

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number
19/330,989

APPLICATION AS FILED - PART I

(Column 1)		(Column 2)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	140		N/A	
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	308		N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	1020		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	20 minus 20 =	*	x	= 0	OR		
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3 minus 3 =	*	x	= 0			
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0			
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0			
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL	1468		TOTAL	

APPLICATION AS AMENDED - PART II

(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
Total (37 CFR 1.16(i))	*	Minus **	=	x	=	OR	x	=
Independent (37 CFR 1.16(h))	*	Minus ***	=	x	=	OR	x	=
Application Size Fee (37 CFR 1.16(s))						OR		
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						OR		
				TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

(Column 1)		(Column 2)	(Column 3)	SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
Total (37 CFR 1.16(i))	*	Minus **	=	x	=	OR	x	=
Independent (37 CFR 1.16(h))	*	Minus ***	=	x	=	OR	x	=
Application Size Fee (37 CFR 1.16(s))						OR		
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))						OR		
				TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.



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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
19/330,989	09/17/2025	3632	1468	305774-401011	1	1

CONFIRMATION NO. 1069

24728

Bradley Arant Boult Cummings LLP
IP Department
1230 Peachtree Street NE
Promenade Tower, Suite 2100
ATLANTA, GA 30309

FILING RECEIPT



0000000095358094

Date Mailed: 10/03/2025

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

Please verify the accuracy of the data presented on this receipt. If an error is noted on this Filing Receipt, please submit a written request for a corrected Filing Receipt, including a properly marked-up ADS showing the changes with strike-through for deletions and underlining for additions. If you received a "Notice to File Missing Parts" or other Notice requiring a response for this application, please submit any request for correction to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections provided that the request is grantable.

Inventor(s)

Walter Ernest POWER, II, Carver, MN;
Gregory Alan GODFREY, Richmond Hill, GA;
Carl Eugene Kossuth, Rolla, MO;

Applicant(s)

Tethrd LLC, Columbia, TN, Assignee (with 37 CFR 1.172 Interest);

Power of Attorney: The patent practitioners associated with Customer Number 24728

Domestic Applications for which benefit is claimed

This application is a REI of 17/231,717 04/15/2021 PAT 11,504,556
which is a CON of 17/022,844 09/16/2020 ABN
which is a CON of 16/736,345 01/07/2020 ABN

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: 09/30/2025

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 19/330,989**

Projected Publication Date: None

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

BRIDGE ROPE ASSEMBLY

Preliminary Class

248

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

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

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

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

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

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

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

page 2 of 4

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

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Title 35, United States Code, Section 184
Title 37, Code of Federal Regulations, 5.11 & 5.15

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INFORMATION DISCLOSURE STATEMENT SIZE FEE – WRITTEN ASSERTION UNDER 37 CFR 1.98

Complete if Known

Application or Patent No.: 19/330,989	First Named Inventor: Walter Ernest Power, II	Art Unit:
Filing Date: September 17, 2025	Attorney Docket Number: 305774-401011	Examiner:

Please see 37 CFR 1.17(v) and attached Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

- ☐ 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 37 CFR 1.17(v)(1).
- ☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(2).
- ☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(3).

NOTE: This form must be accompanied by PTO/SB/08a and/or PTO/SB/08b or equivalent.

DEPOSIT ACCOUNT

The Director is authorized to charge the fee indicated above in the amount of \$ _____ for the IDS submitted herewith to deposit account 60-6905.

SIGNATURE

This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications.

If applicant or patent owner is a juristic entity (e.g., an LLC or corporation), this form must be signed by a registered practitioner. See 37 CFR 1.31.

If applicant or patent owner is a person or persons, this form may be signed by either a registered practitioner, or the applicant or patentee. Note that if multiple people together are the applicant or patentee (e.g., there are joint inventors who together are the applicant), then a signature is required from each person who is an applicant or patentee. *Submit multiple forms if more than one signature is required, see below*.*

Signature /Adam J. Thompson/	Date October 2, 2025
Name (Print/Typed)	Practitioner Registration Number (if applicable) 72831

☐ * Total of _____ forms are submitted.

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**Instructions for Filling out the
“Information Disclosure Statement Size Fee – Written Assertion Under 37 CFR 1.98” Form
(Not to be Submitted to the USPTO)**

Note: This form is to be used when applicant or patent owner files an Information Disclosure Statement (IDS) for consideration by the examiner. This form must be accompanied by PTO/SB/08a and/or PTO/SB/08b or equivalent.

Determining the cumulative number of applicant-provided or patent owner-provided items of information

The IDS size fee is based on the cumulative number of items of information provided by an applicant or patent owner during the pendency of the application or reexamination proceeding. It is the applicant’s and patent owner’s responsibility to track the cumulative number of items of information provided in the application or proceeding and provide a written assertion of any applicable IDS size fee due.

In determining the applicable written assertion for the cumulative number of applicant-provided or patent owner-provided items of information, “provided” refers to the items cited on an IDS under 37 CFR 1.98(a)(1) by an applicant or patent owner, whether or not an actual copy of the cited item is submitted by the applicant or patent owner to the USPTO. If a particular item provided by an applicant or patent owner on an IDS was not considered because the item was non-compliant and that particular item is provided on an IDS a second time in the same application or patent, it will not be counted again.

An item of information that an applicant cited in a parent application will not be counted in a child application (e.g., a continuation, continuation-in-part, or divisional application) for the purpose of the IDS size fees unless it is resubmitted, i.e., provided by the applicant on an IDS in the child application. Applicants who wish to avoid paying the IDS size fees in a child application for items of information considered in a parent application may do so by not resubmitting the items. An item of information must be resubmitted in the continuing application if the applicant desires the item of information to be printed on the patent. See MPEP 609.02, subsection II.A.2.

The cumulative count is determined for each application or patent separately. Continuing, CPA, and reissue applications and post-issuance proceedings will start with a count of zero. A request for continued examination (RCE) is not the filing of a new application, and thus the count will not reset when an RCE is filed.

Written Assertion

Check “[] No IDS size fee is required under 37 CFR 1.17(v) at this time” on the above PTO/SB/08c form when the IDS does not cause the cumulative number of applicant-provided or patent owner-provided items in this application or proceeding to:

- exceed 50, 100, or 200 items of information.

Check “[] The IDS is accompanied by the IDS size fee under 1.17(v)(1)” on the above PTO/SB/08c form when the IDS causes the cumulative number of applicant-provided or patent owner-provided items in this application or proceeding to:

- exceed 50 items of information but not exceed 100 items of information.

Check “[] The IDS is accompanied by the IDS size fee under 1.17(v)(2)” on the above PTO/SB/08c form when the IDS causes the cumulative number of applicant-provided or patent owner-provided items in this application or proceeding to:

- exceed 100 items of information but not exceed 200 items of information.

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- exceed 200 items of information.

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Select only one assertion on the PTO/SB/08c form above.

Note: the cumulative count of items of information includes all items of information already of record in a pending application or proceeding that were submitted via IDS(s) including those submitted prior to January 19, 2025.

Method of Payment

This section should only be filled out if the IDS size fee is due. Fees may be paid by check or money order (made payable to the Director of the United States Patent and Trademark Office), credit card (Form PTO-2038), or deposit account. When paying by deposit account, the amount of the IDS size fee to be charged to the deposit account must be specified to comply with 37 CFR 1.98(a)(4). General authorizations to charge fees to a deposit account are not compliant written assertions. When paying by credit card, to protect your credit card information, do not submit Form PTO-2038 electronically through USPTO’s patent electronic filing system or any other USPTO Web site.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013), <https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf>.

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



- (51) **International Patent Classification:**
A62B 35/00 (2006.01) *A62B 35/04* (2006.01)
- (21) **International Application Number:**
PCT/US2017/064684
- (22) **International Filing Date:**
05 December 2017 (05.12.2017)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
15/376,233 12 December 2016 (12.12.2016) US
- (71) **Applicant:** MSA TECHNOLOGY, LLC [US/US]; 1000 Cranberry Woods Drive, Cranberry Township, Pennsylvania 16066 (US).
- (72) **Inventors:** JACOB, Matthew, Frederick; 901 Rosalind Road, Pittsburgh, Pennsylvania 15237 (US). SEPE, Benjamin, T.; 1324 E Carson Street, Apartment 4, Pittsburgh, Pennsylvania 15203 (US). QUIGLEY, Matthew; 611 Dorseyville Road, Pittsburgh, Pennsylvania 15238 (US).
- (74) **Agent:** PREPELKA, Nathan, J. et al.; The Webb Law Firm, One Gateway Center, 420 Ft. Duquesne Blvd., Suite 1200, Pittsburgh, Pennsylvania 15222 (US).

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

(84) **Designated States** (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

(54) **Title:** HARNESS WITH INTEGRATED ENERGY ABSORBER

(57) **Abstract:** A fall protection harness for being removably worn by a user having at least two leg straps, a first shoulder strap and a second shoulder strap. At least one of the shoulder straps has an energy absorbing element integrated therewith. The energy absorbing element may be a tubular webbing material surrounding a tearable webbing material with at least two bound webbing components configured to tear from one another when the shoulder strap is subjected to a force that exceeds a predetermined threshold.

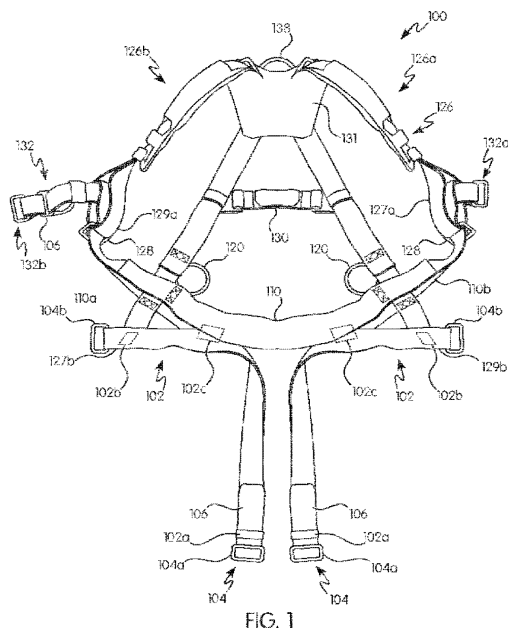


FIG. 1

Published:

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

HARNESS WITH INTEGRATED ENERGY ABSORBER

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority to U.S. Utility Application No. 15/376,233, filed December 12, 2016 entitled “Harness with Integrated Energy Absorber” the disclosure of which is incorporated by reference herein in its entirety.

BACKGROUND OF THE INVENTION

Field of the Invention

[0002] The present invention relates generally to a fall protection harness and, in particular, to a fall protection harness having an integrated energy absorber.

Description of the Related Art

[0003] As is known in the art, there exist various safety devices and arrangements that can be worn by or attached to a user to ensure the wearer’s safety in certain situations. Such mechanisms come in many forms, including, but not limited to, harnesses and safety belts. Full body harnesses are widely used for lifting and lowering individuals in dangerous situations and as a primary component in a personal fall arrest system. These harnesses can also be used for work positioning, travel restriction, ladder climbing, rescue retrieval, and evacuation. While these harnesses are used mainly in an industrial setting, and particularly the construction industry where the likelihood and danger of falls from heights is both numerous and significant, a full body harness can be used in various other applications in which total suspension and support of the body must be ensured, either expectedly or unexpectedly.

[0004] While there are many variations in full body harness construction, all typically include a plurality of elongate straps that are combined together to fit around a user’s body. In some embodiments or aspects, a full body harness may have an attachment point (D-ring) typically positioned in a central portion of the user’s back, and a plurality of straps routed around predetermined portions of the user’s body in such a manner as to hold or suspend the user in the event of a fall.

[0005] Full body harnesses, when used in a personal fall arrest system, must always be used with an energy absorbing element. In some embodiments or aspects, the energy absorbing element may be a self-retracting lanyard (SRL), and in other embodiments or aspects may include a lanyard or a rope grab. The SRL is attached at one end to an anchor point and at its other end to a line

directly connected to the user. The SRL is configured to activate once the user has begun to fall to arrest the fall soon enough to prevent injury to the user. Typically, an SRL has a housing with a rotatable drum having a line wound about the drum and a braking mechanism for controlling the rotation of the drum. The drum can rotate in a first direction to unwind (or “pay out”) the line from the housing when a certain level of tension is deliberately applied. When tension is reduced or released, the drum can slowly rotate in a reverse direction, thereby causing the line to retract or rewind onto the drum. The braking mechanism is configured for slowing down and stopping the rotation of the drum when the line unwinds too rapidly. For example, the braking mechanism may be activated to brake the rotation of the drum when the rotation speed exceeds a predetermined velocity. A sudden line pay out at a speed that exceeds normal payout is an indication that the user has experienced a fall that needs to be stopped or arrested. Should such an unintentional, accidental fall commence, the braking mechanism in the housing of the SRL is configured to engage and stop the user from falling too far.

[0006] Many falls occur over the edge of a working surface, causing the line of the SRL to bend over the edge. In such situations, the line is not moved relative to the edge, thereby imparting the entire force of a fall on a single point in the line at the edge. If an energy absorbing element is not positioned between the user and the edge, there is a risk that the user will be exposed to dangerously high forces caused by a sudden deceleration of the user’s body as the user’s weight is supported by the harness and a line attaching the user to the anchor point. Some full body harnesses have an energy absorbing element permanently attached to the D-ring on the user’s back. This design, however, is often bulky and can interfere with the user’s mobility. It also adds additional weight that the user must carry at all times.

[0007] Accordingly, there is a need in the art for an improved harness that addresses certain drawbacks and deficiencies associated with known harnesses. For example, there is a need for an improved harness with an improved energy absorbing element associated with the harness. There is a further need in the art for an improved harness that can be easily and effectively worn by the user in a variety of work environments without compromising the user’s ability to move and without adding additional weight that must be borne by the user. There is also a need for an improved harness with increased safety compliance at the worksite, and with more effective and safe support of the user in the event of a fall.

SUMMARY OF THE INVENTION

[0008] Generally, provided is an improved fall protection harness having an integrated energy absorbing element. Preferably, provided is an improved harness having an energy absorbing element, such as a tearable webbing material. Preferably, provided is an improved harness that can be easily and effectively worn by the user in a variety of work environments without compromising the user's ability to move and without adding significant weight that must be borne by the user. Preferably, provided is an improved harness that not only leads to increased safety compliance at the worksite, but also provides increased effectiveness to the personal fall protection system and a resulting increase in the safety of the user in the event of a fall.

[0009] In some preferred and non-limiting embodiments or aspects, provided is a wearable harness having a plurality of straps, optionally including a first leg strap and a second leg strap, each leg strap having a first end and a second end removably attached to each other and configured to be free floating when detached from each other. The harness may optionally further include a belt strap having a first end and a second end removably attached to each other and configured to be free floating when detached from each other. The harness includes a shoulder strap having a first shoulder strap, and a second shoulder strap. One or both of the first shoulder strap and the second shoulder strap may have an energy absorbing element integrated therewith. The energy absorbing element may have a tubular webbing encasing a tearable webbing material with at least two bound (e.g., load-bearing) webbing components configured to tear from one another when the shoulder strap is subjected to a force that exceeds a predetermined threshold. Accordingly, the energy absorbing element may be integrated on or with at least a portion of at least one of the shoulder straps.

[0010] In other preferred and non-limiting embodiments or aspects, the energy absorbing element may be exposed from the tubular webbing at a substantially intermediate portion of at least one of the first shoulder strap and the second shoulder strap between the first end and the second end of the at least one of the first shoulder strap and the second shoulder strap. The energy absorbing element may be exposed from the tubular webbing through an opening in the tubular webbing. The opening may be a slit formed at a substantially intermediate portion of at least one of the first shoulder strap and the second shoulder strap between the first end and the second end of the at least one of the first shoulder strap and the second shoulder strap. At least a portion of the energy absorbing element may be configured to exit through the opening of the tubular

webbing upon tearing. The tubular webbing may be made from a woven tubular material. The tubular webbing may be made from a substantially flat webbing material having opposing lateral ends connected to one another to define a tubular shape.

