. For example, the user may unlock rotation of the shaft 108, rotate the actuated output 108 to a desired position relative to the housing 101, lock rotation of the actuated output 108, and operate the reciprocating treatment device 100. FIG. 8 shows the components that allow rotation of the rotation housing 44 together with the push rod assembly 108 and related components. Button 515 includes radially extending teeth 515a and is biased outwardly by spring 519, which surrounds and is seated on spacer 518 (which is preferably made of foam). Spring 519 is seated against dampening members 520 and 517, which are preferably made of rubber to dampen any vibrations of the spring 519. The assembly also includes a gear box cover 525 and dampening ring 521. Button 515 is outwardly biased by spring 519 to a position where teeth 515a are engaged with teeth 516a, which are defined hoop 516, which is connected to housing 101. Preferably hoop 516 includes inner and outer plastic rings 516b and 516c that sandwich a rubber ring 516d therebetween to help dampen vibrations and reduce noise. The button 515 is movable

between a first position where teeth 515a are engaged with teeth 516a and a second position where teeth 515 are not engaged with teeth 516a. When the button 515 is in the first position, the rotation assembly 47 cannot rotate. When the button is pushed to the second position, the teeth 515a disengage from teeth 516a, thereby allowing the entire rotation assembly 47 to rotate. The rotation housing 44 includes a main body portion 62 disposed in the housing and an arm portion 64 extending through the rotation space 60 and outside the housing. The arm portion 64 rotates within the rotation space 60 defined in the housing 101. As shown in FIG. 2, in a preferred embodiment, the device 212 includes a tambour door 217 that unfolds within the rotation space 60 as the rotation assembly is moved from the position shown in FIG. 1 to the position shown in FIG. 2. The tambour door 217 covers slot 214. As shown in FIG. 2, an arm cover 524 covers the arm portion 64 of the rotation housing 44.

[00128] As shown in FIG. 9, the gearbox housing 404 includes a clearance slot 214 defined therein for the push rod assembly 108. The slot 214 is provided so the push rod assembly 108 can move freely and allow the rotation housing 44 to articulate. The clearance slot 214 has first and second ends 214a and 214b. As shown in FIG. 9, the push rod assembly 108 extends through the clearance slot 214. it will be appreciated that when the rotation housing 44 is rotated from a first position to a second position the push rod assembly 108 moves within the clearance slot 214 from the first end to the second end thereof.

[00129] As shown in FIGS. 8-10, in a preferred embodiment, the pushrod assembly or output shaft 108 includes two halves or rods with an adapter member 226 therebetween to also help reduce noise and vibration. The adapter member 226 isolates the vibrations generated in the gearbox and prevents them from being transmitted down the shaft to the treatment structure. The adapter member 226 can include anti-rotation tabs to protect the push rod from user applied torque during use. The first rod portion 230 of the output shaft 108 (push

rod or reciprocator 310) includes an opening 232 on an end thereof that receives a pivot pin 234. The connection between the first rod portion 230 and the adapter member 226 includes a bushing 227 with the pin 234 and elastomeric material to dampen vibrations. The end of first rod portion 230 that includes opening 232 is received in a pocket 229 in adapter member 226. The pin 234 extends through openings in the side walls of adapter member 226, through bushing 227 and through opening 232, to secure first rod portion 230 to adapter member 226. Adapter member 226 includes a protrusion 231 extending therefrom that is received in an opening 233 in an end of the second rod portion 236, to connect the adapter member 226 to the second rod portion 236. In another embodiment, the end of the second rod portion 236 can be received in an opening in the adapter member 226. In use, the size of the top opening of pocket 229 allows the first rod portion to move side to side as the opening 232 pivots on pin 234 and first rod portion 230 reciprocates. This translates to linear reciprocation of second rod portion 236. Because the bushing 227 comprises at least some elastomeric material, vibrations are dampened (and noise reduced) as the push rod assembly 108 reciprocates.

[00130] Ring 526 is seated on and surrounds the bottom portion of the arm portion 64 (see seat 64a in FIG. 8) to help hold the first and second housing halves 44a and 44b together. Washer or guide member 527 is received in the rotation housing 44 and provides stability and a path for the reciprocating push rod assembly or output shaft 108.

[00131] As shown in FIG. 9, in this embodiment, the first rod portion 230 or push rod assembly 108 extends through clearance slot 214. It will be appreciated that the term pushrod assembly includes any of the embodiments described herein and can include a shaft with an adapter member allowing pivoting between two halves or can include a single shaft that does not include any pivoting.

[00132] As shown in FIGS. 9-10, in a preferred embodiment, the male connector 110 includes an alignment tab 497 above each ball that mates with a slot in the female opening. These tabs 497 help with proper alignment with the treatment structure. See U.S. Patent App. No. 2019/0017528, the entirety of which is incorporated herein by reference.

[00133] FIGS. 11-16 show embodiments of percussive massage devices similar to percussive massage device 212 above, but without a rotation assembly. Device 208, shown in FIGS. 11-14 is referred to commercially as the G3. Device 210, shown in FIGS. 15-16 is referred to commercially as the LIV. As is shown in FIG. 13, in a preferred embodiment, switch 104 includes switch electronics 575 associated therewith. The switch electronics 575 may include a printed circuit board (PCB) and other components to allow the switch 104 to activate the motor 106 and to change the speed of the motor, turn the device on and off, among other tasks. As shown in FIG. 13, in a preferred embodiment, the motor 106 is housed in the third handle portion 147, the battery 114 is housed in the second handle portion 145 and the switch electronics 575 are housed in the first handle portion 143. This configuration also applies to devices 210 and 212. FIG. 14 shows cushion members 577 that surround the gearbox 404 and help dampen and reduce noise and vibration generated by the components in the gearbox. Cushion members 577 are similar to inner suspension rings 219 in device 212. However, cushion members 577 are thicker and do not need to rotate due to the exclusion of the rotation housing in devices 208 and 210. Cushion members 577 include cutouts or channels 579 therein to allow clearance of components such as the push rod assembly and pinion shaft.

[00134] FIGS. 17-35 show embodiments in accordance with a percussion massage device with a force meter. FIG. 17 is a block diagram showing interconnected components of a percussive therapy device with a force meter 400 (see also FIG. 33). In an embodiment, the percussive therapy device with force meter 400 includes a microcontroller unit 701, a

battery pack management unit 702, an NTC sensor 703, a power charging management unit 704, a wireless charging management unit 705, a wireless charging receiving system 706, a voltage management unit 707 (5V 3.3V Voltage Management in drawings), battery charging inputs 708 (20V 2.25A Charging Inputs in drawings), a display 709 (Force/Battery/Speed Display in drawings), a wireless control unit 710 (Bluetooth Control in drawings), an OLED screen 711, an OLED screen control system 712, a motor 713, a motor drive system 714, a PWM speed setup unit 715, an over-current protection unit 716, and a power switch unit 717 (Power On/Off OLED Screen SW in drawings). In the embodiment shown in accordance with FIG. 17, each block in the diagram is shown as a separate component. In alternative embodiments, however, certain components may be combined without departing from the scope of the present disclosure.

[00135] The microcontroller unit 701, in an embodiment, is a microcontroller unit including a processor, a memory, and input/output peripherals. In other embodiments, however the microcontroller unit 701 is an ST Microelectronics STM32F030K6 series of microcontroller units, STM32F030C8T6 series of microcontrollers, STM32F030CCT6 series of microcontrollers, or an equivalent microcontroller.

[00136] One of ordinary skill would understand that the memory of the microcontroller unit 701 is configured to store machine-readable code for processing by the processor of the microcontroller unit 701. Various other configurations may exist depending on whether the designer of the percussive massage device with force meter 400 desires to implement the machine-readable code in software, firmware, or both. In an embodiment, the machine-readable code is stored on the memory and configured to be executed by a processor of the microcontroller 701. In an embodiment, the machine-readable code is stored on computer-readable media.

[00137] The battery pack management unit 702, in an embodiment, is implemented in firmware or software and configured to be used in connection with the microcontroller unit 701. In this embodiment, the firmware or software is stored in memory (not shown) and configured to be obtainable by the microcontroller unit 701. The battery pack management unit 702 may also be a combination of firmware, software, and hardware, in another embodiment. The battery pack management unit 702 is coupled with the NTC sensor 703. The NTC sensor 703 is a negative temperature coefficient thermistor used by the battery pack management unit 702 to sense temperature of the battery pack. For example, the NTC sensor 703 is a thermistor with B value of 3950 +/- 1%, and a resistance of 10 kΩ. In another example, the thermistor has a resistance of 100 kΩ. One of ordinary skill in the art would recognize that a thermistor is a resistor whose resistance is dependent upon temperature. In other embodiments, however, the NTC sensor 703 may be another type of temperature sensing device or component used in connection with the battery pack management unit 702.

[00138] The power charging management unit 704, in an embodiment, is implemented in firmware or software and configured to be used in connection with the microcontroller unit 701. Similarly to the battery pack management unit 702, the power charging management unit 704 firmware or software is stored in memory (not shown) and configured to be obtainable by the microcontroller unit 701. The power charging management unit 704 may also be a combination of firmware, software, and hardware, in another embodiment. In various embodiments, the power charging management unit 704 is configured to charge a battery pack via a direct connection or through an external charger, such as when configured to be operable with rechargeable batteries.

[00139] The wireless charging management unit 705, in an embodiment, is coupled to the battery pack management unit 702 and the battery charging inputs 708. In other

embodiments, the battery or battery pack is charged using other conventional methodologies, such as, for example, charging the battery or battery pack using a wire or cord coupled to the battery charging inputs 708.

[00140] The wireless charging receiving system 706, in an embodiment, is coupled to the power charging management unit 704 and the display 709. The wireless charging receiving system 706 includes one or more of firmware, software, and hardware. In an embodiment, the wireless charging receiving system 706 is configured to receive information pertaining to battery capacity, charging metrics, and other information pertaining to wireless charging, and to pass along the information to the power charging management unit 704. The wireless charging receiving system 706 preferably includes a wireless charging pad used to charge the percussive massage device with force meter 400. One of ordinary skill in the art would understand that a variety of wireless charging devices may be utilized to wirelessly charge the percussive massage device with force meter 400. As one example, the Qi wireless charging standard and related devices may be utilized to wirelessly charge the percussive massage device with force meter 400.

[00141] The voltage management unit 707, in an embodiment, is a DC voltage regulator that steps down 5 volt to 3.3 volt power for use by the microcontroller unit 701. The voltage management unit 707 may also perform additional functions for management of 3.3 volt power for use by the microcontroller unit 701. In an embodiment, the voltage management unit 707 is implemented using a series of electronic components such as, for example, implementing a resistive divider using electronic components. In another embodiment, the voltage management unit 707 is a stand-alone voltage regulator module and/or device designed to step down voltage from 5 volts to 3.3 volts. One of ordinary skill in the art would understand the various methodologies and devices available to step down 5 volts to 3.3 volts.

[00142] The battery charging inputs 708, in an embodiment, are interfaces by which a wire or cord may be inserted for charging the percussive massage device with force meter 400. For example, a standardized barrel connector is the battery charging inputs 708. In another example, the battery charging inputs 708 is a USB connector. Other more specialized charging methodologies may require a particular battery charging input not described above.

[00143] The display 709, in an embodiment, displays a series of LEDs depicting an amount of force applied by the percussive massage device with force meter 400. In an alternative embodiment, the display 709 displays a series of LEDs depicting the current battery or battery pack charge of the percussive massage device with force meter 400. In yet another embodiment, the display 709 displays a series of LEDs depicting the current speed of the percussive massage device with force meter 400. One of ordinary skill in the art would recognize that while LEDs have been specified in the above-referenced embodiments, other embodiments not using LEDs are within the scope of this disclosure, such as, for example, liquid crystal displays, OLEDs, CRT displays, or plasma displays. One of ordinary skill in the art would also understand that it may be advantageous in an embodiment utilizing a battery or battery pack to use low-power options to ensure battery power longevity. In an embodiment, the display 709 is a 128x64 pixel OLED display.

[00144] The wireless control unit 710 is a wireless connectivity device that may be implemented in a wireless microcontroller unit. In an embodiment, the wireless control unit 710 is a Bluetooth transceiver module configured to couple, via Bluetooth, to a remote device. In an embodiment, the Bluetooth module is a Bluetooth Low-Energy (BLE) module configured to be run in broadcast mode. The wireless control unit 710 is coupled to the microcontroller unit 701. In an embodiment, the remote device is a smartphone having an embedded Bluetooth module. In an alternative embodiment, the remote device is a

personal computer having Bluetooth connectivity. In other embodiments, other wireless connectivity standards besides the Bluetooth wireless standard may be utilized. It will be appreciated that the Bluetooth connectivity or other wireless connectivity may be described herein as being implemented in a wireless connection device. The wireless connection device can be a separate module, can be included in the MCU or other component of the device, or can be a separate chip. In summary, the percussive therapy device including a wireless connection device means that the percussive massage device can connect to another electronic device wirelessly (e.g., a phone, tablet, computer, computer, voice controlled speaker, regular speaker, etc.). One of ordinary skill in the art would recognize that low-power wireless control modules may be advantageous when the percussive massage device with force meter 400 is utilizing a battery or battery pack.

[00145] The OLED screen 711 and the OLED screen control system 712, in an embodiment, are configured to display substantially the same information as the display 709 referenced above. The OLED screen 711 is coupled to the OLED screen control system 511. The OLED screen control system 712 is coupled to the microcontroller unit 701, the OLED screen 711, and the power switch unit 717. In an embodiment, the display 709 and the OLED screen 711 may be redundant and it may only be necessary to utilize one or the other.

[00146] The motor 713, in an embodiment, is a brushless direct current (BLDC) motor. The motor 713 and the motor drive system 714, in an embodiment, are configured to vary the speed (i.e., rotational motion) that may be converted to reciprocal motion. In other embodiments, the motor 713 is a brushed DC motor, a brushed AC motor, or a brushless AC motor. One of ordinary skill in the art would understand that choosing a brushless or brushed motor, or direct current or alternating current, may vary depending on the application and intended size, battery power, and use.

[00147] The PWM speed setup unit 715, in an embodiment, is used to control pulse width modulation utilized to drive the motor 713. The PWM speed setup unit 715 is coupled to the microcontroller unit 701 and the over-current protection unit 716. One of ordinary skill in the art would understand that pulse width modulation is one way to vary the average power applied to the motor 713, resulting in varying speed as desired. In alternative embodiments, one of ordinary skill in the art would understand that there are a variety of methods to vary the speed of a brushless DC motor. For example, voltage to the motor 713 may be controlled in other non-PWM methods.

[00148] The over-current protection unit 716, in an embodiment, may be a feature of an integrated system-in-package to prevent damage caused by high currents to the motor. In other embodiments, the over-current protection unit 716 is implemented using a series of electronic components configured to protect the motor from excessively high current.

[00149] The power switch unit 717, in an embodiment, is configured to turn on and turn off the percussive massage device with force meter 400. The power switch unit 717 is coupled to the OLED screen control system 712 and the microcontroller unit 701. In an embodiment, the power switch unit 717 is the switch 405.

[00150] FIG. 18 shows a circuit diagram of the microcontroller unit 701 with pin outputs. In this embodiment, the STM32F030K6 series of microcontroller units is utilized. The circuit diagram depicts +3.3 volt power being provided to the VDD inputs of the microcontroller unit 701. Input PA3 is labeled "Motor_VOL", the voltage of the motor 713. Input PA2 is "bt_v", the battery or battery pack voltage. The microcontroller unit is configured to receive analog voltage on inputs PA2 and PA3 and to convert it to digital voltage using the microcontroller's analog-to-digital converter. In this embodiment, the analog-to-digital converter is a 12-bit ADC. One of ordinary skill in the art would understand that other microcontrollers may utilize voltage sensing and analog-to-digital converters to perform

similar functions. In yet other embodiments, an analog-to-digital converter module separate from a microcontroller may be utilized.

[00151] FIG. 19 shows a circuit diagram used for battery voltage detection. In this embodiment, +BT, the positive battery terminal 518, is coupled to a circuit consisting of a P-channel MOSFET 519, an N-Channel MOSFET 520, 0.1 μF capacitor 521, 100 kΩ resistors 522, 523, 68 kΩ resistor 524, 1 kΩ resistors 525, 526, and 10 kΩ resistors 527, 528. The circuit is configured to provide an input analog voltage of the battery or battery pack, or bt_v, to the microcontroller unit 701 of FIG. 18. In other embodiments, voltage of the battery or battery pack may be achieved using a voltage reader coupled to the terminals of the battery or battery pack.

[00152] FIG. 20 shows a circuit diagram for detection and measurement of voltage of the motor 713 of the percussive massage device. In this embodiment, voltage sensing resistor 529 is coupled in parallel with the microcontroller unit 701, and coupled to the motor 713. In an embodiment, the voltage sensing resistor has a value of 0.0025 Ω. The circuit depicted in FIG. 20 is configured to provide the Motor_VOL input into the microcontroller unit 701 of FIG. 17. In an embodiment, the input analog voltage is amplified. In another embodiment, the voltage of the motor 713 is measured or sensed using a separate series of electronic components or a standalone device and input into a microprocessor for use with the method of displaying a force on the percussive massage device.

[00153] FIG. 21 is a flow diagram showing a method 800 of detecting force applied by the percussive massage device in accordance with a preferred embodiment. At Step 802, a voltage magnitude V is obtained. In an embodiment, voltage magnitude V is an analog voltage obtained by using the circuit disclosed in FIG. 17. In that circuit, a block curve signal from the motor 713 (i.e., a Hall effect sensor) is simulated in the circuit as current using the resistor R, which is placed in parallel with the microcontroller unit 701. In other

embodiments, voltage that corresponds to the current operating speed of the motor 713 may be generated in a variety of other ways. The voltage magnitude V may be input to a microcontroller unit 701 that converts analog voltage to digital voltage using an analog-to-digital converter, such as that implemented in the STM32F030K6 microcontroller unit. The STM32F030K6 microcontroller unit coverts analog voltage magnitude to a digital code corresponding to the 12-bit ADC (i.e., 0 to 4096). The digital code represents a voltage magnitude corresponding to the original voltage magnitude V obtained.

[00154] At Step 804, a lookup table is generated that correlates voltage V to force magnitude F. In an embodiment, the lookup table is generated using a method 900 of generating a lookup table correlating voltage to force. For example, the force magnitude F may be expressed in pounds of force. In an altemative embodiment, the force magnitude F may be expressed in Newtons of force.

[00155] At Step 806, the force magnitude F corresponding to voltage magnitude V is displayed on the percussive massage device with force meter 400. In an embodiment, a series of LED lights may be utilized to depict varying amounts of force as the force is being applied by the percussive massage device with force meter 400. Thus, as the amount of force magnitude F increases, more LEDs on the series of LED lights will be lit. Preferably, the series of LED lights consists of 12 LED lights.

[00156] FIG. 22 is a flow diagram showing a method 900 of generating a lookup table correlating voltage to force. At Step 902, a maximum magnitude of force, F_{MAX}, is determined. The magnitude of F_{MAX} may be determined by assessing the maximum desired force to apply using the percussive massage device with force meter 400. As an example, F_{MAX} is 60 pounds of force.

[00157] At Step 904, a maximum magnitude of voltage, V_{MAX}, is determined. The magnitude of V_{MAX} may be determined by assessing the maximum theoretical voltage change possible by the percussive massage device with force meter 400. As an example, V_{MAX} is 1.8 volts.

[00158] At Step 906, F_{MAX} is divided into equal increments. Using the above example from Step 902, 60 pounds of force is divided into 60 one-pound increments.

[00159] At Step 908, V_{MAX} is divided into the same amount of increments as determined in Step 906 above. Thus, using the above example from Step 904, 1.8 volts is divided into 60 0.03-volt increments.

[00160] At Step 910, a lookup table (LUT) is generated that correlates the increments of pounds of force with the increments of voltage. This necessarily creates a linear relationship between force and voltage. FIG. 23 is a graph plotting the LUT for use by the method of detecting force of FIG. 21 that was generated using the specific example identified in FIG. 22. The graph depicts calculated force that was calculated using the method 900.

[00161] A problem may arise in that the theoretical maximum voltage assumption at Step 904 in the method 900 is inaccurate. It may also be the case that as the percussive massage device with force meter 400 is used, the maximum available voltage degrades over time. In other words, the battery or battery pack voltage may decrease.

[00162] Accordingly, a method 1000 of calibrating the LUT generated by method 900 may be advantageous. FIG. 24 is a flow diagram showing a method 1000 of calibrating a LUT. At Step 1002, battery pack voltage BV is obtained. In an embodiment, battery pack voltage magnitude BV is an analog voltage obtained by using the circuit disclosed in FIG. 19. In that circuit, the battery pack voltage magnitude BV may be input to a microcontroller unit 701 that converts analog voltage to digital voltage using an analog-to-digital converter, such as that implemented in the STM32F030K6 microcontroller unit. The STM32F030K6

microcontroller unit coverts analog voltage magnitude to a digital code corresponding to the 12-bit ADC (i.e., 0 to 4096). The digital code represents a voltage magnitude corresponding to the original battery pack voltage magnitude BV obtained.

[00163] At Step 1004, V_{MAX} is set to the actual battery voltage magnitude BV output. As an example, may decrease from 1.8 volts to 1.74 volts, a 0.6 volt decrease. At Step 1006, the LUT linear correlation is adjusted to reflect the lower V_{MAX}. FIG. 25 is a graph plotting the LUT calculated by the method 900 against the LUT calibrated by using the method 1000. The LUT resulting from method 1000 depicts a calibrated force rather than a calculated force.

[00164] FIG. 26 is a flow diagram showing a method 1100 of calibrating a LUT. The method 1100 may be performed after the method 900, or entirely separately from the method 900. At Step 1102, battery pack voltage BV is measured. In an embodiment, the measurement is done without applying any force from the percussive massage device with force meter 400. In an embodiment, the battery pack voltage BV is measured using an external voltage meter. In another embodiment, the battery pack and/or microcontroller unit 701 have embedded solutions for directly measuring battery pack voltage BV.

[00165] At Step 1104, the display on the percussive massage device with force meter 400 that displays the force magnitude F is read to determine the force magnitude F corresponding to the measured battery pack voltage BV.

[00166] At Step 1106, a force meter is used to measure actual force being applied. In an embodiment, the force meter is a push/pull force meter. The direct measurement of force allows calibration of the LUT by comparing the displayed force magnitude F with the measured actual force. At Step 1108, the LUT is updated with a corrected force corresponding with the measured battery pack voltage BV. After Step 1108, Steps 1102-1106 are repeated for each successive voltage increment. In the embodiment depicted in

accordance with the method 900, Steps 1102-1106 are repeated for every 0.03-volt increment. FIG. 27 is a graph plotting the LUT calculated by the method 1100 after all 3-volt increments had been updated.

[00167] FIG. 28 is a flow diagram showing a method 1200 of detecting force applied by a percussive massage device in accordance with a preferred embodiment. At Step 1202, current magnitude C of a battery pack is obtained. In an embodiment, current magnitude C is input into the microcontroller unit 701. At Step 1204, voltage magnitude BV of a battery pack is obtained. In an embodiment, voltage magnitude BV is input into the microcontroller unit 701. At Step 1206, power is calculated using the product of C and BV. In an embodiment, the microcontroller unit 701 is configured to calculate power by multiplying C and BV. At Step 1208, a lookup table is generated that correlates power magnitude P to force magnitude F. In an embodiment, the lookup table is generated using a method 1300 of generating a lookup table correlating power to force. For example, the power magnitude P may be expressed in watts. In an alternative embodiment, force magnitude F may be expressed in pounds of force or Newtons of force.

[00168] At Step 1210, the force magnitude F corresponding to power magnitude P is displayed on the percussive massage device with force meter 400. In an embodiment, a series of LED lights may be utilized to depict varying amounts of force as the force is being applied by the percussive massage device with force meter 400. Thus, as the amount of force magnitude F increases, more LEDs on the series of LED lights will be lit. Preferably, the series of LED lights consists of 12 LED lights.

[00169] FIG. 29 is a flow diagram showing a method 1300 of generating a lookup table correlating power to force. At Step 1302, a maximum magnitude of power, F_{MAX}, is determined. A theoretical maximum magnitude of power, however, is not a reasonable

assumption if the total effective power may be calculated. Equation 1 may be utilized to determine Total Maximum Effective Power (EP_{MAX}).

$$Equation\ 1: Total\ EP_{MAX} = P_{MAX} \times Total\ EP$$

[00170] Equation 2 may be utilized to calculate Total EP, which is then input into Equation 1 above.

$$Equation\ 2: Total\ EP = EP_{BATTERY} \times EP_{PCBA} \times EP_{MOTOR}$$

where Total EP, $EP_{BATTERY}$, EP_{PCBA}, and EP_{MOTOR} are all expressed in percentages, and where PCBA is a printed circuit board assembly.

[00171] In an embodiment, EP (Battery) is 85%, EP (PCBA) is 95%, and EP (Motor) is 75%. Thus, using Equation 2, Total EP is 85% * 95% * 75% = 60.5625%.

[00172] In this embodiment, P_{MAX} is calculated by multiplying the maximum voltage V_{MAX} and the maximum amperage C_{MAX} of the battery pack such as in Equation 3. P_{MAX} is then input into Equation 1.

$$P_{MAX} = V_{MAX} \times C_{MAX}$$

[00173] In this embodiment, V_{MAX} is 16.8 volts and C_{MAX} is 20 amperes. Thus, P_{MAX} is 336 watts.

[00174] Turning back now to Equation 1, if P_{MAX} is 336 watts and Total EP is 60.5625%, then Total EP_{MAX} is 203 watts.

[00175] At Step 1304, a minimum amount of power P_{MIN}, is determined. It will be recognized by one of ordinary skill in the art that the power without any force being applied (i.e., no load) will be non-zero. Thus, P_{MIN} of 12 watts is assumed. One of ordinary skill will also understand that the value of is equivalent to the rated power without load, which may be derived from V_{MAX} and C_{MIN}.

[00176] At Step 1306, a maximum magnitude of force, F_{MAX}, is determined. The magnitude of F_{MAX} may be determined by assessing the maximum desired force to apply using the percussive massage device with force meter 400. As an example, F_{MAX} is 60 pounds of force.

[00177] At Step 1308, Total EP_{MAX} is divided into equal increments. In an embodiment, Total EP_{MAX} is divided in 3 watt increments per one pound of force, starting at P_{MIN} (12 watts). It will be recognized by one of ordinary skill in the art that if F_{MAX} is 60 pounds of force, the total desired force output of the percussive massage device with force meter 400, then 60 pounds of force correlates to 189 watts, within the calculated Total EP_{MAX}.

[00178] At Step 1310, a LUT is generated that correlates the increments of pounds of force with the increments of power in watts. This necessarily creates a linear relationship between force and voltage. FIG. 30 is a graph plotting the LUT for use by the method of detecting force of FIG. 28 that was generated using the specific example identified in FIG. 25. The graph depicts calculated force that was calculated using the method 1200.

[00179] Similarly to the method 900, a problem may arise in that the measured voltage of the battery pack at Step 1204 in the method 1200 is inaccurate. It may also be the case that as the percussive massage device with force meter 400 is used, the maximum available voltage degrades over time. In other words, the battery or battery pack voltage may decrease.

[00180] FIG. 31 is a flow diagram showing a method 1400 of calibrating a LUT. The method 1400 may be performed after the method 900 or the method 1200, or entirely separately from the method 900 or the method 1200. At Step 1402, current magnitude C of a battery pack is obtained. In an embodiment, current magnitude C is input into the microcontroller unit 701.

