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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
19/295,322	08/08/2025	Jason WERSLAND	5015.039000L	7142
186370 7590 05/08/2026 STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C. (Therabody) 1101 K Street, NW 10th Floor WASHINGTON, DC 20005			EXAMINER MILLER, CHRISTOPHER E	
			ART UNIT 3785	PAPER NUMBER
			NOTIFICATION DATE 05/08/2026	DELIVERY MODE 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):

e-office@sternekessler.com

<i>Applicant-Initiated Interview Summary</i>	Application No. 19/295,322	Applicant(s) WERSLAND et al.		
	Examiner CHRISTOPHER E MILLER	Art Unit 3785	AIA (First Inventor to File) Status Yes	Page 1 of 2

All Participants (applicant, applicants representative, PTO personnel)	Title	Type
CHRISTOPHER E MILLER	Examiner	Telephonic
Joseph Venier	Attorney of Record	

Date of Interview: 06 May 2026

Issues Discussed:

35 U.S.C. 103

Applicant discussed the 103 rejections with respect to the Danby, Huang, and Noble prior art. Applicant argued that Danby focuses on the design of the scotch yoke mechanism as one of the main problems that Danby is addressing, and argued that one of ordinary skill would not swap out the scotch yoke mechanism for the reciprocating mechanism(s) of Huang/Noble because this would defeat the purpose of Danby's scotch yoke mechanism design. The Examiner disagreed and stated that it was a simple substitution of one known rotary-to-reciprocating motion mechanism for another known rotary-to-reciprocating motion mechanism to produce a predictable result, and that the Noble reference provides advantages such as avoiding undesirable vibrations when the motor is running (col. 3, lines 23-26). No agreements were reached.

Objections

Applicant questioned how to format the amendment to the specification to cancel the new matter from the January 21, 2026 amendment. The Examiner suggested filing an amendment to paragraph [0132] that strikes out the language that was identified as new matter.

Proposed Amendment(s)

Applicant suggested that an RCE may be filed, focusing on the structures depicted in Figure 23 to overcome the prior art of record. The Examiner suggested determining which structures would distinguish over Huang/Noble. No agreements were reached at this time.

☒ Attachment

/CHRISTOPHER E MILLER/ Examiner, Art Unit 3785	
<p>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</p> <p>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</p>	

<i>Applicant-Initiated Interview Summary</i>	Application No. 19/295,322	Applicant(s) WERSLAND et al.		
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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 Discussion Purposes Only

**Proposed Agenda for Examiner Interview
Wednesday, May 6, 2026 at 1:00 PM (ET)
Ser. No. 19/295,322**

Participants:

For PTO: Examiner Christopher E. Miller
For Applicant: Joseph K. Venier (Reg. #76,838)

Dear Examiner Miller,

I propose the following agenda for the telephone interview of May 6, 2026:

- Discuss the amendment to the specification made in the response filed January 21, 2026.
- Discuss distinctions between the push rod assembly shown in FIGS. 21–23A of present application and the prior art, with particular attention to Danby, Elliott, Huang, and Noble.

Please feel free contact me if you have any questions or comments.

Joseph K. Venier, Reg. No. 76,838
(202) 772-8785
jvenier@sternekessler.com

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19/295,322	08/08/2025	Jason WERSLAND	5015.039000L	7142
186370 7590 03/10/2026 STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C. (Therabody) 1101 K Street, NW 10th Floor WASHINGTON, DC 20005			EXAMINER MILLER, CHRISTOPHER E	
			ART UNIT 3785	PAPER NUMBER
			NOTIFICATION DATE 03/10/2026	DELIVERY MODE ELECTRONIC

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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.

Status of Claims

2. This Action is in response to the amendment filed on January 21, 2026.

As directed by the amendment: Claims 3, 14, 16, and 18 were amended. Claims 8 and 20 were cancelled. Claims 23-24 are newly added, and thus claims 3-7, 9-19, and 21-24 are pending and currently under consideration for patentability under 37 CFR 1.104.

Specification

3. The amendment filed January 21, 2026 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: "Output shaft 108 is configured to reciprocate on a reciprocation path that is transverse to first handle portion 143." (para. [0132]).

Applicant is required to cancel the new matter in the reply to this Office Action.

4. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- a. "transverse" (claim 3, claim 14, claim 18) lacks antecedent basis in the specification.

Claim Interpretation - 35 USC § 112(f)

5. The following is a quotation of 35 U.S.C. 112(f):

(f) Element in Claim for a Combination. – An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The following is a quotation of pre-AIA 35 U.S.C. 112, sixth paragraph:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

6. The claims in this application are given their broadest reasonable interpretation using the plain meaning of the claim language in light of the specification as it would be understood by one of ordinary skill in the art. The broadest reasonable interpretation of a claim element (also commonly referred to as a claim limitation) is limited by the description in the specification when 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is invoked.

As explained in MPEP § 2181, subsection I, claim limitations that meet the following three-prong test will be interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph:

- (A) the claim limitation uses the term “means” or “step” or a term used as a substitute for “means” that is a generic placeholder (also called a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function;
- (B) the term “means” or “step” or the generic placeholder is modified by functional language, typically, but not always linked by the transition word “for” (e.g.,

“means for”) or another linking word or phrase, such as “configured to” or “so that”; and

- (C) the term “means” or “step” or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

Use of the word “means” (or “step”) in a claim with functional language creates a rebuttable presumption that the claim limitation is to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites sufficient structure, material, or acts to entirely perform the recited function.

Absence of the word “means” (or “step”) in a claim creates a rebuttable presumption that the claim limitation is not to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is not interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites function without reciting sufficient structure, material or acts to entirely perform the recited function.

Claim limitations in this application that use the word “means” (or “step”) are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action. Conversely, claim limitations in this application that do not use the word “means” (or “step”) are not being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action.

Claim Rejections - 35 USC § 112(b)

7. 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.

8. Claims 4, 14-19, 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 applications subject to pre-AIA 35 U.S.C. 112, the applicant), regards as the invention.

Claim 4, lines 1-2 recite “an interior angle defined between the handle portion and the output shaft is obtuse” and it is confusing how a single handle portion is considered both obtuse to the output shaft (as required by claim 4) and the reciprocation path is transverse to the longitudinal direction of the handle portion (as required by claim 3). Based upon Applicant’s disclosure, it appears that the handle portion (143) forms an obtuse angle with the output shaft (see Fig. 1), but this longitudinal axis (along A1, Fig. 1) would not be transverse to the reciprocation axis. It is unclear what Applicant considers to be the meaning of the term “transverse”, which does not appear in the originally filed specification.

Claim 14, lines 7-8 recite “an output shaft configured to reciprocate on a reciprocation path that is transverse to the handle portion” and the last two lines recite “an interior angle defined between the handle portion and the output shaft is obtuse” and it is confusing how a single handle portion is considered both obtuse to the output shaft and the reciprocation path is transverse to the handle portion. Based upon

Applicant's disclosure, it appears that the handle portion (143) forms an obtuse angle with the output shaft (see Fig. 1), but the handle portion would not be transverse to the reciprocation path. It is unclear what Applicant considers to be the meaning of the term "transverse", which does not appear in the originally filed specification.

Claim 15, line 1 recites "including a housing that" which is confusing because claim 14 already recites "a housing" (line 2). Examiner suggests --wherein the housing--

Claim 18, lines 7-8 recite "an output shaft configured to reciprocate along a reciprocation axis that is transverse to the handle portion axis and intersects the handle portion axis" and the last two lines recite "an interior angle defined between the handle portion and the output shaft is obtuse" and it is confusing how a single handle portion is considered both obtuse to the output shaft and the reciprocation axis is transverse to the handle portion axis and intersects the handle portion axis. Based upon Applicant's disclosure, it appears that the handle portion (143) forms an obtuse angle with the output shaft (see Fig. 1), but this handle axis (along A1, Fig. 1) would not be transverse to the reciprocation axis. It is unclear what Applicant considers to be the meaning of the term "transverse", which does not appear in the originally filed specification.

The remaining claims are rejected based on their dependence on a rejected base claim.

Claim Rejections - 35 USC § 102

9. 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 (i.e., changing from AIA to pre-AIA) 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.

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

A person shall be entitled to a patent unless –

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.

11. Claim(s) 3, 9-13, and 24 are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Danby et al. (2015/0005682).

Regarding claim 3, Danby discloses a percussive massage system (Fig. 1 has massaging head 130 that is driven by a piston in a reciprocating motion, see para. [0005], and see the third sentence of [0037]) comprising:

a percussive device (hand-held massaging device 100, Fig. 1) comprising:

a housing (main housing 102, and upper housing 104, Fig. 1);

a handle portion (handle 106, Fig. 1) that extends in a longitudinal direction (see “1. Longitudinal Direction” in annotated Figure A below);

a motor (motor 210, Fig. 2);

an eccentric shaft (crank pin 213, Fig. 2, Fig. 4; this pin is eccentric because it is “positioned offset from the centerline 400” of flywheel 212, see Fig. 4 and the second sentence of [0034]) configured to travel in a circle (“as flywheel 212 rotates, crank pin 213 rotates in a circular path around the centerline 400 of the flywheel 212” see the third sentence of [0036]) in response to activation of the motor (motor 210 has a shaft 211 that extends into flywheel 212 to rotate the flywheel and crank pin 213, see Figs. 2-4 and lines 1-6 of [0034]);

a push rod assembly (flywheel 212, crank pin 213, crank bearing 214, piston 230, Fig. 4) connected to the motor (“motor 210 includes a shaft 211 that extends into a flywheel 212” see the first sentence of [0034], Fig. 2, Fig. 4), wherein the push rod assembly includes an output shaft (piston 230, Fig. 4) configured to reciprocate (“causing reciprocal motion of piston 230” see the last sentence of [0036]; “piston 230 may only move in a back-and-forth motion along its longitudinal axis” see the third sentence of [0037]) on a reciprocation path (the space that piston 230 occupies as it reciprocates along its longitudinal axis, see “2. Reciprocation Path” in annotated Figures A-B below) that is transverse to the longitudinal direction of the handle portion (see annotated Fig. A., the longitudinal direction 1 is perpendicular to the reciprocation path 2); and

a head portion (see “3. Head Portion” in Fig. A) comprising a portion of the housing that encloses the motor (Head Portion 3 includes part of the housing that encloses motor 210, see Fig. A) and a proximal end of the push rod assembly (Head Portion 3 includes a proximal end of the push rod assembly, see Fig. A), wherein the head portion is located at a longitudinal end of the handle portion (Head Portion 3 is located at a longitudinal end of the handle portion 106, see Fig. A),

wherein:

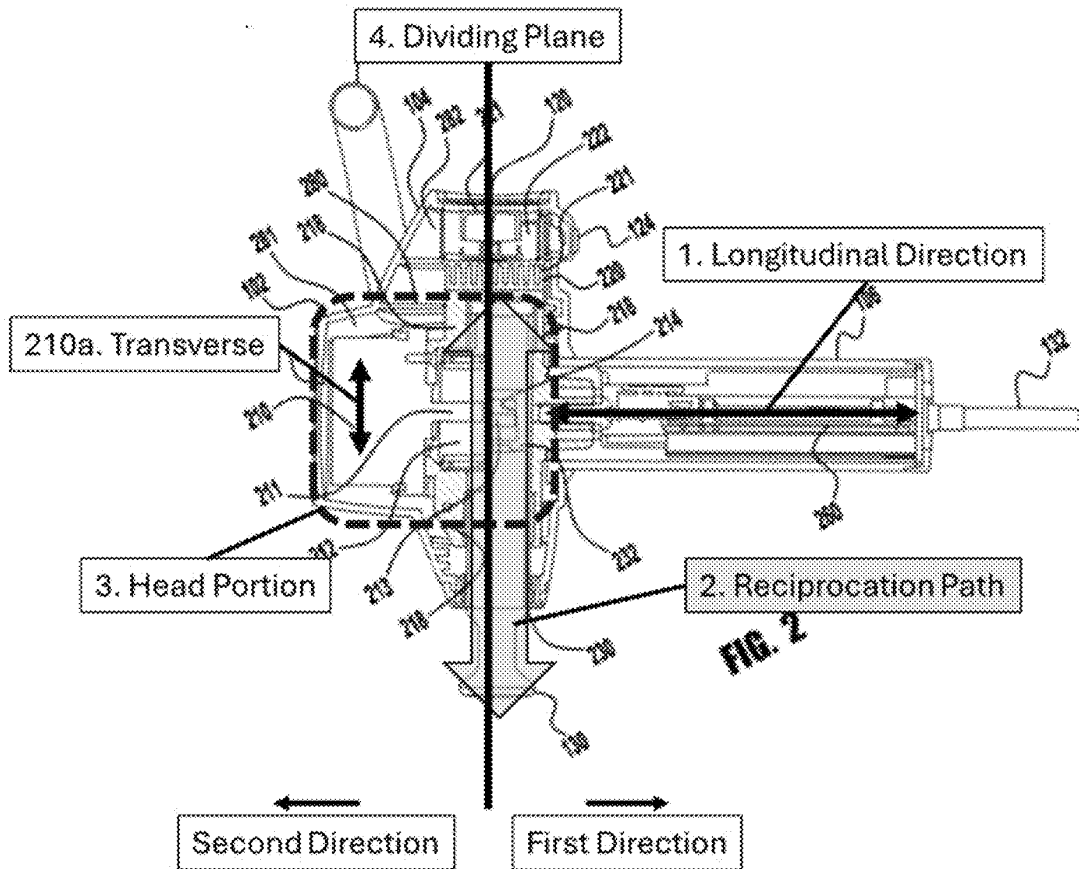
the reciprocation path (2, Fig. A) is on a dividing plane (see “4. Dividing Plane” in Fig. A. This is a plane along where the surface of the flywheel 212 meets the piston 230, Fig. 2, Fig. 4, thus the plane is “dividing” the flywheel from the piston),

a proximal end of the push rod assembly (see “5. Proximal End” in annotated Figure B below) is connected (via crank bearing 214, aperture 410, and pocket 232, Fig.

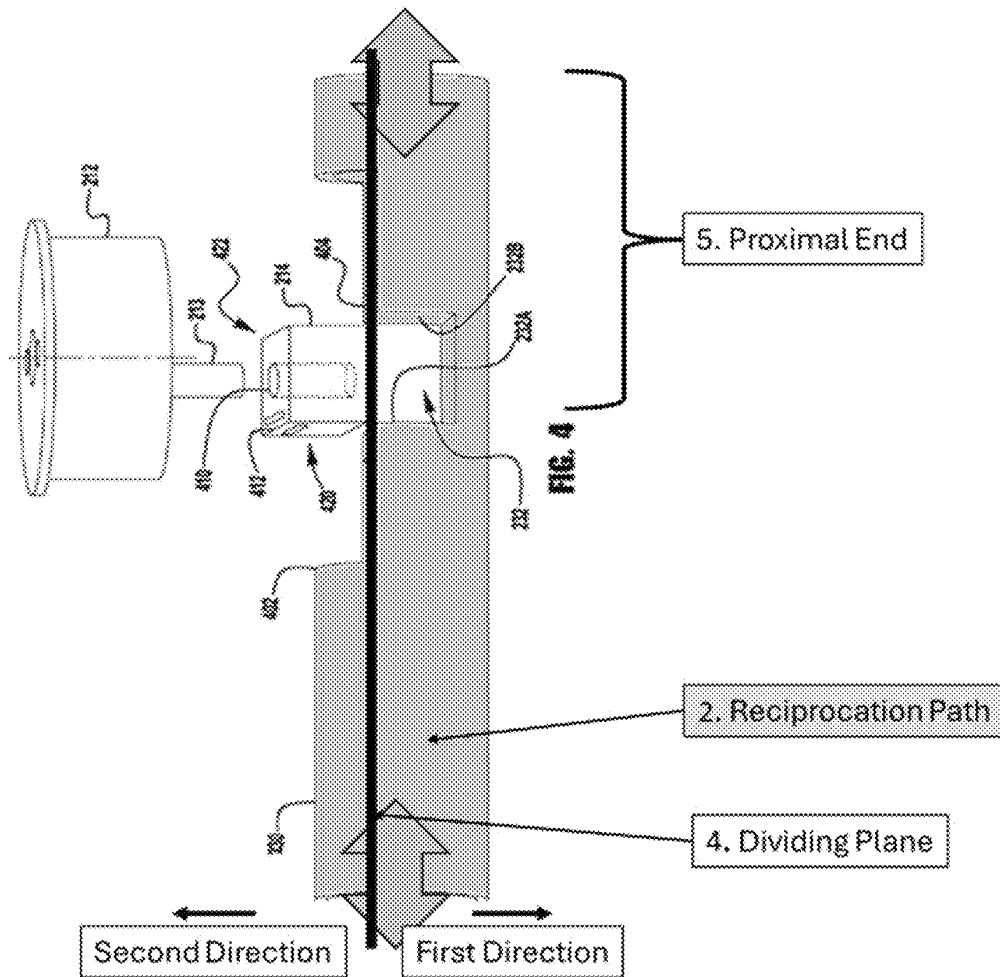
4) to the eccentric shaft (213, Fig. 4; “Crank pin 213 is inserted in an aperture 410 (FIG. 4) of a crank bearing 214” see the third sentence of [0034]) at a location offset from the dividing plane in a first direction (crank bearing 214 is positioned within pocket 232, which is offset from the dividing plane in the first direction, to the right, as seen in Figs. A-B), and

the motor (210) extends transverse to the longitudinal direction of the handle portion (the motor 210 has a circular cross-section and centered about the longitudinal direction of the handle portion 106 as seen in Figs. 2-3, and thus the motor extends transverse such as “210. Transverse” in Fig. A) and away from the dividing plane in a second direction that is opposite the first direction (see annotated Fig. A below, the motor 210 extends away from the dividing plane 4 in a “second direction” that is opposite the “first direction”); and

at least one attachment (massaging head 130, Figs. 1-3) configured to be operatively connected to the percussive device (“massaging head 130 includes a quick-release connection” see the last sentence of [0026]).



Annotated Figure A (from Figure 2 of Danby): Danby's handle portion (106) extends in a longitudinal direction (1). The output shaft (230) reciprocates on a reciprocation path (2, shaded gray). This is the space piston 230 occupies as it reciprocates). The reciprocation path (2) is transverse to the longitudinal direction (1) of the handle portion (the longitudinal direction 1 is horizontal, and the reciprocation path is vertical). There is a head portion (3, dashed lines) comprising a portion of the housing that encloses the motor (210) and a proximal end of the push rod assembly (see Fig. B below), wherein the head portion (3) is located at a longitudinal end of the handle portion. The reciprocation path (2) is on a dividing plane (4, this is a plane along where the surface of the flywheel 212 meets the piston 230). The dividing plane (4) defines a first direction and second direction, opposite to the first direction (see above).



Annotated Figure B (from Figure 4 of Danby): The reciprocation path (2, shaded gray) is on a dividing plane (4, this is a plane along where the surface of the flywheel 212 meets the piston 230). The dividing plane (4) defines a first direction and second direction, opposite to the first direction (see above). The push rod assembly has a proximal end (5).

Regarding claim 9, Danby discloses wherein the housing (102, 104, Fig. 1) includes a first portion (main housing 102, Fig. 1) that extends away from the handle portion (main housing 102 extends away from handle portion 106, as seen in Fig. 1) and encloses a portion of the push rod assembly (see Fig. 1, the main housing is adjacent handle 106 and 108 in the center of the device and thus the main housing 102 encloses at least a portion of the push rod assembly as further seen in Fig. 2) and a second portion (upper housing 104, Fig. 1) that extends away from the handle portion (upper

housing 104 extends away from handle portion 106 as seen in Fig. 1) and the first portion (102, see Fig. 1).

Regarding claim 10, Danby discloses wherein the motor (210, Fig. 2) is located outside of the handle portion (motor 210 is not mounted inside handle portion 106, see Figs. 2-3).

Regarding claim 11, Danby discloses wherein the attachment (massage head 130, Figs. 1-3) is configured to be connected to a distal end of the push rod assembly (massage head 130 connects to the distal end of piston 230 as seen in Figs. 2-3).

Regarding claim 12, Danby discloses wherein the distal end of the push rod assembly includes a distal end of the output shaft (the distal end of the push rod assembly is the distal end of output shaft/piston 230, see Figs. 2-3), and the attachment (massage head 130, Figs. 1-3) is connected to the distal end of the output shaft (massage head 130 connects to the distal end of piston 230 as seen in Figs. 2-3).

Regarding claim 13, Danby discloses wherein the attachment (massage head 130, Figs. 1-3) is removably connected ("massaging head 130 includes a quick-release connection" see the last sentence of [0026]) to the distal end of the push rod assembly (as seen in Figs. 2-3, the massage head 130 is connected to the distal end of push rod assembly, i.e., the distal end of piston 230. Additionally, the details of this quick-connection are shown in Figs. 6-6A, and it is seen that the massaging head 620 is connected to distal end of piston 602 as massaging head 620 is inserted into the distal end and comes in close contact with the wall at the distal end. It is noted that Figs. 6-6A are referred to as an exemplary embodiment of a quick-connect system (see the first sentence of [0048]), and these are the only details illustrated for the quick-connection.

This quick-connect embodiment of Figs. 6-6A would still have all of the structures disclosed in massaging device 100, Figs. 1-4 (see the second sentence of [0048]).

Thus, it is considered a single embodiment to anticipate claim 13).

Regarding claim 24, Danby discloses wherein the handle portion (106) is generally straight (see Figs. 1-2).

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 (i.e., changing from AIA to pre-AIA) 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:

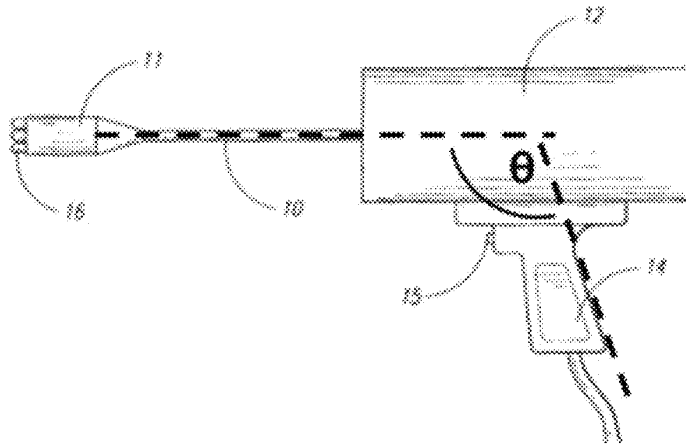
A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the 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. Claim(s) 4, 14-15, and 18, as best understood, are rejected under 35 U.S.C. 103 as being unpatentable over Danby et al. (2015/0005682) in view of Elliott (5,618,315).

Regarding claim 4, Danby is silent regarding wherein an interior angle defined between the handle portion (106, Fig. 1) and the output shaft (230, Fig. 2) is obtuse.

Elliott teaches a related chiropractic adjustment device (Fig. 2) with a handle portion (pistol grip 14, Fig. 2). An interior angle defined between the handle portion (14)

and the output shaft (elongated rod 10, Fig. 2) is obtuse (see " θ " in annotated Figure C below, this is an interior angle of the rear surface of the handle portion). Elliott states that this pistol grip design is "for ease of handling of the hand held portion" (see lines 9-10 of the Abstract).



Annotated Figure C (from Fig. 2 of Elliott): Elliott has a handle portion (14) and an output shaft (1). An interior angle (θ) defined between the handle portion and the output shaft (10) is obtuse (see above, the angle between the rear surface of the handle portion and the output shaft axis is obtuse).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the handle portion of Danby to be a pistol grip design such that an interior angle defined between the handle portion and the output shaft is obtuse as taught by Elliott because a pistol grip design is expected to provide easy and comfortable handling.

In the modified device, the handle portion (106, Danby as modified by Elliott) would still extend substantially in a longitudinal direction that is transverse to the reciprocation path (the front surface of pistol grip 14 of Elliott is transverse to the output shaft axis, see Fig. 2 of Elliott. In the modified device, this angle intersects the output shaft 230 of Danby).

Regarding claim 14, Danby discloses a percussive massage device (hand-held massaging device 100, Fig. 1. This has massaging head 130 that is driven by a piston in a reciprocating motion, see para. [0005], and see the third sentence of [0037]) comprising:

a handle portion (handle 106, Fig. 1), a motor (motor 210, Fig. 2), a housing (main housing 102, upper housing 104, Fig. 1), and an output assembly (flywheel 212, crank pin 213, piston 230, massage head 130, Fig. 2, Fig. 4), wherein the output assembly includes:

an eccentric shaft (crank pin 213, Fig. 2, Fig. 4; this pin is eccentric because it is “positioned offset from the centerline 400” of flywheel 212, see Fig. 4 and the second sentence of [0034]), wherein the motor is configured to apply torque about a motor axis to the eccentric shaft (motor 210 applies torque about motor shaft 211 and its corresponding axis. The shaft 211 extends into flywheel 212 to rotate the flywheel and crank pin 213, see Figs. 2-4 and lines 1-6 of [0034]); and

a push rod assembly (piston 230 and massage head 130, Figs. 2-4) connected to the motor (“motor 210 includes a shaft 211 that extends into a flywheel 212” see the first sentence of [0034], Fig. 2, Fig. 4. The flywheel rotates crank pin 213, which causes piston 230 to reciprocate, see the last sentence of [0036]), wherein the push rod assembly includes an output shaft (piston 230, Fig. 4) configured to reciprocate (“causing reciprocal motion of piston 230” see the last sentence of [0036]; “piston 230 may only move in a back-and-forth motion along its longitudinal axis” see the third sentence of [0037]) on a reciprocation path (the space that piston 230 occupies as it reciprocates along its longitudinal axis, see “2. Reciprocation Path” in annotated Figures

A-B above) that is transverse to the handle portion (the longitudinal direction of the handle portion is horizontal, and the reciprocation path is vertical, see Fig. A);

wherein:

a dividing plane (see “4. Dividing Plane” in annotated Figures A-B above. This is a plane along where the surface of the flywheel 212 meets the piston 230, Fig. 2, Fig. 4, thus the plane is “dividing” the flywheel from the piston) is defined perpendicular to the motor axis (the motor axis extends along shaft 211, Fig. 2, and this is perpendicular to the dividing plane 4 as seen in Fig. A above), and the reciprocation path is on the dividing plane (see Figs. A-B above, the reciprocation path 2 is on dividing plane 4),

a proximal end of the push rod assembly (see “5. Proximal End” in annotated Figure B above) is connected (via crank bearing 214, aperture 410, and pocket 232, Fig. 4) to the eccentric shaft (213, Fig. 4; “Crank pin 213 is inserted in an aperture 410 (FIG. 4) of a crank bearing 214” see the third sentence of [0034]) at a connection point (at the aperture 410 in crank bearing 214, Fig. 4) that travels on a circular path when the motor is active (“Rotation of crank pin 213 causes crank bearing 214 to travel in a circular motion within piston pocket 232” see the last sentence of [0036]),

the motor (210) includes an end (the end of motor 210 furthest away from the dividing plane 4, along the “second direction” as seen in annotated Fig. A above) positioned on an opposite side of the dividing plane (4, see Fig. A above) from the circular path of the connection point (the end of motor 210 furthest away from the dividing plane 4, is on the opposite side from the circular path that the connection point i.e., aperture 410 of crank bearing 214 travels, see Figs. A-B above).

Danby is silent regarding wherein the handle portion (106) comprises a portion of the housing; and an interior angle defined between the handle portion and the output shaft is obtuse.

Elliott teaches a related chiropractic adjustment device (Fig. 2) with a handle portion (pistol grip 14, Fig. 2) that comprises a portion of the housing (see Figs. 1-2, the handle extends outward from central portion 12 as part of the device housing). An interior angle defined between the handle portion (14) and the output shaft (elongated rod 10, Fig. 2) is obtuse (see “ θ ” in annotated Figure C above, this is an interior angle of the rear surface of the handle portion). Elliott states that this pistol grip design is “for ease of handling of the hand held portion” (see lines 9-10 of the Abstract).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the handle portion of Danby to be a pistol grip design that comprises a portion of the housing, such that an interior angle defined between the handle portion and the output shaft is obtuse as taught by Elliott because a pistol grip design is expected to provide easy and comfortable handling, and because it has been held that the use of a one piece construction (the handle portion being part of the housing) instead of separate pieces (handle portion 106 being distinct from housing 102/104) would be merely a matter of obvious engineering choice (see MPEP 2144.04(V)(B)).

In the modified device, the handle portion (106, Danby as modified by Elliott) would still extend transverse to the reciprocation path (the front surface of pistol grip 14 of Elliott is transverse to the output shaft axis, see Fig. 2 of Elliott. In the modified device, this angle intersects the output shaft 230 of Danby).

Regarding claim 15, the modified Danby/Elliott device discloses including a housing (main housing 102, upper housing 104, Fig. 1 of Danby) that includes a first portion (main housing 102, Fig. 1) that extends away from the handle portion (main housing 102 extends away from handle portion 106, as seen in Fig. 1) and encloses a portion of the push rod assembly (see Fig. 1 of Danby, the main housing is adjacent handle 106 and 108 in the center of the device and thus the main housing 102 encloses at least a portion of the push rod assembly as further seen in Fig. 2), and the housing (102, 104) includes a second portion (upper housing 104, Fig. 1) that extends away from the handle portion (upper housing 104 extends away from handle portion 106 as seen in Fig. 1) and the first portion (102, see Fig. 1).

Regarding claim 18, Danby discloses a percussive massage device (hand-held massaging device 100, Fig. 1. This has massaging head 130 that is driven by a piston in a reciprocating motion, see para. [0005], and see the third sentence of [0037]) comprising:

a handle portion (handle 106, Fig. 1), a motor (motor 210, Fig. 2), and an output assembly (flywheel 212, crank pin 213, piston 230, massage head 130, Fig. 2, Fig. 4), wherein the handle portion defines a handle portion axis (see “1. Longitudinal Direction” in annotated Fig. A above), and wherein the output assembly includes:

an eccentric shaft (crank pin 213, Fig. 2, Fig. 4; this pin is eccentric because it is “positioned offset from the centerline 400” of flywheel 212, see Fig. 4 and the second sentence of [0034]), wherein the motor is configured to apply torque to the eccentric shaft (motor 210 applies torque via motor shaft 211. The shaft 211 extends into flywheel 212 to rotate the flywheel and crank pin 213, see Figs. 2-4 and lines 1-6 of [0034]); and

a push rod assembly (piston 230 and massage head 130, Figs. 2-4) connected to the motor (“motor 210 includes a shaft 211 that extends into a flywheel 212” see the first sentence of [0034], Fig. 2, Fig. 4. The flywheel rotates crank pin 213, which causes piston 230 to reciprocate, see the last sentence of [0036]), wherein the push rod assembly includes an output shaft (piston 230, Fig. 4) configured to reciprocate (“causing reciprocal motion of piston 230” see the last sentence of [0036]; “piston 230 may only move in a back-and-forth motion along its longitudinal axis” see the third sentence of [0037]) along a reciprocation axis (a longitudinal axis of piston 230, see the third sentence of [0037] and Figs. 2-4. Here, the longitudinal axis associated with dividing plane 4, annotated Figs. A-B above is considered the reciprocation axis) that is transverse to the handle portion (the longitudinal direction of the handle portion is horizontal, and the reciprocation axis is vertical, see Fig. A);

wherein:

a proximal end of the push rod assembly (see “5. Proximal End” in annotated Figure B above) is connected (via crank bearing 214, aperture 410, and pocket 232, Fig. 4) to the eccentric shaft (213, Fig. 4; “Crank pin 213 is inserted in an aperture 410 (FIG. 4) of a crank bearing 214” see the third sentence of [0034]) at a connection point (at the aperture 410 in crank bearing 214, Fig. 4) that travels on a circular path when the motor is active (“Rotation of crank pin 213 causes crank bearing 214 to travel in a circular motion within piston pocket 232” see the last sentence of [0036]),

an end of the motor (the end of motor 210 furthest away from the dividing plane 4, along the “second direction” as seen in annotated Fig. A above) is on an opposite side of the reciprocation axis (longitudinal axis of 230, Figs. 3-4) from the circular path

of the connection point (aperture 410 and crank bearing 214 are positioned to the right of a central, longitudinal line of piston 230 as seen in Fig. 4, and the motor 210 is positioned on the opposite side as seen in Figs. 2-3).

Danby is silent regarding an interior angle defined between the handle portion (106) and the output shaft is obtuse.

Elliott teaches a related chiropractic adjustment device (Fig. 2) with a handle portion (pistol grip 14, Fig. 2). An interior angle defined between the handle portion (14) and the output shaft (elongated rod 10, Fig. 2) is obtuse (see “ θ ” in annotated Figure C above, this is an interior angle of the rear surface of the handle portion). Elliott states that this pistol grip design is “for ease of handling of the hand held portion” (see lines 9-10 of the Abstract).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the handle portion of Danby to be a pistol grip design such that an interior angle defined between the handle portion and the output shaft is obtuse as taught by Elliott because a pistol grip design is expected to provide easy and comfortable handling.

In the modified device, the handle portion (106, Danby as modified by Elliott) axis would still extend substantially in a longitudinal direction that is transverse to, and intersecting, the reciprocation axis (the front surface of pistol grip 14 of Elliott is transverse to the output shaft axis, see Fig. 2 of Elliott. In the modified device, this angle intersects the output shaft 230 of Danby).

Regarding claim 21, the modified Danby/Elliott device discloses wherein the reciprocation axis is on a dividing plane (the longitudinal axis associated with dividing

plane 4, annotated Figs. A-B above is considered the reciprocation axis), and the circular path of the connection point (aperture 410 and crank bearing 214 are rotated in a circular path, see the last sentence of [0036]) is on an opposite side of the dividing plane (4) from the end of the motor (the end of motor 210 furthest away from the dividing plane 4, along the “second direction” as seen in annotated Fig. A above, is on an opposite side relative to the circular path of aperture 410, crank bearing 214, see Figs. 2-4).

Regarding claim 22, the modified Danby/Elliott device discloses including a housing (main housing 102, upper housing 104, Fig. 1) that includes a first portion (main housing 102, Fig. 1) that extends away from the handle portion (main housing 102 extends away from handle portion 106 as seen in Fig. 1) and encloses a portion of the push rod assembly (see Fig. 1, the main housing is adjacent handle 106 and 108 in the center of the device and thus the main housing 102 encloses at least a portion of the push rod assembly as further seen in Fig. 2), and the housing (102, 104) includes a second portion (upper housing 104, Fig. 1) that extends away from the handle portion (upper housing 104 extends away from handle portion 106 as seen in Fig. 1) and the first portion (102, see Fig. 1).

15. Claim 5 is rejected under 35 U.S.C. 103 as being unpatentable over Danby et al. (2015/0005682) in view of Noble et al. (4,730,605).

Regarding claim 5, Danby is silent regarding wherein the push rod assembly includes a push rod that includes a proximal end and a distal end, the proximal end of the push rod assembly includes the proximal end of the push rod, and the proximal end of the push rod is farther from the reciprocation path than the distal end of the push rod.

Noble teaches a related percussion device (Fig. 4, see Title) with a motor (drive unit 28, Fig. 8) operably connected to a push rod assembly (coupling arrangement 42, Fig. 8) that includes a push rod (connecting rod 56, Fig. 6) and an output shaft (neck portion 66, Fig. 6) configured to reciprocate (see col. 3, lines 1-5, and corresponding reciprocating movement along arrow 44, Fig. 8). The push rod (56) includes a proximal end (the end adjacent stub shaft 58, Fig. 4) and a distal end (the end at shoulder 62, adjacent neck portion 66, see Fig. 6), the proximal end of the push rod assembly (42, Fig. 8) includes the proximal end of the push rod (the proximal end of coupling arrangement 42 includes the proximal end of push rod 56, see Fig. 4, Fig. 6), and the proximal end of the push rod (the end adjacent stub shaft 58, Fig. 4) is farther from a reciprocation path than the distal end of the push rod (see Figure 8, the reciprocation path is along arrow 44, which aligns with the distal end of push rod 56, while the proximal end of push rod 56 is laterally displaced to the right as seen in Fig. 8, Fig. 4). The proximal end of the push rod is farther from the reciprocation path due to the presence of a counterbalance weight (52, Fig. 4, Fig. 8) that “ensures that the eccentric is dynamically balances and avoids undesirable vibrations when motor 28 is running” (see col. 3, lines 23-26).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the push rod assembly of Danby to be replaced with the counterbalance weight and push rod assembly including a push rod as taught by Noble because this would be a simple substitution of one known reciprocation driving mechanism for another known reciprocation driving mechanism (substituting Danby’s reciprocating push rod assembly with Noble’s

reciprocating push rod assembly), and provide a predictable result that the presence of the counterbalance weight between the eccentric shaft and the reciprocating push rod/output shaft would dynamically balance the push rod assembly and avoid undesirable vibrations.

16. Claim(s) 6-7 are rejected under 35 U.S.C. 103 as being unpatentable over Danby et al. (2015/0005682) in view of Marton et al. (2019/0254922).

Regarding claim 6, Danby discloses including: a switch for activating the motor (second pushbutton 128, see Fig. 1 and lines 1-10 of [0029]. Pressing button 128 turns the massaging device on/off and adjusts the speed of the motor), wherein the switch is located on a portion of the housing (housing portion 104, Fig. 1) that is on an opposite side of the device relative to the push rod assembly (see Figs. 1-3, the pushbutton 128 is on a portion of the housing away from the distal end of piston 230), but is silent regarding this location facing an opposite direction from a distal end of the push rod assembly. However, it is noted that it has been held that rearranging parts of an invention involves only routine skill in the art. MPEP 2144.04(VI).

Furthermore, Marton teaches a related percussive massage device (Figs. 1-2, see Title) with a switch for activating the motor (pushbutton switch 162, Fig. 2; see all of para. [0111], the switch advances from an off-state to a first (low) speed of the motor, a second (medium) speed, and a third (high) speed), wherein the switch (162, Fig. 2) is located on a portion of the housing that faces an opposite direction from a distal end of the push rod assembly (the switch 162, Fig. 2, is facing the opposite direction as the distal end of push rod assembly 512, 514, see Fig. 3, Fig. 7). The switch is also adjacent an electronic display (speed indication light-emitting diodes 166A, 166B, 166C,

see Fig. 4B and lines 6-17 of [0043]) to indicate to the user the selected percussion speed of the motor. One of ordinary skill in the art would recognize that this location of the switch and electronic display would be clearly visible during use.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the location of the switch of Danby to be on a portion of the housing that faces an opposite direction from a distal end of the push rod assembly and to include an electronic display as taught by Marton since this merely involves a rearrangement of parts and because such a position would be expected to be clearly visible for a user to engage with the switch and view the electronic display to indicate the current percussion speed.

Regarding claim 7, Danby discloses wherein the device includes a switch configured for activating the motor (second pushbutton 128, see Fig. 1 and lines 1-10 of [0029]. Pressing button 128 turns the massaging device on/off and adjusts the speed of the motor), but is silent regarding an electronic display that faces a same direction as the switch.

Marton teaches a related percussive massage device (Figs. 1-2, see Title) with a switch for activating the motor (pushbutton switch 162, Fig. 2; see all of para. [0111], the switch advances from an off-state to a first (low) speed of the motor, a second (medium) speed, and a third (high) speed). The switch is adjacent an electronic display (speed indication light-emitting diodes 166A, 166B, 166C, see Fig. 4B and lines 6-17 of [0043]) that faces the same direction as the switch (see Fig. 2, Fig. 4B) to indicate to the user the selected percussion speed of the motor. One of ordinary skill in the art would

recognize that this location of the switch and electronic display would be clearly visible during use.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the switch of Danby to include a corresponding electronic display facing the same direction as taught by Marton because such a position would be expected to be clearly visible for a user to engage with the switch while also viewing the electronic display to determine the current percussion speed.

17. Claim 16 is rejected under 35 U.S.C. 103 as being unpatentable over Danby et al. (2015/0005682) in view Elliott (5,618,315) as applied to claim 14 above, and further in view of Pepe (2017/0304145).

Regarding claim 16, the modified Danby/Elliott device is silent regarding including a battery housed in the handle portion.

Pepe teaches a related handheld percussive massage device (Fig. 1; “to-and-fro motion is part of percussive massage therapy” see lines 19-22 of [0026]) that includes two handle portions (primary handle 12, secondary handle 14, Fig. 1) and a battery is housed in at least one of the handle portion(s) (“The motor is powered by a rechargeable battery, which is preferably housed within one of the handles.” See the last sentence of [0026]). One of ordinary skill in the art would recognize that a rechargeable battery provides predictable advantages, such as improving portability of the device as it would not need to be plugged in during use, and improving convenience by allowing the battery to be recharged.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the power source and handle portion of Danby/Elliott to include a rechargeable battery housed in the handle portion as taught by Pepe because this is a combination of prior art elements according to known techniques (placing a rechargeable battery within a handle) and provides predictable advantages such as improving portability of the device as it would not need to be plugged in during use, and improving convenience by allowing the battery to be recharged.

18. Claim 17 is rejected under 35 U.S.C. 103 as being unpatentable over Danby et al. (2015/0005682) in view Elliott (5,618,315) as applied to claim 14 above, and further in view of Huang (2001/0027280).

Regarding claim 17, the modified Danby/Elliott device discloses wherein the percussive massage device (100, Fig. 1 of Danby) includes a bearing (crank bearing 214, Fig. 2, Fig. 4 of Danby) between the eccentric shaft (crank pin 213, Fig. 2, Fig. 4 of Danby) and the push rod assembly (230, 130, Figs. 2-4 of Danby), the output shaft (230) is centered on the reciprocation path (the piston 230 coincides entirely with the reciprocation path 2, see Figs. A-B), and the motor (210) includes an end (the end of motor 210 furthest away from the dividing plane 4, along the “second direction” as seen in annotated Fig. A above) positioned on a left side of the reciprocating path (2, see Figs. A-B). The modified Danby/Elliott device is silent regarding the motor end being positioned on an opposite side of the reciprocating path *from the bearing* (214, Fig. 4).

Huang teaches a related percussive massage device (Fig. 5, see title) including a motor (motor 30, Fig. 5), a bearing (rotary bearing 42, Figs. 4-5) between an eccentric

shaft (crank arm 36 has an eccentric shaft that is received within rotary bearing 42 as seen in Figs. 4-5) and a push rod assembly (vertical connecting rod 40, Fig. 5), that includes an output shaft (second end 48, Fig. 5) centered on a reciprocation path (connecting rod 40 reciprocates axially, “up and down” see the first sentence and last sentence of [0021]. The second end 48 is centered on this axial movement), and the motor (30) includes an end (either end of the motor 30 adjacent shaft 34, Fig. 5) positioned on an opposite side of the reciprocating path from the bearing (see Fig. 5, the output shaft 48 is reciprocated up and down along a reciprocating path. The motor 30 is positioned to the left of this reciprocating path and the bearing 42 is positioned to the right of the reciprocating path). This is a known push rod assembly to produce reciprocating movement in an up and down direction, and provides an expected result of a percussive massage.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the eccentric shaft, bearing, and push rod assembly of Danby/Elliott to have the motor end being positioned on an opposite side of the reciprocating path from the bearing as taught by Huang because this is a simple substitution of one known reciprocating movement mechanism for another known reciprocating movement mechanism, to provide predictable results of a percussive massage mechanism.

19. Claims 19 and 23 are rejected under 35 U.S.C. 103 as being unpatentable over Danby et al. (2015/0005682) in view Elliott (5,618,315) as applied to claim 18 above, and further in view of Noble et al. (4,730,605).

Regarding claim 19, the modified Danby/Elliott device is silent regarding wherein: the push rod assembly includes a push rod, and the push rod includes a proximal end and a distal end, and wherein the proximal end of the push rod is connected to the eccentric shaft at the connection point, and the distal end of the push rod is nearer to the reciprocation axis than the proximal end of the push rod.

Noble teaches a related percussion device (Fig. 4, see Title) with a motor (drive unit 28, Fig. 8) operably connected to a push rod assembly (coupling arrangement 42, Fig. 8) that includes a push rod (connecting rod 56, Fig. 6) and an output shaft (neck portion 66, Fig. 6) configured to reciprocate (see col. 3, lines 1-5). The push rod (56) includes a proximal end (the end adjacent stub shaft 58, Fig. 4) and a distal end (the end at shoulder 62, adjacent neck portion 66, see Fig. 6), and wherein the proximal end of the push rod is connected to an eccentric shaft (stub shaft 58, Fig. 4. This is received in bearing 60 of eccentric 50 and thus an eccentric shaft, see col. 3, lines 29-30) at a connection point (the connection between connecting rod 56 and shaft 58, Fig. 4), and the distal end of the push rod (the end at shoulder 62, adjacent neck portion 66, see Fig. 6) is nearer to the reciprocation axis (rod 56 reciprocates along direction 44, Fig. 8, and the end of rod 56 at shoulder 62, adjacent neck portion 66 is aligned with this axis as seen in Fig. 6) than the proximal end of the push rod (see Figure 8, the reciprocation path is along arrow 44, which aligns with the distal end of push rod 56, while the proximal end of push rod 56 is laterally displaced to the right as seen in Fig. 8, Fig. 4). The proximal end of the push rod is farther from the reciprocation path due to the presence of a counterbalance weight (52, Fig. 4, Fig. 8) that “ensures that the eccentric

is dynamically balances and avoids undesirable vibrations when motor 28 is running”
(see col. 3, lines 23-26).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the push rod assembly of Danby/Elliott to be replaced with the counterbalance weight and push rod assembly including a push rod as taught by Noble because this would be a simple substitution of one known reciprocation driving mechanism for another known reciprocation driving mechanism (substituting Danby’s reciprocating push rod assembly with Noble’s reciprocating push rod assembly), and provide a predictable result that the presence of the counterbalance weight between the eccentric shaft and the reciprocating push rod/output shaft would dynamically balance the push rod assembly and avoid undesirable vibrations.

Regarding claim 23, the modified Danby/Elliott device is silent regarding wherein the output shaft (230, Danby) is centered on the reciprocation axis.

Noble teaches a related percussion device (Fig. 4, see Title) with a motor (drive unit 28, Fig. 8) operably connected to a push rod assembly (coupling arrangement 42, Fig. 8) that includes a push rod (connecting rod 56, Fig. 8) and an output shaft (neck portion 66, Fig. 6) configured to reciprocate (see col. 3, lines 1-5) along a reciprocation axis (the vertical axis associated with direction 44, Fig. 8), wherein the output shaft (66) is centered on the reciprocation axis (neck portion 66 moves vertically, centered on the axis associated with direction 44). The push rod (56) includes a proximal end (the end adjacent stub shaft 58, Fig. 4) wherein the proximal end of the push rod is connected to an eccentric shaft (stub shaft 58, Fig. 4. This is received in bearing 60 of eccentric 50

and thus an eccentric shaft, see col. 3, lines 29-30) at a connection point (the connection between connecting rod 56 and shaft 58, Fig. 4) that travels on a circular path when the motor is active (the motor rotates shaft 58). Noble includes a counterbalance weight (52, Fig. 4, Fig. 8) that “ensures that the eccentric is dynamically balances and avoids undesirable vibrations when motor 28 is running” (see col. 3, lines 23-26).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the push rod assembly of Danby/Elliott to be replaced with the counterbalance weight and push rod assembly including a push rod and output shaft that is centered on the reciprocation axis as taught by Noble because this would be a simple substitution of one known reciprocation driving mechanism for another known reciprocation driving mechanism (substituting Danby’s reciprocating push rod assembly with Noble’s reciprocating push rod assembly), and provide a predictable result that the presence of the counterbalance weight between the eccentric shaft and the reciprocating push rod/output shaft would dynamically balance the push rod assembly and avoid undesirable vibrations.

Response to Arguments

20. Applicant's arguments filed January 21, 2026, have been fully considered but they are not persuasive.

21. Regarding the argument that Applicant disagrees with the Office’s interpretation of the term “handle portion”, as the specification states “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 cooperates to form a triangle” (see the first two paragraphs of page 9 of the Remarks), this claim interpretation has been adopted. However, further clarification is requested as to Applicant’s intended meaning of the term “transverse.” Applicant does not appear to disclose a single “handle portion” that is both transverse to the output shaft/reciprocation axis, and also forms an obtuse angle as required by claims 4, 14, and 18.

22. Regarding the argument that claim 3 has been amended such that Danby does not anticipate the claim, as Danby does not disclose a “head portion” located at a longitudinal end of the handle portion (see pages 11-12 of the Remarks), this argument is not persuasive because claim 3 has now been rejected based upon the handle portion (106) of Danby, rather than the optional handle portion (108).

23. Regarding the argument that Danby does not anticipate claim 14 because Danby’s handle 108 does not comprise a portion of the main housing 102 (see the first three paragraphs of page 13 of the Remarks), this argument has been considered, but it is moot because Danby no longer anticipates claim 14 due to the claim amendments, and the 103 rejection(s) now rely upon handle portion 106 of Danby.

24. Regarding the argument that Danby does not anticipate claim 18 because Danby’s handle 108 does not have an axis that intersects the reciprocation axis (see the last paragraph of page 13 of the Remarks, through the first two paragraph of page 14), this argument has been considered, but it is moot because Danby no longer anticipates claim 18 due to the claim amendments, and the 103 rejection(s) now rely upon handle portion 106 of Danby.

25. Regarding the argument that none of the remaining prior art cure the deficiencies of Danby with respect to the independent claims (see the last paragraph of page 14 of the Remarks), this argument is not persuasive because Danby does not have any deficiencies with respect to claim 3, and because Danby/Elliott disclose each limitation of claims 14 and 18.

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Kao (2020/0000678) discloses a related reciprocating massage device with a handle portion that forms an obtuse angle with the reciprocation axis.

27. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any nonprovisional extension fee (37 CFR 1.17(a)) pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER E MILLER whose telephone number is (571)270-1473. The examiner can normally be reached Mon-Fri 9:00-5:30 (Eastern).

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, Timothy Stanis can be reached at 571-272-5139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and <https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHRISTOPHER E MILLER/
Examiner, Art Unit 3785

Application/Control Number: 19/295,322
Art Unit: 3785

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/TIMOTHY A STANIS/
Supervisory Patent Examiner, Art Unit 3785

<i>Examiner-Initiated Interview Summary</i>	Application No. 19/295,322	Applicant(s) WERSLAND et al.		
	Examiner CHRISTOPHER E MILLER	Art Unit 3785	AIA (First Inventor to File) Status Yes	Page 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	Title	Type
CHRISTOPHER E MILLER	Examiner	Telephonic
Joseph Venier	Attorney of Record	

Date of Interview: 02 March 2026

Issues Discussed:

Other

The Examiner called to attempt to clarify which of the "handle portion(s)" is both transverse to the output shaft/reciprocation axis, while also forming an interior angle between the handle portion and the output shaft that is obtuse. The Examiner noted that the first handle portion (143, Fig. 1) is obtuse to the output shaft/reciprocation axis, but did not appear to be transverse based upon the ordinary engineering meaning of "transverse" to be forming a 90 degree angle.

No agreement was made at this time as to the meaning of "transverse." Instead, Mr. Venier requested to clarify the meaning of "transverse" in a subsequent response.

/CHRISTOPHER E MILLER/ Examiner, Art Unit 3785	/TIMOTHY A STANIS/ Supervisory Patent Examiner, Art Unit 3785
<p>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</p> <p>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</p>	

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.

<i>Notice of References Cited</i>	Application/Control No. 19/295,322		Applicant(s)/Patent Under Reexamination WERSLAND et al.	
	Examiner CHRISTOPHER E MILLER		Art Unit 3785	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-5618315-A	1997-04-08	Elliott; Thomas	A61H23/0218	606/237
*	B	US-20200000678-A1	2020-01-02	KAO; Jui-Hung	A61H23/0218	1/1
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	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 YYYY-MM-DD format are publication dates. Classifications may be US or foreign.