[0011] In other preferred and non-limiting embodiments or aspects, the at least two bound webbing components may be bound by a plurality of binder threads or an adhesive. The plurality of binder threads may be configured to tear successively in a longitudinal direction of at least one of the first shoulder strap and the second shoulder strap when the at least one of the first shoulder strap and the second shoulder strap is subject to the force that exceeds the predetermined threshold. The plurality of binder threads may extend through at least a portion of a thickness of the at least two webbing components. The plurality of binder threads may be arranged in a row, or two or more rows extending along a longitudinal length or a lateral length of the webbing components. The rows may be substantially parallel to each other or intersect with each other at least once over the longitudinal length or the lateral length of the webbing components. The plurality of binder threads may be arranged in two or more thread groups spaced apart from each other along a longitudinal length or a lateral length of the webbing components. The two or more thread groups may be arranged in a pattern. A density of the plurality of binder threads may increase from the rear portion to the front portion of the shoulder strap, or vice versa. The predetermined threshold may be in the range of about 310 lbs to about 2,250 lbs. The first shoulder strap and the second shoulder strap may have a starting tear area at the rear portion where the pair of bound webbing components is unbound. The first shoulder strap and the second shoulder strap may have an ending tear point having a reinforced area configured to prevent separation of the at least two bound webbing components. The energy absorbing element may be located on an energy absorbing area at the rear portion of at least one of the first shoulder strap and the second shoulder strap.

[0012] In other preferred and non-limiting embodiments or aspects, at least one connector may be arranged on at least one of the plurality of straps and configured to facilitate removable attachment of the free floating ends of at least one of the plurality of straps. The connector may be at least one of the following: a clip, a buckle, a mating arrangement, an attachment structure, or any combination thereof. The first end of each leg strap may be adjustably attached to the second end by a connection mechanism that can adjust the length of each leg strap. The harness may have a chest strap having a first end and a second end removably attached to each other and configured to be free floating when detached from each other. The first end of the chest strap may be

attached to the first shoulder strap and the second end of the chest strap may be attached to the second shoulder strap. The harness may have a back strap connecting a rear portion of at least one of the first shoulder strap and the second shoulder strap.

[0013] In other preferred and non-limiting embodiments or aspects, a fall protection harness removably wearable by a user may have a plurality of straps, including an optional first leg strap, an optional second leg strap, and an optional belt strap. The fall protection harness includes a first shoulder strap and a second shoulder strap. One or both of the first shoulder strap and the second shoulder strap may have an energy absorbing element integrated therewith, the energy absorbing element comprising a tubular webbing encasing a tearable webbing material with at least two bound webbing components bound together by a plurality of binder threads configured to tear successively in a longitudinal direction of the first shoulder strap and the second shoulder strap when the first shoulder strap and the second shoulder strap are subjected to a predetermined force. The energy absorbing element may be exposed from the tubular webbing at a substantially intermediate portion of at least one of the first shoulder strap and the second shoulder strap between the first end and the second end of the at least one of the first shoulder strap and the second shoulder strap.

[0014] In other preferred and non-limiting embodiments or aspects, the first shoulder strap and the second shoulder strap may have a starting tear area at the rear portion where the pair of bound webbing components is unbound. The energy absorbing element may be located on an area at the rear portion of at least one of the first shoulder strap and the second shoulder strap. At least one connector may be arranged on at least one of the plurality of straps and configured to facilitate removable attachment of free floating ends of at least one of the plurality of straps. The connector may be at least one of the following: a clip, a buckle, a mating arrangement, an actuatable structure, or any combination thereof. The first end of each leg strap may be adjustably attached to the second end by a connection mechanism to adjust a length of each leg strap. The harness may have a chest strap having a first end and a second end removably attached to each other and configured to be free floating when detached from each other. The first end of the chest strap may be attached to the first shoulder strap and the second end of the chest strap may be attached to the second shoulder strap.

[0015] In other preferred and non-limiting embodiments or aspects, at least one strap of a harness may have a shoulder strap having tubular webbing encasing an energy absorbing element

having a tearable webbing material with at least two bound webbing components bound together by a plurality of binder threads configured to tear successively in a longitudinal direction of the shoulder strap when the shoulder strap is subjected to a predetermined force. The energy absorbing element may be exposed from the tubular webbing at a substantially intermediate portion of the shoulder strap. In a harness removably attachable to a body of a user, at least one strap may have an energy absorbing element integrated with the at least one strap.

[0016] Further preferred and non-limiting embodiments or aspects will now be set forth in the following numbered clauses.

[0017] Clause 1: A wearable harness having a plurality of straps comprising: an optional first leg strap, an optional second leg strap, an optional belt strap, a first shoulder strap, and a second shoulder strap, wherein at least one of the first shoulder strap and the second shoulder strap comprises an energy absorbing element integrated therewith.

[0018] Clause 2: The harness of claim 1, wherein the energy absorbing element is a tubular webbing encasing a tearable webbing material with at least two bound webbing components configured to tear from one another when the shoulder strap is subjected to a force that exceeds a predetermined threshold.

[0019] Clause 3: The harness of clause 1 or 2, wherein the energy absorbing element is exposed from the tubular webbing at a substantially intermediate portion of at least one of the first shoulder strap and the second shoulder strap between the first end and the second end of the at least one of the first shoulder strap and the second shoulder strap.

[0020] Clause 4: The harness of any of clauses 1-3, wherein the energy absorbing element is exposed from the tubular webbing through an opening in the tubular webbing.

[0021] Clause 5: The harness of any of clauses 1-4, wherein at least a portion of the energy absorbing element is configured to exit through the opening of the tubular webbing upon tearing.

[0022] Clause 6: The harness of any of clauses 1-5, wherein the tubular webbing comprises a substantially flat webbing material having opposing lateral ends connected to one another to define a tubular shape.

[0023] Clause 7: The harness of any of clauses 1-6, wherein the at least two bound webbing components are bound by a plurality of binder threads.

[0024] Clause 8: The harness of any of clauses 1-7, wherein the plurality of binder threads are configured to tear successively in a longitudinal direction of at least one of the first shoulder

strap and the second shoulder strap when the at least one of the first shoulder strap and the second shoulder strap is subjected to the force that exceeds the predetermined threshold.

[0025] Clause 9: The harness of any of clauses 1-8, wherein the plurality of binder threads extend through at least a portion of a thickness of the at least two webbing components.

[0026] Clause 10: The harness of any of clauses 1-9, wherein the plurality of binder threads are arranged in two or more substantially parallel or intersecting rows extending along a longitudinal length or a lateral length of the webbing components.

[0027] Clause 11: The harness of any of clauses 1-10, wherein the plurality of binder threads are arranged in two or more thread groups spaced apart from each other along a longitudinal length or a lateral length of the webbing components.

[0028] Clause 12: The harness of any of clauses 1-11, wherein the predetermined threshold is about 310 lbs to about 2,250 lbs.

[0029] Clause 13: The harness of any of clauses 1-12, wherein the at least two bound webbing components are bound together by an adhesive.

[0030] Clause 14: The harness of any of clauses 1-13, wherein the first shoulder strap and the second shoulder strap have a starting tear area at a rear portion where the pair of bound webbing components is unbound.

[0031] Clause 15: The harness of any of clauses 1-14, wherein the first shoulder strap and the second shoulder strap have an ending tear point having a reinforced area configured to prevent separation of the at least two bound webbing components.

[0032] Clause 16. The harness of any of clauses 1-15, wherein the energy absorbing element is located on an area at a rear portion of at least one of the first shoulder strap and the second shoulder strap.

[0033] Clause 17: A fall protection harness removably wearable by a user, the harness having a plurality of straps comprising: an optional first leg strap an optional second leg strap, an optional belt strap, a first shoulder strap, and a second shoulder strap, wherein at least one of the first shoulder strap and the second shoulder strap have an energy absorbing element integrated therewith, the energy absorbing element comprising a tubular webbing encasing a tearable webbing material with at least two bound webbing components bound together by a plurality of binder threads configured to tear successively in a longitudinal direction of the first shoulder strap and the second shoulder strap when the first shoulder strap and the second shoulder strap are

subjected to a predetermined force, and wherein the energy absorbing element is exposed from the tubular webbing at a substantially intermediate portion of at least one of the first shoulder strap and the second shoulder strap between the first end and the second end of the at least one of the first shoulder strap and the second shoulder strap.

[0034] Clause 18: The harness of clause 17, wherein the first end of each leg strap is adjustably attached to the second end by a connection mechanism to adjust a length of each leg strap.

[0035] Clause 19: The harness of clause 17 or clause 18, wherein the energy absorbing element is located on an area at a rear portion of at least one of the first shoulder strap and the second shoulder strap.

[0036] Clause 20: In a harness removably attachable to a body of a user and having at least one strap comprising an energy absorbing element integrated with the at least one strap.

[0037] These and other features and characteristics of the present disclosure, as well as the methods of operation and functions of the related elements of structures and the combination of parts and economies of manufacture, will become more apparent upon consideration of the following description and the appended claims with reference to the accompanying drawings, all of which form a part of this specification, wherein like reference numerals designate corresponding parts in the various figures. It is to be expressly understood, however, that the drawings are for the purpose of illustration and description only and are not intended as a definition of the limits of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0038] **FIG. 1** is a front view of a harness in accordance with the principles of the present invention;

[0039] **FIG. 2** is a detailed perspective view of a shoulder harness having an energy absorbing element in accordance with the principles of the present invention;

[0040] **FIG. 3A** is a schematic representation of the energy absorbing element in a first configuration;

[0041] **FIG. 3B** is a schematic representation of the energy absorbing element in a second configuration;

[0042] **FIG. 4A** is a side cross-sectional view of an energy absorbing element in accordance with the principles of the present invention;

[0043] FIG. 4B is a top view of an energy absorbing element in accordance with the principles of the present invention; and

[0044] FIG. 4C is a top view of an energy absorbing element in accordance with the principles of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0045] For purposes of the description hereinafter, the terms “end”, “upper”, “lower”, “right”, “left”, “vertical”, “horizontal”, “top”, “bottom”, “lateral”, “longitudinal” and derivatives thereof shall relate to the invention as it is oriented in the drawing figures. However, it is to be understood that the invention may assume various alternative variations and step sequences, except where expressly specified to the contrary. It is also to be understood that the specific devices and processes illustrated in the attached drawings, and described in the following specification, are simply exemplary embodiments of the invention. Hence, specific dimensions and other physical characteristics related to the embodiments disclosed herein are not to be considered as limiting.

[0046] As used in the specification and the claims, the singular form of “a”, “an”, and “the” include plural referents unless the context clearly dictates otherwise. As used in the specification and the claims, the term “end” refers to the extreme distal portion or the area near or adjacent that portion. Unless otherwise specified, the use of the term “attach”, “attachable”, and/or “attachment” includes a permanent, semi-permanent, removable, or adjustable attaching arrangement. As used in the specification and the claims, the term “integrated”, when used with reference to an energy absorbing element and any portion of a harness, means that an energy absorbing element is formed as a separate component or arrangement and can be combined in, on, or with at least a portion of a separately formed harness (e.g., at least one strap or portion of a strap of the harness), such that the two components together constitute a whole. Therefore, the terms “therewith”, “therein”, and “thereon” are used interchangeably in the context of the present description. As used in the specification and the claims, the term “substantially parallel” means a relative angle as between two objects (if extended to theoretical intersection), such as elongated objects and including reference lines, that is from 0° to 5°, or from 0° to 3°, or from 0° to 2°, or from 0° to 1°, or from 0° to 0.5°, or from 0° to 0.25°, or from 0° to 0.1°, inclusive of the recited values.

[0047] As used in the specification and the claims, all ranges or ratios disclosed herein are to be understood to encompass any and all subranges or sub-ratios subsumed therein. For aspect or

embodiment, a stated range or ratio of “1 to 10” should be considered to include any and all subranges between (and inclusive of) the minimum value of 1 and the maximum value of 10; that is, all sub-ranges or sub-ratios beginning with a minimum value of 1 or more and ending with a maximum value of 10 or less, such as but not limited to, 1 to 6.1, 3.5 to 7.8, and 5.5 to 10.

[0048] In various preferred and non-limiting embodiments or aspects, and with reference to **FIGS. 1-3B**, the present disclosure is directed to a harness **100** used in a fall protection system. As discussed herein, the harness **100** has at least one structural energy absorbing element integrated therewith and made from a tearable webbing material configured for absorbing energy during a fall event. In various preferred and non-limiting embodiments or aspects, the harness **100** may be used in combination with a supplementary energy absorbing element, such as a self-retracting lanyard (SRL) (not shown), to provide additional energy absorption during a fall event.

[0049] With continued reference to **FIG. 1**, the harness **100** has at least two leg straps **102** configured to attach around a user's legs below a user's groin area. When attached, the leg straps **102** loop around or encircle each of the user's legs. Each leg strap **102** has a first end **102a** that is removably attachable to a second end **102b** via a connector **104**. In some preferred and non-limiting embodiments or aspects, the connector **104** may be a clip, a buckle, a mating arrangement, an actuatable structure, or the like. The connector **104** permits removable attachment of the first end **102a** to the second end **102b** of each leg strap **102**. In this manner, the first and second ends **102a**, **102b** of the leg straps **102** are configured to be removably attached to each other and configured to be free floating when detached from each other. In some preferred and non-limiting embodiments or aspects, at least one connector **104** and/or the leg strap **102** may have at least one connection mechanism **106** configured for adjusting the length of each leg strap **102**. In this manner, the at least one connection mechanism **106** adjusts a distance between the first end **102a** and the second end **102b** such that each leg strap **102** may be adjusted to fit comfortably around the user's legs. Each leg strap **102** may be formed from a substantially flat webbing material typically used in harness construction.

[0050] In various preferred and non-limiting embodiments or aspects of the present disclosure, the leg straps **102** (or, indeed, any of the straps in the harness **100**) may be linear lengths of material, folded straps that form loops with the at least one connector **104** at the first end **102a** and/or the second end **102b**, or the like. For example, as shown in **FIG. 1**, the connector **104** may have a first portion **104a** that is non-adjustably attached to the first end **102a** of at least one leg

strap **102**, while a second portion **104b** of the connector **104** is adjustably secured at the second end **102b** of at least one leg strap **102** through a loop of the material that makes up the leg strap **102**. Therefore, in such an arrangement, the second portion **104b** of the connector **104** and the loop of material that makes up the leg strap **102** at the second end **102b** defines the at least one connection mechanism **106** for adjusting a length of the leg strap **102**. It should be noted that the position of the connection mechanism **106** may be reversed such that the second portion **104b** of the connector **104** is provided on the first end **102a** of the leg strap **102**. At least one leg strap **102** may have padding (not shown) for increasing the user's comfort while wearing the harness **100**.

[0051] With continued reference to **FIG. 1**, each leg strap **102** is connected to a belt strap **110** at a substantially intermediate portion **102c** of the leg strap **102** between the first end **102a** and the second end **102b**. For example, each leg strap **102** may be connected to the belt strap **110**. In some preferred and non-limiting embodiments or aspects, the substantially intermediate portion **102c** of the leg strap **102** may be directly and non-movably connected to the belt strap **110**, such as being sewn directly to the belt strap **110**. In other preferred and non-limiting embodiments or aspects, the substantially intermediate portion **102c** of each leg strap **102** may be connected to the rear end of the belt strap **110** by a connection strap (not shown) to allow the substantially intermediate portion **102c** of the leg strap **102** to slidably move along a front portion of the leg strap **102**. Accordingly, the position of the leg straps **102** may be adjusted relative to the belt strap **110** to increase the user's comfort while wearing the harness **100**.

[0052] The belt strap **110** is configured to encircle at least a portion of the user's torso. The belt strap **110** has a first end **110a** that is attached to a first portion of a shoulder strap **126** and a second end **110b** that is attached to a second portion of the shoulder strap **126**. The first end **110a** and the second end **110b** may be removably or non-removably attachable to the shoulder strap **126**. In some embodiments or aspects, at least one of the first end **110a** and the second end **110b** may be attachable to the shoulder strap **126** via a connector similar to the connector **104** described herein with reference to the leg straps **102**. In some preferred and non-limiting embodiments or aspects, the belt strap **110** may have at least one connection mechanism **106** configured for adjusting the length of the belt strap **110**. In this manner, the at least one connection mechanism **106** adjusts a distance between the first end **110a** and the second end **110b** such that the belt strap **110** may be adjusted to fit comfortably around the user's torso. One or more handle connection members, and other handling and/or connectors **120** may be provided on at least a portion of the

belt strap **110**. The belt strap **110** may have padding (not shown) for increasing the user's comfort while wearing the harness **100**. The belt strap **110** may be formed from a substantially flat webbing material typically used in harness construction.

[0053] With continued reference to **FIG. 1**, the harness **100** further has the shoulder strap **126** configured to extend over at least a portion of the user's shoulders. The shoulder strap **126** may have a first shoulder strap **126a** and a second shoulder strap **126b** arranged to overlap one another in an X-shaped configuration. In some preferred and non-limiting embodiments or aspects, the shoulder strap **126** may have at least one shoulder pad **131** having one or more openings through which the first shoulder strap **126a** and the second shoulder strap **126b** can be arranged to maintain the first shoulder strap **126a** and the second shoulder strap **126b** in the X-shaped configuration.