[00181] At Step 1404, battery pack voltage BV is measured. In an embodiment, the measurement is done without applying any force from the percussive massage device with force meter 400. In an embodiment, the battery pack voltage BV is measured using an external voltage meter. In another embodiment, the battery pack and/or microcontroller unit 701 have embedded solutions for directly measuring battery pack voltage BV. At Step 1406, power is calculated using the product of C and BV. In an embodiment, the microcontroller unit 701 is configured to calculate power by multiplying C and BV.

[00182] At Step 1408, the display on the percussive massage device with force meter 400 that displays the force magnitude F is read to determine the force magnitude F corresponding to the calculated power. At Step 1410, a force meter is used to measure actual force being applied. In an embodiment, the force meter is a push/pull force meter. The direct measurement of force allows calibration of the LUT by comparing the displayed force magnitude F with the measured actual force. At Step 1412, the LUT is updated with a corrected force corresponding with the measured power. After Step 1412, Steps 1402-1410 are repeated for each power or force increment. In the embodiment depicted in accordance with the method 900, Steps 1402-1410 are repeated for every 3-watt increment. FIG. 32 is a graph plotting the LUT calculated by the method 1400 after all 3-watt increments had been updated.

[00183] FIGS. 33-35 show an exemplary percussive massage device 400 that embodies the features disclosed herein, and, in particular, in FIGS. 17-48 (or FIGS. 1-16). Generally, the percussive massage device 400 includes a housing 101, an electrical source or battery pack 114, a motor 406 positioned in the housing 101, and a switch 405 for activating the motor 406. The electronics (see printed circuit board 408 in FIG. 34) includes the controller that is configured to obtain a voltage of the motor, generate a lookup table correlating voltage

to force applied by the percussive massage device, and display a force magnitude corresponding to the obtained voltage using the lookup table.

[00184] FIGS. 36-43A show further views of percussive massage device 400. FIGS. 36 and 37 are similar to FIGS. 1 and 1A and show that percussive massage device 400 includes a similar triangle shape with first, second and third handle portions 143, 145 and 147 that cooperate to define the handle portion 149. Refer to the description of at least FIGS. 1-5 for an explanation of the other reference numerals and features shown in FIGS. 36-40. All features and components described above with respect to any percussive therapy or massage devices may be included in percussive massage device 400.

[00185] As shown in FIGS. 41-43, in a preferred embodiment, the brushless motor 406 is located in the head portion 12. The percussive massage device 400 can include a rotatable arm that is part of rotation housing 44. The motor 406 is located in the rotation housing 44, which is housed with the head portion 12 of the housing 101. In another embodiment, the rotation capability can be omitted.

[00186] In a preferred embodiment, the device includes a push rod or shaft 14 that is connected directly to a shaft 16 that is rotated by the motor 406 and the motor shaft 21 extending therefrom. The shaft 16 can be part of a counterweight assembly 17 that includes a counterweight 19. In a preferred embodiment, the push rod 14 is L-shaped or includes an arc shape, as shown in FIGS. 42A-42B. Preferably, the point where the push rod 14 is connected to the shaft 16 is offset from the reciprocating path that the distal end 18 of the push rod 14 (and the massage attachment 628) travel. This capability is provided by the arc or L-shape. It should be appreciated that the push rod 14 is designed such that it can transmit the force at least partially diagonally or in an arc along its shape instead of vertically so the motor can be located at or near the middle of the device, otherwise a large protrusion would be necessary to keep the shaft in the center with the motor offset

therefrom (and positioned in the protrusion). The arc also allows the push rod 14 to have a close clearance with the motor, as shown in FIGS. 42A and 42B and allows the outer housing to be smaller than similar prior art devices, therefore making the device 400 lower profile. FIG. 42A shows the push rod 14 at the bottom dead center of its travel and FIG. 42B shows the push rod 14 at the top dead center of its travel. Preferably one or more bearings 20 are included at the proximal end of the push rod 14 where it connects to the motor to counteract the diagonal forces and preventing the push rod 14 from moving and touching the motor 406. The bearing 20 is received on shaft 16 and a threaded fastener 26 is received in a co-axial opening 16a in shaft 16. The proximal end of the push rod 14 is received on bearing 20. These components are all shown in FIG. 43.

[00187] As shown in FIG. 33, in a preferred embodiment, the device 400 includes a touch screen 409 (also referred to herein as touch screen 1582 in association with method steps) as well as button(s) for operating the device (e.g., stopping, starting, activating, changing speeds, amplitudes, etc.). The touch screen 409 can also include other functions. The device 400 can also include a thumbwheel or rolling button positioned near the touch screen/on off button to allow the user to scroll or navigate through the different functions. touch screen 409 for operating the device. In the embodiment, shown in FIG. 33, the device 400 includes touch screen 409, a center button 404 for turning the device on and off and a ring/rocker button 447 that provides the ability to scroll left and right (e.g., to the preset treatments discussed herein) and up and down (e.g., to control the speed or frequency). The screen can also be a non-touch screen or just used for display.

[00188] In another preferred embodiment, any of the devices taught herein can include the ability to vary the amplitude or stroke, thus providing a longer or shorter stroke depending on the application or needs of the user. For example, the stroke can change or be changed between about 8-16 mm. In another embodiment, the stroke can be varied up to 25 or more

mm. The amplitude/stroke variability can also be part of the routines, presets or protocols discussed herein. For example, the device can include a mechanical switch that allows the eccentricity of the connector to be modified (e.g., between 4mm and 8mm). The mechanism can include a push button and a slider. The pin structure has a spring that lets it fall back into the locked position.

[00189] Similar to percussive massage devices 208, 210 and 212 above, in a preferred embodiment, device 400 includes a number of dampening components that are made of an elastomer or the like and damp vibrations to keep the device relatively quiet. For example, as shown in FIG. 43, device 400 includes dampening rings 426 (similar to inner suspension rings 219) that surround the rotation housing 44 (with first and second rotation housing halves 44a and 44b) and help dampen the sound of vibration between the rotation housing and outer housing 101.

[00190] As shown in FIGS. 43 and 43A, the device 400 preferably also includes a motor mount 24 that secures the motor 406 in place and is secured to the housing 101. Motor 406 includes a receiving member 28 with three protrusions 30 (and number between one and ten can be included) that is received in a protrusion opening 32 defined in the motor mount 24 (in first wall 38). Flanges 34 extending from the motor mount 24 help keep the protrusions 30 in place. The motor 406 is preferably secured via threaded fasteners or the like to the motor mount 24. Motor shaft 21 extends into the motor mount interior 36, which is defined between first and second walls 38 and a side 40 that extends part of the way around the circumference. The counterweight assembly 17, proximal end of the push rod 14 and related components for converting the rotation of the motor shaft 21 to reciprocating motion are position in the motor mount interior 36. The push rod 14 extends downwardly out of the motor mount interior and through a push rod opening 42 in the side 40. In a preferred embodiment, the motor mount 24 is connected directly to the housing

~~402/~~101 via fasteners 46 that are secured to mounting members 48 in the housing (see FIG. 43A). It will be appreciated that the term push rod assembly used herein includes any of the components discussed herein or combinations thereof, e.g., push rod 14, output shaft 108, reciprocator 310, second rod portion 236, that extend from the rotating motor shaft 21, shaft 246 or the like that provide reciprocating motion and include the attachment on the distal end thereof. The push rod assembly also includes the male connector 110 (and any related components) or any other connector at the end of the reciprocating components that allows connection of an attachment to be used for massage or therapy.

[00191] Preferably the device can be wirelessly charged. FIG. 34 shows the wireless charging receiver 22, which is positioned in the third handle portion 147. In another embodiment, the wireless charging receiver 22 can be located either of the first and second handle portions 143 and 145 or in the head portion 12.

[00192] In a preferred embodiment, the device 400 is associated with and can be operated by an app or software that runs on a mobile device such as a phone, watch or tablet (or any computer). The app can connect to the device 400 via bluetooth or other wireless connection protocol. The app can have any or all of the following functions. Furthermore, any of the functions discussed herein can be added to the touch screen/scroll wheel or button(s) capability directly on the device. If the user walks or is located too far away from the device, the device will not work or activate. The device can be turned on an off using the app as well as the touch screen or button on the device. The app can control the variable speeds (e.g., anywhere between 1750-3000 RPM). A timer can be implemented so the device stops after a predetermined period of time.

[00193] In a preferred embodiment the device, via the app or the touch screen and other functional buttons, etc. includes different treatment protocols or routines associated therewith. During the routine, the device can vary different aspects or outputs of the device

or make changes based on time, speed (frequency), amplitude (stroke), arm position, force, temperature, grip (i.e., which handle portion to grip), attachment (e.g., cone, ball, dampener, etc.) and body part. The device (via the app, touch screen, haptic feedback or audibly via a speaker) can also prompt the user to make some of these changes at certain points throughout the routine, e.g., arm position, grip, attachment changes and body part changes. One of ordinary skill in the art will understand that, depending upon the particular design of the device, one or more of these outputs are applicable, while in other devices, all options described are applicable.

[00194] When the start of the protocol is selected, the device runs through a preprogrammed routine. For example, the device may operate at a first RPM for a first period of time and then operate at a second RPM for a second period of time and/or at a first amplitude for a first period of time and then operate at a second amplitude for a second period of time. The routines can also include prompts (e.g., haptic feedback) for letting the user to know to move to a new body part. These routines or treatments can be related to recovery, blood flow increase, performance, etc. and can each include a preprogrammed routine or protocol. These routines can also help facilitate certain activities, such as sleep, interval training, stairs, post-run, post-workout, recovery, wellness, post-core exercise, high intensity (plyometric) workouts, among others. The routines can also assist in providing relief and recovery from ailments such as plantar fasciitis, "tech neck," muscle cramps, jet lag, sciatica, carpal tunnel, knots, and shin splints, among others. The routines can also prompt or instruct the user to switch attachments (e.g., attachment 628 shown in FIG. 40) or positions of the arm or rotation housing. The prompts can include sounds, haptic feedback (e.g., vibration of the device or mobile device), textual instructions or visual representation such as a graphic or picture on the app or touch screen, etc. For example, the app may instruct the user to start with the ball attachment with the arm in position two.

Then the user hits start and the device runs at a first frequency for a predetermined amount of time. The app or device then prompts the user to begin the next step in the routine and instructs the user to change to the cone attachment and to place the arm in position 1 (e.g., see the arm position in FIG. 38). The arm can include any number of positions, e.g., 1-10 positions or 1-3 positions or 1-2 positions. FIGS. 38-40 show the arm in three different positions. The user hits start again and the device runs at a second frequency for a predetermined amount of time. The protocol can be divided into steps where, at each step, varied outputs are predetermined or specified.

[00195] In a preferred embodiment, the device 400 includes a housing 101, an electrical source 114, a motor 406 positioned in the housing 101, a switch 405 (which can be any of the touch screen 409, rocker button 447, button 404 or any other switch or button) for activating the motor 406, and a routine controller 630. The device 400 is configured to mate with an attachment 628. The attachment can be, for example, the attachment 628 shown in FIG. 38. The attachment is affixed to the male connector 110 so that the shaft or push rod assembly 108 moves the attachment reciprocally in accordance with a specified amplitude. For example, the amplitude is depicted in FIGS. 42A and 42B, where FIG. 42A shows the attachment at a maximum extended position and FIG. 42B shows the attachment at a minimum extended position. The distance between maximum and minimum extended positions can, in an embodiment, define the amplitude.

[00196] The attachment 628 can be a variety of attachments configured to provide therapeutic relief to specified portions of the body. For example, the attachment 628 can be a standard ball (see U.S. Patent App. No. 29/677,157, the entirety of which is incorporated herein by reference) attachment targeted for overall use on both large and small muscle groups. The attachment 628 can be a cone attachment (see U.S. Patent No. D849,261, the entirety of which is incorporated herein by reference) for pinpoint muscle treatment, trigger points,

and small muscle areas like the hands and feet. The attachment 628 can also be a dampener attachment (see U.S. Patent App. No. 29/676,670, the entirety of which is incorporated herein by reference) used for tender or bony areas, but also for overall uses. The attachment 628 can be a wedge attachment (see U.S. Patent No. D845,500, the entirety of which is incorporated herein by reference) for use on shoulder blades ant IT bands, used for "scraping" and "flushing" motions that help to flush lactic acid out of muscles. The attachment 628 can be a large ball (see U.S. Patent App. No. 29/677,016, the entirety of which is incorporated herein by reference) for large muscle groups like glutes and quads. The attachment 628 can be a thumb attachment (see U.S. Patent No. D850,639, the entirety of which is incorporated herein by reference) used on trigger points and the lower back. The attachment 628 can be a Supersoft™ attachment (see U.S. Patent App. No. 29/726,305, the entirety of which is incorporated herein by reference), designed to provide therapeutic relief to sensitive areas, including bones. One of ordinary skill in the art would recognize that the attachments described herein are non-limiting and other configurations of attachments, including varying materials and shapes, may be utilized in accordance with this embodiment. Spherical, forked, flat or other shaped attachments are all within the scope of the invention.

[00197] The routine controller 630 is configured to perform a routine in connection with one or more specified protocols. The routine controller 630 can be, for example, the microcontroller unit 701 depicted in FIG. 17. The routine controller 630 can also be a standalone microcontroller separate from the microcontroller 701. The routine controller can step through different steps of a specified protocol designed to target specified muscle groups and to provide certain therapeutic effects, as described herein.

[00198] FIG. 44 is a table showing an example of a protocol in accordance with a preferred embodiment. Protocol 1 is divided into four steps, each depicting a specified time, speed,

amplitude, attachment, force, temperature, and grip. At Step 1, the device 400 is activated for 30 seconds at a speed of 1550 RPM. A routine controller 630 may be utilized to turn on the percussive massage device and implement a speed of the attachment 628 of 1550 RPM. One of ordinary skill in the art would understand that the speed of the attachment 628 is directly proportional to the speed of the motor 406. The amplitude of the percussive massage device is set to be 2 in accordance with Protocol 1. This may translate to a specified distance that an attachment 628 moves while in use, as described above. Step 1 also specifies a dampener attachment affixed to the device 400, a force of "1" be applied by the device 400, and a temperature of 21 °C be applied to the attachment.

[00199] One of ordinary skill in the art would understand that the force to be applied by the device 400 may depend upon the pressure exerted by the user in pressing the attachment onto a person's body part. As described more fully herein, the force to be applied by the device 400 may be the target force. In an embodiment where the user provides pressure to exert a particular force upon a person's body part, the routine controller 630 may adjust the output of the device 400 to ensure that the force actually applied by the attachment is the target force. The routine controller 630 may also be configured to provide feedback to the user to increase or decrease pressure on a person's body part to meet the target force. Each of these embodiments is applicable to each of the steps of a given protocol, including in Steps 2-4 below, as well as Steps 1-4 of the protocol shown in FIG. 45.

[00200] Step 1 also specifies that the device 400 is to be operated using grip 1. Grip 1, for example, may be the grip shown on the first handle portion 143 depicted in FIG. 38, otherwise referred to as a "regular" or "standard" grip. Grip 2, for example, may be the grip shown on the third handle portion 147 depicted in FIG. 39, otherwise referred to as a "reverse" grip. An "inverse" grip can also be used on third handle portion 147 (not shown).

Grip 3, for example, may be the grip shown on the second handle portion 145 depicted in FIG. 40, otherwise referred to as a "base" grip.

[00201] At Step 2, Protocol 1 specifies that the device 400 be activated for 15 seconds at 2100 RPM, with an amplitude of "3", a force of "3", and a temperature of 26 °C. Step 2 specifies that the small ball attachment 628 be used, and that the device 400 is to be operated using grip 1. Step 2 therefore requires that the dampener attachment in Step 1 be replaced by the small ball attachment, but specifies that the same grip is to be used.

[00202] At Step 3, Protocol 1 specifies that the device 400 be activated for 30 seconds, at 2200 RPM, with an amplitude of "1", a force of "3", and a temperature of 29 °C. Step 3 specifies that the dampener attachment 628 be used, and that the device 400 is to be operated using grip 1. Step 3 therefore requires that the small ball attachment in Step 2 be replaced by the dampener attachment, but specifies that the same grip is to be used.

[00203] At Step 4, Protocol 1 specifies that the device 400 be activated for 45 seconds, at 2400 RPM, with an amplitude of "4", a force of "2", and a temperature of 32 °C. Step 3 specifies that the large ball attachment be used, and that the device 400 is to be operated using grip 1. Step 3 therefore requires that the dampener attachment in Step 2 be replaced by the large ball attachment, but specifies that the same grip is to be used. It will be appreciated that Protocol 1 is provided as an example to the reader of many of the different outputs that can be changed during a myriad of treatment protocols that can be provided or developed. It will be further appreciated that any one or more of the outputs can be a part of a protocol or routine and any of the outputs discussed herein can be omitted. For example, a protocol may only include time and speed or only time speed and force, or only time, speed and grip or any other combination of the outputs described herein.

[00204] FIG. 45 is a table showing an example of a "Shin Splints" protocol in accordance with a preferred embodiment. Like Protocol 1, the Shin Splints protocol is divided into

four steps, each depicting a specified time, speed, amplitude, attachment, force, temperature, and grip, but also specifying a particular arm position and body part to which to apply the attachment. At Step 1, the device 400 is activated for 1 minute at a speed of 1500 RPM, with an amplitude of "1", a force of "2", and a temperature of 21 °C. Step 1 specifies that the dampener attachment be used, and that the device 400 is to be operated using grip 2 ("Reverse"), to the right shin.

[00205] Step 1 also specifies the arm position 632, 634, 636 to be used is arm position 1. One of ordinary skill in the art would understand that the numbers of arm position (e.g., 1, 2, 3, 4, etc.) are predetermined arm positions intended to be used during a particular protocol. The part of the body to which the attachment 628 is to be applied is one of the factors in determining an optimal arm position. The arm position, however, may be determined by the user and is not required to otherwise implement a protocol. As shown in FIG. [[39]] 38, a "standard" grip may be utilized with arm position 632 to apply to specific parts of the body. As shown in FIG. 39, a "reverse" grip may be utilized with arm position 634 to apply to specific parts of the body. As shown in FIG. 40, a "base" grip may be utilized with arm position 636 to apply to specific parts of the body. One of ordinary skill in the art would recognize that the arm position 632, 634, 636 in combination with the particular grip 143, 145, 147 may vary depending on the application. One of ordinary skill in the art will understand that setting the arm position of a device 400 depends upon the specific device. For example, certain devices may allow a user to adjust arm position while others do not. For those that do not, this step does not apply. In other embodiments, this step may be performed during execution of the steps of the particular protocol.

[00206] At Step 2, the Shin Splints protocol specifies that the device 400 be activated for 1 minute at 1500 RPM, with an amplitude of "1", a force of "2", and a temperature of 21 °C. Step 2 specifies that the dampener attachment be used, and that the device 400 is to be

operated using grip 2 ("Reverse"), at an arm position 1, to the left shin. Step 2 therefore uses the same attachment, grip, and arm position as Step 1, but is applied to the other shin.

[00207] At Step 3, the Shin Splints protocol specifies that the device 400 be activated for 1 minute at 2000 RPM, with an amplitude of "3", a force of "3", and a temperature of 24 °C. Step 2 specifies that the dampener attachment be used, and that the device 400 is to be operated using grip 3 ("Base"), at an arm position 1, to the right calf. Step 3 therefore requires that the user change grips from "reverse" to "base" grips, but specifies that the same attachment and arm position be used.

[00208] At Step 4, the Shin Splints protocol specifies that the device 400 be activated for 1 minute at 2000 RPM, with an amplitude of "3", a force of "3", and a temperature of 24 °C. Step 2 specifies that the dampener attachment be used, and that the device 400 is to be operated using grip 3 ("Base"), at an arm position 1, to the left calf. Step 2 therefore uses the same attachment, grip, and arm position as Step 1, but is applied to the other calf.

[00209] FIG. 46 is a series of flow diagrams (FIGS. 46A, 46B, 46C) showing a method 1500 of executing a routine for a percussive massage device.

[00210] FIG. 46A is a flow diagram showing an exemplary protocol initiation. At Step 1502, Protocol 1 is initiated. Protocol 1, for example, is the Protocol 1 depicted in FIG. 44 or the "Shin Splints" Protocol depicted in FIG. 45. One of ordinary skill in the art would understand that Protocol 1 depicted in FIG. 44 does not include all of the outputs that are specified in the Shin Splints Protocol depicted in FIG. 45, and thus, not all steps of the method 1500 apply to the Protocol 1 depicted in FIG. 44.

[00211] At Step 1504, a user is prompted to set the arm position to the specified arm position 632, 634, 636. The user may be the person using the device 400 on their own body or on the body of another person. The arm position 632, 634, 636 specified in the Shin Splints Protocol is arm position 1, for example.

[00212] At Step 1506, the user is prompted to use a specified grip or handle portion 143, 145, 147 on the device 400. The grip specified in the Shin Splints Protocol is the third handle portion 147, for example. As described herein, the grip may vary depending on the particular protocol or step.

[00213] At Step 1508, the user is prompted to affix a specified attachment to the device 400. As described herein, the attachment may vary depending on the particular protocol or step.

[00214] At Step 1510, the method determines whether the arm position 632, 634, 636 and the grip position 143, 145, 147 are configured appropriately and whether the attachment 628 is affixed. Step 1510 may involve a prompt to the user by haptic feedback, application interface, or touch screen (among other types of prompts) in which the user is asked to proceed when the appropriate arm position, grip, and attachment are ready. In other embodiments, the device 400 may sense that the arm position and grip are appropriate and that an attachment is affixed before proceeding automatically. In an embodiment, Step 1510 is repeated until the arm position, grip, and attachment are ready.

[00215] FIG. 46B is a flow diagram showing an exemplary Step 1 of the protocol, continuing the method 1500 where FIG. 46A left off.

[00216] At Step 1512, Step 1 of the protocol is initiated. Step 1, for example, is Step 1 depicted in FIGS. 44 and 45, for example.

[00217] At Step 1514, the method 1500 applies a specified time period (T_1) in which the device 400 is activated, a speed of the attachment, an amplitude of the attachment, a force of the attachment, and a temperature of the attachment. In an embodiment, one or more of these outputs of the device 400 are applied. These outputs may be applied by the routine controller 630. One of ordinary skill in the art would understand that a user's implementation of the device 400 on a body part is not required to apply certain of these outputs. For example, the time period, speed, amplitude, and temperature are not

necessarily dependent upon a user applying pressure to a body part. On the other hand, the force applied by the attachment 628 may require a user to exert pressure on a body part for a target force (or a target force range) to be reached. Further, the temperature may vary depending on whether the attachment 628 is applied to a body part, or not, and to which body part it is applied. Thus, the temperature may need to be adjusted during application of the attachment 628 to reach a desired temperature predetermined by the protocol. In another embodiment, the temperature may be adjusted by a user.

[00218] After time period T_1, the user may be prompted to change the attachment 628, arm position 632, 634, 636, and/or grip position 143, 145, 147. These outputs may need to be implemented prior to the start of Step 2 of a protocol. In the Shin Splints Protocol depicted in FIG. 45, the attachment 628, arm position 632, 634, 636 and grip position 143, 145, 147 remain the same. At Step 1516, after time period T_1, the user is prompted to set the arm position to the specified arm position 632, 634, 636. The user may be the person using the device 400 on their own body or on the body of another person.

[00219] At Step 1518, the user is prompted to use a specified grip 143, 145, 147 on the device 400. As described herein, the grip may vary depending on the particular protocol or step.

[00220] At Step 1520, the user is prompted to affix a specified attachment 628 to the device 400. As described herein, the attachment 628 may vary depending on the particular protocol or step.

[00221] At Step 1522, the method determines whether the arm position 632, 634, 636 and the grip position 143, 145, 147 are configured appropriately and whether the attachment 628 is affixed. This step and all other like steps are optional. Step 1510 may involve a prompt to the user by haptic feedback, application interface, or touch screen (among other types of prompts) in which the user is prompted to move to the next step in the routine and/or requested to proceed when the appropriate arm position, grip, and attachment are ready. In

other embodiments, the device 400 may sense that the arm position and grip are appropriate and that an attachment is affixed before proceeding automatically. In an embodiment, Step 1522 is repeated until the arm position, grip, and attachment are ready.

[00222] FIG. 46C is a flow diagram showing an exemplary Step 2 of the protocol, continuing the method 1500 where FIG. 46B left off.

[00223] At Step 1524, Step 2 of the protocol is initiated. Step 2, for example, is Step 2 depicted in FIGS. 44 and 45, for example.

[00224] At Step 1526, the method 1500 applies a specified time period (T_2) in which the device 400 is activated, a speed of the attachment, an amplitude of the attachment, a force of the attachment, and a temperature of the attachment. In an embodiment, one or more of these outputs of the device 400 are applied. These outputs may be applied by the routine controller 630. One of ordinary skill in the art would understand that a user's implementation of the device 400 on a body part is not required to apply certain of these outputs. For example, the time period, speed, amplitude, and temperature are not necessarily dependent upon a user applying pressure to a body part. On the other hand, the force applied by the attachment 628 may require a user to exert pressure on a body part for a target force to be reached. Further, the temperature may vary depending on whether the attachment 628 is applied to a body part, or not, and to which body part it is applied. Thus, the temperature may need to be adjusted during application of the attachment 628 to reach a desired temperature predetermined by the protocol. In another embodiment, the temperature may be adjusted by a user.

[00225] After time period T_2, the user may be prompted to change the attachment 628, arm position 632, 634, 636, and/or grip position 143, 145, 147. These outputs may need to be implemented prior to the start of Step 3 of a protocol. In the Shin Splints Protocol depicted in FIG. 45, the attachment 628 and arm position 632, 634, 636 remain the same, but the

grip 143, 145, 147 is adjusted to the base grip. At Step 1528, after time period T_2, the user is prompted to set the arm position to the specified arm position 632, 634, 636. The user may be the person using the device 400 on their own body or on the body of another person.

[00226] At Steps 1528-1534, therefore, steps substantially the same as Steps 1516-1522 are performed. After Step 1534, Steps 3-4 are initiated in substantially the same manner as Steps 1-2. For example, Steps 3 and 4 may be Steps 3 and 4 of the Protocol 1 depicted in FIG. 44 or the Shin Splints Protocol depicted in FIG. 45. Furthermore, Step 1534 can be omitted in a device where none of the grip, arm position or attachment can be sensed by the device. In this embodiment, the given protocol simply moves from step 1 to step 2 prompting the user to make a change (but regardless of whether the user has actually made a change).

[00227] As an alternative to FIG. 46C, FIG. 46D is a flow diagram depicting an alternative Step 2 of a protocol. In the alternative Step 2, a force meter adjustment is implemented.

[00228] Steps 1536-1538 are performed substantially the same as Steps 1524-1526 in previous Step 2 above.

[00229] At Step 1540, the force being applied by the attachment 628 is monitored. In the embodiment shown in FIG. 46D, the method 1500 utilizes the force meter <u>400</u> ~~700~~ to monitor the force actually being applied by the user.

[00230] At Step 1542, the force is displayed to the user. In an embodiment, the force is displayed on an application interface 1584 such as a graphical user interface. In other embodiments, individual use or combined use of the application interface 1584, touch screen 1582, the OLED screen 711, or the like, may be used to display the force.