<i>Search Notes</i> 	Application/Control No. 19/295,322	Applicant(s)/Patent Under Reexamination WERSLAND et al.
	Examiner CHRISTOPHER E MILLER	Art Unit 3785

CPC - Searched*		
Symbol	Date	Examiner
A61H 23/00, 02, 006, 0254;	10/10/2025	CEM
Updated above searches	02/25/2026	CEM

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

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

Search Notes		
Search Notes	Date	Examiner
PE2E Keyword text search	09/23/2025	CEM
Inventor search	09/23/2025	CEM
Conducted Similarity Searches	09/24/2025	CEM
Updated above searches	02/25/2026	CEM

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/CHRISTOPHER E MILLER/ Examiner, Art Unit 3785	
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<i>Index of Claims</i> 	Application/Control No. 19/295,322	Applicant(s)/Patent Under Reexamination WERSLAND et al.
	Examiner CHRISTOPHER E MILLER	Art Unit 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	10/10/2025	03/02/2026						
	1	-	-						
	2	-	-						
	3	✓	✓						
	4	✓	✓						
	5	✓	✓						
	6	✓	✓						
	7	✓	✓						
	8	✓	-						
	9	✓	✓						
	10	✓	✓						
	11	✓	✓						
	12	✓	✓						
	13	✓	✓						
	14	✓	✓						
	15	✓	✓						
	16	✓	✓						
	17	✓	✓						
	18	✓	✓						
	19	✓	✓						
	20	✓	-						
	21	✓	✓						
	22	✓	✓						
	23		✓						
	24		✓						

PE2E SEARCH - Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	British Equivalents	Time Stamp
L1	201	jason.in. near2 wersland.in.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/23 09:27 PM
L2	212	nazarian.in. near2 benjamin.in.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/23 09:27 PM
L4	43	jaime.in. near2 (sanchez ADJ solana).in.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/23 09:27 PM
L5	199	eduardo.in. near2 merino.in.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/23 09:28 PM
L6	58	richard.in. near2 tang.in.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/23 09:28 PM
L7	281	1 2 4 5 6	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/23 09:28 PM
L8	32	15/458920 15/186859	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/23 09:29 PM
L9	4	16/168100	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/23 09:32 PM
L10	106	("1545027" "1657765" "1660821" "2078159" "3169521" "3494353" "D222570" "3993052" "4669452" "D301617" "5117815" "5193528" "D373197" "D388175" "D407498" "D456909" "D484248" "D530020" "7125390" "7435232" "D627897" "D649657" "D657065" "D666734" "8372111" "D698935" "D708755" "9532918" "D818599" "D820466" "D826418" "10327981" "20030009116" "20040254507" "20060155220" "20060282025" "20070270727" "20090306560" "20110224588" "20120067164" "20130261516" "20140358045" "20150005682" "20150150758" "20160367425" "20170042754"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/23 09:33 PM

L11	80	"20170304145" "20170326021" "20180200141" "20190175434").pn. OR ("10959908").urpn. AND (PGPB USPT USOC).dbnm. ("3494353" "3494353" "3169521" "3169521" "2078159" "2078159" "1660821" "1660821" "1657765" "1657765" "1545027" "1545027").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/23 09:36 PM
L12	106	("1545027" "1657765" "1660821" "2078159" "3169521" "3494353" "D222570" "3993052" "4669452" "D301617" "5117815" "5193528" "D373197" "D388175" "D407498" "D456909" "D484248" "D530020" "7125390" "7435232" "D627897" "D649657" "D657065" "D666734" "8372111" "D698935" "D708755" "9532918" "D818599" "D820466" "D826418" "10327981" "20030009116" "20040254507" "20060155220" "20060282025" "20070270727" "20090306560" "20110224588" "20120067164" "20130261516" "20140358045" "20150005682" "20150150758" "20160367425" "20170042754" "20170304145" "20170326021" "20180200141" "20190175434").pn. OR ("10959908").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/23 09:37 PM
L13	4	16/168100	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/23

L14	192	1 2 4 5 6	(USPAT)	OR	ON	ON	09:39 PM 2025/09/23 09:41 PM
L15	109	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/09/23 09:45 PM

		10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675- A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR US-20130261516-A1				
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L16	65	OR US-20070270727-A1 OR US-20060282025-A1 OR US-20210283005-A1).did. AND PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US-2078159-A OR US-1660821-A OR US-1657765-A OR US-1545027-A).did. AND USOC.dbnm.) ((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US-3993052-A OR US-12016818-B2 OR US-11744769-B2 OR US-11559462-B2 OR US-11452670-B2 OR US-11432994-B2 OR US-11357697-B2 OR US-10426691-B2 OR US-9889066-B2 OR US-6875186-B2 OR US-6599260-B2 OR US-5415621-A OR US-4841955-A OR US-4716890-A OR US-4513737-A OR US-4461286-A OR US-4088128-A OR US-4016873-A OR US-3837335-A OR US-3710785-A OR US-10357425-B2 OR US-10912707-B2 OR US-10428850-B2 OR US-10557490-B2 OR US-10774860-B2 OR US-10470970-B2 OR US-	(USPAT)	OR	ON	ON	2025/09/23 09:46 PM
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		10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US-				
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		20230277410-A1 OR US-20210244609-A1 OR US-20200085675- A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR US-20130261516-A1 OR US-20070270727- A1 OR US- 20060282025-A1 OR US-20210283005- A1).did. AND PGPB.dbnm.) OR ((US- 3494353-A OR US- 3169521-A OR US- 2078159-A OR US- 1660821-A OR US- 1657765-A OR US- 1545027-A).did. AND USOC.dbnm.)					
L17	42	16 AND (motor AND (housing handle) AND axis).clm.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/23 09:46 PM
L18	27	16 AND (motor AND (housing handle) AND axis).clm.	(USPAT)	OR	ON	ON	2025/09/23 09:46 PM
L19	10	((US-10702448-B2 OR US-10918565-B2 OR US-11160722-B2 OR US-11559462-B2 OR US-10959911-B2 OR US-10857064-B2 OR US-11452670-B2 OR US-12064387-B2 OR US-12396919-B2 OR US-10945915-B2).did. AND USPT.dbnm.)	(USPAT)	OR	ON	ON	2025/09/23 10:00 PM
L20	626	((US-20200085675-A1 OR US-20200069512- A1 OR US- 20190247271-A1 OR US-20170326021-A1 OR US-20130261516- A1 OR US- 20060155220-A1 OR US-20040254507-A1 OR US-20190008718- A1 OR US- 20170354567-A1 OR US-20140288473-A1 OR US-20170273855- A1 OR US- 20170224576-A1 OR	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/23 10:27 PM

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		US-20060293619-A1 OR US-20060282025-A1 OR US-20060276731-A1 OR US-20060270953-A1 OR US-20060173389-A1 OR US-20060155225-A1 OR US-20060069333-A1 OR US-20060052729-A1 OR US-20060047315-A1 OR US-20060041208-A1 OR US-20060020232-A1 OR US-20050222524-A1 OR US-20050215929-A1 OR US-20050203448-A1 OR US-20050187498-A1 OR US-20050159687-A1 OR US-20050137504-A1 OR US-20050096572-A1 OR US-20030028134-A1 OR US-20040254508-A1 OR US-20040249325-A1 OR US-20030158505-A1 OR US-20040193080-A1 OR US-20040193079-A1 OR US-20040106883-A1 OR US-20040064074-A1 OR US-20040049137-A1 OR US-20030149381-A1 OR US-20020082532-A1 OR US-20020183668-A1 OR US-20020177795-A1 OR US-20020107459-A1 OR US-20020082536-A1 OR US-20010027280-A1 OR US-20190254921-A1 OR US-20190239702-A1 OR US-20190142689-A1 OR US-20190021941-A1 OR US-20180296433-A1 OR US-20180168918-A1 OR US-20180116903-A1 OR US-20180056029-A1 OR US-20170340510-A1 OR US-20170281457-					
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		D456909-S OR US- D407498-S OR US- D388175-S OR US- D373197-S OR US- D301617-S OR US- D222570-S OR US- 7282037-B2 OR US- 7229424-B2 OR US- 9889066-B2 OR US- D886317-S OR US- D875961-S OR US- 10314762-B1 OR US- D837395-S OR US- 7207957-B2 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 4513737-A OR US- 10357425-B2 OR US- 4632095-A OR US- 6758826-B2 OR US- D805210-S OR US- 9532918-B1 OR US- 7335171-B2 OR US- 5862564-A OR US- 4266536-A OR US- 10548808-B2 OR US- 10327981-B1 OR US- D539915-S OR US- 6261251-B1 OR US- 5560746-A OR US- D317204-S OR US- 4798198-A OR US- 3856002-A OR US- D691731-S OR US- D689620-S OR US- 7211057-B2 OR US- 7122015-B2 OR US- 6988997-B2 OR US- 6966883-B2 OR US- 5848980-A OR US- D387174-S OR US- 5193528-A OR US- 7128722-B2 OR US- 7125390-B2 OR US- 7041072-B2 OR US- 6682496-B1 OR US- 10492984-B2 OR US- D874015-S OR US- D855822-S OR US- 4841955-A OR US- 4827914-A OR US- 4088128-A OR US- 6616621-B1 OR US- 6440091-B1 OR US- D455837-S OR US- 6165145-A OR US- 5951501-A OR US- 5925002-A OR US-				
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		5803916-A OR US- D367712-S OR US- D373640-S OR US- 5415621-A OR US- 5159922-A OR US- 5140979-A OR US- 5065743-A OR US- 4730605-A OR US- 4549535-A OR US- 3993052-A OR US- 3841321-A OR US- 1657765-A OR US- D877351-S OR US- 6500135-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5224469-A OR US- 1339179-A OR US- 4846158-A OR US- 4757806-A OR US- 4149530-A OR US- 10201470-B2 OR US- 6432072-B1 OR US- 5656018-A OR US- 3710785-A OR US- 3494353-A OR US- D847364-S OR US- D885601-S OR US- D884915-S OR US- D884207-S OR US- D884205-S OR US- D880716-S OR US- D880715-S OR US- D880714-S OR US- D879986-S OR US- D872869-S OR US- D866790-S OR US- D656621-S OR US- D484608-S OR US- D447810-S OR US- 6102876-A OR US- D706433-S OR US- D526417-S OR US- D471986-S OR US- D331467-S OR US- D329292-S OR US- D329291-S OR US- D323034-S OR US- 4691693-A OR US- D879985-S OR US- 7927259-B1 OR US- 6663657-B1 OR US- 4566442-A OR US- 3626934-A OR US- D363994-S OR US- 5458119-A OR US- D338070-S OR US- 2074735-A OR US-				
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		6878124-B1 OR US- 3149629-A OR US- 9237981-B1 OR US- 8875337-B2 OR US- 8372111-B2 OR US- 6251089-B1 OR US- 6241694-B1 OR US- 7819828-B2 OR US- D616558-S OR US- D613416-S OR US- 7633246-B2 OR US- D599029-S OR US- 7533758-B1 OR US- 7481783-B1 OR US- 10206848-B2 OR US- 6241696-B1 OR US- 5662593-A OR US- D583480-S OR US- 7435232-B2 OR US- 10226397-B2 OR US- 9265689-B2 OR US- 7361153-B1 OR US- 7291116-B2 OR US- 7077817-B2 OR US- 7025736-B1 OR US- 6994680-B1 OR US- 6925672-B1 OR US- 6841962-B2 OR US- 6830552-B1 OR US- D479607-S OR US- 6607499-B1 OR US- D473657-S OR US- 6436062-B1 OR US- 6406406-B1 OR US- D455499-S OR US- D452572-S OR US- 6332873-B1 OR US- 6269888-B1 OR US- 6010467-A OR US- 5997489-A OR US- 5935090-A OR US- 5935089-A OR US- D398401-S OR US- 5792081-A OR US- 5766210-A OR US- 5735803-A OR US- 5730708-A OR US- 5716332-A OR US- 5711758-A OR US- 5709705-A OR US- 5618315-A OR US- 5405311-A OR US- D353008-S OR US- 5364338-A OR US- 5360111-A OR US- D339637-S OR US- 5117815-A OR US- D435913-S OR US-				
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		4825853-A OR US- 5088474-A OR US- 4958628-A OR US- 4742875-A OR US- 4716890-A OR US- 4669452-A OR US- 10016337-B2 OR US- 7414337-B2 OR US- RE35082-E OR US- 4622956-A OR US- 4604993-A OR US- 4565189-A OR US- 4550718-A OR US- 4532919-A OR US- 4495940-A OR US- 4492223-A OR US- 4483328-A OR US- 4481939-A OR US- 4461286-A OR US- 4381766-A OR US- 4210135-A OR US- 4098266-A OR US- 4079733-A OR US- 4069816-A OR US- 4048989-A OR US- 4016873-A OR US- 3837335-A OR US- 3672355-A OR US- 3385290-A OR US- 3362401-A OR US- 3185146-A OR US- 3077878-A OR US- 2944543-A OR US- 2767707-A OR US- 2691978-A OR US- 2633844-A OR US- 2624335-A OR US- 2581806-A OR US- 2447698-A OR US- 2424699-A OR US- 2342557-A OR US- 2306424-A OR US- 2204259-A OR US- 9980870-B2 OR US- 7144417-B2 OR US- 2168975-A OR US- 2113084-A OR US- 2078159-A OR US- 10426691-B2 OR US- D670389-S OR US- 2048712-A OR US- 2011471-A OR US- 1999939-A OR US- 1969042-A OR US- 1928612-A OR US- 1908051-A OR US- 1796444-A OR US- 1755144-A OR US-				
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		1710051-A OR US- 1660821-A OR US- 7153282-B1 OR US- 1612343-A OR US- 1545027-A OR US- 1516717-A OR US- 1192282-A OR US- 1185583-A OR US- 1123639-A OR US- 1111427-A OR US- 1103669-A OR US- 1006684-A OR US- 0934662-A OR US- 0899234-A OR US- 0827133-A OR US- 0472572-A OR US- 0448883-A OR US- 9345633-B2 OR US- 10548810-B2 OR US- D745180-S OR US- D729940-S OR US- 10675211-B2 OR US- 8622890-B1 OR US- 7699794-B2 OR US- 7431706-B2 OR US- 5624385-A OR US- 3545434-A OR US- 6805679-B2 OR US- 6514179-B1 OR US- 6033372-A OR US- 5891064-A OR US- 5725484-A OR US- 5554102-A OR US- 5484390-A OR US- 2512536-A OR US- 5167226-A OR US- 4712539-A OR US- 4648387-A OR US- 4150668-A OR US- 4116233-A OR US- 4086922-A OR US- 3565063-A OR US- 3298687-A OR US- 3067738-A OR US- 2699771-A OR US- 2628611-A OR US- 2574601-A OR US- 2547243-A OR US- 2519790-A OR US- 2466659-A OR US- 2417744-A OR US- 2294947-A OR US- 2286324-A OR US- 2113444-A OR US- 2003272-A OR US- 1951776-A OR US- 1936022-A OR US- 1668364-A OR US-					
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		1663975-A OR US- 1557417-A OR US- 1494162-A OR US- 6105891-A OR US- D520144-S OR US- 5632765-A OR US- 4224932-A OR US- 3169521-A OR US- 3140711-A OR US- D970743-S OR US- D949416-S OR US- D946166-S OR US- D939222-S OR US- D928979-S OR US- D928334-S OR US- D925057-S OR US- D923191-S OR US- D923192-S OR US- D903140-S OR US- D899615-S OR US- D872295-S OR US- D869673-S OR US- D866189-S OR US- D864407-S OR US- D863580-S OR US- D863581-S OR US- D861186-S OR US- D858789-S OR US- D857907-S OR US- D857908-S OR US- D857909-S OR US- D855197-S OR US- D852971-S OR US- D442918-S OR US- D703825-S OR US- D674500-S OR US- 6979285-B2 OR US- D463862-S OR US- D843002-S OR US- D727514-S OR US- 6102875-A OR US- D807134-S OR US- D334430-S OR US- D372313-S OR US- D842491-S OR US- D823478-S OR US- D652945-S OR US- D352443-S OR US- D726927-S OR US- D385965-S OR US- D728115-S OR US- D722256-S OR US- D657831-S OR US- 5183034-A OR US- D639442-S OR US- 5979285-A OR US- D674499-S OR US- D510139-S OR US-				
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		D655919-S OR US- D754868-S OR US- D320922-S OR US- D465716-S OR US- D815508-S OR US- D848089-S OR US- D761429-S OR US- D842487-S OR US- 6911010-B2 OR US- D532113-S OR US- D379580-S OR US- 10105280-B2 OR US- D761075-S OR US- 7013588-B2 OR US- D848017-S OR US- D695413-S OR US- 9107799-B2 OR US- 6478755-B2 OR US- D673284-S OR US- 3968789-A OR US- 10959908-B2 OR US- D977664-S OR US- D977663-S OR US- 10561574-B1 OR US- 4576241-A OR US- 5577996-A OR US- 4989585-A OR US- 2246263-A OR US- 9821238-B1 OR US- 8419663-B2 OR US- 9168196-B2 OR US- 6241693-B1 OR US- 9616267-B2 OR US- 4493315-A OR US- 11376185-B2 OR US- D590127-S OR US- D493348-S OR US- D467347-S OR US- D671226-S OR US- D726926-S OR US- D725788-S OR US- D438308-S OR US- D847363-S OR US- D469879-S OR US- D738522-S OR US- D372656-S OR US- 3532918-A).did. AND USPT.dbnm.) OR ((US- 3494353-A OR US- 1657765-A OR US- 1339179-A OR US- 2074735-A OR US- 3149629-A OR US- 2204259-A OR US- 1796444-A OR US- 1660821-A OR US- 3385290-A OR US- 3364921-A OR US-					
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L21	88	3362401-A OR US- 3194231-A OR US- 3185146-A OR US- 3077878-A OR US- 2944543-A OR US- 2767707-A OR US- 2688960-A OR US- 2641256-A OR US- 2621652-A OR US- 2581806-A OR US- 2447698-A OR US- 2424699-A OR US- 2347327-A OR US- 2342557-A OR US- 2306424-A OR US- 2273710-A OR US- 2213356-A OR US- 2113084-A OR US- 2079096-A OR US- 2078159-A OR US- 2048712-A OR US- 2048220-A OR US- 2011471-A OR US- 1999939-A OR US- 1969042-A OR US- 1958936-A OR US- 1955623-A OR US- 1928612-A OR US- 1908051-A OR US- 1755144-A OR US- 1719140-A OR US- 1693137-A OR US- 1563944-A OR US- 1545027-A OR US- 1516717-A OR US- 1192282-A OR US- 1185583-A OR US- 1123639-A OR US- 1111427-A OR US- 1103669-A OR US- 1006684-A OR US- 0899234-A OR US- 0827133-A OR US- 0795212-A OR US- 0743147-A OR US- 0732356-A OR US- 0655490-A OR US- 0448883-A OR US- 0444597-A OR US- 3545434-A OR US- 2512536-A OR US- 3169521-A OR US- 3140711-A).did. AND USOC.dbnm.) ("4088128" "4513737" "4549535" "4790296" "4841955" "5656017"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/24 09:41 AM
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		"5733029" "5769657" "6228042" "6682496" "9889066" "20060293711" "20080262399" "20100274162" "20110017742" "20130261516" "20130281897" "20140031866" "20150005682" "20160367425" "20170027798" "20170333280" "20180008512" "20180168913" "20180200141" "4088128" "4513737" "4549535" "4790296" "4841955" "5656017" "5733029" "5769657" "6228042" "6682496" "9889066" "20060293711" "20080262399" "20200274162" "20110017742" "20130261516" "20130281897" "20140031866" "20150005682" "20160367425" "20170027798" "20170333280" "20180008512" "20180168913" "20180200141").pn. OR ("10561574" "10492984").urpn. AND (PGPB USPT USOC).dbnm.					
L22	52	("5399148" "6228042" "6805700" "20050090863").pn. OR ("7927259").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/24 10:17 AM
L23	112	("1787211" "4088128" "4513737" "4827914" "4841955" "4858600").pn. OR ("6682496").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/24 10:26 AM
L24	236	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY,	OR	ON	ON	2025/09/24 10:34 AM

		US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US-	CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
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		12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US-				
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		2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1				
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		OR US-20210244611-A1 OR US-20210401663-A1 OR US-20220125672-A1 OR US-20220211575-A1 OR US-20220257460-A1 OR US-20220296463-A1 OR US-20230248609-A1 OR US-20230277410-A1 OR US-20210244609-A1 OR US-20200085675-A1 OR US-20190175434-A1 OR US-20170304145-A1 OR US-20170042754-A1 OR US-20150005682-A1 OR US-20130261516-A1 OR US-20070270727-A1 OR US-20060282025-A1 OR US-20210283005-A1 OR US-20120167322-A1 OR US-20140024982-A1 OR US-20160256017-A1 OR US-20130253391-A1 OR US-20110203824-A1 OR US-20040049137-A1 OR US-20050131461-A1 OR US-20100137907-A1 OR US-20060116614-A1 OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US-20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US-20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US-20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US-20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US-					
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		20030149381-A1 OR US-20120046694-A1 OR US-20020183668- A1 OR US- 20050215929-A1 OR US-20180361137-A1 OR US-20020082532- A1 OR US- 20100222719-A1 OR US-20120253245-A1 OR US-20160074641- A1 OR US- 20160213558-A1 OR US-20140221887-A1 OR US-20090306561- A1 OR US- 20170079865-A1 OR US-20050187498-A1 OR US-20120121309- A1 OR US- 20070150004-A1).did. AND PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US- 2078159-A OR US- 1660821-A OR US- 1657765-A OR US- 1545027-A OR US- 1787211-A).did. AND USOC.dbnm.)					
L25	1	24 AND (dividing near3 axis)	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 10:34 AM
L26	46	16/675772	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 10:43 AM
L27	847	((US-11850204-B2 OR US-11752064-B2 OR US-11730668-B2 OR US-11672728-B1 OR US-D949390-S OR US- 11253423-B1 OR US- 11241357-B2 OR US- 11110260-B1 OR US- 10993874-B1 OR US- D912835-S OR US- 10806660-B1 OR US- D897110-S OR US- 10714953-B1 OR US- 10695508-B2 OR US- 10688290-B1 OR US- 10511777-B2 OR US- 10383486-B2 OR US- 10376659-B2 OR US- 10335345-B2 OR US- 10314762-B1 OR US- 10285722-B2 OR US- 10272011-B1 OR US- 10124165-B2 OR US-	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 10:46 AM

		9839572-B2 OR US- D803572-S OR US- 9808646-B2 OR US- 9801448-B1 OR US- 9782604-B2 OR US- 9592405-B2 OR US- 9456678-B1 OR US- D765982-S OR US- D764173-S OR US- 9278230-B2 OR US- 9278045-B2 OR US- 9126034-B1 OR US- D736399-S OR US- 9084587-B2 OR US- 8951216-B2 OR US- 8936542-B1 OR US- 8864401-B2 OR US- 8715210-B2 OR US- 8709041-B2 OR US- D693932-S OR US- 8506506-B2 OR US- 8397518-B1 OR US- 8372111-B2 OR US- 8157753-B2 OR US- 8028707-B2 OR US- 7959369-B2 OR US- 7927259-B1 OR US- 7896908-B2 OR US- 7793419-B2 OR US- 7695207-B1 OR US- 7644589-B2 OR US- 7559907-B2 OR US- 7479136-B2 OR US- 7435232-B2 OR US- 7425947-B1 OR US- 7273159-B2 OR US- 7258675-B2 OR US- 7204041-B1 OR US- 7204832-B2 OR US- 7083580-B2 OR US- 7063476-B1 OR US- 7014639-B2 OR US- 6979302-B2 OR US- 6980854-B2 OR US- 6974224-B2 OR US- 6965375-B1 OR US- 6896693-B2 OR US- 6875225-B1 OR US- 6766199-B2 OR US- 6748266-B2 OR US- 6743215-B2 OR US- 6702837-B2 OR US- 6682496-B1 OR US- 6663657-B1 OR US- 6535761-B2 OR US- 6524329-B1 OR US- 6461377-B1 OR US- 6443915-B1 OR US-				
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		6438964-B1 OR US- 6432036-B1 OR US- 6416534-B1 OR US- 6401289-B1 OR US- 6352518-B1 OR US- 6336907-B1 OR US- 6312397-B1 OR US- 6245890-B1 OR US- 6228042-B1 OR US- 6221095-B1 OR US- 6123657-A OR US- 6090085-A OR US- 6019482-A OR US- 6017337-A OR US- 6010264-A OR US- 6001070-A OR US- 6001055-A OR US- 5951501-A OR US- 5895418-A OR US- 5803916-A OR US- 5800490-A OR US- 5746702-A OR US- 5725483-A OR US- 5698866-A OR US- 5690608-A OR US- 5662593-A OR US- 5656018-A OR US- 5647841-A OR US- 5632720-A OR US- 5593381-A OR US- 5569168-A OR US- 5511270-A OR US- 5489280-A OR US- 5471695-A OR US- 5447491-A OR US- 5415621-A OR US- 5382222-A OR US- 5363045-A OR US- 5358503-A OR US- 5336159-A OR US- 5311860-A OR US- 5300095-A OR US- 5176130-A OR US- 5174285-A OR US- 5167226-A OR US- 5140979-A OR US- 5131384-A OR US- 5103809-A OR US- 5097828-A OR US- 5088474-A OR US- 5085207-A OR US- 5073058-A OR US- 5067480-A OR US- 5065743-A OR US- 4991749-A OR US- 4930923-A OR US- 4920956-A OR US- 4883380-A OR US-					
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		US-20040249320-A1 OR US-20040210277-A1 OR US-20040193079-A1 OR US-20040171970-A1 OR US-20040147984-A1 OR US-20040111086-A1 OR US-20040082983-A1 OR US-20040064074-A1 OR US-20040037895-A1 OR US-20040030325-A1 OR US-20040030370-A1 OR US-20040024438-A1 OR US-20030195443-A1 OR US-20030180690-A1 OR US-20030165480-A1 OR US-20030163176-A1 OR US-20030163068-A1 OR US-20030158505-A1 OR US-20030149381-A1 OR US-20030100936-A1 OR US-20030014096-A1 OR US-20030009116-A1 OR US-20030004441-A1 OR US-20020192231-A1 OR US-20020156509-A1 OR US-20020091425-A1 OR US-20020082536-A1 OR US-20020082532-A1 OR US-20220175127-A1 OR US-20200154854-A1 OR US-20220211575-A1 OR US-20230145400-A1 OR US-20220339061-A1 OR US-20220151865-A1 OR US-20240058207-A1 OR US-20240374468-A1 OR US-20220331585-A1 OR US-20240207655-A1 OR US-20230404841-A1 OR US-20100010507-A1 OR US-20130158547-A1 OR US-20120197357-A1 OR US-20220040030-A1).did. AND					
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		PGPB.dbnm.) OR ((KR-20220058677-A OR CN-216439596-U OR KR-20220030711-A OR CN-215938255-U OR DE-102020123082-A1 OR CN-215779811-U OR CN-114010485-A OR CN-113855514-A OR CN-215133032-U OR CN-214859044-U OR KR-102325386-B1 OR WO-2021222573-A1 OR WO-2021210750-A1 OR WO-2021211238-A1 OR CN-113350154-A OR CN-113274276-A OR KR-20210095422-A OR KR-20210091842-A OR CN-113116702-A OR CN-113081751-A OR CN-213490366-U OR CN-112891186-A OR CN-112791308-A OR CN-112773696-A OR CN-213157619-U OR CN-112741964-A OR KR-20210047406-A OR KR-20210044358-A OR KR-20210044035-A OR CN-112618960-A OR KR-20210036430-A OR KR-20210000722-U OR WO-2021050861-A1 OR WO-2021050868-A1 OR CN-112370646-A OR KR-20210018636-A OR KR-20210016729-A OR CN-112315773-A OR KR-20210013392-A OR CN-112245261-A OR KR-20210001066-A OR CN-111973428-A OR KR-102178263-B1 OR WO-2020227569-A1 OR KR-20200126252-A OR CN-111821150-A OR WO-2020209497-A1 OR KR-102161933-B1 OR KR-20200100378-A OR WO-2020139715-A1 OR CN-210844180-U OR KR-20200063823-A OR KR-102118572-B1 OR KR-20200051098-A				
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		OR KR-20200050488-A OR CN-111109818-A OR KR-20200040003-A OR CN-110711134-A OR KR-102067323-B1 OR CN-209933448-U OR CN-110478222-A OR WO-2019207469-A1 OR WO-2019203423-A1 OR CN-110339042-A OR CN-110302051-A OR CN-110101563-A OR CN-109998891-A OR WO-2019118561-A1 OR CN-109620684-A OR CN-109528473-A OR CN-109394489-A OR CN-109350862-A OR CN-109223500-A OR WO-2019014031-A1 OR CN-108671405-A OR KR-20180113097-A OR KR-20180002806-U OR KR-101891952-B1 OR CN-108543126-A OR CN-108542741-A OR CN-108451704-A OR CN-108451705-A OR KR-20180094694-A OR CN-108392388-A OR WO-2018135671-A1 OR CN-108175673-A OR WO-2018094540-A1 OR CA-3045164-A1 OR KR-101852410-B1 OR CN-106859949-A OR KR-20160072194-A OR WO-2014118596-A1 OR KR-20130007021-U OR JP-5129032-B2 OR KR-101162978-B1 OR CN-201239336-Y OR FR-2998169-A1 OR WO-2014080103-A2 OR CN-110694170-A OR WO-2021198063-A1 OR CN-116133632-A OR CN-113993494-B OR KR-102453088-B1).did. AND FTDB.dbnm.) OR ((US-20220133585-A1 OR CN-113855514-A OR CN-215133032-U OR US-20210154093-A1					
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		OR US-10993874-B1 OR US-10973374-B1 OR US-20210077338-A1 OR US-20210001148-A1 OR JP-2020171460-A OR US-20200261310-A1 OR US-20200154874-A1 OR CN-110694170-A OR US-20190290076-A1 OR CN-209404585-U OR US-20190254922-A1 OR US-20190200814-A1 OR US-20180325328-A1 OR US-20180289584-A1 OR US-20180178032-A1 OR US-20180161237-A1 OR CN-107913174-A OR US-20180092449-A1 OR US-20170112713-A1 OR US-20170056145-A1 OR US-20170056685-A1 OR WO-2017027793-A1 OR US-20160367425-A1 OR US-20140207217-A1 OR US-20140194900-A1 OR US-20140135798-A1 OR WO-2014062647-A1 OR US-20130282085-A1 OR WO-2013021380-A1 OR US-20100274162-A1 OR US-20100222719-A1 OR US-20090182249-A1 OR US-20070185553-A1 OR US-20060085056-A1 OR EP-1525872-A1 OR US-5176130-A OR FR-3108498-A1 OR CN-203089822-U OR WO-2020254297-A1 OR WO-2022034111-A1 OR EP-2862555-A1).did. AND DWPI.dbnm.) OR ((US-3536064-A OR US-3494353-A OR US-3467080-A OR US-3169521-A OR US-3154926-A OR US-2995768-A OR US-					
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		2985166-A OR US-2809630-A OR US-2548411-A OR US-2512536-A OR US-2490074-A OR US-2477883-A OR US-2472385-A OR US-2441682-A OR US-2424699-A OR US-2183726-A OR US-2078159-A OR US-1955863-A OR US-1955623-A OR US-1772501-A OR US-1660821-A OR US-1657765-A OR US-1545027-A OR US-1380986-A OR US-1352894-A OR US-1339179-A OR US-1228669-A).did. AND USOC.dbnm.)					
L28	3	("20150045702" "20200289161" "20190247271").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 10:47 AM
L29	0	("2022/0339061").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/24 10:54 AM
L30	17	("2021/0000683").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/24 10:59 AM
L31	42	(Artificial Intelligence) More like doc: US-20210000683-A1 Text: (US-20210000683-A1 OR US-12350222-B2 OR CA-3150901-A1 OR US-11813221-B2 OR JP-2025028111-A OR CN-115192405-A OR CN-111166643-A OR US-11938082-B1 OR AU-2019204770-B1 OR CN-111407625-A OR HK-40026119-A OR WO-2020101725-A1 OR CN-212326934-U OR US-20030028134- A1 OR CN-113316444- A OR US-10314762-B1 OR US-20210361524- A1 OR US- 20220387252-A1 OR US-20240148605-A1 OR CN-111166643-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/09/24 10:59 AM

L32	315	B).did. ((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/09/24 11:06 AM
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		10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US-					
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		3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932-					
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		A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675- A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR US-20130261516-A1 OR US-20070270727- A1 OR US- 20060282025-A1 OR US-20210283005-A1 OR US-20120167322- A1 OR US- 20140024982-A1 OR US-20160256017-A1 OR US-20130253391- A1 OR US- 20110203824-A1 OR US-20040049137-A1 OR US-20050131461- A1 OR US- 20100137907-A1 OR				
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		US-20060116614-A1 OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US-20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US-20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US-20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US-20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US-20030149381-A1 OR US-20120046694-A1 OR US-20020183668-A1 OR US-20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US-20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US-20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US-20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US-20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US-20150045702-A1 OR US-20200390644-A1 OR US-20170238686-A1 OR US-20190298036-A1 OR US-20210290430-A1 OR US-20150202114-A1 OR US-20030158505-A1 OR US-20160045081-A1 OR US-20190159961-A1					
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		A1 OR US- 20210196563-A1 OR US-20100331745-A1 OR US-20210113365- A1 OR US- 20120037184-A1 OR US-20200268594-A1 OR US-20200129372- A1 OR US- 20210113427-A1 OR US-20210001148-A1 OR US-20190175396- A1 OR US- 20060052729-A1 OR US-20120253246-A1 OR US-20200261306- A1 OR US- 20210161759-A1 OR US-20110009783-A1 OR US-20220151865- A1 OR US- 20220339061-A1 OR US-20080234611-A1 OR US-20220168175- A1 OR US- 20210113421-A1 OR US-20100274162-A1 OR US-20220362097- A1 OR US- 20200230012-A1 OR US-20210077340-A1 OR US-20200009010- A1 OR US- 20210022951-A1 OR US-20220047412-A1 OR US-20150174387- A1 OR US- 20170304144-A1 OR US-20180031090-A1 OR US-20160192814- A1 OR US- 20200289364-A1 OR US-20240374468-A1 OR US-20200155410- A1 OR US- 20200276079-A1 OR US-20210307998-A1 OR US-20210000683- A1 OR US- 20030028134-A1 OR US-20210361524-A1 OR US-20220387252- A1 OR US- 20210196562-A1 OR US-20190365598-A1 OR US-20200393026- A1 OR US- 20200085684-A1 OR				
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L33	50	<p>US-20210121360-A1).did. AND PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US-2078159-A OR US-1660821-A OR US-1657765-A OR US-1545027-A OR US-1787211-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683-A1).did. AND DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1).did. AND FTDB.dbnm.)</p> <p>(Artificial Intelligence) Similar to: 16/168,100 with 0 CPC Selections and 0 Text Selections</p> <p>Text: (US-20200085675-A1 OR US-20210283005-A1 OR US-10959908-B2 OR WO-2021211892-A1 OR US-20210322257-A1 OR CN-115068300-A OR US-6981954-B2 OR US-20020169400-A1 OR US-20010027280-A1 OR US-6733466-B2 OR US-20020193712-A1 OR US-20230225932-A1 OR WO-9526702-A2 OR US-20190247271-A1 OR AU-2064295-A OR AU-682592-B2 OR AU-2003224706-B2 OR US-6500135-B2 OR US-20060094994-A1 OR US-7491184-B2 OR US-20110118637-A1 OR US-8512265-B2 OR WO-0038613-A2 OR US-5716332-A OR US-20030028134-A1 OR US-20020161315-A1 OR US-6432072-B1 OR EP-0229531-A2 OR US-7128722-B2 OR</p>	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/09/24 11:06 AM
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L34	50	<p>CA-1302817-C OR US-20050010141-A1 OR US-20200330321-A1 OR US-20220047452-A1 OR AU-2003224706-A1 OR US-10702448-B2 OR WO-03082179-A2 OR CA-2480871-C OR US-20210154092-A1 OR KR-20220003634-A OR US-20050020947-A1 OR US-20200069510-A1 OR US-4730605-A OR US-6165145-A OR KR-20210095228-A OR KR-102345756-B1 OR KR-102438489-B1 OR US-12396919-B2 OR US-10959911-B2 OR WO-2018101755-A1 OR KR-102283189-B1).did.</p> <p>(Artificial Intelligence) Similar to: 16/168,100 with 5 CPC Selections and 0 Text Selections</p> <p>Text: (KR-20220003634-A OR KR-102438489-B1 OR CN-114732702-A OR AU-2019417557-A1 OR KR-20200127266-A OR WO-2020139715-A1 OR KR-20210095228-A OR KR-102345756-B1 OR KR-102283189-B1 OR JP-2025069456-A OR US-20210283005-A1 OR US-20200085675-A1 OR US-10959908-B2 OR US-20190247271-A1 OR CN-111544279-A OR AU-2020267581-A1 OR US-11484461-B2 OR US-20200405568-A1 OR JP-2019180804-A OR WO-2018221299-A1 OR US-11701291-B2 OR CN-111228077-B OR CN-111228077-A OR US-20200170877-A1 OR CN-113908035-A OR US-11452670-B2</p>	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/09/24 11:06 AM
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L35	50	<p>OR US-20230248609-A1 OR CA-3152118-A1 OR AU-2020269393-A1 OR US-20210244611-A1 OR US-10945915-B2 OR US-11633323-B2 OR US-20200352821-A1 OR US-11564860-B2 OR US-20220047451-A1 OR US-20210186800-A1 OR US-11160723-B2 OR US-12396919-B2 OR JP-2021006187-A OR JP-7485825-B2 OR JP-2023083566-A OR JP-7270483-B2 OR JP-7560697-B2 OR JP-2024087089-A OR CN-112137792-A OR CN-112137792-B OR JP-7208775-B2 OR JP-6752028-B2 OR JP-2020081646-A OR JP-2017148409-A).did.</p> <p>(Artificial Intelligence) Similar to: 19/295,322 with 0 CPC Selections and 0 Text Selections</p> <p>Text: (US-20230248609-A1 OR US-20210244611-A1 OR US-12329711-B2 OR US-20220257460-A1 OR US-10857064-B2 OR US-20200261307-A1 OR CA-3150901-A1 OR US-20210059898-A1 OR WO-2021050861-A1 OR AU-2020347255-A1 OR KR-20220062350-A OR EP-3764971-B1 OR US-20200289365-A1 OR US-11357697-B2 OR US-10959911-B2 OR AU-2020267581-A1 OR WO-2020227569-A1 OR JP-2025028111-A OR CA-3093587-A1 OR CN-114630646-B OR CA-3139527-A1 OR KR-20200127266-A OR WO-2020139715-A1 OR AU-2019417557-A1</p>	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/09/24 11:07 AM
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L36	50	<p>OR WO-2021222573-A1 OR KR-20220005080-A OR CA-3093587-C OR KR-102438489-B1 OR KR-20220003634-A OR KR-102345756-B1 OR US-20200261310-A1 OR KR-102283189-B1 OR KR-20210095228-A OR CN-118766736-A OR US-20220047452-A1 OR US-20200330321-A1 OR JP-2022532147-A OR AU-2019417557-B2 OR JP-7536864-B2 OR CN-114449987-B OR US-11744769-B2 OR US-20230225932-A1 OR US-20200069510-A1 OR US-20230277410-A1 OR US-10702448-B2 OR US-11160722-B2 OR US-11857481-B2 OR US-20210154092-A1 OR US-11559462-B2 OR US-10918565-B2).did.</p> <p>(Artificial Intelligence) Similar to: 19/295,322 with 3 CPC Selections and 0 Text Selections</p> <p>Text: (WO-2024063899-A1 OR US-20240099932-A1 OR US-20170304145-A1 OR WO-2024189510-A1 OR US-20240382372-A1 OR US-20230301867-A1 OR EP-3747502-A1 OR WO-2020103346-A1 OR CN-111989076-B OR CN-111989076-A OR JP-2022179750-A OR JP-2025069456-A OR AU-2019417557-A1 OR WO-2020139715-A1 OR CN-114732702-A OR KR-20200127266-A OR EP-3764971-B1 OR CN-114732702-B OR</p>	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/09/24 11:07 AM
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		KR-20220003634-A OR KR-20210095228-A OR KR-102345756-B1 OR CA-3093587-A1 OR CA-3093587-C OR KR- 102283189-B1 OR RU- 2744207-C1 OR KR- 102438489-B1 OR US- 20200237612-A1 OR US-11890254-B2 OR US-20210244611-A1 OR US-20230248609- A1 OR US- 20170156975-A1 OR CN-106137694-A OR AU-2019417557-B2 OR US-20210322257-A1 OR WO-2021211892- A1 OR GB-2621950-A OR US-20030009116- A1 OR WO-03003967- A2 OR US- 20050015028-A1 OR US-6758826-B2 OR US-7122015-B2 OR US-12102583-B2 OR CN-118141673-B OR US-12285378-B2 OR US-12290486-B2 OR US-20250099325-A1 OR US-12109165-B2 OR US-20220362097- A1 OR US- 20200046601-A1 OR US-20240307261- A1).did.					
L37	79	33 34 35 36	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 11:07 AM
L38	154	33 34 35 36	(US-PGPUB; USPAT; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/09/24 11:07 AM
L39	38	(Artificial Intelligence) More like doc: <u>US-20170304145-A1</u> Text: (US-1339179-A OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2025/09/24 11:09 AM

L40	327	<p>2441682-A OR US-3626934-A OR US-4549535-A OR US-5085207-A OR AU-2716700-A OR US-6758826-B2 OR US-6805700-B2 OR JP-4405195-B2 OR US-7927259-B1 OR US-20100274162-A1 OR FI-123981-B OR FR-2998168-B1 OR US-20160279017-A1 OR AU-2016284030-A1 OR US-20170304145-A1 OR CN-210673743-U OR ES-2779729-T3 OR JP-2581413-Y2 OR JP-2565566-Z).did.</p> <p>((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US-3993052-A OR US-12016818-B2 OR US-11744769-B2 OR US-11559462-B2 OR US-11452670-B2 OR US-11432994-B2 OR US-11357697-B2 OR US-10426691-B2 OR US-9889066-B2 OR US-6875186-B2 OR US-6599260-B2 OR US-5415621-A OR US-4841955-A OR US-4716890-A OR US-4513737-A OR US-4461286-A OR US-4088128-A OR US-4016873-A OR US-3837335-A OR US-3710785-A OR US-</p>	<p>EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)</p> <p>(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)</p>	OR	ON	ON	2025/09/24 11:17 AM
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		10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US-				
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		5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US-					
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		4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675-				
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		A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR US-20130261516-A1 OR US-20070270727- A1 OR US- 20060282025-A1 OR US-20210283005-A1 OR US-20120167322- A1 OR US- 20140024982-A1 OR US-20160256017-A1 OR US-20130253391- A1 OR US- 20110203824-A1 OR US-20040049137-A1 OR US-20050131461- A1 OR US- 20100137907-A1 OR US-20060116614-A1 OR US-20150119771- A1 OR US- 20090043231-A1 OR US-20060047315-A1 OR US-20030195443- A1 OR US- 20090270915-A1 OR US-20190254922-A1 OR US-20190254921- A1 OR US- 20060293711-A1 OR US-20190247271-A1 OR US-20140031866- A1 OR US- 20020107459-A1 OR US-20140142472-A1 OR US-20020082536- A1 OR US- 20040249320-A1 OR US-20050222524-A1 OR US-20160213554- A1 OR US- 20030149381-A1 OR US-20120046694-A1 OR US-20020183668- A1 OR US- 20050215929-A1 OR US-20180361137-A1 OR US-20020082532- A1 OR US- 20100222719-A1 OR US-20120253245-A1 OR US-20160074641- A1 OR US- 20160213558-A1 OR				
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		US-20140221887-A1 OR US-20090306561-A1 OR US-20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US-20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US-20150045702-A1 OR US-20200390644-A1 OR US-20170238686-A1 OR US-20190298036-A1 OR US-20210290430-A1 OR US-20150202114-A1 OR US-20030158505-A1 OR US-20160045081-A1 OR US-20190159961-A1 OR US-20210196563-A1 OR US-20100331745-A1 OR US-20210113365-A1 OR US-20120037184-A1 OR US-20200268594-A1 OR US-20200129372-A1 OR US-20210113427-A1 OR US-20210001148-A1 OR US-20190175396-A1 OR US-20060052729-A1 OR US-20120253246-A1 OR US-20200261306-A1 OR US-20210161759-A1 OR US-20110009783-A1 OR US-20220151865-A1 OR US-20220339061-A1 OR US-20080234611-A1 OR US-20220168175-A1 OR US-20210113421-A1 OR US-20100274162-A1 OR US-20220362097-A1 OR US-20200230012-A1 OR US-20210077340-A1 OR US-20200009010-A1 OR US-20210022951-A1 OR US-20220047412-A1 OR US-20150174387-					
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		A1 OR US- 20170304144-A1 OR US-20180031090-A1 OR US-20160192814- A1 OR US- 20200289364-A1 OR US-20240374468-A1 OR US-20200155410- A1 OR US- 20200276079-A1 OR US-20210307998-A1 OR US-20210000683- A1 OR US- 20030028134-A1 OR US-20210361524-A1 OR US-20220387252- A1 OR US- 20210196562-A1 OR US-20190365598-A1 OR US-20200393026- A1 OR US- 20200085684-A1 OR US-20210121360-A1 OR US-20200046601- A1 OR US- 20250099325-A1 OR US-20230301867- A1).did. AND PGPB.dbnm.) OR ((US- 3494353-A OR US- 3169521-A OR US- 2078159-A OR US- 1660821-A OR US- 1657765-A OR US- 1545027-A OR US- 1787211-A OR US- 2441682-A OR US- 1339179-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683- A1 OR US-7927259-B1 OR US-20030195443- A1).did. AND DWPI.dbnm.) OR ((CN- 212326934-U OR JP- 2025028111-A OR CA- 3150901-A1 OR WO- 0038613-A2).did. AND FTDB.dbnm.)					
L41	189	40 NOT (@ad>="20181226")	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 11:18 AM
L42	31	("1660821" "1796444" "1833103" "2706980" "3626934").pn. OR ("3837335").urpn. AND	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/24 11:36 AM

L43	20	(PGPB USPT USOC).dbnm. (US-1545027-\$ US- 1594636-\$ US- 1657765-\$ US- 1784301-\$ US- 2179594-\$ US- 2391671-\$ US- 2475861-\$ US- 2931632-\$ US- 2987334-\$ US- 3053559-\$ US- 3077837-\$ US- 3172675-\$ US- 3452226-\$ US- 3545301-\$ US- 3626934-\$ US- 3699952-\$ US- 3705579-\$ US- 3942251-\$ US- 3968789-\$ US- 4031763-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 11:52 AM
L44	20	(US-4158246-\$ US- 4173217-\$ US- 4203431-\$ US- 4506159-\$ US- 4513737-\$ US- 4533796-\$ US- 4549535-\$ US- 4565189-\$ US- 4566442-\$ US- 4596406-\$ US- 4691693-\$ US- 4692958-\$ US- 4730605-\$ US- 4815224-\$ US- 4841955-\$ US- 5014681-\$ US- 5085207-\$ US- 5088474-\$ US- 5092317-\$ US- 5103809-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:20 PM
L45	22	(US-5201149-\$ US- 5207697-\$ US- 5212887-\$ US- 5417644-\$ US- 5501657-\$ US- 5569168-\$ US- 5573500-\$ US- 5656018-\$ US- 5860669-\$ US- 5910197-\$ US- 5935089-\$ US- 5951501-\$ US- 6003052-\$ US- 6006631-\$ US- 6146383-\$ US-	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:23 PM

L46	25	6165145-\$ US- 6227959-\$ US- 6228042-\$ US- 6245031-\$ US- 6290660-\$ US- 6401289-\$ US- 6406445-\$).DID. (US-6432072-\$ US- 6537236-\$ US- 6539328-\$ US- 6558338-\$ US- 6568089-\$ US- 6599250-\$ US- 6599260-\$ US- 6663657-\$ US- 6682496-\$ US- 6715781-\$ US- 6723050-\$ US- 6723060-\$ US- 6758826-\$ US- 6805700-\$ US- 6823762-\$ US- 6846295-\$ US- 6994575-\$ US- 7041072-\$ US- 7128721-\$ US- 7169169-\$ US- 7223250-\$ US- 7384405-\$ US- 7431706-\$ US- 7470081-\$ US- 7497639-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:25 PM
L47	21	(US-7503923-\$ US- 7549966-\$ US- 7731672-\$ US- 7740249-\$ US- 7857729-\$ US- 7877880-\$ US- 7927259-\$ US- 7927294-\$ US- 7963717-\$ US- 8313450-\$ US- 8342187-\$ US- 8435194-\$ US- 8622943-\$ US- 8646348-\$ US- 8695461-\$ US- 8770882-\$ US- 8777881-\$ US- 8945104-\$ US- 8951216-\$ US- 9017273-\$ US- 9107486-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:27 PM
L48	25	(US-10034813-\$ US- 10201470-\$ US- 10252051-\$ US- 10276844-\$ US-	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:33 PM

L49	14	10314762-\$ US- 10335345-\$ US- 10357425-\$ US- 10557490-\$ US- 10702448-\$ US- 10758027-\$ US- 10857064-\$ US- 10918565-\$ US- 10945915-\$ US- 10959908-\$ US- 10959911-\$ US- 9132058-\$ US- 9138257-\$ US- 9272837-\$ US- 9364385-\$ US- 9416805-\$ US- 9597256-\$ US- 9744600-\$ US- 9872813-\$ US- 9889066-\$ US- 9981366-\$).DID. (US-10993874-\$ US- 11160723-\$ US- 11478400-\$ US- 11478606-\$ US- 12064387-\$ US- 20010016697-\$ US- 20010027280-\$ US- 20020082532-\$ US- 20020177795-\$ US- 20030014079-\$ US- 20030028134-\$ US- 20030094356-\$ US- 20030144615-\$ US- D143678-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:35 PM
L50	14	(US-20050075591-\$ US-20050109137-\$ US-20050126018-\$ US-20050131461-\$ US-20050203445-\$ US-20050235988-\$ US-20050252011-\$ US-20060025710-\$ US-20060047315-\$ US-20060074455-\$ US-20060123941-\$ US-20060211961-\$ US-20060272664-\$ US-20070129220-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:36 PM
L51	18	(US-20070144310-\$ US-20070150004-\$ US-20070173886-\$ US-20070179414-\$ US-20070270727-\$ US-20070282228-\$ US-20080077061-\$	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:39 PM

L55	1	US-20140097793-\$ US-20140101872-\$ US-20140129174-\$ US-20140163443-\$ US-20140180331-\$).DID. ("20130116503").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:51 PM
L56	10	(US-20140194900-\$ US-20140200495-\$ US-20140207032-\$ US-20140209594-\$ US-20140221887-\$ US-20140305747-\$ US-20140316313-\$ US-20150119771-\$ US-20140194790-\$ US-20150042254-\$ US-40202493-\$ US- 40288473-\$ US- 50005682-\$ US- 50082562-\$ US- 50133833-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:52 PM
L57	1	("20140190023").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:53 PM
L58	18	(US-20150145297-\$ US-20150148592-\$ US-20150157528-\$ US-20150176674-\$ US-20150216719-\$ US-20150257964-\$ US-20150305969-\$ US-20150328081-\$ US-20150375315-\$ US-20160000642-\$ US-20160017905-\$ US-20160030279-\$ US-20160045661-\$ US-20160112841-\$ US-20160113840-\$ US-20160113841-\$ US-20160127129-\$ US-20160129186-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:54 PM
L59	16	(US-20160136040-\$ US-20160166464-\$ US-20160170996-\$ US-20160206502-\$ US-20160243359-\$ US-20160263732-\$ US-20160269486-\$ US-20160310353-\$ US-20160311091-\$ US-20160324717-\$ US-20160338901-\$ US-20160346163-\$	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:55 PM

L60	18	US-20160367425-\$ US-20170027798-\$ US-20170042754-\$ US-20170049278-\$).DID. (US-20170069191-\$ US-20170119623-\$ US-20170128320-\$ US-20170156974-\$ US-20170156975-\$ US-20170189227-\$ US-20170216136-\$ US-20170233063-\$ US-20170246074-\$ US-20170304144-\$ US-20170304145-\$ US-20170308046-\$ US-20170312161-\$ US-20170360641-\$ US-20180008512-\$ US-20180050440-\$ US-20180078449-\$ US-20180133101-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 01:03 PM
L61	18	(US-20180140100-\$ US-20180140502-\$ US-20180141188-\$ US-20180154141-\$ US-20180185234-\$ US-20180200141-\$ US-20180236572-\$ US-20180243158-\$ US-20180263845-\$ US-20180279843-\$ US-20180288160-\$ US-20180296433-\$ US-20180315499-\$ US-20180315504-\$ US-20190000709-\$ US-20190038229-\$ US-20190066833-\$ US-20190110945-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 01:04 PM
L62	18	(US-20190175434-\$ US-20190209424-\$ US-20190216677-\$ US-20190232478-\$ US-20190254921-\$ US-20190254922-\$ US-20190314239-\$ US-20190337140-\$ US-20190350793-\$ US-20190381271-\$ US-20200000237-\$ US-20200009010-\$ US-20200016027-\$ US-20200035237-\$	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 01:05 PM