[0054] With specific reference to **FIG. 1**, the first shoulder strap **126a** has a first end **127a** that is connected to the second end **110b** of the belt strap **110**. The first end **127a** of the first shoulder strap **126a** may be removably or non-removably attachable to the second end **110b** of the belt strap **110**. In some preferred and non-limiting embodiments or aspects, the first end **127a** of the first shoulder strap **126a** may be attached to the second end **110b** of the belt strap **110** via a connector similar to the connector **104** described herein with reference to the leg straps **102**. The first shoulder strap **126a** further has a second end **127b** that is connected to one of the two leg straps **102**. In some preferred and non-limiting embodiments or aspects, the second end **127b** of the first shoulder strap **126a** is connected to the leg strap **102** proximate to the second end **102b** of the leg strap **102**, such as by being sewn directly to the leg strap **102**. The first shoulder strap **126a** may have at least one loop **128** through which the first end **110a** of the belt strap **110** may be passed. At least a portion of the first shoulder strap **126a** may be formed from a substantially flat webbing material typically used in harness construction.

[0055] With continued reference to **FIG. 1**, the second shoulder strap **126b** has a first end **129a** that is connected to the first end **110a** of the belt strap **110**. The first end **129a** of the second shoulder strap **126b** may be removably or non-removably attachable to first end **110a** of the belt strap **110**. In some embodiments or aspects, the first end **129a** of the second shoulder strap **126b** may be attached to the first end **110a** of the belt strap **110** via a connector similar to the connector **104** described herein with reference to the leg straps **102**. The second shoulder strap **126b** further has a second end **129b** that is connected to the other of the two leg straps **102**. In some preferred and non-limiting embodiments or aspects, the second end **129b** of the second shoulder strap **126b**

is connected to the leg strap **102** proximate to the second end **102b** of the leg strap **102**, such as by being sewn directly to the leg strap **102**. The second shoulder strap **126b** may have at least one loop **128** through which the second end **110b** of the belt strap **110** may be passed. At least a portion of the second shoulder strap **126b** may be formed from a substantially flat webbing material typically used in harness construction.

[0056] As shown in **FIG. 1**, the harness **100** may have a back strap **130** connecting a substantially intermediate portion of the first shoulder strap **126a** between its first end **127a** and second end **127b** with a substantially intermediate portion of the second shoulder strap **126b** between its first end **129a** and second end **129b**. A position of the back strap **130** may be adjustable along a longitudinal direction of each the first shoulder strap **126a** and the second shoulder strap **126b**, such as by sliding the back strap **130** along the first shoulder strap **126a** and/or the second shoulder strap **126b**.

[0057] The harness **100** further may have a chest strap **132** having a first end **132a** removably connectable to a second end **132b**. The first end **132a** of the chest strap **132** may be positioned proximate to the first end **127a** of the first shoulder strap **126a**, while the second end **132b** of the chest strap **132** may be positioned proximate to the first end **129a** of the second shoulder strap **126b**. The first end **132a** of the chest strap **132** is removably attachable to the second end **132b** via a connector, similar to the connector **104** described herein with reference to the leg straps **102**. In some preferred and non-limiting embodiments or aspects, the connector **104** may be a clip, a buckle, a mating arrangement, an actuatable structure, or the like. In this manner, the first and second ends **132a**, **132b** of the chest strap **132** are configured to be removably attached to each other and configured to be free floating when detached from each other. In some preferred and non-limiting embodiments or aspects, at least one of the back strap **130** and the chest strap **132** may have at least one connection mechanism, such as the connection mechanism **106** described herein with reference to the leg straps **102**. The connection mechanism **106** is configured for adjusting the length of the back strap **130** and/or the chest strap **132**. The back strap **130** and the chest strap **132** may be formed from a substantially flat webbing material typically used in harness construction.

[0058] With reference to **FIG. 2**, the shoulder strap **126** has an anchor element, such as a D-ring **138**, for connecting at least a portion of the shoulder strap **126** to a line connected to an anchor point. In some preferred and non-limiting embodiments or aspects, at least a portion of the first

shoulder strap **126a** and the second shoulder strap **126b** is looped around or otherwise permanently attached to the D-ring **138**. The D-ring **138** has a frame **140** defining at least one opening through which the first shoulder strap **126a** and the second shoulder strap **126b** may be looped around. In some preferred and non-limiting embodiments or aspects, the frame **140** of the D-ring **138** has a first opening **142** through which the first shoulder strap **126a** and the second shoulder strap **126b** extend. The D-ring further has a second opening **144** which may be used to secure the clip, such as a carabiner, of a lanyard or other rope or line between the harness **100** and the anchor point (or secure other items to the harness **100**).

[0059] In some preferred and non-limiting embodiments or aspects, the shoulder strap **126** has an energy absorbing element integrated therewith. In one preferred and non-limiting embodiment or aspect, at least one of the first shoulder strap **126a** and the second shoulder strap **126b** may be constructed from a tearable webbing material, such as an energy absorbing tear tape that is encased within a tubular webbing. In another preferred and non-limiting embodiment, and with reference to **FIG. 3A**, both the first shoulder strap **126a** and the second shoulder strap **126b** are made from a substantially flat webbing material **146** that is encased within a tubular webbing **147**. The substantially flat webbing material **146** may be completely encased within the tubular webbing **147**, except at a substantially intermediate portion of the first shoulder strap **126a** and the second shoulder strap **126b**, where at least a portion of the substantially flat webbing material **146** may be exposed (and exit) from the tubular webbing **147**. Of course, this exposure or exit point or area may be at any point along the length of the first shoulder strap **126a** and the second shoulder strap **126b**.

[0060] In some preferred and non-limiting embodiments or aspects, the substantially flat webbing material **146** may be exposed from the tubular webbing **147** through an opening **149** in the tubular webbing **147** in an area where the substantially flat webbing material **146** is connected to the D-ring **138**. As described herein, a first portion of the substantially flat webbing material **146** from each of the first shoulder strap **126a** and the second shoulder strap **126b** may be connected directly to the D-ring **138**, while a second portion of the substantially flat webbing material **146** bypasses the D-ring **138**. In this manner, the harness **100** does not differ externally from a conventional harness without the energy absorbing element, but incorporates the beneficial energy absorption element integrated into the harness **100**.

[0061] With reference to **FIGS. 3A-3B**, the first shoulder strap **126a** is illustrated. The second shoulder strap **126b** is omitted for simplicity of illustration. While the illustration of the second shoulder strap **126b** is omitted from **FIGS. 3A-3B**, construction and operation of the second shoulder strap **126b** is identical to that of the first shoulder strap **126a** in the embodiment or aspect where both shoulder straps **126a**, **126b** incorporate the tubular webbing **147** and/or energy absorbing element. Each of the first shoulder strap **126a** and a second shoulder strap **126b** may have the tubular webbing **147** arranged to overlap one another in an X-shaped configuration. The tubular webbing **147** of the first shoulder strap **126a** may have a first end that corresponds with the first end **127a** of the first shoulder strap **126a** (shown in **FIG. 1**). The first end of the tubular webbing **147** may be connected to the second end **110b** of the belt strap **110** in a removably or non-removably attachable manner. In some preferred and non-limiting embodiments or aspects, the first end of the tubular webbing **147** may be attachable to the second end **110b** of the belt strap **110** via a connector similar to the connector **104** described herein with reference to the leg straps **102**. The tubular webbing **147** further has a second end that corresponds to the second end **127b** of the first shoulder strap **126a** (shown in **FIG. 1**). The second end of the tubular webbing **147** may be connected to one of the two leg straps **102** in a removably or non-removably attachable manner. The tubular webbing **147** may be formed from webbing material that is woven into a tubular shape, or from flat webbing material wherein opposite lateral ends of the substantially flat webbing material are connected together to form the tubular shape of the tubular webbing **147**.

[0062] In various examples, the tubular webbing **147** may have an internal diameter of about 0.5 inches to about 2.0 inches. In various embodiments or aspects, a longitudinal length of the tubular webbing **147** may be between about 24 inches to about 90 inches. The opening **149** in the tubular webbing **147** may be formed at a substantially intermediate point between the first end **127a** and the second end **127b** of the first shoulder strap **126a** (and/or the second shoulder strap **126b**). In some preferred and non-limiting embodiments or aspects, the opening **149** may be formed at a rear portion of the harness **100** at an upper portion of a user's back. In this manner, the opening **149** allows the substantially flat webbing material **146** to be exposed such that the substantially flat webbing material **146** may be connected to the D-ring **138**. The opening **149** may be formed as a slit in the tubular webbing **147** having a length between about 0.5 inches to about 2.0 inches. In one preferred and non-limiting embodiment, and upon activation of the energy absorbing element, e.g., the flat webbing material **146**, at least a portion of the energy absorbing

element is configured to exit through the opening **149** of the tubular webbing **147** upon tearing, thereby facilitating the complete (if necessary) separation of the flat webbing material **146**. Further, it is envisioned that the opening **149** may be reinforced wholly or partially around its edges to ensure that the tubular webbing **147** does not rip or tear during a fall event.

[0063] With continued reference to **FIGS. 3A-3B**, the substantially flat webbing material **146** of the first shoulder strap **126a** has two webbing components **146a**, **146b** (which may be load-bearing webbing components) that are woven together by binder threads **148**. In some embodiments or aspects, the webbing material **146** may have a plurality of load-bearing webbing components. The webbing components **146a**, **146b** may each be typically made from a two ply webbing material constructed from high tenacity polyester or nylon yarns. Each webbing component **146a**, **146b** may have a face ply and a back ply. The webbing components **146a**, **146b** may be superimposed over one another such that the back ply of one of the webbing components **146a**, **146b** is positioned over the face ply of the other of the webbing components **146a**, **146b**. The webbing components **146a**, **146b** and the binder threads **148** are woven together to constitute a single-piece webbing material, i.e., the first shoulder strap **126a** and the second shoulder strap **126b**. While the present disclosure describes binder threads **148** as a means of integrally bonding the webbing components **146a**, **146b** together, other suitable bonding means, such as hook-and-loop fasteners, adhesives, or other energy absorbing materials may also be used, either individually or in combination with the binder threads **148**.

[0064] When the energy absorbing element is activated, such as during a fall event, the binder threads **148** are configured to be torn upon experiencing a force in excess of a predetermined force, thereby allowing the two webbing components **146a**, **146b** to tear apart from each other, such as shown in **FIG. 3B**. In some embodiments or aspects, the predetermined force (load) may be in the range of about 310 lbs to about 2,250 lbs. The binder threads **148** are configured to absorb energy (force) of a user falling during a fall event by fracturing (or tearing/separating) and allowing the webbing components **146a**, **146b** to separate from each other. The tearing of the binder threads **148** may be initiated by a minimum predetermined force (load), such as about 310 lbs. The tearing of the binder threads **148**, and a consequent separation of the webbing components **146a**, **146b** continues as long as the force on the harness **100** exceeds the minimum predetermined force and ends when either (1) the webbing components **146a**, **146b** reach an ending point; or (2) the force reduces to a point below the minimum predetermined force. In various embodiments or aspects,

the shoulder strap **124** may be configured to tear the webbing components **146a**, **146b** apart from each other due to breaking of the binder threads **148** at a constant force. The minimum predetermined force (load) required to break the binder threads **148** may be configurable by increasing or decreasing the density of the binder threads **148** per unit area, increasing or decreasing the width of the shoulder strap **124**, increasing or decreasing the density of the binder threads **148** along a longitudinal length and/or a lateral length of the shoulder strap **124**, and/or selecting a type of thread having specified strength characteristics.

[0065] As discussed above, and in another preferred and non-limiting embodiment or aspect, the webbing components **146a**, **146b** may be bound together by an adhesive, such as glue, that separates when reaching the minimum predetermined force or load. It is recognized that these adhesives may be specifically formulated to meet the separation requirements at the minimum predetermined force or load.

[0066] With reference to **FIG. 4A**, the binder threads **148** may extend through at least a portion of a thickness of at least one of the webbing components **146a**, **146b**. For example, the binder threads **148** may extend between the face ply and the back ply of each of the webbing components **146a**, **146b**. In some embodiments or aspects, such as shown in **FIG. 4A**, the binder threads **148** extend through the entire thickness of each of the webbing components **146a**, **146b**. With reference to **FIG. 4B**, the binder threads **148** may be woven in two or more rows **153** extending along a longitudinal length and/or a lateral length of the webbing components **146a**, **146b**. In various preferred and non-limiting embodiments or aspects, the rows **153** may be substantially parallel to each other, or intersect at least once with each other along the longitudinal length and/or the lateral length of the webbing components **146a**, **146b**. With reference to **FIG. 4C**, the binder threads **148** may be arranged in a plurality of thread groups **151** arranged in a pattern on the webbing components **146a**, **146b**. In some preferred and non-limiting embodiments or aspects, the density of thread groups **151** may be constant along the longitudinal length and/or the lateral length of the webbing components **146a**, **146b**. In this manner, the webbing components **146a**, **146b** will separate from one another due to breaking of the binder threads **148** at a constant rate at a given force that exceeds the minimum predetermined force. In other preferred and non-limiting embodiments or aspects, the density of thread groups **151** may vary along the longitudinal length and/or the lateral length of the webbing components **146a**, **146b**, such as by increasing or decreasing the density of the thread groups **151**. Accordingly, the webbing components **146a**,

146a will separate from one another due to breaking of the binder threads **148** at an increasing or decreasing rate at a given force that exceeds the minimum predetermined force. The arrangement of the thread groups **151** may be selected to optimize the tear-away force required to break the binder threads **148** (or adhesive) during separation of the webbing components **146a**, **146b** from each other. In various preferred and non-limiting embodiments or aspects, the binder threads **148** extend continuously between the webbing components **146a**, **146b** in a sinusoidal manner. The binder threads **148** may be made from high tenacity polyester yarns, nylon, or other suitable materials. The tensile strength of the binder threads **148** is desirably selected to be less than that of the webbing components **146a**, **146b** to allow the binder threads **148** to tear without tearing the webbing components **146a**, **146b**.

[0067] With reference to **FIG. 3A**, the first shoulder strap **126a** may have a starting tear point **150** at which the two webbing components **146a**, **146b** are not bound by the binder threads **148**. The starting tear point **150** may be defined at a substantially intermediate portion of the first shoulder strap **126a** between the first end **127a** and the second end **127b**. After the starting tear point **150**, the webbing components **146a**, **146b** are integrally woven together. With reference to **FIG. 3B**, as the user falls during a fall event, the binder threads **148** start to fracture (or tear) at the starting tear point **150** and continue tearing along the longitudinal length of an energy absorbing area **152** of the shoulder strap **126** that ties the webbing components **146a**, **146b** with the binder threads **148**. The binder threads **148** are configured to tear successively along the longitudinal length of the bound absorbing area **152** beginning from the starting tear point **150**. The successive tearing of the binder threads **148** absorbs energy of the fall, thereby safely decelerating the user and reducing the shock transferred to the user's body as the user's weight is borne by the harness. Further, at least a portion of the webbing components **146a**, **146b** exit from the tubular webbing **147** through the opening **149**.

[0068] With continued reference to **FIG. 3B**, the first shoulder strap **126a** may have an ending tear point **154** at an end of the energy absorbing area **152**. The ending tear point **154** may have a reinforced area **156**, such as by additional stitching, to prevent further tearing of the webbing components **146a**, **146b**. Once activated, the two webbing components **146a**, **146b** support the user's weight, such as with one of the webbing components **146a**, **146b** being connected to the D-ring **138**, and the other of the two webbing components **146a**, **146b** supporting the user's shoulders. The tearing of the two webbing components **146a**, **146b** due to breaking of the binder

threads **148** may end prior to the ending tear point **154** if the force on the harness is reduced below the minimum predetermined force necessary to tear the binder threads **148**.

[0069] The shoulder strap **126** having an energy absorbing element integrated therewith, such as the two webbing components **146a**, **146b** bound by binding threads **148**, reduces the risk of misuse, especially in leading edge applications where the user may incorrectly attach an integrated energy absorbing element to a conventional harness. A harness **100** having such a shoulder strap **126** eliminates the need for a structural back-up strap as the tear tape maintains the static strength of structural webbing at full elongation (end of deployment shown in **FIG. 5C**). In this manner, the harness **100** does not differ externally from a conventional harness without the energy absorbing element, but incorporates the beneficial energy absorption element integrated into the harness **100**.

[0070] Although the invention has been described in detail for the purpose of illustration based on what is currently considered to be the most practical and preferred embodiments, it is to be understood that such detail is solely for that purpose and that the invention is not limited to the disclosed embodiments, but, on the contrary, is intended to cover modifications and equivalent arrangements that are within the spirit and scope of the appended claims. For example, it is to be understood that the present invention contemplates that, to the extent possible, one or more features of any embodiment can be combined with one or more features of any other embodiment.