[00231] At Step 1546, the user is prompted to increase or decrease the force being applied to a body part according to the specified protocol during T_2. FIG. 48 is a diagram showing a

touch screen 1582 in accordance with an exemplary embodiment of the display of the force. A force display 1590 shows an exemplary embodiment of Step 1546. The force display 1590 shows a series of force measurements over the course of the "Right Bicep" step of a protocol. A force display prompt 1592 is used to display a message to the user such as "PERFECT PRESSURE: WELL DONE" when the force applied by the attachment 628 matches or corresponds to a target force predetermined by the protocol. In this embodiment, the force display prompt 1592 may recite "INCREASE PRESSURE" or the like if the measured force applied by the attachment 628 is lower than the target force predetermined by the protocol. Consequently, if the measured force applied by the attachment 628 is higher than the target force predetermined by the protocol, then the force display prompt 1592 may recite "DECREASE PRESSURE" or the like. The user may then adjust the pressure the user is exerting on the body part to either increase pressure or decrease pressure according to the force display prompt 1592 so that the measured force is equivalent or substantially equivalent to the target force.

[00232] After time period T_2, the user may be prompted to change the attachment 628, arm position 632, 634, 636, and/or grip position 143, 145, 147. These outputs may need to be implemented prior to the start of Step 3 of a protocol. In the Shin Splints Protocol depicted in FIG. 45, the attachment 628 and arm position 632, 634, 636 remain the same, but the grip 143, 145, 147 is adjusted to the base grip. At Step 1528, after time period T_2, the user is prompted to set the arm position to the specified arm position 632, 634, 636. The user may be the person using the device 400 on their own body or on the body of another person.

[00233] At Steps 1548-1552, therefore, steps substantially the same as Steps 1516-1522 are performed. After Step 1534, Steps 3-4 are initiated in substantially the same manner as

Steps 1-2. For example, Steps 3 and 4 may be Steps 3 and 4 of the Protocol 1 depicted in FIG. 44 or the Shin Splints Protocol depicted in FIG. 45.

[00234] FIG. 47 is a diagram in accordance with an exemplary embodiment of an application interface 1584. At the top of the interface 1584, a protocol field 1556 is displayed to the user. In this embodiment, the protocol field 1556 is "TECH NECK." The protocol title 1556 also shows the overall time period of the protocol.

[00235] The next portion of the interface 1584 shows step fields 1558-1568 of the protocol that are displayed to the user. In this embodiment, the step fields identify the title of the step and time period of the step. For example, step field 1558 is titled "RIGHT BICEP" (where the treatment will be provided) and the time period of activation is "0:30 MIN."

[00236] The interface 1584 also includes a current step field 1570 that identifies the current step title 1570, a grip title display 1572, and an attachment title display 1574.

[00237] The interface 1584 also includes a time display 1576 and a time remaining display 1578 to show the user how much time has occurred during that step and the time remaining in that step. Finally, the interface 1584 includes a control field 1580 to play, skip back, and skip forward from step to step.

[00238] As described above, FIG. 47 shows a touch screen 1582 on a mobile device. The touch screen 1582 displays a graphic depicting a starting point 1586 "A" and an end point 1588 "B" (thereby defining a treatment path) showing the user where to apply the attachment 628 to the specified body part. In FIG. 47, the display instructs the user to move the attachment from the lower portion of the right bicep to the upper portion of the right bicep (the treatment path) during the current step. In some embodiments, during a single step, the user may be prompted or shown on the graphical user interface more than one treatment path (or a first treatment path and a second treatment path) on the same body part/muscle or on different body parts/muscles. For example, during the right bicep step,

the user may be prompted to first move the device along the path shown in FIG. 47, but, during the same 30 second step may also be prompted or shown a path that is parallel to the path shown in FIG. 47.

[00239] Although the operations of the method(s) herein are shown and described in a particular order, the order of the operations of each method may be altered so that certain operations may be performed in an inverse order or so that certain operations may be performed, at least in part, concurrently with other operations. In another embodiment, instructions or sub-operations of distinct operations may be implemented in an intermittent and/or alternating manner.

[00240] Unless the context clearly requires otherwise, throughout the description and the claims, the words "comprise," "comprising," and the like are to be construed in an inclusive sense, as opposed to an exclusive or exhaustive sense; that is to say, in the sense of "including, but not limited to." As used herein, the terms "connected," "coupled," or any variant thereof, means any connection or coupling, either direct or indirect, between two or more elements; the coupling of connection between the elements can be physical, logical, or a combination thereof. Additionally, the words "herein," "above," "below," and words of similar import, when used in this application, shall refer to this application as a whole and not to any particular portions of this application. Where the context permits, words in the above Detailed Description of the Preferred Embodiments using the singular or plural number may also include the plural or singular number respectively. The word "or" in reference to a list of two or more items, covers all of the following interpretations of the word: any of the items in the list, all of the items in the list, and any combination of the items in the list.

[00241] Embodiments are envisioned where any of the aspects, features, component or steps herein may be omitted and/or are option. Furthermore, where appropriate any of

these optional aspects, features, component or steps discussed herein in relation to one aspect of the invention may be applied to another aspect of the invention.

[00242] The above-detailed description of embodiments of the disclosure is not intended to be exhaustive or to limit the teachings to the precise form disclosed above. While specific embodiments of and examples for the disclosure are described above for illustrative purposes, various equivalent modifications are possible within the scope of the disclosure, as those skilled in the relevant art will recognize. For example, while processes or blocks are presented in a given order, alternative embodiments may perform routines having steps, or employ systems having blocks, in a different order, and some processes or blocks may be deleted, moved, added, subdivided, combined, and/or modified to provide alternative or subcombinations. Each of these processes or blocks may be implemented in a variety of different ways. Also, while processes or blocks are at times shown as being performed in series, these processes or blocks may instead be performed in parallel, or may be performed, at different times. Further any specific numbers noted herein are only examples: alternative implementations may employ differing values or ranges.

[00243] The above-detailed description of embodiments of the disclosure is not intended to be exhaustive or to limit the teachings to the precise form disclosed above. While specific embodiments of and examples for the disclosure are described above for illustrative purposes, various equivalent modifications are possible within the scope of the disclosure, as those skilled in the relevant art will recognize. Further, any specific numbers noted herein are only examples: alternative implementations may employ differing values, measurements or ranges. It will be appreciated that any dimensions given herein are only exemplary and that none of the dimensions or descriptions are limiting on the present invention.

[00244] The teachings of the disclosure provided herein can be applied to other systems, not necessarily the system described above. The elements and acts of the various embodiments described above can be combined to provide further embodiments.

[00245] Any patents and applications and other references noted above, including any that may be listed in accompanying filing papers, are incorporated herein by reference in their entirety. Aspects of the disclosure can be modified, if necessary, to employ the systems, functions, and concepts of the various references described above to provide yet further embodiments of the disclosure.

[00246] These and other changes can be made to the disclosure in light of the above Detailed Description of the Preferred Embodiments. While the above description describes certain embodiments of the disclosure, and describes the best mode contemplated, no matter how detailed the above appears in text, the teachings can be practiced in many ways. Details of the system may vary considerably in its implementation details, while still being encompassed by the subject matter disclosed herein. As noted above, particular terminology used when describing certain features or aspects of the disclosure should not be taken to imply that the terminology is being redefined herein to be restricted to any specific characteristics, features or aspects of the disclosure with which that terminology is associated. In general, the terms used in the following claims should not be construed to limit the disclosures to the specific embodiments disclosed in the specification unless the above Detailed Description of the Preferred Embodiments section explicitly defines such terms. Accordingly, the actual scope of the disclosure encompasses not only the disclosed embodiments, but also all equivalent ways of practicing or implementing the disclosure under the claims.

[00247] While certain aspects of the disclosure are presented below in certain claim forms, the inventors contemplate the various aspects of the disclosure in any number of claim

forms. For example, while only one aspect of the disclosure is recited as a means-plus-function claim under 35 U.S.C. §112, ¶6, other aspects may likewise be embodied as a means-plus-function claim, or in other forms, such as being embodied in a computer-readable medium. (Any claims intended to be treated under 35 U.S.C. §112, ¶6 will begin with the words "means for"). Accordingly, the applicant reserves the right to add additional claims after filing the application to pursue such additional claim forms for other aspects of the disclosure.

[00248] Accordingly, although exemplary embodiments of the invention have been shown and described, it is to be understood that all the terms used herein are descriptive rather than limiting, and that many changes, modifications, and substitutions may be made by one having ordinary skill in the art without departing from the spirit and scope of the invention.

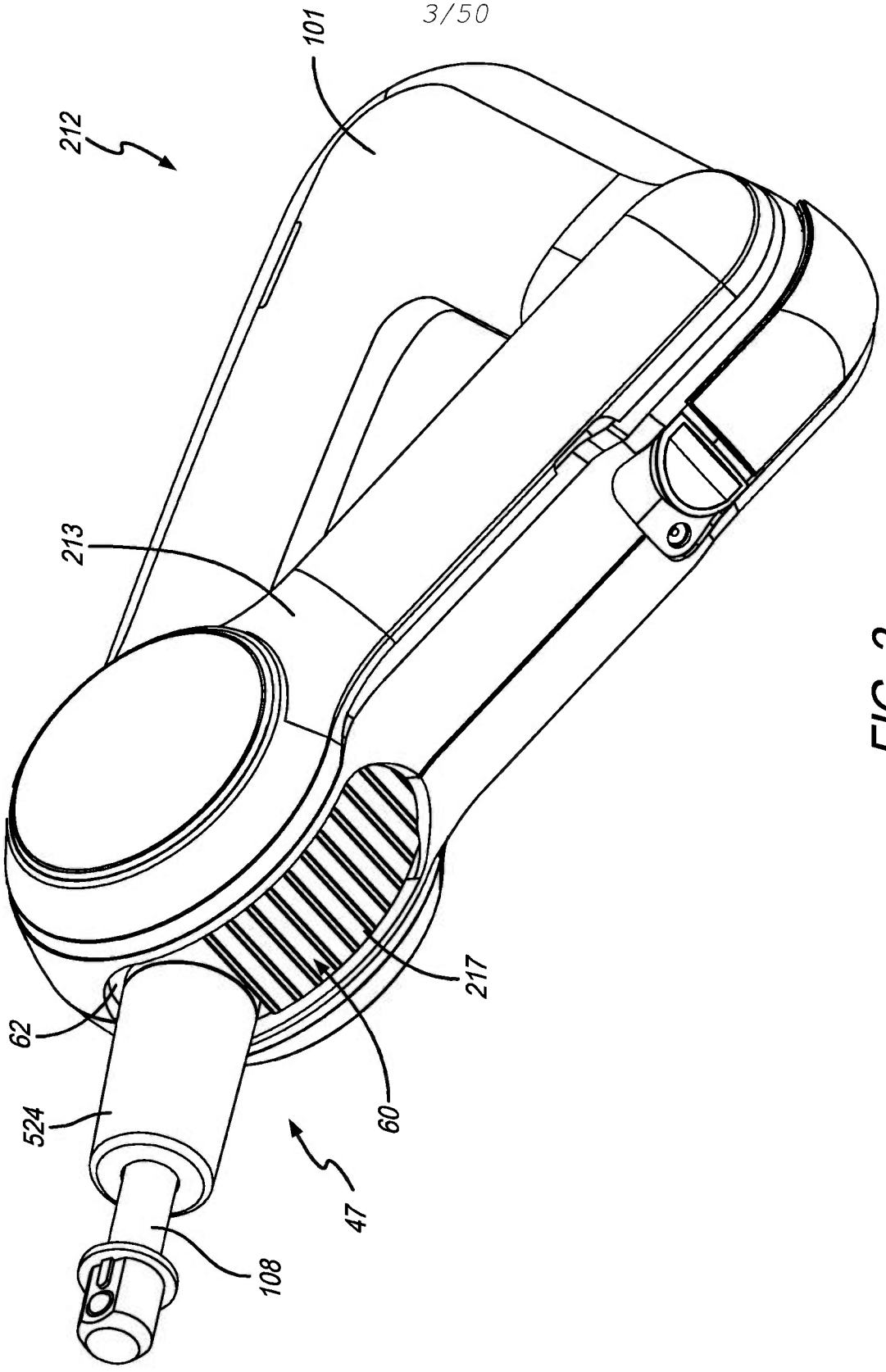


FIG. 2

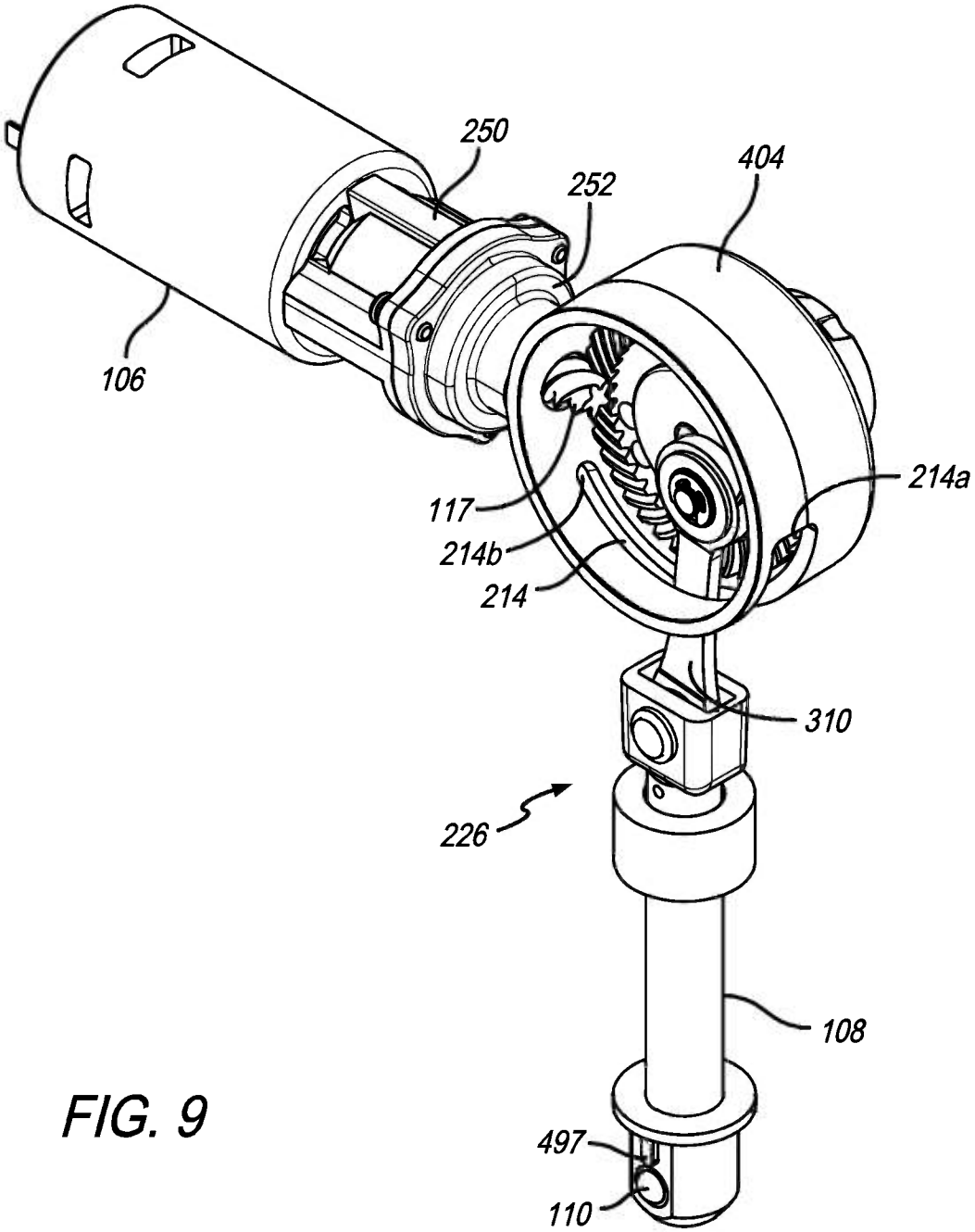


FIG. 9

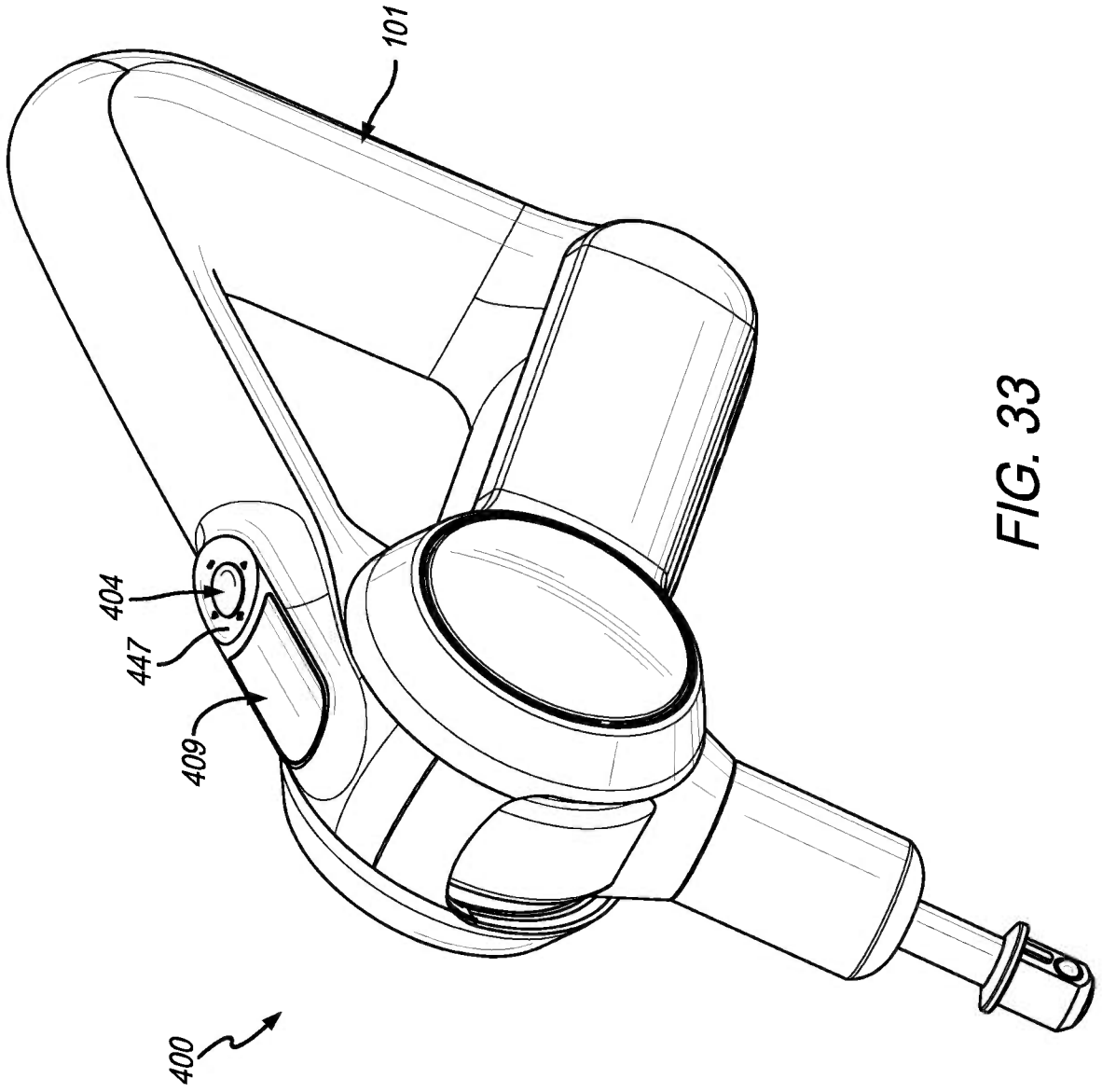


FIG. 33

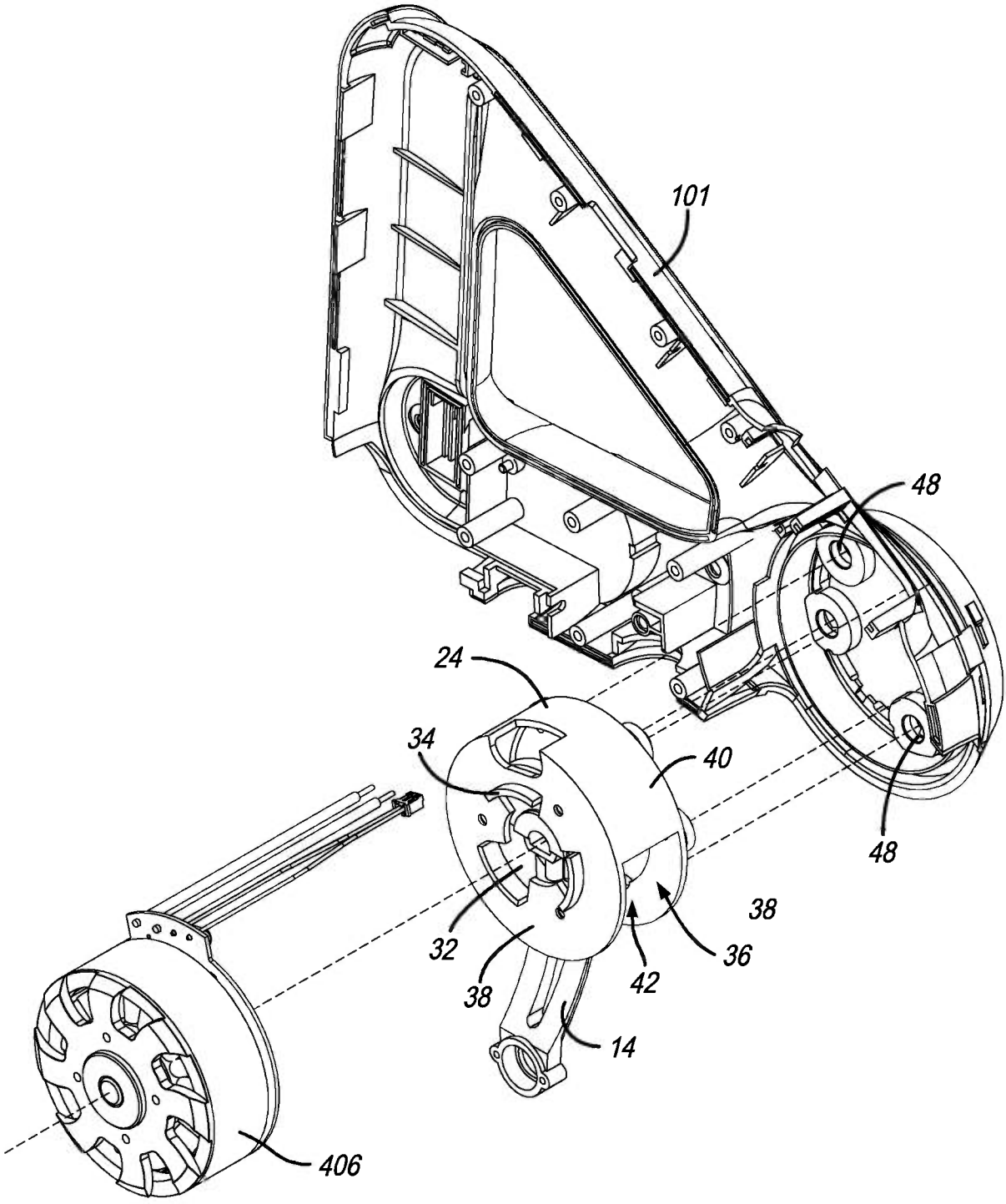


FIG. 43A

Electronic Patent Application Fee Transmittal

Application Number:	16869402
Filing Date:	07-May-2020
Title of Invention:	PERCUSSIVE THERAPY DEVICE
First Named Inventor/Applicant Name:	Jason Wersland
Filer:	Brennan C. Swain/Susan Papp
Attorney Docket Number:	76840-5077

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
Pages:				
Claims:				
CLAIMS IN EXCESS OF 20	2202	3	50	150
INDEPENDENT CLAIMS IN EXCESS OF 3	2201	1	230	230
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**380**

Electronic Acknowledgement Receipt	
EFS ID:	40446967
Application Number:	16869402
International Application Number:	
Confirmation Number:	4812
Title of Invention:	PERCUSSIVE THERAPY DEVICE
First Named Inventor/Applicant Name:	Jason Wersland
Customer Number:	24574
Filer:	Brennan C. Swain/Susan Papp
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Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$380
RAM confirmation Number	E202091J07241169
Deposit Account	100440
Authorized User	Susan Papp
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Amendment/Req. Reconsideration-After Non-Final Reject	76840_5077_Response.pdf	142681 9695f6bc27211d873a9330dc61337f5ed935fd97	no	16
Warnings:					
Information:					
2	Specification	76840_5077_Substitute_Marked_Up_Specification.pdf	438187 528ad4d8f6347d10d0fa60f6e9a250bf24e19b8c	no	71
Warnings:					
Information:					
3	Specification	76840_5077_Substitute_Clean_Specification.pdf	434493 c7668156b5c9119698f2a671a08d3c12aebad867	no	71
Warnings:					
Information:					
4	Drawings-only black and white line drawings	76840_5077_Replacement_Sheets_.pdf	205883 75dd18a693bd5df316e0f976fca05f36474cdff3	no	4
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	32125 6827a6f5fab5091269f9ea0ae33ea4b291c5f6ab	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	1253369		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

IN THE PATENT AND TRADEMARK OFFICE

In re patent application of: Jason WERSLAND Serial No. 16/869,402 Filed: May 7, 2020 Title: PERCUSSIVE THERAPY DEVICE	**Confirmation No. 4812** Group Art Unit: 3785 Examiner: Stuart, Colin W. Customer No. 24,574 Docket No. 76840-5077

AMENDMENT

Please amend the above-identified application, without prejudice, as follows:

Amendments to the Claims begin on page 2 of this paper.

Amendments to the Specification begin on page 9 of this paper.

Amendments to the Drawings begin on page 10 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:

What is claimed is:

1. (currently amended) A percussive therapy device comprising:

a housing, wherein the housing includes first, second and third handle portions and a head portion that cooperate to define a handle opening, wherein the first handle portion defines a first axis, the second handle portion defines a second axis and the third handle portion defines a third axis, wherein the first, second and third axes cooperate to form a triangle, such that a user can grasp any of the first, second or third handle portions independently to use the percussive therapy device, and wherein the motor is positioned in the head portion of the housing,

an electrical source,

a motor positioned in the housing,

a switch for activating the motor, and

a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor.

2. (currently amended) The percussive therapy device of claim 1 ~~wherein the housing includes first, second and third handle portions and a head portion that cooperate to define a handle opening, wherein the first handle portion defines a first axis, the second handle portion defines a second axis and the third handle portion defines a third axis, wherein the first, second and third axes cooperate to form a triangle, such that a user can grasp any of the first, second or third handle portions independently to use the percussive therapy device, wherein the motor is~~

~~positioned in the head portion of the housing, and~~ wherein at least a portion of the push rod assembly extends outside of the head portion.

3. (currently amended) The percussive therapy device of claim [[2]] 1 wherein the first handle portion is generally straight, wherein the second handle portion is generally straight, and wherein the third handle portion is generally straight.

4. (original) The percussive therapy device of claim 1 further comprising a wireless connection device.

5. (original) The percussive therapy device of claim 1 wherein the electrical source is a rechargeable battery, and wherein the percussive massage device further comprising a wireless charging receiver that is in electrical communication with the battery.

6. (original) The percussive therapy device of claim 1 further comprising a touchscreen.