L63	16	US-20200069510-\$ US-20200085675-\$ US-20200090175-\$ US-20200179210-\$).DID. (US-20200179215-\$ US-20200230012-\$ US-20200241683-\$ US-20200261-\$ US- 20200268594-\$ US- 20200294423-\$ US- 20200352821-\$ US- 20200390644-\$ US- 20200397651-\$ US- 20200405570-\$ US- 20210000683-\$ US- 20210022951-\$ US- 20210022955-\$ US- 20210059898-\$ US- 20210085555-\$ US- 20210128402-\$ US- 20210307998-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 01:06 PM
L64	7	(US-20210330530-\$ US-20220000781-\$ US-20220007810-\$ US-20220054350-\$ US-20220087433-\$ US-20220241135-\$ US-20230001131-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 01:07 PM
L65	378	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/09/27 01:53 PM

		6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US-					
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		D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US-					
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		3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US-				
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		20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675- A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR US-20130261516-A1 OR US-20070270727- A1 OR US- 20060282025-A1 OR US-20210283005-A1 OR US-20120167322- A1 OR US- 20140024982-A1 OR US-20160256017-A1 OR US-20130253391- A1 OR US- 20110203824-A1 OR US-20040049137-A1 OR US-20050131461- A1 OR US- 20100137907-A1 OR US-20060116614-A1					
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		OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US-20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US-20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US-20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US-20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US-20030149381-A1 OR US-20120046694-A1 OR US-20020183668-A1 OR US-20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US-20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US-20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US-20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US-20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US-20150045702-A1 OR US-20200390644-A1 OR US-20170238686-A1 OR US-20190298036-A1 OR US-20210290430-A1 OR US-20150202114-A1 OR US-20030158505-A1 OR US-20160045081-A1 OR US-20190159961-A1 OR US-					
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		20210196563-A1 OR US-20100331745-A1 OR US-20210113365- A1 OR US- 20120037184-A1 OR US-20200268594-A1 OR US-20200129372- A1 OR US- 20210113427-A1 OR US-20210001148-A1 OR US-20190175396- A1 OR US- 20060052729-A1 OR US-20120253246-A1 OR US-20200261306- A1 OR US- 20210161759-A1 OR US-20110009783-A1 OR US-20220151865- A1 OR US- 20220339061-A1 OR US-20080234611-A1 OR US-20220168175- A1 OR US- 20210113421-A1 OR US-20100274162-A1 OR US-20220362097- A1 OR US- 20200230012-A1 OR US-20210077340-A1 OR US-20200009010- A1 OR US- 20210022951-A1 OR US-20220047412-A1 OR US-20150174387- A1 OR US- 20170304144-A1 OR US-20180031090-A1 OR US-20160192814- A1 OR US- 20200289364-A1 OR US-20240374468-A1 OR US-20200155410- A1 OR US- 20200276079-A1 OR US-20210307998-A1 OR US-20210000683- A1 OR US- 20030028134-A1 OR US-20210361524-A1 OR US-20220387252- A1 OR US- 20210196562-A1 OR US-20190365598-A1 OR US-20200393026- A1 OR US- 20200085684-A1 OR US-20210121360-A1				
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		OR US-20200046601-A1 OR US-20250099325-A1 OR US-20230301867-A1 OR US-20030144615-A1 OR US-20030094356-A1 OR US-20020177795-A1 OR US-20010027280-A1 OR US-20050109137-A1 OR US-20060211961-A1 OR US-20050252011-A1 OR US-20050126018-A1 OR US-20070144310-A1 OR US-20100100119-A1 OR US-20100145242-A1 OR US-20100160841-A1 OR US-20130138023-A1 OR US-20140194790-A1 OR US-20150042254-A1 OR US-20150305969-A1 OR US-20160324717-A1 OR US-20170049278-A1 OR US-20170156974-A1 OR US-20180008512-A1 OR US-20180288160-A1 OR US-20180296433-A1 OR US-20180236572-A1 OR US-20190232478-A1 OR US-20190209424-A1 OR US-20210128402-A1).did. AND PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US-2078159-A OR US-1660821-A OR US-1657765-A OR US-1545027-A OR US-1787211-A OR US-2441682-A OR US-1339179-A OR US-2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683-A1 OR US-7927259-B1 OR US-20030195443-A1).did. AND DWPI.dbnm.) OR ((CN-					
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L66	1	212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2).did. AND FTDB.dbnm.) 17/645966	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/08 08:51 PM
L67	8	("10054964" "10078319 "10790101" "1187797 6" "20140320406" "202 00253073" "202100183 42" "20220233397").PN	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/08 08:52 PM
L68	47	("5097828" "6241027" "6432072" "6682496" "7273159" "7384405" "8713739" "9089470" "10314762" "20010007952" "20020177795" "20050020947" "20050209537" "20050209539" "20060058714" "20080014011" "20080119767" "20080300529" "20100274162" "20130046212" "20140378555" "20150005682" "20150121900" "20150182290" "20150297393" "20150305969" "20160089537" "20160151238" "20160331308" "20160367425" "20170304145" "20180185236" "20180200141" "20180228691" "20180263845" "20180280675" "20190015294" "20190060115" "20190136889" "20190159961" "20190175434" "20200155410" "20200268594" "20200289161" "20210077340" "20220117073" "20220233397").pn. OR ("11877976").urpn.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/08 08:54 PM

L69	1	AND (PGPB USPT USOC).dbnm. ("20210128402").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/08 08:57 PM
L70	380	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/10/08 09:06 PM

		10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US-				
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		12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US-				
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		5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1				
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		OR US-20220211575-A1 OR US-20220257460-A1 OR US-20220296463-A1 OR US-20230248609-A1 OR US-20230277410-A1 OR US-20210244609-A1 OR US-20200085675-A1 OR US-20190175434-A1 OR US-20170304145-A1 OR US-20170042754-A1 OR US-20150005682-A1 OR US-20130261516-A1 OR US-20070270727-A1 OR US-20060282025-A1 OR US-20210283005-A1 OR US-20120167322-A1 OR US-20140024982-A1 OR US-20160256017-A1 OR US-20130253391-A1 OR US-20110203824-A1 OR US-20040049137-A1 OR US-20050131461-A1 OR US-20100137907-A1 OR US-20060116614-A1 OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US-20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US-20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US-20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US-20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US-20030149381-A1 OR US-20120046694-A1 OR US-20020183668-A1 OR US-					
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		20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US- 20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US- 20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US- 20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US- 20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US- 20150045702-A1 OR US-20200390644-A1 OR US-20170238686-A1 OR US- 20190298036-A1 OR US-20210290430-A1 OR US-20150202114-A1 OR US- 20030158505-A1 OR US-20160045081-A1 OR US-20190159961-A1 OR US- 20210196563-A1 OR US-20100331745-A1 OR US-20210113365-A1 OR US- 20120037184-A1 OR US-20200268594-A1 OR US-20200129372-A1 OR US- 20210113427-A1 OR US-20210001148-A1 OR US-20190175396-A1 OR US- 20060052729-A1 OR US-20120253246-A1 OR US-20200261306-A1 OR US- 20210161759-A1 OR US-20110009783-A1 OR US-20220151865-A1 OR US- 20220339061-A1 OR US-20080234611-A1 OR US-20220168175-A1 OR US- 20210113421-A1 OR US-20100274162-A1					
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		OR US-20220362097-A1 OR US-20200230012-A1 OR US-20210077340-A1 OR US-20200009010-A1 OR US-20210022951-A1 OR US-20220047412-A1 OR US-20150174387-A1 OR US-20170304144-A1 OR US-20180031090-A1 OR US-20160192814-A1 OR US-20200289364-A1 OR US-20240374468-A1 OR US-20200155410-A1 OR US-20200276079-A1 OR US-20210307998-A1 OR US-20210000683-A1 OR US-20030028134-A1 OR US-20210361524-A1 OR US-20220387252-A1 OR US-20210196562-A1 OR US-20190365598-A1 OR US-20200393026-A1 OR US-20200085684-A1 OR US-20210121360-A1 OR US-20200046601-A1 OR US-20250099325-A1 OR US-20230301867-A1 OR US-20030144615-A1 OR US-20030094356-A1 OR US-20020177795-A1 OR US-20010027280-A1 OR US-20050109137-A1 OR US-20060211961-A1 OR US-20050252011-A1 OR US-20050126018-A1 OR US-20070144310-A1 OR US-20100100119-A1 OR US-20100145242-A1 OR US-20100160841-A1 OR US-20130138023-A1 OR US-20140194790-A1 OR US-20150042254-A1 OR US-20150305969-A1 OR US-					
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		20160324717-A1 OR US-20170049278-A1 OR US-20170156974- A1 OR US- 20180008512-A1 OR US-20180288160-A1 OR US-20180296433- A1 OR US- 20180236572-A1 OR US-20190232478-A1 OR US-20190209424- A1 OR US- 20210128402-A1 OR US-20220110825-A1 OR US-20220233397- A1).did. AND PGPB.dbnm.) OR ((US- 3494353-A OR US- 3169521-A OR US- 2078159-A OR US- 1660821-A OR US- 1657765-A OR US- 1545027-A OR US- 1787211-A OR US- 2441682-A OR US- 1339179-A OR US- 2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683- A1 OR US-7927259-B1 OR US-20030195443- A1).did. AND DWPI.dbnm.) OR ((CN- 212326934-U OR JP- 2025028111-A OR CA- 3150901-A1 OR WO- 0038613-A2).did. AND FTDB.dbnm.)					
L71	127	70 AND bearing	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/09 10:02 AM
L72	1	("20210128402").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/09 10:13 AM
L73	10	15/186859	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/09 10:22 AM
L74	380	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO,	OR	ON	ON	2025/10/09 10:24 AM

		US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US-	NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
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		4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US-					
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		2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US-					
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		5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675- A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR				
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		US-20130261516-A1 OR US-20070270727-A1 OR US-20060282025-A1 OR US-20210283005-A1 OR US-20120167322-A1 OR US-20140024982-A1 OR US-20160256017-A1 OR US-20130253391-A1 OR US-20110203824-A1 OR US-20040049137-A1 OR US-20050131461-A1 OR US-20100137907-A1 OR US-20060116614-A1 OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US-20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US-20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US-20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US-20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US-20030149381-A1 OR US-20120046694-A1 OR US-20020183668-A1 OR US-20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US-20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US-20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US-20170079865-A1 OR US-20050187498-A1 OR US-20120121309-					
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		A1 OR US- 20070150004-A1 OR US-20200000678-A1 OR US-20200289161- A1 OR US- 20150045702-A1 OR US-20200390644-A1 OR US-20170238686- A1 OR US- 20190298036-A1 OR US-20210290430-A1 OR US-20150202114- A1 OR US- 20030158505-A1 OR US-20160045081-A1 OR US-20190159961- A1 OR US- 20210196563-A1 OR US-20100331745-A1 OR US-20210113365- A1 OR US- 20120037184-A1 OR US-20200268594-A1 OR US-20200129372- A1 OR US- 20210113427-A1 OR US-20210001148-A1 OR US-20190175396- A1 OR US- 20060052729-A1 OR US-20120253246-A1 OR US-20200261306- A1 OR US- 20210161759-A1 OR US-20110009783-A1 OR US-20220151865- A1 OR US- 20220339061-A1 OR US-20080234611-A1 OR US-20220168175- A1 OR US- 20210113421-A1 OR US-20100274162-A1 OR US-20220362097- A1 OR US- 20200230012-A1 OR US-20210077340-A1 OR US-20200009010- A1 OR US- 20210022951-A1 OR US-20220047412-A1 OR US-20150174387- A1 OR US- 20170304144-A1 OR US-20180031090-A1 OR US-20160192814- A1 OR US- 20200289364-A1 OR				
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		US-20240374468-A1 OR US-20200155410-A1 OR US-20200276079-A1 OR US-20210307998-A1 OR US-20210000683-A1 OR US-20030028134-A1 OR US-20210361524-A1 OR US-20220387252-A1 OR US-20210196562-A1 OR US-20190365598-A1 OR US-20200393026-A1 OR US-20200085684-A1 OR US-20210121360-A1 OR US-20200046601-A1 OR US-20250099325-A1 OR US-20230301867-A1 OR US-20030144615-A1 OR US-20030094356-A1 OR US-20020177795-A1 OR US-20010027280-A1 OR US-20050109137-A1 OR US-20060211961-A1 OR US-20050252011-A1 OR US-20050126018-A1 OR US-20070144310-A1 OR US-20100100119-A1 OR US-20100145242-A1 OR US-20100160841-A1 OR US-20130138023-A1 OR US-20140194790-A1 OR US-20150042254-A1 OR US-20150305969-A1 OR US-20160324717-A1 OR US-20170049278-A1 OR US-20170156974-A1 OR US-20180008512-A1 OR US-20180288160-A1 OR US-20180296433-A1 OR US-20180236572-A1 OR US-20190232478-A1 OR US-20190209424-A1 OR US-20210128402-A1 OR US-20220110825-A1 OR US-20220233397-					
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L75	52	<p>A1).did. AND PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US-2078159-A OR US-1660821-A OR US-1657765-A OR US-1545027-A OR US-1787211-A OR US-2441682-A OR US-1339179-A OR US-2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683-A1 OR US-7927259-B1 OR US-20030195443-A1).did. AND DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2).did. AND FTDB.dbnm.)</p> <p>((US-1660821-A OR US-1545027-A OR US-2078159-A OR US-3494353-A OR US-3169521-A OR US-1657765-A).did. AND USOC.dbnm.) OR ((US-20210244609-A1 OR US-20190175434-A1 OR US-20200261306-A1 OR US-20170304145-A1 OR US-20170042754-A1 OR US-20110009783-A1 OR US-20160367425-A1 OR US-20210128402-A1 OR US-20200268594-A1 OR US-20210113365-A1 OR US-20190254922-A1 OR US-20200085675-A1 OR US-20200289364-A1 OR US-20210196562-A1 OR US-20030149381-A1 OR US-20150042254-A1 OR US-20180263845-A1 OR US-20170304144-A1 OR US-20210000683-A1 OR</p>	(USOCR; US-PGPUB; USPAT)	OR	ON	ON	2025/10/09 10:24 AM
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L77	1	US-20050126018-A1 OR US-20130261516-A1 OR US-20140221887-A1 OR US-20150005682-A1).did. AND PGPB.dbnm.) OR ((US-3942251-A OR US-10993874-B1 OR US-3993052-A OR US-4158246-A OR US-11723830-B1 OR US-4815224-A OR US-4730605-A OR US-D872869-S OR US-4088128-A OR US-7927259-B1 OR US-3626934-A OR US-3837335-A OR US-5656018-A OR US-5951501-A OR US-4031763-A OR US-6682496-B1 OR US-1594636-A OR US-2581806-A OR US-3452226-A OR US-1494162-A OR US-3172675-A OR US-2294947-A OR US-1185583-A).did. AND USPT.dbnm.)	WO AND "2006070505"	(US-PGPUB; USPAT; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/10/09 10:25 AM
L78	52	((US-2078159-A OR US-1545027-A OR US-3494353-A OR US-1660821-A OR US-3169521-A OR US-1657765-A).did. AND USOC.dbnm.) OR ((US-20210244609-A1 OR US-20190175434-A1 OR US-20200261306-A1 OR US-20170304145-A1 OR		(USOCR; US-PGPUB; USPAT)	OR	ON	ON	2025/10/09 10:30 AM

L79	35	US-20200085675-A1 OR US-20170042754-A1 OR US-20160367425-A1 OR US-20210128402-A1 OR US-20210113365-A1 OR US-20190254922-A1 OR US-20110009783-A1 OR US-20210196562-A1 OR US-20030149381-A1 OR US-20150042254-A1 OR US-20180263845-A1 OR US-20200289364-A1 OR US-20170304144-A1 OR US-20200268594-A1 OR US-20210000683-A1 OR US-20050126018-A1 OR US-20130261516-A1 OR US-20140221887-A1 OR US-20150005682-A1).did. AND PGPB.dbnm.) OR ((US-3626934-A OR US-3942251-A OR US-10993874-B1 OR US-3993052-A OR US-11723830-B1 OR US-4730605-A OR US-D872869-S OR US-7927259-B1 OR US-4158246-A OR US-3837335-A OR US-4088128-A OR US-5656018-A OR US-5951501-A OR US-4815224-A OR US-4031763-A OR US-6682496-B1 OR US-1594636-A OR US-2581806-A OR US-3452226-A OR US-1494162-A OR US-3172675-A OR US-2294947-A OR US-1185583-A).did. AND USPT.dbnm.) 78 NOT (@aD>="20181226")	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB,	OR	ON	ON	2025/10/09 10:31 AM
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L80	17	78 NOT 79	HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN)) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/10/09 10:31 AM
L81	5	16/168100	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/10/09 10:34 AM
L82	1	((US-20200085675-A1).did. AND PGPB.dbnm.)	(US-PGPUB)	OR	ON	ON	2025/10/09 10:35 AM
L83	6	((US-2078159-A OR US-1660821-A OR US-1545027-A OR US-3494353-A OR US-3169521-A OR US-1657765-A).did. AND USOC.dbnm.)	(USOCR)	OR	ON	ON	2025/10/09 10:35 AM
L84	41	79 82 83	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO,	OR	ON	ON	2025/10/09 10:36 AM

L85	37	((US-20200085675-A1 OR US-20190175434-A1 OR US-20160367425-A1 OR US-20170304145-A1 OR US-20110009783-A1 OR US-20170042754-A1 OR US-20190254922-A1 OR US-20050126018-A1 OR US-20030149381-A1 OR US-20150042254-A1 OR US-20170304144-A1 OR US-20180263845-A1 OR US-20130261516-A1 OR US-20140221887-A1 OR US-20150005682-A1).did. AND PGPB.dbnm.) OR ((US-3942251-A OR US-7927259-B1 OR US-3993052-A OR US-4730605-A OR US-5656018-A OR US-3626934-A OR US-3837335-A OR US-4088128-A OR US-5951501-A OR US-4031763-A OR US-6682496-B1 OR US-2581806-A OR US-3452226-A OR US-1494162-A OR US-3172675-A OR US-2294947-A).did. AND USPT.dbnm.) OR ((US-2078159-A OR US-3494353-A OR US-1660821-A OR US-1545027-A OR US-3169521-A OR US-1657765-A).did. AND USOC.dbnm.)	NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN)) (US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/09 10:43 AM
L86	235	74 NOT (@aD>="20181226")	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV,	OR	ON	ON	2025/10/09 10:45 AM

L87	204	86 NOT 85	MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO))	OR	ON	ON	2025/10/09 10:45 AM
L88	243	jay.in. near3 calvert.in.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO))	OR	ON	ON	2025/10/09 10:47 AM
L89	2	("4730605").pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO))	OR	ON	ON	2025/10/09 10:48 AM
L90	10	("20170304145" "20200085675" "20190254922" "3837335" "4730605").pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV,	OR	ON	ON	2025/10/09 10:59 AM

L91	5	("20170304145" "20200085675" "20190254922" "3837335" "4730605").pn.	MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) (US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/09 10:59 AM
L92	4751	A61H23/00,02,006.cpc.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/10 06:41 PM
L93	1581	A61H23/0254.cpc.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/10 06:41 PM
L94	3700	(92 OR 93) NOT (@Ad>="20181226")	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/10 06:42 PM
L95	739	94 AND (reciprocat\$5 percuss\$5)	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/10 06:42 PM
L96	3	("1955623").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/10 06:43 PM
L97	383	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/10/10 06:45 PM

		4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US-				
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		6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US-					
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		2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2 OR US- 1955623-A).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR				
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		US-20190017528-A1 OR US-20190015294-A1 OR US-20180263845-A1 OR US-20200214930-A1 OR US-20200261307-A1 OR US-20200261310-A1 OR US-20200352820-A1 OR US-20200352821-A1 OR US-20210022955-A1 OR US-20210059898-A1 OR US-20210104318-A1 OR US-20210169733-A1 OR US-20210244610-A1 OR US-20210244611-A1 OR US-20210401663-A1 OR US-20220125672-A1 OR US-20220211575-A1 OR US-20220257460-A1 OR US-20220296463-A1 OR US-20230248609-A1 OR US-20230277410-A1 OR US-20210244609-A1 OR US-20200085675-A1 OR US-20190175434-A1 OR US-20170304145-A1 OR US-20170042754-A1 OR US-20150005682-A1 OR US-20130261516-A1 OR US-20070270727-A1 OR US-20060282025-A1 OR US-20210283005-A1 OR US-20120167322-A1 OR US-20140024982-A1 OR US-20160256017-A1 OR US-20130253391-A1 OR US-20110203824-A1 OR US-20040049137-A1 OR US-20050131461-A1 OR US-20100137907-A1 OR US-20060116614-A1 OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-					
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		A1 OR US- 20090270915-A1 OR US-20190254922-A1 OR US-20190254921- A1 OR US- 20060293711-A1 OR US-20190247271-A1 OR US-20140031866- A1 OR US- 20020107459-A1 OR US-20140142472-A1 OR US-20020082536- A1 OR US- 20040249320-A1 OR US-20050222524-A1 OR US-20160213554- A1 OR US- 20030149381-A1 OR US-20120046694-A1 OR US-20020183668- A1 OR US- 20050215929-A1 OR US-20180361137-A1 OR US-20020082532- A1 OR US- 20100222719-A1 OR US-20120253245-A1 OR US-20160074641- A1 OR US- 20160213558-A1 OR US-20140221887-A1 OR US-20090306561- A1 OR US- 20170079865-A1 OR US-20050187498-A1 OR US-20120121309- A1 OR US- 20070150004-A1 OR US-20200000678-A1 OR US-20200289161- A1 OR US- 20150045702-A1 OR US-20200390644-A1 OR US-20170238686- A1 OR US- 20190298036-A1 OR US-20210290430-A1 OR US-20150202114- A1 OR US- 20030158505-A1 OR US-20160045081-A1 OR US-20190159961- A1 OR US- 20210196563-A1 OR US-20100331745-A1 OR US-20210113365- A1 OR US- 20120037184-A1 OR				
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		US-20200268594-A1 OR US-20200129372-A1 OR US-20210113427-A1 OR US-20210001148-A1 OR US-20190175396-A1 OR US-20060052729-A1 OR US-20120253246-A1 OR US-20200261306-A1 OR US-20210161759-A1 OR US-20110009783-A1 OR US-20220151865-A1 OR US-20220339061-A1 OR US-20080234611-A1 OR US-20220168175-A1 OR US-20210113421-A1 OR US-20100274162-A1 OR US-20220362097-A1 OR US-20200230012-A1 OR US-20210077340-A1 OR US-20200009010-A1 OR US-20210022951-A1 OR US-20220047412-A1 OR US-20150174387-A1 OR US-20170304144-A1 OR US-20180031090-A1 OR US-20160192814-A1 OR US-20200289364-A1 OR US-20240374468-A1 OR US-20200155410-A1 OR US-20200276079-A1 OR US-20210307998-A1 OR US-20210000683-A1 OR US-20030028134-A1 OR US-20210361524-A1 OR US-20220387252-A1 OR US-20210196562-A1 OR US-20190365598-A1 OR US-20200393026-A1 OR US-20200085684-A1 OR US-20210121360-A1 OR US-20200046601-A1 OR US-20250099325-A1 OR US-20230301867-A1 OR US-20030144615-					
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		A1 OR US- 20030094356-A1 OR US-20020177795-A1 OR US-20010027280- A1 OR US- 20050109137-A1 OR US-20060211961-A1 OR US-20050252011- A1 OR US- 20050126018-A1 OR US-20070144310-A1 OR US-20100100119- A1 OR US- 20100145242-A1 OR US-20100160841-A1 OR US-20130138023- A1 OR US- 20140194790-A1 OR US-20150042254-A1 OR US-20150305969- A1 OR US- 20160324717-A1 OR US-20170049278-A1 OR US-20170156974- A1 OR US- 20180008512-A1 OR US-20180288160-A1 OR US-20180296433- A1 OR US- 20180236572-A1 OR US-20190232478-A1 OR US-20190209424- A1 OR US- 20210128402-A1 OR US-20220110825-A1 OR US-20220233397- A1 OR US- 20040243031-A1 OR US-20030014079- A1).did. AND PGPB.dbnm.) OR ((US- 3494353-A OR US- 3169521-A OR US- 2078159-A OR US- 1660821-A OR US- 1657765-A OR US- 1545027-A OR US- 1787211-A OR US- 2441682-A OR US- 1339179-A OR US- 2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683- A1 OR US-7927259-B1 OR US-20030195443- A1).did. AND				
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L98	383	DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2).did. AND FTDB.dbnm.)	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/10/11 11:15 PM
		((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US-3993052-A OR US-12016818-B2 OR US-11744769-B2 OR US-11559462-B2 OR US-11452670-B2 OR US-11432994-B2 OR US-11357697-B2 OR US-10426691-B2 OR US-9889066-B2 OR US-6875186-B2 OR US-6599260-B2 OR US-5415621-A OR US-4841955-A OR US-4716890-A OR US-4513737-A OR US-4461286-A OR US-4088128-A OR US-4016873-A OR US-3837335-A OR US-3710785-A OR US-10357425-B2 OR US-10912707-B2 OR US-10428850-B2 OR US-10557490-B2 OR US-10774860-B2 OR US-10470970-B2 OR US-10617588-B2 OR US-10702448-B2 OR US-11166863-B2 OR US-10918565-B2 OR US-11160722-B2 OR US-10758452-B2 OR US-10847984-B2 OR US-					

		10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US-				
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		10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US-					
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		3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2 OR US- 1955623-A).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611-				
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		US-20120046694-A1 OR US-20020183668-A1 OR US-20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US-20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US-20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US-20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US-20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US-20150045702-A1 OR US-20200390644-A1 OR US-20170238686-A1 OR US-20190298036-A1 OR US-20210290430-A1 OR US-20150202114-A1 OR US-20030158505-A1 OR US-20160045081-A1 OR US-20190159961-A1 OR US-20210196563-A1 OR US-20100331745-A1 OR US-20210113365-A1 OR US-20120037184-A1 OR US-20200268594-A1 OR US-20200129372-A1 OR US-20210113427-A1 OR US-20210001148-A1 OR US-20190175396-A1 OR US-20060052729-A1 OR US-20120253246-A1 OR US-20200261306-A1 OR US-20210161759-A1 OR US-20110009783-A1 OR US-20220151865-A1 OR US-20220339061-A1 OR US-20080234611-A1 OR US-20220168175-					
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L100	1	((US-7927259-B1).did. AND USPT.dbnm.)	(USPAT)	OR	ON	ON	2025/10/11 11:18 PM
L101	1	((US-2581806-A).did. AND USPT.dbnm.)	(USPAT)	OR	ON	ON	2025/10/11 11:20 PM
L102	8	91 99 100 101	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/11 11:20 PM
L103	47	16/675772	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/12

L104	36	16/796143	(US-PGPUB; USPAT)	OR	ON	ON	04:31 PM 2025/10/12 04:33 PM
L105	383	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/10/12 04:35 PM

		10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US-				
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		12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US-					
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		6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2 OR US- 1955623-A).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1				
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L108	9	102 106	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/12 04:38 PM
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L110	237	105 NOT (@ad>="20181226")	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/12 07:08 PM
L111	0	("2017027798").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/12 07:09 PM

L112	1	("20170027798").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/12 07:09 PM
L113	1	((US-20170156974-A1).did. AND PGPB.dbnm.)	(US-PGPUB)	OR	ON	ON	2025/10/12 07:12 PM
L114	41	("4513737" "4827914" "4841955" "5088474" "5140979" "5951501" "6228042" "6537236" "6723060" "7144417" "8083699" "8096963" "9889066").pn. OR ("10201470").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/12 07:12 PM
L115	1	((US-9889066-B2).did. AND USPT.dbnm.)	(USPAT)	OR	ON	ON	2025/10/12 10:32 PM
L116	237	("0784024" "0799881" "1339179" "1612981" "1657765" "1978223" "3030647" "3494353" "3710785" "3841321" "3845758" "3920291" "3968789" "3993052" "4088128" "4162675" "RE30500" "4412535" "4505267" "4513737" "4523580" "4549535" "4730605" "4827914" "4841955" "4858600" "5063911" "5065743" "5140979" "5159922" "5215078" "5305738" "5311860" "5364223" "5415621" "5447491" "5489280" "D367712" "D373640" "5602432" "5632720" "5656018" "5725483" "5803916" "5843006" "5925002" "5951501" "6102875" "6123657" "6165145" "6170108" "D437713" "D438309" "6228042" "6231497" "D455837" "6375609" "6402710" "6432072" "6440091" "6461377" "6478755" "6494849" "6585667" "6616621" "6656140" "6682496" "6758826" "6805700" "6832991" "6866776" "6979300" "6994679" "7033329" "7041072" "7083581"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/12 10:32 PM

		"7125390" "7128722" "7211057" "7229424" "7238162" "7264598" "7270641" "7282037" "7306569" "7322946" "7335170" "7354408" "7470242" "7507198" "7517327" "7597669" "7634314" "7927294" "7976485" "8052625" "8092407" "8192379" "8282583" "8317733" "20020058892" "20030060741" "20030130602" "20030195438" "20030195443" "20050015030" "20050096571" "20050096682" "20060074360" "20060178715" "20070179414" "20080214968" "20080234611" "20080306417" "20090182249" "20090306577" "20100228168" "20100274162" "20110106067" "20120253245" "20120259255" "20130006040" "20140094724").pn. OR ("9889066").urpn. AND (PGPB USPT USOC).dbnm.					
L117	41	("4513737" "4827914" "4841955" "5088474" "5140979" "5951501" "6228042" "6537236" "6723060" "7144417" "8083699" "8096963" "9889066").pn. OR ("10201470").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/12 10:34 PM
L118	1	((US-9889066-B2).did. AND USPT.dbnm.)	(USPAT)	OR	ON	ON	2025/10/12 10:38 PM
L119	1	((US-9889066-B2).did. AND USPT.dbnm.)	(USPAT)	OR	ON	ON	2025/10/12 10:44 PM
L120	12	108 109 112 115	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/12 10:53 PM
L121	1	("20150005682").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/13 11:49 AM

L122	1	("20150005682").pn.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/14 06:08 PM
L123	2	("12064387" "12396919").pn.	(USPAT)	OR	ON	ON	2025/10/14 10:30 PM
L125	1	("10959908").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/16 12:58 PM
L141	1	("4730605").pn.	(FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/10/16 03:47 PM
L142	2	("4730605").pn.	(US-PGPUB; USPAT; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/10/16 03:47 PM
L143	4	("7927259" "20170304144" "3169521").pn.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/16 03:56 PM
L144	385	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US-3993052-A OR US-12016818-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/10/16 03:57 PM

		11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US-				
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		4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US-				
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		2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US-					
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		7927294-B2 OR US- 9872813-B2 OR US- 1955623-A OR US- 7634314-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675- A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR US-20130261516-A1 OR US-20070270727- A1 OR US- 20060282025-A1 OR US-20210283005-A1 OR US-20120167322- A1 OR US- 20140024982-A1 OR				
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		US-20160256017-A1 OR US-20130253391-A1 OR US-20110203824-A1 OR US-20040049137-A1 OR US-20050131461-A1 OR US-20100137907-A1 OR US-20060116614-A1 OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US-20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US-20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US-20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US-20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US-20030149381-A1 OR US-20120046694-A1 OR US-20020183668-A1 OR US-20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US-20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US-20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US-20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US-20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US-20150045702-A1 OR US-20200390644-A1 OR US-20170238686-					
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		A1 OR US- 20190298036-A1 OR US-20210290430-A1 OR US-20150202114- A1 OR US- 20030158505-A1 OR US-20160045081-A1 OR US-20190159961- A1 OR US- 20210196563-A1 OR US-20100331745-A1 OR US-20210113365- A1 OR US- 20120037184-A1 OR US-20200268594-A1 OR US-20200129372- A1 OR US- 20210113427-A1 OR US-20210001148-A1 OR US-20190175396- A1 OR US- 20060052729-A1 OR US-20120253246-A1 OR US-20200261306- A1 OR US- 20210161759-A1 OR US-20110009783-A1 OR US-20220151865- A1 OR US- 20220339061-A1 OR US-20080234611-A1 OR US-20220168175- A1 OR US- 20210113421-A1 OR US-20100274162-A1 OR US-20220362097- A1 OR US- 20200230012-A1 OR US-20210077340-A1 OR US-20200009010- A1 OR US- 20210022951-A1 OR US-20220047412-A1 OR US-20150174387- A1 OR US- 20170304144-A1 OR US-20180031090-A1 OR US-20160192814- A1 OR US- 20200289364-A1 OR US-20240374468-A1 OR US-20200155410- A1 OR US- 20200276079-A1 OR US-20210307998-A1 OR US-20210000683- A1 OR US- 20030028134-A1 OR				
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		US-20210361524-A1 OR US-20220387252-A1 OR US-20210196562-A1 OR US-20190365598-A1 OR US-20200393026-A1 OR US-20200085684-A1 OR US-20210121360-A1 OR US-20200046601-A1 OR US-20250099325-A1 OR US-20230301867-A1 OR US-20030144615-A1 OR US-20030094356-A1 OR US-20020177795-A1 OR US-20010027280-A1 OR US-20050109137-A1 OR US-20060211961-A1 OR US-20050252011-A1 OR US-20050126018-A1 OR US-20070144310-A1 OR US-20100100119-A1 OR US-20100145242-A1 OR US-20100160841-A1 OR US-20130138023-A1 OR US-20140194790-A1 OR US-20150042254-A1 OR US-20150305969-A1 OR US-20160324717-A1 OR US-20170049278-A1 OR US-20170156974-A1 OR US-20180008512-A1 OR US-20180288160-A1 OR US-20180296433-A1 OR US-20180236572-A1 OR US-20190232478-A1 OR US-20190209424-A1 OR US-20210128402-A1 OR US-20220110825-A1 OR US-20220233397-A1 OR US-20040243031-A1 OR US-20030014079-A1 OR US-20170027798-A1).did. AND PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US-					
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		2078159-A OR US-1660821-A OR US-1657765-A OR US-1545027-A OR US-1787211-A OR US-2441682-A OR US-1339179-A OR US-2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683-A1 OR US-7927259-B1 OR US-20030195443-A1).did. AND DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2).did. AND FTDB.dbnm.)					
L145	12	("20210128402" "20170304145" "20200085675" "20190254922" "3837335" "4730605" "2581806" "7927259" "20170304144" "3169521" "20150005682" "20010027280").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/17 12:44 AM
L146	2	((US-3837335-A OR US-2581806-A).did. AND USPT.dbnm.)	(USPAT)	OR	ON	ON	2025/10/17 12:44 AM
L147	385	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US-3993052-A OR US-12016818-B2 OR US-11744769-B2 OR US-11559462-B2 OR US-11452670-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/10/17 12:44 AM

		11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US-				
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		3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US-					
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		1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2 OR US- 1955623-A OR US-				
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		7634314-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675- A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR US-20130261516-A1 OR US-20070270727- A1 OR US- 20060282025-A1 OR US-20210283005-A1 OR US-20120167322- A1 OR US- 20140024982-A1 OR US-20160256017-A1 OR US-20130253391- A1 OR US-				
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		20110203824-A1 OR US-20040049137-A1 OR US-20050131461-A1 OR US- 20100137907-A1 OR US-20060116614-A1 OR US-20150119771-A1 OR US- 20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US- 20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US- 20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US- 20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US- 20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US- 20030149381-A1 OR US-20120046694-A1 OR US-20020183668-A1 OR US- 20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US- 20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US- 20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US- 20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US- 20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US- 20150045702-A1 OR US-20200390644-A1 OR US-20170238686-A1 OR US- 20190298036-A1 OR US-20210290430-A1					
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		OR US-20150202114-A1 OR US-20030158505-A1 OR US-20160045081-A1 OR US-20190159961-A1 OR US-20210196563-A1 OR US-20100331745-A1 OR US-20210113365-A1 OR US-20120037184-A1 OR US-20200268594-A1 OR US-20200129372-A1 OR US-20210113427-A1 OR US-20210001148-A1 OR US-20190175396-A1 OR US-20060052729-A1 OR US-20120253246-A1 OR US-20200261306-A1 OR US-20210161759-A1 OR US-20110009783-A1 OR US-20220151865-A1 OR US-20220339061-A1 OR US-20080234611-A1 OR US-20220168175-A1 OR US-20210113421-A1 OR US-20100274162-A1 OR US-20220362097-A1 OR US-20200230012-A1 OR US-20210077340-A1 OR US-20200009010-A1 OR US-20210022951-A1 OR US-20220047412-A1 OR US-20150174387-A1 OR US-20170304144-A1 OR US-20180031090-A1 OR US-20160192814-A1 OR US-20200289364-A1 OR US-20240374468-A1 OR US-20200155410-A1 OR US-20200276079-A1 OR US-20210307998-A1 OR US-20210000683-A1 OR US-20030028134-A1 OR US-20210361524-A1 OR US-20220387252-A1 OR US-					
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		20210196562-A1 OR US-20190365598-A1 OR US-20200393026- A1 OR US- 20200085684-A1 OR US-20210121360-A1 OR US-20200046601- A1 OR US- 20250099325-A1 OR US-20230301867-A1 OR US-20030144615- A1 OR US- 20030094356-A1 OR US-20020177795-A1 OR US-20010027280- A1 OR US- 20050109137-A1 OR US-20060211961-A1 OR US-20050252011- A1 OR US- 20050126018-A1 OR US-20070144310-A1 OR US-20100100119- A1 OR US- 20100145242-A1 OR US-20100160841-A1 OR US-20130138023- A1 OR US- 20140194790-A1 OR US-20150042254-A1 OR US-20150305969- A1 OR US- 20160324717-A1 OR US-20170049278-A1 OR US-20170156974- A1 OR US- 20180008512-A1 OR US-20180288160-A1 OR US-20180296433- A1 OR US- 20180236572-A1 OR US-20190232478-A1 OR US-20190209424- A1 OR US- 20210128402-A1 OR US-20220110825-A1 OR US-20220233397- A1 OR US- 20040243031-A1 OR US-20030014079-A1 OR US-20170027798- A1).did. AND PGPB.dbnm.) OR ((US- 3494353-A OR US- 3169521-A OR US- 2078159-A OR US- 1660821-A OR US- 1657765-A OR US-				
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		1545027-A OR US-1787211-A OR US-2441682-A OR US-1339179-A OR US-2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683-A1 OR US-7927259-B1 OR US-20030195443-A1).did. AND DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2).did. AND FTDB.dbnm.)					
L148	8	((US-2078159-A OR US-1660821-A OR US-3169521-A OR US-1545027-A).did. AND USOC.dbnm.) OR ((US-3837335-A OR US-3626934-A OR US-4088128-A OR US-2581806-A).did. AND USPT.dbnm.)	(USOCR; USPAT)	OR	ON	ON	2025/10/17 12:45 AM
L149	1	((US-1657765-A).did. AND USOC.dbnm.)	(USOCR)	OR	ON	ON	2025/10/17 12:45 AM
L150	9	146 148 149	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/17 12:45 AM
L151	5	((US-3837335-A OR US-2581806-A).did. AND USPT.dbnm.) OR ((US-2078159-A OR US-1660821-A OR US-3169521-A).did. AND USOC.dbnm.)	(USPAT; USOCR)	OR	ON	ON	2025/10/17 12:49 AM
L152	385	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/02/25 10:51 AM

		US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US-				
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		3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US-				
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		1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US-					
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		8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2 OR US- 1955623-A OR US- 7634314-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675- A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR US-20130261516-A1 OR US-20070270727- A1 OR US- 20060282025-A1 OR US-20210283005-A1					
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		OR US-20120167322-A1 OR US-20140024982-A1 OR US-20160256017-A1 OR US-20130253391-A1 OR US-20110203824-A1 OR US-20040049137-A1 OR US-20050131461-A1 OR US-20100137907-A1 OR US-20060116614-A1 OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US-20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US-20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US-20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US-20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US-20030149381-A1 OR US-20120046694-A1 OR US-20020183668-A1 OR US-20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US-20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US-20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US-20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US-20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US-					
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		20150045702-A1 OR US-20200390644-A1 OR US-20170238686- A1 OR US- 20190298036-A1 OR US-20210290430-A1 OR US-20150202114- A1 OR US- 20030158505-A1 OR US-20160045081-A1 OR US-20190159961- A1 OR US- 20210196563-A1 OR US-20100331745-A1 OR US-20210113365- A1 OR US- 20120037184-A1 OR US-20200268594-A1 OR US-20200129372- A1 OR US- 20210113427-A1 OR US-20210001148-A1 OR US-20190175396- A1 OR US- 20060052729-A1 OR US-20120253246-A1 OR US-20200261306- A1 OR US- 20210161759-A1 OR US-20110009783-A1 OR US-20220151865- A1 OR US- 20220339061-A1 OR US-20080234611-A1 OR US-20220168175- A1 OR US- 20210113421-A1 OR US-20100274162-A1 OR US-20220362097- A1 OR US- 20200230012-A1 OR US-20210077340-A1 OR US-20200009010- A1 OR US- 20210022951-A1 OR US-20220047412-A1 OR US-20150174387- A1 OR US- 20170304144-A1 OR US-20180031090-A1 OR US-20160192814- A1 OR US- 20200289364-A1 OR US-20240374468-A1 OR US-20200155410- A1 OR US- 20200276079-A1 OR US-20210307998-A1				
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		OR US-20210000683-A1 OR US-20030028134-A1 OR US-20210361524-A1 OR US-20220387252-A1 OR US-20210196562-A1 OR US-20190365598-A1 OR US-20200393026-A1 OR US-20200085684-A1 OR US-20210121360-A1 OR US-20200046601-A1 OR US-20250099325-A1 OR US-20230301867-A1 OR US-20030144615-A1 OR US-20030094356-A1 OR US-20020177795-A1 OR US-20010027280-A1 OR US-20050109137-A1 OR US-20060211961-A1 OR US-20050252011-A1 OR US-20050126018-A1 OR US-20070144310-A1 OR US-20100100119-A1 OR US-20100145242-A1 OR US-20100160841-A1 OR US-20130138023-A1 OR US-20140194790-A1 OR US-20150042254-A1 OR US-20150305969-A1 OR US-20160324717-A1 OR US-20170049278-A1 OR US-20170156974-A1 OR US-20180008512-A1 OR US-20180288160-A1 OR US-20180296433-A1 OR US-20180236572-A1 OR US-20190232478-A1 OR US-20190209424-A1 OR US-20210128402-A1 OR US-20220110825-A1 OR US-20220233397-A1 OR US-20040243031-A1 OR US-20030014079-A1 OR US-20170027798-A1).did. AND					
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L153	50	<p>PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US-2078159-A OR US-1660821-A OR US-1657765-A OR US-1545027-A OR US-1787211-A OR US-2441682-A OR US-1339179-A OR US-2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683-A1 OR US-7927259-B1 OR US-20030195443-A1).did. AND DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2).did. AND FTDB.dbnm.)</p> <p>(Artificial Intelligence) Similar to: 19/295,322 with 0 CPC Selections and 0 Text Selections</p> <p>Text: (US-20230248609-A1 OR US-20210244611-A1 OR US-11452670-B2 OR US-12329711-B2 OR US-20250295553-A1 OR US-20210059898-A1 OR CA-3150901-A1 OR KR-102283189-B1 OR EP-4027963-B1 OR US-10857064-B2 OR US-20200289365-A1 OR WO-2021050861-A1 OR AU-2020347255-A1 OR KR-20220062350-A OR US-20200261307-A1 OR AU-2019417557-B2 OR WO-2020227569-A1 OR AU-2020267581-A1 OR US-10959911-B2 OR JP-7536864-B2 OR JP-2025028111-A OR KR-20220005080-A OR CA-3139527-A1 OR US-20200261310-A1</p>	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2026/02/25 10:51 AM
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L154	50	<p>OR WO-2022236162-A1 OR CN-118766736-A OR JP-2022532147-A OR US-20200330321-A1 OR US-20210022955-A1 OR US-20200069510-A1 OR CN-114449987-A OR US-10702448-B2 OR US-20210169733-A1 OR US-20210154092-A1 OR US-11432994-B2 OR JP-2025069456-A OR CA-3125525-C OR US-10945915-B2 OR WO-2021113722-A1 OR US-20230277410-A1 OR WO-2023039549-A1 OR US-11857481-B2 OR US-11998504-B2 OR CN-111989076-A OR US-20240130927-A1 OR AU-2024235883-A1 OR WO-2024189510-A1 OR US-12290486-B2 OR US-20250099325-A1 OR US-20250025369-A1).did.</p> <p>(Artificial Intelligence) Similar to: 19/295,322 with 2 CPC Selections and 0 Text Selections</p> <p>Text: (US-20190307634-A1 OR JP-2019180804-A OR CN-110353960-A OR WO-2018221299-A1 OR CN-107519007-A OR TW-202348216-A OR CN-221691901-U OR CN-113908035-A OR CN-113908035-B OR EP-3260104-A1 OR US-20200129370-A1 OR JP-2020065798-A OR US-11696867-B2 OR CN-107126339-A OR CN-106038158-B OR JP-2016198371-A OR WO-2024063899-A1 OR US-20240099932-A1 OR CN-106038158-A OR KR-20110001031-U OR</p>	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2026/02/25 10:52 AM
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L155	98	WO-2024025116-A1 OR US-20170304145-A1 OR KR-20120050029-A OR CN-101790362-A OR WO-2009028305-A1 OR CN-111096888-B OR CN-101790362-B OR KR-20180001426-U OR KR-20190065630-A OR JP-2021101908-A OR KR-20200116789-A OR KR-102625146-B1 OR CN-115399587-A OR KR-102902412-B1 OR KR-102279971-B1 OR CN-109394508-A OR KR-20220150494-A OR AU-2024235883-A1 OR WO-2024189510-A1 OR CN-111096888-A OR CN-120788895-A OR EP-3747502-A1 OR CN-118217143-A OR CN-113018126-A OR CN-120882398-A OR KR-20240016126-A OR WO-2024025078-A1 OR KR-20240014970-A OR KR-102805521-B1 OR US-20170360651-A1).did. 153 154	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2026/02/25 10:52 AM
L156	389	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO,	OR	ON	ON	2026/02/25 01:48 PM

		US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US-	RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
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		D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US-					
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		2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US-					
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		7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2 OR US- 1955623-A OR US- 7634314-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675- A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US-				
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		20150005682-A1 OR US-20130261516-A1 OR US-20070270727- A1 OR US- 20060282025-A1 OR US-20210283005-A1 OR US-20120167322- A1 OR US- 20140024982-A1 OR US-20160256017-A1 OR US-20130253391- A1 OR US- 20110203824-A1 OR US-20040049137-A1 OR US-20050131461- A1 OR US- 20100137907-A1 OR US-20060116614-A1 OR US-20150119771- A1 OR US- 20090043231-A1 OR US-20060047315-A1 OR US-20030195443- A1 OR US- 20090270915-A1 OR US-20190254922-A1 OR US-20190254921- A1 OR US- 20060293711-A1 OR US-20190247271-A1 OR US-20140031866- A1 OR US- 20020107459-A1 OR US-20140142472-A1 OR US-20020082536- A1 OR US- 20040249320-A1 OR US-20050222524-A1 OR US-20160213554- A1 OR US- 20030149381-A1 OR US-20120046694-A1 OR US-20020183668- A1 OR US- 20050215929-A1 OR US-20180361137-A1 OR US-20020082532- A1 OR US- 20100222719-A1 OR US-20120253245-A1 OR US-20160074641- A1 OR US- 20160213558-A1 OR US-20140221887-A1 OR US-20090306561- A1 OR US- 20170079865-A1 OR US-20050187498-A1				
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		OR US-20120121309-A1 OR US-20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US-20150045702-A1 OR US-20200390644-A1 OR US-20170238686-A1 OR US-20190298036-A1 OR US-20210290430-A1 OR US-20150202114-A1 OR US-20030158505-A1 OR US-20160045081-A1 OR US-20190159961-A1 OR US-20210196563-A1 OR US-20100331745-A1 OR US-20210113365-A1 OR US-20120037184-A1 OR US-20200268594-A1 OR US-20200129372-A1 OR US-20210113427-A1 OR US-20210001148-A1 OR US-20190175396-A1 OR US-20060052729-A1 OR US-20120253246-A1 OR US-20200261306-A1 OR US-20210161759-A1 OR US-20110009783-A1 OR US-20220151865-A1 OR US-20220339061-A1 OR US-20080234611-A1 OR US-20220168175-A1 OR US-20210113421-A1 OR US-20100274162-A1 OR US-20220362097-A1 OR US-20200230012-A1 OR US-20210077340-A1 OR US-20200009010-A1 OR US-20210022951-A1 OR US-20220047412-A1 OR US-20150174387-A1 OR US-20170304144-A1 OR US-20180031090-A1 OR US-20160192814-A1 OR US-					
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		20200289364-A1 OR US-20240374468-A1 OR US-20200155410- A1 OR US- 20200276079-A1 OR US-20210307998-A1 OR US-20210000683- A1 OR US- 20030028134-A1 OR US-20210361524-A1 OR US-20220387252- A1 OR US- 20210196562-A1 OR US-20190365598-A1 OR US-20200393026- A1 OR US- 20200085684-A1 OR US-20210121360-A1 OR US-20200046601- A1 OR US- 20250099325-A1 OR US-20230301867-A1 OR US-20030144615- A1 OR US- 20030094356-A1 OR US-20020177795-A1 OR US-20010027280- A1 OR US- 20050109137-A1 OR US-20060211961-A1 OR US-20050252011- A1 OR US- 20050126018-A1 OR US-20070144310-A1 OR US-20100100119- A1 OR US- 20100145242-A1 OR US-20100160841-A1 OR US-20130138023- A1 OR US- 20140194790-A1 OR US-20150042254-A1 OR US-20150305969- A1 OR US- 20160324717-A1 OR US-20170049278-A1 OR US-20170156974- A1 OR US- 20180008512-A1 OR US-20180288160-A1 OR US-20180296433- A1 OR US- 20180236572-A1 OR US-20190232478-A1 OR US-20190209424- A1 OR US- 20210128402-A1 OR US-20220110825-A1					
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		OR US-20220233397-A1 OR US-20040243031-A1 OR US-20030014079-A1 OR US-20170027798-A1 OR US-20240099932-A1).did. AND PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US-2078159-A OR US-1660821-A OR US-1657765-A OR US-1545027-A OR US-1787211-A OR US-2441682-A OR US-1339179-A OR US-2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683-A1 OR US-7927259-B1 OR US-20030195443-A1).did. AND DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2 OR KR-102625146-B1 OR WO-2020227569-A1 OR WO-2021050861-A1).did. AND FTDB.dbnm.)					
L157	68	156 AND wersland.in.	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/02/25 01:48 PM
L158	18	157 AND transvers\$4	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB,	OR	ON	ON	2026/02/25 02:13 PM

L159	4	("20150005682").pn.	HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/02/25 03:28 PM
L160	389	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US-3993052-A OR US-12016818-B2 OR US-11744769-B2 OR US-11559462-B2 OR US-11452670-B2 OR US-11432994-B2 OR US-11357697-B2 OR US-10426691-B2 OR US-9889066-B2 OR US-6875186-B2 OR US-6599260-B2 OR US-5415621-A OR US-4841955-A OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/03/02 10:44 AM

		4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US-				
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		D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US-					
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		1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2 OR US- 1955623-A OR US- 7634314-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1				
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		OR US-20200069510-A1 OR US-20190350793-A1 OR US-20190017528-A1 OR US-20190015294-A1 OR US-20180263845-A1 OR US-20200214930-A1 OR US-20200261307-A1 OR US-20200261310-A1 OR US-20200352820-A1 OR US-20200352821-A1 OR US-20210022955-A1 OR US-20210059898-A1 OR US-20210104318-A1 OR US-20210169733-A1 OR US-20210244610-A1 OR US-20210244611-A1 OR US-20210401663-A1 OR US-20220125672-A1 OR US-20220211575-A1 OR US-20220257460-A1 OR US-20220296463-A1 OR US-20230248609-A1 OR US-20230277410-A1 OR US-20210244609-A1 OR US-20200085675-A1 OR US-20190175434-A1 OR US-20170304145-A1 OR US-20170042754-A1 OR US-20150005682-A1 OR US-20130261516-A1 OR US-20070270727-A1 OR US-20060282025-A1 OR US-20210283005-A1 OR US-20120167322-A1 OR US-20140024982-A1 OR US-20160256017-A1 OR US-20130253391-A1 OR US-20110203824-A1 OR US-20040049137-A1 OR US-20050131461-A1 OR US-20100137907-A1 OR US-20060116614-A1 OR US-20150119771-A1 OR US-					
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		20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US- 20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US- 20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US- 20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US- 20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US- 20030149381-A1 OR US-20120046694-A1 OR US-20020183668-A1 OR US- 20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US- 20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US- 20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US- 20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US- 20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US- 20150045702-A1 OR US-20200390644-A1 OR US-20170238686-A1 OR US- 20190298036-A1 OR US-20210290430-A1 OR US-20150202114-A1 OR US- 20030158505-A1 OR US-20160045081-A1 OR US-20190159961-A1 OR US- 20210196563-A1 OR US-20100331745-A1					
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L161	73	<p>US-20210361524-A1 OR US-20210000683-A1 OR US-7927259-B1 OR US-20030195443-A1).did. AND DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2 OR KR-102625146-B1 OR WO-2020227569-A1 OR WO-2021050861-A1).did. AND FTDB.dbnm.)</p> <p>160 AND (handle handgrip grip\$4 grasp\$4 handlebar hand) near8 (ergonomic\$6 angle angled angular incline inclined inclinat\$4 slop\$4 slant\$4 degree slant\$4)</p>	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/03/02 11:57 AM
L162	80	<p>160 AND (handle handgrip grip\$4 grasp\$4 handlebar hand) near8 (ergonomic\$6 angle angled angular incline inclined inclinat\$4 slop\$4 slant\$4 degree slant\$4 pistol pistol?type)</p>	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/03/02 11:59 AM
L163	106	<p>160 AND (handle handgrip grip\$4 grasp\$4 handlebar hand) near8 (ergonomic\$6 angle angled angular incline inclined inclinat\$4 slop\$4 slant\$4 degree slant\$4 pistol pistol?type forward</p>	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO,	OR	ON	ON	2026/03/02 12:03 PM

L164	113	backward perpendicular) 160 AND (handle handgrip grip\$4 grasp\$4 handlebar hand) near8 (ergonomic\$6 angle angled angular incline inclined inclinat\$4 slop\$4 slant\$4 degree slant\$4 pistol pistol?type forward backward perpendicular\$3)	NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2026/03/02 12:03 PM
L165	1	("20150005682").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2026/03/02 02:50 PM
L166	1	("9427371").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2026/03/03 09:08 AM
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L168	98	("2818854" "4230099" "4821355" "4850067" "4889109" "5018231" "5070865" "5125123" "5180386").pn. OR ("5279310").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2026/03/03 09:19 AM
L169	389	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA,	OR	ON	ON	2026/03/03 03:43 PM

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L172	2	("4730605" "20010027280").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2026/03/04 11:22 AM

PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.



UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION # 19/295,322	RECEIPT DATE / TIME 01/21/2026 04:13:19 PM Z ET	ATTORNEY DOCKET # 5015.039000L
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Title of Invention

PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY CONNECTED ATTACHMENT

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	7142	FILED BY	Rolonda Lee
PATENT CENTER #	74070229	FILING DATE	08/08/2025
CUSTOMER #	186370	FIRST NAMED INVENTOR	Jason WERSLAND
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Joseph Venier

Documents

TOTAL DOCUMENTS: 5

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2026-01-21-Transmittal- Form-5015-039000L.pdf	1	Transmittal Letter	215 KB
2026-01-21-Amendment- Reply-111-5015-039000L.pdf	17	-	2492 KB
2026-01-21-Amendment- Reply-111-5015-039000L- A....pdf (1-1)	1	Amendment/Request for Reconsideration-After Non- Final Rejection	105 KB
2026-01-21-Amendment- Reply-111-5015-039000L- SPEC.pdf (2-2)	1	Specification	95 KB
2026-01-21-Amendment- Reply-111-5015-039000L- CLM.pdf (3-7)	5	Claims	101 KB

2026-01-21-Amendment-Reply-111-5015-039000L-REM.pdf	(8-17)	10	Applicant Arguments/Remarks Made in an Amendment	2473 KB
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Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2026-01-21-Transmittal-Form-5015-039000L.pdf	87FA98AB6DE4D55308A14DC398C7FB2FAD9A4DD4698F4903D4A48052A9079839069FD9230FE7C8F03C774F5E0F2D7A9F64E046A545759588D7A1916AB4F1EA7E
2026-01-21-Amendment-Reply-111-5015-039000L.pdf	DDA69649177BC2BB2E734C3F33F9F5E0E12CAD978FB079C286D2386D27797377292CB900FC788A6A0DCA76F5AD260612D85E4C423E735A8DD72BAE6B8C0A20AD
2026-01-21-Amendment-Reply-111-5015-039000L-A....pdf	DF67A84675F6D4471FA556EB8D9E80886504AEACB0C103D12C56476C32149F9CDC6D3AB37747FF2B29C8651AAE69E00880D4B11E320B68627D5DBECB48FD7E08
2026-01-21-Amendment-Reply-111-5015-039000L-SPEC.pdf	91E2C7E64D6D5CCF1D713F9B55598E0B23EEEF5D5F4FEB87CB5C27BDEEF213B0DDDFEDF09B27323F0D8CBD3CFA186F3D75B691BAA5BC792040503CBEA4C744865
2026-01-21-Amendment-Reply-111-5015-039000L-CLM.pdf	6FF950AFDA3D66AEF03E5CBA311D11811DFF5E510F7D64D7E76F8C379C08879CCD2376BA06C96FF977E88BD457636D9BBD4730F38E5C0D61B7A4C003C02C1EA0
2026-01-21-Amendment-Reply-111-5015-039000L-REM.pdf	09DF8469F32630DEA7281F7053968E3A99ACD4F29C084ABE4A9E89BD0E8A250A8A5897053BA8AEB52A4A7546347F08FFA3DF5CF81B68241A4A68D7DB24D220A2

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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.

TRANSMITTAL FORM	Application Number	19/295,322	
	Filing Date	08/08/2025	
	First Named Inventor	Jason WERSLAND	
	Art Unit	3785	
	Examiner Name	Christopher E. MILLER	
(to be used for all correspondence after initial filing)		Attorney Docket Number	5015.039000L
Total Number of Pages in This Submission			

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):
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Firm Name	Sterne, Kessler, Goldstein & Fox P.L.L.C.	
Signature	/Joseph K. Venier/	
Printed name	Joseph K. Venier	
Date	January 20, 2026	Reg. No. 76,838

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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:		
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Jason WERSLAND

Confirmation No.: 7142

Applicant: Therabody, Inc.

Art Unit: 3785

Application No.: 19/295,322

Examiner: MILLER, Christopher E.

Filed: August 8, 2025

Atty. Docket: 5015.039000L

Title: **PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY CONNECTED
ATTACHMENT**

Amendment and Reply Under 37 C.F.R. § 1.111

Mail Stop Amendment

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

Commissioner:

In reply to the Office Action dated October 21, 2025, Applicant submits the following
Amendment and Remarks.

It is not believed that extensions of time are required beyond those that may otherwise be
provided for in documents accompanying this paper. However, if additional extensions of time are
necessary to prevent abandonment of this application, then such extensions of time are hereby
petitioned under 37 C.F.R. § 1.136(a), and any additional fees required to continue prosecution or
appeal of this application (including issue fee, fees for net addition of claims, or forwarding to
appeal) are hereby authorized to be charged to our Deposit Account No. 19-0036.

Amendments to the Specification

Please amend paragraph [0132] of the specification as follows:

[0132] As shown in FIGS. 23 and 23A, 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 101 via fasteners 46 that are secured to mounting members 48 in the housing (see FIG. 23A). 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. Output shaft 108 is configured to reciprocate on a reciprocation path that is transverse to first handle portion 143. The reciprocation path is on a dividing plane. An internal angle is defined between output shaft 108 and first handle portion 143. 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.

Atty. Dkt. No. 5015.039000L

Amendments to the Claims

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

1. (Canceled)
2. (Canceled)
3. (Currently Amended) A percussive massage system comprising:
 - a percussive device comprising:
 - a housing;
 - a handle portion that extends in a longitudinal direction;
 - a motor;
 - an eccentric shaft configured to travel in a circle in response to activation of the motor; [[and]]
 - a push rod assembly connected to the motor, wherein the push rod assembly includes an output shaft configured to reciprocate on a reciprocation path that is transverse to the longitudinal direction of the handle portion; and
 - a head portion comprising a portion of the housing that encloses the motor and a proximal end of the push rod assembly, wherein the head portion is located at a longitudinal end of the handle portion,
 - wherein:
 - the reciprocation path is on a dividing plane,
 - a proximal end of the push rod assembly is connected to the eccentric shaft at a location offset from the dividing plane in a first direction, and
 - the motor extends transverse to the longitudinal direction of the handle portion and away from the dividing plane in a second direction that is opposite the first direction; and
 - at least one attachment configured to be operatively connected to the percussive device.

4. (Previously Presented) The percussive massage system of claim 3, wherein an interior angle defined between the handle portion and the output shaft is obtuse.
5. (Previously Presented) The percussive massage system of claim 3, wherein the push rod assembly includes a push rod that includes a proximal end and a distal end, the proximal end of the push rod assembly includes the proximal end of the push rod, and the proximal end of the push rod is farther from the reciprocation path than the distal end of the push rod.
6. (Previously Presented) The percussive massage system of claim 3, including:
a switch for activating the motor, wherein the switch is located on a portion of the housing that faces an opposite direction from a distal end of the push rod assembly.
7. (Previously Presented) The percussive massage system of claim 3, wherein the device includes a switch and an electronic display that faces a same direction as the switch, wherein the switch is configured for activating the motor.
8. (Canceled)
9. (Previously Presented) The percussive massage system of claim 3, wherein the housing includes a first portion that extends away from the handle portion and encloses a portion of the push rod assembly and a second portion that extends away from the handle portion and the first portion.
10. (Previously Presented) The percussive massage system of claim 3, wherein the motor is located outside of the handle portion.
11. (Previously Presented) The percussive massage system of claim 3, wherein the attachment is configured to be connected to a distal end of the push rod assembly.

12. (Previously Presented) The percussive massage system of claim 11, wherein the distal end of the push rod assembly includes a distal end of the output shaft, and the attachment is connected to the distal end of the output shaft.
13. (Previously Presented) The percussive massage system of claim 11, wherein the attachment is removably connected to the distal end of the push rod assembly.
14. (Currently Amended) A percussive massage device comprising:
 - a handle portion, a motor, a housing, and an output assembly, wherein the handle portion comprises a portion of the housing, and wherein the output assembly includes:
 - an eccentric shaft, wherein the motor is configured to apply torque about a motor axis to the eccentric shaft; and
 - a push rod assembly connected to the motor, wherein the push rod assembly includes an output shaft configured to reciprocate on a reciprocation path that is transverse to the handle portion;
 - wherein:
 - a dividing plane is defined perpendicular to the motor axis, and the reciprocation path is on the dividing plane,
 - a proximal end of the push rod assembly is connected to the eccentric shaft at a connection point that travels on a circular path when the motor is active,
 - the motor includes an end positioned on an opposite side of the dividing plane from the circular path of the connection point, and
 - an interior angle defined between the handle portion and the output shaft is obtuse.
15. (Previously Presented) The percussive massage device of claim 14, including a housing that includes a first portion that extends away from the handle portion and encloses a portion of the push rod assembly, and the housing includes a second portion that extends away from the handle portion and the first portion.

16. (Currently Amended) The percussive massage ~~device~~system of claim 14, including a battery housed in the handle portion.
17. (Previously Presented) The percussive massage device of claim 14, wherein the percussive massage device includes a bearing between the eccentric shaft and the push rod assembly, the output shaft is centered on the reciprocation path, and the motor includes an end positioned on an opposite side of the reciprocation path from the bearing.
18. (Currently Amended) A percussive massage device comprising:
 - a handle portion, a motor, and an output assembly, wherein the handle portion defines a handle portion axis, and wherein the output assembly includes:
 - an eccentric shaft, wherein the motor is configured to apply torque to the eccentric shaft; and
 - a push rod assembly connected to the motor, wherein the push rod assembly includes an output shaft configured to reciprocate along a reciprocation axis that is transverse to the handle portion axis and intersects the handle portion axis;
 - wherein:
 - a proximal end of the push rod assembly is connected to the eccentric shaft at a connection point that travels on a circular path when the motor is active,
 - an end of the motor is on an opposite side of the reciprocation axis from the circular path of the connection point, and
 - an interior angle defined between the handle portion and the output shaft is obtuse.
19. (Previously Presented) The percussive massage device of claim 18, wherein:
 - the push rod assembly includes a push rod, and the push rod includes a proximal end and a distal end, and
 - wherein the proximal end of the push rod is connected to the eccentric shaft at the connection point, and the distal end of the push rod is nearer to the reciprocation axis than the proximal end of the push rod.

20. (Canceled)
21. (Previously Presented) The percussive massage device of claim 18, wherein the reciprocation axis is on a dividing plane, and the circular path of the connection point is on an opposite side of the dividing plane from the end of the motor.
22. (Previously Presented) The percussive massage device of claim 18, including a housing that includes a first portion that extends away from the handle portion and encloses a portion of the push rod assembly, and the housing includes a second portion that extends away from the handle portion and the first portion.
23. (New) The percussive massage device of claim 18, wherein the output shaft is centered on the reciprocation axis.
24. (New) The percussive massage device of claim 3, wherein the handle portion is generally straight.

Remarks

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 3–7, 9–19, and 21–24 are pending in the application, with claims 3, 14, and 18 being the independent claims. Claims 3, 14, 16, and 18 are amended. Claim 8 is canceled without prejudice to or disclaimer of the subject matter therein. New claim 23 is added. Paragraph [0032] of the specification is also amended. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicant respectfully requests that the Office reconsider all outstanding objections and rejections and that they be withdrawn.

Objection to the Specification

The specification is objected to as lacking antecedent basis for the terms “transverse,” “dividing plane,” and “interior angle.”

Paragraph [0132] of the specification is amended to include the terms “transverse,” “dividing plane,” and “interior angle.” These terms therefore have antecedent basis in the specification.

This amendment introduces no new matter. The features described in the amended portion of paragraph [0132] are all supported at least in the drawings. For example, a skilled person would understand at least FIGS. 18, 19, 21, and 22A of the application as originally filed as showing the subject matter of the amended portion of paragraph [0132].

Accordingly, Applicant requests that the Office withdraw the objection to the specification.

Objection to the Claims

Claim 16 is objected to as informal for referring to “the percussive massage system” in the preamble, whereas claim 14, from which claim 16 depends, refers to “a percussive massage device” in the preamble.

Claim 16 is amended to refer to “the percussive massage device” in the preamble. Accordingly, Applicant respectfully requests that the objection to claim 16 be withdrawn.

Claim Interpretation

The Office Action includes a section titled “Claim Interpretation” that discusses the term “handle portion.” (Office Action, pg. 3). In that section, the Office alleges that some of the claims’ references to the position or orientation of other elements relative to a handle portion “only need to apply to *respective segments* of the handle portion, rather than *the entire* handle portion.” (*Id.* (emphasis in original)). Referring to the drawings of the present application, the Office further alleges “Applicant’s Figure 1 has one segment of a handle portion that is transverse to the output shaft (the segment along axis A3, Fig. 1) and a *different segment* that defines an obtuse angle between the handle portion and the output shaft (the segment along axis A1, Fig. 1).” (*Id.*, (emphasis in original)). The Office concludes “the prior art may similarly have a ‘handle portion’ made of different segments and even if a part of a segment is transverse and another part is obtuse, this will read on the broadest reasonable interpretation of the claim language.” (*Id.*).

Applicant respectfully disagrees with the Office’s interpretation of the specification and drawings as it relates to the term “handle portion.” The Office characterizes certain features shown in the drawings as multiple “segments” of a single handle portion, but the specification refers to each of the so-called “segments” as a distinct handle portion. For example, the Office alleges FIG. 1 shows a “segment along axis A1” and a “segment along axis A3” (Office Action, pg. 3), but the specification states “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.” (Specification, ¶ [0075]).

In the broadest reasonable interpretation of a claim, “the meaning given to a claim term... must be consistent with the use of the claim term in the specification and drawings.” M.P.E.P. § 2111. Any rejection resting on an interpretation of claim language that is incompatible with the specification’s description of each of the three handle portion axes as being defined by a different handle portion would therefore be improper.

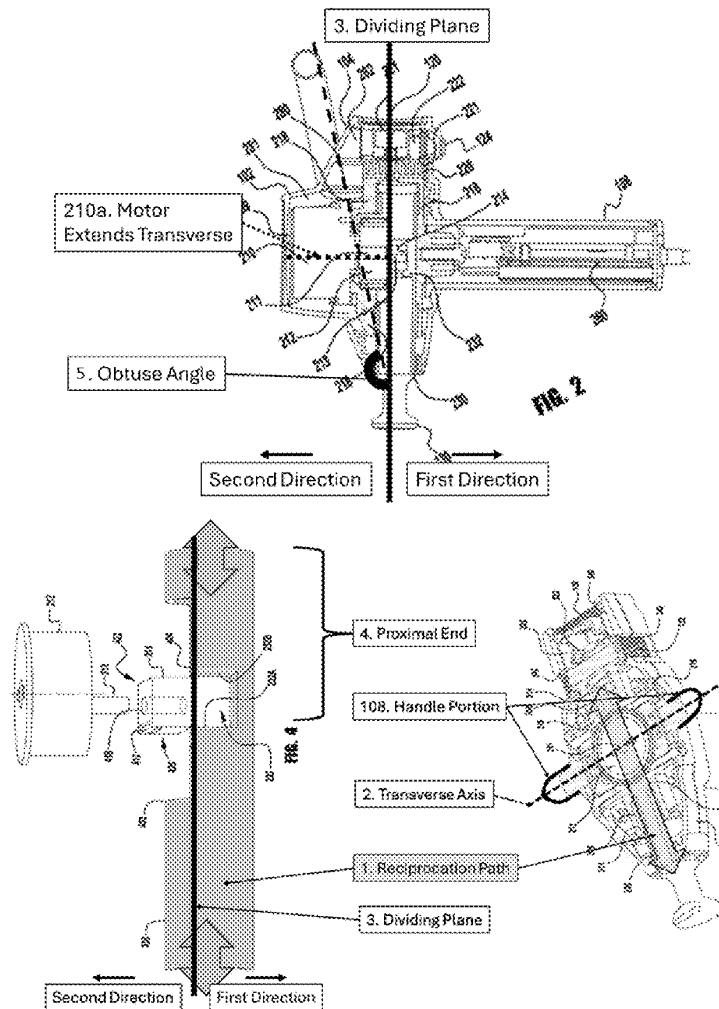
Rejection under 35 U.S.C. § 102

Claims 3, 4, 9–15, 18, 21, and 22 are rejected under 35 U.S.C. § 102(a)(1) as allegedly being anticipated by U.S. Patent Application Publication No. 2015/0005682 to Danby et al. (“Danby”).

A. Claim 3 and claims depending from claim 3

1. Summary of rejection

With respect to claim 3, the Office compares Danby's "main housing 102," "optional handle 108," "motor 210," and "crank pin 213" to the claimed housing, handle portion, motor, and eccentric shaft, respectively. (Office Action, pg. 6). The Office compares Danby's "flywheel 212, crank pin 213, crank bearing 214, [and] piston 230" collectively to the claimed push rod assembly. (*Id.*, pg. 6–7). The Office further alleges Danby discloses the claimed relationships between these features, labeling further claim terms including "proximal end," "dividing plane," "first direction," and "second direction" on annotated copies of Danby's figures 2, 3, and 4. (*Id.*, pg. 10–11).



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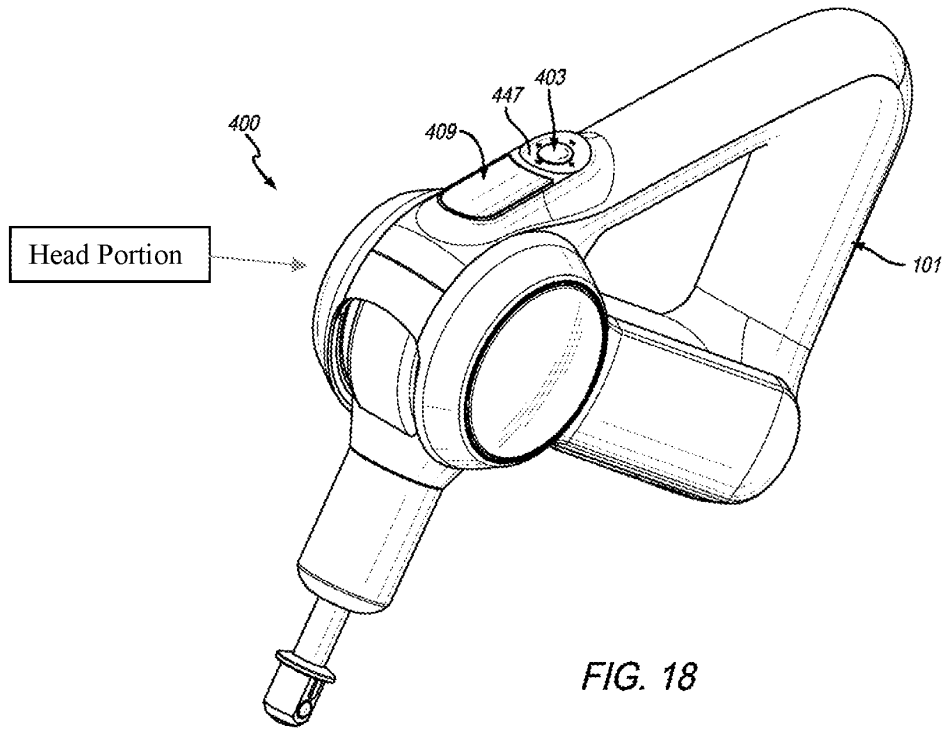
(Danby's FIGS. 2–4 as annotated by the Office, Office Action, pg. 10–11)

The rejection is based on an interpretation of claim 3 explained in an earlier section of the Office Action titled "Claim Interpretation" (Office Action, pg. 3) and discussed above.

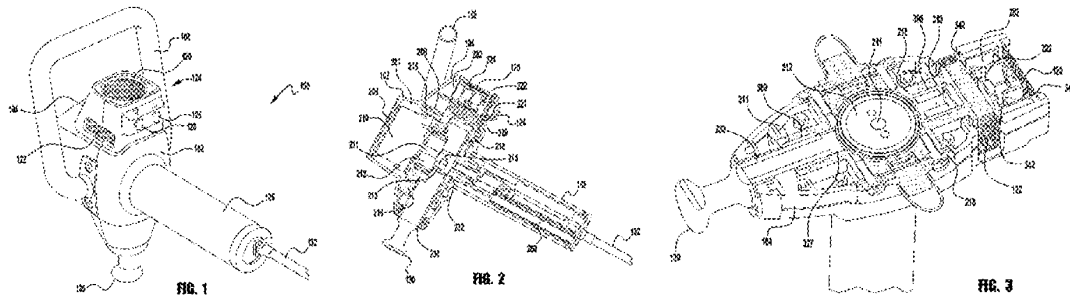
2. Amendment and Applicant's response

Without acquiescing to the rejection and solely to expedite prosecution by further distinguishing Danby, claim 3 is amended to recite "a handle portion that extends in a longitudinal direction," that the "reciprocation path... is transverse to the longitudinal direction of the handle portion," that "the motor extends transverse to the longitudinal direction of the handle portion," and that the percussive device comprises "a head portion comprising a portion of the housing that encloses the motor and a proximal end of the push rod assembly, wherein the head portion is located at a longitudinal end of the handle portion."

Danby does not anticipate amended claim 3 at least because Danby does not disclose a "head portion" as claimed located at a longitudinal end of the alleged handle portion. The part of Danby's main housing 102 that contains the features the Office compares to the claimed motor and proximal end of the reciprocation assembly is not located at a "longitudinal end" of the optional handle 108. Rather, that part of the main housing 102 is received between two inward facing prongs of the optional handle 108.



(Application, FIG. 18 (annotated, showing a head portion at a longitudinal end of a handle portion))



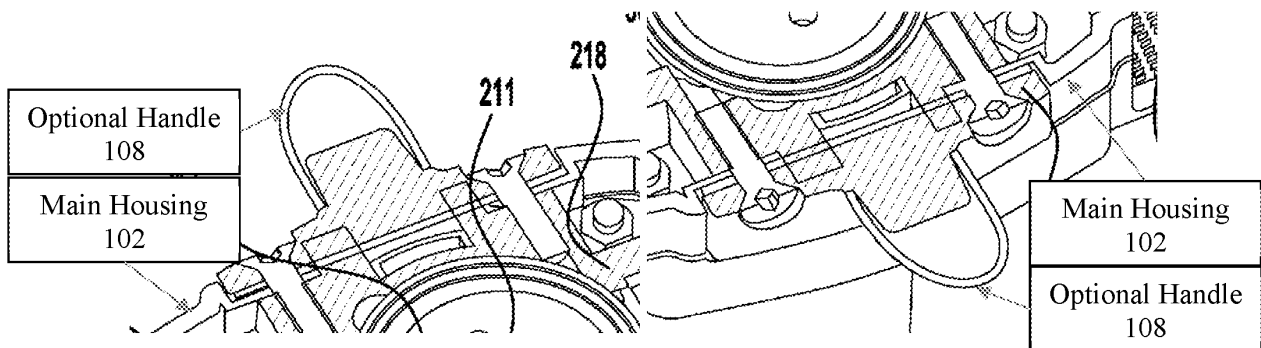
(Danby, FIGS. 1–3 (showing the portion of main housing 102 that contains the motor 210, flywheel 212, crank pin 213, and crank bearing 214 to be between two inward facing prongs of the optional handle 108))

Danby does not disclose each and every feature of amended claim 3 for at least that reason. Accordingly, Applicant requests that the Office withdraw the § 102 rejection of claim 3 and its dependent claims 4 and 9–14.

B. Claims 14 and 15

The rejection of claim 14 rests on a similar rejection of Danby as does the rejection of claim 3. (Office Action, pg. 12–14).

Without acquiescing to the rejection and solely to expedite prosecution by further distinguishing Danby, claim 14 is amended to recite “wherein the handle portion comprises a portion of the housing.” Danby’s optional handle 108 does not comprise a portion of the main housing 102.



(Danby, FIG. 3 (cropped and annotated, showing the ends of the optional handle 108 to be outside the main housing 102, without either forming part of the other))

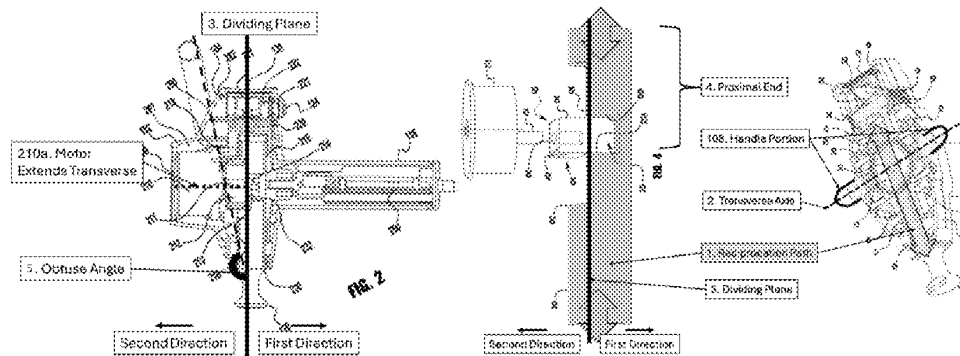
Danby does not disclose each and every feature of claim 14 for at least that reason.

Accordingly, Applicant requests that the Office withdraw the § 102 rejection of claim 14 and its dependent claim 15.

C. Claim 18 and claims depending from claim 18

The rejection of claim 18 rests on a similar rejection of Danby as do the rejections of claim 3 and claim 14. (Office Action, pg. 14–16).

Without acquiescing to the rejection and solely to expedite prosecution by further distinguishing Danby, claim 18 is amended to recite “wherein the handle portion defines a handle portion axis” and “wherein the push rod assembly includes an output shaft configured to reciprocate along a reciprocation axis that... intersects the handle portion axis.” The line the Office calls a “reciprocation axis” (the same line used to identify a dividing plane for the purposes of rejecting other claims, *see* Office Action, pg. 15, discussing the annotated copies of Danby’s drawings reproduced above) does not intersect an axis defined by the optional handle 108.



(Danby's FIGS. 2–4 as annotated by the Office, Office Action, pg. 10–11)

The optional handle 108 has two mutually parallel segments spaced to either side of Danby's alleged push rod assembly in a direction perpendicular to their length. The optional handle 108 also has a third segment that is perpendicular to the first two and is also spaced from the alleged push rod assembly in a direction perpendicular to its length. None of these segments defines an axis that is intersected by the alleged reciprocation axis, nor does the optional handle 108 as a whole. Danby does not disclose each and every feature of claim 18 for at least these reasons.

Accordingly, Applicant requests that the Office withdraw the § 102 rejection of claim 18 and its dependent claims 21 and 22.

Rejections under 35 U.S.C. § 103

Claims 5, 19, and 20 are rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Danby in view of U.S. Patent No. 4,730,605 to Noble et al. ("Noble").

Claims 6 and 7 are rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Danby in view of U.S. Patent Application Publication No. 2019/0254922 to Marton et al. ("Marton").

Claims 8 and 16 are rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Danby in view of U.S. Patent Application Publication No. 2017/0304145 to Pepe ("Pepe").

Claim 17 is rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Danby in view of U.S. Patent Application Publication No. 2001/0027280 to Huang ("Huang").

Claims 5–7, 16, 17, 19, and 20 are all dependent. Noble, Marton, Pepe, and Huang do not cure the deficiencies of Danby with respect to the independent claims. Accordingly, Applicant

requests that the Office withdraw the § 103 rejection of claims 5–7, 16, 17, 19, and 20. Claims 8 and 20 are canceled, so the rejection thereof is moot.

Double Patenting

Claims 3–9 are rejected on the grounds of non-statutory obviousness type double patenting as allegedly being unpatentable over claims 1, 5, 7, 8, 10, and 11 of U.S. Patent No. 12,396,919.

Claims 10–13 are rejected on the grounds of non-statutory obviousness type double patenting as allegedly being unpatentable over claim 1 of U.S. Patent No. 12,396,919 in view of Danby.

Claims 14, 15, and 18–22 are rejected on the grounds of non-statutory obviousness type double patenting as allegedly being unpatentable over claim 15 of U.S. Patent No. 12,396,919 in view of Danby.

Claim 16 is rejected on the grounds of non-statutory obviousness type double patenting as allegedly being unpatentable over claim 15 of U.S. Patent No. 12,396,919 in view of Danby, as applied to claim 14 above, and further in view of Pepe.

Claim 17 is rejected on the grounds of non-statutory obviousness type double patenting as allegedly being unpatentable over claim 15 of U.S. Patent No. 12,396,919 in view of Danby, as applied to claim 14 above, and further in view of Huang.

Claims 3, 4, 6, 7, and 9–13 are rejected on the grounds of non-statutory obviousness type double patenting as allegedly being unpatentable over claims 1, 8, and 9 of U.S. Patent No. 12,064,387 in view of Danby.

Claim 5 is rejected on the grounds of non-statutory obviousness type double patenting as allegedly being unpatentable over claim 1 of U.S. Patent No. 12,064,387 in view of Danby, as applied to claim 3 above, and further in view of Noble.

Claim 8 is rejected on the grounds of non-statutory obviousness type double patenting as allegedly being unpatentable over claim 1 of U.S. Patent No. 12,064,387 in view of Danby, as applied to claim 3 above, and further in view of Pepe.

Claims 8 and 20 are canceled, so the rejection thereof is moot.

Applicant respectfully requests this double patenting rejection be held in abeyance until all claims are otherwise deemed allowable. At that time, Applicant will consider filing a terminal disclaimer to overcome an obviousness-type double patenting rejection.

Double Patenting

Claims 23 and 24 are new. Claim 24 depends from claim 3. Claim 23 depends from claim 18 and is therefore novel and non-obvious for at least the same reasons.

Conclusion

All of the stated grounds of objection and rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Office reconsider all presently outstanding objections and rejections and that they be withdrawn. Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Office believes, for any reason, that personal communication will expedite prosecution of this application, the Office is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

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

/Joseph K. Venier/

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

Date: January 20, 2026

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

25753919.1

Atty. Dkt. No. 5015.039000L

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 19/295,322		Filing Date 08/08/2025		☐ To be Mailed	
ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO									
APPLICATION AS FILED - PART I									
		(Column 1)	(Column 2)						
FOR		NUMBER FILED	NUMBER EXTRA		RATE (\$)		FEE (\$)		
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A		N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (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(j))		minus 20 =	*		x \$80 =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*		x \$240 =				
☐ 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	01/21/2026	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA		RATE (\$)		ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0		x \$80 =		0
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0		x \$240 =		0
	☐ Application Size Fee (37 CFR 1.16(s))								
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								
							TOTAL ADD'L FEE		0
AMENDMENT		(Column 1)	(Column 2)		(Column 3)				
		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.							ADMIN		
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".							/KREIGHTON LAMBERT SR/		
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".									
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.									

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

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



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

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY DOCKET NO	TOT CLAIMS	IND CLAIMS
19/295,322	08/08/2025	3785	902	5015.039000L	2	2

CONFIRMATION NO. 7142

CORRECTED FILING RECEIPT



0000000098551454

186370

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

(Therabody)

1101 K Street, NW

10th Floor

WASHINGTON, DC 20005

Date Mailed: 12/10/2025

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

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Inventor(s)

Jason WERSLAND, Manhattan Beach, CA;
Benjamin NAZARIAN, Beverly Hills, CA;
Jaime SANCHEZ SOLANA, Los Angeles, CA;
Eduardo MERINO, Beverly Hills, CA;
Richard TANG, Shenzhen, CHINA;

Applicant(s)

Therabody, Inc., Los Angeles, CA;

Power of Attorney: The patent practitioners associated with Customer Number 186370

Domestic Applications for which benefit is claimed

This application is a CON of 18/809,073 08/19/2024 PAT 12,396,919
which is a CON of 18/162,499 01/31/2023 PAT 12,064,387
which is a CON of 17/244,278 04/29/2021 PAT 11,564,860
and is a CON of 17/739,630 05/09/2022 PAT 11,890,253
and said 17/244,278 04/29/2021 is a CIP of 17/018,099 09/11/2020 PAT 11,357,697
which is a CIP of 16/869,402 05/07/2020 PAT 10,857,064
which is a CIP of 16/796,143 02/20/2020 PAT 10,940,081
which claims benefit of 62/844,424 05/07/2019
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page 1 of 4

and said 17/244,278 04/29/2021 claims benefit of 63/133,951 01/05/2021
and claims benefit of 63/017,472 04/29/2020
and said 17/739,630 05/09/2022 is a CIP of 17/244,239 04/29/2021 PAT 11,452,670
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and claims benefit of 63/017,472 04/29/2020
and said 17/739,630 05/09/2022 is a CIP of 17/705,300 03/26/2022 PAT 11,730,668

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

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

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

If Required, Foreign Filing License Granted: 08/21/2025

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 19/295,322**

Projected Publication Date: Not Applicable.

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY CONNECTED ATTACHMENT

Preliminary Class

601

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ

page 2 of 4

in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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

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

NOT GRANTED

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

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
19/295,322	08/08/2025		902	5015.039000L	2	2

CONFIRMATION NO. 7142

FILING RECEIPT



000000093358282

186370

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

(Therabody)

1101 K Street, NW

10th Floor

WASHINGTON, DC 20005

Date Mailed: 08/28/2025

Receipt is acknowledged of this non-provisional utility patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF FIRST INVENTOR, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection.

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Inventor(s)

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Eduardo MERINO, Beverly Hills, CA;
Richard TANG, Shenzhen, CHINA;

Applicant(s)

Therabody, Inc., Los Angeles, CA;

Power of Attorney: The patent practitioners associated with Customer Number 186370

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(*) Data provided by applicant is not consistent with PTO records.

and said 17/244,239 04/29/2021 claims benefit of 63/017,472 04/29/2020

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If Required, Foreign Filing License Granted: 08/21/2025

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 19/295,322**

Projected Publication Date: 11/27/2025

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY CONNECTED ATTACHMENT

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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NOT GRANTED

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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	5015.039000L
	Application Number	<u>19/295,322</u>
Title of Invention	PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY CONNECTED ATTACHMENT	
<p>The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76.</p> <p>This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.</p>		

Domestic Benefit/National Stage Information:

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

When referring to the current application, please leave the application number blank.

Application Number	Continuity Type	Prior Application Status	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
<u>19/295,322</u>	Continuation of	Pending Patented	18/809,073	2024-08-19	<u>12,396,919</u>	<u>2025-08-26</u>
18/809,073	Continuation of	Patented	18/162,499	2023-01-31	12,064,387	2024-08-20
18/162,499	Continuation of	Patented	17/244,278	2021-04-29	11,564,860	2023-01-31
18/162,499	Continuation of	Patented	17/739,630	2022-05-09	11,890,253	2024-02-06
17/244,278	Continuation in part of	Patented	17/018,099	2020-09-11	11,357,697	2022-06-14
17/018,099	Continuation in part of	Patented	16/869,402	2020-05-07	10,857,064	2020-12-08
16/869,402	Continuation in part of	Patented	16/796,143	2020-02-02	10940081	2021-03-09
16/796,143	claims benefit of provisional	Expired	62/844,424	2019-05-07		
16/796,143	claims benefit of provisional	Expired	62/899,098	2019-09-11		
16/796,143	claims benefit of provisional	Expired	62/912,392	2019-10-08		

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	5015.039000L			
		Application Number	19/295,322			
Title of Invention	PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY CONNECTED ATTACHMENT					

16/869,402	Continuation in part of	Patented	16/675,772	2019-11-06	10,702,448	2020-07-07
16/675,772	claims benefit of provisional	Expired	62/785,151	2018-12-26		
17/244,278	claims benefit of provisional	Expired	63/133,951	2021-01-05		
17/244,278	claims benefit of provisional	Expired	63/017,472	2020-04-29		
17/739,630	Continuation in part of	Patented	17/244,239	2021-04-29	11,452,670	2022-09-27
17/244,239	Continuation in part of	Patented	17/018,099	2020-09-11	11,357,697	2022-06-14
17/244,239	claims benefit of provisional	Expired	63/017,472	2020-04-29		
17/739,630	Continuation in part of	Patented	17/705,300	2022-03-26	11,730,668	2023-08-22
17/244,239	claims benefit of provisional	Expired	63/133,951	2021-01-05		

Signature:

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

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

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

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	5015.039000L
	Application Number	19/295,322
Title of Invention	PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY CONNECTED ATTACHMENT	

Signature	/Joseph K. Venier/		Date (YYYY-MM-DD)	2025-12-08
First Name	Joseph	Last Name	Venier	Registration Number 76,838

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Jason WERSLAND

Confirmation No.: 7142

Applicant: Therabody, Inc.

Art Unit: *To Be Assigned*

Application No.: 19/295,322

Examiner: *To Be Assigned*

Filing Date: August 8, 2025

Atty. Docket: 5015.039000L

Title: **PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY CONNECTED ATTACHMENT**

Request for Corrected Official Filing Receipt

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

Mail Stop Missing Parts

Commissioner:

Applicant hereby requests that a corrected Official Filing Receipt be issued and sent to the undersigned representative. Specifically, the following corrections to the Official Filing Receipt are requested:

In the Domestic Applications for which benefit is claimed section, please delete:

“This application is a CON of 18/809,073 08/19/2024 PAT 12,396,919
which is a CON of 18/162,499 01/31/2023 PAT 12,064,387
which is a CON of 17/244,278 04/29/2021 PAT 11,564,860
and is a CON of 17/739,630 05/09/2022 PAT 11,890,253
and said 17/244,278 04/29/2021 is a CIP of 17/018,099 09/11/2020 PAT 11,357,697
which is a CIP of 16/869,402 05/07/2020 PAT 10,857,064
which is a CIP of 16/796,143 02/20/2020 PAT 10,940,081
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
and said 16/869,402 05/07/2020 is a CIP of 16/675,772 11/06/2019 PAT 10,702,448
which claims benefit of 62/785, 151 12/26/2018
and said 17/244,278 04/29/2021 claims benefit of 63/133,951 01/05/2021

Atty. Dkt. No. 5015.039000L

and claims benefit of 63/017,472 04/29/2020
and said 17/739,630 05/09/2022 is a CIP of 17/244,239 04/29/2021 PAT 11,452,670
which is a CIP of 17/018,099 09/11/2020 PAT 11,357,697
and claims benefit of 63/017,472 04/29/2020
and said 17/739,630 05/09/2022 is a CIP of 17/705,300 03/26/2022 PAT 11,730,668 and
said 17/244,239 04/29/2021 claims benefit of 63/133,951 01/05/2021”.

In the Domestic Applications for which benefit is claimed section, please add:

--This application is a CON of 18/809,073 08/19/2024 PAT 12,396,919
which is a CON of 18/162,499 01/31/2023 PAT 12,064,387
which is a CON of 17/244,278 04/29/2021 PAT 11,564,860
and is a CON of 17/739,630 05/09/2022 PAT 11,890,253
and said 17/244,278 04/29/2021 is a CIP of 17/018,099 09/11/2020 PAT 11,357,697
which is a CIP of 16/869,402 05/07/2020 PAT 10,857,064
which is a CIP of 16/796,143 02/20/2020 PAT 10,940,081
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
and said 16/869,402 05/07/2020 is a CIP of 16/675,772 11/06/2019 PAT 10,702,448
which claims benefit of 62/785, 151 12/26/2018
and said 17/244,278 04/29/2021 claims benefit of 63/133,951 01/05/2021
and claims benefit of 63/017,472 04/29/2020
and said 17/739,630 05/09/2022 is a CIP of 17/244,239 04/29/2021 PAT 11,452,670
which is a CIP of 17/018,099 09/11/2020 PAT 11,357,697
and said 17/739,630 05/09/2022 is a CIP of 17/705,300 03/26/2022 PAT 11,730,668
and said 17/244,239 04/29/2021 claims benefit of 63/017,472 04/29/2020 --.

In support of the above request, a marked-up copy of the instant Official Filing Receipt is enclosed to show the corrections and a corrected Application Data Sheet. It is requested that a corrected Official Filing Receipt be issued, and sent to the undersigned at the earliest possible time.

Atty. Dkt. No. 5015.039000L

Jason WERSLAND
Application No. 19/295,322

Applicant notes the present request includes two changes to the domestic benefit claim section of the Official filing receipt:

1) Deletion of the benefit claim from App. No. 17/244,239 to App. No. 63/133,951. The benefit claim from App. No. 17/244,278 to App. No. 63/133,951 is not changed.

2) Correction of an apparent Patent Office error relating to the continuity between App. Nos. 17/739,630, 17/244,239, and 63/017,472.

The following is an image of a portion of page 5 out of 11 of the original ADS filed with the present application:

Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
17/739630	Continuation in part of	17/244239	2021-04-29	11452670	2022-09-27

The following is an image of a portion of page 6 out of 11 of the original ADS filed with the present application:

Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
17/244239	Claims benefit of provisional	63/017472	2020-04-29

Thus, the original ADS filed with the present application indicates that App. No. 17/739,630 is a CIP of App. No. 17/244,239, and that App. No. 17/244,239 in turn claims the benefit of App. No. 63/017,472.

The following is an image of a portion of the Official filing receipt:
and said 17/739,630 05/09/2022 is a CIP of 17/244,239 04/29/2021 PAT 11,452,670
which is a CIP of 17/018,099 09/11/2020 PAT 11,357,697
and claims benefit of 63/017,472 04/29/2020

The foregoing portion of the Official filing receipt appears to suggest that App. No. 17/739,630 directly claims the benefit of App. No. 63/017,472, which is not consistent with the original ADS.

Applicant requests the deletion of “and claims benefit of 63/017,472 04/29/2020” and the addition of “and said 17/244,239 04/29/2021 claims benefit of 63/017,472 04/29/2020” to clearly indicate that App. No. 17/244,239 claims the benefit of App. No. 63/017,472.

Atty. Dkt. No. 5015.039000L

Jason WERSLAND
Application No. 19/295,322

Respectfully submitted,

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

/Joseph K. Venier/

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

Date: December 8, 2025

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

25497196.1

Atty. Dkt. No. 5015.039000L

TRANSMITTAL FORM (to be used for all correspondence after initial filing)	Application Number	19/295,322
	Filing Date	08/08/2025
	First Named Inventor	Jason WERSLAND
	Art Unit	3785
	Examiner Name	Christopher E. MILLER
Total Number of Pages in This Submission	Attorney Docket Number	5015.039000L

ENCLOSURES (Check all that apply)		
☐ Fee Transmittal Form	☐ Drawing(s)	☐ After Allowance Communication to TC
☐ Fee Attached	☐ Licensing-related Papers	☐ Appeal Communication to Board of Appeals and Interferences
☐ Amendment/Reply	☐ Petition	☐ Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
☐ After Final	☐ Petition to Convert to a Provisional Application	☐ Proprietary Information
☐ Affidavits/declaration(s)	☐ Power of Attorney, Revocation	☐ Status Letter
☐ Extension of Time Request	☐ Change of Correspondence Address	☒ Other Enclosure(s) (please identify below):
☐ Express Abandonment Request	☐ Terminal Disclaimer	Corrected Application Data Sheet;
☐ Information Disclosure Statement	☐ Request for Refund	Request for Corrected Official Filing Receipt;
☐ Certified Copy of Priority Document(s)	☐ CD, Number of CD(s) _____	Corrected Official Filing Receipt.
☐ Reply to Missing Parts/Incomplete Application	☐ Landscape Table on CD	
☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53	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	December 8, 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:			
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Typed or printed name		Date	

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION # 19/295,322	RECEIPT DATE / TIME 12/08/2025 04:51:35 PM Z ET	ATTORNEY DOCKET # 5015.039000L
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Title of Invention

PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY CONNECTED ATTACHMENT

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	7142	FILED BY	Rolonda Lee
PATENT CENTER #	73491771	FILING DATE	08/08/2025
CUSTOMER #	186370	FIRST NAMED INVENTOR	Jason WERSLAND
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Joseph Venier

Documents

TOTAL DOCUMENTS: 4

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
2025-12-08-Transmittal- Form-5015-039000L.pdf	1	Transmittal Letter	216 KB
2025-12-08-ADS-Corrected- 5015-039000L.pdf	3	Application Data Sheet	111 KB
Warning: This is not a USPTO supplied ADS fillable form. Data in the form cannot be automatically loaded to other USPTO systems.			
2025-12-08-Request-OFR- 5015-039000L.pdf	4	Request for Corrected Filing Receipt	433 KB
2025-12-08-OFR-Corrected- 5015-039000L.pdf	4	Request for Corrected Filing Receipt	44 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
2025-12-08-Transmittal-Form-5015-039000L.pdf	5426CABCE12053ECD1520FA5441C77BFD6F84D64D3492015 DF051A431B3903FB03E1CF263147CB93A91F5E543A3A76333 71C1F37CCB2FFD2A04B460733A38687
2025-12-08-ADS-Corrected-5015-039000L.pdf	674356B03CC37F1A52621410003D07CAB0C952CAA18BC1698 1B96814A28D19EEC50BEEA073FC14B2B4F001263B0A779AB2 116F2186C22B3DE6FE5293CC042DB4
2025-12-08-Request-OFR-5015-039000L.pdf	703C96A7B428B6266DE5D96DB68A554D5CE42A8EC8144515 B9F1B2467C7DD64FA0594DD52AB1C33911A5BE847B6F7BD8 109D9814F770396185E2218B87E9D207
2025-12-08-OFR-Corrected-5015-039000L.pdf	70801D695FF2F12031E868C50B342C42553672B7D663120736 BB266A8AB2ADDE07188BEC68FCD4E3ECFFBC5F557D91B49 464FB250167DEF545D26DD6C9EC7824

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.



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
19/295,322	08/08/2025	Jason WERSLAND	5015.039000L

CONFIRMATION NO. 7142

186370

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

(Therabody)

1101 K Street, NW

10th Floor

WASHINGTON, DC 20005

PUBLICATION NOTICE



OC000000098064077

Date Mailed: 11/28/2025

Title:PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY CONNECTED ATTACHMENT

Publication No.US-2025-0360048-A1

Publication Date:11/27/2025

NOTICE OF PUBLICATION OF APPLICATION

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

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

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Public Records Division. The Public Records Division can be reached by telephone at (571) 272-3150 or (800) 972-6382, by facsimile at (571) 273-3250, by mail addressed to the United States Patent and Trademark Office, Public Records Division, Alexandria, VA 22313-1450 or via the Internet.

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

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



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
19/295,322	08/08/2025	Jason WERSLAND	5015.039000L	7142

186370	7590	10/21/2025
STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C. (Therabody) 1101 K Street, NW 10th Floor WASHINGTON, DC 20005		

EXAMINER	
MILLER, CHRISTOPHER E	

ART UNIT	PAPER NUMBER
3785	

NOTIFICATION DATE	DELIVERY MODE
10/21/2025	ELECTRONIC

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

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

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

e-office@sternekessler.com

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.

Status of Claims

2. This Action is in response to the amendment filed on September 24, 2025.

As directed by the amendment: Claims 1-2 were cancelled. Claims 3-22 are newly added, and thus claims 3-22 are pending and currently under consideration for patentability under 37 CFR 1.104.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- a. “transverse” (claim 3, claim 14, claim 18) lacks antecedent basis in the specification.
- b. “a dividing plane” (claim 3, claim 14, claim 21) lacks antecedent basis in the specification.
- c. “interior angle” (claim 4, claim 14, claim 18) lacks antecedent basis in the specification.

Claim Objections

4. Claim 16 is objected to because of the following informalities:

Claim 16, line 1 recites “The percussive massage system of claim 14” and Examiner suggests --The percussive massage device of claim 14-- because claim 14 recites “A percussive massage device” rather than a “percussive massage system.”

Appropriate correction is required.

Claim Interpretation

5. The claims recite “a handle portion” (Claim 3, line 4; Claim 14, line 2; Claim 18, line 2), “a reciprocation path (or axis) that is transverse to the handle portion” (Claim 3, lines 9-10; Claim 14, lines 7-8; Claim 18, lines 7-8), “the motor extends transverse to the handle portion” (Claim 3, line 15), and “an interior angle defined between the handle portion and the output shaft is obtuse” (Claim 4, lines 1-2; Claim 14, lines 16-17; Claim 18, lines 14-15).

Based upon the claim context and the disclosure, these references to being “transverse to the handle portion” and defining an “obtuse angle” between the handle portion only need to apply to *respective segments of* the handle portion, rather than *the entire* handle portion. For example, Applicant’s Figure 1 has one segment of a handle portion that is transverse to the output shaft (the segment along axis A3, Fig. 1), and a *different segment* that defines an obtuse angle between the handle portion and the output shaft (the segment along axis A1, Fig. 1). Thus, the prior art may similarly have a “handle portion” made of different segments and even if a part of a segment is transverse and another part is obtuse, this will read on the broadest reasonable interpretation of the claim language.

Claim Interpretation - 35 USC § 112(f)

6. The following is a quotation of 35 U.S.C. 112(f):

(f) Element in Claim for a Combination. – An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

The following is a quotation of pre-AIA 35 U.S.C. 112, sixth paragraph:

An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

7. The claims in this application are given their broadest reasonable interpretation using the plain meaning of the claim language in light of the specification as it would be understood by one of ordinary skill in the art. The broadest reasonable interpretation of a claim element (also commonly referred to as a claim limitation) is limited by the description in the specification when 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is invoked.

As explained in MPEP § 2181, subsection I, claim limitations that meet the following three-prong test will be interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph:

- (A) the claim limitation uses the term “means” or “step” or a term used as a substitute for “means” that is a generic placeholder (also called a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function;
- (B) the term “means” or “step” or the generic placeholder is modified by functional language, typically, but not always linked by the transition word “for” (e.g., “means for”) or another linking word or phrase, such as “configured to” or “so that”; and
- (C) the term “means” or “step” or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.

Use of the word “means” (or “step”) in a claim with functional language creates a rebuttable presumption that the claim limitation is to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites sufficient structure, material, or acts to entirely perform the recited function.