What is claimed is:

1. A wearable harness having a plurality of straps comprising:
a first shoulder strap and a second shoulder strap, wherein at least one of the first shoulder strap and the second shoulder strap comprises a tubular webbing; and
an energy absorbing element integrated with at least one of the first shoulder strap and the second shoulder strap,
wherein the energy absorbing element is at least partially encased within the tubular webbing and comprises a tearable webbing material with at least two bound webbing components configured to tear from one another when the first shoulder strap and the second shoulder strap are subjected to a force that exceeds a predetermined threshold during a fall event.
2. The harness of claim 1, wherein the energy absorbing element is exposed from the tubular webbing at a substantially intermediate portion of at least one of the first shoulder strap and the second shoulder strap between the first end and the second end of the at least one of the first shoulder strap and the second shoulder strap.
3. The harness of claim 1, wherein the energy absorbing element is exposed from the tubular webbing through an opening in the tubular webbing.
4. The harness of claim 3, wherein at least a portion of the energy absorbing element is configured to exit through the opening of the tubular webbing upon tearing.
5. The harness of claim 1, wherein the tubular webbing comprises a substantially flat webbing material having opposing lateral ends connected to one another to define a tubular shape.
6. The harness of claim 1, wherein the at least two bound webbing components are bound by a plurality of binder threads.

7. The harness of claim 6, wherein the plurality of binder threads are configured to tear successively in a longitudinal direction of at least one of the first shoulder strap and the second shoulder strap when the at least one of the first shoulder strap and the second shoulder strap is subjected to the force that exceeds the predetermined threshold.

8. The harness of claim 6, wherein the plurality of binder threads extend through at least a portion of a thickness of the at least two webbing components.

9. The harness of claim 6, wherein the plurality of binder threads are arranged in two or more substantially parallel or intersecting rows extending along a longitudinal length or a lateral length of the webbing components.

10. The harness of claim 6, wherein the plurality of binder threads are arranged in two or more thread groups arranged in a pattern and spaced apart from each other along a longitudinal length or a lateral length of the webbing components.

11. The harness of claim 1, wherein the predetermined threshold is in a range of about 310 lbs to about 2,250 lbs.

12. The harness of claim 1, wherein the at least two bound webbing components are bound together by an adhesive.

13. The harness of claim 1, wherein the first shoulder strap and the second shoulder strap have a starting tear area at a rear portion where the pair of bound webbing components is unbound.

14. The harness of claim 1, wherein the first shoulder strap and the second shoulder strap have an ending tear point having a reinforced area configured to prevent separation of the at least two bound webbing components.

15. The harness of claim 1, wherein the energy absorbing element is located on an energy absorbing area at a rear portion of at least one of the first shoulder strap and the second shoulder strap.

16. A fall protection harness removably wearable by a user, the harness having a plurality of straps comprising:

a first shoulder strap and a second shoulder strap comprising a tubular webbing, wherein at least one of the first shoulder strap and the second shoulder strap have an energy absorbing element integrated therewith and at least partially encased within the tubular webbing, the energy absorbing element comprising a tearable webbing material with at least two bound webbing components bound together by a plurality of binder threads configured to tear successively in a longitudinal direction of the first shoulder strap and the second shoulder strap when the first shoulder strap and the second shoulder strap are subjected to a predetermined force during a fall event, and

wherein the energy absorbing element is exposed from the tubular webbing at a substantially intermediate portion of at least one of the first shoulder strap and the second shoulder strap between the first end and the second end of the at least one of the first shoulder strap and the second shoulder strap.

17. The harness of claim 16, wherein the first shoulder strap and the second shoulder strap have a starting tear area at a rear portion where the at least two bound webbing components are unbound.

18. The harness of claim 16, wherein the energy absorbing element is located on an area at a rear portion of at least one of the first shoulder strap and the second shoulder strap.

19. In a harness removably attachable to a body of a user and having at least one strap comprising:

an energy absorbing element integrated with the at least one strap, wherein the energy absorbing element is at least partially encased with a tubular webbing of the at least one strap and comprises a tearable webbing material with at least two

bound webbing components configured to tear from one another when the at least one strap is subjected to a force that exceeds a predetermined threshold during a fall event.

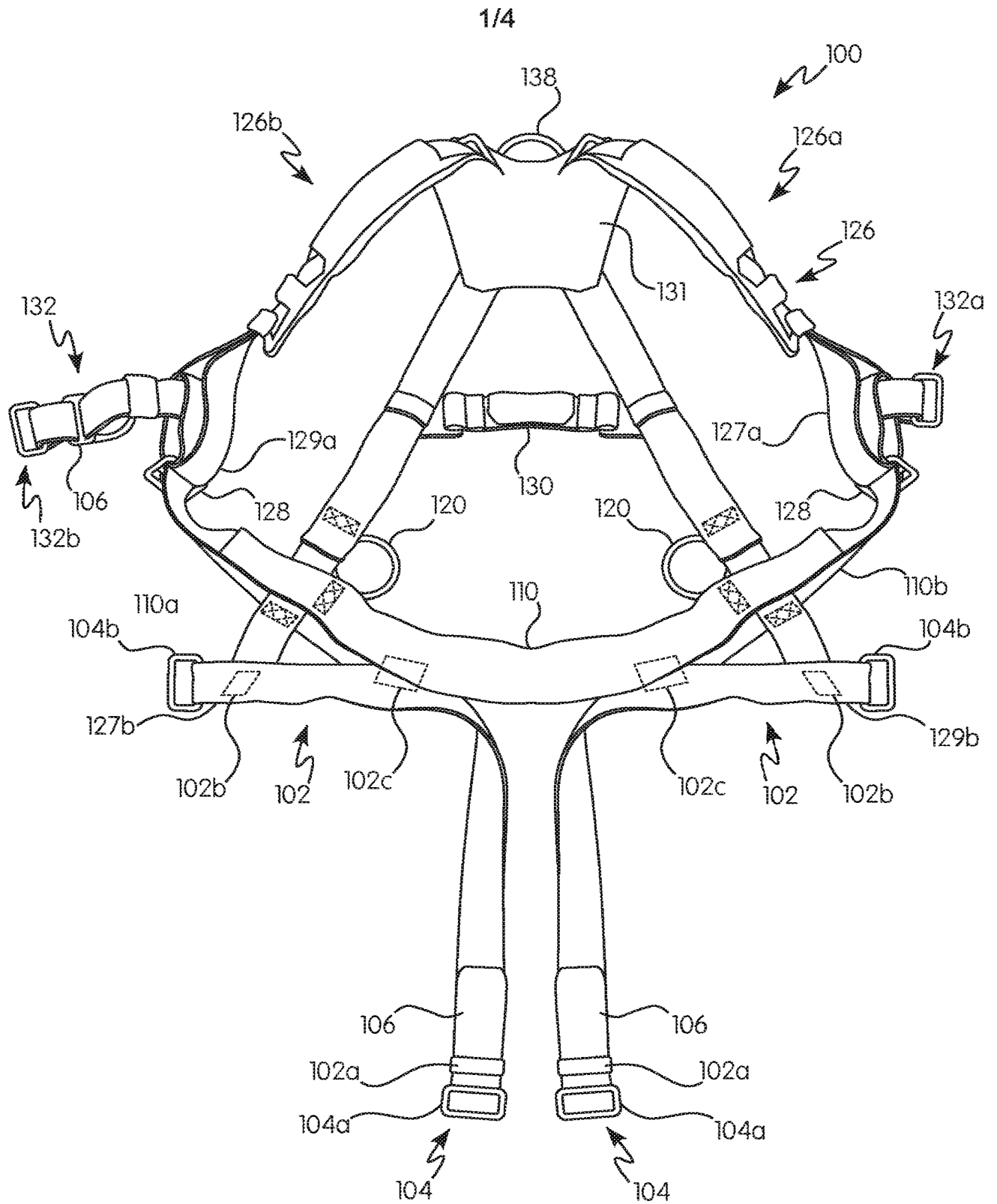


FIG. 1

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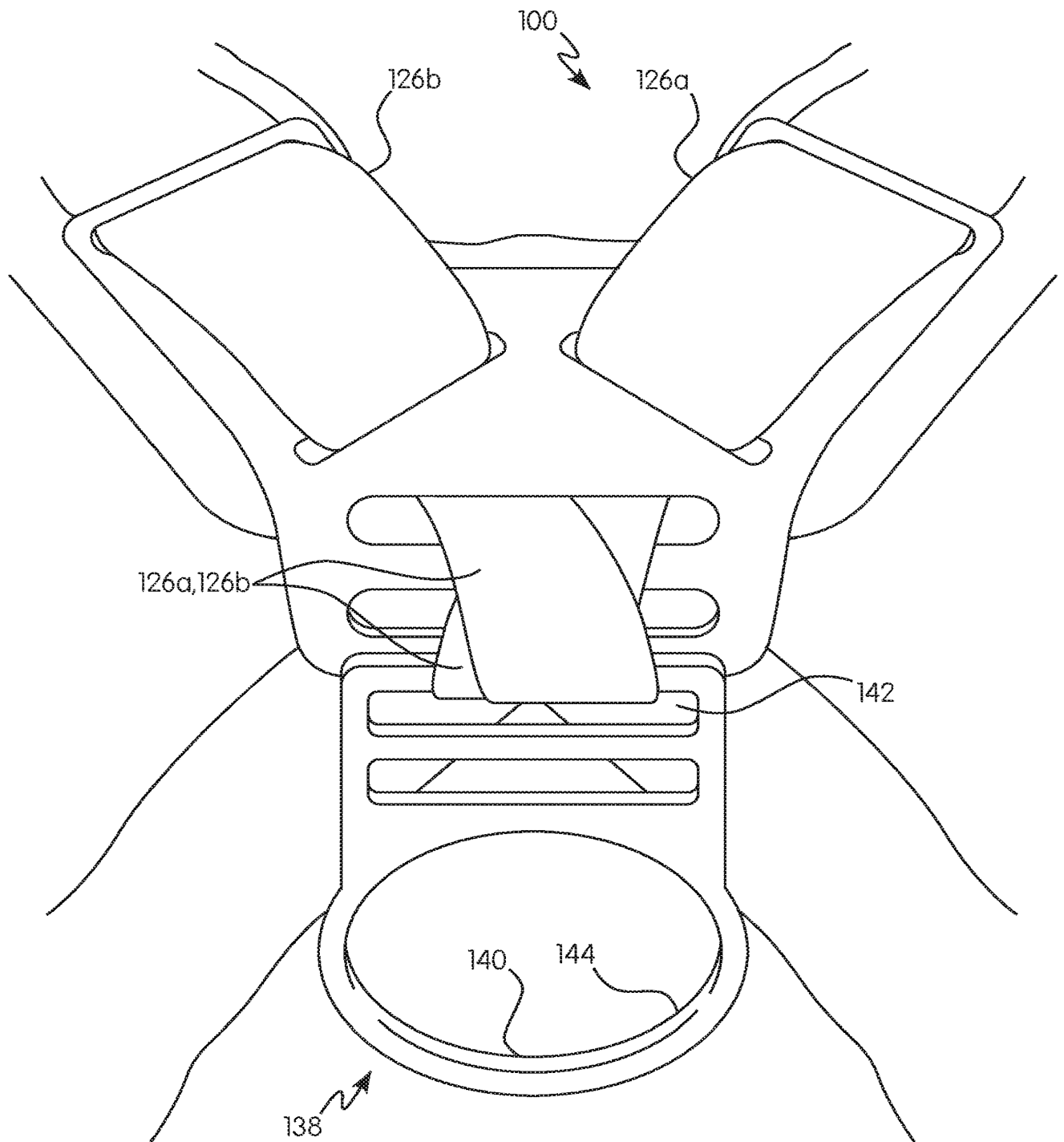


FIG. 2

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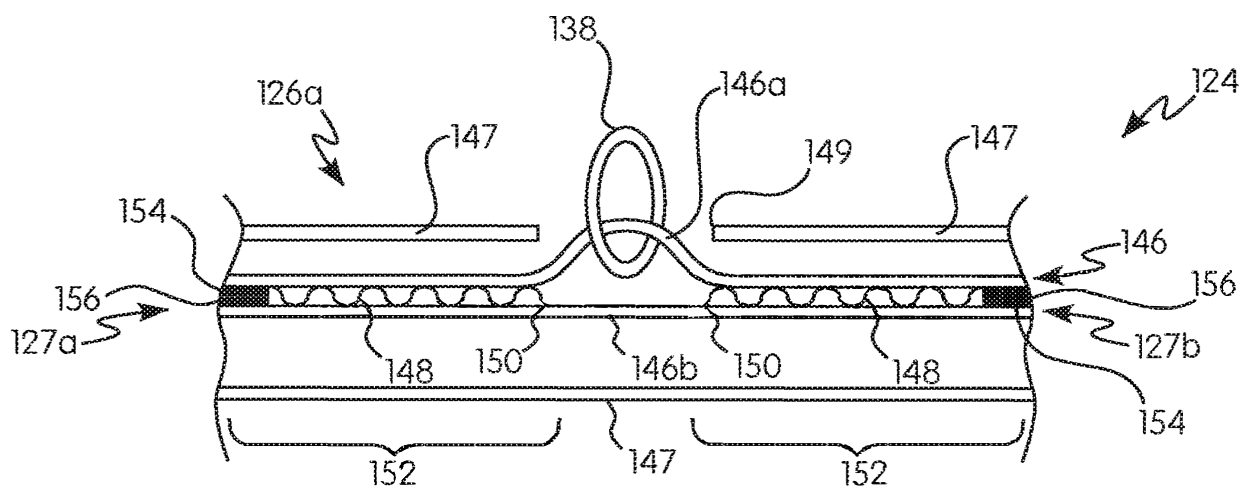


FIG. 3A

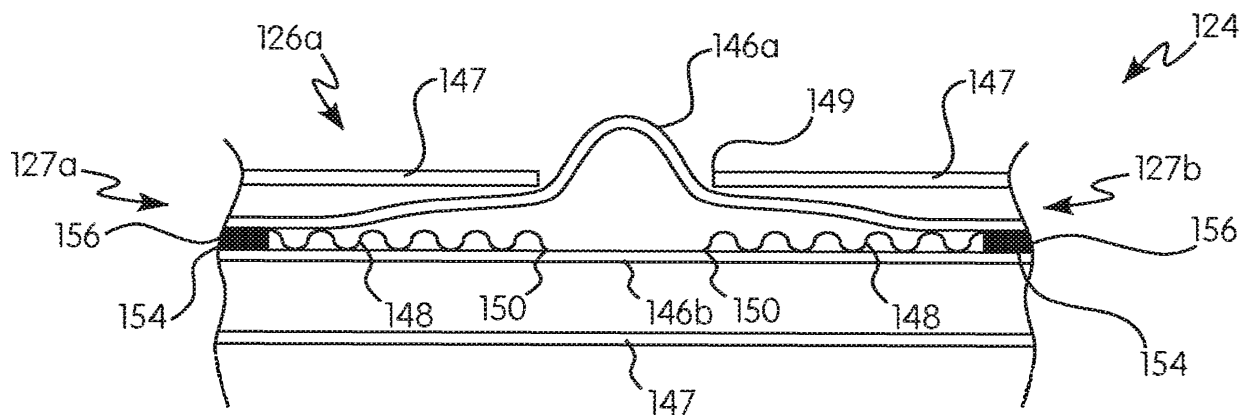


FIG. 3B

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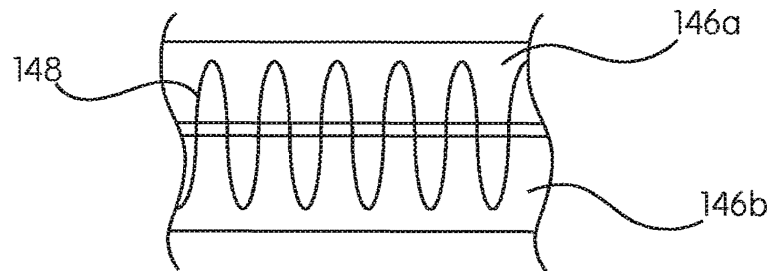


FIG. 4A

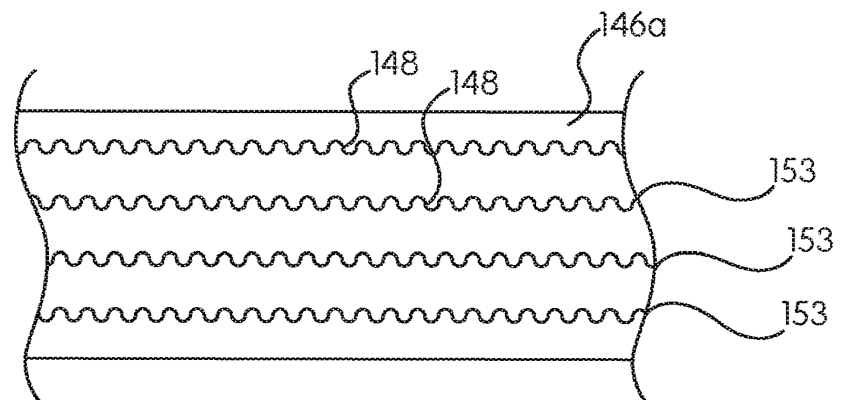


FIG. 4B

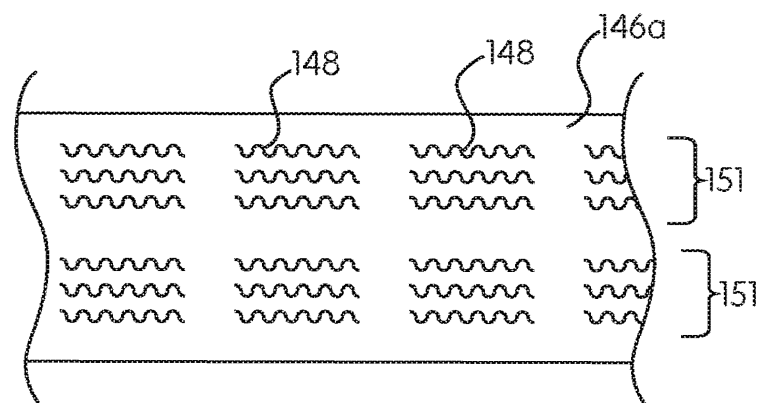


FIG. 4C

INTERNATIONAL SEARCH REPORT

International application No

PCT/US2017/064684

A. CLASSIFICATION OF SUBJECT MATTER

INV. A62B35/00 A62B35/04
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A62B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 8 584 799 B1 (DENNINGTON MARK [US]) 19 November 2013 (2013-11-19) figures -----	19 1-18

☐

Further documents are listed in the continuation of Box C.