7. (currently amended) ~~The percussive therapy device of claim 1~~ A percussive therapy device comprising:

a housing,

an electrical source,

a motor positioned in the housing, wherein the motor is a brushless motor, ~~wherein~~

a motor mount [[is]] positioned in the housing, wherein the motor mount includes a first side wall that includes opposing inner and outer major surfaces, and a second side wall that

includes opposing inner and outer major surfaces, wherein a motor mount interior is defined between the inner major surfaces of the first and second side walls, wherein the motor is secured to the outer major surface of the first side wall ~~motor mount,~~ and ~~wherein~~ the ~~motor mount~~ second side wall is secured to the housing, wherein the first side wall defines a first side wall axis, wherein the motor includes a motor shaft that defines a motor shaft axis and extends through a protrusion opening defined in the first side wall of the motor mount and into the motor mount interior, wherein the motor shaft axis extends generally parallel to the first side wall axis, wherein the first side wall axis is normal to the outer major surface of the first side wall, and wherein at least a portion of the push rod assembly is positioned in the motor mount interior,

a switch for activating the motor, and

a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor.

8-16. canceled

17. (currently amended) The percussive therapy device of claim [[2]] 1 wherein the electrical source is a battery that is positioned in the second handle portion, and wherein a wireless charging receiver that is in electrical communication with the battery is positioned in the third handle portion.

18. (currently amended) The percussive therapy device of claim [[9]] 7 wherein the push rod assembly extends through a push rod opening defined in the motor mount and out of the motor mount interior, and wherein the push rod assembly extends in a direction generally perpendicular to the motor shaft.

19. (currently amended) The percussive therapy device of claim [[8]] 7 wherein the first side wall includes at least a first flange extending outwardly therefrom, wherein the first flange is positioned adjacent a first protrusion on the motor.

20. (previously presented) The percussive therapy device of claim 19 wherein the first side wall includes second and third flanges extending outwardly therefrom, wherein the second and third flanges are positioned adjacent second and third protrusions on the motor.

21. (currently amended) The percussive therapy device of claim 1 ~~further comprising~~ wherein the percussive therapy device is configured to provide haptic feedback.

22. (currently amended) The percussive therapy device of claim 1 [[2]] wherein the first handle portion includes a first handle portion interior edge and defines a first handle portion length, wherein the first handle portion length is long enough that when a user grasps the first handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the first handle portion interior edge, wherein the second handle portion includes a second handle portion interior edge and defines a second handle portion length, wherein the second handle portion length is long enough that when a user grasps the second handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the second handle portion interior edge, wherein the third handle portion includes a third handle portion interior edge and defines a third handle portion length, wherein the third handle portion length is long enough that when a user grasps the third handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the third handle portion interior edge.

23. (previously presented) The percussive therapy device of claim 22 wherein at least two of the first handle portion, second handle portion and third handle portion are generally straight.

24. (currently amended) A method of using a percussive massage device, the method comprising the steps of:

obtaining the percussive massage device, wherein the percussive massage device includes a housing that includes first, second and third handle portions that cooperate to at least partially define a handle opening, an electrical source, a motor positioned in the housing, a switch for activating the motor, and a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor, wherein the first handle portion defines a first axis, the second handle portion defines a second axis and the third handle portion defines a third axis, wherein the first handle portion includes a first handle portion interior edge and defines a first handle portion length, wherein the first handle portion length is long enough that when a user grasps the first handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the first handle portion interior edge, wherein the second handle portion includes a second handle portion interior edge and defines a second handle portion length, wherein the second handle portion length is long enough that when a user grasps the second handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the second handle portion interior edge, wherein the third handle portion includes a third handle portion interior edge and defines a third handle portion length, wherein the third handle portion length is long enough that when a user grasps the third handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the third handle portion interior edge,

activating the motor using the switch,

grasping the first handle portion using a first hand,

massaging a first body part,

reorienting the percussive massage device, grasping the second handle portion using the first hand and massaging the first body part or a second body part, and

reorienting the percussive massage device, grasping the third handle portion using the first hand and massaging the first body part, the second body part or a third body part.

25. canceled.

26. (currently amended) The method of claim [[25]] 24 wherein the housing includes a head portion, and wherein the motor is positioned in the head portion.

27. (currently amended) The method of claim [[26]] 24 wherein at least two of the first handle portion, second handle portion and third handle portion are generally straight.

28. (previously presented) The method of claim 24 wherein the first handle portion, second handle portion and third handle portion are generally straight.

29. (new) The method of claim 24 wherein the housing defines a housing length, wherein at least a portion of the handle opening extends forwardly of half the housing length.

30. (new) The method of claim 24 wherein a transverse plane that bifurcates the housing extends through the handle opening.

31. (new) The method of claim 24 further comprising a fourth interior surface that at least partially defines the handle portion, wherein the first handle portion interior surface, second handle portion interior surface, third handle portion interior surface and fourth interior surface cooperate to define a quadrilateral.

32. (new) The percussive therapy device of claim 23 further comprising a fourth interior surface that at least partially defines the handle portion, wherein the first handle portion interior surface, second handle portion interior surface, third handle portion interior surface and fourth interior surface cooperate to define a quadrilateral.

33. (new) A percussive therapy device comprising:

a housing,

an electrical source,

a motor positioned in the housing, wherein the motor is a brushless motor,

a motor mount positioned in the housing, wherein the motor mount includes a first side wall that includes opposing inner and outer major surfaces, and a second side wall that includes opposing inner and outer major surfaces, wherein a motor mount interior is defined between the inner major surfaces of the first and second side walls, and wherein the motor is directly secured to the outer major surface of the first side wall and wherein the second side wall is secured to the housing,

a switch for activating the motor, and

a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor.

AMENDMENTS TO THE SPECIFICATION

A substitute specification is attached (including clean and marked up copies). No new matter has been added.

AMENDMENTS TO THE DRAWINGS

Replacement drawing sheets 3/50, 10/50, 31/50 and 42/50 are included. FIGS. 2, 8, 33, 43A have been amended. No new matter has been added.

REMARKS

In this amendment, claims 1-3, 7, 17-19, 21, 22, 24, 26 and 27 have been amended, claims 8, 9 and 25 have been cancelled and claims 29-33 have been added. Accordingly, claims 1-7, 17-24 and 26-33 remain pending in the present application.

INTERVIEW

Applicant thanks the Examiner for extending the courtesy of an interview on August 20, 2020. During the interview, proposed claim amendments and arguments were discussed. The Examiner indicated that the proposed amendments to claim 24 overcame the current rejections and proposed two different additional amendments to claim 7. Claim 7 has been amended to include the "normal" language discussed during the interview. Claim 33 has been added and includes the "directly secured" language discussed during the interview. Applicant awaits the results of any additional search.

ALLOWABLE SUBJECT MATTER

Applicant notes that, other than the Double Patenting rejection, claims 2-3, 17 and 22-23 were not rejected over any prior art. The patentable features of claim 2 have been added to claim 1.

DRAWINGS

The drawings have been objected to. Reference characters "116" and "117" have both been used to designate the pinion shaft. Correction has been made in the specification, thereby mooting the objection.

References characters "101" and "402" have both been used to designate the housing. All instances of the housing in the specification have been changed to "101" and the drawings have been amended.

Reference characters "230" and "310" have both been used to designate the pushrod and the reciprocator. "310" is the reciprocator and "230" is the first rod portion. The specification has been amended to address this, thereby mooting the objection. FIG. 8 has been amended to change the "310" lead line to an arrow.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 47, 700. "47" has been added to FIG. 2. All instances of "700," which refers to the "percussive therapy device with force meter" have been changed to "400", thereby mooting the objection.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 228. "228" is supposed to be "226." Correction has been made in FIG. 8, thereby mooting the objection.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "230" has been used to designate all of the first rod portion, the reciprocator, and the pushrod and reference character "231" has been used to designate both the protrusion and the first rod portion. All instances of "230" in the specification now refer to the "first rod portion" and "231" refers to the protrusion, thereby mooting the objection.

The drawings are objected to because para. 00125 discloses a compliant dampening block with reference 402; however, 402 in para. 33 does not appear to show a dampening block nor does there appear to be such a dampening block shown in the drawings. The specification has been amended to remove "402" with respect to the "compliant dampening blocks", thereby mooting the objection.

No new matter has been added.

SPECIFICATION

The specification has been objected to. Para. 00123 recites the phrase "opening 222b that_receives" to which the underscore mark is objected to. This has been amended.

Para. 00119 recites the phrase "and comfort of using the_device" to which the underscore mark is objected to. This has been amended.

Para. 00120 recites the phrase "second handle portion 145 f(the second handle portion length)." to which the 'f(the' term appears to be a typographical error. This has been amended.

Para. 00125 recites the phrase "In some_embodiments" to which the underscore mark is objected to. This has been amended.

Para. 00129 recites the phrase "and the adapter member_226" to which the underscore mark is objected to. This has been amended.

Para. 00159 recites that "1.8 volts is divided into 60 0.3-volt increments" and this is objected to as this appears it should be 0.03-volt increments. This has been amended. It should be noted that, as stated in the specification, the 0.03 volt increments are only exemplary. This figure is not limiting.

Para. 00166 is objected to as it recites "3-volt increments" and as discussed above this does not appear to be the value of the increments. This has been amended.

Para. 00183 recites the phrase "using the lookup table. [END OF 5063]" which is objected to for what appears to be extraneous/typographical language. This has been amended.

Para. 00200 refers to a "Fig. 39", "Fig. 40", and "Fig. 41" when disclosing various grips of the device; however, it appears from the disclosure that these figures should be —Fig. 38--, --Fig. 39--, and —Fig. 40--, respectively. This has been amended.

Para. 00205 recites the phrase "As shown in Fig. 41, a "base" grip may be utilized" which is objected to as Fig. 41 does not appear to show a base grip. "FIG. 41" has been amended to "FIG. 40".

Para. 00238 refers to a "Fig. 46" (two instances) in reference to a touch screen on a mobile device and this is objected to as Fig. 46 does not show a touch screen on a mobile device and furthermore, there is no "Fig. 46" but rather Figs. 46A-D. "FIG. 46" has been amended to "FIG. 47".

No new matter has been added.

REJECTIONS UNDER 35 U.S.C. § 112

The Examiner has rejected claims 2-3, 17 and 21-23 as being indefinite. The features of claim 2 have been added to claim 1, thereby mooting the rejection.

Claim 21 has been amended pursuant to the Examiner's suggestion.

DOUBLE PATENTING

The Examiner has rejected the claims for double patenting. Claim 1 was provisionally rejected for "same invention" type double patenting. Claim 1 has been amended, thereby mooting the rejection.

Claims 1-9, 17, 18 and 21-27 were rejected on the ground of nonstatutory double patenting as being unpatentable over certain claims of U.S. Patent No. 10,702,448 either alone or in combination with other prior art. A terminal disclaimer is submitted herewith to obviate the rejection.

Claims 1 and 24 were rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1 and 15 of U.S. Patent No. 10,357,425. However, after the current amendments the Examiner indicated that this rejection is moot.

Claims 1 was also provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over certain claims of copending application no. 16/869,389. Claim 1 has been amended, thereby mooting the rejection.

REJECTIONS UNDER 35 U.S.C. §103

The Examiner has rejected claim 1 as unpatentable over Rix (US 7,927,259), in view of Haas (2005/0126018); claim 4 as unpatentable over Rix, Haas and Marton (US 10,314,762); claim 6 as unpatentable over Rix, Haas and Roberts (US 2015/0119771); claims 7-8 and 19-20 as unpatentable over Rix, Haas, Standbridge (US 2012/02532425) and Kehoe (US 2013/0014968); claims 7-9 and 18 as unpatentable over Rix, Haas, Standbridge and Naughton (US

2010/0162579); claim 24 as unpatentable over Rix, Haas, Pepe (US 2017/0304145) and Calvert (US 7,041,072); and claims 24-27 as unpatentable over Rix, Haas, Neumeier (US 2005/0252011) and Calvert. Please see the Office Action for the specific rejections.

As discussed above in the Interview section, independent claim 7 has been amended and independent claim 33 has been added as discussed during the August 20, 2020 interview.

Further, as discussed above in the Interview section, independent claim 24 and its dependents are allowable over the cited art.

For the all the reasons stated above, applicant respectfully requests withdrawal of the rejections.

REQUEST FOR TELEPHONE CONFERENCE

If after considering this Amendment, the Examiner believes that the claims are not allowable, Applicant requests that the Examiner please contact their authorized representative identified below by phone prior to issuing any further Office action for the purpose of hopefully resolving any such issue.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date.

It is believed that no additional fee is due for submitting this response. However, in the event a fee is required, the Commissioner is authorized to charge any amounts due or credit any overpayments in connection with this matter to Deposit Account No. 10-0440.

Respectfully submitted,

JEFFER MANGELS BUTLER & MITCHELL LLP

Dated: September 1, 2020

By: /Brennan C. Swain/

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(310) 203-8080
CUSTOMER NO. 24,574

Doc Code: DIST.E.FILE Document Description: Electronic Terminal Disclaimer - Filed	PTO/SB/26 U.S. Patent and Trademark Office Department of Commerce

Electronic Petition Request	**TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A "PRIOR" PATENT**
Application Number	16869402
Filing Date	07-May-2020
First Named Inventor	Jason Wersland
Attorney Docket Number	76840-5077
Title of Invention	PERCUSSIVE THERAPY DEVICE

☒ Filing of terminal disclaimer does not obviate requirement for response under 37 CFR 1.111 to outstanding Office Action

☒ This electronic Terminal Disclaimer is not being used for a Joint Research Agreement.

Owner	Percent Interest
TheraGun, Inc.	100%

The owner(s) with percent interest listed above in the instant application hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application which would extend beyond the expiration date of the full statutory term of prior patent number(s)

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as the term of said prior patent is presently shortened by any terminal disclaimer. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of the term of any patent granted on the instant application that would extend to the expiration date of the full statutory term of the prior patent, "as the term of said prior patent is presently shortened by any terminal disclaimer," in the event that said prior patent later:
- expires for failure to pay a maintenance fee;
- is held unenforceable;
- is found invalid by a court of competent jurisdiction;
- is statutorily disclaimed in whole or terminally disclaimed under 37 CFR 1.321;
- has all claims canceled by a reexamination certificate;
- is reissued; or
- is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

◉ Terminal disclaimer fee under 37 CFR 1.20(d) is included with Electronic Terminal Disclaimer request.

○ I certify, in accordance with 37 CFR 1.4(d)(4), that the terminal disclaimer fee under 37 CFR 1.20(d) required for this terminal disclaimer has already been paid in the above-identified application.	
Applicant claims the following fee status: ◉ Small Entity ○ Micro Entity ○ Regular Undiscounted I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.	
THIS PORTION MUST BE COMPLETED BY THE SIGNATORY OR SIGNATORIES I certify, in accordance with 37 CFR 1.4(d)(4) that I am: ◉ An attorney or agent registered to practice before the Patent and Trademark Office who is of record in this application Registration Number 43175 ○ A sole inventor ○ A joint inventor; I certify that I am authorized to sign this submission on behalf of all of the inventors as evidenced by the power of attorney in the application ○ A joint inventor; all of whom are signing this request	
Signature	/Brennan C. Swain/
Name	Brennan C. Swain

*Statement under 37 CFR 3.73(b) is required if terminal disclaimer is signed by the assignee (owner).
Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

Electronic Patent Application Fee Transmittal

Application Number:	16869402
Filing Date:	07-May-2020
Title of Invention:	PERCUSSIVE THERAPY DEVICE
First Named Inventor/Applicant Name:	Jason Wersland
Filer:	Brennan C. Swain/Susan Papp
Attorney Docket Number:	76840-5077

Filed as Small Entity

Filing Fees for Utility under 35 USC 111(a)

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Basic Filing:				
STATUTORY OR TERMINAL DISCLAIMER	2814	1	160	160
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD($)
Extension-of-Time:				
Miscellaneous:				
			Total in USD ($)	**160**

Doc Code: DISQ.E.FILE
Document Description: Electronic Terminal Disclaimer – Approved

Application No.: 16869402

Filing Date: 07-May-2020

Applicant/Patent under Reexamination: Wersland

Electronic Terminal Disclaimer filed on September 1, 2020

☒ APPROVED

This patent is subject to a terminal disclaimer

☐ DISAPPROVED

Approved/Disapproved by: Electronic Terminal Disclaimer automatically approved by EFS-Web

U.S. Patent and Trademark Office

Electronic Acknowledgement Receipt	
EFS ID:	40446736
Application Number:	16869402
International Application Number:	
Confirmation Number:	4812
Title of Invention:	PERCUSSIVE THERAPY DEVICE
First Named Inventor/Applicant Name:	Jason Wersland
Customer Number:	24574
Filer:	Brennan C. Swain/Susan Papp
Filer Authorized By:	Brennan C. Swain
Attorney Docket Number:	76840-5077
Receipt Date:	01-SEP-2020
Filing Date:	07-MAY-2020
Time Stamp:	18:27:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	$160
RAM confirmation Number	E202091I27130734
Deposit Account	100440
Authorized User	Susan Papp
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.21 (Miscellaneous fees and charges)	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Terminal Disclaimer-Filed (Electronic)	eTerminal-Disclaimer.pdf	33500 5c9e4b50d0cf676495049cd88026e8ec71565b39	no	2
Warnings:					
Information:					
2	Fee Worksheet (SB06)	fee-info.pdf	30459 c6fa7269efaf0f07f54a747d0736dc70c769996b	no	2
Warnings:					
Information:					
		Total Files Size (in bytes):	63959		

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New Applications Under 35 U.S.C. 111
If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.
National Stage of an International Application under 35 U.S.C. 371
If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.
New International Application Filed with the USPTO as a Receiving Office
If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

PTO/SB/06 (09-11)
Approved for use through 1/31/2014. OMB 0651-0032
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 displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875	Application or Docket Number 16/869,402	Filing Date 05/07/2020	☐ To be Mailed

ENTITY: ☐ LARGE ☑ SMALL ☐ MICRO

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA		RATE ($)	FEE ($)
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A		N/A	
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A		N/A	
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*		x $50 =	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*		x $230 =	
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $310 ($155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).				
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))					
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL	

APPLICATION AS AMENDED - PART II

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT	09/01/2020	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	* 23	Minus	** 20	= 3		x $50 =	150
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 3	= 1		x $230 =	230
	☐ Application Size Fee (37 CFR 1.16(s))							
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							
							TOTAL ADD'L FEE	380

		(Column 1)		(Column 2)	(Column 3)			
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE ($)	ADDITIONAL FEE ($)
	Total (37 CFR 1.16(i))	*	Minus	**	=		x $0 =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=		x $0 =	
	☐ 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.	LIE
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".	/POLIN ANG/
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".	
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Application	Document	Mailroom Date	Attorney Docket No.
16869402	INTV.SUM.APP	08/25/2020	76840-5077
	EXIN	08/25/2020	76840-5077
	OA.APPENDIX	08/25/2020	76840-5077

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/869,402	05/07/2020	Jason Wersland	76840-5077	4812

24574 7590 08/25/2020

JEFFER, MANGELS, BUTLER & MITCHELL, LLP
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LOS ANGELES, CA 90067

EXAMINER
STUART, COLIN W

ART UNIT	PAPER NUMBER
3785	

NOTIFICATION DATE	DELIVERY MODE
08/25/2020	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):

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Applicant-Initiated Interview Summary	Application No. 16/869,402	Applicant(s) Wersland et al.		
	Examiner COLIN W STUART	Art Unit 3785	AIA (First Inventor to File) Status Yes	Page 1 of 2

All participants (applicant, applicants representative, PTO personnel):

1. COLIN W STUART (Primary Examiner); Telephonic 2. Brennan Swain 43,175 (Attorney of Record); Telephonic

Date of Interview: 20 August 2020

Claims Discussed: 1-2, 7-9, 24-25

Prior Art Discussed: Rix (7,927,259), Haas (2005/0126018), Stanbridge (2012/0253245), Kehoe et al. (2013/0014968), Naughton et al. (2010/0162579)

Amendment proposed: Applicant proposed amendments to the claims to overcome the prior art rejections from the office action of 7/28/20. No agreement regarding allowability of the application overall was reached at this time as further search and consideration is required.

Brief Description of the main topic(s) of discussion: Applicant requested the interview to discuss proposed claim amendments and arguments in regards to the prior art rejections in the office action of 7/28/20. No agreement regarding allowability of the overall application was reached at this time as further search and consideration is required.

Issues Discussed:

Item(s) under 35 U.S.C. 103:
Applicant proposed amendments (see attached) to overcome the prior art rejections from the previous office action of 7/28/20. I appears that upon filing, and approval, of the proper terminal disclaimer, claim 1 would be in allowable form. The amendments to claim 24 appear to overcome the cited 103 combinations; however, further search and consideration is required. The newly proposed independent claim 7 was discussed and Examiner indicated that the Naughton reference appeared to still read on features of the claimed motor mount; however, it was discussed that further amendments such as the motor being directly secured to the outer major surface of the first side wall or further limiting that the first side wall axis is orthogonal or normal to the inner or outer major surface of the first side wall would appear to distinguish over Naughton. Applicant indicated that a response would be forthcoming. No agreement regarding allowability of the application overall was reached as further search and consideration is required.

Attachment(s): Agenda, Proposed Amendments, Proposed Arguments,

/COLIN W STUART/ Primary Examiner, Art Unit 3785	

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: The formal written reply to the last Office action must include the substance of the interview. (See MPEP section 713.04). If a reply to the last Office action has already been filed, applicant is given a non-extendable period of the longer of one month or thirty days from this interview date, or the mailing date of this interview summary form, whichever is later, to file a statement of the substance of the interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

FOR INTERVIEW PURPOSES ONLY. DO NOT ENTER. /CWS/ 8/20/20

Stuart, Colin W.

From: Swain, Brennan C. <bcs@jmbm.com>
Sent: Tuesday, August 18, 2020 1:03 PM
To: Stuart, Colin W.
Cc: Papp, Susan
Subject: Interview Agenda for 16/869,402 (Atty Docket No. 76840-5077) [JMBM-LA.76840.5077]

Follow Up Flag: Follow up
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Dear Examiner Stuart,

Recognizing that Internet communications are not secure, I hereby authorize the USPTO to communicate with the undersigned and practitioners in accordance with 37 CFR 1.33 and 37 CFR 1.34 concerning any subject matter of this application via video conferencing, instant messaging, or electronic mail. I understand that a copy of these communications will be made of record in the application file. (MPEP 502.03)

During our interview on August 20, 2020 at 1:00 PM EDT, I would like to discuss the proposed claim amendments set forth below. Remarks are set forth after the claims. I look forward to speaking with you.

1. (currently amended) A percussive therapy device comprising:

a housing, wherein the housing includes first, second and third handle portions and a head portion that cooperate to define a handle opening, wherein the first handle portion defines a first axis, the second handle portion defines a second axis and the third handle portion defines a third axis, wherein the first, second and third axes cooperate to form a triangle, such that a user can grasp any of the first, second or third handle portions independently to use the percussive therapy device, wherein the motor is positioned in the head portion of the housing, and wherein at least a portion of the push rod assembly extends outside of the head portion,

an electrical source,

a motor positioned in the housing,

a switch for activating the motor, and

a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor.

2. canceled.

3. (currently amended) The percussive therapy device of claim [[2]] 1 wherein the first handle portion is generally straight, wherein the second handle portion is generally straight, and wherein the third handle portion is generally straight.

4. (original) The percussive therapy device of claim 1 further comprising a wireless connection device.

5. (original) The percussive therapy device of claim 1 wherein the electrical source is a rechargeable battery, and wherein the percussive massage device further comprising a wireless charging receiver that is in electrical communication with the battery.

6. (original) The percussive therapy device of claim 1 further comprising a touchscreen.

7. (currently amended) ~~The percussive therapy device of claim 1~~ A percussive therapy device comprising:

a housing,

an electrical source,

a motor positioned in the housing, wherein the motor is a brushless motor, ~~wherein~~

a motor mount [[is]] positioned in the housing, wherein the motor mount includes a first side wall that includes opposing inner and outer major surfaces, and a second side wall that includes opposing inner and outer major surfaces, wherein a motor mount interior is defined between the inner major surfaces of the first and second side walls, wherein the motor is secured to the outer major surface of the first side wall ~~motor mount,~~ and ~~wherein~~ the ~~motor mount~~ second side wall is secured to the housing, wherein the first side wall defines a first side wall axis, wherein the motor includes a motor shaft that defines a motor shaft axis and extends through a protrusion opening defined in the first side wall of the motor mount and into the motor mount interior, wherein the motor shaft axis extends generally parallel to the first side wall axis, and wherein at least a portion of the push rod assembly is positioned in the motor mount interior,

a switch for activating the motor, and

a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor.

8-16. canceled

17. (currently amended) The percussive therapy device of claim [[2]] 1 wherein the electrical source is a battery that is positioned in the second handle portion, and wherein a wireless charging receiver that is in electrical communication with the battery is positioned in the third handle portion.

18. (currently amended) The percussive therapy device of claim [[9]] 7 wherein the push rod assembly extends through a push rod opening defined in the motor mount and out of the motor mount interior, and wherein the push rod assembly extends in a direction generally perpendicular to the motor shaft.

19. (previously presented) The percussive therapy device of claim 8 wherein the first side wall includes at least a first flange extending outwardly therefrom, wherein the first flange is positioned adjacent a first protrusion on the motor.

20. (previously presented) The percussive therapy device of claim 19 wherein the first side wall includes second and third flanges extending outwardly therefrom, wherein the second and third flanges are positioned adjacent second and third protrusions on the motor.

21. (currently amended) The percussive therapy device of claim 1 ~~further comprising~~ wherein the percussive therapy device is configured to provide haptic feedback.

22. (currently amended) The percussive therapy device of claim 1 [[2]] wherein the first handle portion includes a first handle portion interior edge and defines a first handle portion length, wherein the first handle portion length is long enough that when a user grasps the first handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the first handle portion interior edge, wherein the second handle portion includes a second handle portion interior edge and defines a second handle portion length, wherein the second handle portion length is long enough that when a user grasps the second handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the second handle portion interior edge, wherein the third handle portion includes a third handle portion interior edge and defines a third handle portion length, wherein the third handle portion length is long enough that when a user

grasps the third handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the third handle portion interior edge.

23. (previously presented) The percussive therapy device of claim 22 wherein at least two of the first handle portion, second handle portion and third handle portion are generally straight.

24. (currently amended) A method of using a percussive massage device, the method comprising the steps of:

obtaining the percussive massage device, wherein the percussive massage device includes a housing that includes first, second and third handle portions that cooperate to at least partially define a handle opening, an electrical source, a motor positioned in the housing, a switch for activating the motor, and a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor, wherein the first handle portion defines a first axis, the second handle portion defines a second axis and the third handle portion defines a third axis, wherein the first handle portion includes a first handle portion interior edge and defines a first handle portion length, wherein the first handle portion length is long enough that when a user grasps the first handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the first handle portion interior edge, wherein the second handle portion includes a second handle portion interior edge and defines a second handle portion length, wherein the second handle portion length is long enough that when a user grasps the second handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the second handle portion interior edge, wherein the third handle portion includes a third handle portion interior edge and defines a third handle portion length, wherein the third handle portion length is long enough that when a user grasps the third handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the third handle portion interior edge,

activating the motor using the switch,

grasping the first handle portion using a first hand,

massaging a first body part,

reorienting the percussive massage device, grasping the second handle portion using the first hand and massaging the first body part or a second body part, and

reorienting the percussive massage device, grasping the third handle portion using the first hand and massaging the first body part, the second body part or a third body part.

25. canceled.

26. (currently amended) The method of claim [[25]] 24 wherein the housing includes a head portion, and wherein the motor is positioned in the head portion.

27. (currently amended) The method of claim [[26]] 24 wherein at least two of the first handle portion, second handle portion and third handle portion are generally straight.

28. (previously presented) The method of claim 24 wherein the first handle portion, second handle portion and third handle portion are generally straight.

29. (new) The method of claim 24 wherein the housing defines a housing length, wherein at least a portion of the handle opening extends forwardly of half the housing length.