Absence of the word “means” (or “step”) in a claim creates a rebuttable presumption that the claim limitation is not to be treated in accordance with 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph. The presumption that the claim limitation is not interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, is rebutted when the claim limitation recites function without reciting sufficient structure, material or acts to entirely perform the recited function.

Claim limitations in this application that use the word “means” (or “step”) are being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action. Conversely, claim limitations in this application that do not use the word “means” (or “step”) are not being interpreted under 35 U.S.C. 112(f) or pre-AIA 35 U.S.C. 112, sixth paragraph, except as otherwise indicated in an Office action.

Claim Rejections - 35 USC § 102

8. 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 (i.e., changing from AIA to pre-AIA) 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.

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

A person shall be entitled to a patent unless –

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.

10. Claim(s) 3-4, 9-15, 18, and 21-22 are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Danby et al. (2015/0005682).

Regarding claim 3, Danby discloses a percussive massage system (Fig. 1 has massaging head 130 that is driven by a piston in a reciprocating motion, see para. [0005], and see the third sentence of [0037]) comprising:

a percussive device (hand-held massaging device 100, Fig. 1) comprising:

a housing (main housing 102, and upper housing 104, Fig. 1);

a handle portion (second handle 108, Fig. 1);

a motor (motor 210, Fig. 2);

an eccentric shaft (crank pin 213, Fig. 2, Fig. 4; this pin is eccentric because it is “positioned offset from the centerline 400” of flywheel 212, see Fig. 4 and the second sentence of [0034]) configured to travel in a circle (“as flywheel 212 rotates, crank pin 213 rotates in a circular path around the centerline 400 of the flywheel 212” see the third sentence of [0036]) in response to activation of the motor (motor 210 has a shaft 211 that extends into flywheel 212 to rotate the flywheel and crank pin 213, see Figs. 2-4 and lines 1-6 of [0034]); and

a push rod assembly (flywheel 212, crank pin 213, crank bearing 214, piston 230, Fig. 4) connected to the motor (“motor 210 includes a shaft 211 that extends into a flywheel 212” see the first sentence of [0034], Fig. 2, Fig. 4), wherein the push rod assembly includes an output shaft (piston 230, Fig. 4) configured to reciprocate (“causing reciprocal motion of piston 230” see the last sentence of [0036]; “piston 230 may only move in a back-and-forth motion along its longitudinal axis” see the third sentence of [0037]) on a reciprocation path (the space that piston 230 occupies as it reciprocates along its longitudinal axis, see “Reciprocation Path 1” in annotated Figure A below) that is transverse to the handle portion (see “Transverse Axis 2” in annotated Figure A below, the piston 230 reciprocates along a vertical path, which is transverse to at least part of the handle portion 108 where it connects to the housing. It is noted that the claim does not require the *entire* handle portion to be transverse to the reciprocation path, and this interpretation is consistent with Applicant’s disclosure as only the segment of handle portion along axis A3 is transverse to the reciprocation path, while only the segment of handle portion along axis A1 is obtuse with respect to the output shaft),

wherein:

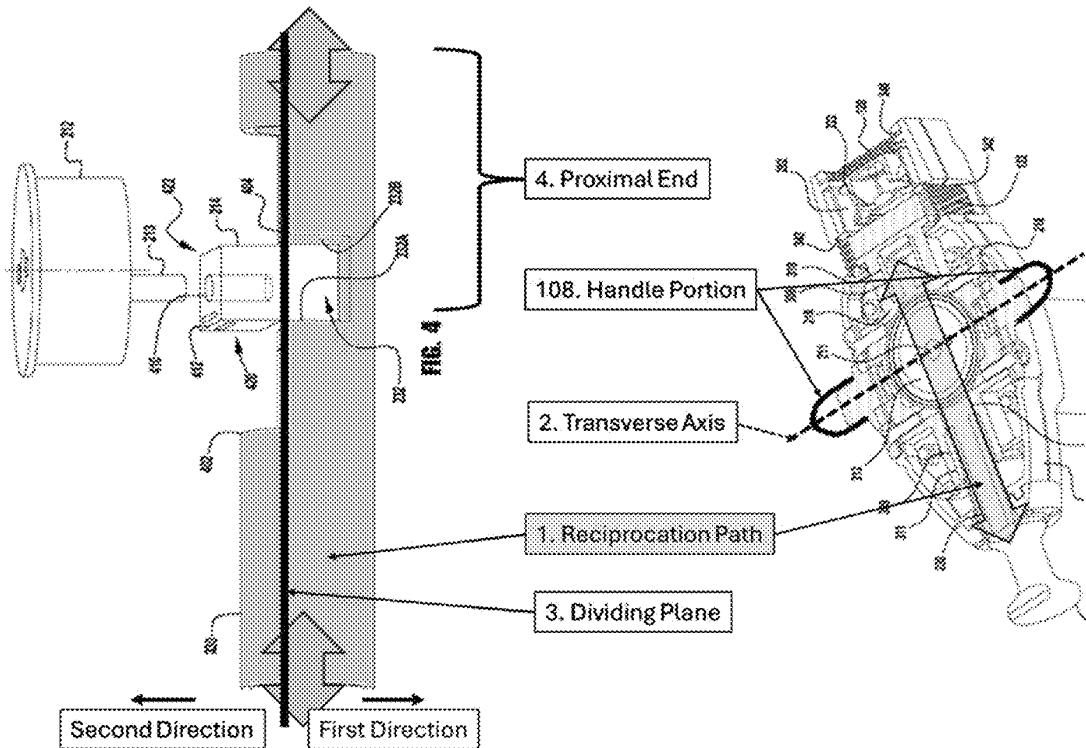
the reciprocation path (1, Fig. A) is on a dividing plane (see “Dividing Plane 3” in annotated Figures A-B below. This is a plane along where the surface of the flywheel 212 meets the piston 230, Fig. 2, Fig. 4, thus the plane is “dividing” the flywheel from the piston),

a proximal end of the push rod assembly (see “Proximal End 4” in annotated Figure A below) is connected (via crank bearing 214, aperture 410, and pocket 232, Fig.

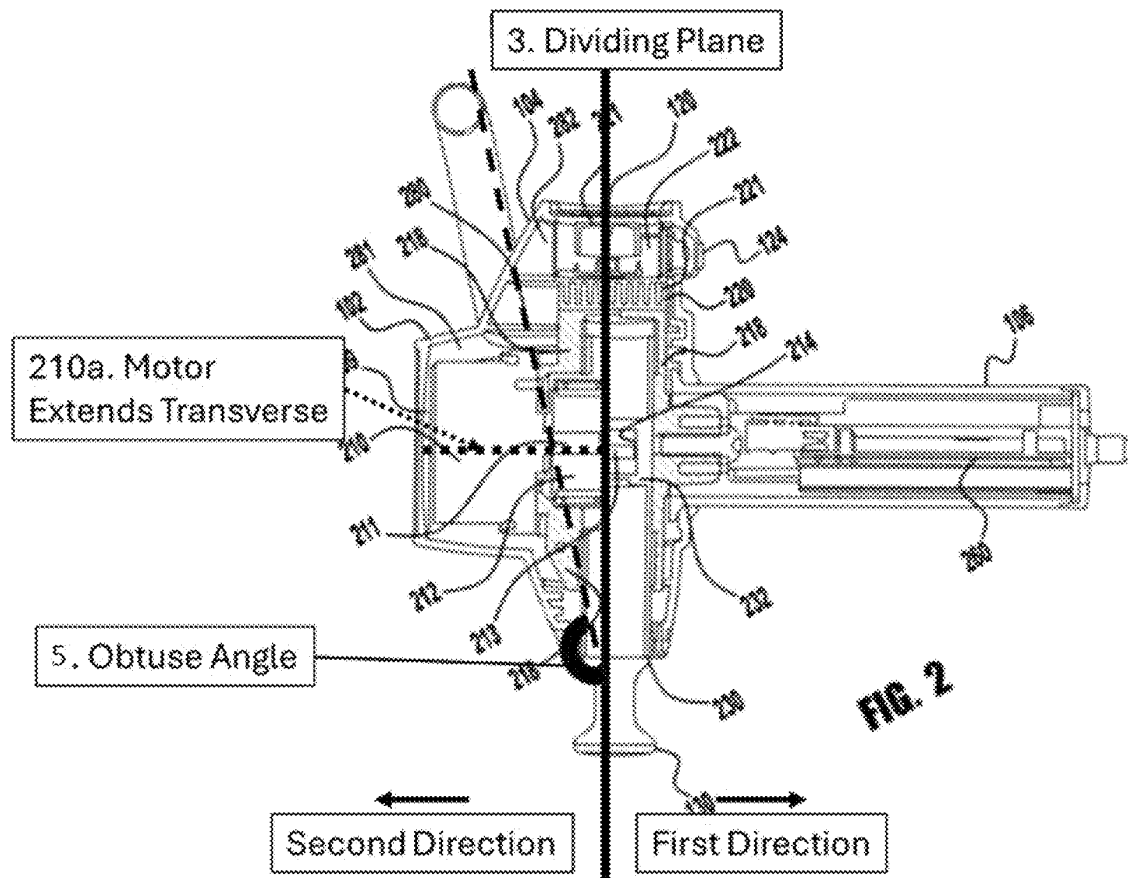
4) to the eccentric shaft (213, Fig. 4; “Crank pin 213 is inserted in an aperture 410 (FIG. 4) of a crank bearing 214” see the third sentence of [0034]) at a location offset from the dividing plane in a first direction (crank bearing 214 is positioned within pocket 232, which is offset from the dividing plane in the first direction, to the right, as seen in Figs. A-B), and

the motor (210) extends transverse to the handle portion (the motor 210 extends transverse 210a, Fig. B, to at least the portion of the handle 108 that connects to the housing based on Figures A-B, considered together. As seen in Fig. A, the motor *shaft* 211 is located along the transverse axis 2 aligned with handle portion 108. As seen in Fig. B, the motor 210 extends outwardly from shaft 211 such that the motor is perpendicular to both the transverse axis 2 and the piston 230. Thus, the motor extends transverse along 210a, Fig. B, to the handle portion 108) and away from the dividing plane in a second direction that is opposite the first direction (see annotated Fig. B below, the motor 210 extends transverse 210a, which is in the “second direction” relative to dividing plane 3, opposite the “first direction”); and

at least one attachment (massaging head 130, Figs. 1-3) configured to be operatively connected to the percussive device (“massaging head 130 includes a quick-release connection” see the last sentence of [0026]).



Annotated Figure A (from Figures 3-4 of Danby): Danby's piston (230) moves along a reciprocation path (1, shaded gray. This is the space piston 230 occupies as it reciprocates). The reciprocation path (1) is transverse (see the dashed line transverse axis 2) to the handle portion (108, darkened black). The reciprocation path (1) is on a dividing plane (3, this is a plane along where the surface of the flywheel 212 meets the piston 230). The dividing plane (3) defines a first direction and second direction, opposite to the first direction (see above). The push rod assembly includes a proximal end (4).



Annotated Figure B (from Fig. 2 of Danby): The reciprocation path (space occupied by piston 230 as it reciprocates) is on a dividing plane (3, this is a plane along where the surface of the flywheel 212 meets the piston 230). The dividing plane (3) defines a first direction and second direction, opposite to the first direction (see above). The motor (210) extends transverse (210a) to the handle portion (108, seen in Figs. 1, 3, and Fig. A above). An interior angle between the handle portion (108, Fig. 1, Fig. 3) and output shaft (230) is obtuse (see obtuse angle 5).

Regarding claim 4, Danby discloses wherein an interior angle defined between the handle portion (108, Fig. 1, Fig. 3) and the output shaft (230, Figs. 2-3) is obtuse (see "Obtuse Angle 5" in annotated Fig. B above).

Regarding claim 9, Danby discloses wherein the housing (102, 104, Fig. 1) includes a first portion (main housing 102, Fig. 1) that extends away from the handle portion (main housing 102 extends away from handle portion 108, toward the other handle 106 as seen in Fig. 1) and encloses a portion of the push rod assembly (see Fig.

1, the main housing is adjacent handle 106 and 108 in the center of the device and thus the main housing 102 encloses at least a portion of the push rod assembly as further seen in Fig. 2) and a second portion (upper housing 104, Fig. 1) that extends away from the handle portion (upper housing 104 extends away from at least the lower connection of handle portion 108 as seen in Fig. 1) and the first portion (102, see Fig. 1).

Regarding claim 10, Danby discloses wherein the motor (210, Fig. 2) is located outside of the handle portion (motor 210 is not mounted inside handle portion 108, see Figs. 2-3).

Regarding claim 11, Danby discloses wherein the attachment (massage head 130, Figs. 1-3) is configured to be connected to a distal end of the push rod assembly (massage head 130 connects to the distal end of piston 230 as seen in Figs. 2-3).

Regarding claim 12, Danby discloses wherein the distal end of the push rod assembly includes a distal end of the output shaft (the distal end of the push rod assembly is the distal end of output shaft/piston 230, see Figs. 2-3), and the attachment (massage head 130, Figs. 1-3) is connected to the distal end of the output shaft (massage head 130 connects to the distal end of piston 230 as seen in Figs. 2-3).

Regarding claim 13, Danby discloses wherein the attachment (massage head 130, Figs. 1-3) is removably connected ("massaging head 130 includes a quick-release connection" see the last sentence of [0026]) to the distal end of the push rod assembly (as seen in Figs. 2-3, the massage head 130 is connected to the distal end of push rod assembly, i.e., the distal end of piston 230. Additionally, the details of this quick-connection are shown in Figs. 6-6A, and it is seen that the massaging head 620 is connected to distal end of piston 602 as massaging head 620 is inserted into the distal

end and comes in close contact with the wall at the distal end. It is noted that Figs. 6-6A are referred to as an exemplary embodiment of a quick-connect system (see the first sentence of [0048]), and these are the only details illustrated for the quick-connection. This quick-connect embodiment of Figs. 6-6A would still have all of the structures disclosed in massaging device 100, Figs. 1-4 (see the second sentence of [0048]). Thus, it is considered a single embodiment to anticipate claim 13).

Regarding claim 14, Danby discloses a percussive massage device (hand-held massaging device 100, Fig. 1. This has massaging head 130 that is driven by a piston in a reciprocating motion, see para. [0005], and see the third sentence of [0037]) comprising:

a handle portion (second handle 108, Fig. 1), a motor (motor 210, Fig. 2), and an output assembly (flywheel 212, crank pin 213, piston 230, massage head 130, Fig. 2, Fig. 4), wherein the output assembly includes:

an eccentric shaft (crank pin 213, Fig. 2, Fig. 4; this pin is eccentric because it is “positioned offset from the centerline 400” of flywheel 212, see Fig. 4 and the second sentence of [0034]), wherein the motor is configured to apply torque about a motor axis to the eccentric shaft (motor 210 applies torque about motor shaft 211 and its corresponding axis. The shaft 211 extends into flywheel 212 to rotate the flywheel and crank pin 213, see Figs. 2-4 and lines 1-6 of [0034]); and

a push rod assembly (piston 230 and massage head 130, Figs. 2-4) connected to the motor (“motor 210 includes a shaft 211 that extends into a flywheel 212” see the first sentence of [0034], Fig. 2, Fig. 4. The flywheel rotates crank pin 213, which causes piston 230 to reciprocate, see the last sentence of [0036]), wherein the push rod

assembly includes an output shaft (piston 230, Fig. 4) configured to reciprocate (“causing reciprocal motion of piston 230” see the last sentence of [0036]; “piston 230 may only move in a back-and-forth motion along its longitudinal axis” see the third sentence of [0037]) on a reciprocation path (the space that piston 230 occupies as it reciprocates along its longitudinal axis, see “Reciprocation Path 1” in annotated Figure A above) that is transverse to the handle portion (see “Transverse Axis 2” in annotated Figure A above, the piston 230 reciprocates along a vertical path, which is transverse to at least part of the handle portion 108 where it connects to the housing);

wherein:

a dividing plane (see “Dividing Plane 3” in annotated Figures A-B above. This is a plane along where the surface of the flywheel 212 meets the piston 230, Fig. 2, Fig. 4, thus the plane is “dividing” the flywheel from the piston) is defined perpendicular to the motor axis (the motor axis extends along line 210a, Fig. B above, and this is perpendicular to the dividing plane 3), and the reciprocation path is on the dividing plane (see Figs. A-B above, the reciprocation path 1 is on dividing plane 3),

a proximal end of the push rod assembly (see “Proximal End 4” in annotated Figure A above) is connected (via crank bearing 214, aperture 410, and pocket 232, Fig. 4) to the eccentric shaft (213, Fig. 4; “Crank pin 213 is inserted in an aperture 410 (FIG. 4) of a crank bearing 214” see the third sentence of [0034]) at a connection point (at the aperture 410 in crank bearing 214, Fig. 4) that travels on a circular path when the motor is active (“Rotation of crank pin 213 causes crank bearing 214 to travel in a circular motion within piston pocket 232” see the last sentence of [0036]),

the motor (210) includes an end (the end of motor 210 furthest away from the dividing plane 3, along the “second direction” as seen in annotated Fig. B above) positioned on an opposite side of the dividing plane (3, see Fig. B above) from the circular path of the connection point (the end of motor 210 furthest away from the dividing plane 3, is on the opposite side from the circular path that the connection point i.e., aperture 410 of crank bearing 214 travels, see Figs. A-B above), and

an interior angle defined between the handle portion (108, Fig. 1, Fig. 3) and the output shaft (230, Figs. 2-3) is obtuse (see “Obtuse Angle 5” in annotated Fig. B above).

Regarding claim 15, Danby discloses including a housing (main housing 102, upper housing 104, Fig. 1) that includes a first portion (main housing 102, Fig. 1) that extends away from the handle portion (main housing 102 extends away from handle portion 108, toward the other handle 106 as seen in Fig. 1) and encloses a portion of the push rod assembly (see Fig. 1, the main housing is adjacent handle 106 and 108 in the center of the device and thus the main housing 102 encloses at least a portion of the push rod assembly as further seen in Fig. 2), and the housing (102, 104) includes a second portion (upper housing 104, Fig. 1) that extends away from the handle portion (upper housing 104 extends away from at least the lower connection of handle portion 108 as seen in Fig. 1) and the first portion (102, see Fig. 1).

Regarding claim 18, Danby discloses a percussive massage device (hand-held massaging device 100, Fig. 1. This has massaging head 130 that is driven by a piston in a reciprocating motion, see para. [0005], and see the third sentence of [0037]) comprising:

a handle portion (second handle 108, Fig. 1), a motor (motor 210, Fig. 2), and an output assembly (flywheel 212, crank pin 213, piston 230, massage head 130, Fig. 2, Fig. 4), wherein the output assembly includes:

an eccentric shaft (crank pin 213, Fig. 2, Fig. 4; this pin is eccentric because it is “positioned offset from the centerline 400” of flywheel 212, see Fig. 4 and the second sentence of [0034]), wherein the motor is configured to apply torque to the eccentric shaft (motor 210 applies torque via motor shaft 211. The shaft 211 extends into flywheel 212 to rotate the flywheel and crank pin 213, see Figs. 2-4 and lines 1-6 of [0034]); and

a push rod assembly (piston 230 and massage head 130, Figs. 2-4) connected to the motor (“motor 210 includes a shaft 211 that extends into a flywheel 212” see the first sentence of [0034], Fig. 2, Fig. 4. The flywheel rotates crank pin 213, which causes piston 230 to reciprocate, see the last sentence of [0036]), wherein the push rod assembly includes an output shaft (piston 230, Fig. 4) configured to reciprocate (“causing reciprocal motion of piston 230” see the last sentence of [0036]; “piston 230 may only move in a back-and-forth motion along its longitudinal axis” see the third sentence of [0037]) along a reciprocation axis (a longitudinal axis of piston 230, see the third sentence of [0037] and Figs. 2-4. Here, the longitudinal axis associated with dividing plane 3, annotated Figs. A-B above is considered the reciprocation axis) that is transverse to the handle portion (see “Transverse Axis 2” in annotated Figure A above, the piston 230 reciprocates along a longitudinal axis, which is transverse to at least part of the handle portion 108 where it connects to the housing);

wherein:

a proximal end of the push rod assembly (see “Proximal End 4” in annotated Figure A above) is connected (via crank bearing 214, aperture 410, and pocket 232, Fig. 4) to the eccentric shaft (213, Fig. 4; “Crank pin 213 is inserted in an aperture 410 (FIG. 4) of a crank bearing 214” see the third sentence of [0034]) at a connection point (at the aperture 410 in crank bearing 214, Fig. 4) that travels on a circular path when the motor is active (“Rotation of crank pin 213 causes crank bearing 214 to travel in a circular motion within piston pocket 232” see the last sentence of [0036]),

an end of the motor (the end of motor 210 furthest away from the dividing plane 3, along the “second direction” as seen in annotated Fig. B above) is on an opposite side of the reciprocation axis (longitudinal axis of 230, Figs. 3-4) from the circular path of the connection point (aperture 410 and crank bearing 214 are positioned to the right of a central, longitudinal line of piston 230 as seen in Fig. 4, and the motor 210 is positioned on the opposite side as seen in Figs. 2-3), and

an interior angle defined between the handle portion (108, Fig. 1, Fig. 3) and the output shaft (230, Figs. 2-3) is obtuse (see “Obtuse Angle 5” in annotated Fig. B above).

Regarding claim 21, Danby discloses wherein the reciprocation axis is on a dividing plane (the longitudinal axis associated with dividing plane 3, annotated Figs. A-B above is considered the reciprocation axis), and the circular path of the connection point (aperture 410 and crank bearing 214 are rotated in a circular path, see the last sentence of [0036]) is on an opposite side of the dividing plane (3) from the end of the motor (the end of motor 210 furthest away from the dividing plane 3, along the “second direction” as seen in annotated Fig. B above, is on an opposite side relative to the circular path of aperture 410, crank bearing 214, see Figs. 2-4).

Regarding claim 22, Danby discloses including a housing (main housing 102, upper housing 104, Fig. 1) that includes a first portion (main housing 102, Fig. 1) that extends away from the handle portion (main housing 102 extends away from handle portion 108, toward the other handle 106 as seen in Fig. 1) and encloses a portion of the push rod assembly (see Fig. 1, the main housing is adjacent handle 106 and 108 in the center of the device and thus the main housing 102 encloses at least a portion of the push rod assembly as further seen in Fig. 2), and the housing (102, 104) includes a second portion (upper housing 104, Fig. 1) that extends away from the handle portion (upper housing 104 extends away from at least the lower connection of handle portion 108 as seen in Fig. 1) and the first portion (102, see Fig. 1).

Claim Rejections - 35 USC § 103

11. 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 (i.e., changing from AIA to pre-AIA) 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.

12. 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.

13. Claim(s) 5 and 19-20 are rejected under 35 U.S.C. 103 as being unpatentable over Danby et al. (2015/0005682) in view of Noble et al. (4,730,605).

Regarding claim 5, Danby is silent regarding wherein the push rod assembly includes a push rod that includes a proximal end and a distal end, the proximal end of the push rod assembly includes the proximal end of the push rod, and the proximal end of the push rod is farther from the reciprocation path than the distal end of the push rod.

Noble teaches a related percussion device (Fig. 4, see Title) with a motor (drive unit 28, Fig. 8) operably connected to a push rod assembly (coupling arrangement 42, Fig. 8) that includes a push rod (connecting rod 56, Fig. 6) and an output shaft (neck portion 66, Fig. 6) configured to reciprocate (see col. 3, lines 1-5, and corresponding reciprocating movement along arrow 44, Fig. 8). The push rod (56) includes a proximal end (the end adjacent stub shaft 58, Fig. 4) and a distal end (the end at shoulder 62, adjacent neck portion 66, see Fig. 6), the proximal end of the push rod assembly (42, Fig. 8) includes the proximal end of the push rod (the proximal end of coupling arrangement 42 includes the proximal end of push rod 56, see Fig. 4, Fig. 6), and the proximal end of the push rod (the end adjacent stub shaft 58, Fig. 4) is farther from a reciprocation path than the distal end of the push rod (see Figure 8, the reciprocation path is along arrow 44, which aligns with the distal end of push rod 56, while the proximal end of push rod 56 is laterally displaced to the right as seen in Fig. 8, Fig. 4). The proximal end of the push rod is farther from the reciprocation path due to the presence of a counterbalance weight (52, Fig. 4, Fig. 8) that “ensures that the eccentric is dynamically balances and avoids undesirable vibrations when motor 28 is running” (see col. 3, lines 23-26).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the push rod assembly

of Danby to be replaced with the counterbalance weight and push rod assembly including a push rod as taught by Noble because this would be a simple substitution of one known reciprocation driving mechanism for another known reciprocation driving mechanism (substituting Danby's reciprocating push rod assembly with Noble's reciprocating push rod assembly), and provide a predictable result that the presence of the counterbalance weight between the eccentric shaft and the reciprocating push rod/output shaft would dynamically balance the push rod assembly and avoid undesirable vibrations.

Regarding claim 19, Danby is silent regarding wherein: the push rod assembly includes a push rod, and the push rod includes a proximal end and a distal end, and wherein the proximal end of the push rod is connected to the eccentric shaft at the connection point, and the distal end of the push rod is nearer to the reciprocation axis than the proximal end of the push rod.

Noble teaches a related percussion device (Fig. 4, see Title) with a motor (drive unit 28, Fig. 8) operably connected to a push rod assembly (coupling arrangement 42, Fig. 8) that includes a push rod (connecting rod 56, Fig. 6) and an output shaft (neck portion 66, Fig. 6) configured to reciprocate (see col. 3, lines 1-5). The push rod (56) includes a proximal end (the end adjacent stub shaft 58, Fig. 4) and a distal end (the end at shoulder 62, adjacent neck portion 66, see Fig. 6), and wherein the proximal end of the push rod is connected to an eccentric shaft (stub shaft 58, Fig. 4). This is received in bearing 60 of eccentric 50 and thus an eccentric shaft, see col. 3, lines 29-30) at a connection point (the connection between connecting rod 56 and shaft 58, Fig. 4), and the distal end of the push rod (the end at shoulder 62, adjacent neck portion 66, see

Fig. 6) is nearer to the reciprocation axis (rod 56 reciprocates along direction 44, Fig. 8, and the end of rod 56 at shoulder 62, adjacent neck portion 66 is aligned with this axis as seen in Fig. 6) than the proximal end of the push rod (see Figure 8, the reciprocation path is along arrow 44, which aligns with the distal end of push rod 56, while the proximal end of push rod 56 is laterally displaced to the right as seen in Fig. 8, Fig. 4). The proximal end of the push rod is farther from the reciprocation path due to the presence of a counterbalance weight (52, Fig. 4, Fig. 8) that “ensures that the eccentric is dynamically balances and avoids undesirable vibrations when motor 28 is running” (see col. 3, lines 23-26).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the push rod assembly of Danby to be replaced with the counterbalance weight and push rod assembly including a push rod as taught by Noble because this would be a simple substitution of one known reciprocation driving mechanism for another known reciprocation driving mechanism (substituting Danby’s reciprocating push rod assembly with Noble’s reciprocating push rod assembly), and provide a predictable result that the presence of the counterbalance weight between the eccentric shaft and the reciprocating push rod/output shaft would dynamically balance the push rod assembly and avoid undesirable vibrations.

Regarding claim 20, the modified Danby/Noble device discloses wherein the distal end of the push rod (the end at shoulder 62, adjacent neck portion 66, see Fig. 6 of Noble) is coupled to the output shaft (shoulder 62 connects to neck portion 66, see Fig. 6 of Noble).

14. Claim(s) 6-7 are rejected under 35 U.S.C. 103 as being unpatentable over Danby et al. (2015/0005682) in view of Marton et al. (2019/0254922).

Regarding claim 6, Danby discloses including: a switch for activating the motor (second pushbutton 128, see Fig. 1 and lines 1-10 of [0029]. Pressing button 128 turns the massaging device on/off and adjusts the speed of the motor), wherein the switch is located on a portion of the housing (housing portion 104, Fig. 1) that is on an opposite side of the device relative to the push rod assembly (see Figs. 1-3, the pushbutton 128 is on a portion of the housing away from the distal end of piston 230), but is silent regarding this location facing an opposite direction from a distal end of the push rod assembly. However, it is noted that it has been held that rearranging parts of an invention involves only routine skill in the art. MPEP 2144.04(VI).

Furthermore, Marton teaches a related percussive massage device (Figs. 1-2, see Title) with a switch for activating the motor (pushbutton switch 162, Fig. 2; see all of para. [0111], the switch advances from an off-state to a first (low) speed of the motor, a second (medium) speed, and a third (high) speed), wherein the switch (162, Fig. 2) is located on a portion of the housing that faces an opposite direction from a distal end of the push rod assembly (the switch 162, Fig. 2, is facing the opposite direction as the distal end of push rod assembly 512, 514, see Fig. 3, Fig. 7). The switch is also adjacent an electronic display (speed indication light-emitting diodes 166A, 166B, 166C, see Fig. 4B and lines 6-17 of [0043]) to indicate to the user the selected percussion speed of the motor. One of ordinary skill in the art would recognize that this location of the switch and electronic display would be clearly visible during use.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the location of the switch of Danby to be on a portion of the housing that faces an opposite direction from a distal end of the push rod assembly and to include an electronic display as taught by Marton since this merely involves a rearrangement of parts and because such a position would be expected to be clearly visible for a user to engage with the switch and view the electronic display to indicate the current percussion speed.

Regarding claim 7, Danby discloses wherein the device includes a switch configured for activating the motor (second pushbutton 128, see Fig. 1 and lines 1-10 of [0029]. Pressing button 128 turns the massaging device on/off and adjusts the speed of the motor), but is silent regarding an electronic display that faces a same direction as the switch.

Marton teaches a related percussive massage device (Figs. 1-2, see Title) with a switch for activating the motor (pushbutton switch 162, Fig. 2; see all of para. [0111], the switch advances from an off-state to a first (low) speed of the motor, a second (medium) speed, and a third (high) speed). The switch is adjacent an electronic display (speed indication light-emitting diodes 166A, 166B, 166C, see Fig. 4B and lines 6-17 of [0043]) that faces the same direction as the switch (see Fig. 2, Fig. 4B) to indicate to the user the selected percussion speed of the motor. One of ordinary skill in the art would recognize that this location of the switch and electronic display would be clearly visible during use.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the switch of Danby to

include a corresponding electronic display facing the same direction as taught by Marton because such a position would be expected to be clearly visible for a user to engage with the switch while also viewing the electronic display to determine the current percussion speed.

15. Claim(s) 8 and 16 are rejected under 35 U.S.C. 103 as being unpatentable over Danby et al. (2015/0005682) in view of Pepe (2017/0304145).

Regarding claim 8, Danby is silent regarding including a battery at least partially located in the handle portion.

Pepe teaches a related handheld percussive massage device (Fig. 1; “to-and-fro motion is part of percussive massage therapy” see lines 19-22 of [0026]) that includes two handle portions (primary handle 12, secondary handle 14, Fig. 1) and a battery is located in at least one of the handle portion(s) (“The motor is powered by a rechargeable battery, which is preferably housed within one of the handles.” See the last sentence of [0026]). One of ordinary skill in the art would recognize that a rechargeable battery provides predictable advantages, such as improving portability of the device as it would not need to be plugged in during use, and improving convenience by allowing the battery to be recharged.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the power source and handle portion of Danby to include a rechargeable battery in the handle portion as taught by Pepe because this is a combination of prior art elements according to known techniques (placing a rechargeable battery within a handle) and provides predictable advantages such as improving portability of the device as it would not need to be

plugged in during use, and improving convenience by allowing the battery to be recharged.

Regarding claim 16, Danby is silent regarding including a battery housed in the handle portion.

Pepe teaches a related handheld percussive massage device (Fig. 1; “to-and-fro motion is part of percussive massage therapy” see lines 19-22 of [0026]) that includes two handle portions (primary handle 12, secondary handle 14, Fig. 1) and a battery is housed in at least one of the handle portion(s) (“The motor is powered by a rechargeable battery, which is preferably housed within one of the handles.” See the last sentence of [0026]). One of ordinary skill in the art would recognize that a rechargeable battery provides predictable advantages, such as improving portability of the device as it would not need to be plugged in during use, and improving convenience by allowing the battery to be recharged.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the power source and handle portion of Danby to include a rechargeable battery housed in the handle portion as taught by Pepe because this is a combination of prior art elements according to known techniques (placing a rechargeable battery within a handle) and provides predictable advantages such as improving portability of the device as it would not need to be plugged in during use, and improving convenience by allowing the battery to be recharged.

16. Claim 17 is rejected under 35 U.S.C. 103 as being unpatentable over Danby et al. (2015/0005682) in view of Huang (2001/0027280).

Regarding claim 17, Danby discloses wherein the percussive massage device (100, Fig. 1) includes a bearing (crank bearing 214, Fig. 2, Fig. 4) between the eccentric shaft (crank pin 213, Fig. 2, Fig. 4) and the push rod assembly (230, 130, Figs. 2-4), the output shaft (230) is centered on the reciprocation path (the piston 230 coincides entirely with the reciprocation path 1, see Figs. A-B), and the motor (210) includes an end (the end of motor 210 furthest away from the dividing plane 3, along the “second direction” as seen in annotated Fig. B above) positioned on a left side of the reciprocating path (1, see Figs. A-B). Danby is silent regarding the motor end being positioned on an opposite side of the reciprocating path *from the bearing* (214, Fig. 4).

Huang teaches a related percussive massage device (Fig. 5, see title) including a motor (motor 30, Fig. 5), a bearing (rotary bearing 42, Figs. 4-5) between an eccentric shaft (crank arm 36 has an eccentric shaft that is received within rotary bearing 42 as seen in Figs. 4-5) and a push rod assembly (vertical connecting rod 40, Fig. 5), that includes an output shaft (second end 48, Fig. 5) centered on a reciprocation path (connecting rod 40 reciprocates axially, “up and down” see the first sentence and last sentence of [0021]. The second end 48 is centered on this axial movement), and the motor (30) includes an end (either end of the motor 30 adjacent shaft 34, Fig. 5) positioned on an opposite side of the reciprocating path from the bearing (see Fig. 5, the output shaft 48 is reciprocated up and down along a reciprocating path. The motor 30 is positioned to the left of this reciprocating path and the bearing 42 is positioned to the right of the reciprocating path). This is a known push rod assembly to produce reciprocating movement in an up and down direction, and provides an expected result of a percussive massage.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the eccentric shaft, bearing, and push rod assembly of Danby to have the motor end being positioned on an opposite side of the reciprocating path from the bearing as taught by Huang because this is a simple substitution of one known reciprocating movement mechanism for another known reciprocating movement mechanism, to provide predictable results of a percussive massage mechanism.

Double Patenting

17. 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 § 2146 *et seq.* 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 filing of a terminal disclaimer by itself is not a complete reply to a nonstatutory double patenting (NSDP) rejection. A complete reply requires that the terminal disclaimer be accompanied by a reply requesting reconsideration of the prior Office action. Even where the NSDP rejection is provisional the reply must be complete. See MPEP § 804, subsection I.B.1. For a reply to a non-final Office action, see 37 CFR 1.111(a). For a reply to final Office action, see 37 CFR 1.113(c). A request for reconsideration while not provided for in 37 CFR 1.113(c) may be filed after final for consideration. See MPEP §§ 706.07(e) and 714.13.

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/patent/patents-forms. The actual 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/apply/applying-online/eterminal-disclaimer.

18. Claims 3-9 are rejected on the ground of nonstatutory double patenting as being unpatentable over claim(s) 1, 5, 7-8, and 10-11 of U.S. Patent No. 12,396,919 (hereinafter “Patented Claim 1”).

Although the claims at issue are not identical, they are not patentably distinct from each other because instant claim 3 is merely a broader version of Patented Claim 1. All of the limitations of instant claim 3 are recited in Patented claim 1 (see below), and Patented claim 1 adds additional limitation(s) such as the motor “configured to output torque about a motor axis,” the eccentric shaft configured to travel in a circle “about the motor axis,” the dividing plane being “normal to the motor axis,” and “an interior angle defined between the handle portion and the output shaft is obtuse.”

Regarding instant claim 3, Patented Claim 1 discloses a percussive massage system (see col. 34, line 17) comprising:

- a percussive device comprising (see col. 34, line 18):
 - a housing (see col. 34, line 19);
 - a handle portion (see col. 34, line 20);
 - a motor (see col. 34, line 21);
 - an eccentric shaft configured to travel in a circle in response to activation of the motor (see col. 34, lines 23-24); and
 - a push rod assembly connected to the motor (see col. 34, line 26), wherein the push rod assembly includes an output shaft configured to reciprocate on a reciprocation path (see col. 34, lines 29-31, the traveling along a reciprocation axis when the push rod assembly reciprocates reads on “reciprocate on a reciprocation path”) that is transverse to the handle portion (see col. 34, lines 31-32),

wherein:

the reciprocation path is on a dividing plane (see col. 34, lines 31-33), a proximal end of the push rod assembly is connected to the eccentric shaft at a location offset from the dividing plane in a first direction (see col. 34, lines 33-36), and

the motor extends transverse to the handle portion and away from the dividing plane in a second direction that is opposite the first direction (see col. 34, lines 36-38);
and

at least one attachment configured to be operatively connected to the percussive device (see col. 34, lines 41-42).

Regarding instant claim 4, Patented Claim 1 discloses wherein an interior angle defined between the handle portion and the output shaft is obtuse (see col. 34, lines 38-40).

Regarding instant claim 5, Patented Claim 5 depends from Patented Claim 1, and discloses wherein the push rod assembly includes a push rod that includes a proximal end and a distal end (see col. 35, lines 16-19), the proximal end of the push rod assembly includes the proximal end of the push rod (the push rod assembly is stated to include the push rod, thus the proximal end of the push rod is included), and the proximal end of the push rod is farther from the reciprocation path than the distal end of the push rod (see col. 35, lines 20-21).

Regarding instant claim 6, Patented Claim 7 depends from Patented Claim 1, and discloses including: a switch for activating the motor, wherein the switch is located on a portion of the housing that faces an opposite direction from a distal end of the push rod assembly (see col. 35, lines 27-31).

Regarding instant claim 7, Patented Claim 8 depends from Patented Claim 1, and discloses wherein the device includes a switch and an electronic display that faces a same direction as the switch, wherein the switch is configured for activating the motor (see col. 35, lines 32-35).

Regarding instant claim 8, Patented Claim 10 depends from Patented Claim 1, and discloses including a battery at least partially located in the handle portion (see col. 35, lines 40-41).

Regarding instant claim 9, Patented Claim 11 depends from Patented Claim 1, and discloses wherein the housing includes a first portion that extends away from the handle portion and encloses a portion of the push rod assembly and a second portion that extends away from the handle portion and the first portion (see col. 35, lines 42-46).

19. Claims 10-13 are rejected on the ground of nonstatutory double patenting as being unpatentable over claim 1 of U.S. Patent No. 12,396,919 in view of Danby et al. (2015/0005682).

Regarding instant claim 10, Patented Claim 1 is silent regarding wherein the motor is located outside of the handle portion.

Danby teaches a related percussive massage system (Fig. 1) that houses the motor (210, Figs. 2-3) within a housing (102, 104, Figs. 1-2) rather than being in the handle portion (108, Fig. 1). Thus, the motor is outside the handle portion. This provides an expected result of positioning a motor adjacent a push rod assembly (including piston 230, Figs. 2-4) to drive the push rod assembly from within a protective housing.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the motor of Patented Claim 1 to be located outside of the handle portion as taught by Danby because this provides an expected result of positioning a motor adjacent a push rod assembly to drive the push rod assembly from within a protective housing.

Regarding instant claim 11, Patented Claim 1 is silent regarding wherein the attachment is configured to be connected to a distal end of the push rod assembly.

Danby teaches a related percussive massage system (Fig. 1) with an attachment (massage head 130 stated to have a quick-release connection, see Fig. 1, the last sentence of [0026]; see also Figs. 6A-6B) configured to be connected to a distal end of the push rod assembly (attachment 130, Fig. 1; massaging head 620 with shaft 621, Figs. 6-6A, is connected to distal end of piston 602 as massaging head 620 is inserted into the distal end and comes in close contact with the wall at the distal end). This allows different massage attachments to be selectively applied (see para. [0050]), even without turning off the massaging device (see the last sentence of [0048]).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the attachment of Patented Claim 1 to be connected to a distal end of the push rod assembly as taught by Danby because this allows different massage attachments to be selectively applied (see para. [0050]), even without turning off the massaging device (see the last sentence of [0048] of Danby).

Regarding instant claim 12, the modified Patented Claim 1/Danby device discloses wherein the distal end of the push rod assembly includes a distal end of the

output shaft (distal end of piston 230, Fig. 2; piston 602, Fig. 6 of Danby), and the attachment (130, Fig. 1; 620, Fig. 6 of Danby) is connected to the distal end of the output shaft (massaging head 620 with shaft 621, Figs. 6-6A, is connected to distal end of piston 602 as massaging head 620 is inserted into the distal end and comes in close contact with the wall at the distal end).

Regarding instant claim 13, the modified Patented Claim 1/Danby device discloses wherein the attachment (130, Fig. 1; 620, Fig. 6 of Danby) is removably connected (see Figs. 6-6A of Danby) to the distal end of the push rod assembly (massaging head 620 with shaft 621, Figs. 6-6A, is connected to distal end of piston 602 as massaging head 620 is inserted into the distal end and comes in close contact with the wall at the distal end).

20. Claims 14-15 and 18-22 are rejected on the ground of nonstatutory double patenting as being unpatentable over claim 15 of U.S. Patent No. 12,396,919 in view of Danby et al. (2015/0005682).

Regarding instant claim 14, Patented Claim 15 depends from Patented Claim 2, and discloses a percussive massage device (see col. 34, line 43) comprising:

a handle portion (col. 34, line 45), a motor (col. 34, line 44), and an output assembly (Patented Claim 2 includes both an eccentric shaft and a push rod assembly, thus reciting the two elements of the output assembly), wherein the output assembly includes:

an eccentric shaft (see col. 34, line 62), wherein the motor is configured to apply torque about a motor axis (see col. 34, line 44) to the eccentric shaft (see col. 34, lines 62-64); and

a push rod assembly (col. 34, line 47) connected to the motor (see col. 34, lines 48-49, the output shaft of the push rod assembly is reciprocated in response to activation of the motor and thus the push rod assembly is at least operably connected to the motor), wherein the push rod assembly includes an output shaft configured to reciprocate on a reciprocation path (the “reciprocation axis” is a reciprocation path, see col. 34, lines 48-50);

wherein:

a dividing plane is defined perpendicular to the motor axis (see col. 34, line 57), and the reciprocation path is on the dividing plane (see col. 34, lines 51-53),

a proximal end of the push rod assembly is connected to the eccentric shaft (see col. 34, lines 65-66) at a connection point that travels on a circular path when the motor is active (the eccentric shaft necessarily has an associated connection point, and the eccentric shaft rotates in a circular path, see col. 34, lines 62-64),

an interior angle defined between the handle portion and the output shaft is obtuse (see col. 36, line 4-6).

Patented Claim 15 is silent regarding the reciprocation path being transverse to the handle portion; the motor includes an end positioned on an opposite side of the dividing plane from the circular path of the connection point.

Danby teaches a related percussive massage device (100, Fig. 1) with a reciprocation path (the space that piston 230 occupies as it reciprocates along its longitudinal axis, see “Reciprocation Path 1” in annotated Figure A above) that is transverse to the handle portion (see “Transverse Axis 2” in annotated Figure A above, the piston 230 reciprocates along a vertical path, which is transverse to at least the

portion of the handle 108 that connects to the housing); and the motor (210, Figs. 2-3) includes an end (the end of motor 210 furthest away from the dividing plane 3, along the “second direction” as seen in annotated Fig. B above) positioned on an opposite side of the dividing plane (3, Figs. A-B) from the circular path of the connection point (the end of motor 210 furthest away from the dividing plane 3, is on the opposite side from the circular path that the connection point i.e., aperture 410 of crank bearing 214 travels, see Figs. A-B above). This arrangement of the reciprocation path for the push rod assembly provides expected results that the device is suited to apply a deep muscle-stimulating massage to increase muscle metabolism, increase the lactic acid cycle and relieve pain (see para. [0002]).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the reciprocation path and arrangement of the motor and push rod assembly of Patented Claim 15 to have the reciprocation path transverse to the handle portion and the motor includes an end positioned on an opposite side of the dividing plane from the circular path of the connection point as taught by Danby because this would be a simple substitution of one known push rod assembly for another known push rod assembly, to provide predictable results of a reciprocating massage mechanism that is suitable to apply a deep muscle-stimulating massage to increase muscle metabolism, increase the lactic acid cycle and relieve pain.

Regarding instant claim 15, the modified Patented Claim 15/Danby device as currently combined is silent regarding including a housing that includes a first portion that extends away from the handle portion and encloses a portion of the push rod

assembly, and the housing includes a second portion that extends away from the handle portion and the first portion.

However, Danby additionally teaches including a housing (main housing 102, upper housing 104, Fig. 1) that includes a first portion (main housing 102, Fig. 1) that extends away from the handle portion (main housing 102 extends away from handle portion 108, toward the other handle 106 as seen in Fig. 1) and encloses a portion of the push rod assembly (see Fig. 1, the main housing is adjacent handle 106 and 108 in the center of the device and thus the main housing 102 encloses at least a portion of the push rod assembly as further seen in Fig. 2), and the housing (102, 104) includes a second portion (upper housing 104, Fig. 1) that extends away from the handle portion (upper housing 104 extends away from at least the lower connection of handle portion 108 as seen in Fig. 1) and the first portion (102, see Fig. 1). This housing provides an expected result of connecting to the handle portion(s) and providing a protective case for the motor and push rod assembly.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the device of Patented Claim 15/Danby to further include a housing that includes a first portion that extends away from the handle portion and encloses a portion of the push rod assembly, and the housing includes a second portion that extends away from the handle portion and the first portion as taught by Danby because this provides an expected result of connecting to the handle portion(s) and providing a protective case for the motor and push rod assembly.

Regarding instant claim 18, Patented Claim 15 depends from Patented Claim 2, and discloses a percussive massage device (see col. 34, line 43) comprising:

a handle portion (col. 34, line 45), a motor (col. 34, line 44), and an output assembly (Patented Claim 2 includes both an eccentric shaft and a push rod assembly, thus reciting the two elements of the output assembly), wherein the output assembly includes:

an eccentric shaft (see col. 34, line 62), wherein the motor is configured to apply torque (see col. 34, line 44) to the eccentric shaft (see col. 34, lines 62-64, when the motor is active it applies an output torque to a motor axis, and the eccentric shaft is configured to travel in a circle about the motor axis when the motor is active);

a push rod assembly (col. 34, line 47) connected to the motor (see col. 34, lines 48-49, the output shaft of the push rod assembly is reciprocated in response to activation of the motor and thus the push rod assembly is at least operably connected to the motor), wherein the push rod assembly includes an output shaft configured to reciprocate along a reciprocation axis (see col. 34, lines 48-50);

wherein:

a proximal end of the push rod assembly is connected to the eccentric shaft (see col. 34, lines 65-66) at a connection point that travels on a circular path when the motor is active (the eccentric shaft necessarily has an associated connection point, and the eccentric shaft rotates in a circular path, see col. 34, lines 62-64),

an interior angle defined between the handle portion and the output shaft is obtuse (see col. 36, line 4-6).

Patented Claim 15 is silent regarding the reciprocation axis being transverse to the handle portion; and an end of the motor is on an opposite side of the reciprocation axis from the circular path of the connection point.

Danby teaches a related percussive massage device (100, Fig. 1) with a reciprocation axis (piston 230 reciprocates along its longitudinal axis, see the third sentence of [0037]) that is transverse to the handle portion (see “Transverse Axis 2” in annotated Figure A above, the piston 230 reciprocates along a vertical axis, which is transverse to at least part of the handle portion 108 where it connects to the housing); and the motor (210, Figs. 2-3) includes an end (the end of motor 210 furthest away from the dividing plane 3, along the “second direction” as seen in annotated Fig. B above) on an opposite side of the reciprocation axis from the circular path of the connection point (the end of motor 210 furthest away from the dividing plane 3, is on the opposite side of the reciprocation axis from the circular path that the connection point i.e., aperture 410 of crank bearing 214 travels, see Figs. A-B above). This arrangement of the reciprocation axis for the push rod assembly provides expected results that the device is suited to apply a deep muscle-stimulating massage to increase muscle metabolism, increase the lactic acid cycle and relieve pain (see para. [0002]).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the reciprocation axis and arrangement of the motor and push rod assembly of Patented Claim 15 to have the reciprocation axis transverse to the handle portion and an end of the motor is on an opposite side of the reciprocation axis from the circular path of the connection point as taught by Danby because this would be a simple substitution of one known push rod

assembly for another known push rod assembly, to provide predictable results of a reciprocating massage mechanism that is suitable to apply a deep muscle-stimulating massage to increase muscle metabolism, increase the lactic acid cycle and relieve pain.

Regarding instant claim 19, the modified Patented Claim 15/Danby device discloses wherein the push rod assembly includes a push rod, and the push rod includes a proximal end and a distal end (see col. 34, lines 54-56) and wherein the proximal end of the push rod is connected to the eccentric shaft at the connection point (see col. 34, lines 65-67, there is necessarily a connection point at the operative connection), and the distal end of the push rod is nearer to the reciprocation axis than the proximal end of the push rod (see col. 35, lines 4-5 of Patented Claim 15).

Regarding instant claim 20, the modified Patented Claim 15/Danby device discloses wherein the distal end of the push rod is coupled to the output shaft (see col. 34, lines 54-56 of Patented Claim 15).

Regarding instant claim 21, the modified Patented Claim 15/Danby device discloses wherein the reciprocation axis is on a dividing plane (see col. 34, lines 52-53 of Patented Claim 15), and the circular path of the connection point is on an opposite side of the dividing plane from the end of the motor (as taught by Danby, see annotated Figs. A-B above).

Regarding instant claim 22, the modified Patented Claim 15/Danby device as currently combined is silent regarding including a housing that includes a first portion that extends away from the handle portion and encloses a portion of the push rod assembly, and the housing includes a second portion that extends away from the handle portion and the first portion.

However, Danby additionally teaches including a housing (main housing 102, upper housing 104, Fig. 1) that includes a first portion (main housing 102, Fig. 1) that extends away from the handle portion (main housing 102 extends away from handle portion 108, toward the other handle 106 as seen in Fig. 1) and encloses a portion of the push rod assembly (see Fig. 1, the main housing is adjacent handle 106 and 108 in the center of the device and thus the main housing 102 encloses at least a portion of the push rod assembly as further seen in Fig. 2), and the housing (102, 104) includes a second portion (upper housing 104, Fig. 1) that extends away from the handle portion (upper housing 104 extends away from at least the lower connection of handle portion 108 as seen in Fig. 1) and the first portion (102, see Fig. 1). This housing provides an expected result of connecting to the handle portion(s) and providing a protective case for the motor and push rod assembly.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the device of Patented Claim 15/Danby to further include a housing that includes a first portion that extends away from the handle portion and encloses a portion of the push rod assembly, and the housing includes a second portion that extends away from the handle portion and the first portion as taught by Danby because this provides an expected result of connecting to the handle portion(s) and providing a protective case for the motor and push rod assembly.

21. Claim 16 is rejected on the ground of nonstatutory double patenting as being unpatentable over claim 15 of U.S. Patent No. 12,396,919 in view of Danby

et al. (2015/0005682) as applied to claim 14 above, and further in view of Pepe (2017/0304145).

Regarding instant claim 16, the modified Patented Claim 15/Danby device is silent regarding including a battery housed in the handle portion.

Pepe teaches a related handheld percussive massage device (Fig. 1; “to-and-fro motion is part of percussive massage therapy” see lines 19-22 of [0026]) that includes two handle portions (primary handle 12, secondary handle 14, Fig. 1) and a battery is housed in at least one of the handle portion(s) (“The motor is powered by a rechargeable battery, which is preferably housed within one of the handles.” See the last sentence of [0026]). One of ordinary skill in the art would recognize that a rechargeable battery provides predictable advantages, such as improving portability of the device as it would not need to be plugged in during use, and improving convenience by allowing the battery to be recharged.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the power source and handle portion of Patented Claim 15/Danby to include a rechargeable battery housed in the handle portion as taught by Pepe because this is a combination of prior art elements according to known techniques (placing a rechargeable battery within a handle) and provides predictable advantages such as improving portability of the device as it would not need to be plugged in during use, and improving convenience by allowing the battery to be recharged.

22. Claim 17 is rejected on the ground of nonstatutory double patenting as being unpatentable over claim 15 of U.S. Patent No. 12,396,919 in view of Danby

et al. (2015/0005682) as applied to claim 14 above, and further in view of Huang (2001/0027280).