☒

See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

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US 8584799	B1	19-11-2013	NONE



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DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

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(54) Title: HARNESS CONNECTOR AND HARNESS

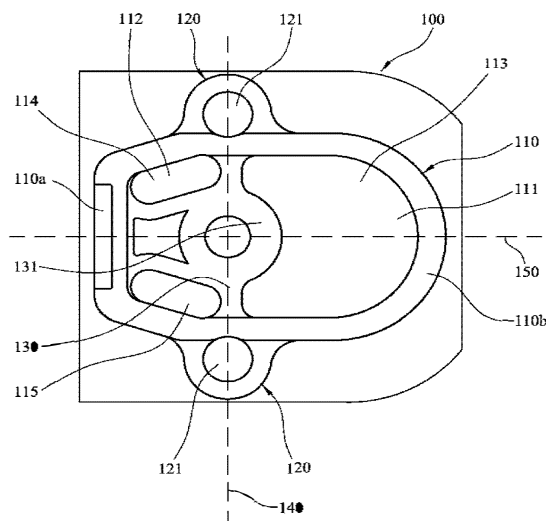


Figure 3

(57) Abstract: A harness for supporting a user in a suspended position is disclosed, together with a harness connector. The harness comprises a waist belt for extending around a user's waist, and two leg bands configured to extend around a left and right leg, of a user. The harness further comprises a cradle for coupling the leg bands with the waist belt, and which comprises at least two harness connectors. The harness connectors comprise a closed loop first frame defining a first aperture, at least two closed loop second frames rigidly coupled to the first frame, each closed loop second frame defining a second aperture, and a bridging member which extends across the first aperture between the at least two second frames. The bridging member defines a third aperture nested within the first aperture, and the at least two second apertures and third aperture are linearly aligned.

HARNESS CONNECTOR AND HARNESS

The present invention relates to a harness connector and a harness for supporting a user in a suspended position.

Harnesses for arborists typically comprise a short rope section which bridges a left and right side of the harness so that a supporting rope can be suitably anchored thereto. The so-called “rope bridge” offers a coupling point for the rope which can move across the harness as the user moves around a tree for example. However, the rope bridge offers a limited anchorage point such that it is difficult for a user to transfer between trees or other transfer between different supporting ropes.

The present invention seeks to improve harnesses by providing harness connectors which increase versatility for arborists and the like when operating in a suspended state at elevated positions.

In accordance with a first aspect of the present invention, there is provided a harness connector comprising a closed loop first frame defining a first aperture, at least two closed loop second frames rigidly coupled to the first frame, each closed loop second frame defining a second aperture and a bridging member which extends across the first aperture between the at least two second frames, the bridging member defining a third aperture nested within the first aperture, wherein the at least two second apertures and third aperture are linearly aligned.

In an embodiment, the bridging member separates the first aperture into a proximal aperture which extends adjacent a proximal end of the connector and a distal aperture which extends adjacent a distal end of the connector.

In an embodiment, the first frame comprises a linear portion and an arcuate portion which extends to opposite ends of the linear portion. In this respect, the first frame may be substantially D-shaped. The connector may further comprise a connecting member which

extends between a proximal end of the connector and the bridging member. The connecting member separates the proximal aperture into two elongate apertures.

The linear portion of the first frame preferably extends along the proximal end of the connector and the arcuate portion preferably extends along the distal end of the connector.

5 In an embodiment, the at least two second apertures and third aperture are aligned along a first axis which extends substantially transverse to a second axis of the connector. Preferably the second axis is an axis of symmetry of the connector.

In an embodiment, the connecting member extends along the second axis. The elongate apertures extend along respective axes which are acutely orientated relative to the second axis. In an embodiment, the respective axes diverge with respect to each other along 10 the connector in a direction which is from the proximal end to the distal end of the connector.

In an embodiment, the first frame, at least two second frames, bridging member and connecting member extend in a common plane such that the connector is substantially planar.

15 In an embodiment, each of the at least two second apertures and third aperture is a substantially circular aperture.

In an embodiment, the distal aperture is an arcuate aperture.

In an embodiment, the connector is formed of a rigid material such as a metal. Preferably the connector is formed of aluminium.

20 In accordance with a second aspect of the present invention, there is provided a harness for supporting a user in a suspended position, the harness comprising a waist belt for extending around a user's waist and two leg bands configured to extend around a left and right leg of a user, wherein the harness further comprises a cradle for coupling the leg bands with the waist belt, the cradle comprising at least two harness connectors of the first aspect of the invention.

In an embodiment, the harness connectors are disposed at a front of the harness so that the harness connectors extend at the front of a user during use.

In an embodiment, the cradle comprises a plurality of belt straps which extend between the waist belt and the harness connectors and a plurality of band straps which extend between
5 the leg bands and the harness connectors.

In an embodiment, a proximal end of the belt straps are rigidly coupled to the waist belt and a distal end of each belt strap is looped around the first frame through the first aperture of a separate connector. The cradle preferably further comprises a plurality of buckles for adjusting the length of each belt strap.

10 In an embodiment, a proximal end of the band straps are rigidly coupled to the leg bands and a distal end of each band strap is looped around the first frame through the first aperture of a separate connector. The cradle preferably further comprises a plurality of buckles for adjusting the length of each band strap.

In an embodiment, the belt straps and band straps are looped around the first frame
15 through the proximal aperture and preferably through a separate elongate aperture of each connector. The divergent nature of the elongate apertures offers an improved comfort for the user as the belt straps and leg straps become held in position by virtue of the orientation of the section of the first frame which defines the elongate apertures. The first frame section extends substantially parallel to the respective axes of the elongate apertures so that the first
20 frame section bordering each elongate aperture are similarly inclined to the axis of symmetry.

In an embodiment, the harness connectors are orientated upon the harness such that the distal end of each connector faces towards each other.

In an embodiment, the harness further comprises a bridge strap or rope which is coupled to one of the at least two second apertures or third aperture of one connector and a

corresponding aperture of the at least two second apertures or third aperture of the other connector.

In an embodiment, the harness further comprises a support (such as a padded lumbar support) which is coupled to the waist belt and a leg support (such as a padded leg support) which is coupled to each leg band.

In an embodiment, the waist belt and leg bands are adjustable via a respective buckle, so that the effective length of the belt and leg bands can be adjusted to suitably fit a user.

In an embodiment, the harness further comprises a plurality of attachment points located on the waist belt for detachably coupling climbing accessories. The attachment points may comprise loops or rings secured to the waist belt.

In an embodiment, the harness further comprises a sub-harness configured to provide anatomical support for the female pelvis.

Preferably the sub-harness comprises a first adjustable strap attached at an upper end to the face (eg the inside face) of a first end of the waist belt and a second adjustable strap attached at an upper end to the face (eg the inside face) of a second end of the waist belt. Particularly preferably the sub-harness further comprises an intermediate strap attached at an upper end to the rear face (eg exterior rear face) of the waist belt at substantially the mid-point. More preferably the lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap are convergent and coupled to the front exterior face of each of the leg bands by a coupling strap (eg a U-shaped coupling strap).

The lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap may be fixed (eg jointly fixed) to the coupling strap. For example, the lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap may be stitched (eg jointly stitched) to the coupling strap.

Preferably the lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap are connected freely (*eg* jointly connected freely) to the coupling strap. For example, the lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap may be looped on (*eg* jointly looped on) the coupling strap. By being
5 connected freely to the coupling strap, the lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap have greater articulation with (*eg* slidability on) the coupling strap to promote comfort.

In accordance with a third aspect of the present invention, there is provided a harness for supporting a female user in a suspended position, the harness comprising a waist belt for
10 extending around a user's waist and two leg bands configured to extend around a left and right leg of a user, a cradle for coupling the leg bands with the waist belt and a sub-harness configured to provide anatomical support for the female pelvis.

Preferably the sub-harness comprises a first adjustable strap attached at an upper end to the face (*eg* the inside face) of a first end of the waist belt and a second adjustable strap
15 attached at an upper end to the face (*eg* the inside face) of a second end of the waist belt. Particularly preferably the sub-harness further comprises an intermediate strap attached at an upper end to the rear face (*eg* exterior rear face) of the waist belt at substantially the mid-point. More preferably the lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap are convergent and coupled to the front exterior face of each of the
20 leg bands by a coupling strap (*eg* a U-shaped coupling strap).

The lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap may be fixed (*eg* jointly fixed) to the coupling strap. For example, the lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap may be stitched (*eg* jointly stitched) to the coupling strap.

Preferably the lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap are connected freely (*eg* jointly connected freely) to the coupling strap.

By being connected freely to the coupling strap, the lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap have greater articulation with (eg slidability on) the coupling strap to promote comfort. For example, the lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap may be looped on
5 (eg jointly looped on) the coupling strap.

Typically the coupling strap is attached at a medial position of the front exterior face of each of the leg bands.

Whilst the invention has been described above, it extends to any inventive combination of features set out above or in the following description. Although illustrative embodiments of
10 the invention are described in detail herein with reference to the accompanying drawings, it is to be understood that the invention is not limited to these precise embodiments.

Furthermore it is contemplated that a particular feature described either individually or as part of an embodiment can be combined with other individually described features, or parts of other embodiments, even if the other features and embodiments make no mention of the
15 particular feature. Thus the invention extends to such specific combinations not already described.

By way of example only, embodiments of the invention will now be described with reference to the accompanying drawings in which:

Figure 1 is a front view of a harness according to a first embodiment of the present
20 invention fitted to a male user;

Figure 2 is a rear view of the harness illustrated in figure 1;

Figure 3 is a view of a harness connector according to an embodiment of the present invention;

Figure 4a is a front view of a harness according to a second embodiment of the present
25 invention suitable to be fitted to a female user; and

Figure 4b is a rear view of the harness illustrated in figure 4a.

Referring to Figures 1 and 2, there is illustrated a harness 10 according to a first embodiment of the present invention for supporting a male user when suspended from a rope or similar (not shown).

5 The harness 10 comprises a waist belt 20 comprising a webbing strap 21 (which may be formed of a polyester for example) which is arranged to extend around a user's waist and is adjustable via a buckle 22 so that the effective length of the waist belt 20 can be varied. The webbing strap 21 extends around an exterior of a lumbar support 23 so that (when fitted to a user) the lumbar support 23 extends between the webbing strap 21 and the user. The lumbar
10 support 23 may be padded and formed of a foamed material such as a polyethylene. A plurality of looped straps 24 through which the webbing strap 21 can extend secures the lumbar support 23 to the webbing strap 21. In an embodiment, the harness 10 further comprises a plurality of looped rope sections 25 and/or rings 26 secured around the waist belt 20. The looped sections 25 and rings 26 serve as attachment points for detachably coupled climbing
15 accessories such as quick draws (not shown), camming devices (not shown) or karabiners (not shown) to the harness 10.

 The harness 10 further comprises two leg bands 30, 40 or loops, which are separately arranged to extend around the thigh region of a users' legs. Each leg band 30, 40 comprises a fixing strap 31, 41 which may be similarly formed of a polyester, which is adjustable via a
20 respective buckle 32, 42 and a leg support 33, 43 which extends between the fixing strap 31, 41 and the users leg. The leg supports 33, 43 reduce the pressure exerted on the users legs from the fixing straps 31, 41 by distributing the force across a larger area compared with the fixing straps 31, 41 alone. The leg supports 33, 43 may be padded and similarly formed of a foamed material such as a polyethylene and further comprise a plurality of looped straps 34,
25 44 (only one of which is shown) similar to the lumbar support 23 through which the fixing straps 31, 41 can extend to secure the leg supports 33, 43 to the fixing straps 31, 41.

The harness 10 further comprises a cradle 50 which couples the leg supports 30, 40 to the waist belt 20, so that the waist belt 20 and leg supports 30, 40 can cooperate to support a user at multiple positions. The cradle 50 comprises two rear straps 51, 52 which extend between the waist belt 20 and the leg supports 30, 40 at a rear of the harness 10. Each rear strap 51, 52 comprises a belt portion 51a, 52a and a leg portion 51b, 52b. A proximal end of the belt portion 51a, 52a is rigidly coupled to the waist belt 20 (such as by stitching) and a proximal end of each leg portion 51b, 52b is rigidly coupled to a respective leg band 30, 40. The belt portion 51a, 52a and leg portion 51b, 52b of each rear strap 51, 52 are coupled together via a buckle 53, 54, so that the rise (namely the separation of the waist belt 20 from the leg bands 30, 40) can be varied.

The cradle 50 further comprises two front straps 55, 56 which similarly extend between the waist belt 20 and the leg supports 30, 40 at a front of the harness 10. Each front strap 55, 56 comprises a belt portion 55a, 56a and a leg portion 55b, 56b. A proximal end of the belt portion 55a, 56a is rigidly coupled to the waist belt 20 (such as by stitching) and a proximal end of each leg portion 55b, 56b is rigidly coupled to a respective leg band 30, 40. The belt portion 55a, 56a and leg portion 55b, 56b of each front strap 55, 56 are coupled together via a respective harness connector 100 as illustrated in Figure 3. In this respect, the harness 10 comprises two harness connectors 100 disposed at a front of the harness 10.

Referring to Figure 3, there is illustrated a harness connector 100 according to an embodiment of the present invention. The harness connector 100 is formed of a rigid material (such as a metal) and is preferably formed of a lightweight metal such as aluminium. The connector 100 comprises a first closed loop frame portion 110 which defines a first aperture 111. The connector 100 further comprises at least two second frame portions 120 rigidly coupled to the first frame portion 110 (or otherwise integrally formed therewith) disposed on opposing sides of the first frame 110 on an outer periphery thereof. The second frame portions 120 separately define a second aperture 121 having a substantially circular shape.

The connector 100 further comprises a bridging member 130 which extends across the first aperture 111 and is rigidly coupled at each end thereof with the first frame portion 110 or otherwise formed integrally therewith. The bridging member 130 extends across the first aperture 111 between the second frame portions 120. The member 130 defines a third aperture 131 at a central location thereof, which comprises a substantially circular shape. The at least two second apertures 121 and third aperture 131 are linearly aligned and extend along an axis 140 which is substantially transverse to a longitudinal, symmetric axis 150 of the connector 100.

The bridging member 13 separates the first aperture 111 into a proximal and distal aperture 112, 113, which extend at opposite sides of the bridging member 130. The proximal aperture 112 extends adjacent a proximal end of the aperture 111 which comprises a substantially linear portion 110a of the first frame portion 110. The distal aperture 113 extends adjacent a distal end of the connector 100 which comprises an arcuate portion 110b of the first frame 110. The arcuate portion 110b extends to opposite ends of the linear portion 110a such that the first frame portion 110 is substantially D-shaped.