30. (new) The method of claim 24 wherein a transverse plane that bifurcates the housing extends through the handle opening.

31. (new) The method of claim 24 further comprising a fourth interior surface that at least partially defines the handle portion, wherein the first handle portion interior surface, second handle portion interior surface, third handle portion interior surface and fourth interior surface cooperate to define a quadrilateral.

32. (new) The percussive therapy device of claim 23 further comprising a fourth interior surface that at least partially defines the handle portion, wherein the first handle portion interior surface, second handle portion interior surface, third handle portion interior surface and fourth interior surface cooperate to define a quadrilateral.

REMARKS

ALLOWABLE SUBJECT MATTER

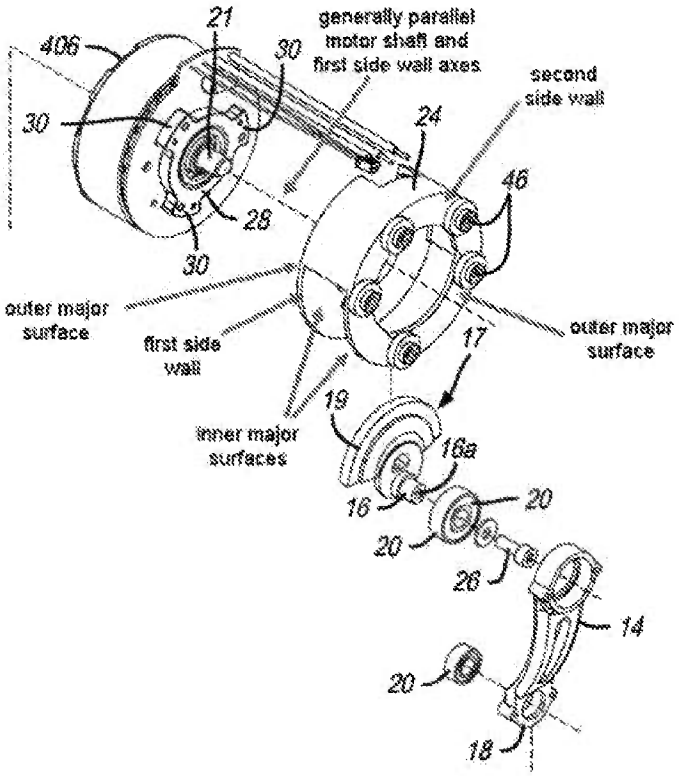
Applicant notes that, other than the Double Patenting rejection, claims 2-3, 17 and 22-23 were not rejected over any prior art. The features of claim 2 have been added to claim 1. Accordingly, after the filing of the Terminal Disclaimer discussed below, it is believed that claim 1 and all dependents are in condition for allowance.

REJECTIONS UNDER 35 U.S.C. §103

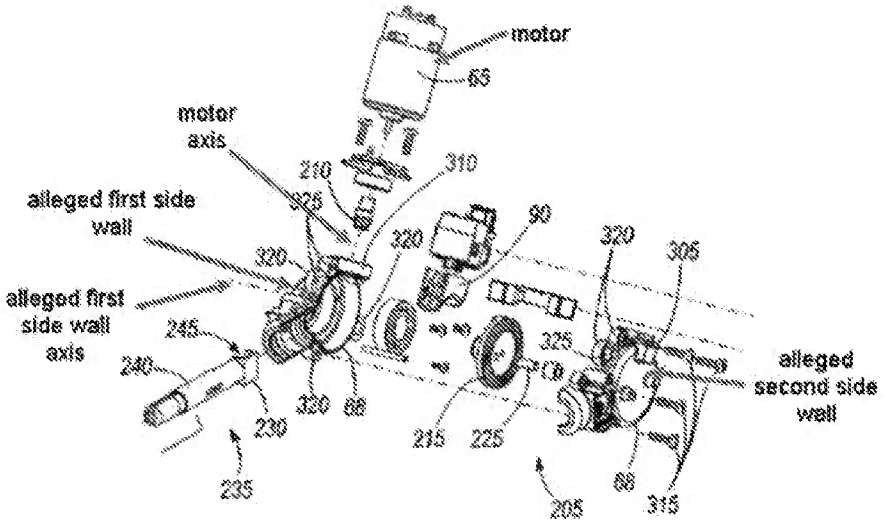
The Examiner has rejected claim 1 as unpatentable over Rix (US 7,927,259), in view of Haas (2005/0126018); claim 4 as unpatentable over Rix, Haas and Marton (US 10,314,762); claim 6 as unpatentable over Rix, Haas and Roberts (US 2015/0119771); claims 7-8 and 19-20 as unpatentable over Rix, Haas, Standbridge (US 2012/02532425) and Kehoe (US 2013/0014968); claims 7-9 and 18 as unpatentable over Rix, Haas, Standbridge and Naughton (US 2010/0162579); claim 24 as unpatentable over Rix, Haas, Pepe (US 2017/0304145) and Calvert (US 7,041,072); and claims 24-27 as unpatentable over Rix, Haas, Neumeier (US 2005/0252011) and Calvert. Please see the Office Action for the specific rejections.

Claim 7 as Rejected Over Rix, Haas, Standbridge and Naughton

With respect to the rejection of claims 7-9 and 18 that includes Naughton ("the second claim 7 rejection"), claim 7 has been placed in independent form and has been amended such that the first and second side walls each include opposing inner and outer major surfaces, as shown in the portion of annotated FIG. 43 shown below. Claim 7 has been further amended to recite "wherein the first side wall defines a first side wall axis, wherein the motor includes a motor shaft that defines a motor shaft axis and extends through a protrusion opening defined in the first side wall of the motor mount and into the motor mount interior, wherein the motor shaft axis extends generally parallel to the first side wall axis." The generally parallel axes are also shown in FIG. 43 below.



In Naughton, the alleged first and second side walls are part of a gear case and the motor shaft extends into the gear case. First, Naughton does not explicitly teach that the motor is secured to the first half of the gear case. Second, as shown below in a portion of FIG. 8 of Naughton, the motor shaft axis does not extend generally parallel to the axis of the alleged first side wall of Naughton.



Therefore, amended claim 7 defines over the cited art and withdrawal of the rejection is requested.

Claim 24 and its Dependents

It is respectfully submitted that present claims 24 and its dependents are not obvious. Claim 24 was rejected over Rix, Haas, Pepe and Calvert and claims 24-27 were rejected over Rix, Haas, Neumeier and Calvert. The features of claim 25 have been added to claim 24, therefore mooting the rejection above including Pepe. Support for the "at least partially" amendment to claim 24 can be found in paragraph [0119] as filed.

Claim 24 has been amended to include wherein the first, second and third handle portion lengths are each long enough that when a user grasps the associated handle portion with a hand at least a portion of three fingers extend through the handle opening and contact the handle portion interior edge. Claim 24 further recites "grasping the first handle portion using a first hand, massaging a first body part, reorienting the percussive massage device, grasping the second handle portion using the first hand and massaging the first body part or a second body part, and reorienting the percussive massage device, grasping the third handle portion using the first hand and massaging the first body part, the second body part or a third body part"

The amendments to claim 24 include the features originally from claim 25. As stated above, claim 25 was rejected as being unpatentable over a combination of four references, namely Rix, Haas, Neumeier and Calvert, with Neumeier and Calvert being added to the combination to show multiple handles to be gripped. With respect to Neumeier, the Examiner states that Neumeier "includes plural gripping surfaces (see Neumeier

Fig. 1 and para. 0018, main handle grip 6 and additional grip at 8) and Calvert teaches a similar massage device which includes a handle which is intended to be grasped in various positions depending on the particular treatment being given (see Calvert col. 4 In. 25-47). " In short, as is discussed further below, the 2 "grips" of Neumeier are clearly intended to be used simultaneously as a user grips both of them with two hands.

Therefore, it is respectfully submitted that the amendments regarding performing the method with a single hand (among other reasons), as discussed below, differentiate from the "modified Rix device."

The Examiner Has Failed to Show A Reasonable Motivation
to Combine/Modify the Cited References

Under Federal Circuit case law, the prior art must provide a basis for the alleged modification and the conclusion of obviousness cannot derive from the teachings of the Applicant's specification.

It is respectfully submitted that in the present case, the cited prior art does not provide an appropriate basis for the modification. Instead, the Examiner has derived his conclusion of obviousness from the teaching in Applicant's specification that it is advantageous to be able to grasp separate handle portions using hindsight. In short, based on the configuration of the Rix, Haas, Neumeier and Calvert devices (see below in the section discussing new claims 29 and 30), a person of ordinary skill in the art would not be motivated to modify and reconfigure the Rix device using the teachings of Haas, Neumeier and Calvert to arrive at claim 24. There is simply no reason to add a housing with first, second and third handle portions that can each be grasped independently to be able to grasp and use the device in different configurations.

It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." *In re Lee*, 277 F.3d at 1343, *citing W.L. Gore & Assocs. v. Garlock, Inc.*, 721 F.2d 1540, 1553 (Fed. Cir. 1983). See *In re Dow Chem. Co.*, 837 F.2d 469, 473 (Fed. Cir. 1988) ("[t]here must be a reason or suggestion in the art for selecting the procedure used, other than the knowledge learned from the applicant's disclosure"); *Cardiac Pacemakers, Inc. v. St. Jude Medical, Inc.*, 381 F.3d 1371 (Fed. Cir. 2004) ("the suggestion to combine references must not be derived by hindsight from knowledge of the invention itself."). Using an applicant's disclosure as a blueprint to reconstruct the claimed invention from isolated pieces of the prior art contravenes the statutory mandate of §103 which requires judging obviousness at the point in time when the invention was made. See *Grain Processing Corp. v. American Maize-Prods. Co.*, 840 F.2d 902, 907 (Fed. Cir. 1988).

Calling the defendants' analysis a "poster child" for hindsight reasoning, the Federal Circuit affirmed the finding of nonobviousness in *Otsuka Pharmaceutical Co., Ltd. v. Sandoz, Inc.*, 678 F.3d 1280 (Fed. Cir. 2012). The Federal Circuit used a two part inquiry typically called a "lead compound analysis" but applicable to any art field:

1. Determine whether a chemist of ordinary skill would have selected the asserted prior art compounds as lead compounds, or starting points, for further development efforts. ("analysis is guided by evidence of the compound's pertinent properties.... Absent a reason or motivation based on such prior art evidence, mere structural similarity between a prior art compound and the claimed compound does not inform the lead compound 10 selection." *Otsuka*, 678 F.3d at 1292.

2. Would the prior art have supplied one of ordinary skill in the art with a reason or motivation to modify a lead compound to make the claimed compound with a reasonable expectation of success? *Id. at 1291-92*.

Even assuming that one would have selected OPC4392 as a lead compound, the district court found that the Defendants failed to prove that the prior art would have directed one to make the various modifications necessary to convert OPC–4392 into aripiprazole. ...On appeal, the Defendants rely in large part on the inventors' and Otsuka's own development efforts in an attempt to prove that aripiprazole would have been obvious. ... The inventor's own path itself never leads to a conclusion of obviousness; that is hindsight. What matters is the path that the person of ordinary skill in the art would have followed, as evidenced by the pertinent prior art. *Id.*

In the present case, and as is shown in FIGS. 38-40, the purpose of the first, second and third handle portions is to allow a user to grasp each of the handle portions separately so that they can massage one or more body parts and/or use the percussive massage device in different orientations. Claim 24 recites this feature. None of Rix, Haas nor Neumeier teach, disclose or suggest providing separate handle portions, nor do they suggest that the alleged housings of the device can be grasped anywhere other than a single handle. More importantly, no motivation or reasoning is provided in Rix or any of the other references to modify Rix to include the claimed handle portion features and the Examiner is making these modifications in hindsight based on a reading of the teachings in the present application.

Rix has a single handle. "The saw has a handle end 20. The handle end has a trigger 22. In this manner the rod may be reciprocated at a rate proportionate to a user's force applied to the trigger." Rix Col. 3, lines 65-67. The Examiner alleges that Rix has four handle portions (see annotated FIG. 1 or Rix on page 13 of the current Office Action). However, Rix never mentions the components being handle portions nor provides any disclosure about grasping the handle portions. Furthermore, Rix can only operate when the trigger is pressed. Therefore, a user would never grasp the other three alleged handle portions, and, if they did, it require 2 hands. Furthermore, Rix is intended to be used by a trainer on an athlete (see, e.g., col. 4, lines 59-60 – "The body impact trainer system of the present invention was designed for trainers of athletes"). Therefore, there would be no need for the user to reorient the device or grasp different handle portions. In short, Rix does not teach, disclose or suggest grasping any portion of the device other than the handle and does not teach, disclose or suggest grasping with only a first hand.

Haas includes a single handle 12. "The hand-held tool 10 further has a handle 12 on which an actuation switch 13 is arranged for actuating the hand-held tool 10." Haas paragraph [0022]. Haas also does not teach, disclose or suggest grasping any portion of the device other than the handle 12.

Neumeier teaches "A main handle grip 6 is formed at a posterior end of housing 4. At a tool-end facing away from the posterior end, the housing 4 forms a device neck 8, which serves as an additional hand grip." See paragraph [0018] of Neumeier. However, paragraph [0004] of Neumeier discusses the importance of using a high amount of pressure during use of the inventive saber saw. "In addition, a high pressure must be applied when sawing because the spring fore acting on the hook element must be overcome and the pressure necessary for advancing the saw blade must be applied. To produce this high pressure, the end of the saber saw opposite to the saw blade must be drawn upwards with the first hand while the device neck must be urged downwards with a second hand. A relatively high pressure of the saw blade against the work piece results from the torque generated in this process." It is respectfully submitted that a person of ordinary skill in the art would understand that neck 8 would be for the user to place their second hand on while holding the main grip 6 and operating the trigger (not numbered, but shown in FIG. 1 on main grip 6).

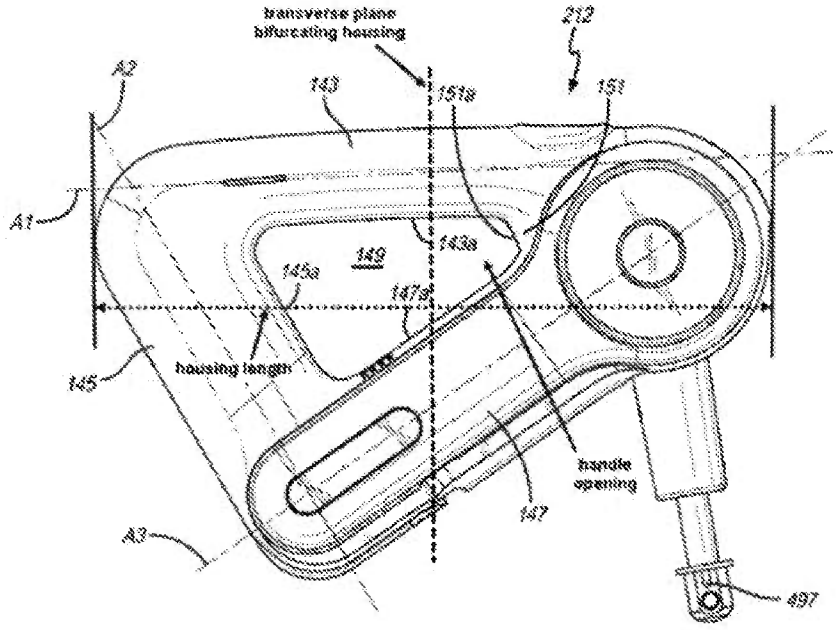
First, because the trigger in on main grip 6, a user would never grasp any portion of the device "with the first hand" other than the main grip 6. However, furthermore, based on the quote above about the high pressure needed, a person of ordinary skill in the art would understand that a user would clearly never use the saber saw in any orientation other than placing a first hand on main grip 6 and a second hand on neck 8. Accordingly, Neumeier also does not teach, disclose or suggest grasping any portion of the device "with the first hand" other than the main grip 6.

Lastly, we address Calvert. As discussed above, the combination of Rix, Haas and Neumeier is not proper. Calvert does not make up for the deficiencies of the other references. The handles 42 and 44 of Calvert are rods that extend therefrom and, as is readily apparent to a person of ordinary skill in the art, a person grasps handle 42 with one hand and handle 44 with the other hand and then presses the massage nodes against the body. Calvert does state that "the handle arrangement may be varied." However, no suggestion or motivation is made to orient the handles as claimed. Furthermore, a person of ordinary skill in the art when modifying the Rix device would not look to a device that includes handles that are simply rods or sticks extending outwardly therefrom.

Therefore, none of Rix, Haas, Neumeier nor Calvert teach, disclose or suggest providing separate handle portions, oriented as claimed, and grasped by a single hand during use. Instead, the Examiner took Applicant's teaching of using the different handle portions that can be gripped separately to use the device in different orientations and, in hindsight, argued that one of ordinary skill in the art would take Rix, Haas, Neumeier and Calvert and modify them appropriately to arrive at the claimed invention. It is respectfully submitted that the prior art does **not** provide a basis for the modification, as is necessary under the **controlling** case law discussed

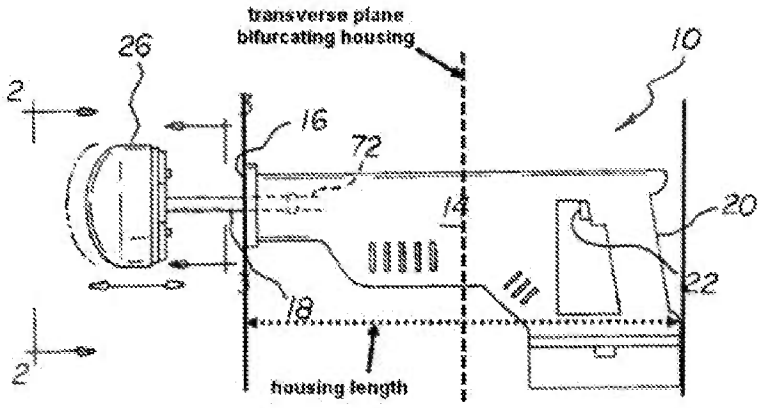
above. Instead, the Examiner has derived the conclusion of obviousness from Applicant's specification, which is improper. As quoted above from *Otsuka*, "The inventor's own path itself never leads to a conclusion of obviousness; that is hindsight." The inventor's own path here is a path that leads to a percussive massage device with three separate handle portions that can be grasped by a user to use the device. A person of ordinary skill in the art, upon a review of Rix, Haas, Neumeier and Calvert, would not be lead down a path where a tool is provided with first, second and third handle portions. The Examiner's conclusion was based on hindsight reasoning. Therefore, the combination cannot stand and the rejection should be withdrawn.

Claims 29 and 30 have also been added. As shown below in FIG. 1 of the present application, the handle portions and handle opening encompass a large portion of the length of the device and of the housing itself. This provides stability and control for a user utilizing the device and grasping any of the handle portions.

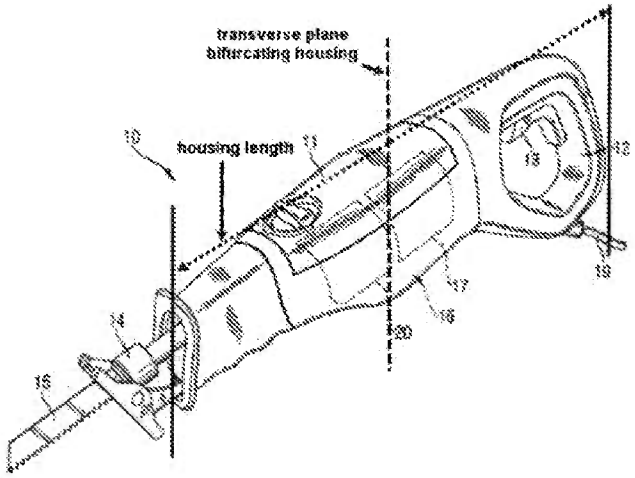


As shown below, the Rix, Haas, Neumeier and Calvert devices and housings thereof are all much longer overall than the handle openings and alleged handle portions. This configuration would make it awkward and unwieldy for a user to grasp the various alleged handle portions and use the device as shown in FIGS. 38-40 of the present invention. See, e.g., an exemplary use of one commercial embodiment of the invention in a short video at https://www.youtube.com/watch?v=9902baVFUDk. Now imagine trying to perform this routine using the modified Rix device.

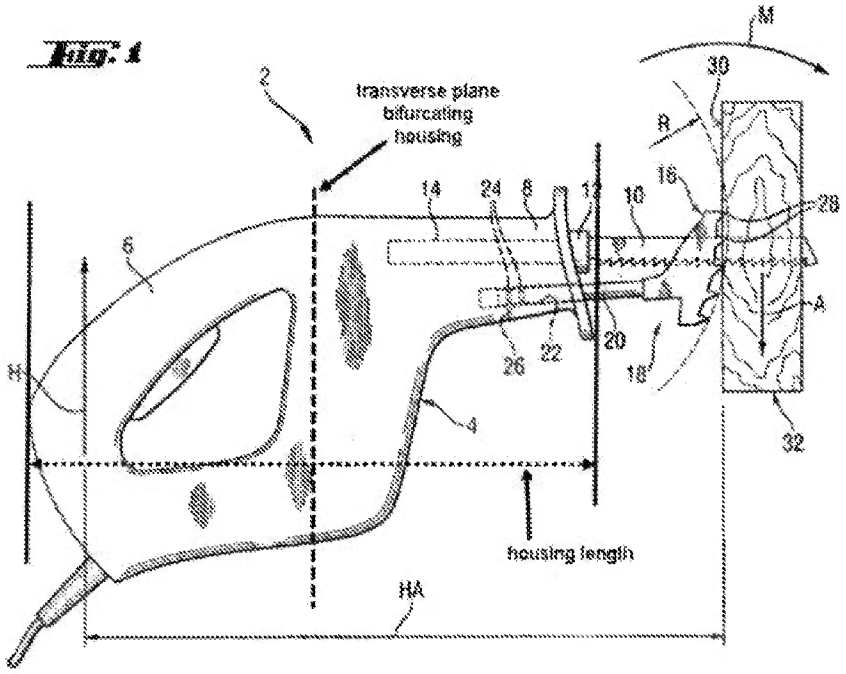
Rix


transverse plane
bifurcating housing
26
10
2
16
72
14
20
22
18
2
housing length

Haas


transverse plane
bifurcating housing
housing length

Neumeier



Calvert

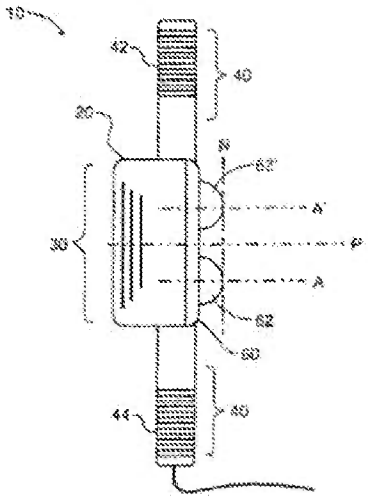


FIG. 1

Claim 29 has been added and recites "wherein the housing defines a housing length, wherein at least a portion of the handle opening extends forwardly of half the housing length." The housing length is shown above in FIG. 14. As shown, a portion of the handle opening 149 extends forwardly of the line marking half the housing length (labeled as "transverse plane bifurcating housing"). As shown in the annotated figures above, none of Rix, Haas, Neumeier and Calvert show, teach or suggest this. Furthermore, the Rix device as modified by Haas, Neumeier and Calvert would not include this feature.

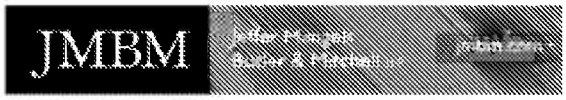
Claim 30 has been added and recites "wherein a transverse plane that bifurcates the housing extends through the handle opening" As shown in FIG. 14 above, the transverse plane that bifurcates the housing extends through handle opening 149. As shown in the annotated figures above, none of Rix, Haas, Neumeier and Calvert show, teach or suggest this. Furthermore, the Rix device as modified by Haas, Neumeier and Calvert would not include this feature.

Accordingly, claims 29 and 30 further define over the cited references.

Claim 31 has been added and recites "further comprising a fourth interior surface that at least partially defines the handle portion, wherein the first handle portion interior surface, second handle portion interior surface, third handle portion interior surface and fourth interior surface cooperate to define a quadrilateral." Support for the fourth interior surface can be found in at least original paragraph [0120] and FIGS. 1 and 37. The surface is referred to as a finger surface. However, the specification has also been amended to provide support for the exact term "fourth interior surface." It is believed that this is not new matter as FIG. 37 clearly shows a "fourth interior surface." Claim 32 includes similar a similar recitation to claim 31.

For the all the reasons stated above, applicant respectfully requests withdrawal of the rejections.

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16869402	NTC.PUB	08/20/2020	76840-5077

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
16/869,402	05/07/2020	Jason Wersland	76840-5077

CONFIRMATION NO. 4812

24574
JEFFER, MANGELS, BUTLER & MITCHELL, LLP
1900 AVENUE OF THE STARS, 7TH FLOOR
LOS ANGELES, CA 90067

PUBLICATION NOTICE



Title:PERCUSSIVE THERAPY DEVICE

Publication No.US-2020-0261307-A1
Publication Date:08/20/2020

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Application	Document	Mailroom Date	Attorney Docket No.
16869402	CTNF	07/28/2020	76840-5077
	EXIN	07/28/2020	76840-5077
	892	07/28/2020	76840-5077
	1449	07/28/2020	76840-5077

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/869,402	05/07/2020	Jason Wersland	76840-5077	4812

24574 7590 07/28/2020

JEFFER, MANGELS, BUTLER & MITCHELL, LLP
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LOS ANGELES, CA 90067

EXAMINER
STUART, COLIN W

ART UNIT	PAPER NUMBER
3785	

NOTIFICATION DATE	DELIVERY MODE
07/28/2020	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):

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Office Action Summary	Application No. 16/869,402	Applicant(s) Wersland et al.	
	Examiner COLIN W STUART	Art Unit 3785	AIA (FITF) Status Yes

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Period for Reply

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

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

Status

1)☑ Responsive to communication(s) filed on 6/17/20.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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

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

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

Disposition of Claims*

5) ☑ Claim(s) 1-9 and 17-27 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-9 and 17-27 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

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

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

Application Papers

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

11)☑ The drawing(s) filed on 5/7/20 is/are: a)☐ accepted or b)☑ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

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

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

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

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

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

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

Attachment(s)

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

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

3) ☑ Interview Summary (PTO-413) Paper No(s)/Mail Date 7/9/20.

4) ☐ Other: _____.

Notice of Pre-AIA or AIA Status

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

Information Disclosure Statement

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Note: the crossed-through reference in the IDS filed 6/24/20 is not being considered at this time as the publication number, date, and name of the cited document does not match.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference characters "116" and "117" have both been used to designate the pinion shaft, references characters "101" and "402" have both been used to designate the housing, and reference characters "230" and "310" have both been used to designate the pushrod and the reciprocator (note in Fig. 8 these reference characters are pointing to the same part).

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 47, 700.

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 228.

6. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "230" has been used to designate all of the first rod portion, the reciprocator, and the pushrod and reference character "231" has been used to designate both the protrusion and the first rod portion.

7. The drawings are objected to because para. 00125 discloses a compliant dampening block with reference 402; however, 402 in para. 33 does not appear to show a dampening block nor does there appear to be such a dampening block shown in the drawings.

8. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

9. The disclosure is objected to because of the following informalities:

- Para. 00123 recites the phrase "opening 222b that_receives" to which the underscore mark is objected to;

- Para. 00119 recites the phrase "and comfort of using the_device" to which the underscore mark is objected to;
- Para. 00120 recites the phrase "second handle portion 145 f(the second handle portion length)." to which the 'f(the' term appears to be a typographical error;
- Para. 00125 recites the phrase "In some_embodiments" to which the underscore mark is objected to;
- Para. 00129 recites the phrase "and the adapter member_226" to which the underscore mark is objected to;
- Para. 00159 recites that "1.8 volts is divided into 60 0.3-volt increments" and this is objected to as this appears it should be 0.03-volt increments;
- Para. 00166 is objected to as it recites "3-volt increments" and as discussed above this does not appear to be the value of the increments;
- Para. 00183 recites the phrase "using the lookup table. **[END OF 5063]**" which is objected to for what appears to be extraneous/typographical language;
- Para. 00200 refers to a "Fig. 39", "Fig. 40", and "Fig. 41" when disclosing various grips of the device; however, it appears from the disclosure that these figures should be –Fig. 38--, --Fig. 39--, and –Fig. 40--, respectively;
- Para. 00205 recites the phrase "As shown in Fig. 41, a "base" grip may be utilized" which is objected to as Fig. 41 does not appear to show a base grip; and
- Para. 00238 refers to a "Fig. 46" (two instances) in reference to a touch screen on a mobile device and this is objected to as Fig. 46 does not show a touch screen on a mobile device and furthermore, there is no "Fig. 46" but rather Figs. 46A-D.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

10. The following is a quotation of 35 U.S.C. 112(b):
(b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. Claims 2-3, 17, and 21-23 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Regarding claim 2, the language "The percussive therapy device of claim wherein" (line 1) renders the claim indefinite as it is not known what claim this claim 2 depends on and thus the metes and bounds of the claim cannot be ascertained. For purposes of expedited examination this claim will be examined as if dependent on claim 1.

Regarding claim 21, this dependent device claims that it "further comprising haptic feedback"; however, this appears to be a method step has 'haptic feedback' is not a structural element per se but rather the creation of the experience of touch for a user via various means (force, vibration, etc.). Thus the claim is unclear as this appears to be a method step and it is not known how such haptic feedback step is provided. Examiner suggests amending to read –wherein the percussive therapy device is configured to provide haptic feedback—for example.

Claims 3, 17, 22, and 23 are rejected based on dependency on a rejected claim.

Claim Rejections - 35 USC § 103

12. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory

basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

13. The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims the examiner presumes that the subject matter of the various claims was commonly owned as of the effective filing date of the claimed invention(s) absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and effective filing dates of each claim that was not commonly owned as of the effective filing date of the later invention in order for the examiner to consider the applicability of 35 U.S.C. 102(b)(2)(C) for any potential 35 U.S.C. 102(a)(2) prior art against the later invention.

15. Claim 1 is/are rejected under 35 U.S.C. 103 as being unpatentable over Rix (7,927,259) in view of Haas (2005/0126018).

Regarding claim 1, Rix shows a percussive therapy device (see Fig. 1-5, abstract for example) which includes a housing 14, a motor positioned in the housing (see Fig. 1 and col. 2 ln. 23-27, col. 4 ln. 54-58, motor 72), a switch for activating the motor (see Fig. 1 and col. 3 ln. 65-67, switch 22), and a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor (see Fig. 1, push rod assembly 18, see col. 2 ln. 23-27 and col. 4 ln. 54-58 for example). Rix teaches that the device is an electrical saw converted to be a massager (see col. 1 ln. 30-36 and col. 3 ln. 63) and as such one would expect that the device would have an electrical source; however, Rix is silent as to explicitly including this feature. Haas teaches a similar device (note that the

device of Rix is a reciprocating saw converted to be a massager as discussed above) which includes an electrical source (see Haas para. 0021). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the Rix device to explicitly include an electrical source, as taught by Haas, in order to provide the required elements to power the device, i.e. electrical source.

16. Claim 4 is/are rejected under 35 U.S.C. 103 as being unpatentable over Rix and Haas as applied to claim 1 above, and further in view of Marton et al. (10,314,762).

Regarding claim 4, the modified Rix device is silent as to including a wireless connection device; however, Marton teaches a similar device which includes a wireless connection device (see Marton Fig. 35 and col. 37 ln. 38 through col. 39 ln. 19 which discloses connection of the device with a remote electronic device via wireless connection). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the modified Rix device to include a wireless connection device, as taught by Marton, in order to provide the ability to connect with a remote device for monitoring (Marton col. 37 ln. 38 through col. 39 ln. 19).

17. Claims 5 and 21 is/are rejected under 35 U.S.C. 103 as being unpatentable over Rix and Haas as applied to claim 1 above, and further in view of Paul et al. (2018/0288160).

Regarding claim 5, the modified Rix device teaches a battery as the electrical source (see Haas para. 0021), but is silent as to the device including a wireless charging receiver in electrical communication with the battery; however, Paul teaches a massage device which includes rechargeable battery in communication with a wireless charging receiver (see Paul para. 0039). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the modified Rix device to include a wireless charging receiver in electrical communication with

the battery, as taught by Paul, in order to provide the ability reuse the device after the battery has been drained without having to use another separate battery.

Regarding claim 21, the modified Rix device is silent as to further including haptic feedback; however, Paul teaches a similar massage device which includes providing haptic feedback to the user (see Paul para. 0040). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the modified Rix device to include providing haptic feedback to the user, as taught by Paul, in order to alert the user about information related to the operation of the device (see Paul para. 0040).

18. Claim 6 is/are rejected under 35 U.S.C. 103 as being unpatentable over Rix and Haas as applied to claim 1 above, and further in view of Roberts (2015/0119771).

Regarding claim 6, the modified Rix device is silent as to the device further including a touch screen; however, Roberts teaches a similar device which includes a touch screen to provide a user interface (see Roberts Fig. 1-2 and para. 0159). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the modified Rix device to include a touch screen, as taught by Roberts, in order to provide a well-known data input tool/user interface to control the device (see Roberts para. 0150).

19. Claims 7-8 and 19-20 is/are rejected under 35 U.S.C. 103 as being unpatentable over Rix and Haas as applied to claim 1 above, and further in view of Stanbridge (2012/0253245) and Kehoe et al. (2013/0014968).

Regarding claim 7, the modified Rix device is silent as to the motor explicitly being a brushless motor and a motor mount is positioned in the housing such that the motor is secured to the motor

mount and the mount is secured to the housing; however, Stanbridge teaches a similar massage device which includes a brushless motor (see Stanbridge para. 0109), and Kehoe teaches a similar device (note that Rix is a reciprocating saw converted to a massage device as discussed above) which includes a motor mount for mounting a motor to and mounting to the housing (see Kehoe Fig. 4-8, motor 32, motor mount 64, Fig. 12, motor 232, motor mount 256, Fig. 1 showing the motor and mount secured within the housing). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the modified Rix device's motor to be a brushless motor, as taught by Stanbridge, and to include a motor mount for mounting the motor inside the housing, as taught by Kehoe, in order to provide a motor efficient motor (brushless being more efficient than a brushed motor) and to provide the required structural components to secure the motor inside the device (mount).

Regarding claim 8, the modified Rix device's motor mount includes first and second side walls that define a motor mount interior therebetween and the motor being secured to the first side wall and the second side wall is secured to the housing (see Kehoe Fig. 5-6, Fig. 6 showing the upper side of the motor mount 64 which is the second side wall, the underside which the motor is mounted to as shown in Fig. 5 being the first side wall, interior shown at 92, see also Fig. 12 showing similar sidewalls, Fig. 1 and 2 showing securing within the housing).

Regarding claim 19, the modified Rix device's first side wall includes at least a first flange extending outwardly therefrom and positioned adjacent a first protrusion on the motor (see Kehoe Fig. 4-6, flanges 84 extending outwardly from underside/first side wall and adjacent to protrusions 60 on the motor).

Regarding claim 20, the modified Rix device's first side wall includes second a third flanges extending outwardly therefrom and positioned adjacent second and third protrusions on the motor (see Kehoe Fig. 4-6 which shows first and second flanges 84 extending outwardly from underside/first side

wall and adjacent to first and second protrusions 60 on the motor, para. 0031 disclosing that there can be more than two flanges 84 and more than two protrusions 60 and thus discloses first, second and third flanges and protrusions).

20. Claims 7-9 and 18 is/are rejected under 35 U.S.C. 103 as being unpatentable over Rix and Haas as applied to claim 1 above, and further in view of Stanbridge and Naughton et al. (2010/0162579).

Regarding claim 7, the modified Rix device is silent as to the motor explicitly being a brushless motor and a motor mount is positioned in the housing such that the motor is secured to the motor mount and the mount is secured to the housing; however, Stanbridge teaches a similar massage device which includes a brushless motor (see Stanbridge para. 0109), and Naughton teaches a similar device (note that Rix is a reciprocating saw converted to a massage device as discussed above) which includes a motor mount for mounting a motor to and mounting to the housing (see Naughton Fig. 8, motor mount element 68 which is shown in first and second side walls as shown in this figure, motor 65, all secured to the housing 42/44 as can be seen). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the modified Rix device's motor to be a brushless motor, as taught by Stanbridge, and to include a motor mount for mounting the motor inside the housing, as taught by Naughton, in order to provide a motor efficient motor (brushless being more efficient than a brushed motor) and to provide the required structural components to secure the motor inside the device (mount).

Regarding claim 8, the modified Rix device's motor mount includes first and second side walls that define a motor mount interior therebetween and the motor being secured to the first side wall and the second side wall is secured to the housing (see Naughton Fig. 8, first and second side walls being each half element 68 with interior as shown).

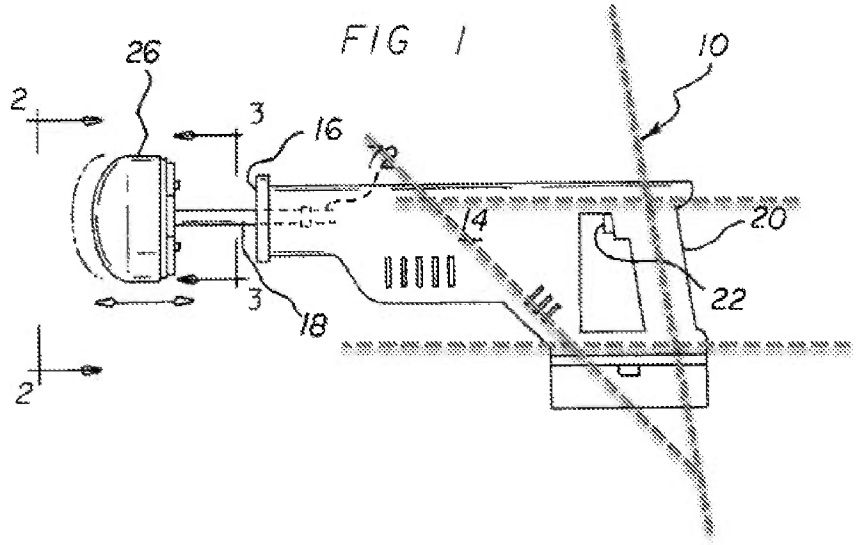
Regarding claim 9, the modified Rix device's motor includes a shaft (Naughton Fig. 8 with shaft of motor 65 as shown and including element 210) that extends through a protrusion opening defined in the first side wall of the motor mount and into the interior and at least a portion of the push rod assembly being positioned in the motor mount interior (see Naughton Fig. 8 which shows shaft 210 extending through a protrusion opening at element 310 with portion 230 of push rod assembly 235 also positioned in the motor mount interior, see also Fig. 7).

Regarding claim 18, the modified Rix device's push rod assembly extends through a push rod opening defined in the motor mount and out of the motor mount interior (see Naughton Fig. 8, push rod opening adjacent element 230 in this figure, see also Fig. 7).

21. Claim 24 is/are rejected under 35 U.S.C. 103 as being unpatentable over Rix in view of Haas, Pepe (2017/0304145), and Calvert (7,041,072).

Regarding claim 24, the use of the Rix device includes a method of using a percussive massage device (see Fig. 1-5 and abstract for example), which includes obtaining the percussive massage device (see Fig. 1), the device including a housing 14 that includes first, second and third handle portions, with first, second and third axes, that cooperate to define a handle opening (see annotated Fig. 1 below which has labeled 4 different axes, each one of these defined by handle portions as shown, thus a possibility of first through fourth handle portions, the portions are handle portions as they are capable of being grasped by a user), a motor positioned in the housing (see Fig. 1 and col. 2 ln. 23-27, col. 4 ln. 54-58, motor 72), a switch for activating the motor (see Fig. 1 and col. 3 ln. 65-67, switch 22), and a push rod assembly operatively connected to the motor and configured to reciprocate in response to activation of the motor (see Fig. 1, push rod assembly 18, see col. 2 ln. 23-27 and col. 4 ln. 54-58 for example), activating the motor using the switch and grasping the first handle portion and massaging a first body portion (see annotated Fig. 1 below, a first handle portion such as the portion at 20, switch 22

is actuated to activate the motor per col. 3 ln. 65-67, and the ordinary use of the device would provide massage to at least a first body portion). Rix teaches that the device is an electrical saw converted to be a massager (see col. 1 ln. 30-36 and col. 3 ln. 63) and as such one would expect that the device would have an electrical source; however, Rix is silent as to explicitly including this feature. Haas teaches a similar device (note that the device of Rix is a reciprocating saw converted to be a massager as discussed above) which includes an electrical source (see Haas para. 0021). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the Rix method's device to explicitly include an electrical source, as taught by Haas, in order to provide the required elements to power the device, i.e. electrical source. The now modified Rix is silent as to explicitly grasping the second and third handle portions and massaging the first body part; however, Pepe teaches a similar percussive massage device which includes plural handle portions which are intended to be grasped (see Pepe Fig. 1 and para. 0024, handle portions 12 and 14 intended to be grasped by the user) and Calvert teaches a similar massage device which includes a handle which is intended to be grasped in various positions depending on the particular treatment being given (see Calvert col. 4 ln. 25-47). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the modified Rix method to include grasping the second and third handle portions and massaging the body part, as taught by Pepe and Calvert, in order to provide the ability to provide the required gripping positions depending on the particular treatment being given (see Calvert col. 4 ln. 25-28).



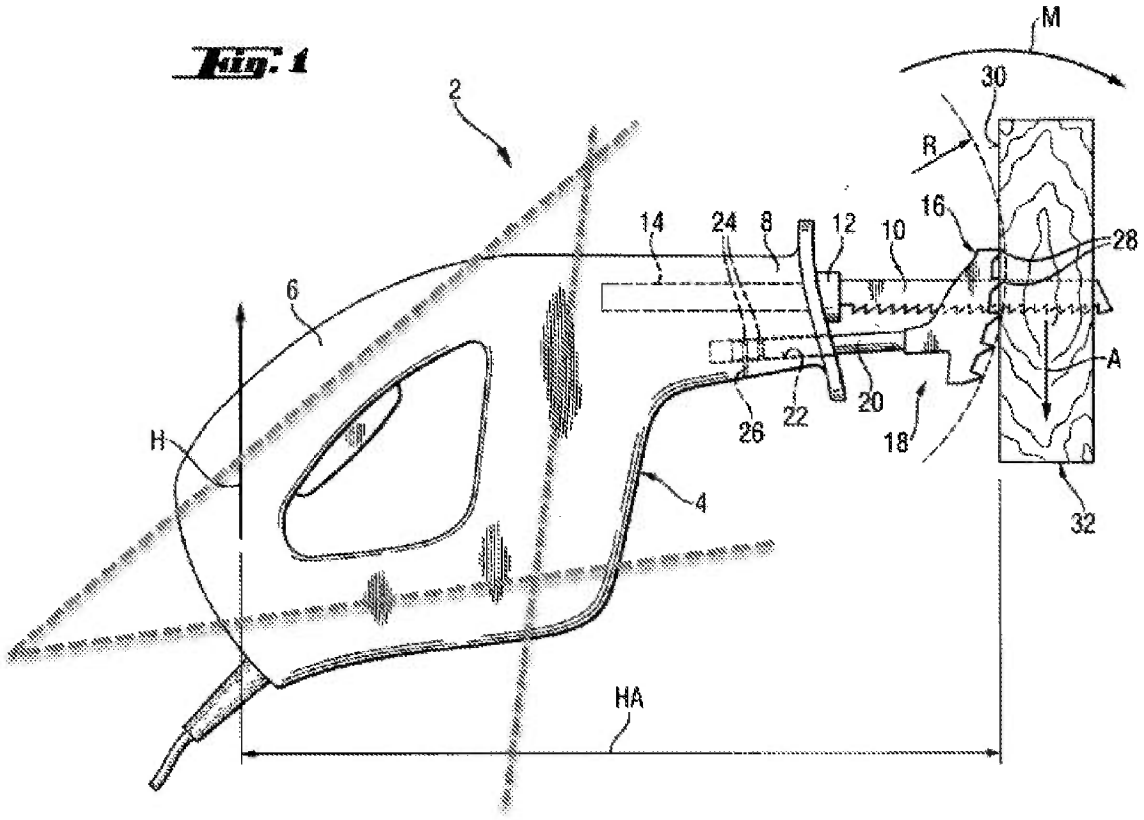
22. Claims 24-27 is/are rejected under 35 U.S.C. 103 as being unpatentable over Rix in view of Haas, Neumeier (2005/0252011), and Calvert.

Regarding claim 24, the use of the Rix device includes a method of using a percussive massage device (see Fig. 1-5 and abstract for example), which includes obtaining the percussive massage device (see Fig. 1), the device including a housing 14 that includes first, second and third handle portions, with first, second and third axes, that cooperate to define a handle opening (see annotated Fig. 1 above which has labeled 4 different axes, each one of these defined by handle portions as shown, thus a possibility of first through fourth handle portions, the portions are handle portions as they are capable of being grasped by a user), a motor positioned in the housing (see Fig. 1 and col. 2 ln. 23-27, col. 4 ln. 54-58, motor 72), a switch for activating the motor (see Fig. 1 and col. 3 ln. 65-67, switch 22), and a push rod assembly operatively connected to the motor and configured to reciprocate in response to

activation of the motor (see Fig. 1, push rod assembly 18, see col. 2 ln. 23-27 and col. 4 ln. 54-58 for example), activating the motor using the switch and grasping the first handle portion and massaging a first body portion (see annotated Fig. 1 above, a first handle portion such as the portion at 20, switch 22 is actuated to activate the motor per col. 3 ln. 65-67, and the ordinary use of the device would provide massage to at least a first body portion). Rix teaches that the device is an electrical saw converted to be a massager (see col. 1 ln. 30-36 and col. 3 ln. 63) and as such one would expect that the device would have an electrical source; however, Rix is silent as to explicitly including this feature. Haas teaches a similar device (note that the device of Rix is a reciprocating saw converted to be a massager as discussed above) which includes an electrical source (see Haas para. 0021). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the Rix method's device to explicitly include an electrical source, as taught by Haas, in order to provide the required elements to power the device, i.e. electrical source. The now modified Rix is silent as to explicitly grasping the second and third handle portions and massaging the first body part; however, Neumeier teaches a similar device (note that the device of Rix is a reciprocating saw converted to be a massager as discussed above) which includes plural gripping surfaces (see Neumeier Fig. 1 and para. 0018, main handle grip 6 and additional grip at 8) and Calvert teaches a similar massage device which includes a handle which is intended to be grasped in various positions depending on the particular treatment being given (see Calvert col. 4 ln. 25-47). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the modified Rix method to include grasping the second and third handle portions and massaging the body part, as taught by Neumeier and Calvert, in order to provide the ability to provide the required gripping positions depending on the particular treatment being given (see Calvert col. 4 ln. 25-28).

Regarding claim 25, the modified Rix method is silent as to the first, second, and third handle portions providing interior edges and defining lengths as claimed; however, Neumeier teaches a similar

device (note that the device of Rix is a reciprocating saw converted to be a massager as discussed above) which includes handle portions which have an interior edge with length which would allow for a user to grasp such that at least a portion of three fingers extend through the handle opening and contact the interior edge as claimed (see annotated Fig. 1 of Neumeier below which shows the axes defined by three different handle portions all of which define the handle opening via interior edges with lengths which would allow for the user to have at least a portion of three fingers extending therethrough and contacting the interior edge). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the modified Rix method's device's handle to be shaped, as taught by Neumeier, in order to provide a desired, ergonomic shape to the handle.



Regarding claim 26, the modified Rix method's housing includes a head portion with the motor positioned therein (see annotated Fig. 1 of Neumeier above and Fig. 1 of Rix, actuated output 18 of Rix is reciprocated via motor 72 which is located in a similar location as a head portion 8 of Neumeier).

Regarding claim 27, the modified Rix method includes at least two of the first, second, and third handle portions being generally straight (see annotated Fig. 1 of Neumeier above).

Double Patenting

23. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process... may obtain a patent therefor..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the claims that are directed to the same invention so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

24. Claim 1 provisionally rejected under 35 U.S.C. 101 as claiming the same invention as that of claim 1 of copending Application No. 16/890544 (reference application). This is a provisional statutory double patenting rejection since the claims directed to the same invention have not in fact been patented.

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

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

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

For more information about eTerminal Disclaimers, refer to

www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

26. Claims 1, 24, and 25 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 6, 1, and 2 of U.S. Patent No. 10,702,448.

Although the claims at issue are not identical, they are not patentably distinct from each other because the patented claims include each structural and functional feature and claimed method steps but include additional limitations such that the patented claims are narrower versions of the instant claims and as such any infringement on the patented claims would result in infringement on the instant claims. Instant claim 1 corresponds to patent claim 6. Instant claim 24 corresponds to patent claim 1. Instant claim 25 corresponds to patent claim 2.

27. Claims 2-3, 22-23, and 26-27 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 6-7 and 2 of U.S. Patent No. 10,702,448 in view of Rix.

Regarding instant claim 2 and 26, patent claim 6, and 2, includes each first, second, and third handle portions as claimed, but is silent as to explicitly including a head portion with the motor therein; however, Rix teaches a similar device with handle portions and a head portion with the motor therein (see Rix Fig. 1, head portion being the part of the housing which houses motor 72). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the patent claim 6 device, claim 2 method to explicitly include a head portion to house the motor, as taught by Rix, in order to provide room for the required elements for operating the device.

Instant claim 3 corresponds to modified patent claim 6. Instant claims 22 and 23 correspond to modified patent claim 7. Instant claim 27 corresponds to modified patent claim 2.

28. Claim 17 is rejected on the ground of nonstatutory double patenting as being unpatentable over claim 8 of U.S. Patent No. 10,702,448 in view of Rix and Paul.

Regarding instant claim 17, the modified patent claim 8 includes a battery in the second handle portion, but is silent as to including a wireless charging receiver in electrical communication with the battery and positioned within the third handle portion; however, Paul teaches a similar device which includes wireless charging receiver for charging a battery (see Paul para. 0039). it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the modified patent claim 8 to include a wireless charging receiver in electrical communication with the battery, as taught by Paul, in order to provide the ability reuse the device after the battery has been drained without having to use another separate battery and it would have been obvious to provide this to the third handle portion as a matter of design choice.

29. Claim 4 rejected on the ground of nonstatutory double patenting as being unpatentable over claim 6 of U.S. Patent No. 10,702,448 in view of Marton.

Regarding instant claim 4, the patent claim 6 is silent as to including a wireless connection device; however, Marton teaches a similar device which includes a wireless connection device (see Marton Fig. 35 and col. 37 ln. 38 through col. 39 ln. 19 which discloses connection of the device with a remote electronic device via wireless connection). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the patent claim 6 to include a wireless connection device, as taught by Marton, in order to provide the ability to connect with a remote device for monitoring (Marton col. 37 ln. 38 through col. 39 ln. 19).

30. Claims 5 and 21 are rejected on the ground of nonstatutory double patenting as being unpatentable over claim 6 and 8 of U.S. Patent No. 10,702,448 in view of Paul.

Regarding instant claim 5, the patent claim 8 device is silent as to including a wireless charging receiver in electrical communication with the battery and positioned within the third handle portion; however, Paul teaches a similar device which includes wireless charging receiver for charging a battery (see Paul para. 0039). it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the modified patent claim 8 to include a wireless charging receiver in electrical communication with the battery, as taught by Paul, in order to provide the ability reuse the device after the battery has been drained without having to use another separate battery

Regarding instant claim 21, the patent claim 6 device is silent as to further including haptic feedback; however, Paul teaches a similar massage device which includes providing haptic feedback to the user (see Paul para. 0040). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the patent claim 6 to include providing haptic feedback to the user, as taught by Paul, in order to alert the user about information related to the operation of the device (see Paul para. 0040).

31. Claim 6 is rejected on the ground of nonstatutory double patenting as being unpatentable over claim 6 of U.S. Patent No. 10,702,448 in view of Roberts.

Regarding instant claim 6, the patent claim 6 is silent as to the device further including a touch screen; however, Roberts teaches a similar device which includes a touch screen to provide a user interface (see Roberts Fig. 1-2 and para. 0159). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the patent claim 6 to include a touch screen, as taught by Roberts, in order to provide a well-known data input tool/user interface to control the device (see Roberts para. 0150).

32. Claims 7-9 and 18 are rejected on the ground of nonstatutory double patenting as being unpatentable over claim 6 of U.S. Patent No. 10,702,448 in view of Stanbridge and Naughton.

Regarding instant claim 7, the patent claim 6 is silent as to the motor explicitly being a brushless motor and a motor mount is positioned in the housing such that the motor is secured to the motor mount and the mount is secured to the housing; however, Stanbridge teaches a similar massage device which includes a brushless motor (see Stanbridge para. 0109), and Naughton teaches a similar device which includes a motor mount for mounting a motor to and mounting to the housing (see Naughton Fig. 8, motor mount element 68 which is shown in first and second side walls as shown in this figure, motor 65, all secured to the housing 42/44 as can be seen). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the patent claim 6 motor to be a brushless motor, as taught by Stanbridge, and to include a motor mount for mounting the motor inside the housing, as taught by Naughton, in order to provide a motor efficient motor (brushless being more efficient than a brushed motor) and to provide the required structural components to secure the motor inside the device (mount).

Regarding instant claim 8, the modified patent claim 6's motor mount includes first and second side walls that define a motor mount interior therebetween and the motor being secured to the first side wall and the second side wall is secured to the housing (see Naughton Fig. 8, first and second side walls being each half element 68 with interior as shown).

Regarding instant claim 9, the modified patent claim 6's motor includes a shaft (Naughton Fig. 8 with shaft of motor 65 as shown and including element 210) that extends through a protrusion opening defined in the first side wall of the motor mount and into the interior and at least a portion of the push rod assembly being positioned in the motor mount interior (see Naughton Fig. 8 which shows shaft 210 extending through a protrusion opening at element 310 with portion 230 of push rod assembly 235 also positioned in the motor mount interior, see also Fig. 7).

Regarding instant claim 18, the modified patent claim 6's push rod assembly extends through a push rod opening defined in the motor mount and out of the motor mount interior (see Naughton Fig. 8, push rod opening adjacent element 230 in this figure, see also Fig. 7).

33. Claims 7 and 19-20 are rejected on the ground of nonstatutory double patenting as being unpatentable over claim 6 of U.S. Patent No. 10,702,448 in view of Stanbridge and Kehoe.

Regarding instant claim 7, the patent claim 6 is silent as to the motor explicitly being a brushless motor and a motor mount is positioned in the housing such that the motor is secured to the motor mount and the mount is secured to the housing; however, Stanbridge teaches a similar massage device which includes a brushless motor (see Stanbridge para. 0109), and Kehoe teaches a similar device (note that Rix is a reciprocating saw converted to a massage device as discussed above) which includes a motor mount for mounting a motor to and mounting to the housing (see Kehoe Fig. 4-8, motor 32, motor mount 64, Fig. 12, motor 232, motor mount 256, Fig. 1 showing the motor and mount secured within the housing). Thus it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the patent claim 6 motor to be a brushless motor, as taught by Stanbridge, and to include a motor mount for mounting the motor inside the housing, as taught by Kehoe, in order to provide a motor efficient motor (brushless being more efficient than a brushed motor) and to provide the required structural components to secure the motor inside the device (mount).