Regarding instant claim 17, the modified Patented Claim 15/Danby device as currently combined is silent regarding wherein the percussive massage device includes a bearing between the eccentric shaft and the push rod assembly, the output shaft is centered on the reciprocation path, and the motor includes an end positioned on an opposite side of the reciprocation path from the bearing.

Huang teaches a related percussive massage device (Fig. 5, see title) including a motor (motor 30, Fig. 5), a bearing (rotary bearing 42, Figs. 4-5) between an eccentric shaft (crank arm 36 has an eccentric shaft that is received within rotary bearing 42 as seen in Figs. 4-5) and a push rod assembly (vertical connecting rod 40, Fig. 5), that includes an output shaft (second end 48, Fig. 5) centered on a reciprocation path (connecting rod 40 reciprocates axially, “up and down” see the first sentence and last sentence of [0021]. The second end 48 is centered on this axial movement), and the motor (30) includes an end (either end of the motor 30 adjacent shaft 34, Fig. 5) positioned on an opposite side of the reciprocating path from the bearing (see Fig. 5, the output shaft 48 is reciprocated up and down along a reciprocating path. The motor 30 is positioned to the left of this reciprocating path and the bearing 42 is positioned to the right of the reciprocating path). This is a known push rod assembly to produce reciprocating movement in an up and down direction, and provides an expected result of a percussive massage.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the device of Patented

Claim 15/Danby to further include a bearing between the eccentric shaft and the push rod assembly, the output shaft is centered on the reciprocation path, and the motor includes an end positioned on an opposite side of the reciprocation path from the bearing as taught by Huang because this is a simple substitution of one known reciprocating movement mechanism for another known reciprocating movement mechanism, to provide predictable results of a percussive massage mechanism.

23. Claims 3-4, 6-7, and 9-13 are rejected on the ground of nonstatutory double patenting as being unpatentable over claim(s) 1 and 8-9 of U.S. Patent No. 12,064,387 (hereinafter “Patent ‘387 Claim”) in view of Danby et al. (2015/0005682).

Regarding instant claim 3, Patent ‘387 Claim 1 discloses a percussive massage system (see col. 34, line 6) comprising:

- a percussive device comprising (see col. 34, line 7):

- a housing (see col. 34, line 8);

- a handle portion (see col. 34, line 8);

- a motor (see col. 34, line 10);

- an eccentric shaft configured to travel in a circle in response to activation of the motor (see col. 34, lines 12-13); and

- a push rod assembly connected to the motor (see col. 34, line 14), wherein the push rod assembly includes a “connector” configured to reciprocate on a reciprocation path (see col. 34, lines 16-19),

- wherein:

the reciprocation path is on a dividing plane (see col. 34, lines 19-20, the “common plane” is considered a dividing plane because any plane will necessarily divide a space relative to the plane), a proximal end of the push rod assembly is connected to the eccentric shaft at a location offset from the dividing plane in a first direction (see col. 34, lines 21-23), and

the motor extends transverse to the handle portion (see col. 34, lines 19-21) and away from the dividing plane in a second direction that is opposite the first direction (see col. 34, lines 23-25); and

at least one attachment configured to be operatively connected to the percussive device (see col. 34, lines 26-27).

Patent ‘387 Claim 1 is silent regarding the “connector” being an output shaft, and the reciprocation path being transverse to the handle portion.

Danby teaches a related percussive massage system (Fig. 1 has massaging head 130 that is driven by a piston in a reciprocating motion, see para. [0005], and see the third sentence of [0037]) comprising: a handle portion (second handle 108, Fig. 1); a motor (motor 210, Fig. 2); a push rod assembly (flywheel 212, crank pin 213, crank bearing 214, piston 230, Fig. 4) connected to the motor (“motor 210 includes a shaft 211 that extends into a flywheel 212” see the first sentence of [0034], Fig. 2, Fig. 4), wherein the push rod assembly includes an output shaft (piston 230, Fig. 4) configured to reciprocate (“causing reciprocal motion of piston 230” see the last sentence of [0036]; “piston 230 may only move in a back-and-forth motion along its longitudinal axis” see the third sentence of [0037]) on a reciprocation path (the space that piston 230 occupies as it reciprocates along its longitudinal axis, see “Reciprocation Path 1” in annotated

Figure A above) that is transverse to the handle portion (see “Transverse Axis 2” in annotated Figure A above, the piston 230 reciprocates along a vertical path, which is transverse to at least part of the handle portion 108 where it connects to the housing). This arrangement of the reciprocation path for the push rod assembly provides expected results that the device is suited to apply a deep muscle-stimulating massage to increase muscle metabolism, increase the lactic acid cycle and relieve pain (see para. [0002]).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the connector and handle portion of Patent ‘387 Claim 1 to be an output configured to reciprocate on a reciprocation path, with the reciprocation path transverse to the handle portion as taught by Danby because this is a simple substitution of one known reciprocating push rod assembly for another known reciprocating push rod assembly, to provide predictable results of a reciprocating massage mechanism that is suitable to apply a deep muscle-stimulating massage to increase muscle metabolism, increase the lactic acid cycle and relieve pain.

Regarding instant claim 4, the modified Patent ‘387 Claim 1/Danby device discloses wherein an interior angle defined between the handle portion and the output shaft is obtuse (see annotated Figs. A-B and the claim 4 rejection statement above).

Regarding instant claim 6, Patent ‘387 Claim 8 depends from Patent ‘387 Claim 1, and further discloses a switch for activating the motor, wherein the switch is located on a portion of the housing that faces an opposite direction from a distal end of the push rod assembly (see col. 34, lines 50-54 of ‘387).

Regarding instant claim 7, Patent '387 Claim 9 depends from Patent '387 Claim 1, and further discloses wherein the device includes a switch and an electronic display that faces a same direction as the switch, wherein the switch is configured for activating the motor (see col. 34, lines 55-58 of '387).

Regarding instant claim 9, the modified Patent '387 Claim 1/Danby device as currently combined is silent regarding wherein the housing includes a first portion that extends away from the handle portion and encloses a portion of the push rod assembly and a second portion that extends away from the handle portion and the first portion.

Danby additionally teaches wherein the housing (102, 104, Fig. 1) includes a first portion (main housing 102, Fig. 1) that extends away from the handle portion (main housing 102 extends away from handle portion 108, toward the other handle 106 as seen in Fig. 1) and encloses a portion of the push rod assembly (see Fig. 1, the main housing is adjacent handle 106 and 108 in the center of the device and thus the main housing 102 encloses at least a portion of the push rod assembly as further seen in Fig. 2) and a second portion (upper housing 104, Fig. 1) that extends away from the handle portion (upper housing 104 extends away from at least the lower connection of handle portion 108 as seen in Fig. 1) and the first portion (102, see Fig. 1). This provides an expected result of positioning a motor adjacent a push rod assembly (including piston 230, Figs. 2-4) to drive the push rod assembly from within a protective housing.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the device of Patent '387 Claim 1/Danby to include a housing with a first portion that extends away from the handle portion and encloses a portion of the push rod assembly and a second portion

that extends away from the handle portion and the first portion as taught by Danby because this provides an expected result of positioning a motor adjacent a push rod assembly to drive the push rod assembly from within a protective housing.

Regarding instant claim 10, the modified Patent '387/Danby device as currently combined is silent regarding wherein the motor is located outside of the handle portion.

Danby additionally teaches wherein the motor (210, Figs. 2-3) is located within a housing (102, 104, Figs. 1-2) rather than being in the handle portion (108, Fig. 1). Thus, the motor is outside the handle portion. This provides an expected result of positioning a motor adjacent a push rod assembly (including piston 230, Figs. 2-4) to drive the push rod assembly from within a protective housing.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the motor of Patent '387/Danby to be located outside of the handle portion as taught by Danby because this provides an expected result of positioning a motor adjacent a push rod assembly to drive the push rod assembly from within a protective housing.

Regarding instant claim 11, the modified Patent '387/Danby device as currently combined is silent regarding wherein the attachment is configured to be connected to a distal end of the push rod assembly.

Danby additionally teaches an attachment (massage head 130 stated to have a quick-release connection, see Fig. 1, the last sentence of [0026]; see also Figs. 6A-6B) configured to be connected to a distal end of the push rod assembly (attachment 130, Fig. 1; massaging head 620 with shaft 621, Figs. 6-6A, is connected to distal end of piston 602 as massaging head 620 is inserted into the distal end and comes in close

contact with the wall at the distal end). This allows different massage attachments to be selectively applied (see para. [0050]), even without turning off the massaging device (see the last sentence of [0048]).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the attachment of Patent '387/Danby to be connected to a distal end of the push rod assembly as taught by Danby because this allows different massage attachments to be selectively applied (see para. [0050]), even without turning off the massaging device (see the last sentence of [0048] of Danby).

Regarding instant claim 12, the modified Patent '387/Danby device discloses wherein the distal end of the push rod assembly includes a distal end of the output shaft (distal end of piston 230, Fig. 2; piston 602, Fig. 6 of Danby), and the attachment (130, Fig. 1; 620, Fig. 6 of Danby) is connected to the distal end of the output shaft (massaging head 620 with shaft 621, Figs. 6-6A, is connected to distal end of piston 602 as massaging head 620 is inserted into the distal end and comes in close contact with the wall at the distal end).

Regarding instant claim 13, the modified Patent '387/Danby device discloses wherein the attachment (130, Fig. 1; 620, Fig. 6 of Danby) is removably connected (see Figs. 6-6A of Danby) to the distal end of the push rod assembly (massaging head 620 with shaft 621, Figs. 6-6A, is connected to distal end of piston 602 as massaging head 620 is inserted into the distal end and comes in close contact with the wall at the distal end).

24. Claim 5 is rejected on the ground of nonstatutory double patenting as being unpatentable over claim 1 of U.S. Patent No. 12,064,387 ("Patent '387 Claim 1") in view of Danby et al. (2015/0005682) as applied to claim 3 above, and further in view of Noble et al. (4,730,605).

Regarding instant claim 5, the modified Patent '387 Claim 1/Danby device is silent regarding the push rod assembly includes a push rod that includes a proximal end and a distal end, the proximal end of the push rod assembly includes the proximal end of the push rod, and the proximal end of the push rod is farther from the reciprocation path than the distal end of the push rod.

Noble teaches a related percussion device (Fig. 4, see Title) with a motor (drive unit 28, Fig. 8) operably connected to a push rod assembly (coupling arrangement 42, Fig. 8) that includes a push rod (connecting rod 56, Fig. 6) and an output shaft (neck portion 66, Fig. 6) configured to reciprocate (see col. 3, lines 1-5, and corresponding reciprocating movement along arrow 44, Fig. 8). The push rod (56) includes a proximal end (the end adjacent stub shaft 58, Fig. 4) and a distal end (the end at shoulder 62, adjacent neck portion 66, see Fig. 6), the proximal end of the push rod assembly (42, Fig. 8) includes the proximal end of the push rod (the proximal end of coupling arrangement 42 includes the proximal end of push rod 56, see Fig. 4, Fig. 6), and the proximal end of the push rod (the end adjacent stub shaft 58, Fig. 4) is farther from a reciprocation path than the distal end of the push rod (see Figure 8, the reciprocation path is along arrow 44, which aligns with the distal end of push rod 56, while the proximal end of push rod 56 is laterally displaced to the right as seen in Fig. 8, Fig. 4). The proximal end of the push rod is farther from the reciprocation path due to the

presence of a counterbalance weight (52, Fig. 4, Fig. 8) that “ensures that the eccentric is dynamically balances and avoids undesirable vibrations when motor 28 is running” (see col. 3, lines 23-26).

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the push rod assembly of Patent ‘387 Claim 1/Danby to be replaced with the counterbalance weight and push rod assembly including a push rod as taught by Noble because this would be a simple substitution of one known reciprocation driving mechanism for another known reciprocation driving mechanism (substituting Danby’s reciprocating push rod assembly with Noble’s reciprocating push rod assembly), and provide a predictable result that the presence of the counterbalance weight between the eccentric shaft and the reciprocating push rod/output shaft would dynamically balance the push rod assembly and avoid undesirable vibrations.

25. Claim 8 is rejected on the ground of nonstatutory double patenting as being unpatentable over claim 1 of U.S. Patent No. 12,064,387 (“Patent ‘387 Claim 1”) in view of Danby et al. (2015/0005682) as applied to claim 3 above, and further in view of Pepe (2017/0304145).

Regarding instant claim 8, the modified Patent ‘387 Claim 1/Danby device is silent regarding including a battery at least partially located in the handle portion.

Pepe teaches a related handheld percussive massage device (Fig. 1; “to-and-fro motion is part of percussive massage therapy” see lines 19-22 of [0026]) that includes two handle portions (primary handle 12, secondary handle 14, Fig. 1) and a battery is located in at least one of the handle portion(s) (“The motor is powered by a

rechargeable battery, which is preferably housed within one of the handles.” See the last sentence of [0026]). One of ordinary skill in the art would recognize that a rechargeable battery provides predictable advantages, such as improving portability of the device as it would not need to be plugged in during use, and improving convenience by allowing the battery to be recharged.

Therefore, it would have been obvious to one having ordinary skill in the art before the effective filing date of the claimed invention to modify the power source and handle portion of Patent ‘387 Claim 1/Danby to include a rechargeable battery in the handle portion as taught by Pepe because this is a combination of prior art elements according to known techniques (placing a rechargeable battery within a handle) and provides predictable advantages such as improving portability of the device as it would not need to be plugged in during use, and improving convenience by allowing the battery to be recharged.

Conclusion

26. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sweetland (1,660,821) discloses a related percussion massage device with a crankshaft, bearing, and handle portion that is transverse to the reciprocation path. Redding (2,078,159) discloses a related vertebral adjuster with a display on a portion of the housing facing opposite the distal end of the output shaft. McShirley (2,581,806) discloses a related percussion massage device with a handle portion that forms an obtuse angle with the reciprocating output shaft. McCaw (3,169,521) discloses a vibrating massager with a plurality of handle portions that each form an obtuse angle with the reciprocating output shaft. Teranishi (3,837,335)

discloses a related percussion massage device with a handle portion that is transverse to the reciprocation path and a motor that is mounted on one side of the reciprocation path and a bearing that is mounted on another side.

27. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHRISTOPHER E MILLER whose telephone number is (571)270-1473. The examiner can normally be reached Mon-Fri 10:00-6:30 (eastern).

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 at 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 published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and <https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/CHRISTOPHER E MILLER/
Examiner, Art Unit 3785

<i>Notice of References Cited</i>	Application/Control No. 19/295,322		Applicant(s)/Patent Under Reexamination WERSLAND et al.	
	Examiner CHRISTOPHER E MILLER		Art Unit 3785	Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
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*	B	US-1660821-A	1928-02-28	SWEETLAND WILLIAM H	A61H23/0254	601/101
*	C	US-3169521-A	1965-02-16	EARL MCCAWE	A61H7/005	601/87
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NON-PATENT DOCUMENTS

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

<i>Search Notes</i> 	Application/Control No. 19/295,322	Applicant(s)/Patent Under Reexamination WERSLAND et al.
	Examiner CHRISTOPHER E MILLER	Art Unit 3785

CPC - Searched*		
Symbol	Date	Examiner
A61H 23/00, 02, 006, 0254;	10/10/2025	CEM

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

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

Search Notes		
Search Notes	Date	Examiner
PE2E Keyword text search	09/23/2025	CEM
Inventor search	09/23/2025	CEM
Conducted Similarity Searches	09/24/2025	CEM

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner

/CHRISTOPHER E MILLER/ Examiner, Art Unit 3785	
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<i>Index of Claims</i> 	Application/Control No. 19/295,322	Applicant(s)/Patent Under Reexamination WERSLAND et al.
	Examiner CHRISTOPHER E MILLER	Art Unit 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	10/10/2025								
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Application history Attorney/Agent/Custodian

IFW Reference Manager Interference and

Lookup

Inventor last name

NAZARIAN

Inventor first name

Benjamin

Inventor middle name

Exact match results



Results

Inventor

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PE2E SEARCH - Search History (Prior Art)

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		US-20150040334-A1 OR US-20150007404-A1 OR US-20120067164-A1 OR US-20130175486-A1 OR US-20120324665-A1 OR US-20120198658-A1 OR US-20120167725-A1 OR US-20120006159-A1 OR US-20110099765-A1 OR US-20110002732-A1 OR US-20100314593-A1 OR US-20100229315-A1 OR US-20100107828-A1 OR US-20090223061-A1 OR US-20090013834-A1 OR US-20150150758-A1 OR US-20190343713-A1 OR US-20150305487-A1 OR US-20170367923-A1 OR US-20080209648-A1 OR US-20140101892-A1 OR US-20050113870-A1 OR US-20090083919-A1 OR US-20100130334-A1 OR US-20150150599-A1 OR US-20130060081-A1 OR US-20140357944-A1 OR US-20050075591-A1 OR US-20050049529-A1 OR US-20070144750-A1 OR US-20120184420-A1 OR US-20120167322-A1 OR US-20070287938-A1 OR US-20170027798-A1).did. AND PGPB.dbnm.) OR ((US-D826418-S OR US-D820466-S OR US-D818599-S OR US-D708755-S OR US-D698935-S OR US-D666734-S OR US-D657065-S OR US-D649657-S OR US-D627897-S OR US-D530020-S OR US-D484248-S OR US-					
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		D456909-S OR US- D407498-S OR US- D388175-S OR US- D373197-S OR US- D301617-S OR US- D222570-S OR US- 7282037-B2 OR US- 7229424-B2 OR US- 9889066-B2 OR US- D886317-S OR US- D875961-S OR US- 10314762-B1 OR US- D837395-S OR US- 7207957-B2 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 4513737-A OR US- 10357425-B2 OR US- 4632095-A OR US- 6758826-B2 OR US- D805210-S OR US- 9532918-B1 OR US- 7335171-B2 OR US- 5862564-A OR US- 4266536-A OR US- 10548808-B2 OR US- 10327981-B1 OR US- D539915-S OR US- 6261251-B1 OR US- 5560746-A OR US- D317204-S OR US- 4798198-A OR US- 3856002-A OR US- D691731-S OR US- D689620-S OR US- 7211057-B2 OR US- 7122015-B2 OR US- 6988997-B2 OR US- 6966883-B2 OR US- 5848980-A OR US- D387174-S OR US- 5193528-A OR US- 7128722-B2 OR US- 7125390-B2 OR US- 7041072-B2 OR US- 6682496-B1 OR US- 10492984-B2 OR US- D874015-S OR US- D855822-S OR US- 4841955-A OR US- 4827914-A OR US- 4088128-A OR US- 6616621-B1 OR US- 6440091-B1 OR US- D455837-S OR US- 6165145-A OR US- 5951501-A OR US- 5925002-A OR US-				
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		5803916-A OR US- D367712-S OR US- D373640-S OR US- 5415621-A OR US- 5159922-A OR US- 5140979-A OR US- 5065743-A OR US- 4730605-A OR US- 4549535-A OR US- 3993052-A OR US- 3841321-A OR US- 1657765-A OR US- D877351-S OR US- 6500135-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5224469-A OR US- 1339179-A OR US- 4846158-A OR US- 4757806-A OR US- 4149530-A OR US- 10201470-B2 OR US- 6432072-B1 OR US- 5656018-A OR US- 3710785-A OR US- 3494353-A OR US- D847364-S OR US- D885601-S OR US- D884915-S OR US- D884207-S OR US- D884205-S OR US- D880716-S OR US- D880715-S OR US- D880714-S OR US- D879986-S OR US- D872869-S OR US- D866790-S OR US- D656621-S OR US- D484608-S OR US- D447810-S OR US- 6102876-A OR US- D706433-S OR US- D526417-S OR US- D471986-S OR US- D331467-S OR US- D329292-S OR US- D329291-S OR US- D323034-S OR US- 4691693-A OR US- D879985-S OR US- 7927259-B1 OR US- 6663657-B1 OR US- 4566442-A OR US- 3626934-A OR US- D363994-S OR US- 5458119-A OR US- D338070-S OR US- 2074735-A OR US-				
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		6878124-B1 OR US- 3149629-A OR US- 9237981-B1 OR US- 8875337-B2 OR US- 8372111-B2 OR US- 6251089-B1 OR US- 6241694-B1 OR US- 7819828-B2 OR US- D616558-S OR US- D613416-S OR US- 7633246-B2 OR US- D599029-S OR US- 7533758-B1 OR US- 7481783-B1 OR US- 10206848-B2 OR US- 6241696-B1 OR US- 5662593-A OR US- D583480-S OR US- 7435232-B2 OR US- 10226397-B2 OR US- 9265689-B2 OR US- 7361153-B1 OR US- 7291116-B2 OR US- 7077817-B2 OR US- 7025736-B1 OR US- 6994680-B1 OR US- 6925672-B1 OR US- 6841962-B2 OR US- 6830552-B1 OR US- D479607-S OR US- 6607499-B1 OR US- D473657-S OR US- 6436062-B1 OR US- 6406406-B1 OR US- D455499-S OR US- D452572-S OR US- 6332873-B1 OR US- 6269888-B1 OR US- 6010467-A OR US- 5997489-A OR US- 5935090-A OR US- 5935089-A OR US- D398401-S OR US- 5792081-A OR US- 5766210-A OR US- 5735803-A OR US- 5730708-A OR US- 5716332-A OR US- 5711758-A OR US- 5709705-A OR US- 5618315-A OR US- 5405311-A OR US- D353008-S OR US- 5364338-A OR US- 5360111-A OR US- D339637-S OR US- 5117815-A OR US- D435913-S OR US-				
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		4825853-A OR US- 5088474-A OR US- 4958628-A OR US- 4742875-A OR US- 4716890-A OR US- 4669452-A OR US- 10016337-B2 OR US- 7414337-B2 OR US- RE35082-E OR US- 4622956-A OR US- 4604993-A OR US- 4565189-A OR US- 4550718-A OR US- 4532919-A OR US- 4495940-A OR US- 4492223-A OR US- 4483328-A OR US- 4481939-A OR US- 4461286-A OR US- 4381766-A OR US- 4210135-A OR US- 4098266-A OR US- 4079733-A OR US- 4069816-A OR US- 4048989-A OR US- 4016873-A OR US- 3837335-A OR US- 3672355-A OR US- 3385290-A OR US- 3362401-A OR US- 3185146-A OR US- 3077878-A OR US- 2944543-A OR US- 2767707-A OR US- 2691978-A OR US- 2633844-A OR US- 2624335-A OR US- 2581806-A OR US- 2447698-A OR US- 2424699-A OR US- 2342557-A OR US- 2306424-A OR US- 2204259-A OR US- 9980870-B2 OR US- 7144417-B2 OR US- 2168975-A OR US- 2113084-A OR US- 2078159-A OR US- 10426691-B2 OR US- D670389-S OR US- 2048712-A OR US- 2011471-A OR US- 1999939-A OR US- 1969042-A OR US- 1928612-A OR US- 1908051-A OR US- 1796444-A OR US- 1755144-A OR US-					
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		1710051-A OR US- 1660821-A OR US- 7153282-B1 OR US- 1612343-A OR US- 1545027-A OR US- 1516717-A OR US- 1192282-A OR US- 1185583-A OR US- 1123639-A OR US- 1111427-A OR US- 1103669-A OR US- 1006684-A OR US- 0934662-A OR US- 0899234-A OR US- 0827133-A OR US- 0472572-A OR US- 0448883-A OR US- 9345633-B2 OR US- 10548810-B2 OR US- D745180-S OR US- D729940-S OR US- 10675211-B2 OR US- 8622890-B1 OR US- 7699794-B2 OR US- 7431706-B2 OR US- 5624385-A OR US- 3545434-A OR US- 6805679-B2 OR US- 6514179-B1 OR US- 6033372-A OR US- 5891064-A OR US- 5725484-A OR US- 5554102-A OR US- 5484390-A OR US- 2512536-A OR US- 5167226-A OR US- 4712539-A OR US- 4648387-A OR US- 4150668-A OR US- 4116233-A OR US- 4086922-A OR US- 3565063-A OR US- 3298687-A OR US- 3067738-A OR US- 2699771-A OR US- 2628611-A OR US- 2574601-A OR US- 2547243-A OR US- 2519790-A OR US- 2466659-A OR US- 2417744-A OR US- 2294947-A OR US- 2286324-A OR US- 2113444-A OR US- 2003272-A OR US- 1951776-A OR US- 1936022-A OR US- 1668364-A OR US-					
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		D655919-S OR US- D754868-S OR US- D320922-S OR US- D465716-S OR US- D815508-S OR US- D848089-S OR US- D761429-S OR US- D842487-S OR US- 6911010-B2 OR US- D532113-S OR US- D379580-S OR US- 10105280-B2 OR US- D761075-S OR US- 7013588-B2 OR US- D848017-S OR US- D695413-S OR US- 9107799-B2 OR US- 6478755-B2 OR US- D673284-S OR US- 3968789-A OR US- 10959908-B2 OR US- D977664-S OR US- D977663-S OR US- 10561574-B1 OR US- 4576241-A OR US- 5577996-A OR US- 4989585-A OR US- 2246263-A OR US- 9821238-B1 OR US- 8419663-B2 OR US- 9168196-B2 OR US- 6241693-B1 OR US- 9616267-B2 OR US- 4493315-A OR US- 11376185-B2 OR US- D590127-S OR US- D493348-S OR US- D467347-S OR US- D671226-S OR US- D726926-S OR US- D725788-S OR US- D438308-S OR US- D847363-S OR US- D469879-S OR US- D738522-S OR US- D372656-S OR US- 3532918-A).did. AND USPT.dbnm.) OR ((US- 3494353-A OR US- 1657765-A OR US- 1339179-A OR US- 2074735-A OR US- 3149629-A OR US- 2204259-A OR US- 1796444-A OR US- 1660821-A OR US- 3385290-A OR US- 3364921-A OR US-					
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		3362401-A OR US- 3194231-A OR US- 3185146-A OR US- 3077878-A OR US- 2944543-A OR US- 2767707-A OR US- 2688960-A OR US- 2641256-A OR US- 2621652-A OR US- 2581806-A OR US- 2447698-A OR US- 2424699-A OR US- 2347327-A OR US- 2342557-A OR US- 2306424-A OR US- 2273710-A OR US- 2213356-A OR US- 2113084-A OR US- 2079096-A OR US- 2078159-A OR US- 2048712-A OR US- 2048220-A OR US- 2011471-A OR US- 1999939-A OR US- 1969042-A OR US- 1958936-A OR US- 1955623-A OR US- 1928612-A OR US- 1908051-A OR US- 1755144-A OR US- 1719140-A OR US- 1693137-A OR US- 1563944-A OR US- 1545027-A OR US- 1516717-A OR US- 1192282-A OR US- 1185583-A OR US- 1123639-A OR US- 1111427-A OR US- 1103669-A OR US- 1006684-A OR US- 0899234-A OR US- 0827133-A OR US- 0795212-A OR US- 0743147-A OR US- 0732356-A OR US- 0655490-A OR US- 0448883-A OR US- 0444597-A OR US- 3545434-A OR US- 2512536-A OR US- 3169521-A OR US- 3140711-A).did. AND USOC.dbnm.)					
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		"5733029" "5769657" "6228042" "6682496" "9889066" "20060293711" "20080262399" "20100274162" "20110017742" "20130261516" "20130281897" "20140031866" "20150005682" "20160367425" "20170027798" "20170333280" "20180008512" "20180168913" "20180200141" "4088128" "4513737" "4549535" "4790296" "4841955" "5656017" "5733029" "5769657" "6228042" "6682496" "9889066" "20060293711" "20080262399" "20200274162" "20110017742" "20130261516" "20130281897" "20140031866" "20150005682" "20160367425" "20170027798" "20170333280" "20180008512" "20180168913" "20180200141").pn. OR ("10561574" "10492984").urpn. AND (PGPB USPT USOC).dbnm.					
L22	52	("5399148" "6228042" "6805700" "20050090863").pn. OR ("7927259").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/24 10:17 AM
L23	112	("1787211" "4088128" "4513737" "4827914" "4841955" "4858600").pn. OR ("6682496").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/24 10:26 AM
L24	236	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY,	OR	ON	ON	2025/09/24 10:34 AM

		US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US-	CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
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		12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US-				
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		2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1				
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		20030149381-A1 OR US-20120046694-A1 OR US-20020183668- A1 OR US- 20050215929-A1 OR US-20180361137-A1 OR US-20020082532- A1 OR US- 20100222719-A1 OR US-20120253245-A1 OR US-20160074641- A1 OR US- 20160213558-A1 OR US-20140221887-A1 OR US-20090306561- A1 OR US- 20170079865-A1 OR US-20050187498-A1 OR US-20120121309- A1 OR US- 20070150004-A1).did. AND PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US- 2078159-A OR US- 1660821-A OR US- 1657765-A OR US- 1545027-A OR US- 1787211-A).did. AND USOC.dbnm.)					
L25	1	24 AND (dividing near3 axis)	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 10:34 AM
L26	46	16/675772	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 10:43 AM
L27	847	((US-11850204-B2 OR US-11752064-B2 OR US-11730668-B2 OR US-11672728-B1 OR US-D949390-S OR US- 11253423-B1 OR US- 11241357-B2 OR US- 11110260-B1 OR US- 10993874-B1 OR US- D912835-S OR US- 10806660-B1 OR US- D897110-S OR US- 10714953-B1 OR US- 10695508-B2 OR US- 10688290-B1 OR US- 10511777-B2 OR US- 10383486-B2 OR US- 10376659-B2 OR US- 10335345-B2 OR US- 10314762-B1 OR US- 10285722-B2 OR US- 10272011-B1 OR US- 10124165-B2 OR US-	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 10:46 AM

		9839572-B2 OR US- D803572-S OR US- 9808646-B2 OR US- 9801448-B1 OR US- 9782604-B2 OR US- 9592405-B2 OR US- 9456678-B1 OR US- D765982-S OR US- D764173-S OR US- 9278230-B2 OR US- 9278045-B2 OR US- 9126034-B1 OR US- D736399-S OR US- 9084587-B2 OR US- 8951216-B2 OR US- 8936542-B1 OR US- 8864401-B2 OR US- 8715210-B2 OR US- 8709041-B2 OR US- D693932-S OR US- 8506506-B2 OR US- 8397518-B1 OR US- 8372111-B2 OR US- 8157753-B2 OR US- 8028707-B2 OR US- 7959369-B2 OR US- 7927259-B1 OR US- 7896908-B2 OR US- 7793419-B2 OR US- 7695207-B1 OR US- 7644589-B2 OR US- 7559907-B2 OR US- 7479136-B2 OR US- 7435232-B2 OR US- 7425947-B1 OR US- 7273159-B2 OR US- 7258675-B2 OR US- 7204041-B1 OR US- 7204832-B2 OR US- 7083580-B2 OR US- 7063476-B1 OR US- 7014639-B2 OR US- 6979302-B2 OR US- 6980854-B2 OR US- 6974224-B2 OR US- 6965375-B1 OR US- 6896693-B2 OR US- 6875225-B1 OR US- 6766199-B2 OR US- 6748266-B2 OR US- 6743215-B2 OR US- 6702837-B2 OR US- 6682496-B1 OR US- 6663657-B1 OR US- 6535761-B2 OR US- 6524329-B1 OR US- 6461377-B1 OR US- 6443915-B1 OR US-				
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		6438964-B1 OR US- 6432036-B1 OR US- 6416534-B1 OR US- 6401289-B1 OR US- 6352518-B1 OR US- 6336907-B1 OR US- 6312397-B1 OR US- 6245890-B1 OR US- 6228042-B1 OR US- 6221095-B1 OR US- 6123657-A OR US- 6090085-A OR US- 6019482-A OR US- 6017337-A OR US- 6010264-A OR US- 6001070-A OR US- 6001055-A OR US- 5951501-A OR US- 5895418-A OR US- 5803916-A OR US- 5800490-A OR US- 5746702-A OR US- 5725483-A OR US- 5698866-A OR US- 5690608-A OR US- 5662593-A OR US- 5656018-A OR US- 5647841-A OR US- 5632720-A OR US- 5593381-A OR US- 5569168-A OR US- 5511270-A OR US- 5489280-A OR US- 5471695-A OR US- 5447491-A OR US- 5415621-A OR US- 5382222-A OR US- 5363045-A OR US- 5358503-A OR US- 5336159-A OR US- 5311860-A OR US- 5300095-A OR US- 5176130-A OR US- 5174285-A OR US- 5167226-A OR US- 5140979-A OR US- 5131384-A OR US- 5103809-A OR US- 5097828-A OR US- 5088474-A OR US- 5085207-A OR US- 5073058-A OR US- 5067480-A OR US- 5065743-A OR US- 4991749-A OR US- 4930923-A OR US- 4920956-A OR US- 4883380-A OR US-					
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		4858600-A OR US- 4846176-A OR US- 4841955-A OR US- 4827914-A OR US- 4821740-A OR US- 4745909-A OR US- 4741338-A OR US- 4730605-A OR US- 4723860-A OR US- 4716890-A OR US- 4669452-A OR US- 4640284-A OR US- 4614191-A OR US- 4566442-A OR US- 4565189-A OR US- 4561440-A OR US- 4549535-A OR US- 4519389-A OR US- 4513737-A OR US- 4505267-A OR US- 4502469-A OR US- 4495940-A OR US- 4470263-A OR US- 4427001-A OR US- 4397055-A OR US- 4326508-A OR US- 4203431-A OR US- 4171171-A OR US- 4162675-A OR US- 4158246-A OR US- 4150668-A OR US- 4088128-A OR US- 4079733-A OR US- 4046142-A OR US- 3993052-A OR US- 3968789-A OR US- 3837335-A OR US- 3710785-A OR US- 3699952-A OR US- 3626934-A OR US- 3452226-A OR US- 3382866-A OR US- 3099137-A OR US- 12064387-B2 OR US- 11890253-B2 OR US- 11331244-B2 OR US- 12016818-B2 OR US- 12161599-B1 OR US- 7927294-B2 OR US- 9889066-B2 OR US- 12343302-B2 OR US- 3169521-A).did. AND USPT.dbnm.) OR ((US- 20220362097-A1 OR US-20220257460-A1 OR US-20220168175- A1 OR US- 20220125672-A1 OR				
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		US-20080214968-A1 OR US-20080193493-A1 OR US-20080188915-A1 OR US-20080168605-A1 OR US-20080168595-A1 OR US-20080172045-A1 OR US-20080172112-A1 OR US-20080167590-A1 OR US-20080154162-A1 OR US-20080140164-A1 OR US-20080125682-A1 OR US-20080125835-A1 OR US-20080119913-A1 OR US-20080106156-A1 OR US-20080103563-A1 OR US-20080103560-A1 OR US-20080082028-A1 OR US-20080077201-A1 OR US-20080077211-A1 OR US-20080065176-A1 OR US-20080052844-A1 OR US-20080046047-A1 OR US-20080018167-A1 OR US-20080015545-A1 OR US-20080014011-A1 OR US-20070270727-A1 OR US-20070255187-A1 OR US-20070244416-A1 OR US-20070217199-A1 OR US-20070206986-A1 OR US-20070203436-A1 OR US-20070193278-A1 OR US-20070185553-A1 OR US-20070179573-A1 OR US-20070150004-A1 OR US-20070106347-A1 OR US-20070073366-A1 OR US-20070073198-A1 OR US-20070038206-A1 OR US-20070032843-A1 OR US-20070027411-A1 OR US-20060293711-A1 OR US-20060282025-A1 OR US-20060276730-					
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		A1 OR US- 20060276731-A1 OR US-20060253051-A1 OR US-20060235341- A1 OR US- 20060211961-A1 OR US-20060135891-A1 OR US-20060135911- A1 OR US- 20060135319-A1 OR US-20060085056-A1 OR US-20060064147- A1 OR US- 20060060184-A1 OR US-20060058714-A1 OR US-20060052729- A1 OR US- 20060047330-A1 OR US-20060030908-A1 OR US-20060025710- A1 OR US- 20060009719-A1 OR US-20050278876-A1 OR US-20050277974- A1 OR US- 20050277950-A1 OR US-20050234383-A1 OR US-20050222525- A1 OR US- 20050209663-A1 OR US-20050209537-A1 OR US-20050203445- A1 OR US- 20050193742-A1 OR US-20050187498-A1 OR US-20050138740- A1 OR US- 20050142093-A1 OR US-20050137504-A1 OR US-20050131497- A1 OR US- 20050131461-A1 OR US-20050113725-A1 OR US-20050107724- A1 OR US- 20050075149-A1 OR US-20050075591-A1 OR US-20050070977- A1 OR US- 20050065579-A1 OR US-20050055070-A1 OR US-20050045189- A1 OR US- 20050043653-A1 OR US-20050005626-A1 OR US-20040260212- A1 OR US- 20040260210-A1 OR				
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		US-20040249320-A1 OR US-20040210277-A1 OR US-20040193079-A1 OR US-20040171970-A1 OR US-20040147984-A1 OR US-20040111086-A1 OR US-20040082983-A1 OR US-20040064074-A1 OR US-20040037895-A1 OR US-20040030325-A1 OR US-20040030370-A1 OR US-20040024438-A1 OR US-20030195443-A1 OR US-20030180690-A1 OR US-20030165480-A1 OR US-20030163176-A1 OR US-20030163068-A1 OR US-20030158505-A1 OR US-20030149381-A1 OR US-20030100936-A1 OR US-20030014096-A1 OR US-20030009116-A1 OR US-20030004441-A1 OR US-20020192231-A1 OR US-20020156509-A1 OR US-20020091425-A1 OR US-20020082536-A1 OR US-20020082532-A1 OR US-20220175127-A1 OR US-20200154854-A1 OR US-20220211575-A1 OR US-20230145400-A1 OR US-20220339061-A1 OR US-20220151865-A1 OR US-20240058207-A1 OR US-20240374468-A1 OR US-20220331585-A1 OR US-20240207655-A1 OR US-20230404841-A1 OR US-20100010507-A1 OR US-20130158547-A1 OR US-20120197357-A1 OR US-20220040030-A1).did. AND					
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		PGPB.dbnm.) OR ((KR-20220058677-A OR CN-216439596-U OR KR-20220030711-A OR CN-215938255-U OR DE-102020123082-A1 OR CN-215779811-U OR CN-114010485-A OR CN-113855514-A OR CN-215133032-U OR CN-214859044-U OR KR-102325386-B1 OR WO-2021222573-A1 OR WO-2021210750-A1 OR WO-2021211238-A1 OR CN-113350154-A OR CN-113274276-A OR KR-20210095422-A OR KR-20210091842-A OR CN-113116702-A OR CN-113081751-A OR CN-213490366-U OR CN-112891186-A OR CN-112791308-A OR CN-112773696-A OR CN-213157619-U OR CN-112741964-A OR KR-20210047406-A OR KR-20210044358-A OR KR-20210044035-A OR CN-112618960-A OR KR-20210036430-A OR KR-20210000722-U OR WO-2021050861-A1 OR WO-2021050868-A1 OR CN-112370646-A OR KR-20210018636-A OR KR-20210016729-A OR CN-112315773-A OR KR-20210013392-A OR CN-112245261-A OR KR-20210001066-A OR CN-111973428-A OR KR-102178263-B1 OR WO-2020227569-A1 OR KR-20200126252-A OR CN-111821150-A OR WO-2020209497-A1 OR KR-102161933-B1 OR KR-20200100378-A OR WO-2020139715-A1 OR CN-210844180-U OR KR-20200063823-A OR KR-102118572-B1 OR KR-20200051098-A				
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		OR KR-20200050488-A OR CN-111109818-A OR KR-20200040003-A OR CN-110711134-A OR KR-102067323-B1 OR CN-209933448-U OR CN-110478222-A OR WO-2019207469-A1 OR WO-2019203423-A1 OR CN-110339042-A OR CN-110302051-A OR CN-110101563-A OR CN-109998891-A OR WO-2019118561-A1 OR CN-109620684-A OR CN-109528473-A OR CN-109394489-A OR CN-109350862-A OR CN-109223500-A OR WO-2019014031-A1 OR CN-108671405-A OR KR-20180113097-A OR KR-20180002806-U OR KR-101891952-B1 OR CN-108543126-A OR CN-108542741-A OR CN-108451704-A OR CN-108451705-A OR KR-20180094694-A OR CN-108392388-A OR WO-2018135671-A1 OR CN-108175673-A OR WO-2018094540-A1 OR CA-3045164-A1 OR KR-101852410-B1 OR CN-106859949-A OR KR-20160072194-A OR WO-2014118596-A1 OR KR-20130007021-U OR JP-5129032-B2 OR KR-101162978-B1 OR CN-201239336-Y OR FR-2998169-A1 OR WO-2014080103-A2 OR CN-110694170-A OR WO-2021198063-A1 OR CN-116133632-A OR CN-113993494-B OR KR-102453088-B1).did. AND FTDB.dbnm.) OR ((US-20220133585-A1 OR CN-113855514-A OR CN-215133032-U OR US-20210154093-A1					
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		OR US-10993874-B1 OR US-10973374-B1 OR US-20210077338-A1 OR US-20210001148-A1 OR JP-2020171460-A OR US-20200261310-A1 OR US-20200154874-A1 OR CN-110694170-A OR US-20190290076-A1 OR CN-209404585-U OR US-20190254922-A1 OR US-20190200814-A1 OR US-20180325328-A1 OR US-20180289584-A1 OR US-20180178032-A1 OR US-20180161237-A1 OR CN-107913174-A OR US-20180092449-A1 OR US-20170112713-A1 OR US-20170056145-A1 OR US-20170056685-A1 OR WO-2017027793-A1 OR US-20160367425-A1 OR US-20140207217-A1 OR US-20140194900-A1 OR US-20140135798-A1 OR WO-2014062647-A1 OR US-20130282085-A1 OR WO-2013021380-A1 OR US-20100274162-A1 OR US-20100222719-A1 OR US-20090182249-A1 OR US-20070185553-A1 OR US-20060085056-A1 OR EP-1525872-A1 OR US-5176130-A OR FR-3108498-A1 OR CN-203089822-U OR WO-2020254297-A1 OR WO-2022034111-A1 OR EP-2862555-A1).did. AND DWPI.dbnm.) OR ((US-3536064-A OR US-3494353-A OR US-3467080-A OR US-3169521-A OR US-3154926-A OR US-2995768-A OR US-					
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		2985166-A OR US-2809630-A OR US-2548411-A OR US-2512536-A OR US-2490074-A OR US-2477883-A OR US-2472385-A OR US-2441682-A OR US-2424699-A OR US-2183726-A OR US-2078159-A OR US-1955863-A OR US-1955623-A OR US-1772501-A OR US-1660821-A OR US-1657765-A OR US-1545027-A OR US-1380986-A OR US-1352894-A OR US-1339179-A OR US-1228669-A).did. AND USOC.dbnm.)					
L28	3	("20150045702" "20200289161" "20190247271").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 10:47 AM
L29	0	("2022/0339061").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/24 10:54 AM
L30	17	("2021/0000683").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/24 10:59 AM
L31	42	(Artificial Intelligence) More like doc: US-20210000683-A1 Text: (US-20210000683-A1 OR US-12350222-B2 OR CA-3150901-A1 OR US-11813221-B2 OR JP-2025028111-A OR CN-115192405-A OR CN-111166643-A OR US-11938082-B1 OR AU-2019204770-B1 OR CN-111407625-A OR HK-40026119-A OR WO-2020101725-A1 OR CN-212326934-U OR US-20030028134- A1 OR CN-113316444- A OR US-10314762-B1 OR US-20210361524- A1 OR US- 20220387252-A1 OR US-20240148605-A1 OR CN-111166643-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/09/24 10:59 AM

L32	315	B).did. ((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/09/24 11:06 AM
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		10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US-				
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		3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932-				
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		A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675- A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR US-20130261516-A1 OR US-20070270727- A1 OR US- 20060282025-A1 OR US-20210283005-A1 OR US-20120167322- A1 OR US- 20140024982-A1 OR US-20160256017-A1 OR US-20130253391- A1 OR US- 20110203824-A1 OR US-20040049137-A1 OR US-20050131461- A1 OR US- 20100137907-A1 OR				
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		US-20060116614-A1 OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US-20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US-20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US-20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US-20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US-20030149381-A1 OR US-20120046694-A1 OR US-20020183668-A1 OR US-20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US-20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US-20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US-20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US-20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US-20150045702-A1 OR US-20200390644-A1 OR US-20170238686-A1 OR US-20190298036-A1 OR US-20210290430-A1 OR US-20150202114-A1 OR US-20030158505-A1 OR US-20160045081-A1 OR US-20190159961-A1					
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		A1 OR US- 20210196563-A1 OR US-20100331745-A1 OR US-20210113365- A1 OR US- 20120037184-A1 OR US-20200268594-A1 OR US-20200129372- A1 OR US- 20210113427-A1 OR US-20210001148-A1 OR US-20190175396- A1 OR US- 20060052729-A1 OR US-20120253246-A1 OR US-20200261306- A1 OR US- 20210161759-A1 OR US-20110009783-A1 OR US-20220151865- A1 OR US- 20220339061-A1 OR US-20080234611-A1 OR US-20220168175- A1 OR US- 20210113421-A1 OR US-20100274162-A1 OR US-20220362097- A1 OR US- 20200230012-A1 OR US-20210077340-A1 OR US-20200009010- A1 OR US- 20210022951-A1 OR US-20220047412-A1 OR US-20150174387- A1 OR US- 20170304144-A1 OR US-20180031090-A1 OR US-20160192814- A1 OR US- 20200289364-A1 OR US-20240374468-A1 OR US-20200155410- A1 OR US- 20200276079-A1 OR US-20210307998-A1 OR US-20210000683- A1 OR US- 20030028134-A1 OR US-20210361524-A1 OR US-20220387252- A1 OR US- 20210196562-A1 OR US-20190365598-A1 OR US-20200393026- A1 OR US- 20200085684-A1 OR				
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L33	50	<p>US-20210121360-A1).did. AND PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US-2078159-A OR US-1660821-A OR US-1657765-A OR US-1545027-A OR US-1787211-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683-A1).did. AND DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1).did. AND FTDB.dbnm.)</p> <p>(Artificial Intelligence) Similar to: 16/168,100 with 0 CPC Selections and 0 Text Selections</p> <p>Text: (US-20200085675-A1 OR US-20210283005-A1 OR US-10959908-B2 OR WO-2021211892-A1 OR US-20210322257-A1 OR CN-115068300-A OR US-6981954-B2 OR US-20020169400-A1 OR US-20010027280-A1 OR US-6733466-B2 OR US-20020193712-A1 OR US-20230225932-A1 OR WO-9526702-A2 OR US-20190247271-A1 OR AU-2064295-A OR AU-682592-B2 OR AU-2003224706-B2 OR US-6500135-B2 OR US-20060094994-A1 OR US-7491184-B2 OR US-20110118637-A1 OR US-8512265-B2 OR WO-0038613-A2 OR US-5716332-A OR US-20030028134-A1 OR US-20020161315-A1 OR US-6432072-B1 OR EP-0229531-A2 OR US-7128722-B2 OR</p>	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/09/24 11:06 AM
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L34	50	<p>CA-1302817-C OR US-20050010141-A1 OR US-20200330321-A1 OR US-20220047452-A1 OR AU-2003224706-A1 OR US-10702448-B2 OR WO-03082179-A2 OR CA-2480871-C OR US-20210154092-A1 OR KR-20220003634-A OR US-20050020947-A1 OR US-20200069510-A1 OR US-4730605-A OR US-6165145-A OR KR-20210095228-A OR KR-102345756-B1 OR KR-102438489-B1 OR US-12396919-B2 OR US-10959911-B2 OR WO-2018101755-A1 OR KR-102283189-B1).did.</p> <p>(Artificial Intelligence) Similar to: 16/168,100 with 5 CPC Selections and 0 Text Selections</p> <p>Text: (KR-20220003634-A OR KR-102438489-B1 OR CN-114732702-A OR AU-2019417557-A1 OR KR-20200127266-A OR WO-2020139715-A1 OR KR-20210095228-A OR KR-102345756-B1 OR KR-102283189-B1 OR JP-2025069456-A OR US-20210283005-A1 OR US-20200085675-A1 OR US-10959908-B2 OR US-20190247271-A1 OR CN-111544279-A OR AU-2020267581-A1 OR US-11484461-B2 OR US-20200405568-A1 OR JP-2019180804-A OR WO-2018221299-A1 OR US-11701291-B2 OR CN-111228077-B OR CN-111228077-A OR US-20200170877-A1 OR CN-113908035-A OR US-11452670-B2</p>	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/09/24 11:06 AM
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L35	50	<p>OR US-20230248609-A1 OR CA-3152118-A1 OR AU-2020269393-A1 OR US-20210244611-A1 OR US-10945915-B2 OR US-11633323-B2 OR US-20200352821-A1 OR US-11564860-B2 OR US-20220047451-A1 OR US-20210186800-A1 OR US-11160723-B2 OR US-12396919-B2 OR JP-2021006187-A OR JP-7485825-B2 OR JP-2023083566-A OR JP-7270483-B2 OR JP-7560697-B2 OR JP-2024087089-A OR CN-112137792-A OR CN-112137792-B OR JP-7208775-B2 OR JP-6752028-B2 OR JP-2020081646-A OR JP-2017148409-A).did.</p> <p>(Artificial Intelligence) Similar to: 19/295,322 with 0 CPC Selections and 0 Text Selections</p> <p>Text: (US-20230248609-A1 OR US-20210244611-A1 OR US-12329711-B2 OR US-20220257460-A1 OR US-10857064-B2 OR US-20200261307-A1 OR CA-3150901-A1 OR US-20210059898-A1 OR WO-2021050861-A1 OR AU-2020347255-A1 OR KR-20220062350-A OR EP-3764971-B1 OR US-20200289365-A1 OR US-11357697-B2 OR US-10959911-B2 OR AU-2020267581-A1 OR WO-2020227569-A1 OR JP-2025028111-A OR CA-3093587-A1 OR CN-114630646-B OR CA-3139527-A1 OR KR-20200127266-A OR WO-2020139715-A1 OR AU-2019417557-A1</p>	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/09/24 11:07 AM
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L36	50	<p>OR WO-2021222573-A1 OR KR-20220005080-A OR CA-3093587-C OR KR-102438489-B1 OR KR-20220003634-A OR KR-102345756-B1 OR US-20200261310-A1 OR KR-102283189-B1 OR KR-20210095228-A OR CN-118766736-A OR US-20220047452-A1 OR US-20200330321-A1 OR JP-2022532147-A OR AU-2019417557-B2 OR JP-7536864-B2 OR CN-114449987-B OR US-11744769-B2 OR US-20230225932-A1 OR US-20200069510-A1 OR US-20230277410-A1 OR US-10702448-B2 OR US-11160722-B2 OR US-11857481-B2 OR US-20210154092-A1 OR US-11559462-B2 OR US-10918565-B2).did.</p> <p>(Artificial Intelligence) Similar to: 19/295,322 with 3 CPC Selections and 0 Text Selections</p> <p>Text: (WO-2024063899-A1 OR US-20240099932-A1 OR US-20170304145-A1 OR WO-2024189510-A1 OR US-20240382372-A1 OR US-20230301867-A1 OR EP-3747502-A1 OR WO-2020103346-A1 OR CN-111989076-B OR CN-111989076-A OR JP-2022179750-A OR JP-2025069456-A OR AU-2019417557-A1 OR WO-2020139715-A1 OR CN-114732702-A OR KR-20200127266-A OR EP-3764971-B1 OR CN-114732702-B OR</p>	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/09/24 11:07 AM
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		KR-20220003634-A OR KR-20210095228-A OR KR-102345756-B1 OR CA-3093587-A1 OR CA-3093587-C OR KR- 102283189-B1 OR RU- 2744207-C1 OR KR- 102438489-B1 OR US- 20200237612-A1 OR US-11890254-B2 OR US-20210244611-A1 OR US-20230248609- A1 OR US- 20170156975-A1 OR CN-106137694-A OR AU-2019417557-B2 OR US-20210322257-A1 OR WO-2021211892- A1 OR GB-2621950-A OR US-20030009116- A1 OR WO-03003967- A2 OR US- 20050015028-A1 OR US-6758826-B2 OR US-7122015-B2 OR US-12102583-B2 OR CN-118141673-B OR US-12285378-B2 OR US-12290486-B2 OR US-20250099325-A1 OR US-12109165-B2 OR US-20220362097- A1 OR US- 20200046601-A1 OR US-20240307261- A1).did.					
L37	79	33 34 35 36	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 11:07 AM
L38	154	33 34 35 36	(US-PGPUB; USPAT; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/09/24 11:07 AM
L39	38	(Artificial Intelligence) More like doc: <u>US-20170304145-A1</u> Text: (US-1339179-A OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA,	OR	ON	ON	2025/09/24 11:09 AM