The connector 100 further comprises a connecting member 160 which extends along the longitudinal axis 150 of the connector 100 between a central region of the linear portion 110a and the bridging member 130. The connecting member 160 is rigidly coupled to the linear portion 110a and bridging member 130 (or otherwise integrally formed therewith) and separates the proximal aperture 112 into two elongate apertures 114, 115 which are separately orientated along a respective axis. The elongate apertures 114, 115 are orientated at an acute angle to the longitudinal axis 150 and preferably diverge away from each other in a direction which is toward the distal end of the connector 100.

The first frame portion 110, at least two second frame portions 120, bridging member 130 and connecting member 160 extend in a common plane, such that the connector 100 is substantially planar. When incorporated within the harness 10 illustrated in Figures 1 and 2,

the belt portion 55a, 56a of each front strap 55, 56 is looped around the first frame portion 110 within an elongate aperture 114 of a connector 100, and the leg portion 55b, 56b of each front strap 55, 56 is looped around the first frame portion 110 within the adjacent elongate aperture 115 of the respective connector 100. The connectors 100 are orientated such that the distal end of each connector 100 extend toward each other and the divergent orientation of the elongate aperture 114, 115 of each connector accommodate the orientation of the belt portion 55a, 56a and leg portion 55b, 56b of each front strap 55, 56 and help centralise the connector 100 relative to the harness 10. The front straps 55, 56 may further comprise buckles 57, 58 or similar so that the effective length of the front straps 55, 56 and thus the separation of the waist belt 20 from the leg bands 30, 40 can be varied.

The harness 10 further comprises a rope bridge 60 which extends between the harness connectors 100. The rope bridge 60 comprises a short length of rope 61 or similar, one end of which is passed through one of the aligned circular apertures 121, 131 of one connector 100 and secured thereto. The other end of the rope 61 is passed through a corresponding circular aperture 121, 131 of the other connector 100 and secured thereto. During use, the rope bridge 60 serves as an attachment point for securing a rope (not shown), and may comprise a ring 62 or similar threaded thereon for facilitating the attachment of a rope (not shown) to the rope bridge 60 using a karabiner (not shown) or similar for suspending a user above the ground. The further aligned apertures 121, 131 provide additional attachment points for securing further rope bridges (not shown). The additional rope bridges enable arborists and the like to easily transfer between trees by coupling separate support ropes to the separate rope bridges. Moreover, the separate apertures 121, 131 enable rope bridges 60 to be secured therebetween having different lengths to provide differing degrees of freedom for the user when suspended. In addition, the distal aperture 113 of each connector 100 provides an easily accessible attachment point which is separate from the rope bridge(s) for securing additional ropes and lines to a user (such as during an emergency when it is required to rescue a user from an elevated, suspended position).

Figure 4a is a front view of a harness 400 according to a second embodiment of the present invention suitable to be fitted to a female user. Figure 4b is a rear view of the harness 400 illustrated in Figure 4a.

The harness 400 according to the second embodiment is largely identical to the harness 10 according to the first embodiment but is additionally equipped with a sub-harness 401. The sub-harness 401 generates anatomical support and comfort for the female pelvis and so the harness 400 is intended for female users.

The sub-harness 401 comprises a first adjustable strap 401a attached at an upper end to the inside face of a first end of the waist belt 20 and a second adjustable strap 401b attached at an upper end to the inside face of a second end of the waist belt 20. In use, the first adjustable strap 401a and second adjustable strap 401b are pulled tightly to give the harness 400 a snug fit. The sub-harness 401 further comprises an intermediate strap 402 attached at an upper end to the exterior rear face of the waist belt 20 at substantially the mid-point. Lower ends of the first adjustable strap 401a, the second adjustable strap 401b and the intermediate strap 402 are convergent and jointly coupled to the front exterior face of each of the right leg band 30 and the left leg band 40 by a U-shaped coupling strap 403.

From the foregoing therefore, it is evident that the harness and connector provide an improved support for climbers when operating at elevated positions.

CLAIMS

1. A harness connector comprising a closed loop first frame defining a first aperture, at least two closed loop second frames rigidly coupled to the first frame, each closed loop second frame defining a second aperture and a bridging member which extends across
5 the first aperture between the at least two second frames, the bridging member defining a third aperture nested within the first aperture, wherein the at least two second apertures and third aperture are linearly aligned.
2. A harness connector according to claim 1, wherein the bridging member separates the first aperture into a proximal aperture which extends adjacent a proximal end of the
10 connector and a distal aperture which extends adjacent a distal end of the connector.
3. A harness connector according to claim 1 or 2, wherein the first frame comprises a linear portion and an arcuate portion which extends to opposite ends of the linear portion.
4. A harness connector according to any preceding claim, wherein the first frame is
15 substantially D-shaped.
5. A harness connector according to any preceding claim, wherein the connector further comprises a connecting member which extends between a proximal end of the connector and the bridging member.
6. A harness connector according to claim 5, wherein the connecting member separates
20 the proximal aperture into two elongate apertures.
7. A harness connector according to claim 3, wherein the linear portion of the first frame extends along a proximal end of the connector and the arcuate portion extends along a distal end of the connector.
8. A harness connector according to any preceding claim, wherein the at least two second
25 apertures and third aperture are aligned along a first axis which extends substantially transverse to a second axis of the connector.

9. A harness connector according to claim 8, wherein the second axis is an axis of symmetry of the connector.
10. A harness connector according to claim 8 or 9, as appended to claim 5, wherein the connecting member extends along the second axis.
- 5 11. A harness connector according to claim 8 as appended to claim 6, wherein the elongate apertures extend along respective axes which are acutely orientated relative to the second axis.
12. A harness connector according to claim 11, wherein the respective axes diverge with respect to each other along the connector in a direction which is from a proximal end to a distal end of the connector.
- 10 13. A harness connector according to claim 5, wherein the first frame, at least two second frames, bridging member and connecting member extend in a common plane, such that the connector is substantially planar.
14. A harness connector according to any preceding claim, wherein the at least two second apertures and third aperture are substantially circular.
- 15 15. A harness connector according to claim 2, wherein the distal aperture is an arcuate aperture.
16. A harness connector according to any preceding claim, wherein the connector is formed of a rigid material.
- 20 17. A harness connector according to any preceding claim, wherein the connector is formed of aluminium.
18. A harness for supporting a user in a suspended position comprising a waist belt for extending around a user's waist, and two leg bands configured to extend around a left and right leg of a user, wherein the harness further comprises a cradle for coupling the leg bands with the waist belt, the cradle comprising at least two harness connectors according to any preceding claim.
- 25

19. A harness according to claim 18, wherein the harness connectors are disposed at a front of the harness so that the harness connectors extend at the front of a user during use.
20. A harness according to claim 18 or 19, wherein the cradle comprises a plurality of belt straps which extend between the waist belt and the harness connectors, and a plurality of band straps which extend between the leg bands and the harness connectors.
21. A harness according to claim 20, wherein a proximal end of the belt straps are rigidly coupled to the waist belt and a distal end of each belt strap is looped around the first frame through the first aperture of a separate connector.
22. A harness according to claim 20 or 21, wherein the cradle further comprises a plurality of buckles for adjusting the length of each belt strap.
23. A harness according to claim 22, wherein a proximal end of the band straps are rigidly coupled to the leg bands and a distal end of each band strap is looped around the first frame through the first aperture of a separate connector.
24. A harness according to claim 23, wherein the cradle further comprises a plurality of buckles for adjusting the length of each band strap.
25. A harness according to claim 20, wherein the belt straps and band straps are looped around the first frame through the proximal aperture.
26. A harness according to claim 25, wherein the belt straps and band straps are looped around the first frame through a separate elongate aperture of each connector.
27. A harness according to any of claims 18 to 26, wherein the harness connectors are orientated upon the harness such that the distal end of each connector faces towards each other.
28. A harness according to any of claims 18 to 27, further comprising a bridge strap or rope which is coupled to one of the at least two second apertures or third aperture of one connector and a corresponding aperture of the at least two second apertures or third aperture of the other connector.

29. A harness according to any of claims 18 to 28, further comprising a support which is coupled to the waist belt and a leg support which is coupled to each leg band.

30. A harness according to any of claims 18 to 29, wherein the waist belt and leg bands are adjustable via a respective buckle so that the effective length of the belt and leg bands can be varied.

31. A harness according to any of claims 18 to 30, further comprising a plurality of attachment points located on the waist belt for detachably coupling climbing accessories.

32. A harness according to any of claims 18 to 30 further comprising a sub-harness configured to provide anatomical support for the female pelvis.

33. A harness according to claim 32 wherein the sub-harness comprises a first adjustable strap attached at an upper end to the inside face of a first end of the waist belt and a second adjustable strap attached at an upper end to the inside face of a second end of the waist belt.

34. A harness according to claim 33 wherein the sub-harness further comprises an intermediate strap attached at an upper end to the exterior rear face of the waist belt at substantially the mid-point.

35. A harness according to claim 34 wherein lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap are convergent and jointly coupled to the front exterior face of each of the leg bands by a coupling strap.

36. A harness according to claim 34 or 35 wherein the lower ends of the first adjustable strap, the second adjustable strap and the intermediate strap are connected freely to the coupling strap

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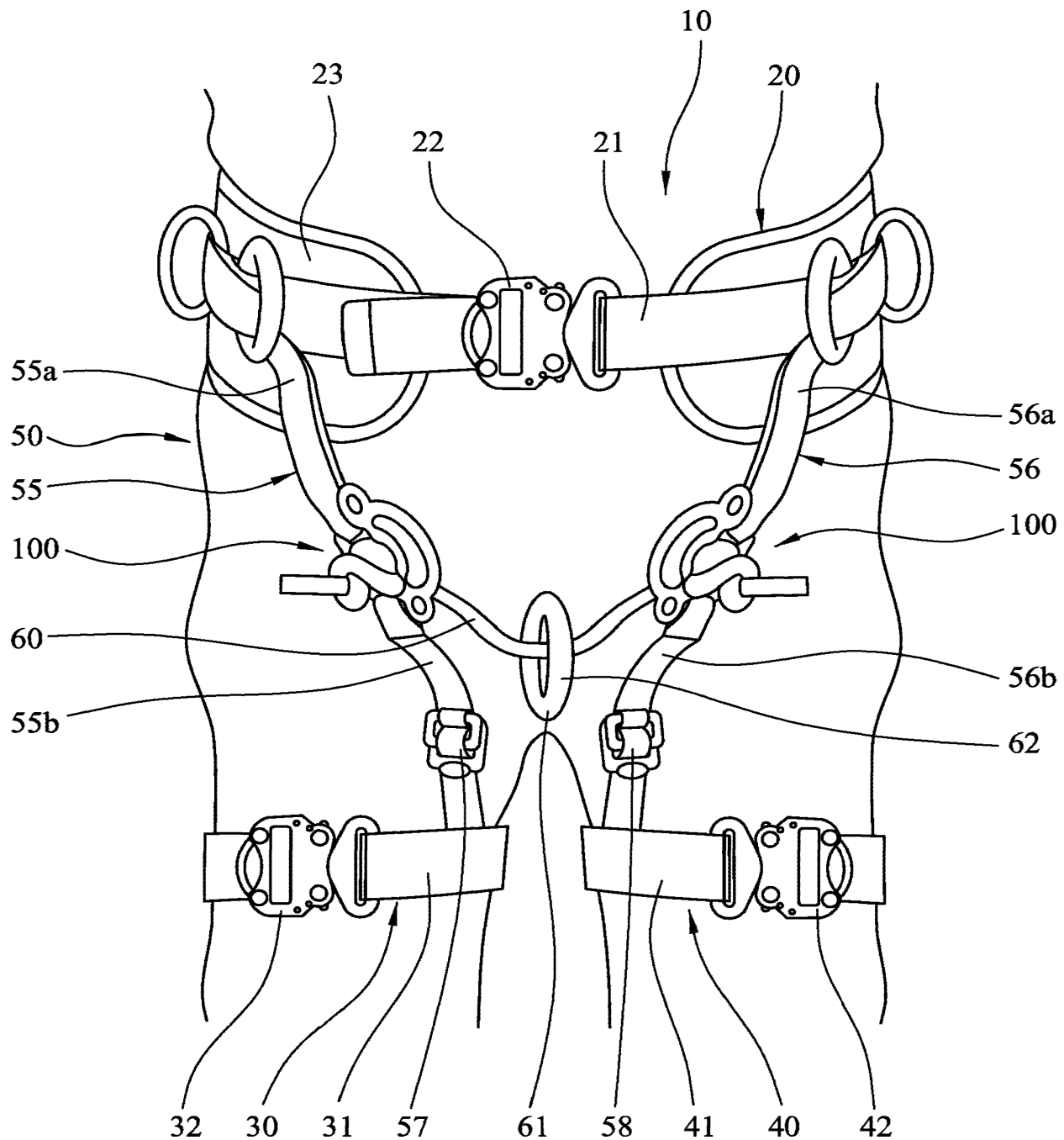
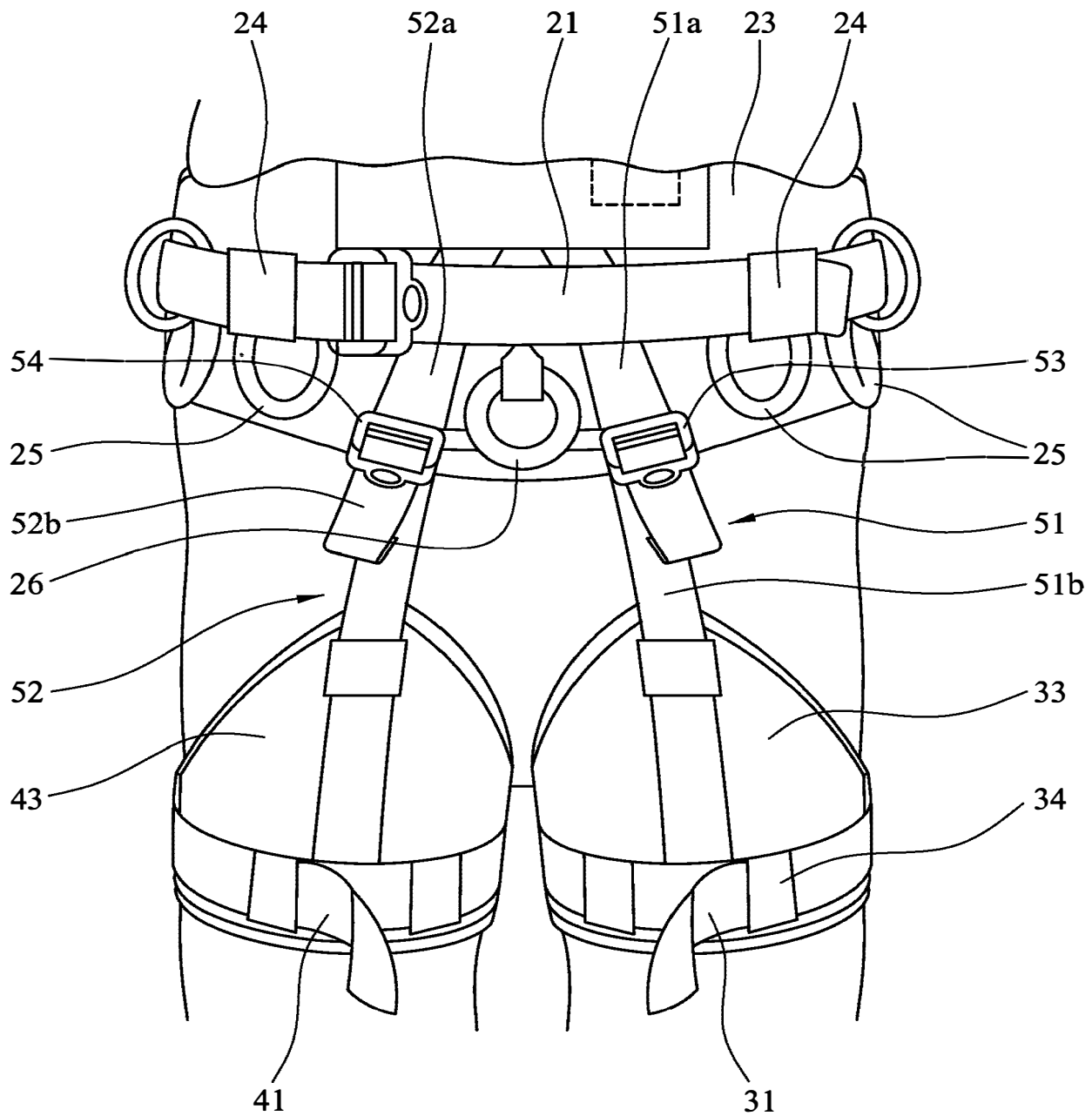
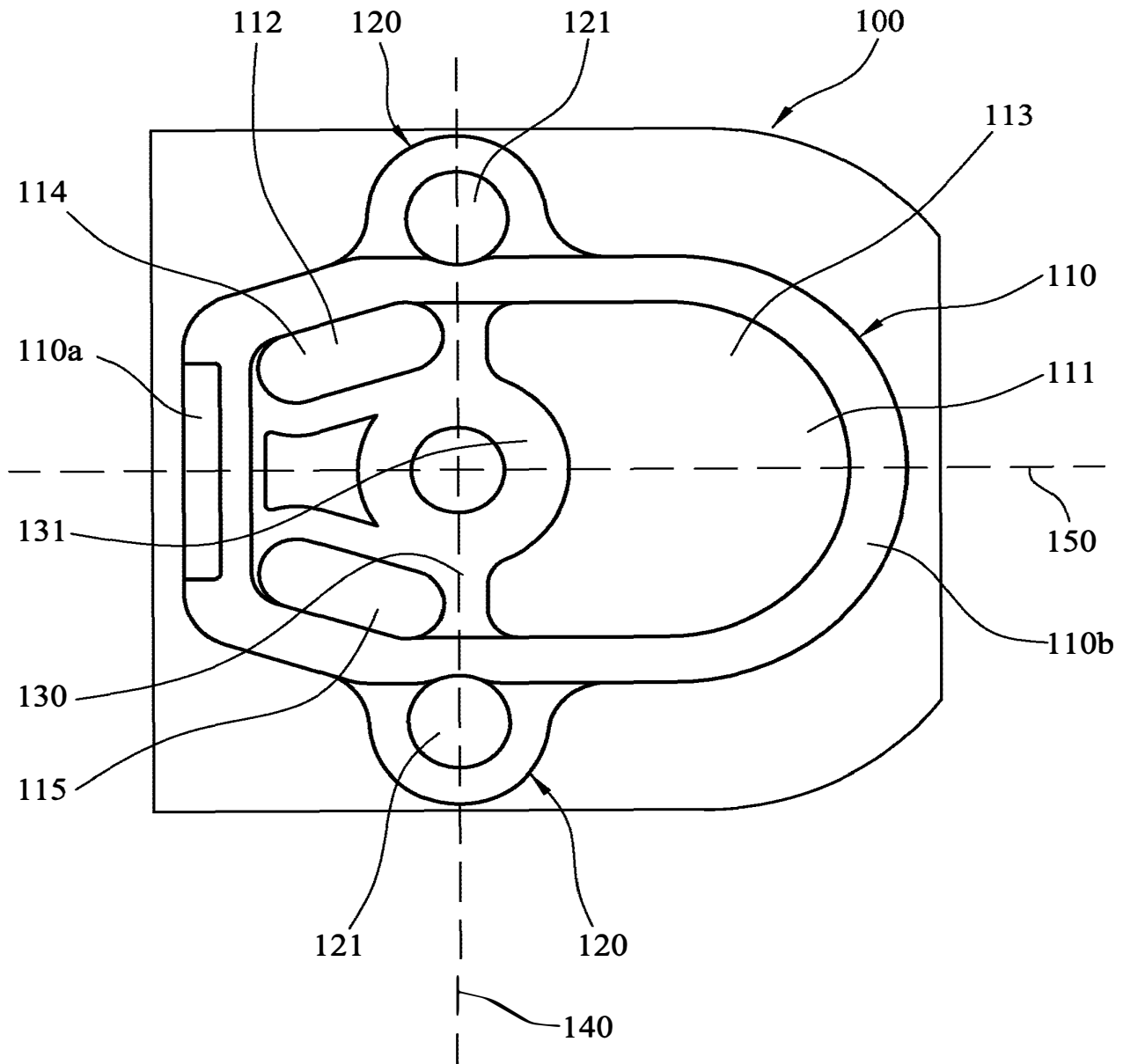