Regarding instant claim 19, the modified patent claim 6 first side wall includes at least a first flange extending outwardly therefrom and positioned adjacent a first protrusion on the motor (see Kehoe Fig. 4-6, flanges 84 extending outwardly from underside/first side wall and adjacent to protrusions 60 on the motor).

Regarding claim 20, the modified patent claim 6 first side wall includes second a third flanges extending outwardly therefrom and positioned adjacent second and third protrusions on the motor (see Kehoe Fig. 4-6 which shows first and second flanges 84 extending outwardly from underside/first side wall and adjacent to first and second protrusions 60 on the motor, para. 0031 disclosing that there can be more than two flanges 84 and more than two protrusions 60 and thus discloses first, second and third flanges and protrusions).

34. Claims 1 and 24 are rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1 and 15 of U.S. Patent No. 10,357,425.

Although the claims at issue are not identical, they are not patentably distinct from each other because patent claims 1 and 15 include each structural and functional feature and claimed method steps but include additional limitations such that the patented claims are narrower versions of the instant claims and as such any infringement on the patented claims would result in infringement on the instant claims. Instant claim 1 corresponds to patent claim 1. Instant claim 24 corresponds to patent claim 15.

35. Claim 1 is provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claim 1 of copending Application No. 16/869389 in view of Rix.

This is a provisional nonstatutory double patenting rejection.

Regarding instant claim 1, the copending claim 1 includes each structural and functional limitation as claimed, but is silent as to including a push rod assembly as claimed; however, Rix teaches a similar device which includes a push rod assembly as claimed (see Rix Fig. 1, push rod assembly 18, see col. 2 ln. 23-27 and col. 4 ln. 54-58 for example) and it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify the copending claim 1

device to include a push rod assembly, as taught by Rix, in order to provide the required elements (i.e. push rod assembly with attached treatment structure) to provide the user with the massage.

Conclusion

36. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Griner (2017/0156974), Wersland (2017/0027798), Zhang (2019/0175434), and Danby et al. (2015/0005682).

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to COLIN W STUART whose telephone number is (571)270-7490. The examiner can normally be reached on M-F: 9-5.

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, Justine Yu can be reached on 571-272-4835. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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

/COLIN W STUART/
Primary Examiner, Art Unit 3785

Examiner-Initiated Interview Summary	Application No. 16/869,402	Applicant(s) Wersland et al.		
	Examiner COLIN W STUART	Art Unit 3785	AIA (First Inventor to File) Status Yes	Page 1 of 1

All participants (applicant, applicants representative, PTO personnel):

1. COLIN W STUART (Primary Examiner); Telephonic 2. Brennan Swain 43,175 (Attorney of Record); Telephonic

Date of Interview: 09 July 2020

Issues Discussed:

Other:
Examiner contacted attorney of record, Brennan Swain 43,175, to confirm that the preliminary amendment filed 6/17/20 are the claims intended to be examiner and that Applicant does not plan on filing further preliminary amendments. Mr. Swain confirmed that no further preliminary amendments were being filed and that the claims dated 6/17/20 are the ones under examination.

/COLIN W STUART/
Primary Examiner, Art Unit 3785

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview .

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

Notice of References Cited	Application/Control No. 16/869,402	Applicant(s)/Patent Under Reexamination Wersland et al.	
	Examiner COLIN W STUART	Art Unit 3785	Page 1 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20050126018-A1	06-2005	Haas, Guenter	B23D51/16	30/394
*	B	US-20180288160-A1	10-2018	PAUL; JoHannes D.	H04L67/125	1/1
*	C	US-20150119771-A1	04-2015	Roberts; Michelle G.	A61N5/0619	601/135
*	D	US-20130014968-A1	01-2013	Kehoe; Sean T.	B25F5/02	173/216
*	E	US-20100162579-A1	07-2010	Naughton; Michael	B23D49/16	30/392
*	F	US-20190175434-A1	06-2019	ZHANG; Changjuan	A61H23/006	1/1
*	G	US-20170304145-A1	10-2017	Pepe; Tom	A61H23/006	1/1
*	H	US-7041072-B2	05-2006	Calvert; Jay Wynn	A61H7/001	128/898
*	I	US-20050252011-A1	11-2005	Neumeier, Michael	B23D51/02	30/371
*	J	US-10702448-B2	07-2020	Wersland; Jason	A61H15/0085	1/1
*	K	US-10357425-B2	07-2019	Wersland; Jason	A61H1/008	1/1
*	L	US-20170156974-A1	06-2017	Griner; Thomas Edward	A61H23/006	1/1
*	M	US-20170027798-A1	02-2017	Wersland; Jason	A61H1/008	1/1

FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

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

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

Notice of References Cited	Application/Control No. 16/869,402	Applicant(s)/Patent Under Reexamination Wersland et al.	
	Examiner COLIN W STUART	Art Unit 3785	Page 2 of 2

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
	A					
	B					
	C					
	D					
	E					
	F					
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	K					
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FOREIGN PATENT DOCUMENTS

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

NON-PATENT DOCUMENTS

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

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

Index of Claims	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/869,402	Wersland et al.
	Examiner	Art Unit
	COLIN W STUART	3785

✓	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	07/21/2020								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
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	24	✓								
	25	✓								
	26	✓								
	27	✓								

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/869,402	Wersland et al.
	Examiner	Art Unit
	COLIN W STUART	3785

CPC - Searched*		
Symbol	**Date**	**Examiner**
A61H: 1/00, 006, 008; 23/00, 004, 006, 02, 0218, 0254, 0263, 04, 06	07/21/2020	CWS
A61H: 2023/002, 0209, 0272, 0281, 029; 39/00, 002, 007, 04	07/21/2020	CWS
A61H: 2201/0165, 12, 1207, 1215, 1223, 123, 1238, 14, 1409, 1418, 1481, 149, 1664	07/21/2020	CWS
B23D: 51/16; 49/162, 165, 00, 007, 008, 10, 16, 167	07/21/2020	CWS
B26D: 7/2621, 2614; 5/14	07/21/2020	CWS
A61B: 17/148, 142, 14, 144	07/21/2020	CWS
B27B: 19/00, 002, 006, 09, 02; 11/06	07/21/2020	CWS

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**
83	615,623, 632, 626, 427	07/21/2020	CWS
30	392, 393, 394, 182, 208, 241, 217-220, 242	07/21/2020	CWS
173	49,114, 122, 205	07/21/2020	CWS
227	131	07/21/2020	CWS
D08	8,61, 64	07/21/2020	CWS
144	121, 122, 147	07/21/2020	CWS
125	16.01	07/21/2020	CWS
76	31, 36	07/21/2020	CWS
601	97,107	07/21/2020	CWS

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

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	16/869,402	Wersland et al.
	Examiner	Art Unit
	COLIN W STUART	3785

Search Notes		
Search Notes	**Date**	**Examiner**
Inventor name search	07/21/2020	CWS
Assignee search	07/21/2020	CWS
EAST text search (see search history)	07/21/2020	CWS
PLUS search	07/21/2020	CWS

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L20	395	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$ or US-20070144310-$ or US-20180263845-$ or US-20150005682-$).did. or (US-20180200141-$ or US-20040255475-$ or US-20040255474-$ or US-20040187324-$ or US-20040117993-$ or US-20150367494-$ or US-20150033564-$ or US-20130133210-$ or US-	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	ON	2020/07/21 13:02

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L22	163	L20 and (grasp$ grip$4)	US-PGPUB; USPAT; USOCR	OR	ON	2020/07/21 13:06
L23	9	(("20190175434") or ("20170304145") or ("20050252011") or ("20200060918") or ("20150005682") or ("20080177207") or ("20100145242") or ("20050159689") or ("7041072")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2020/07/21 14:49
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S6	1	WO-2014118596-$.did.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:12
S7	1	2014-P46661.NRAN.	DERWENT	OR	ON	2018/03/19 10:12
S8	99	(US-20160367425-$ or US-20140180331-$ or US-20080103419-$ or US-20030195443-$ or US-20160206502-$ or US-20140163442-$ or US-20070150004-$ or US-20120046694-$ or US-20100137907-$ or US-20090270915-$ or US-20060293711-$ or US-20050131461-$ or US-20050113870-$ or US-20050090863-$ or US-20020177795-$ or US-20100010399-$ or US-20050075591-$ or US-20050049531-$ or US-20110009691-$ or US-20090234182-$ or US-20090222024-$ or US-20050187431-$ or US-20030009116-$ or US-20040193080-$ or US-20020188233-$ or US-20130261516-$).did. or (US-20130138023-$ or US-20120253245-$ or US-20120101517-$ or US-20070244418-$ or US-20050187498-$ or US-20010016697-$ or US-20160338899-$ or US-20060025710-$ or US-20030028134-$ or US-20060192527-$ or US-20020107459-$ or US-20170027798-$ or US-20060123941-$ or US-20170304145-$ or US-20120330201-$ or US-20080200849-$ or US-20130281897-$).did. or (US-6663657-$ or US-6228042-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-9456950-$ or US-8083699-$ or US-8641648-$ or US-7144417-$ or US-7169169-$ or US-7503923-$ or US-6805700-$ or US-6503211-$ or US-6241693-$ or US-3880150-$ or US-4858600-$ or US-8398539-$ or US-6991599-$ or US-6758826-$ or US-7122015-$ or US-9265689-$ or US-8715161-$ or US-7662088-$ or US-7041072-$ or US-7491184-$ or US-7128722-$).did. or (US-6352518-$ or US-6027444-$ or US-5716332-$ or US-5063911-$ or US-4827914-$ or US-4777945-$ or US-3837335-$ or US-3724451-$ or US-3626934-$ or US-6976970-$ or US-6723060-$ or US-6602211-$ or US-5632765-$ or US-4461286-$ or US-4513737-$ or US-	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:14

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S9	0	(Theragun).as.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:15
S10	2	(("WERSLAND") near3 ("Jason")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:15
S11	115	(US-20160367425-$ or US-20140180331-$ or US-20080103419-$ or US-20030195443-$ or US-20160206502-$ or US-20140163442-$ or US-20070150004-$ or US-20120046694-$ or US-20100137907-$ or US-20090270915-$ or US-20060293711-$ or US-20050131461-$ or US-20050113870-$ or US-20050090863-$ or US-20020177795-$ or US-20100010399-$ or US-20050075591-$ or US-20050049531-$ or US-20110009691-$ or US-20090234182-$ or US-20090222024-$ or US-20050187431-$ or US-20030009116-$ or US-20040193080-$ or US-20020188233-$ or US-20130261516-$).did. or (US-20130138023-$ or US-20120253245-$ or US-20120101517-$ or US-20070244418-$ or US-20050187498-$ or US-20010016697-$ or US-20160338899-$ or US-20060025710-$ or US-20030028134-$ or US-20060192527-$ or US-20020107459-$ or US-20170027798-$ or US-20060123941-$ or US-20170156974-$ or US-20160151238-$ or US-20130281897-$ or US-20100222723-$ or US-20090270773-$ or US-20050054958-$ or US-20080275343-$ or US-20070119625-$ or US-20040144572-$ or US-20170304144-$ or US-20170304145-$).did. or (US-6663657-$ or US-6228042-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-9456950-$ or US-8083699-$ or US-8641648-$ or US-7144417-$ or US-7169169-$ or US-7503923-$ or US-6805700-$ or US-6503211-$ or US-6241693-$ or US-3880150-$ or US-4858600-$ or US-8398539-$ or US-6991599-$ or US-6758826-$ or US-7122015-$ or US-9265689-$ or US-8715161-$ or US-7662088-$ or US-7041072-$ or US-	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:17

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S12	0	(("WERSLAND") near3 ("Jason")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:17
S13	0	(("NAZARIAN") near3 ("Benjamin")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:17
S14	0	(("NAZARIAN") near3 ("Benjamin")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:17
S15	0	(("ENSING") near3 ("Geert")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:17
S16	3	(("ENSING") near3 ("Geert")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:17
S17	573	(("LI") near3 ("Guang")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:18
S18	2	S17 and (massage reciprocat$).clm.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:18

S19	40	(("LI") near3 ("Guang")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:19
S20	43	(("FIRTH") near3 ("Robert")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:19
S21	8	(("FIRTH") near3 ("Robert")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:20
S22	24	(("LINTON") near3 ("Andrew")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:20
S23	6	(("LINTON") near3 ("Andrew")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:21
S24	148	(("COOPER") near3 ("Andrew")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:21
S25	57	(("COOPER") near3 ("Andrew")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:22
S26	84	(("WALDRON") near3 ("Michael")).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 10:23
S27	5	(("WALDRON") near3 ("Michael")).INV.	EPO; JPO; DERWENT	OR	ON	2018/03/19 10:25
S28	50	(US-5727981-$ or US-5499775-$ or US-4388883-$ or US-4408378-$ or US-4435131-$ or US-4592143-$ or US-5217310-$ or US-5230314-$ or US-5273381-$ or US-5273479-$ or US-5316227-$ or US-5340227-$ or US-5896845-$ or US-5897027-$ or US-5951009-$ or US-	USPAT	OR	ON	2018/03/19 17:04

		5992972-$ or US-6080044-$ or US-5601533-$ or US-3877422-$ or US-3830233-$ or US-4136608-$ or US-4177147-$ or US-4297121-$ or US-4300937-$ or US-4309850-$ or US-4312685-$).did. or (US-4403953-$ or US-4416270-$ or US-4419875-$ or US-4463770-$ or US-4545736-$ or US-4590876-$ or US-4632094-$ or US-4757647-$ or US-4799419-$ or US-4840047-$ or US-4864965-$ or US-4922692-$ or US-4941382-$ or US-5361786-$ or US-5422147-$ or US-5423862-$ or US-5468217-$ or US-5571130-$ or US-5641405-$ or US-5641969-$ or US-5681453-$ or US-5707460-$ or US-5798523-$ or US-5863433-$).did.				
S29	50	S28 and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/19 17:06
S30	99	(US-20160367425-$ or US-20140180331-$ or US-20080103419-$ or US-20030195443-$ or US-20160206502-$ or US-20140163442-$ or US-20070150004-$ or US-20120046694-$ or US-20100137907-$ or US-20090270915-$ or US-20060293711-$ or US-20050131461-$ or US-20050113870-$ or US-20050090863-$ or US-20020177795-$ or US-20100010399-$ or US-20050075591-$ or US-20050049531-$ or US-20110009691-$ or US-20090234182-$ or US-20090222024-$ or US-20050187431-$ or US-20030009116-$ or US-20040193080-$ or US-20020188233-$ or US-20130261516-$).did. or (US-20130138023-$ or US-20120253245-$ or US-20120101517-$ or US-20070244418-$ or US-20050187498-$ or US-20010016697-$ or US-20160338899-$ or US-20060025710-$ or US-20030028134-$ or US-20060192527-$ or US-20020107459-$ or US-20170027798-$ or US-20060123941-$ or US-20170304145-$ or US-20120330201-$ or US-20080200849-$ or US-20130281897-$).did. or (US-6663657-$ or US-6228042-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-9456950-$ or US-8083699-$ or US-8641648-$ or US-7144417-$ or US-7169169-$ or US-7503923-$ or US-6805700-$ or US-6503211-$ or US-6241693-$ or US-3880150-$ or US-4858600-$ or US-8398539-$ or US-6991599-$ or US-6758826-$ or US-7122015-$ or US-9265689-$ or US-8715161-$ or US-7662088-$ or US-7041072-$ or US-7491184-$ or US-7128722-$).did. or (US-6352518-$ or US-6027444-$ or US-5716332-$ or US-5063911-$ or US-4827914-$ or US-4777945-$ or US-3837335-$ or US-3724451-$ or US-3626934-$ or US-6976970-$ or US-6723060-$ or US-6602211-$ or US-	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:13

		5632765-$ or US-4461286-$ or US-4513737-$ or US-4790296-$ or US-6911013-$ or US-6165145-$ or US-5935089-$ or US-4703536-$ or US-7927259-$ or US-6875186-$ or US-6682496-$ or US-6537236-$ or US-6599260-$ or US-6733414-$ or US-2078159-$).did. or (US-5951501-$ or US-7749178-$).did. or (WO-2014118596-$ or WO-2015038005-$).did.				
S31	115	(US-20160367425-$ or US-20140180331-$ or US-20080103419-$ or US-20030195443-$ or US-20160206502-$ or US-20140163442-$ or US-20070150004-$ or US-20120046694-$ or US-20100137907-$ or US-20090270915-$ or US-20060293711-$ or US-20050131461-$ or US-20050113870-$ or US-20050090863-$ or US-20020177795-$ or US-20100010399-$ or US-20050075591-$ or US-20050049531-$ or US-20110009691-$ or US-20090234182-$ or US-20090222024-$ or US-20050187431-$ or US-20030009116-$ or US-20040193080-$ or US-20020188233-$ or US-20130261516-$).did. or (US-20130138023-$ or US-20120253245-$ or US-20120101517-$ or US-20070244418-$ or US-20050187498-$ or US-20010016697-$ or US-20160338899-$ or US-20060025710-$ or US-20030028134-$ or US-20060192527-$ or US-20020107459-$ or US-20170027798-$ or US-20060123941-$ or US-20170156974-$ or US-20160151238-$ or US-20130281897-$ or US-20100222723-$ or US-20090270773-$ or US-20050054958-$ or US-20080275343-$ or US-20070119625-$ or US-20040144572-$ or US-20170304144-$ or US-20170304145-$).did. or (US-6663657-$ or US-6228042-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-9456950-$ or US-8083699-$ or US-8641648-$ or US-7144417-$ or US-7169169-$ or US-7503923-$ or US-6805700-$ or US-6503211-$ or US-6241693-$ or US-3880150-$ or US-4858600-$ or US-8398539-$ or US-6991599-$ or US-6758826-$ or US-7122015-$ or US-9265689-$ or US-8715161-$ or US-7662088-$ or US-7041072-$ or US-7491184-$ or US-7128722-$).did. or (US-6352518-$ or US-6027444-$ or US-5716332-$ or US-5063911-$ or US-4827914-$ or US-4777945-$ or US-3837335-$ or US-3724451-$ or US-3626934-$ or US-6976970-$ or US-6723060-$ or US-6602211-$ or US-5632765-$ or US-4461286-$ or US-4513737-$ or US-4790296-$ or US-6911013-$ or US-6165145-$ or US-5935089-$ or US-4703536-$ or US-7927259-$ or US-6875186-$ or US-6682496-$ or US-6537236-$ or US-6599260-$ or US-6733414-$ or US-2078159-$).did. or (US-5951501-$ or US-4730605-$ or US-6374932-$ or US-7131506-$ or US-6619413-$ or US-5071005-$ or US-4615402-$).did. or	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:13

		(US-3094119-$ or US-2964037-$).did. or (WO-2014118596-$ or WO-2015038005-$).did.				
S32	19	S31 not S30	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:13
S33	411	A61H1/00.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:15
S34	57	S33 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:17
S35	163	A61H1/006.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:20
S36	734	A61H1/008.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:25
S37	73	S36 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:25
S38	223	S36 and (reciprocat$ translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:25
S39	14	S36 and (reciprocat$ and translat$)	US-PGPUB; USPAT	OR	ON	2018/03/20 12:27

			; USOCR			
S40	566	A61H23/00.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:33
S41	26	S40 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:33
S42	56	S40 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:34
S43	88	A61H23/004.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:36
S44	167	A61H23/006.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 12:37
S45	1,323	A61H23/02.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 14:41
S46	37	S45 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 14:41
S47	123	S45 and (reciprocat$)	US-PGPUB; USPAT	OR	ON	2018/03/20 14:41

			; USOCR			
S48	372	A61H23/0218.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 16:21
S49	629	A61H23/0254.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 17:17
S50	37	S49 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 17:17
S51	226	S49 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 17:25
S52	1,078	A61H23/0263.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 17:56
S53	41	S52 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 17:56
S54	121	S52 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 17:57
S55	434	A61H23/04.cpc. and @ad<="20170314"	US-PGPUB; USPAT	OR	ON	2018/03/20 18:21

			; USOCR			
S56	20	S55 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/20 18:21
S57	59	A61H23/06.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:05
S58	59	A61H2023/002.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:08
S59	39	A61H2023/0209.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:11
S60	104	A61H2023/0272.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:13
S61	50	A61H2023/0281.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:17
S62	36	A61H2023/029.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:20
S63	112	A61H39/00.cpc. and @ad<="20170314"	US-PGPUB; USPAT	OR	ON	2018/03/21 10:21

			; USOCR			
S64	484	A61H39/002.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:31
S65	2	S64 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:31
S66	60	A61H39/007.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:40
S67	697	A61H39/04.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:41
S68	5	S64 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:41
S69	9	S67 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:42
S70	55	S67 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 10:42
S71	189	A61H2201/0165.cpc. and @ad<="20170314"	US-PGPUB; USPAT	OR	ON	2018/03/21 10:57

			; USOCR			
S72	37	A61H2201/12.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:01
S73	493	A61H2201/1207.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:02
S74	12	S73 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:03
S75	41	S73 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:03
S76	1,249	A61H2201/1215.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:12
S77	52	S76 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:12
S78	250	S76 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:13
S79	16	A61H2201/1223.cpc. and @ad<="20170314"	US-PGPUB; USPAT	OR	ON	2018/03/21 11:25

			; USOCR			
S80	158	A61H2201/123.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:26
S81	590	A61H2201/1238.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:32
S82	103	S81 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:32
S83	104	A61H2201/14.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:35
S84	67	A61H2201/1409.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:37
S85	224	A61H2201/1418.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:40
S86	73	A61H2201/1481.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:49
S87	358	A61H2201/149.cpc. and @ad<="20170314"	US-PGPUB; USPAT	OR	ON	2018/03/21 11:52

			; USOCR			
S88	454	A61H2201/1664.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 11:59
S89	912	601/46.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:00
S90	19	S89 and (reciprocat$ and translat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:00
S91	19	S90 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:01
S92	54	601/67.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:01
S93	42	601/69.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:23
S94	322	601/70.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:29
S95	6	S94 and (reciprocat$ and translat$)	US-PGPUB; USPAT	OR	ON	2018/03/21 13:30

			; USOCR			
S96	35	S94 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:30
S97	8	601/82.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:33
S98	311	601/84.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:34
S99	17	601/85.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:44
S100	52	601/89.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:46
S101	103	601/97.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:50
S102	245	601/101.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 13:54
S103	143	601/107.ccls. and @ad<="20170314"	US-PGPUB; USPAT	OR	ON	2018/03/21 14:03

			; USOCR			
S104	161	601/108.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 14:06
S105	224	601/112.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 14:09
S106	542	601/134.ccls. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 14:21
S107	128	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$).did. or (US-6663657-$ or US-6228042-$	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2018/03/21 14:41

		or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$).did. or (US-2964037-$).did. or (EP-1313116-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S108	43	S107 and ((axis axes) with (plane coplan$ co-plan$ parallel perpendicular$ orthogonal$))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 14:42
S109	116	S107 and (motor)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 14:45
S110	40	S108 and S109	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 14:46
S111	10	S107 and (gearbox gear-box (gear adj box))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 15:09
S112	2	S107 and ((shaft driveshaft drive-shaft) with damper)	US-PGPUB; USPAT	OR	ON	2018/03/21 15:44

			; USOCR			
S113	54	("601".clas. or a61h.cpcl.) and ((shaft driveshaft drive-shaft) with damper)	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/21 15:44
S114	52	S113 and @ad<="20170314"	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/21 15:45
S115	6,059	motor same ((shaft drive-shaft driveshaft) with damper)	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/21 16:24
S116	7	motor same ((shaft drive-shaft driveshaft) with damper with compliant)	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/21 16:24
S117	3,818	motor with ((shaft drive-shaft driveshaft) with damper)	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/21 16:25
S118	1,195	motor with ((shaft drive-shaft driveshaft) with damper) with (gear gearbox gear-box)	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/21 16:26
S119	115	motor with ((shaft drive-shaft driveshaft) with damper) with (gear gearbox gear-box) with vibrat$	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/21 16:27
S120	114	S119 and @ad<="20170314"	US-PGPUB ; USPAT	OR	ON	2018/03/21 16:27

			; USOCR			
S121	12	motor with ((shaft drive-shaft driveshaft) with damper) and (a61h.cpcl. or "601".clas.)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 16:51
S122	3,818	motor with ((shaft drive-shaft driveshaft) with damper)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:44
S123	1,263	motor with ((shaft drive-shaft driveshaft) with damper) with gear$4	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:44
S124	0	motor with ((shaft drive-shaft driveshaft) with damper with (compliant)) with gear$4	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:45
S125	1	motor with ((shaft drive-shaft driveshaft) with damper with (compliant))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:45
S126	20	((shaft drive-shaft driveshaft) with damper with (compliant))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:46
S127	3,418	((shaft drive-shaft driveshaft) with damper with gear$3)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:53
S128	951	(((shaft drive-shaft driveshaft) near3 damper) with gear$3)	US-PGPUB; USPAT	OR	ON	2018/03/21 17:56

			; USOCR			
S129	133	(((shaft drive-shaft driveshaft) adj damper) with gear$3)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:57
S130	116	S129 and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 17:57
S131	11	(a61h.cpcl. or "601".clas.) and (compliant with damper)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:00
S132	0	S107 and (bushing with (shaf drive-shaft driveshaft))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:14
S133	59	((shaft drive-shaft driveshaft) with bushing with (compliant))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:14
S134	54	S133 and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:14
S135	0	(a61h.cpcl. or "601".clas.) and (compliant with bushing)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:14
S136	293	(a61h.cpcl. or "601".clas.) and (bushing with (shaft driveshaft drive-shaft))	US-PGPUB; USPAT	OR	ON	2018/03/21 18:14

			; USOCR			
S137	222	S136 and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:14
S138	51	S107 and (gear$3 same motor)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 18:45
S139	34	(a61h.cpcl. or "601".clas.) and (bushing with (shaft driveshaft drive-shaft) with gear$3)	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 19:30
S140	144	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2018/03/21 19:41

		20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$).did. or (US-2964037-$).did. or (EP-1313116-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S141	0	S140 and (gear with (counterweight counter-weight (counter adj weight)))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 19:42
S142	6	S140 and ((counterweight counter-weight (counter adj weight)))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 19:42
S143	7	(a61h.cpcl. or "601".clas.) and (gear$3 with (counterweight counter-weight (counter adj weight)))	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/21 19:47
S144	3,200	(gear$3 with (counterweight counter-weight (counter adj weight)))	US-PGPUB;	OR	ON	2018/03/21 19:47

			USPAT ; USOCR			
S145	298	(motor with (shaft driveshaft drive-shaft) with gear$3 with (counterweight counter-weight (counter adj weight)))	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/21 19:47
S146	190	S145 and @ad<="20170314"	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/21 19:48
S147	0	S140 and ((gearbox gear-box (gear adj box)) with (damp$ bushing mount))	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/21 20:19
S148	32	(a61h.cpcl. or "601".clas.) and ((gearbox gear-box (gear adj box)) with (damp$ bushing mount))	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/21 20:19
S149	26	S148 and @ad<="20170314"	US-PGPUB ; USPAT ; USOCR	OR	ON	2018/03/21 20:20
S150	156	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-	US-PGPUB ; USPAT ; USOCR ; EPO; DERWENT	OR	ON	2018/03/22 09:57