L40	327	<p>2441682-A OR US-3626934-A OR US-4549535-A OR US-5085207-A OR AU-2716700-A OR US-6758826-B2 OR US-6805700-B2 OR JP-4405195-B2 OR US-7927259-B1 OR US-20100274162-A1 OR FI-123981-B OR FR-2998168-B1 OR US-20160279017-A1 OR AU-2016284030-A1 OR US-20170304145-A1 OR CN-210673743-U OR ES-2779729-T3 OR JP-2581413-Y2 OR JP-2565566-Z).did.</p> <p>((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US-3993052-A OR US-12016818-B2 OR US-11744769-B2 OR US-11559462-B2 OR US-11452670-B2 OR US-11432994-B2 OR US-11357697-B2 OR US-10426691-B2 OR US-9889066-B2 OR US-6875186-B2 OR US-6599260-B2 OR US-5415621-A OR US-4841955-A OR US-4716890-A OR US-4513737-A OR US-4461286-A OR US-4088128-A OR US-4016873-A OR US-3837335-A OR US-3710785-A OR US-</p>	<p>EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)</p> <p>(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)</p>	OR	ON	ON	2025/09/24 11:17 AM
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		10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US-				
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		5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US-					
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		4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675-				
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		A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR US-20130261516-A1 OR US-20070270727- A1 OR US- 20060282025-A1 OR US-20210283005-A1 OR US-20120167322- A1 OR US- 20140024982-A1 OR US-20160256017-A1 OR US-20130253391- A1 OR US- 20110203824-A1 OR US-20040049137-A1 OR US-20050131461- A1 OR US- 20100137907-A1 OR US-20060116614-A1 OR US-20150119771- A1 OR US- 20090043231-A1 OR US-20060047315-A1 OR US-20030195443- A1 OR US- 20090270915-A1 OR US-20190254922-A1 OR US-20190254921- A1 OR US- 20060293711-A1 OR US-20190247271-A1 OR US-20140031866- A1 OR US- 20020107459-A1 OR US-20140142472-A1 OR US-20020082536- A1 OR US- 20040249320-A1 OR US-20050222524-A1 OR US-20160213554- A1 OR US- 20030149381-A1 OR US-20120046694-A1 OR US-20020183668- A1 OR US- 20050215929-A1 OR US-20180361137-A1 OR US-20020082532- A1 OR US- 20100222719-A1 OR US-20120253245-A1 OR US-20160074641- A1 OR US- 20160213558-A1 OR				
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		US-20140221887-A1 OR US-20090306561-A1 OR US-20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US-20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US-20150045702-A1 OR US-20200390644-A1 OR US-20170238686-A1 OR US-20190298036-A1 OR US-20210290430-A1 OR US-20150202114-A1 OR US-20030158505-A1 OR US-20160045081-A1 OR US-20190159961-A1 OR US-20210196563-A1 OR US-20100331745-A1 OR US-20210113365-A1 OR US-20120037184-A1 OR US-20200268594-A1 OR US-20200129372-A1 OR US-20210113427-A1 OR US-20210001148-A1 OR US-20190175396-A1 OR US-20060052729-A1 OR US-20120253246-A1 OR US-20200261306-A1 OR US-20210161759-A1 OR US-20110009783-A1 OR US-20220151865-A1 OR US-20220339061-A1 OR US-20080234611-A1 OR US-20220168175-A1 OR US-20210113421-A1 OR US-20100274162-A1 OR US-20220362097-A1 OR US-20200230012-A1 OR US-20210077340-A1 OR US-20200009010-A1 OR US-20210022951-A1 OR US-20220047412-A1 OR US-20150174387-					
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		A1 OR US- 20170304144-A1 OR US-20180031090-A1 OR US-20160192814- A1 OR US- 20200289364-A1 OR US-20240374468-A1 OR US-20200155410- A1 OR US- 20200276079-A1 OR US-20210307998-A1 OR US-20210000683- A1 OR US- 20030028134-A1 OR US-20210361524-A1 OR US-20220387252- A1 OR US- 20210196562-A1 OR US-20190365598-A1 OR US-20200393026- A1 OR US- 20200085684-A1 OR US-20210121360-A1 OR US-20200046601- A1 OR US- 20250099325-A1 OR US-20230301867- A1).did. AND PGPB.dbnm.) OR ((US- 3494353-A OR US- 3169521-A OR US- 2078159-A OR US- 1660821-A OR US- 1657765-A OR US- 1545027-A OR US- 1787211-A OR US- 2441682-A OR US- 1339179-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683- A1 OR US-7927259-B1 OR US-20030195443- A1).did. AND DWPI.dbnm.) OR ((CN- 212326934-U OR JP- 2025028111-A OR CA- 3150901-A1 OR WO- 0038613-A2).did. AND FTDB.dbnm.)					
L41	189	40 NOT (@ad>="20181226")	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 11:18 AM
L42	31	("1660821" "1796444" "1833103" "2706980" "3626934").pn. OR ("3837335").urpn. AND	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/09/24 11:36 AM

L43	20	(PGPB USPT USOC).dbnm. (US-1545027-\$ US-1594636-\$ US-1657765-\$ US-1784301-\$ US-2179594-\$ US-2391671-\$ US-2475861-\$ US-2931632-\$ US-2987334-\$ US-3053559-\$ US-3077837-\$ US-3172675-\$ US-3452226-\$ US-3545301-\$ US-3626934-\$ US-3699952-\$ US-3705579-\$ US-3942251-\$ US-3968789-\$ US-4031763-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 11:52 AM
L44	20	(US-4158246-\$ US-4173217-\$ US-4203431-\$ US-4506159-\$ US-4513737-\$ US-4533796-\$ US-4549535-\$ US-4565189-\$ US-4566442-\$ US-4596406-\$ US-4691693-\$ US-4692958-\$ US-4730605-\$ US-4815224-\$ US-4841955-\$ US-5014681-\$ US-5085207-\$ US-5088474-\$ US-5092317-\$ US-5103809-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:20 PM
L45	22	(US-5201149-\$ US-5207697-\$ US-5212887-\$ US-5417644-\$ US-5501657-\$ US-5569168-\$ US-5573500-\$ US-5656018-\$ US-5860669-\$ US-5910197-\$ US-5935089-\$ US-5951501-\$ US-6003052-\$ US-6006631-\$ US-6146383-\$ US-	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:23 PM

L46	25	6165145-\$ US- 6227959-\$ US- 6228042-\$ US- 6245031-\$ US- 6290660-\$ US- 6401289-\$ US- 6406445-\$).DID. (US-6432072-\$ US- 6537236-\$ US- 6539328-\$ US- 6558338-\$ US- 6568089-\$ US- 6599250-\$ US- 6599260-\$ US- 6663657-\$ US- 6682496-\$ US- 6715781-\$ US- 6723050-\$ US- 6723060-\$ US- 6758826-\$ US- 6805700-\$ US- 6823762-\$ US- 6846295-\$ US- 6994575-\$ US- 7041072-\$ US- 7128721-\$ US- 7169169-\$ US- 7223250-\$ US- 7384405-\$ US- 7431706-\$ US- 7470081-\$ US- 7497639-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:25 PM
L47	21	(US-7503923-\$ US- 7549966-\$ US- 7731672-\$ US- 7740249-\$ US- 7857729-\$ US- 7877880-\$ US- 7927259-\$ US- 7927294-\$ US- 7963717-\$ US- 8313450-\$ US- 8342187-\$ US- 8435194-\$ US- 8622943-\$ US- 8646348-\$ US- 8695461-\$ US- 8770882-\$ US- 8777881-\$ US- 8945104-\$ US- 8951216-\$ US- 9017273-\$ US- 9107486-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:27 PM
L48	25	(US-10034813-\$ US- 10201470-\$ US- 10252051-\$ US- 10276844-\$ US-	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:33 PM

		10314762-\$ US- 10335345-\$ US- 10357425-\$ US- 10557490-\$ US- 10702448-\$ US- 10758027-\$ US- 10857064-\$ US- 10918565-\$ US- 10945915-\$ US- 10959908-\$ US- 10959911-\$ US- 9132058-\$ US- 9138257-\$ US- 9272837-\$ US- 9364385-\$ US- 9416805-\$ US- 9597256-\$ US- 9744600-\$ US- 9872813-\$ US- 9889066-\$ US- 9981366-\$).DID.					
L49	14	(US-10993874-\$ US- 11160723-\$ US- 11478400-\$ US- 11478606-\$ US- 12064387-\$ US- 20010016697-\$ US- 20010027280-\$ US- 20020082532-\$ US- 20020177795-\$ US- 20030014079-\$ US- 20030028134-\$ US- 20030094356-\$ US- 20030144615-\$ US- D143678-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:35 PM
L50	14	(US-20050075591-\$ US-20050109137-\$ US-20050126018-\$ US-20050131461-\$ US-20050203445-\$ US-20050235988-\$ US-20050252011-\$ US-20060025710-\$ US-20060047315-\$ US-20060074455-\$ US-20060123941-\$ US-20060211961-\$ US-20060272664-\$ US-20070129220-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:36 PM
L51	18	(US-20070144310-\$ US-20070150004-\$ US-20070173886-\$ US-20070179414-\$ US-20070270727-\$ US-20070282228-\$ US-20080077061-\$	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:39 PM

L55	1	US-20140097793-\$ US-20140101872-\$ US-20140129174-\$ US-20140163443-\$ US-20140180331-\$).DID. ("20130116503").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:51 PM
L56	10	(US-20140194900-\$ US-20140200495-\$ US-20140207032-\$ US-20140209594-\$ US-20140221887-\$ US-20140305747-\$ US-20140316313-\$ US-20150119771-\$ US-20140194790-\$ US-20150042254-\$ US-40202493-\$ US- 40288473-\$ US- 50005682-\$ US- 50082562-\$ US- 50133833-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:52 PM
L57	1	("20140190023").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:53 PM
L58	18	(US-20150145297-\$ US-20150148592-\$ US-20150157528-\$ US-20150176674-\$ US-20150216719-\$ US-20150257964-\$ US-20150305969-\$ US-20150328081-\$ US-20150375315-\$ US-20160000642-\$ US-20160017905-\$ US-20160030279-\$ US-20160045661-\$ US-20160112841-\$ US-20160113840-\$ US-20160113841-\$ US-20160127129-\$ US-20160129186-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:54 PM
L59	16	(US-20160136040-\$ US-20160166464-\$ US-20160170996-\$ US-20160206502-\$ US-20160243359-\$ US-20160263732-\$ US-20160269486-\$ US-20160310353-\$ US-20160311091-\$ US-20160324717-\$ US-20160338901-\$ US-20160346163-\$	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 12:55 PM

L60	18	US-20160367425-\$ US-20170027798-\$ US-20170042754-\$ US-20170049278-\$).DID. (US-20170069191-\$ US-20170119623-\$ US-20170128320-\$ US-20170156974-\$ US-20170156975-\$ US-20170189227-\$ US-20170216136-\$ US-20170233063-\$ US-20170246074-\$ US-20170304144-\$ US-20170304145-\$ US-20170308046-\$ US-20170312161-\$ US-20170360641-\$ US-20180008512-\$ US-20180050440-\$ US-20180078449-\$ US-20180133101-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 01:03 PM
L61	18	(US-20180140100-\$ US-20180140502-\$ US-20180141188-\$ US-20180154141-\$ US-20180185234-\$ US-20180200141-\$ US-20180236572-\$ US-20180243158-\$ US-20180263845-\$ US-20180279843-\$ US-20180288160-\$ US-20180296433-\$ US-20180315499-\$ US-20180315504-\$ US-20190000709-\$ US-20190038229-\$ US-20190066833-\$ US-20190110945-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 01:04 PM
L62	18	(US-20190175434-\$ US-20190209424-\$ US-20190216677-\$ US-20190232478-\$ US-20190254921-\$ US-20190254922-\$ US-20190314239-\$ US-20190337140-\$ US-20190350793-\$ US-20190381271-\$ US-20200000237-\$ US-20200009010-\$ US-20200016027-\$ US-20200035237-\$	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 01:05 PM

L63	16	US-20200069510-\$ US-20200085675-\$ US-20200090175-\$ US-20200179210-\$).DID. (US-20200179215-\$ US-20200230012-\$ US-20200241683-\$ US-20200261-\$ US- 20200268594-\$ US- 20200294423-\$ US- 20200352821-\$ US- 20200390644-\$ US- 20200397651-\$ US- 20200405570-\$ US- 20210000683-\$ US- 20210022951-\$ US- 20210022955-\$ US- 20210059898-\$ US- 20210085555-\$ US- 20210128402-\$ US- 20210307998-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 01:06 PM
L64	7	(US-20210330530-\$ US-20220000781-\$ US-20220007810-\$ US-20220054350-\$ US-20220087433-\$ US-20220241135-\$ US-20230001131-\$).DID.	(US-PGPUB; USPAT)	OR	ON	ON	2025/09/24 01:07 PM
L65	378	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/09/27 01:53 PM

		6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US-				
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		D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US-					
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		3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US-					
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		20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675- A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR US-20130261516-A1 OR US-20070270727- A1 OR US- 20060282025-A1 OR US-20210283005-A1 OR US-20120167322- A1 OR US- 20140024982-A1 OR US-20160256017-A1 OR US-20130253391- A1 OR US- 20110203824-A1 OR US-20040049137-A1 OR US-20050131461- A1 OR US- 20100137907-A1 OR US-20060116614-A1				
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		OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US-20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US-20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US-20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US-20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US-20030149381-A1 OR US-20120046694-A1 OR US-20020183668-A1 OR US-20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US-20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US-20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US-20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US-20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US-20150045702-A1 OR US-20200390644-A1 OR US-20170238686-A1 OR US-20190298036-A1 OR US-20210290430-A1 OR US-20150202114-A1 OR US-20030158505-A1 OR US-20160045081-A1 OR US-20190159961-A1 OR US-					
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		20210196563-A1 OR US-20100331745-A1 OR US-20210113365- A1 OR US- 20120037184-A1 OR US-20200268594-A1 OR US-20200129372- A1 OR US- 20210113427-A1 OR US-20210001148-A1 OR US-20190175396- A1 OR US- 20060052729-A1 OR US-20120253246-A1 OR US-20200261306- A1 OR US- 20210161759-A1 OR US-20110009783-A1 OR US-20220151865- A1 OR US- 20220339061-A1 OR US-20080234611-A1 OR US-20220168175- A1 OR US- 20210113421-A1 OR US-20100274162-A1 OR US-20220362097- A1 OR US- 20200230012-A1 OR US-20210077340-A1 OR US-20200009010- A1 OR US- 20210022951-A1 OR US-20220047412-A1 OR US-20150174387- A1 OR US- 20170304144-A1 OR US-20180031090-A1 OR US-20160192814- A1 OR US- 20200289364-A1 OR US-20240374468-A1 OR US-20200155410- A1 OR US- 20200276079-A1 OR US-20210307998-A1 OR US-20210000683- A1 OR US- 20030028134-A1 OR US-20210361524-A1 OR US-20220387252- A1 OR US- 20210196562-A1 OR US-20190365598-A1 OR US-20200393026- A1 OR US- 20200085684-A1 OR US-20210121360-A1					
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		OR US-20200046601-A1 OR US-20250099325-A1 OR US-20230301867-A1 OR US-20030144615-A1 OR US-20030094356-A1 OR US-20020177795-A1 OR US-20010027280-A1 OR US-20050109137-A1 OR US-20060211961-A1 OR US-20050252011-A1 OR US-20050126018-A1 OR US-20070144310-A1 OR US-20100100119-A1 OR US-20100145242-A1 OR US-20100160841-A1 OR US-20130138023-A1 OR US-20140194790-A1 OR US-20150042254-A1 OR US-20150305969-A1 OR US-20160324717-A1 OR US-20170049278-A1 OR US-20170156974-A1 OR US-20180008512-A1 OR US-20180288160-A1 OR US-20180296433-A1 OR US-20180236572-A1 OR US-20190232478-A1 OR US-20190209424-A1 OR US-20210128402-A1).did. AND PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US-2078159-A OR US-1660821-A OR US-1657765-A OR US-1545027-A OR US-1787211-A OR US-2441682-A OR US-1339179-A OR US-2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683-A1 OR US-7927259-B1 OR US-20030195443-A1).did. AND DWPI.dbnm.) OR ((CN-					
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L66	1	212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2).did. AND FTDB.dbnm.) 17/645966	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/08 08:51 PM
L67	8	("10054964" "10078319 "10790101" "1187797 6" "20140320406" "202 00253073" "202100183 42" "20220233397").PN	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/08 08:52 PM
L68	47	("5097828" "6241027" "6432072" "6682496" "7273159" "7384405" "8713739" "9089470" "10314762" "20010007952" "20020177795" "20050020947" "20050209537" "20050209539" "20060058714" "20080014011" "20080119767" "20080300529" "20100274162" "20130046212" "20140378555" "20150005682" "20150121900" "20150182290" "20150297393" "20150305969" "20160089537" "20160151238" "20160331308" "20160367425" "20170304145" "20180185236" "20180200141" "20180228691" "20180263845" "20180280675" "20190015294" "20190060115" "20190136889" "20190159961" "20190175434" "20200155410" "20200268594" "20200289161" "20210077340" "20220117073" "20220233397").pn. OR ("11877976").urpn.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/08 08:54 PM

L69	1	AND (PGPB USPT USOC).dbnm. ("20210128402").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/08 08:57 PM
L70	380	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/10/08 09:06 PM

		10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US-				
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		12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US-					
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		5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1				
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		OR US-20220211575-A1 OR US-20220257460-A1 OR US-20220296463-A1 OR US-20230248609-A1 OR US-20230277410-A1 OR US-20210244609-A1 OR US-20200085675-A1 OR US-20190175434-A1 OR US-20170304145-A1 OR US-20170042754-A1 OR US-20150005682-A1 OR US-20130261516-A1 OR US-20070270727-A1 OR US-20060282025-A1 OR US-20210283005-A1 OR US-20120167322-A1 OR US-20140024982-A1 OR US-20160256017-A1 OR US-20130253391-A1 OR US-20110203824-A1 OR US-20040049137-A1 OR US-20050131461-A1 OR US-20100137907-A1 OR US-20060116614-A1 OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US-20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US-20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US-20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US-20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US-20030149381-A1 OR US-20120046694-A1 OR US-20020183668-A1 OR US-					
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		20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US- 20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US- 20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US- 20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US- 20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US- 20150045702-A1 OR US-20200390644-A1 OR US-20170238686-A1 OR US- 20190298036-A1 OR US-20210290430-A1 OR US-20150202114-A1 OR US- 20030158505-A1 OR US-20160045081-A1 OR US-20190159961-A1 OR US- 20210196563-A1 OR US-20100331745-A1 OR US-20210113365-A1 OR US- 20120037184-A1 OR US-20200268594-A1 OR US-20200129372-A1 OR US- 20210113427-A1 OR US-20210001148-A1 OR US-20190175396-A1 OR US- 20060052729-A1 OR US-20120253246-A1 OR US-20200261306-A1 OR US- 20210161759-A1 OR US-20110009783-A1 OR US-20220151865-A1 OR US- 20220339061-A1 OR US-20080234611-A1 OR US-20220168175-A1 OR US- 20210113421-A1 OR US-20100274162-A1					
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		OR US-20220362097-A1 OR US-20200230012-A1 OR US-20210077340-A1 OR US-20200009010-A1 OR US-20210022951-A1 OR US-20220047412-A1 OR US-20150174387-A1 OR US-20170304144-A1 OR US-20180031090-A1 OR US-20160192814-A1 OR US-20200289364-A1 OR US-20240374468-A1 OR US-20200155410-A1 OR US-20200276079-A1 OR US-20210307998-A1 OR US-20210000683-A1 OR US-20030028134-A1 OR US-20210361524-A1 OR US-20220387252-A1 OR US-20210196562-A1 OR US-20190365598-A1 OR US-20200393026-A1 OR US-20200085684-A1 OR US-20210121360-A1 OR US-20200046601-A1 OR US-20250099325-A1 OR US-20230301867-A1 OR US-20030144615-A1 OR US-20030094356-A1 OR US-20020177795-A1 OR US-20010027280-A1 OR US-20050109137-A1 OR US-20060211961-A1 OR US-20050252011-A1 OR US-20050126018-A1 OR US-20070144310-A1 OR US-20100100119-A1 OR US-20100145242-A1 OR US-20100160841-A1 OR US-20130138023-A1 OR US-20140194790-A1 OR US-20150042254-A1 OR US-20150305969-A1 OR US-					
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		20160324717-A1 OR US-20170049278-A1 OR US-20170156974- A1 OR US- 20180008512-A1 OR US-20180288160-A1 OR US-20180296433- A1 OR US- 20180236572-A1 OR US-20190232478-A1 OR US-20190209424- A1 OR US- 20210128402-A1 OR US-20220110825-A1 OR US-20220233397- A1).did. AND PGPB.dbnm.) OR ((US- 3494353-A OR US- 3169521-A OR US- 2078159-A OR US- 1660821-A OR US- 1657765-A OR US- 1545027-A OR US- 1787211-A OR US- 2441682-A OR US- 1339179-A OR US- 2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683- A1 OR US-7927259-B1 OR US-20030195443- A1).did. AND DWPI.dbnm.) OR ((CN- 212326934-U OR JP- 2025028111-A OR CA- 3150901-A1 OR WO- 0038613-A2).did. AND FTDB.dbnm.)					
L71	127	70 AND bearing	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/09 10:02 AM
L72	1	("20210128402").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/09 10:13 AM
L73	10	15/186859	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/09 10:22 AM
L74	380	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO,	OR	ON	ON	2025/10/09 10:24 AM

		US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US-	NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)				
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		4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US-					
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		2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US-					
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		5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675- A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR				
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		US-20130261516-A1 OR US-20070270727-A1 OR US-20060282025-A1 OR US-20210283005-A1 OR US-20120167322-A1 OR US-20140024982-A1 OR US-20160256017-A1 OR US-20130253391-A1 OR US-20110203824-A1 OR US-20040049137-A1 OR US-20050131461-A1 OR US-20100137907-A1 OR US-20060116614-A1 OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US-20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US-20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US-20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US-20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US-20030149381-A1 OR US-20120046694-A1 OR US-20020183668-A1 OR US-20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US-20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US-20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US-20170079865-A1 OR US-20050187498-A1 OR US-20120121309-					
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		A1 OR US- 20070150004-A1 OR US-20200000678-A1 OR US-20200289161- A1 OR US- 20150045702-A1 OR US-20200390644-A1 OR US-20170238686- A1 OR US- 20190298036-A1 OR US-20210290430-A1 OR US-20150202114- A1 OR US- 20030158505-A1 OR US-20160045081-A1 OR US-20190159961- A1 OR US- 20210196563-A1 OR US-20100331745-A1 OR US-20210113365- A1 OR US- 20120037184-A1 OR US-20200268594-A1 OR US-20200129372- A1 OR US- 20210113427-A1 OR US-20210001148-A1 OR US-20190175396- A1 OR US- 20060052729-A1 OR US-20120253246-A1 OR US-20200261306- A1 OR US- 20210161759-A1 OR US-20110009783-A1 OR US-20220151865- A1 OR US- 20220339061-A1 OR US-20080234611-A1 OR US-20220168175- A1 OR US- 20210113421-A1 OR US-20100274162-A1 OR US-20220362097- A1 OR US- 20200230012-A1 OR US-20210077340-A1 OR US-20200009010- A1 OR US- 20210022951-A1 OR US-20220047412-A1 OR US-20150174387- A1 OR US- 20170304144-A1 OR US-20180031090-A1 OR US-20160192814- A1 OR US- 20200289364-A1 OR				
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		US-20240374468-A1 OR US-20200155410-A1 OR US-20200276079-A1 OR US-20210307998-A1 OR US-20210000683-A1 OR US-20030028134-A1 OR US-20210361524-A1 OR US-20220387252-A1 OR US-20210196562-A1 OR US-20190365598-A1 OR US-20200393026-A1 OR US-20200085684-A1 OR US-20210121360-A1 OR US-20200046601-A1 OR US-20250099325-A1 OR US-20230301867-A1 OR US-20030144615-A1 OR US-20030094356-A1 OR US-20020177795-A1 OR US-20010027280-A1 OR US-20050109137-A1 OR US-20060211961-A1 OR US-20050252011-A1 OR US-20050126018-A1 OR US-20070144310-A1 OR US-20100100119-A1 OR US-20100145242-A1 OR US-20100160841-A1 OR US-20130138023-A1 OR US-20140194790-A1 OR US-20150042254-A1 OR US-20150305969-A1 OR US-20160324717-A1 OR US-20170049278-A1 OR US-20170156974-A1 OR US-20180008512-A1 OR US-20180288160-A1 OR US-20180296433-A1 OR US-20180236572-A1 OR US-20190232478-A1 OR US-20190209424-A1 OR US-20210128402-A1 OR US-20220110825-A1 OR US-20220233397-					
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L75	52	<p>A1).did. AND PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US-2078159-A OR US-1660821-A OR US-1657765-A OR US-1545027-A OR US-1787211-A OR US-2441682-A OR US-1339179-A OR US-2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683-A1 OR US-7927259-B1 OR US-20030195443-A1).did. AND DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2).did. AND FTDB.dbnm.)</p> <p>((US-1660821-A OR US-1545027-A OR US-2078159-A OR US-3494353-A OR US-3169521-A OR US-1657765-A).did. AND USOC.dbnm.) OR ((US-20210244609-A1 OR US-20190175434-A1 OR US-20200261306-A1 OR US-20170304145-A1 OR US-20170042754-A1 OR US-20110009783-A1 OR US-20160367425-A1 OR US-20210128402-A1 OR US-20200268594-A1 OR US-20210113365-A1 OR US-20190254922-A1 OR US-20200085675-A1 OR US-20200289364-A1 OR US-20210196562-A1 OR US-20030149381-A1 OR US-20150042254-A1 OR US-20180263845-A1 OR US-20170304144-A1 OR US-20210000683-A1 OR</p>	(USOCR; US-PGPUB; USPAT)	OR	ON	ON	2025/10/09 10:24 AM
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L77	1	US-20050126018-A1 OR US-20130261516-A1 OR US-20140221887-A1 OR US-20150005682-A1).did. AND PGPB.dbnm.) OR ((US-3942251-A OR US-10993874-B1 OR US-3993052-A OR US-4158246-A OR US-11723830-B1 OR US-4815224-A OR US-4730605-A OR US-D872869-S OR US-4088128-A OR US-7927259-B1 OR US-3626934-A OR US-3837335-A OR US-5656018-A OR US-5951501-A OR US-4031763-A OR US-6682496-B1 OR US-1594636-A OR US-2581806-A OR US-3452226-A OR US-1494162-A OR US-3172675-A OR US-2294947-A OR US-1185583-A).did. AND USPT.dbnm.)	WO AND "2006070505"	(US-PGPUB; USPAT; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/10/09 10:25 AM
L78	52	((US-2078159-A OR US-1545027-A OR US-3494353-A OR US-1660821-A OR US-3169521-A OR US-1657765-A).did. AND USOC.dbnm.) OR ((US-20210244609-A1 OR US-20190175434-A1 OR US-20200261306-A1 OR US-20170304145-A1 OR		(USOCR; US-PGPUB; USPAT)	OR	ON	ON	2025/10/09 10:30 AM

L79	35	US-20200085675-A1 OR US-20170042754-A1 OR US-20160367425-A1 OR US-20210128402-A1 OR US-20210113365-A1 OR US-20190254922-A1 OR US-20110009783-A1 OR US-20210196562-A1 OR US-20030149381-A1 OR US-20150042254-A1 OR US-20180263845-A1 OR US-20200289364-A1 OR US-20170304144-A1 OR US-20200268594-A1 OR US-20210000683-A1 OR US-20050126018-A1 OR US-20130261516-A1 OR US-20140221887-A1 OR US-20150005682-A1).did. AND PGPB.dbnm.) OR ((US-3626934-A OR US-3942251-A OR US-10993874-B1 OR US-3993052-A OR US-11723830-B1 OR US-4730605-A OR US-D872869-S OR US-7927259-B1 OR US-4158246-A OR US-3837335-A OR US-4088128-A OR US-5656018-A OR US-5951501-A OR US-4815224-A OR US-4031763-A OR US-6682496-B1 OR US-1594636-A OR US-2581806-A OR US-3452226-A OR US-1494162-A OR US-3172675-A OR US-2294947-A OR US-1185583-A).did. AND USPT.dbnm.) 78 NOT (@aD>="20181226")	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB,	OR	ON	ON	2025/10/09 10:31 AM
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L80	17	78 NOT 79	HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN)) (US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/10/09 10:31 AM
L81	5	16/168100	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/10/09 10:34 AM
L82	1	((US-20200085675-A1).did. AND PGPB.dbnm.)	(US-PGPUB)	OR	ON	ON	2025/10/09 10:35 AM
L83	6	((US-2078159-A OR US-1660821-A OR US-1545027-A OR US-3494353-A OR US-3169521-A OR US-1657765-A).did. AND USOC.dbnm.)	(USOCR)	OR	ON	ON	2025/10/09 10:35 AM
L84	41	79 82 83	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO,	OR	ON	ON	2025/10/09 10:36 AM

L85	37	((US-20200085675-A1 OR US-20190175434-A1 OR US-20160367425-A1 OR US-20170304145-A1 OR US-20110009783-A1 OR US-20170042754-A1 OR US-20190254922-A1 OR US-20050126018-A1 OR US-20030149381-A1 OR US-20150042254-A1 OR US-20170304144-A1 OR US-20180263845-A1 OR US-20130261516-A1 OR US-20140221887-A1 OR US-20150005682-A1).did. AND PGPB.dbnm.) OR ((US-3942251-A OR US-7927259-B1 OR US-3993052-A OR US-4730605-A OR US-5656018-A OR US-3626934-A OR US-3837335-A OR US-4088128-A OR US-5951501-A OR US-4031763-A OR US-6682496-B1 OR US-2581806-A OR US-3452226-A OR US-1494162-A OR US-3172675-A OR US-2294947-A).did. AND USPT.dbnm.) OR ((US-2078159-A OR US-3494353-A OR US-1660821-A OR US-1545027-A OR US-3169521-A OR US-1657765-A).did. AND USOC.dbnm.)	NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN)) (US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/09 10:43 AM
L86	235	74 NOT (@aD>="20181226")	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV,	OR	ON	ON	2025/10/09 10:45 AM

L87	204	86 NOT 85	MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) (US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO))	OR	ON	ON	2025/10/09 10:45 AM
L88	243	jay.in. near3 calvert.in.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO))	OR	ON	ON	2025/10/09 10:47 AM
L89	2	("4730605").pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO))	OR	ON	ON	2025/10/09 10:48 AM
L90	10	("20170304145" "20200085675" "20190254922" "3837335" "4730605").pn.	(US-PGPUB; USPAT; USOCR; FIT (AP, AT, AU, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO))	OR	ON	ON	2025/10/09 10:59 AM

L91	5	("20170304145" "20200085675" "20190254922" "3837335" "4730605").pn.	MA, MC, MD, MY, NL, NO, NZ, OA, PH, PL, PT, RO, RS, RU, SE, SG, SI, SK, SU, TH, TN, TR, TW, UA, VN, WO)) (US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/09 10:59 AM
L92	4751	A61H23/00,02,006.cpc.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/10 06:41 PM
L93	1581	A61H23/0254.cpc.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/10 06:41 PM
L94	3700	(92 OR 93) NOT (@Ad>="20181226")	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/10 06:42 PM
L95	739	94 AND (reciprocat\$5 percuss\$5)	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/10 06:42 PM
L96	3	("1955623").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/10 06:43 PM
L97	383	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/10/10 06:45 PM

		4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US-				
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		6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US-					
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		2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2 OR US- 1955623-A).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR				
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		US-20190017528-A1 OR US-20190015294-A1 OR US-20180263845-A1 OR US-20200214930-A1 OR US-20200261307-A1 OR US-20200261310-A1 OR US-20200352820-A1 OR US-20200352821-A1 OR US-20210022955-A1 OR US-20210059898-A1 OR US-20210104318-A1 OR US-20210169733-A1 OR US-20210244610-A1 OR US-20210244611-A1 OR US-20210401663-A1 OR US-20220125672-A1 OR US-20220211575-A1 OR US-20220257460-A1 OR US-20220296463-A1 OR US-20230248609-A1 OR US-20230277410-A1 OR US-20210244609-A1 OR US-20200085675-A1 OR US-20190175434-A1 OR US-20170304145-A1 OR US-20170042754-A1 OR US-20150005682-A1 OR US-20130261516-A1 OR US-20070270727-A1 OR US-20060282025-A1 OR US-20210283005-A1 OR US-20120167322-A1 OR US-20140024982-A1 OR US-20160256017-A1 OR US-20130253391-A1 OR US-20110203824-A1 OR US-20040049137-A1 OR US-20050131461-A1 OR US-20100137907-A1 OR US-20060116614-A1 OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-					
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		A1 OR US- 20090270915-A1 OR US-20190254922-A1 OR US-20190254921- A1 OR US- 20060293711-A1 OR US-20190247271-A1 OR US-20140031866- A1 OR US- 20020107459-A1 OR US-20140142472-A1 OR US-20020082536- A1 OR US- 20040249320-A1 OR US-20050222524-A1 OR US-20160213554- A1 OR US- 20030149381-A1 OR US-20120046694-A1 OR US-20020183668- A1 OR US- 20050215929-A1 OR US-20180361137-A1 OR US-20020082532- A1 OR US- 20100222719-A1 OR US-20120253245-A1 OR US-20160074641- A1 OR US- 20160213558-A1 OR US-20140221887-A1 OR US-20090306561- A1 OR US- 20170079865-A1 OR US-20050187498-A1 OR US-20120121309- A1 OR US- 20070150004-A1 OR US-20200000678-A1 OR US-20200289161- A1 OR US- 20150045702-A1 OR US-20200390644-A1 OR US-20170238686- A1 OR US- 20190298036-A1 OR US-20210290430-A1 OR US-20150202114- A1 OR US- 20030158505-A1 OR US-20160045081-A1 OR US-20190159961- A1 OR US- 20210196563-A1 OR US-20100331745-A1 OR US-20210113365- A1 OR US- 20120037184-A1 OR				
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		US-20200268594-A1 OR US-20200129372-A1 OR US-20210113427-A1 OR US-20210001148-A1 OR US-20190175396-A1 OR US-20060052729-A1 OR US-20120253246-A1 OR US-20200261306-A1 OR US-20210161759-A1 OR US-20110009783-A1 OR US-20220151865-A1 OR US-20220339061-A1 OR US-20080234611-A1 OR US-20220168175-A1 OR US-20210113421-A1 OR US-20100274162-A1 OR US-20220362097-A1 OR US-20200230012-A1 OR US-20210077340-A1 OR US-20200009010-A1 OR US-20210022951-A1 OR US-20220047412-A1 OR US-20150174387-A1 OR US-20170304144-A1 OR US-20180031090-A1 OR US-20160192814-A1 OR US-20200289364-A1 OR US-20240374468-A1 OR US-20200155410-A1 OR US-20200276079-A1 OR US-20210307998-A1 OR US-20210000683-A1 OR US-20030028134-A1 OR US-20210361524-A1 OR US-20220387252-A1 OR US-20210196562-A1 OR US-20190365598-A1 OR US-20200393026-A1 OR US-20200085684-A1 OR US-20210121360-A1 OR US-20200046601-A1 OR US-20250099325-A1 OR US-20230301867-A1 OR US-20030144615-					
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		A1 OR US- 20030094356-A1 OR US-20020177795-A1 OR US-20010027280- A1 OR US- 20050109137-A1 OR US-20060211961-A1 OR US-20050252011- A1 OR US- 20050126018-A1 OR US-20070144310-A1 OR US-20100100119- A1 OR US- 20100145242-A1 OR US-20100160841-A1 OR US-20130138023- A1 OR US- 20140194790-A1 OR US-20150042254-A1 OR US-20150305969- A1 OR US- 20160324717-A1 OR US-20170049278-A1 OR US-20170156974- A1 OR US- 20180008512-A1 OR US-20180288160-A1 OR US-20180296433- A1 OR US- 20180236572-A1 OR US-20190232478-A1 OR US-20190209424- A1 OR US- 20210128402-A1 OR US-20220110825-A1 OR US-20220233397- A1 OR US- 20040243031-A1 OR US-20030014079- A1).did. AND PGPB.dbnm.) OR ((US- 3494353-A OR US- 3169521-A OR US- 2078159-A OR US- 1660821-A OR US- 1657765-A OR US- 1545027-A OR US- 1787211-A OR US- 2441682-A OR US- 1339179-A OR US- 2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683- A1 OR US-7927259-B1 OR US-20030195443- A1).did. AND				
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L98	383	DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2).did. AND FTDB.dbnm.) ((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US-3993052-A OR US-12016818-B2 OR US-11744769-B2 OR US-11559462-B2 OR US-11452670-B2 OR US-11432994-B2 OR US-11357697-B2 OR US-10426691-B2 OR US-9889066-B2 OR US-6875186-B2 OR US-6599260-B2 OR US-5415621-A OR US-4841955-A OR US-4716890-A OR US-4513737-A OR US-4461286-A OR US-4088128-A OR US-4016873-A OR US-3837335-A OR US-3710785-A OR US-10357425-B2 OR US-10912707-B2 OR US-10428850-B2 OR US-10557490-B2 OR US-10774860-B2 OR US-10470970-B2 OR US-10617588-B2 OR US-10702448-B2 OR US-11166863-B2 OR US-10918565-B2 OR US-11160722-B2 OR US-10758452-B2 OR US-10847984-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/10/11 11:15 PM
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		10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US-				
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		10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US-					
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		3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2 OR US- 1955623-A).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611-				
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		US-20120046694-A1 OR US-20020183668-A1 OR US-20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US-20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US-20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US-20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US-20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US-20150045702-A1 OR US-20200390644-A1 OR US-20170238686-A1 OR US-20190298036-A1 OR US-20210290430-A1 OR US-20150202114-A1 OR US-20030158505-A1 OR US-20160045081-A1 OR US-20190159961-A1 OR US-20210196563-A1 OR US-20100331745-A1 OR US-20210113365-A1 OR US-20120037184-A1 OR US-20200268594-A1 OR US-20200129372-A1 OR US-20210113427-A1 OR US-20210001148-A1 OR US-20190175396-A1 OR US-20060052729-A1 OR US-20120253246-A1 OR US-20200261306-A1 OR US-20210161759-A1 OR US-20110009783-A1 OR US-20220151865-A1 OR US-20220339061-A1 OR US-20080234611-A1 OR US-20220168175-					
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		US-20150042254-A1 OR US-20150305969-A1 OR US-20160324717-A1 OR US-20170049278-A1 OR US-20170156974-A1 OR US-20180008512-A1 OR US-20180288160-A1 OR US-20180296433-A1 OR US-20180236572-A1 OR US-20190232478-A1 OR US-20190209424-A1 OR US-20210128402-A1 OR US-20220110825-A1 OR US-20220233397-A1 OR US-20040243031-A1 OR US-20030014079-A1).did. AND PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US-2078159-A OR US-1660821-A OR US-1657765-A OR US-1545027-A OR US-1787211-A OR US-2441682-A OR US-1339179-A OR US-2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683-A1 OR US-7927259-B1 OR US-20030195443-A1).did. AND DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2).did. AND FTDB.dbnm.)					
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L101	1	((US-2581806-A).did. AND USPT.dbnm.)	(USPAT)	OR	ON	ON	2025/10/11 11:20 PM
L102	8	91 99 100 101	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/11 11:20 PM
L103	47	16/675772	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/12

L104	36	16/796143	(US-PGPUB; USPAT)	OR	ON	ON	04:31 PM 2025/10/12 04:33 PM
L105	383	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US- 11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/10/12 04:35 PM

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		12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US- 2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US-				
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		6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US- 7927294-B2 OR US- 9872813-B2 OR US- 1955623-A).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1				
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		OR US-20220362097-A1 OR US-20200230012-A1 OR US-20210077340-A1 OR US-20200009010-A1 OR US-20210022951-A1 OR US-20220047412-A1 OR US-20150174387-A1 OR US-20170304144-A1 OR US-20180031090-A1 OR US-20160192814-A1 OR US-20200289364-A1 OR US-20240374468-A1 OR US-20200155410-A1 OR US-20200276079-A1 OR US-20210307998-A1 OR US-20210000683-A1 OR US-20030028134-A1 OR US-20210361524-A1 OR US-20220387252-A1 OR US-20210196562-A1 OR US-20190365598-A1 OR US-20200393026-A1 OR US-20200085684-A1 OR US-20210121360-A1 OR US-20200046601-A1 OR US-20250099325-A1 OR US-20230301867-A1 OR US-20030144615-A1 OR US-20030094356-A1 OR US-20020177795-A1 OR US-20010027280-A1 OR US-20050109137-A1 OR US-20060211961-A1 OR US-20050252011-A1 OR US-20050126018-A1 OR US-20070144310-A1 OR US-20100100119-A1 OR US-20100145242-A1 OR US-20100160841-A1 OR US-20130138023-A1 OR US-20140194790-A1 OR US-20150042254-A1 OR US-20150305969-A1 OR US-					
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		20160324717-A1 OR US-20170049278-A1 OR US-20170156974- A1 OR US- 20180008512-A1 OR US-20180288160-A1 OR US-20180296433- A1 OR US- 20180236572-A1 OR US-20190232478-A1 OR US-20190209424- A1 OR US- 20210128402-A1 OR US-20220110825-A1 OR US-20220233397- A1 OR US- 20040243031-A1 OR US-20030014079- A1).did. AND PGPB.dbnm.) OR ((US- 3494353-A OR US- 3169521-A OR US- 2078159-A OR US- 1660821-A OR US- 1657765-A OR US- 1545027-A OR US- 1787211-A OR US- 2441682-A OR US- 1339179-A OR US- 2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683- A1 OR US-7927259-B1 OR US-20030195443- A1).did. AND DWPI.dbnm.) OR ((CN- 212326934-U OR JP- 2025028111-A OR CA- 3150901-A1 OR WO- 0038613-A2).did. AND FTDB.dbnm.)					
L106	1	((US-3169521-A).did. AND USOC.dbnm.)	(USOCR)	OR	ON	ON	2025/10/12 04:37 PM
L107	8	102 106	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/12 04:37 PM
L108	9	102 106	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/12 04:38 PM
L109	1	("20190175434").pn.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/12 04:43 PM
L110	237	105 NOT (@ad>="20181226")	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/12 07:08 PM
L111	0	("2017027798").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/12 07:09 PM

L112	1	("20170027798").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/12 07:09 PM
L113	1	((US-20170156974-A1).did. AND PGPB.dbnm.)	(US-PGPUB)	OR	ON	ON	2025/10/12 07:12 PM
L114	41	("4513737" "4827914" "4841955" "5088474" "5140979" "5951501" "6228042" "6537236" "6723060" "7144417" "8083699" "8096963" "9889066").pn. OR ("10201470").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/12 07:12 PM
L115	1	((US-9889066-B2).did. AND USPT.dbnm.)	(USPAT)	OR	ON	ON	2025/10/12 10:32 PM
L116	237	("0784024" "0799881" "1339179" "1612981" "1657765" "1978223" "3030647" "3494353" "3710785" "3841321" "3845758" "3920291" "3968789" "3993052" "4088128" "4162675" "RE30500" "4412535" "4505267" "4513737" "4523580" "4549535" "4730605" "4827914" "4841955" "4858600" "5063911" "5065743" "5140979" "5159922" "5215078" "5305738" "5311860" "5364223" "5415621" "5447491" "5489280" "D367712" "D373640" "5602432" "5632720" "5656018" "5725483" "5803916" "5843006" "5925002" "5951501" "6102875" "6123657" "6165145" "6170108" "D437713" "D438309" "6228042" "6231497" "D455837" "6375609" "6402710" "6432072" "6440091" "6461377" "6478755" "6494849" "6585667" "6616621" "6656140" "6682496" "6758826" "6805700" "6832991" "6866776" "6979300" "6994679" "7033329" "7041072" "7083581"	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/12 10:32 PM

		"7125390" "7128722" "7211057" "7229424" "7238162" "7264598" "7270641" "7282037" "7306569" "7322946" "7335170" "7354408" "7470242" "7507198" "7517327" "7597669" "7634314" "7927294" "7976485" "8052625" "8092407" "8192379" "8282583" "8317733" "20020058892" "20030060741" "20030130602" "20030195438" "20030195443" "20050015030" "20050096571" "20050096682" "20060074360" "20060178715" "20070179414" "20080214968" "20080234611" "20080306417" "20090182249" "20090306577" "20100228168" "20100274162" "20110106067" "20120253245" "20120259255" "20130006040" "20140094724").pn. OR ("9889066").urpn. AND (PGPB USPT USOC).dbnm.					
L117	41	("4513737" "4827914" "4841955" "5088474" "5140979" "5951501" "6228042" "6537236" "6723060" "7144417" "8083699" "8096963" "9889066").pn. OR ("10201470").urpn. AND (PGPB USPT USOC).dbnm.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/12 10:34 PM
L118	1	((US-9889066-B2).did. AND USPT.dbnm.)	(USPAT)	OR	ON	ON	2025/10/12 10:38 PM
L119	1	((US-9889066-B2).did. AND USPT.dbnm.)	(USPAT)	OR	ON	ON	2025/10/12 10:44 PM
L120	12	108 109 112 115	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/12 10:53 PM
L121	1	("20150005682").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/13 11:49 AM

L122	1	("20150005682").pn.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/14 06:08 PM
L123	2	("12064387" "12396919").pn.	(USPAT)	OR	ON	ON	2025/10/14 10:30 PM
L125	1	("10959908").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/16 12:58 PM
L141	1	("4730605").pn.	(FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/10/16 03:47 PM
L142	2	("4730605").pn.	(US-PGPUB; USPAT; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN))	OR	ON	ON	2025/10/16 03:47 PM
L143	4	("7927259" "20170304144" "3169521").pn.	(US-PGPUB; USPAT; USOCR)	OR	ON	ON	2025/10/16 03:56 PM
L144	385	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US- 3993052-A OR US- 12016818-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/10/16 03:57 PM

		11744769-B2 OR US- 11559462-B2 OR US- 11452670-B2 OR US- 11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US-				
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		4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US- 3672355-A OR US- 5618315-A OR US- 5183034-A OR US- D616558-S OR US- D649657-S OR US- D872295-S OR US- 4048989-A OR US- D367712-S OR US- D872869-S OR US- 4079733-A OR US- 6841962-B2 OR US- 4224932-A OR US- 3626934-A OR US- 4069816-A OR US- 5951501-A OR US- 5730708-A OR US- 7025736-B1 OR US- 5140979-A OR US- 6269888-B1 OR US- 5088474-A OR US- D875961-S OR US- 5935089-A OR US- 5167226-A OR US- 6682496-B1 OR US- 11723830-B1 OR US- 11478400-B1 OR US- 10314762-B1 OR US- 10492984-B2 OR US- 10993874-B1 OR US- 11877976-B2 OR US- 12102583-B2 OR US- 12048666-B2 OR US- 11850204-B2 OR US- 3385290-A OR US- 2466659-A OR US- 1339179-A OR US- 1999939-A OR US- 1192282-A OR US- 2581806-A OR US- 1668364-A OR US- 1657765-A OR US- 2306424-A OR US- 1951776-A OR US- 2574601-A OR US- 1006684-A OR US- 2003272-A OR US- 2424699-A OR US- 2699771-A OR US- 2078159-A OR US- 1494162-A OR US- 3077878-A OR US- 2011471-A OR US- 1660821-A OR US- 2944543-A OR US- 2048712-A OR US-				
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		2512536-A OR US- 2294947-A OR US- 2113084-A OR US- 1545027-A OR US- 1969042-A OR US- 0899234-A OR US- 1928612-A OR US- 3494353-A OR US- 2204259-A OR US- 3169521-A OR US- 1123639-A OR US- 1185583-A OR US- D471986-S OR US- 2113444-A OR US- D970028-S OR US- 11938082-B1 OR US- 7793419-B2 OR US- 4158246-A OR US- 4565189-A OR US- 5097828-A OR US- 5300095-A OR US- D764173-S OR US- 10806660-B1 OR US- 6401289-B1 OR US- 4505267-A OR US- 11253423-B1 OR US- 5569168-A OR US- 5725483-A OR US- 5176130-A OR US- 7273159-B2 OR US- 4203431-A OR US- 3452226-A OR US- 6758826-B2 OR US- 5085207-A OR US- 6165145-A OR US- 6432072-B1 OR US- 11090222-B2 OR US- 4495940-A OR US- 10682281-B2 OR US- 11529284-B2 OR US- 3942251-A OR US- 4031763-A OR US- 1594636-A OR US- 3172675-A OR US- 4730605-A OR US- 4815224-A OR US- 5656018-A OR US- 5212887-A OR US- 5207697-A OR US- 7169169-B2 OR US- 6568089-B1 OR US- 7041072-B2 OR US- 6723060-B2 OR US- 6537236-B2 OR US- 8951216-B2 OR US- 8777881-B2 OR US- 7503923-B2 OR US- 8435194-B2 OR US-					
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		7927294-B2 OR US- 9872813-B2 OR US- 1955623-A OR US- 7634314-B2).did. AND USPT.dbnm.) OR ((US- 20160367425-A1 OR US-20180200141-A1 OR US-20230225932- A1 OR US- 20220047453-A1 OR US-20200405574-A1 OR US-20200069510- A1 OR US- 20190350793-A1 OR US-20190017528-A1 OR US-20190015294- A1 OR US- 20180263845-A1 OR US-20200214930-A1 OR US-20200261307- A1 OR US- 20200261310-A1 OR US-20200352820-A1 OR US-20200352821- A1 OR US- 20210022955-A1 OR US-20210059898-A1 OR US-20210104318- A1 OR US- 20210169733-A1 OR US-20210244610-A1 OR US-20210244611- A1 OR US- 20210401663-A1 OR US-20220125672-A1 OR US-20220211575- A1 OR US- 20220257460-A1 OR US-20220296463-A1 OR US-20230248609- A1 OR US- 20230277410-A1 OR US-20210244609-A1 OR US-20200085675- A1 OR US- 20190175434-A1 OR US-20170304145-A1 OR US-20170042754- A1 OR US- 20150005682-A1 OR US-20130261516-A1 OR US-20070270727- A1 OR US- 20060282025-A1 OR US-20210283005-A1 OR US-20120167322- A1 OR US- 20140024982-A1 OR				
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		US-20160256017-A1 OR US-20130253391-A1 OR US-20110203824-A1 OR US-20040049137-A1 OR US-20050131461-A1 OR US-20100137907-A1 OR US-20060116614-A1 OR US-20150119771-A1 OR US-20090043231-A1 OR US-20060047315-A1 OR US-20030195443-A1 OR US-20090270915-A1 OR US-20190254922-A1 OR US-20190254921-A1 OR US-20060293711-A1 OR US-20190247271-A1 OR US-20140031866-A1 OR US-20020107459-A1 OR US-20140142472-A1 OR US-20020082536-A1 OR US-20040249320-A1 OR US-20050222524-A1 OR US-20160213554-A1 OR US-20030149381-A1 OR US-20120046694-A1 OR US-20020183668-A1 OR US-20050215929-A1 OR US-20180361137-A1 OR US-20020082532-A1 OR US-20100222719-A1 OR US-20120253245-A1 OR US-20160074641-A1 OR US-20160213558-A1 OR US-20140221887-A1 OR US-20090306561-A1 OR US-20170079865-A1 OR US-20050187498-A1 OR US-20120121309-A1 OR US-20070150004-A1 OR US-20200000678-A1 OR US-20200289161-A1 OR US-20150045702-A1 OR US-20200390644-A1 OR US-20170238686-					
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		A1 OR US- 20190298036-A1 OR US-20210290430-A1 OR US-20150202114- A1 OR US- 20030158505-A1 OR US-20160045081-A1 OR US-20190159961- A1 OR US- 20210196563-A1 OR US-20100331745-A1 OR US-20210113365- A1 OR US- 20120037184-A1 OR US-20200268594-A1 OR US-20200129372- A1 OR US- 20210113427-A1 OR US-20210001148-A1 OR US-20190175396- A1 OR US- 20060052729-A1 OR US-20120253246-A1 OR US-20200261306- A1 OR US- 20210161759-A1 OR US-20110009783-A1 OR US-20220151865- A1 OR US- 20220339061-A1 OR US-20080234611-A1 OR US-20220168175- A1 OR US- 20210113421-A1 OR US-20100274162-A1 OR US-20220362097- A1 OR US- 20200230012-A1 OR US-20210077340-A1 OR US-20200009010- A1 OR US- 20210022951-A1 OR US-20220047412-A1 OR US-20150174387- A1 OR US- 20170304144-A1 OR US-20180031090-A1 OR US-20160192814- A1 OR US- 20200289364-A1 OR US-20240374468-A1 OR US-20200155410- A1 OR US- 20200276079-A1 OR US-20210307998-A1 OR US-20210000683- A1 OR US- 20030028134-A1 OR				
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		US-20210361524-A1 OR US-20220387252-A1 OR US-20210196562-A1 OR US-20190365598-A1 OR US-20200393026-A1 OR US-20200085684-A1 OR US-20210121360-A1 OR US-20200046601-A1 OR US-20250099325-A1 OR US-20230301867-A1 OR US-20030144615-A1 OR US-20030094356-A1 OR US-20020177795-A1 OR US-20010027280-A1 OR US-20050109137-A1 OR US-20060211961-A1 OR US-20050252011-A1 OR US-20050126018-A1 OR US-20070144310-A1 OR US-20100100119-A1 OR US-20100145242-A1 OR US-20100160841-A1 OR US-20130138023-A1 OR US-20140194790-A1 OR US-20150042254-A1 OR US-20150305969-A1 OR US-20160324717-A1 OR US-20170049278-A1 OR US-20170156974-A1 OR US-20180008512-A1 OR US-20180288160-A1 OR US-20180296433-A1 OR US-20180236572-A1 OR US-20190232478-A1 OR US-20190209424-A1 OR US-20210128402-A1 OR US-20220110825-A1 OR US-20220233397-A1 OR US-20040243031-A1 OR US-20030014079-A1 OR US-20170027798-A1).did. AND PGPB.dbnm.) OR ((US-3494353-A OR US-3169521-A OR US-					
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		2078159-A OR US-1660821-A OR US-1657765-A OR US-1545027-A OR US-1787211-A OR US-2441682-A OR US-1339179-A OR US-2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683-A1 OR US-7927259-B1 OR US-20030195443-A1).did. AND DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2).did. AND FTDB.dbnm.)					
L145	12	("20210128402" "20170304145" "20200085675" "20190254922" "3837335" "4730605" "2581806" "7927259" "20170304144" "3169521" "20150005682" "20010027280").pn.	(US-PGPUB; USPAT)	OR	ON	ON	2025/10/17 12:44 AM
L146	2	((US-3837335-A OR US-2581806-A).did. AND USPT.dbnm.)	(USPAT)	OR	ON	ON	2025/10/17 12:44 AM
L147	385	((US-10714953-B1 OR US-12161599-B1 OR US-10959908-B2 OR US-12403063-B2 OR US-12357530-B2 OR US-12350222-B2 OR US-12171707-B1 OR US-12064387-B2 OR US-12023294-B2 OR US-11974956-B2 OR US-11957635-B2 OR US-11890253-B2 OR US-11857481-B2 OR US-11813221-B2 OR US-11564860-B2 OR US-7435232-B2 OR US-7125390-B2 OR US-4669452-A OR US-3993052-A OR US-12016818-B2 OR US-11744769-B2 OR US-11559462-B2 OR US-11452670-B2 OR US-	(US-PGPUB; USPAT; USOCR; FIT (AU, AP, AT, BE, BG, BR, BY, CA, CH, CN, CS, CU, CZ, DD, DE, DK, EA, EE, EP, ES, FI, FR, GB, HR, HU, ID, IE, IL, IS, IT, JP, KR, LT, LU, LV, MA, OA, RU, SU, WO, MC, MD, MY, NL, NO, NZ, PH, PL, PT, RO, RS, SE, SG, SI, SK, TH, TN, TR, TW, UA, VN); FPRS; EPO; JPO; DERWENT; IBM_TDB)	OR	ON	ON	2025/10/17 12:44 AM

		11432994-B2 OR US- 11357697-B2 OR US- 10426691-B2 OR US- 9889066-B2 OR US- 6875186-B2 OR US- 6599260-B2 OR US- 5415621-A OR US- 4841955-A OR US- 4716890-A OR US- 4513737-A OR US- 4461286-A OR US- 4088128-A OR US- 4016873-A OR US- 3837335-A OR US- 3710785-A OR US- 10357425-B2 OR US- 10912707-B2 OR US- 10428850-B2 OR US- 10557490-B2 OR US- 10774860-B2 OR US- 10470970-B2 OR US- 10617588-B2 OR US- 10702448-B2 OR US- 11166863-B2 OR US- 10918565-B2 OR US- 11160722-B2 OR US- 10758452-B2 OR US- 10847984-B2 OR US- 10980704-B2 OR US- 10857064-B2 OR US- 10940081-B2 OR US- 10945915-B2 OR US- 11160723-B2 OR US- 10959911-B2 OR US- 11019379-B2 OR US- 11160721-B2 OR US- 11331244-B2 OR US- 11730668-B2 OR US- 12329711-B2 OR US- 12396919-B2 OR US- 12285379-B2 OR US- 12290486-B2 OR US- 4691693-A OR US- 4566442-A OR US- 10201470-B2 OR US- 4827914-A OR US- D388175-S OR US- 7927259-B1 OR US- 6805700-B2 OR US- 6228042-B1 OR US- 11857482-B1 OR US- 12343302-B2 OR US- 3841321-A OR US- 7282037-B2 OR US- 4549535-A OR US- 4632095-A OR US- 6663657-B1 OR US- 5662593-A OR US-				
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		20210196562-A1 OR US-20190365598-A1 OR US-20200393026-A1 OR US- 20200085684-A1 OR US-20210121360-A1 OR US-20200046601-A1 OR US- 20250099325-A1 OR US-20230301867-A1 OR US-20030144615-A1 OR US- 20030094356-A1 OR US-20020177795-A1 OR US-20010027280-A1 OR US- 20050109137-A1 OR US-20060211961-A1 OR US-20050252011-A1 OR US- 20050126018-A1 OR US-20070144310-A1 OR US-20100100119-A1 OR US- 20100145242-A1 OR US-20100160841-A1 OR US-20130138023-A1 OR US- 20140194790-A1 OR US-20150042254-A1 OR US-20150305969-A1 OR US- 20160324717-A1 OR US-20170049278-A1 OR US-20170156974-A1 OR US- 20180008512-A1 OR US-20180288160-A1 OR US-20180296433-A1 OR US- 20180236572-A1 OR US-20190232478-A1 OR US-20190209424-A1 OR US- 20210128402-A1 OR US-20220110825-A1 OR US-20220233397-A1 OR US- 20040243031-A1 OR US-20030014079-A1 OR US-20170027798-A1).did. AND PGPB.dbnm.) OR ((US- 3494353-A OR US- 3169521-A OR US- 2078159-A OR US- 1660821-A OR US- 1657765-A OR US-					
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		1545027-A OR US-1787211-A OR US-2441682-A OR US-1339179-A OR US-2706980-A).did. AND USOC.dbnm.) OR ((CN-212326934-U OR US-20210361524-A1 OR US-20210000683-A1 OR US-7927259-B1 OR US-20030195443-A1).did. AND DWPI.dbnm.) OR ((CN-212326934-U OR JP-2025028111-A OR CA-3150901-A1 OR WO-0038613-A2).did. AND FTDB.dbnm.)					
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PE2E SEARCH - Search History (Interference)

There are no Interference searches to show.