Figure 1

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Figure 2

-3/4-

Figure 3

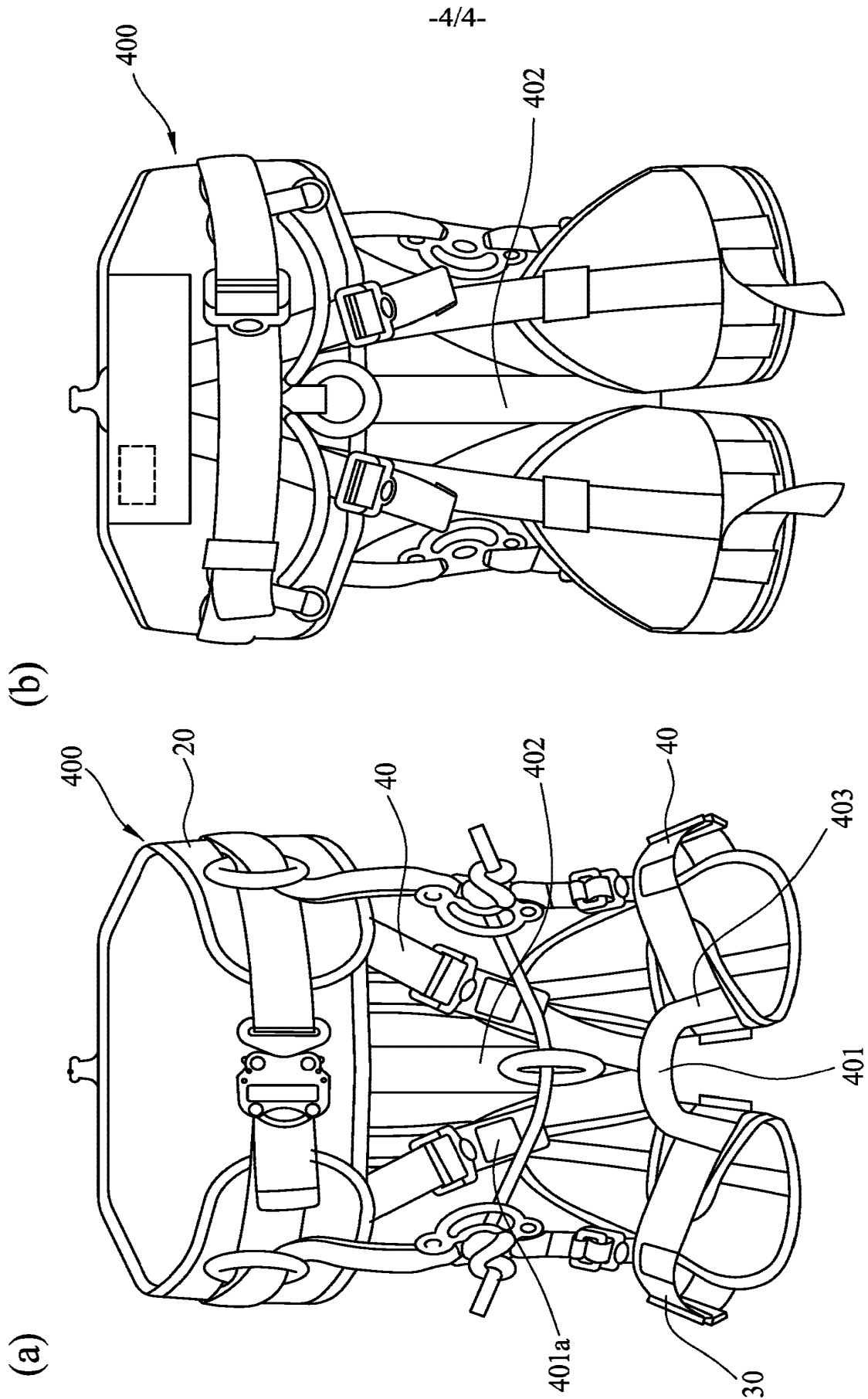


Figure 4

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

INV. A62B35/00

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

A62B A63B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	US 8 333 262 B1 (CARPENTER AMANDA [US] ET AL) 18 December 2012 (2012-12-18) column 4, lines 20-38 column 6, line 62 - column 7, line 22 column 7, line 61 - column 8, line 15 column 8, lines 36-65 column 9, lines 4-44 figures 1-7 ----- -/--	1-4,8,9, 14-25, 27-31 5-7, 10-13, 26,32-36



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

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INTERNATIONAL SEARCH REPORT

International application No

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C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 467 851 B1 (MANNELL CATHERINE A [US] ET AL) 22 October 2002 (2002-10-22)	1,2,5,8, 9,13, 16-18,30
A	column 2, lines 54-65 column 2, lines 36-46 column 3, lines 8-30 column 4, lines 2-15 column 4, lines 34-38 figures 1-5	3,4,6,7, 10-12, 14,15, 19-29, 31-36
A	----- Anonymous: "::< Teufelberger: treeMOTION", , 29 February 2016 (2016-02-29), XP055425762, Retrieved from the Internet: URL:https://web.archive.org/web/2016022906 2509/http://www.teufelberger.com:80/en/pro ducts/arboriculture/harnesses-for-arboricu lture/treemotion.html [retrieved on 2017-11-16] the whole document	1-36
A	& Anonymous: "Rope Bridge for treeMOTION - Manufacturer's Information and User Instructions", , 1 July 2014 (2014-07-01), pages 1-16, XP055425877, www.teufelberger.com Retrieved from the Internet: URL:https://www.teufelberger.com/pub/media /contentmanager/content/downloads/6801224 07-2014_Herstellerinformation-und-Gebrauch sanleitung-treeMOTION-Seilbru_cke_Druck.pd f [retrieved on 2017-11-16] pages 3-5	1-36
A	----- Dmm International Ltd.: "Small Bat Plate - RIG-S-RD - Products - DMM Professional", , 19 October 2012 (2012-10-19), XP055425998, http://dmmprofessional.com Retrieved from the Internet: URL:https://web.archive.org/web/2012101919 3421/http://dmmprofessional.com/products/s mall-bat-plate-rig-s-rd/ [retrieved on 2017-11-16] the whole document -----	1-36

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2017/052664

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 8333262	B1	18-12-2012	US 8333262 B1	18-12-2012
			US 9486654 B1	08-11-2016

US 6467851	B1	22-10-2002	NONE	

(19)



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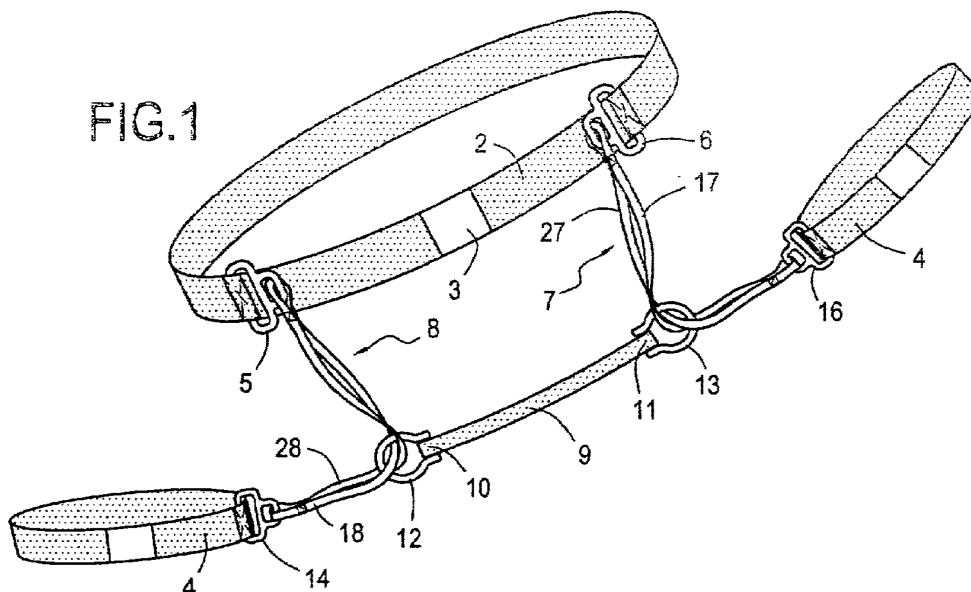
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(54) Dispositif de suspension à triangulation automatique

(57) Dispositif de suspension destiné à être appliqué à un utilisateur ou un objet quelconque pour lui permettre d'être suspendu à une corde le long de laquelle il va ainsi pouvoir se déplacer et comportant un premier point de support de charge principal, par exemple une ceinture (1) à dosseret destiné à entourer le bassin de l'utilisateur et au moins deux points de support de charge auxiliaires, par exemple deux cuissardes (4) destinées à chacune entourer une cuisse de l'utilisateur, et un système de liaison pour relier le premier point de support de charge principale aux au moins deux points de support de charge

auxiliaires constitué d'au moins une première courroie (7) reliant le point de support de charge principale à l'un des deux points de support auxiliaire et une deuxième courroie (8) reliant le point de support principal au deuxième point de support auxiliaire et une courroie (9) centrale reliée à chacune des au moins deux courroies auxiliaires, la courroie centrale étant destinée à être suspendue à une corde principale le long de laquelle l'utilisateur souhaite pouvoir se déplacer dans un sens ou dans l'autre, est caractérisé en ce qu'il est prévu des moyens de réglage automatique de l'équilibre.



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Description

[0001] La présente invention se rapporte à un dispositif de suspension, notamment un dispositif qui permet à une personne d'être suspendue à une corde principale, notamment pour se déplacer le long de cette corde, par exemple par coulissement, par exemple pour élaguer un arbre. Cependant, d'autres applications sont également possibles, comme l'escalade, notamment sportive.

[0002] On connaît déjà des dispositifs de ce genre dans l'art antérieur. Ils comportent une ceinture à dosseret destinée à ceinturer le bassin de l'utilisateur et deux cuissardes destinées à entourer chacune une partie des cuisses de l'utilisateur, les deux cuissardes étant reliées à la ceinture à dosseret par un système de courroies, comportant une courroie latérale gauche et une courroie latérale droite, qui chacune relie l'une des cuissardes droite et gauche respective à la ceinture à dosseret, et une courroie centrale formant pont entre les deux courroies latérales droite et gauche.

[0003] Ces dispositifs de l'art antérieur présentent, notamment, les inconvénients suivants. Lorsque l'utilisateur est stabilisé à un niveau donné le long de la corde principale, il souhaite en général effectuer des mouvements vers la gauche, vers la droite, vers l'arrière ou vers l'avant pour toute sorte de raison, par exemple pour réaliser un élagage. Lors de ces mouvements, le dispositif qui le suspend à la corde n'est plus équilibré de manière exacte et subit des contraintes non uniformes. Si, par exemple, l'utilisateur se penche vers la droite, il apparaît des forces ou contraintes plus importantes sur la partie gauche du système de courroies et, au cours du temps ces déplacements déséquilibrés dans toutes les directions entraînent une usure prématurée de la courroie centrale qui est en liaison avec la corde principale et cette courroie centrale doit être remplacée fréquemment. Or ce remplacement n'est pas simple à effectuer. En outre, lorsque l'utilisateur tente d'atteindre des endroits positionnés à sa droite, à sa gauche ou vers l'arrière ou l'avant et sort de la position de base dans laquelle il se tient droit, il doit de lui-même effectuer une compensation pour s'opposer au déséquilibre du système et cette compensation l'oblige à exercer constamment avec son corps des forces s'opposant aux forces issues du déséquilibre, ce qui fait qu'il n'est pas dans une position la plus agréable possible, alors même qu'il doit dans cette position effectuer un travail difficile, par exemple élaguer un arbre.

[0004] Suivant un perfectionnement déjà connu, on peut prévoir de régler manuellement la position relative de la courroie centrale par rapport à chacune des courroies latérales par l'intermédiaire de boucles. Cependant, ce système à boucles présente l'inconvénient qu'à chaque nouveau déplacement de l'utilisateur, il doit effectuer un nouveau réglage des boucles pour équilibrer son système de liaison entre le dosseret et les cuissardes et l'adapter à la nouvelle position. Dès qu'il souhaite passer dans une autre position, il doit recommencer tout le processus de réglage. Ainsi, l'utilisation de ce dispositif

d'escalade n'est-elle pas très simple.