		20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$).did. or (US-2964037-$).did. or (EP-1313116-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S151	6	S150 and (wobble)	US-PGPUB; USPAT	OR	ON	2018/03/22 10:15

			; USOCR			
S152	1	("5085207").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/03/22 10:16
S153	21	("2122556" | "2156839" | "3993052" | "4964398").PN. OR ("5085207").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 10:20
S154	1	"14362581"	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 10:33
S155	0	("2013/0261516").URPN.	USPAT	OR	ON	2018/03/22 11:17
S156	11	(US-0568503-$ | US-13636273-$ | US-1522935-$ | US-20020107459-$ | US-3837335-$ | US-3936632-$ | US-4432184-$ | US-4549535-$ | US-5167225-$ | US-5593381-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:19
S157	14	(US-0107459-$ | US-1579679-$ | US-20150615-$ | US-3837335-$ | US-4048989-$ | US-4291685-$ | US-4549535-$ | US-5088474-$ | US-5447491-$ | US-5593381-$ | US-6579251-$ | US-7503923-$ | US-20020107459-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:20
S158	1	("9265689").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/03/22 11:25
S159	17	("1955623" | "20010027280" | "20020161315" | "20030158505" | "20060047315" | "20090099485" | "20090306561" | "4513737" | "4604993" | "4742875" | "5413550" | "5803916" | "6440091" | "6500141" | "6568000" | "7435232").PN. OR ("9265689").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:25

S160	32	("1340959" | "3837335" | "3945076" | "3984890" | "4088128" | "4495940" | "4513737" | "4549535" | "4716890" | "4841955" | "5300095" | "5626615").PN. OR ("6228042").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:26
S161	17	("4730605" | "5167226" | "5447491" | "5626555").PN. OR ("5951501").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:27
S162	5	("20050090863" | "5399148" | "6228042" | "6805700").PN. OR ("7927259").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:28
S163	13	("1882040" | "3710875" | "3955563" | "4016873" | "4203431" | "4566442" | "4716890" | "4827914" | "5300095" | "6228042" | "6511445").PN. OR ("6723060").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:28
S164	14	("1787211" | "4088128" | "4513737" | "4827914" | "4841955" | "4858600").PN. OR ("6682496").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:29
S165	25	("3710785" | "4513737").PN. OR ("4827914").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:29
S166	38	("1352894" | "1516717" | "1545027" | "1660821" | "3587588" | "3837335" | "4055343" | "4088128").PN. OR ("4513737").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:30
S167	18	("1660821" | "1796444" | "1833103" | "2706980" | "3626934").PN. OR ("3837335").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:30

S168	17	("1833103" | "2512536" | "3425410").PN. OR ("3626934").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:31
S169	47	("1599628" | "1657765" | "1796444" | "2067991" | "2076410" | "3837335").PN. OR ("4088128").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:33
S170	54	("0738357" | "0794003" | "0934662" | "2138815" | "3601122" | "3955563").PN. OR ("4079733").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:34
S171	57	("1818281" | "20030065280" | "20030084525" | "20040035439" | "20070068546" | "20080210252" | "20090083918" | "2465250" | "2806235" | "3150393" | "3204469" | "3272023" | "3358309" | "3384096" | "3517235" | "3794050" | "3850181" | "3853133" | "3897794" | "4139014" | "4158246" | "4585018" | "4651761" | "5078157" | "5297512" | "5343881" | "5471695" | "5502860" | "5511270" | "5603339" | "5622192" | "5632289" | "5647841" | "5839451" | "5915391" | "5918607" | "5967150" | "5987681" | "6283930" | "6575173" | "6668758" | "6997889" | "7356866" | "7805794" | "7814601" | "7865994").PN. OR ("8342187").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:35
S172	1	("9289348").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/03/22 11:37
S173	13	("20070015435" | "20080091128" | "20090005714" | "20100013610" | "20130116503" | "2263219" | "3504665" | "3978851" | "5460597" | "5470303" | "6632185").PN. OR ("9289348").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:37
S174	7	(US-1579679-$ | US-1635917-$ | US-4603688-$ | US-5159922-$ | US-5447491-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:39

S175	3	(US-0158505-$ | US-20030158505-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:39
S176	11	("2196667" | "2517627" | "2657321" | "3511229").PN. OR ("3806980").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:39
S177	43	("1796444" | "20010010105" | "20020082532" | "20020169400" | "20030009118" | "20050187498" | "20060041208" | "20060155224" | "20060173389" | "2017400" | "2048220" | "2076410" | "2078025" | "3900183" | "4088128" | "4479495" | "4549535" | "4716890" | "4841955" | "5140979" | "5305738" | "5519923" | "5618315" | "5673455" | "5817037" | "5843005" | "6228042" | "6244356" | "6368293" | "6537236" | "6602211" | "6830552" | "6964214" | "7122015" | "7144417" | "7169169").PN. OR ("7503923").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/03/22 11:40
S178	0	"15920322"	US-PGPUB; USPAT; USOCR	OR	ON	2018/05/27 15:54
S179	2	((("Wersland") near3 ("Jason"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 09:27
S180	0	(("15458920") or ("15186859")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/11 09:28
S181	0	"15920322"	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 09:42
S182	415	A61H1/00.cpc. and @ad<="20170314"	US-PGPUB;	OR	ON	2018/06/11 11:59

			USPAT; USOCR			
S183	0	((("Wersland") near3 ("Jason"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 11:59
S184	0	((("Nazarian") near3 ("Benjamin"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 11:59
S185	0	((("Nazarian") near3 ("Benjamin"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 11:59
S186	0	((("Ensing") near3 ("Geert"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 11:59
S187	3	((("Ensing") near3 ("Geert"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 12:00
S188	3	((("Li") near3 ("Guang") near3 ("Qing"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:00
S189	1	((("Li") near3 ("Guang") near3 ("Qing"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 12:01
S190	43	((("Firth") near3 ("Robert"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:01
S191	8	((("Firth") near3 ("Robert"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 12:03

S192	27	((("Linton") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:04
S193	6	((("Linton") near3 ("Andrew"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 12:04
S194	150	((("Cooper") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:04
S195	57	((("Cooper") near3 ("Andrew"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 12:05
S196	88	((("Waldron") near3 ("Michael"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:06
S197	5	((("Waldron") near3 ("Michael"))).INV.	EPO; JPO; DERWENT	OR	ON	2018/06/11 12:07
S198	6	(("8342187") or ("20130138023") or ("20120253245") or ("20030144615") or ("5573500") or ("20150148592")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/11 12:10
S199	5	(("20130261516") or ("4549535") or ("20130138023") or ("20130281897") or ("20060123941")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/11 12:42
S200	57	S182 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:43

S201	165	A61H1/006.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:44
S202	18	S201 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:44
S203	752	A61H1/008.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:44
S204	75	S203 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:44
S205	575	A61H23/00.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:45
S206	57	S205 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:45
S207	92	A61H23/004.cpc. and @ad<="20170314"	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:47
S208	7	S207 and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:47

S209	38	A61H23/006.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:47
S210	129	A61H23/02.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:48
S211	71	A61H23/0218.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 12:49
S212	227	A61H23/0254.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:06
S213	122	A61H23/0263.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:10
S214	82	A61H23/04.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:10
S215	7	A61H23/06.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:11
S216	8	A61H2023/002.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:11

S217	9	A61H2023/0209.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:11
S218	11	A61H2023/0272.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:12
S219	12	A61H2023/0281.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:12
S220	3	A61H39/00.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:12
S221	5	A61H39/002.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:12
S222	2	A61H39/007.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:13
S223	57	A61H39/04.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:13
S224	33	A61H2201/0165.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:13

S225	168	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2018/06/11 13:31

		7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$).did. or (US-2964037-$ or US-1882040-$).did. or (EP-1313116-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S226	2	A61H2201/12.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:32
S227	42	A61H2201/1207.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:32
S228	253	A61H2201/1215.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:33
S229	0	S225 and (rotat$4 same ((button switch) with teeth))	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:35
S230	4	A61H2201/1223.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:35
S231	33	A61H2201/123.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT	OR	ON	2018/06/11 13:35

			; USOCR			
S232	104	A61H2201/1238.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:35
S233	33	A61H2201/14.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:36
S234	14	A61H2201/1409.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:37
S235	0	A61H2201/1018.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:37
S236	110	A61H2201/1418.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:37
S237	20	A61H2201/1481.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:38
S238	93	A61H2201/149.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:38
S239	137	A61H2201/1664.cpc. and @ad<="20170314" and (reciprocat$)	US-PGPUB; USPAT	OR	ON	2018/06/11 13:38

			; USOCR			
S240	19	(("4847451") or ("5089729") or ("5265716") or ("5668357") or ("5041703") or ("4772765") or ("3654415") or ("6365855") or ("4847451") or ("5614701") or ("5414793") or ("6259047") or ("4772765") or ("4006334") or ("3952239") or ("1828903") or ("1502169") or ("2055867")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/06/11 13:44
S241	5	("2003/0094356").URPN.	USPAT	OR	ON	2018/06/11 13:46
S242	135	(powertool power-tool (power adj tool)) and (rotat$4 same ((button switch) with teeth))	US-PGPUB; USPAT; USOCR	OR	ON	2018/06/11 13:48
S243	459	A61H1/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:41
S244	217	A61H1/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:44
S245	914	A61H1/008.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:47
S246	683	A61H23/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:48
S247	119	A61H23/004.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:49

S248	207	A61H23/006.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:49
S249	1,647	A61H23/02.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:50
S250	714	A61H23/0218.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:52
S251	1,066	A61H23/0254.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:52
S252	1,432	A61H23/0263.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 17:53
S253	589	A61H23/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:01
S254	111	A61H23/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:04
S255	78	A61H2023/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:04

S256	49	A61H2023/0209.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:05
S257	138	A61H2023/0272.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:05
S258	93	A61H2023/0281.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:06
S259	41	A61H2023/029.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:06
S260	135	A61H39/00.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:06
S261	547	A61H39/002.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:07
S262	69	A61H39/007.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:07
S263	764	A61H39/04.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:08

S264	273	A61H2201/0165.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:08
S265	57	A61H2201/12.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:16
S266	693	A61H2201/1207.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:16
S267	1,505	A61H2201/1215.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:18
S268	43	A61H2201/1223.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:20
S269	204	A61H2201/123.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:21
S270	733	A61H2201/1238.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:22
S271	142	A61H2201/14.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:23

S272	100	A61H2201/1409.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:24
S273	305	A61H2201/1418.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:25
S274	95	A61H2201/1481.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:25
S275	434	A61H2201/149.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:26
S276	548	A61H2201/1664.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/11 18:26
S277	0	D08/8.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/12 17:32
S278	513	D8/8.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/12 17:33
S279	6	S278 and (reciprocat$ articulat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/12 17:33

S280	10	(US-2240755-$ or US-2808082-$ or US-2822005-$ or US-2868248-$ or US-2902067-$).did.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 11:03
S281	1	("7996996").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/13 11:05
S282	28	("20020014129" | "20030051352" | "20040117993" | "20040187324" | "20040255474" | "20040255475" | "20090151486" | "2970484" | "3309932" | "3827323" | "3945120" | "4344729" | "4763760" | "5079844" | "5099705" | "5134777" | "5212887" | "5735165" | "6352004" | "6568089" | "6601465" | "6763897").PN. OR ("7996996").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 11:42
S283	616	D8/61.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 11:49
S284	16	S283 and (reciprocat$ articulat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 11:49
S285	246	D8/64.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 12:20
S286	58	S285 and (reciprocat$ articulat$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 12:20
S287	709	30/392.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 13:47

S288	240	S287 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 14:05
S289	53	S287 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 14:30
S290	133	30/393.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 14:53
S291	87	S290 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 14:53
S292	14	S290 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 14:53
S293	43	(worx).as.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:01
S294	8	76/31.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:05
S295	10,210	(rockwell).as.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:07

S296	146	S295 and (saw jigsaw jig-saw)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:07
S297	169	30/394.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:16
S298	82	S297 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:16
S299	23	S297 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:16
S300	40	30/182.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:34
S301	82	30/208.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:34
S302	125	30/241.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:35
S303	66	83/615.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:40

S304	104	83/623.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:41
S305	386	B23D51/16.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:44
S306	230	S305 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:44
S307	40	S305 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:45
S308	218	B23D49/162.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:57
S309	74	S308 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:57
S310	21	S308 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/13 17:57
S311	200	173/49.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 08:28

S312	141	S311 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 08:28
S313	11	S311 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 08:28
S314	164	173/114.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 08:46
S315	29	S314 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 08:46
S316	2	S314 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 08:46
S317	124	173/122.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 16:44
S318	47	S317 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 16:54
S319	5	S317 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 16:55

S320	157	173/205.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 16:59
S321	47	S320 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 16:59
S322	2	S321 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 16:59
S324	3	S320 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 16:59
S325	563	227/131.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:02
S326	3	S325 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:02
S327	99	S325 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:02
S328	0	A61B17/148.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:26

S329	447	A61B17/142.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:27
S330	136	S329 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:27
S331	4	S329 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:27
S332	15	B23D49/00.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:31
S333	81	B23D49/007.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:31
S334	2	B23D49/008.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:36
S335	53	B23D49/10.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:37
S336	67	B23D49/16.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:40

S337	185	B23D49/167.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:45
S338	386	B23D51/16.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:52
S339	40	S338 and (adjust$4 near3 angle)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:52
S340	230	S338 and (articulat$ eccentric$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:52
S341	7	B27B19/00.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:58
S342	1	B27B19/002.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:58
S343	261	B27B19/006.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 17:58
S344	4	B27B19/02.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 18:00

S345	14	B27B19/09.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/14 18:00
S346	1	("20030094356").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/15 15:27
S347	2	(("5832611") or ("6264211")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/15 15:42
S348	10	("5832611" | "5940977" | "6138364" | "6671969" | "7096589" | "7204026" | "7251896" | "7430807" | "7818887" | "7926585").PN.	US-PGPUB; USPAT	OR	ON	2018/12/15 16:19
S349	21	(US-0133210-$ | US-2337769-$ | US-2630148-$ | US-20140327-$ | US-5832611-$ | US-5940977-$ | US-6098288-$ | US-6138364-$ | US-6264211-$ | US-6550147-$ | US-6671969-$ | US-7204026-$ | US-7251896-$ | US-7370423-$ | US-7752760-$ | US-8205342-$ | US-8291603-$ | US-8549762-$ | US-20130133210-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:21
S350	9	(US-00000028-$ | US-0936032-$ | US-10109133-$ | US-10289878-$ | US-1132176-$ | US-19627691-$ | US-2334630-$ | US-4128651-$ | US-4219942-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:27
S351	14	(US-1502169-$ | US-1828903-$ | US-2055867-$ | US-3952239-$ | US-4006334-$ | US-4772765-$ | US-4847451-$ | US-5414793-$ | US-5614701-$ | US-6259047-$ | US-6365855-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:28
S352	5	(US-20031203-$ | US-3654415-$ | US-4772765-$ | US-5041703-$ | US-5265716-$ | US-5668357-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:29

S353	2	(US-20040701-$ | US-4847451-$ | US-5089729-$).DID.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:30
S354	229	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$ or US-20070144310-$ or US-20180263845-$ or US-20150005682-$).did. or (US-20180200141-$ or US-20040255475-$ or US-20040255474-$ or US-20040187324-$ or US-20040117993-$ or US-20150367494-$ or US-20150033564-$ or US-20130133210-$ or US-20090100690-$ or US-20060260141-$ or US-20050178012-$ or US-20080047150-$ or US-	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2018/12/15 16:53

		20120192440-$ or US-20120030955-$ or US-20030070307-$ or US-20090272617-$ or US-20180099339-$ or US-20110265335-$ or US-20110131820-$ or US-20060288594-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$).did. or (US-2964037-$ or US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$).did. or (EP-1313116-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S355	17	S354 and (male with female)	US-PGPUB; USPAT	OR	ON	2018/12/15 16:53

			; USOCR			
S356	3	S354 and (connector with bearing)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:56
S357	2	30/$.ccls. and ((male with female) same (connector with bearing))	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 16:57
S358	1	("20150005682").PN.	US-PGPUB; USPAT	OR	ON	2018/12/15 17:03
S359	2	WO-2009014727-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/15 17:04
S360	1	("20090270915").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/15 17:04
S361	1	("6228042").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/15 17:09
S362	3	("20030195443" | "20150005682" | "6682496").PN.	US-PGPUB; USPAT	OR	ON	2018/12/15 17:12
S363	23	("20010016697" | "20030009116" | "20030195443" | "20060025710" | "20060192527" | "20070150004" | "20080103419" | "20120253245" | "20140180331" | "20150148592" | "3626934" | "4150668" | "4173217" | "4566442" | "4730605" | "5085207" | "5417644" | "5569168" | "5573500" | "5951501" | "6228042" | "6663657" | "8951216").PN.	US-PGPUB; USPAT	OR	ON	2018/12/15 17:14
S364	0	"601".clas. and ((male with female) same (connector with bearing))	US-PGPUB; USPAT	OR	ON	2018/12/15 17:45

			; USOCR			
S365	909	((male with female) same (connector with bearing))	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 17:45
S366	39	((male with female) same (connector with bias$ with bearing))	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/15 17:45
S367	231	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2018/12/17 11:23

20030019799-$ or US-20130245511-$ or US-20040039314-$ or US-20070144310-$ or US-20180263845-$ or US-20150005682-$).did. or (US-20180200141-$ or US-20040255475-$ or US-20040255474-$ or US-20040187324-$ or US-20040117993-$ or US-20150367494-$ or US-20150033564-$ or US-20130133210-$ or US-20090100690-$ or US-20060260141-$ or US-20050178012-$ or US-20080047150-$ or US-20120192440-$ or US-20120030955-$ or US-20030070307-$ or US-20090272617-$ or US-20180099339-$ or US-20110265335-$ or US-20110131820-$ or US-20060288594-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$).did. or (US-2964037-$ or

		US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S368	38	S367 and (damp$)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 11:23
S369	35	30/$.ccls. and (damp$ with motor with shaft)	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 11:35
S370	3	(("3545301") or ("6557816")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/17 12:00
S371	16	("3545301").URPN.	USPAT	OR	ON	2018/12/17 12:03
S372	95	((("Waldron") near3 ("Michael"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:06
S373	160	((("Cooper") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:08
S374	31	((("Linton") near3 ("Andrew"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:10
S375	47	((("Firth") near3 ("Robert"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:12

S376	5	((("Li") near3 ("Guang") near3 ("Qing"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:17
S377	2	((("Ensing") near3 ("Geert"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:18
S378	2	((("Nazarian") near3 ("Benjamin"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:18
S379	4	((("Wersland") near3 ("Jason"))).INV.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 12:18
S380	0	B27B11/06.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:18
S381	0	B27B11/06.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:18
S383	471	B26D7/2621.cpc.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:19
S384	244	B26D7/2621.cpc. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:19

S385	326	(bosch near3 tool).as.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:32
S386	37	("20040261273" | "20050178223" | "20060005402" | "20070074405" | "2596481" | "2764188" | "3579827" | "3785053" | "3945120" | "4385443" | "4419904" | "5398417" | "5782000" | "5940977" | "6233833" | "6269888" | "6772662" | "6912790" | "7093668" | "7096590" | "7204026" | "7246533" | "7290343" | "7506447").PN. OR ("7818887").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:53
S387	237	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$ or US-	US-PGPUB; USPAT; USOCR; EPO; DERWENT	OR	ON	2018/12/17 14:58

20180263845-$ or US-20150005682-$).did. or (US-20180200141-$ or US-20040255475-$ or US-20040255474-$ or US-20040187324-$ or US-20040117993-$ or US-20150367494-$ or US-20150033564-$ or US-20130133210-$ or US-20090100690-$ or US-20060260141-$ or US-20050178012-$ or US-20080047150-$ or US-20120192440-$ or US-20120030955-$ or US-20030070307-$ or US-20090272617-$ or US-20180099339-$ or US-20110265335-$ or US-20110131820-$ or US-20060288594-$ or US-20080016705-$ or US-20070209217-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$ or US-9889066-$ or US-10027201-$ or US-8640347-$ or US-5212887-$ or US-5099705-$ or US-5079844-$ or US-3759020-$ or US-7036401-$ or US-3863342-$ or US-7818887-$ or US-RE36269-$ or US-5083376-$ or US-7448137-$ or US-6671969-$ or US-7096589-$ or US-5940977-$ or US-7127973-$ or US-8813377-$ or US-4976164-$ or US-8656598-$ or US-5170564-$).did. or (US-3971132-$ or US-6772662-$ or US-4272996-$ or US-3942251-$ or US-6212781-$ or US-7191847-$ or US-9192390-$ or US-5832611-$ or US-6264211-$ or US-7251896-$ or US-7370423-$ or US-4150668-$ or US-4817738-$ or US-6557816-$ or US-4563605-$).did. or (US-2964037-$ or

		US-1882040-$ or US-2902067-$ or US-2868248-$ or US-2822005-$ or US-2808082-$ or US-2240755-$ or US-3309932-$ or US-3545301-$).did. or (EP-1313116-$ or WO-2009014727-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S388	39	S387 and (counterweight counter-weight (counter adj weight))	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 14:58
S389	71	("1643721" | "1648008" | "3729823" | "3971132" | "4145811" | "4238884" | "4272996" | "4545123" | "4628605" | "4976164" | "5079844").PN. OR ("5212887").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/17 17:07
S390	2	(("5129118") or ("4420995")).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/18 08:33
S391	80	("2008367" | "3172675" | "3208318" | "3438291" | "3532013" | "4187747" | "4245528" | "4317392").PN. OR ("4420995").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/18 08:39
S392	3	144/121.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/19 10:51
S393	2	144/122.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/19 10:52
S394	5	144/147.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/19 10:53

S395	0	(theragun).as.	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/19 10:53
S396	192	125/16.01.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/19 10:53
S397	8	76/31.ccls. and @ad<="20180313"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/19 10:56
S398	2	"15458920"	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/20 17:24
S399	166	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-	US-PGPUB; USPAT; USOCR	OR	ON	2018/12/21 12:58

		20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-3626934-$ or US-9827159-$ or US-4716890-$ or US-5140979-$ or US-3754548-$).did. or (US-6786878-$ or US-7238162-$ or US-7128722-$ or US-8951216-$ or US-5460597-$ or US-5417644-$ or US-6730050-$ or US-6432072-$ or US-5695451-$ or US-5475883-$ or US-5085207-$ or US-4162675-$ or US-4088128-$ or US-4079733-$ or US-3724451-$ or US-8342187-$ or US-7590445-$ or US-4730605-$ or US-7951098-$ or US-4025809-$ or US-3580246-$ or US-6228103-$ or US-9161881-$ or US-4566442-$ or US-5983416-$ or US-4722327-$ or US-7367981-$).did. or (US-5676637-$ or US-8777881-$ or US-4834075-$ or US-6500135-$ or US-3806980-$ or US-7503923-$ or US-5300095-$ or US-4841955-$ or US-6730051-$ or US-5843006-$ or US-3747594-$ or US-5214975-$ or US-5203113-$ or US-5640735-$ or US-5374237-$ or US-7996996-$ or US-9724771-$ or US-9606026-$ or US-7059425-$ or US-5655887-$ or US-3854563-$ or US-5573500-$ or US-3736920-$ or US-5088474-$ or US-9265689-$ or US-5803916-$ or US-6805700-$).did. or (US-6602211-$ or US-6997889-$ or US-4158246-$ or US-9289348-$ or US-5470303-$ or US-5159922-$).did. or (US-2964037-$ or US-1882040-$).did. or (EP-1313116-$).did. or (WO-2015038005-$ or WO-2014118596-$).did.				
S400	1	("20150005682").PN.	US-PGPUB; USPAT	OR	ON	2018/12/21 13:45
S401	0	JP-1995051393-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:48

S402	1	JP-95051393-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:48
S403	1	JP-07051393-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:49
S404	1	JP-02019157-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:50
S405	1	JP-2010534110-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:51
S406	1	2009-E41378.NRAN.	DERWENT	OR	ON	2018/12/21 13:51
S407	1	("20090270915").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/21 13:52
S408	0	KR-101123926-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:53
S409	2	JP-2005204777-$.did.	EPO; JPO; DERWENT	OR	ON	2018/12/21 13:55
S410	1	("6682496").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/12/21 13:56
S411	6	("4150668" | "4566442" | "4730605" | "5085207" | "5417644" | "8951216").PN.	US-PGPUB; USPAT	OR	ON	2018/12/21 13:59
S412	252	(US-20140180331-$ or US-20130261516-$ or US-20130138023-$ or US-20120253245-$ or US-20080103419-$ or US-20070150004-$ or US-20060192527-$ or US-20060123941-$ or US-20060025710-$ or US-20030195443-$ or US-	US-PGPUB; USPAT;	OR	ON	2018/12/21 14:08

		20030009116-$ or US-20010016697-$ or US-20160206502-$ or US-20160367425-$ or US-20170027798-$ or US-20030094356-$ or US-20170304145-$ or US-20140163442-$ or US-20130281897-$ or US-20120101517-$ or US-20100137907-$ or US-20100010399-$ or US-20090270915-$ or US-20090222024-$ or US-20020107459-$ or US-20170304144-$).did. or (US-20170156974-$ or US-20160346152-$ or US-20160271009-$ or US-20170156975-$ or US-20030149381-$ or US-20150202114-$ or US-20130012849-$ or US-20020072693-$ or US-20130123677-$ or US-20130072837-$ or US-20100331745-$ or US-20010027280-$ or US-20030028134-$ or US-20030065280-$ or US-20020183668-$ or US-20020082536-$ or US-20140323931-$ or US-20110137217-$ or US-20110041864-$ or US-20050113636-$ or US-20090038069-$ or US-20040064074-$ or US-20090086569-$ or US-20120253246-$ or US-20170281457-$ or US-20170105896-$ or US-20070299378-$).did. or (US-20100125228-$ or US-20060074362-$ or US-20170281459-$ or US-20040176710-$ or US-20150148592-$ or US-20080262397-$ or US-20100145242-$ or US-20030144615-$ or US-20090177128-$ or US-20170241201-$ or US-20150198219-$ or US-20090165387-$ or US-20070175647-$ or US-20050217900-$ or US-20050015030-$ or US-20100024571-$ or US-20150305973-$ or US-20160015596-$ or US-20150182411-$ or US-20160131228-$ or US-20090032275-$ or US-20030019799-$ or US-20130245511-$ or US-20040039314-$ or US-20070144310-$ or US-20180263845-$ or US-20150005682-$).did. or (US-20180200141-$ or US-20040255475-$ or US-20040255474-$ or US-20040187324-$ or US-20040117993-$ or US-20150367494-$ or US-20150033564-$ or US-20130133210-$ or US-20090100690-$ or US-20060260141-$ or US-20050178012-$ or US-20080047150-$ or US-20120192440-$ or US-20120030955-$ or US-20030070307-$ or US-20090272617-$ or US-20180099339-$ or US-20110265335-$ or US-20110131820-$ or US-20060288594-$ or US-20080016705-$ or US-20070209217-$).did. or (US-6663657-$ or US-6228042-$ or US-5951501-$ or US-5569168-$ or US-4549535-$ or US-4173217-$ or US-5273479-$ or US-8715161-$ or US-7927259-$ or US-7041072-$ or US-6733414-$ or US-6723060-$ or US-6682496-$ or US-6599260-$ or US-6352518-$ or US-6027444-$ or US-5716332-$ or US-4827914-$ or US-4790296-$ or US-4513737-$ or US-3837335-$ or US-	USOCR; EPO; JPO; DERWENT			