Bibliographic Data

Application No: 19/295,322

Foreign Priority claimed: ☐ Yes ☒ No

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

Verified and Acknowledged: /CHRISTOPHER E MILLER/

Examiner's Signature

Initials

Title:

PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY
CONNECTED ATTACHMENT

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
08/08/2025	601	3785	5015.039000L
RULE			

APPLICANTS

Therabody, Inc., Los Angeles, CA, UNITED STATES

INVENTORS

Jason WERSLAND, Manhattan Beach, CA, UNITED STATES

Benjamin NAZARIAN, Beverly Hills, CA, UNITED STATES

Jaime SANCHEZ SOLANA, Los Angeles, CA,

Eduardo MERINO, Beverly Hills, CA, UNITED STATES

Richard TANG, Shenzhen, CHINA

CONTINUING DATA

This application is a CON of 18809073 08/19/2024 PAT 12396919

18809073 is a CON of 18162499 01/31/2023 PAT 12064387

18162499 is a CON of 17739630 05/09/2022 PAT 11890253

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18162499 is a CON of 17244278 04/29/2021 PAT 11564860

17244239 has PRO of 63133951 01/05/2021

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yes, CEM 10/17/2025

16675772 has PRO of 62785151 12/26/2018 *

(*) Data provided by applicant is not consistent with PTO record

FOREIGN APPLICATIONS

none, CEM 10/17/2025

IF REQUIRED, FOREIGN LICENSE GRANTED**

08/21/2025

**** SMALL ENTITY ****

STATE OR COUNTRY

UNITED STATES

ADDRESS

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

(Therabody)

1101 K Street, NW

10th Floor

WASHINGTON, DC 20005

UNITED STATES

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\$3,568

Application history Attorney/Agent/Custom
IFW Reference Manager Interference and ap

Lookup

Inventor last name

WERSLAND

Inventor first name

JASON

Inventor middle name

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Inventor N:

WERSLAND,

WERSLAND,

Exact match results

WERSLAND

Application history Attorney/Agent/Customer In
Interference and appeals **Inventor Name** Lic

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Inventor last name

SANCHEZ SOLANA

Inventor first name

Jaime

Inventor middle name

Exact match results

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Inventor ?

SANCHEZ :

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Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)				Complete if Known	
				Application Number	TBD
				Filing Date	Herewith
				First Named Inventor	Jason WERSLAND
				Art Unit	TBD
				Examiner Name	TBD
Sheet	1	of	45	Attorney Docket Number	5015.039000L

U. S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
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	002	US-D93943-S	11-27-1934	HARRY; M. Rand	
	003	US-D118980-S	02-13-1940	GILBERT; B. Larson	
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Examiner Signature	/CHRISTOPHER E MILLER/	Date Considered	09/24/2025
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			Filing Date	Herewith	
			First Named Inventor	Jason WERSLAND	
			Art Unit	TBD	
			Examiner Name	TBD	
Sheet	2	of	45	Attorney Docket Number	5015.039000L

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Examiner Signature	/CHRISTOPHER E MILLER/	Date Considered	09/24/2025
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			Art Unit	TBD	
			Examiner Name	TBD	
Sheet	3	of	45	Attorney Docket Number	5015.039000L

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			First Named Inventor	Jason WERSLAND	
			Art Unit	TBD	
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	079	US-D606192-S	12-15-2009	SUMMERER; Sabine et al.	
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	081	US-D631315-S	01-25-2011	XUE; Ben et al.	
	082	US-D649657-S	11-29-2011	PETERSEN; Christopher M. et al.	
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	084	US-D658759-S	05-01-2012	MARESCAUX; Jacques et al.	
	085	US-D659644-S	05-15-2012	GRETZ; Thomas J.	
	086	US-D666303-S	08-28-2012	DING; Jane Jian et al.	
	087	US-675772-A	06-04-1901	FERGUSON; Allenus	
	088	US-D682195-S	05-14-2013	AGLASSINGER; Hans-Peter	
	089	US-D703337-S	04-22-2014	FUHR; Arlan W. et al.	
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	091	US-D706433-S	06-03-2014	FUHR; Arlan W. et al.	
	092	US-D708742-S	07-08-2014	DALLEMAGNE; Bernard et al.	
	093	US-D722016-S	02-03-2015	BEUKEMA; Brent	
	094	US-D726495-S	04-14-2015	RYAN; Garth	
	095	US-D734863-S	07-21-2015	HENNESSEY; Daniel J.	
	096	US-D735348-S	07-28-2015	HENNESSEY; Daniel	
	097	US-D740222-S	10-06-2015	TANG; Yin	
	098	US-D756180-S	05-17-2016	CHEN; Chao-Ming	
	099	US-D759237-S	06-14-2016	HEATH; Stephen et al.	

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	101	US-D763442-S	08-09-2016	PRICE; Daniel W. et al.	
	102	US-D776612-S	01-17-2017	CHEN; Shaojie et al.	
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	104	US-D817732-S	05-15-2018	RETTLER; Jim T.	
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	108	US-D826418-S	08-21-2018	LAD; Sanjay Harikrishna	
	109	US-D837395-S	01-01-2019	GAN; Qingcao	
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				First Named Inventor	Jason WERSLAND
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	254	US-9272837-B2	03-01-2016	LINZELL; Geoffrey Robert	
	255	US-9364385-B2	06-14-2016	YANG; Tsung-Hsun	
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	268	US-10357425-B2	07-23-2019	WERSLAND; Jason et al.	
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	349	US-20110037431-A1	02-17-2011	MACKLE; Blair Michael	
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	356	US-20120065556-A1	03-15-2012	SMITH; Walton F. et al.	
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	366	US-20130046212-A1	02-21-2013	NICHOLS; Thomas	
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	398	US-20140316313-A1	10-23-2014	MAYER; Matthew J. et al.	
	399	US-20150005682-A1	01-01-2015	DANBY; Philip C. et al.	
	400	US-20150042254-A1	02-12-2015	KATO; Itsuku	
	401	US-20150082562-A1	03-26-2015	KAMADA; Katsuzo	
	402	US-20150098184-A1	04-09-2015	TSAI; Denny et al.	
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				Art Unit	TBD
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		Number-Kind Code ² (if known)			
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	408	US-20150176674-A1	06-25-2015	KHAN; Kamran et al.	
	409	US-20150216719-A1	08-06-2015	DeBENEDICTIS; Leonard C. et al.	
	410	US-20150257964-A1	09-17-2015	AJIKI; Kaori	
	411	US-20150305969-A1	10-29-2015	GIRAUD; Camille et al.	
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	444	US-20170156974-A1	06-08-2017	GRINER; Thomas Edward	
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	460	US-20180140502-A1	05-24-2018	SHAHIOAN; Erik J. et al.	
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	462	US-20180154141-A1	06-07-2018	AHN; Gun Young	
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	467	US-20180263845-A1	09-20-2018	WERSLAND; Jason et al.	
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	479	US-20190216677-A1	07-18-2019	PAUL; Lori Ann	
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	483	US-20190314239-A1	10-17-2019	CI; Zhonghua	
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	485	US-20190350793-A1	11-21-2019	WERSLAND; Jason et al.	
	486	US-20190381271-A1	12-19-2019	JO; Soonhaeng	
	487	US-20200000237-A1	01-02-2020	WU; Dong-Her	
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	489	US-20200016027-A1	01-16-2020	KIM; Sang Won et al.	
	490	US-20200035237-A1	01-30-2020	KIM; Sang Won et al.	
	491	US-20200069510-A1	03-05-2020	WERSLAND; Jason et al.	
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	496	US-20200230012-A1	07-23-2020	FUHR; Arlan W.	
	497	US-20200241683-A1	07-30-2020	LE; Kevin et al.	
	498	US-20200261306-A1	08-20-2020	PEPE; Thomas F.	
	499	US-20200261307-A1	08-20-2020	WERSLAND; Jason et al.	
	500	US-20200268594-A1	08-27-2020	PEPE; Thomas F.	
	501	US-20200294423-A1	09-17-2020	BLAIN; Andre et al.	
	502	US-20200352821-A1	11-12-2020	WERSLAND; Jason et al.	
	503	US-20200390644-A1	12-17-2020	YANG; Victor	
	504	US-20200397651-A1	12-24-2020	PARK; Kyung Hwan et al.	
	505	US-20200405570-A1	12-31-2020	KODAMA; Shogo	
	506	US-20210000683-A1	01-07-2021	CHENG; Guomei	
	507	US-20210022951-A1	01-28-2021	HU; Dashuai	
	508	US-20210022955-A1	01-28-2021	WERSLAND; Jason et al.	
	509	US-20210059898-A1	03-04-2021	WERSLAND; Jason et al.	
	510	US-20210085555-A1	03-25-2021	DAVIS; Douglas Bruce et al.	
	511	US-20210128402-A1	05-06-2021	DAI; Quanqin et al.	
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	516	US-20220054350-A1	02-24-2022	MERINO; Eduardo et al.	
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	002	AU-2019204770-B1	10-24-2019	HYPER ICE INC [US]		☐
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	007	CN-106074129-A	11-09-2016	JINAN LUZHI ELECTRONIC SCIENCE & TECH CO LTD.		☒
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	013	CN-109259995-A	01-25-2019	XIAMEN COMFORT ELECTRONICS CO LTD., et al.		☒
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			First Named Inventor	Jason WERSLAND	
			Art Unit	TBD	
			Examiner Name	TBD	
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FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages Or Relevant Figures Appear	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
	015	CN-109907965-A	06-21-2019	HUIZHOU YINGYI MOTOR CO LTD.		☒
	016	CN-110812178-A	02-21-2020	ZIKKO CHINA CO LTD.		☒
	017	CN-110868983-A	03-06-2020	THERAGUN LLC.		☒
	018	CN-110996874-A	04-10-2020	THERAGUN LLC.		☒
	019	CN-111067786-A	04-28-2020	SHENZHEN FITTOP HEALTH TECH CO LTD.		☒
	020	CN-111616938-A	09-04-2020	NINGBO GUANGXING HEALTH TECH CO LTD.		☒
	021	CN-111973419-A	11-24-2020	SHANGHAI RONGTAI HEALTH TECH CORP LTD.		☒
	022	CN-113143721-A	07-23-2021	XIAMEN OGAWA INTELLIGENT HEALTH EQUIPMENT CO LTD.		☒
	023	CN-113509366-A	10-19-2021	XIAMEN OGAWA INTELLIGENT HEALTH EQUIPMENT CO LTD.		☒
	024	CN-1432452-A	07-30-2003	ILLINOIS TOOL WORKS [US]		☒

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		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
	025	CN-201239336-Y	05-20-2009	ZHUHAI WENYUANTANG MEDICAL TEC [CN]		☒
	026	CN-201333160-Y	10-28-2009	DONGHE WU [CN]		☒
	027	CN-201524220-U	07-14-2010	SHANDONG KANGTAI INDUSTRY CO LTD.		☒
	028	CN-201743890-U	02-16-2011	SHENZHEN BREO TECHNOLOGY CO.		☒
	029	CN-201847899-U	06-01-2011	SHUOYONG CO LTD.		☒
	030	CN-202161539-U	03-14-2012	WEIQING HUANG.		☒
	031	CN-202637439-U	01-02-2013	LIU XING.		☒
	032	CN-203598194-U	05-21-2014	LUO WEIHAO.		☒
	033	CN-205163583-U	04-20-2016	HEFEI HEZHENG MEDICAL SCIENCE & TECH CO LTD.		☒
	034	CN-205286890-U	06-08-2016	SHANGPIN YIJIA WUHAN CO LTD.		☒
	035	CN-205459750-U	08-17-2016	WU ZHENGFU.		☒

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		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
	036	CN-205494357-U	08-24-2016	YANG KAIBO.		☒
	037	CN-205598186-U	09-28-2016	LI AN.		☒
	038	CN-206081000-U	04-12-2017	LIN LILIANG.		☒
	039	CN-206434556-U	08-25-2017	ANHUI RYZUR MEDICAL EQUIPMENT MFT CO LTD.		☒
	040	CN-207286298-U	05-01-2018	SHENZHEN BREO TECHNOLOGY CO.		☒
	041	CN-207855923-U	09-14-2018	SUZHOU WIN TECH TOOLS MFG CO LTD.		☒
	042	CN-208405314-U	01-22-2019	GUANGZHOU LONGEST SCIENCE & TECH CO LTD.		☒
	043	CN-208448086-U	02-01-2019	XIAMEN COMFORT ELECTRONICS CO LTD., et al.		☒
	044	CN-209154392-U	07-26-2019	ANJI XINXIN TECH CO LTD.		☒
	045	CN-2788807-Y	06-21-2006	YU KAILI [CN]		☒
	046	CN-301664182-S	09-07-2011	XU JINGZHUANG.		☒

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	047	CN-303250924-S	06-17-2015	JINGMEI TECHNOLOGY CO., LTD.		☒
	048	CN-303250929-S	06-17-2015	JINGMEI TECHNOLOGY CO., LTD.		☒
	049	CN-304561844-S	03-30-2018	SHENZHEN HUAZENG TECHNOLOGY CO., LTD.		☒
	050	CN-86101310-A	09-03-1986	MAX J. RUDERIAN.		☒
	051	DE-102015102112-A1	08-20-2015	LIEBSCHER-BRACHT ROLAND [DE]		☒
	052	DE-19905199-A1	07-06-2000	MAXSTAR IND CO [KR]		☒
	053	DE-202015005257-U1	10-28-2016	STORZ MEDICAL AG [CH]		☒
	054	DE-3633888-A1	04-07-1988	LICENTIA GMBH [DE]		☒
	055	EP-0436719-B1	05-18-1994	NIHON KENKOZOSHIN KENKYUKAI KK [JP]		☐
	056	EP-1728494-A1	12-06-2006	OREAL [FR]		☒
	057	EP-1728494-B1	01-23-2013	OREAL [FR]		☒

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		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
	058	EP-1964537-A1	09-03-2008	TSUIN BADO KOGYO KK [JP]		☐
	059	EP-2080500-A1	07-22-2009	TSUIN BADO KOGYO KK [JP]		☐
	060	EP-2328255-A1	06-01-2011	GIERSIEPEN GIRA GMBH [DE]		☒
	061	GB-2066081-A	07-08-1981	MABUCHI MOTOR CO.		☐
	062	GB-2262236-A	06-16-1993	HAAS FRANZ [AT]		☐
	063	JP-2000189525-A	07-11-2000	MARUTAKA CO LTD.		☒
	064	JP-2002282322-A	10-02-2002	DAITO ELECTRIC MACHINE IND.		☒
	065	JP-2003077837-A	03-14-2003	TOSHIBA CORP.		☒
	066	JP-2003275265-A	09-30-2003	FAMILY KK.		☒
	067	JP-2005204777-A	08-04-2005	OMRON HEALTHCARE CO LTD.		☒
	068	JP-2006034941-A	02-09-2006	TSUIN BADO KOGYO KK.		☒
	069	JP-2006212228-A	08-17-2006	FAMILY CO LTD., et al.		☒

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		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
	070	JP-2008289616-A	12-04-2008	TSUIN BADO KOGYO KK.		☒
	071	JP-2008510588-A	04-10-2008	COLLOCA CHRISTOPHER J.		☒
	072	JP-2010534110-A	11-04-2010	ACTIVATOR METHODS INTERNATIONAL.		☒
	073	JP-2011502369-A	01-20-2011	JOHNSON DAVID C.		☒
	074	JP-2013119018-A	06-17-2013	AKOOZU KK.		☒
	075	JP-2014511240-A	05-15-2014	BRIDGET RAY SOUTHWELL, ,, et al.		☒
	076	JP-2015035844-A	02-19-2015	MAKITA CORP.		☒
	077	JP-2015104422-A	06-08-2015	MTG KK.		☒
	078	JP-2018518347-A	07-12-2018	THERAGAN, LIMITED DRYABILITY COMPANY.		☒
	079	JP-3077837-U	06-08-2001	TOSHIYUKI FURUNUMA.		☒
	080	JP-5129032-B2	01-23-2013	WATANABE HIDEAKI.		☒
	081	JP-H0219157-A	01-23-1990	SANDEN ENG KK.		☒

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		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
	082	JP-H03218763-A	09-26-1991	SHIN ATSU SHIN CLINIC INC.		☒
	083	JP-H0447440-A	02-17-1992	MITSUBISHI ELECTRIC CORP.		☒
	084	JP-H0447440-U	04-22-1992	MATOKA ELECTRIC MANUFACTURE CO, LTD.		☒
	085	JP-H048128-B2	02-14-1992	KOBE STEEL LTD.		☒
	086	JP-H0751393-A	02-28-1995	HITACHI METALS LTD., et al.		☒
	087	JP-S5230553-A	03-08-1977	MABUCHI MOTOR CO.		☒
	088	JP-S5428491-A	03-03-1979	NISHIDA YOSHINORI.		☒
	089	JP-S60135123-A	07-18-1985	MITSUBISHI ELECTRIC CORP.		☒
	090	KR-100752432-B1	08-24-2007	CHOI DONG HWAN [KR]		☒
	091	KR-101123926-B1	04-13-2012	AT SYSTEM CO LTD [KR]		☒
	092	KR-101162978-B1	07-09-2012	AT SYSTEM CO LTD [KR]		☒
	093	KR-101406275-B1	06-12-2014	LEE JUNG DONG., et al.		☒

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	094	KR-200313149-Y1	05-16-2003	GETTINGWELL CO., LTD.		☒
	095	KR-200345192-Y1	03-16-2004	KIM; Gu-Bong		☒
	096	KR-200435552-Y1	01-30-2007	CHUNG, IL GU.		☒
	097	KR-20090119424-A	11-19-2009	JEON SEONG HEE [KR]		☒
	098	KR-20170108550-A	09-27-2017	LEE YONG SIK [KR]		☒
	099	KR-20180031683-A	03-28-2018	THERAGUN LLC [US]		☒
	100	KR-20200051098-A	05-13-2020	SYNERGY MIMOS CO LTD [KR]		☒
	101	RU-2170567-C1	07-20-2001	PEDDER VALERIJ VIKTOROVICH.		☒
	102	TW-201440753-A	11-01-2014	GAO FU-MAO [TW]		☒
	103	TW-I359657-B	03-11-2012	CAI, CHE.		☒
	104	WO-0119316-A2	03-22-2001	NIAGARA MFG LTD [GB], et al.		☐
	105	WO-2008113139-A1	09-25-2008	CYPRO SSAGE PTY LTD [AU], et al.		☐

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	106	WO-2009014727-A1	01-29-2009	ACTIVATOR METHODS INTERNATIONA [US], et al.		☐
	107	WO-2009102279-A1	08-20-2009	TERNARY TECHNOLOGIES PTE LTD [SG], et al.		☐
	108	WO-2011159317-A1	12-22-2011	SHACHAR YEHOOSHUA [US], et al.		☐
	109	WO-2013114084-A1	08-08-2013	BARHAM ANDREW GARETH [GB]		☐
	110	WO-2013145346-A1	10-03-2013	DAITO ELECTRIC MACHINE IND [JP], et al.		☒
	111	WO-2014118596-A1	08-07-2014	TELEFIELD LTD [CN]		☐
	112	WO-2015038005-A2	03-19-2015	NEVROFLEX AS [NO]		☐
	113	WO-2018012105-A1	01-18-2018	OREAL [FR], et al.		☐
	114	WO-2018119106-A1	06-28-2018	ENSO CO [US]		☐
	115	WO-2019186225-A1	10-03-2019	GOLDEN GM HOLDINGS SDN BHD [MY]		☐
	116	WO-2021050861-A1	03-18-2021	THERAGUN INC [US]		☐

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		Country Code ³ Number ⁴ Kind Code ⁵ (if known)				
	117	WO-2021222571-A1	11-04-2021	THERAGUN INC [US]		☐
	118	WO-2022011251-A9	05-12-2022	HYPER ICE INC [US]		☐
	119	WO-2023172676-A2	09-14-2023	NEW HEIGHTS ENERGY LLC [US]		☐

Examiner Signature	/CHRISTOPHER E MILLER/	Date Considered	09/24/2025
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /C.E.M./

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)			Complete if Known		
			Application Number	TBD	
			Filing Date	Herewith	
			First Named Inventor	Jason WERSLAND	
			Art Unit	TBD	
			Examiner Name	TBD	
Sheet	37	of	45	Attorney Docket Number	5015.039000L

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	001	AMAZON: "OIVO Xbox One Controller Charger Dual Charging Station Updated Strap, Remote Charger Dock-2 Rechargeable Battery Packs Included," OIVO, 06 September 2018, Especially annotated figures, Retrieved from Entire Document, 11 Pages.	☐
	002	AMAZON: "PowerA Joy Con & Pro Controller Charging Dock Nintendo Switch," PowerA, 31 October 2017, Especially annotated figures, Retrieved from Entire Document, 10 Pages.	☐
	003	AMAZON: "Theragun G3PRO Percussive Therapy Device, White, Handheld Deep Muscle, Treatment Massager & Muscle Stimulator for Pain Relief, Recovery, Enhance Performance & Energize The Body," 13 February 2019, Shown on pp. 1, 2 Pages, Retrieved from URL: https://www.amazon.com/dp/B07MJ2MCT3/ref=nav_timeline_asin?_encoding=UTF8&psc=1 .	☐
	004	ANTHONY KATZ, "The RAPTOR: Helps Patients and Saves Your Most Valuable Tool .. Your Hands," DC Aligned:MeyerDC, December 9, 2015, available at: http://news.meyercdc.com/community/vendor-spotlight/the-raptor-helps-patients-saves-your-most-valuable-tool-your-hands/ (last visited Feb. 15, 2023); 5 pages.	☐
	005	AUSTIN, Regan, "HYPERICE Introduces HYPERVOLT, a State-of-the Art Vibration, Massage Device for Muscle Relief," GlobeNewswire, retrieved from: https://www.globenewswire.com/en/news-release/2018/02/26/1387424/0/en/HYPERICE-Introduces-HYPERVOLT-a-State-of-the-Art-Vibration-Massage-Device-for-Muscle-Relief.html#:~:text=LOS%20ANGELES%2C%20Feb.,of%20its%20newest%20product%2C%20HYPERVOLT; February 26, 2018; 4 pages.	☐
	006	BARDWELL D., "Wahl's Massage Products - Meant for Life's Big Pains," DougBardwell.com, 06 April 2016, 7 Pages, [Retrieved On 2021-06-03] Retrieved from URL: https://dougbardwell.com/db/2016/04/06/wahls-massage-products-meant-for-lifes-big-pains/ .	☐
	007	COLLINS D., "External Rotor Motor Basics: Design and Applications," 06 June 2018, 03 Pages.	☐
	008	COLLINS D., "FAQ: What are Hall Effect Sensors and What Is Theirs Role In Dc Motors?," 11 January 2017, 03 Pages.	☐
	009	Defendant's Initial Invalidity Contentions, Therabody, Inc. v. Tzumi Electronics LLC et al., Case No. SDNY-1-21-cv-07803 (PGG)(RWL), dated August 17, 2022; 16 pages.	☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Application Number	TBD		
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		First Named Inventor	Jason WERSLAND		
		Art Unit	TBD		
		Examiner Name	TBD		
Sheet	38	of	45	Attorney Docket Number	5015.039000L

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	010	Description of Therabody GI Device, available at: https://www.therabody.com/us/en-us/faq/thearagun-devices/faq-devices-1.html?fdid=faq&csortb1=sortOrder&csortd1=1 (last visited Feb. 15, 2023).	☐
	011	DIGI-KEY'S NORTH AMERICAN EDITORS: "How to Power and Control Brushless DC Motors," 07 December 2016, 09 Pages.	☐
	012	eBay.com, "Hyperice Hypervolt Plus Percussion Massage Gun Black," retrieved on July 1, 2024, from: https://www.ebay.com/itm/235291399188?epid=17041170488&itmmeta=01HZMXKFMBFRQ17WC1Z4PBKRYW&hash=item36c875d414:g:HuYAAOSw4VpmRBpu&itmprp=en%3AAQAJAAAA4PnnRQrN0tCFRmEKiVFeO9WAq5vc8s2wpw6PqVvLkiD16U00gyJ41f1ML0fqkmOuALhCh1PGg2wJZ5tZroWtEw7sJjhgVfmA%2Bocf6f9rzLlrf%2BhYv7hH8OOKRtsLeafsmF1%2B9%2BkiC14KW%2FbAMikAx7b07HQoWQb%2FyxBykluyPPQ%2FHa8V5mVpdq%2B60u5jw1bOIW7FkUfiTzfEU79GlwjsGkZQa5n8mkhaBZH2trbs8t9atCL12aZFdhZFqN%2FyJ%2B9cdYMoUdmO10vzl2mxVnModndbqexR7ILLQWHeeWpqs%2B%7Ctkp%3ABFBMqPrNnflj ; 6 pages.	☐
	013	Examination Report For Australian Patent Application No. 2016284030, dated 07 May 2018, 3 Pages.	☐
	014	Extended European Search Report for European Application No. 16815104.1, mailed 23 January 2019, 08 Pages.	☐
	015	Extended European Search Report for European Application No. 18832213.5, mailed 21 July 2021, 11 Pages.	☐
	016	Extended European Search Report for European Application No. 18832923.9, mailed 23 April 2021, 7 Pages.	☐
	017	Extended European Search Report for European Application No. 20720323.3, mailed 09 September 2021, 10 Pages.	☐
	018	Extended European Search Report for European Application No. 20802710.2, mailed 10 May 2022, 9 Pages.	☐

Examiner Signature	/CHRISTOPHER E MILLER/	Date Considered	09/24/2025
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		Application Number	TBD		
		Filing Date	Herewith		
		First Named Inventor	Jason WERSLAND		
		Art Unit	TBD		
		Examiner Name	TBD		
Sheet	39	of	45	Attorney Docket Number	5015.039000L

NON-PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	019	Extended European Search Report for European Application No. 20802804.3, mailed 28 April 2022, 8 Pages.	☐
	020	Extended European Search Report for European Application No. 21178300.6, mailed 19 October 2021, 9 Pages.	☐
	021	Extended European Search Report for European Application No. 21178311.3, mailed 23 September 2021, 5 Pages.	☐
	022	HOLLY RIDDLE, "Theragun vs. Hyperice vs. Hydragun: Massage Gun Showdown [Buyer's Guide]," ChatterSource: Health & Wellness, March 9, 2021, available at: https://www.chattersource.com/article/massage-gun/ (last visited Feb. 17, 2023); 14 pages.	☐
	023	International Preliminary Report on Patentability for International Application No. PCT/US2016/038326, mailed 04 January 2018, 8 Pages.	☐
	024	International Preliminary Report on Patentability for International Application No. PCT/US2018/022426, mailed 26 September 2019, 9 Pages.	☐
	025	International Preliminary Report on Patentability for International Application No. PCT/US2018/039599, mailed 23 January 2020, 8 Pages.	☐
	026	International Preliminary Report on Patentability for International Application No. PCT/US2018/040795, mailed 23 January 2020, 7 Pages.	☐
	027	International Preliminary Report on Patentability for International Application No. PCT/US2019/067624, mailed 08 July 2021, 11 Pages.	☐
	028	International Preliminary Report on Patentability for International Application No. PCT/US2020/017645, mailed 26 August 2021, 11 Pages.	☐
	029	International Preliminary Report on Patentability for International Application No. PCT/US2020/031339, mailed 18 November 2021, 11 Pages.	☐

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		Application Number	TBD		
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		First Named Inventor	Jason WERSLAND		
		Art Unit	TBD		
		Examiner Name	TBD		
Sheet	40	of	45	Attorney Docket Number	5015.039000L

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Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	030	International Preliminary Report on Patentability for International Application No. PCT/US2020/031936, mailed 18 November 2021, 14 Pages.	☐
	031	International Preliminary Report on Patentability for International Application No. PCT/US2020/050385, mailed 24 March 2022, 12 Pages.	☐
	032	International Preliminary Report on Patentability for International Application No. PCT/US2020/050399, mailed 13 January 2022, 6 Pages.	☐
	033	International Preliminary Report on Patentability for International Application No. PCT/US2020/054773, mailed 21 April 2022, 8 Pages.	☐
	034	International Preliminary Report on Patentability for International Application No. PCT/US2020/054842, mailed 21 April 2022, 7 Pages.	☐
	035	International Preliminary Report on Patentability for International Application No. PCT/US2020/063426, mailed 16 June 2022, 06 Pages.	☐
	036	International Preliminary Report on Patentability for International Application No. PCT/US2021/022500, mailed 06 October 2022, 6 Pages.	☐
	037	International Preliminary Report on Patentability for International Application No. PCT/US2021/029900, mailed 10 November 2022, 9 Pages.	☐
	038	International Preliminary Report on Patentability for International Application No. PCT/US2021/029903, mailed 10 November 2022, 7 Pages.	☐
	039	International Search Report and Written Opinion for International Application No. PCT/US2016/038326, mailed 01 September 2016, 9 Pages.	☐
	040	International Search Report and Written Opinion for International Application No. PCT/US2018/022426, mailed 31 May 2018, 10 Pages.	☐
	041	International Search Report and Written Opinion for International Application No. PCT/US2018/039599, mailed 24 September 2018, 9 Pages.	☐

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	042	International Search Report and Written Opinion for International Application No. PCT/US2018/040795, mailed 24 September 2018, 8 Pages.	☐
	043	International Search Report and Written Opinion for International Application No. PCT/US2019/067624, mailed 03 February 2020, 13 Pages.	☐
	044	International Search Report and Written Opinion for International Application No. PCT/US2020/017645, mailed 20 May 2020, 13 Pages.	☐
	045	International Search Report and Written Opinion for International Application No. PCT/US2020/031339, mailed 10 June 2020, 12 Pages.	☐
	046	International Search Report and Written Opinion for International Application No. PCT/US2020/031347, mailed 03 August 2020, 9 Pages.	☐
	047	International Search Report and Written Opinion for International Application No. PCT/US2020/031936, mailed 11 September 2020, 17 Pages.	☐
	048	International Search Report and Written Opinion for International Application No. PCT/US2020/050385, mailed 03 December 2020, 13 Pages.	☐
	049	International Search Report and Written Opinion for International Application No. PCT/US2020/050399, mailed 04 February 2021, 11 Pages.	☐
	050	International Search Report and Written Opinion for International Application No. PCT/US2020/054773, mailed 12 January 2021, 9 Pages.	☐
	051	International Search Report and Written Opinion for International Application No. PCT/US2020/054842, mailed 11 January 2021, 8 Pages.	☐
	052	International Search Report and Written Opinion for International Application No. PCT/US2020/063426, mailed 26 February 2021, 09 Pages.	☐
	053	International Search Report and Written Opinion for International Application No. PCT/US2021/022500, mailed 20 April 2021, 7 Pages.	☐

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		Art Unit	TBD		
		Examiner Name	TBD		
Sheet	42	of	45	Attorney Docket Number	5015.039000L

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	054	International Search Report and Written Opinion for International Application No. PCT/US2021/029900, mailed 06 October 2021, 12 Pages.	☐
	055	International Search Report and Written Opinion for International Application No. PCT/US2021/029903, mailed 28 July 2021, 8 Pages.	☐
	056	International Search Report and Written Opinion for International Application No. PCT/US2022/028309, mailed 08 September 2022, 10 Pages.	☐
	057	International Search Report and Written Opinion for International Application No. PCT/US2022/076238, mailed 23 January 2023, 12 Pages.	☐
	058	Machine translation from Espacenet of written description and claims for CN106074129A, 9 pages (2016).	☐
	059	Machine translation from Espacenet of written description and claims for CN111616938A, 5 pages (2020).	☐
	060	Machine translation from Espacenet of written description and claims for CN111973419A, 7 pages (2020).	☐
	061	Machine Translation of Written Description and Claims for WO2013145346A1 (Year: 2013).	☐
	062	MESSAGE EXPERT: "Nursal Deep Percussion Massager Review - 6 Interchangeable Nodes," 04 January 2021, 6 Pages, [Retrieved on 2021-06-03] Retrieved from URL: https://www.massagexpert.net/nursal-deep-percussion-massager-review/ .	☐
	063	MCFARLAND M., "Segway Was Supposed to Change the World, Two Decades Later, It Just Might," CNN Wire Service, 30 October 2018, 7 Pages.	☐
	064	Partial Supplementary European Search Report for European Application No. 18832213.5, mailed 20 April 2021, 12 Pages.	☐

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		Examiner Name	TBD		
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	065	RACHEL [no family name indicated], "Jigsaw Massager," Instructables, 18 April 2010, 6 Pages, Retrieved from URL: https://web.archive.org/web/20100418041422/http://www.instructables.com/id/Jigsaw-Massager/ .	☐
	066	ROCKWELL: "Trans4mer Operating Manual for Multi-purpose saw," Model RK2516/RK2516K, 2011, 32 Pages.	☒
	067	Supplementary European Search Report for European Application No. 19904459.5, mailed 15 April 2021, 04 Pages.	☐
	068	TESTBERICHTE.DE: "Naipo Handheld Percussion Massager with Heating (MGPC 5000)," amazon.de, 7 Pages, [Retrieved on 2021-06-03] Retrieved from URL: https://www.testberichte.de/p/naipo-tests/handheld-percussion-massager-with-heating-mgpc-5000-testbericht.html , See also a YouTube Review of this Device dated 21 May 2018 at https://www.youtube.com/watch?v=bi_QCJA3D9k .	☒
	069	Visual Description of Hyper Ice, Inc. Raptor Device, "Osteopatia Haidy Ortale - Raptor Massage," available at: https://www.youtube.com/watch?v=plyW8FBowVs (last visited Feb. 15, 2023); 1 page.	☐
	070	Visual Description of Hyper Ice, Inc. Raptor Device, "RAPTOR Solutions 1.3 Prone," available at: https://www.youtube.com/watch?v=6i1tRqdwPU8&t=156s (last visited Feb. 15, 2023); 1 page.	☐
	071	WORX Trans4mer "Safety and Operating Manual Original Instructions" for 12V Li-Ion Multipurpose saw, WX540, NX540.3, WX540.9, 16 pages (2013).	☐
	072	YOUTUBE: "Unboxing: Joy-Con & Pro Controller Charging Dock for Nintendo Switch," Crusherbad64, Especially demonstration 8:30 - 8:55, (This reference is Being Used to Show Greater Details of Product not Clearly Disclosed in 'PowerA'), 26 February 2018, Retrieved from entire document, 1 Page.	☐
	073	YouTube.com, "Introducing the Hyperbolt by Hyperice," posted February 25, 2018, retrieved from: https://www.youtube.com/watch?v=el3QbjhGNK0 ; 4 pages.	☐

Examiner Signature	/CHRISTOPHER E MILLER/	Date Considered	09/24/2025
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		Filing Date	Herewith		
		First Named Inventor	Jason WERSLAND		
		Art Unit	TBD		
		Examiner Name	TBD		
Sheet	44	of	45	Attorney Docket Number	5015.039000L

IDS Size Fee Statement

Please see 37 CFR 1.98 to make the appropriate selection. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies:

- ☐ No IDS size fee is required under 37 CFR 1.17(v) at this time.
- ☐ The IDS is accompanied by the IDS size fee under 1.17(v)(1).
- ☐ The IDS is accompanied by the IDS size fee under 1.17(v)(2).
- ☒ The IDS is accompanied by the IDS size fee under 1.17(v)(3).

DEPOSIT ACCOUNT

The Director is authorized to charge the fee indicated above in the amount of \$ 800 for the IDS submitted herewith to deposit account 19-0036

/CHRISTOPHER E MILLER/

09/24/2025

CERTIFICATION STATEMENT

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

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /C.E.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known			
		Application Number	TBD		
		Filing Date	Herewith		
		First Named Inventor	Jason WERSLAND		
		Art Unit	TBD		
		Examiner Name	TBD		
Sheet	45	of	45	Attorney Docket Number	5015.039000L

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

OR

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

- ☐ See attached certification statement.

- ☒ A certification statement is not submitted herewith.

FEE

- ☐ Fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

COPIES

- ☐ An identification of an earlier application pursuant to 37 CFR 1.98 (d) (1) is attached.

SIGNATURE

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

Signature	/Joseph K. Venier/	Date (YYYY-MM-DD)	2025-08-08
Name/Print	Joseph K. Venier	Registration Number	76,838

25251517.1

/CHRISTOPHER E MILLER/

09/24/2025

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Application history Attorney/Age

Customer Number lookup FPNG

OPA Inventor Name Palm Codes

MERINO	Invent Name
Inventor first name	
Eduardo	MERIN EDUAR
Inventor middle name	
	MERIN EDUAR
Exact match results	MERIN EDUAR
☒	
<input type="button" value="Clear"/> <input type="button" value="Lookup"/>	MERIN EDUAR

Application history Attorney/Agent

Customer Number lookup FPNG I

OPA Inventor Name Palm Codes

<input type="text" value="TANG"/>	
Inventor first name	Inventor Name
<input type="text" value="Richard"/>	TANG, RICHAR
Inventor middle name	
<input type="text"/>	TANG, RICHAR
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Jason WERSLAND

Confirmation No.: 7142

Applicant: Therabody, Inc.

Art Unit: 3785

Application No.: 19/295,322

Examiner: Christopher E. MILLER

Filing Date: August 8, 2025

Atty. Docket: 5015.039000L

Title: **PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY CONNECTED ATTACHMENT**

Preliminary Amendment Under 37 C.F.R. § 1.115

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

Mail Stop Amendment

Commissioner:

In advance of prosecution, Applicant submits the following amendments and remarks.

It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and any additional fees required to continue prosecution or appeal of this application (including issue fee, fees for net addition of claims, or forwarding to appeal) are hereby authorized to be charged to our Deposit Account No. 19-0036.

Amendment to the Title

Please replace the title of this application (“PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY CONNECTED ATTACHMENT”) with the following new title:

PERCUSSIVE THERAPY DEVICE

Amendments to the Claims

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

1. (Canceled)
2. (Canceled)
3. (New) A percussive massage system comprising:
 - a percussive device comprising:
 - a housing;
 - a handle portion;
 - a motor;
 - an eccentric shaft configured to travel in a circle in response to activation of the motor; and
 - a push rod assembly connected to the motor, wherein the push rod assembly includes an output shaft configured to reciprocate on a reciprocation path that is transverse to the handle portion,
 - wherein:
 - the reciprocation path is on a dividing plane,
 - a proximal end of the push rod assembly is connected to the eccentric shaft at a location offset from the dividing plane in a first direction, and
 - the motor extends transverse to the handle portion and away from the dividing plane in a second direction that is opposite the first direction; and
 - at least one attachment configured to be operatively connected to the percussive device.
4. (New) The percussive massage system of claim 3, wherein an interior angle defined between the handle portion and the output shaft is obtuse.

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5. (New) The percussive massage system of claim 3, wherein the push rod assembly includes a push rod that includes a proximal end and a distal end, the proximal end of the push rod assembly includes the proximal end of the push rod, and the proximal end of the push rod is farther from the reciprocation path than the distal end of the push rod.
6. (New) The percussive massage system of claim 3, including:
a switch for activating the motor, wherein the switch is located on a portion of the housing that faces an opposite direction from a distal end of the push rod assembly.
7. (New) The percussive massage system of claim 3, wherein the device includes a switch and an electronic display that faces a same direction as the switch, wherein the switch is configured for activating the motor.
8. (New) The percussive massage system of claim 3, including a battery at least partially located in the handle portion.
9. (New) The percussive massage system of claim 3, wherein the housing includes a first portion that extends away from the handle portion and encloses a portion of the push rod assembly and a second portion that extends away from the handle portion and the first portion.
10. (New) The percussive massage system of claim 3, wherein the motor is located outside of the handle portion.
11. (New) The percussive massage system of claim 3, wherein the attachment is configured to be connected to a distal end of the push rod assembly.

12. (New) The percussive massage system of claim 11, wherein the distal end of the push rod assembly includes a distal end of the output shaft, and the attachment is connected to the distal end of the output shaft.
13. (New) The percussive massage system of claim 11, wherein the attachment is removably connected to the distal end of the push rod assembly.
14. (New) A percussive massage device comprising:
 - a handle portion, a motor, and an output assembly, wherein the output assembly includes:
 - an eccentric shaft, wherein the motor is configured to apply torque about a motor axis to the eccentric shaft; and
 - a push rod assembly connected to the motor, wherein the push rod assembly includes an output shaft configured to reciprocate on a reciprocation path that is transverse to the handle portion;
 - wherein:
 - a dividing plane is defined perpendicular to the motor axis, and the reciprocation path is on the dividing plane,
 - a proximal end of the push rod assembly is connected to the eccentric shaft at a connection point that travels on a circular path when the motor is active,
 - the motor includes an end positioned on an opposite side of the dividing plane from the circular path of the connection point, and
 - an interior angle defined between the handle portion and the output shaft is obtuse.
15. (New) The percussive massage device of claim 14, including a housing that includes a first portion that extends away from the handle portion and encloses a portion of the push rod assembly, and the housing includes a second portion that extends away from the handle portion and the first portion.

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16. (New) The percussive massage system of claim 14, including a battery housed in the handle portion.
17. (New) The percussive massage device of claim 14, wherein the percussive massage device includes a bearing between the eccentric shaft and the push rod assembly, the output shaft is centered on the reciprocation path, and the motor includes an end positioned on an opposite side of the reciprocation path from the bearing.
18. (New) A percussive massage device comprising:
 - a handle portion, a motor, and an output assembly, wherein the output assembly includes:
 - an eccentric shaft, wherein the motor is configured to apply torque to the eccentric shaft; and
 - a push rod assembly connected to the motor, wherein the push rod assembly includes an output shaft configured to reciprocate along a reciprocation axis that is transverse to the handle portion;
 - wherein:
 - a proximal end of the push rod assembly is connected to the eccentric shaft at a connection point that travels on a circular path when the motor is active,
 - an end of the motor is on an opposite side of the reciprocation axis from the circular path of the connection point, and
 - an interior angle defined between the handle portion and the output shaft is obtuse.
19. (New) The percussive massage device of claim 18, wherein:
 - the push rod assembly includes a push rod, and the push rod includes a proximal end and a distal end, and

wherein the proximal end of the push rod is connected to the eccentric shaft at the connection point, and the distal end of the push rod is nearer to the reciprocation axis than the proximal end of the push rod.

20. (New) The percussive massage device of claim 19, wherein the distal end of the push rod is coupled to the output shaft.
21. (New) The percussive massage device of claim 18, wherein the reciprocation axis is on a dividing plane, and the circular path of the connection point is on an opposite side of the dividing plane from the end of the motor.
22. (New) The percussive massage device of claim 18, including a housing that includes a first portion that extends away from the handle portion and encloses a portion of the push rod assembly, and the housing includes a second portion that extends away from the handle portion and the first portion.

Remarks

Upon entry of the foregoing amendment, claims 3–22 are pending in the application, with claims 3, 14, and 18 being the independent claims. Claims 1 and 2 are canceled without prejudice to or disclaimer of the subject matter therein. New claims 3–22 are added. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Conclusion

Prompt and favorable consideration of this Preliminary Amendment is respectfully requested. Applicant believes the present application is in condition for allowance. If the Office believes, for any reason, that personal communication will expedite prosecution of this application, the Office is invited to telephone the undersigned at the number provided.

Respectfully submitted,

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

/Joseph K. Venier/

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

Date: September 23, 2025

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

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ENCLOSURES (Check all that apply)		
☐ Fee Transmittal Form	☐ Drawing(s)	☐ After Allowance Communication to TC
☐ Fee Attached	☐ Licensing-related Papers	☐ Appeal Communication to Board of Appeals and Interferences
☒ Amendment/Reply	☐ Petition	☐ Appeal Communication to TC (Appeal Notice, Brief, Reply Brief)
☐ After Final	☐ Petition to Convert to a Provisional Application	☐ Proprietary Information
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☐ Reply to Missing Parts under 37 CFR 1.52 or 1.53		
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	September 23, 2025	Reg. No. 76,838

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

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Title of Invention

PERCUSSIVE THERAPY DEVICE WITH ELECTRICALLY CONNECTED ATTACHMENT

Application Information

APPLICATION TYPE	Utility - Nonprovisional Application under 35 USC 111(a)	PATENT #	-
CONFIRMATION #	7142	FILED BY	Rolonda Lee
PATENT CENTER #	72431253	FILING DATE	08/08/2025
CUSTOMER #	186370	FIRST NAMED INVENTOR	Jason WERSLAND
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Joseph Venier

Documents

TOTAL DOCUMENTS: 5

DOCUMENT		PAGES	DESCRIPTION	SIZE (KB)
2025-09-24-Transmittal-Form-5015-039000L.pdf		1	Transmittal Letter	215 KB
2025-09-24-Preliminary-Amendment-5015-039000L.pdf		8	-	124 KB
2025-09-24-Preliminary-Amendment-5015-039000L-A.PE.pdf	(1-1)	1	Preliminary Amendment	97 KB
2025-09-24-Preliminary-Amendment-5015-039000L-SPEC.pdf	(2-2)	1	Specification	109 KB
2025-09-24-Preliminary-Amendment-5015-039000L-CLM.pdf	(3-7)	5	Claims	89 KB