[0005] Au document US 2002/042942, il est décrit un dispositif du domaine de la présente invention. Il est mentionné des moyens automatiques pour serrer le dispositif sur le pompier lorsque celui-ci s'accroche à une corde et se lance dans le vide. Cependant, ces moyens automatiques sont uniquement destinés au serrage du dispositif autour du pompier et une fois le serrage effectué, le dispositif ne se modifie plus en fonction des mouvements du pompier. Il en résulte que l'usure de la lanière 578 formant pont en raison du contact avec le mousqueton 552 (voir la figure 3) est très grande, ce qui nécessite de changer cette lanière fréquemment. En utilisation, la lanière formant pont « remonte » au-dessus de la ceinture 564, en entraînant vers le haut les boucles 550 et 550a et les lanières 534 et 546 qui viennent se bloquer autour de la ceinture 564 de sorte que l'utilisateur est bien serré automatiquement dans le dispositif. Cependant, une fois serré dans le dispositif sous l'effet de son poids, suspendu au mousqueton 552, l'utilisateur ne peut plus régler le dispositif dans la direction transversale, les lanières 546a et 546 s'étant enroulées autour de la ceinture 564 et formant un noeud qui ne peut plus coulisser. Une fois le pompier serré dans le dispositif, lorsqu'il fait un mouvement de basculement vers la gauche ou la droite, les lanières ne se déplacent pas et un frottement important se produit sur la lanière en pont 578 qui s'use prématurément.

[0006] La présente invention vise à surmonter les inconvénients de l'art antérieur en proposant un dispositif d'escalade du genre mentionné précédemment dans lequel l'usure de la courroie centrale formant pont est diminuée, de sorte qu'il n'est plus nécessaire d'en changer aussi souvent.

[0007] Suivant l'invention, un dispositif de suspension destiné à être appliqué à un objet ou un utilisateur pour lui permettre d'être suspendu à une corde principale, notamment le long de laquelle il va pouvoir se déplacer, notamment par coulissement, et comportant au moins un support de charge principal, par exemple une ceinture à dosseret destinée à entourer le bassin de l'utilisateur, et au moins deux supports de charge auxiliaires, par exemple deux cuissardes destinées à chacune entourer une cuisse de l'utilisateur, et un système de liaison pour relier le au moins un support de charge principale au aux moins deux supports de charge auxiliaires, le système de liaison étant constitué au moins d'une première courroie reliant le au moins un support de charge principal à l'un des deux supports auxiliaires, d'une deuxième courroie reliant le au moins un support principal au deuxième support auxiliaire et d'une courroie centrale reliée à chacune des au moins deux courroies auxiliaires, est caractérisé en ce qu'il est prévu des moyens de réglage automatique de l'équilibrage de l'objet ou de l'utilisateur à l'état suspendu à la corde principale, de sorte que celui-ci, lorsqu'il passe d'une position à une autre dans un domaine de positions correspondant à un basculement vers l'avant, l'arrière, la gauche, la droite ou une combi-

naison de deux basculements de ce genre, reste en une position équilibrée, dans laquelle il peut rester, notamment en étant inerte comme un mannequin.

[0008] Ainsi suivant l'invention, si on remplace l'utilisateur vivant par un mannequin sans vie de forme identique, celui ci va être maintenu en position équilibrée par le système de l'invention dans une grande plage de positions possibles, entre penché vers la droite, penché vers la gauche, penché vers l'avant, penché vers l'arrière ou une combinaison de deux de ces mouvements, et ce de manière automatique. Dans les dispositifs de suspension antérieurs, seule la position centrale est équilibrée et si on penche un mannequin ou un objet quelconque dans une direction quelconque, celui ci continue de basculer sous l'effet de son poids. Lorsqu'il s'agit d'un être humain, dans le cas de ces dispositifs de l'art antérieur, lorsqu'il se penche, il peut en exerçant une force lutter contre ce basculement. Le mannequin sans vie ou l'objet ne le peut pas. Ainsi, suivant l'invention, les moyens de réglage automatique sont tels qu'il maintienne un mannequin sans vie de la forme d'un être humain ou un objet quelconque en équilibre même dans des positions penchées autre qu'une position d'équilibre de départ, et ce de manière automatique, c'est à dire sans intervention manuelle sur le dispositif. Il en résulte pour l'utilisateur un grand confort, en particulier lorsqu'il élague des arbres. Il peut concentrer tous ses efforts sur l'élagage sans avoir à se soucier de se maintenir en équilibre.

[0009] Suivant un perfectionnement de l'invention, la suspension s'effectue en au moins un point de suspension de la courroie centrale.

[0010] On obtient ainsi une moindre usure de cette courroie centrale et une plus longue durée de vie de celle ci.

[0011] Suivant un perfectionnement de l'invention, les moyens de réglage automatique sont agencés de manière à régler automatiquement la résultante des forces appliquées par les charges sur le au moins un point de suspension de la courroie centrale de sorte que cette résultante ait une composante latérale, c'est à dire dans le plan de la courroie, sensiblement nulle.

[0012] On obtient ainsi, en utilisation, un équilibrage parfait pour l'utilisateur ou l'objet dans sensiblement toutes les positions qu'il souhaite prendre. Il en résulte une usure moindre sur la courroie centrale qui, par conséquent, a moins besoin d'être changée que dans l'art antérieur. En outre, l'utilisateur se fatigue moins lors d'un travail, notamment dans le cas où il élague des arbres. En effet, avec ce système, il peut se maintenir en équilibre sans être nécessairement droit ni avoir à modifier de lui-même par des systèmes compliqués à boucle les positions relatives des courroies du système de liaison.

[0013] Suivant un mode de réalisation préféré de l'invention, les moyens de réglage automatique sont agencés de manière à régler la position relative de la courroie centrale par rapport au aux moins deux courroies auxiliaires, en fonction des mouvements de l'utilisateur.

[0014] Suivant un perfectionnement de l'invention, il

est prévu au moins deux anneaux fixées à la courroie centrale formant pont, notamment à ses deux extrémités, et qui coulisent le long des courroies auxiliaires.

[0015] Suivant un mode de réalisation préféré de l'invention, les moyens de réglage automatique sont constitués par le fait qu'il est prévu au moins deux anneaux fixées à la courroie centrale formant pont, notamment à ses deux extrémités, et qui coulisent le long des courroies auxiliaires et qu'au moins une des courroies auxiliaires, de préférence chacune des au moins deux courroies auxiliaires est constituée de deux lanières s'étendant sensiblement sur la même longueur et sensiblement parallèlement l'une à l'autre, les deux lanières passant à l'intérieur de l'anneau coulissant le long de la courroie auxiliaire respective, l'une des lanières étant torsadée par rapport à l'autre, de sorte que ladite une des lanières pénètre dans l'anneau par l'un des côtés de l'anneau et l'autre lanière y pénètre par l'autre côté et ladite l'une des lanières sort du côté par lequel ladite autre lanière est entrée et l'autre lanière sort de l'anneau par le côté par lequel ladite l'une des lanières y est entrée.

[0016] Il est ainsi formé une sorte de noeud ou croisement au niveau de l'anneau, qui est ainsi supporté entre les deux lanières et qui peut coulisser le long des deux lanières entre celles-ci. En outre, la torsion créée au niveau d'une lanière fait que le coulisement a lieu avec un certain frottement permettant d'assurer un coulisement progressif, de manière fluide et sans à-coups, jusqu'à la position d'équilibre sans dépasser celle-ci.

[0017] Suivant un perfectionnement de l'invention, les lanières sont en forme de bandes plates qui forment une surface dite de Moëbus.

[0018] On décrit maintenant uniquement à titre d'exemple un mode de réalisation de l'invention en se reportant au dessin, dans lequel :

la figure 1 représente, suivant une vue en perspective, un dispositif d'escalade suivant l'invention à l'état non monté sur l'utilisateur ;

la figure 2 représente le dispositif d'escalade de la figure 1 monté sur un utilisateur ;

la figure 3 représente un utilisateur muni du dispositif suivant l'invention dans une première position équilibrée ;

la figure 4 est une vue en perspective équivalente à celle de la figure 3 dans laquelle l'utilisateur est dans une autre position également équilibrée alors qu'il s'est penché vers l'arrière ; et

la figure 5 est une vue équivalente à celle des figures 3 et 4, dans laquelle l'utilisateur est également dans une position équilibrée alors qu'il s'est penché vers la gauche, par exemple pour aller chercher quelque chose loin vers la gauche.

[0019] A la figure 1 il est représenté un dispositif d'escalade suivant l'invention. Celui-ci est constitué d'une part, d'un dossier destiné à s'appliquer autour du bassin de l'utilisateur et à y être fixé par une ceinture 2 ajustable

par un système à boucle 3. Deux cuissardes 4 destinées à entourer les cuisses de l'utilisateur et ayant une dimension réglable également par l'intermédiaire d'un système à boucle classique, sont reliées au dosseret 1; ou plus exactement à la ceinture 2, par une boucle métallique 6. Le système de liaison entre les cuissardes et le dosseret comporte une première courroie auxiliaire 7, une deuxième courroie auxiliaire 8 et une courroie centrale 9. Une première extrémité de chaque courroies auxiliaires 7 et 8 est fixée de manière classique aux boucles 6 (repliement de la bande sur soi même avec enfermement de la boucle et couture de fixation), tandis que l'autre extrémité de chacune des courroies 7 et 8 est fixée par une boucle identique à la boucle 6 et de la même manière classique également à la boucle 16 de sa cuissarde respective. La courroie 9 centrale est constituée d'une bande ou lanière double qui à chacune de ses extrémités 10 et 11 est terminée par un anneau 12 et 13 dans l'intérieur duquel pénètrent, pour l'anneau 13, la courroie 7 et pour l'anneau 12, la courroie 8.

[0020] La courroie 7 est constituée de deux bandes plates 17 et 27, tandis que la courroie 8 est constituée de deux bandes plates 18 et 28. Les deux bandes 17 et 27 se rejoignent à chacune de leurs deux extrémités pour être fixées à la boucle de fixation 6 et à la boucle de fixation 16 opposée. La courroie 7 s'étend depuis la boucle 6 en passant à travers l'anneau 13 jusqu'à la boucle 16. Pour passer dans l'anneau 13, la bande 17 y entre par le côté extérieur (le côté tourné vers l'extérieur de la figure 1) et en sort par le côté opposé (vers l'intérieur de la figure), tandis que la bande 27 pénètre dans l'anneau par le côté intérieur et en sort par le côté extérieur. Il est ainsi formé à l'intérieur de l'anneau une sorte de croisement 30 entre les deux bandes. La même description s'applique évidemment pour les deux bandes 18, 28 de la courroie 8 qui passent à l'intérieur de l'anneau 12. En particulier, les bandes 17 et 27 (respectivement 18 et 28) sont constituées d'une même bande unique repliées sur elle même.

[0021] Chaque anneau 12 et 13 peut coulisser le long de la courroie 7 ou 8 en ayant une partie de celui-ci qui se trouve du côté supérieur du croisement à l'intérieur entre les deux bandes 17, 27 et en ayant une autre partie qui se trouve en dessous du croisement 30 et entre les deux bandes 17, 27, les deux bandes ayant ainsi été inversées au niveau du croisement, de sorte que celle qui se trouvait à l'extérieur de la figure se trouve maintenant à l'intérieur et vice versa.

[0022] A la figure 2 on voit le dispositif de la figure 1 monté sur un utilisateur. Les deux cuissardes entourent chacune une cuisse de l'utilisateur, tandis que le dosseret est serré contre le dos de la personne par la ceinture 2. La lanière 9 formant pont entre les deux courroies 7 et 8 est, d'autre part, suspendue en un point 40 de suspension à un anneau 41 qui, lui-même, peut coulisser le long d'une corde 50 principale, l'utilisateur pouvant bloquer en n'importe quelle position le long de la corde 50 le coulisement de l'anneau 41 par un système de blo-

cage qui n'est pas représenté aux figures mais qui est classique. Lorsqu'il est dans une position suspendue donnée en un point donné de la corde 50, l'utilisateur est maintenu en suspension équilibrée par le dispositif d'escalade suivant l'invention.

[0023] A la figure 3, il est représenté une position d'équilibre possible, dans laquelle la courroie centrale 9 est suspendue à l'anneau 41 en ayant deux tronçons de part et d'autre de l'anneau 41 sensiblement de même longueur et les deux courroies auxiliaires ont également chacune deux tronçons, de part et d'autre de leur anneau 12, 13 respectif, sensiblement de même longueur. Trois forces issues des trois charges supportées agissent au point de suspension. La résultante des trois forces agissant sur le point de suspension est sensiblement normale (perpendiculaire) à la courroie, de sorte que le frottement de l'anneau 41 sur la courroie centrale est faible, voir nul.

[0024] A la figure 4, on voit que l'utilisateur s'est penché en inclinant le buste vers l'arrière et en remontant les jambes vers le haut pour atteindre une position sensiblement couchée. Dans cette position, les deux anneaux 12, 13 ont coulisé le long des deux courroies 7 et 8 dans une proportion sensiblement égale, de sorte que les deux courroies 7 et 8 ont chacune maintenant deux tronçons séparés par un anneau respectif et dont l'un est de grande longueur par rapport à l'autre. L'utilisateur est toujours en position équilibrée. La charge appliquée sur la courroie centrale au point de suspension par l'anneau est toujours sensiblement perpendiculaire à la courroie centrale et il n'y a sensiblement pas d'usure liée à un frottement qui apparaîtrait en raison d'une force longitudinale (le long de la courroie) liée à un déséquilibre dans le système, force qui aurait été créée si l'utilisateur s'était penché sans que les anneaux ne modifient leur position le long des courroies auxiliaires. Il en résulte que l'usure sur la courroie centrale est fortement diminuée.

[0025] A la figure 5, on voit que maintenant l'utilisateur s'est penché vers la gauche, par exemple pour atteindre un point éloigné vers sa gauche. Le point de suspension 40 s'est déplacé le long de la courroie centrale, de sorte qu'il divise maintenant cette courroie en deux tronçons qui ne sont plus de même dimension. Le tronçon du côté gauche (côté duquel l'utilisateur s'est penché) de l'anneau 41 est maintenant plus grand que le tronçon du côté droit de l'anneau. De même, les positions relatives des anneaux 12 et 13 par rapport à leurs courroies 7 et 8 respectives se sont maintenant modifiées, la courroie 7 de gauche étant divisée par son anneau 13 en deux tronçons, l'un étant beaucoup plus court que l'autre (celui du côté de l'utilisateur). De même, en ce qui concerne la courroie 8 du côté droit, les deux tronçons de part et d'autre de l'anneau 12 sont sensiblement égaux.

[0026] L'utilisateur est toujours équilibré, la force exercée au point de suspension par les charges étant également sensiblement perpendiculaire à la courroie centrale et sans composante longitudinale, de sorte qu'il n'y a pas d'usure. L'utilisateur peut rester dans cette position en faisant beaucoup moins d'efforts que si les deux an-

neaux étaient restés en position identique par rapport aux courroies latérales. En effet, il n'y a plus de composante longitudinale contre laquelle il doit lutter pour rester dans la position souhaitée.

[0027] On a ainsi décrit un système qui automatiquement, équilibre les charges appliquées aux trois points de support de charge, de sorte que la force de suspension exercée par l'anneau sur la courroie centrale reste toujours sensiblement « verticale » quelle que soit la position qu'il prenne à l'état suspendu. Au fur et à mesure que l'utilisateur se déplace, les anneaux coulisent lentement le long des courroies latérales et atteignent une nouvelle position équilibrée correspondant à la nouvelle position d'équilibre en répartissant les différentes forces exercées sur le système de manière équilibrée. On obtient ainsi une régulation automatique de l'équilibre en fonction des efforts de l'utilisateur. Le système effectue ce que l'on appelle une triangulation des forces, c'est à dire qu'il fait en sorte automatiquement que les trois forces issues des trois supports ait une résultante, dans un système de coordonnées XYZ, dans lequel XY correspondraient au plan passant par les trois supports et Z la perpendiculaire à ce plan, qui s'étend suivant l'axe des Z uniquement.

[0028] Suivant l'invention, si on remplace un utilisateur vivant par un mannequin sans vie, celui ci va être maintenu en position équilibrée par le système de l'invention dans une grande plage de positions possibles, entre penché vers la droite, penché vers la gauche, penché vers l'avant, penché vers l'arrière ou une combinaison de deux de ces mouvements, et ce de manière automatique. Dans les dispositifs d'escalade antérieur, seule la position centrale est équilibrée et si on penche un mannequin dans une direction quelconque, celui ci va tomber. Lorsqu'il s'agit d'un être humain, dans le cas de ces dispositifs de l'art antérieur, lorsqu'il se penche, il peut en exerçant une force s'opposer à cette chute. Le mannequin sans vie ne le peut pas. Ainsi, suivant l'invention, les moyens de réglage automatique sont tels qu'il maintienne un mannequin sans vie de la forme d'un être humain en équilibre même dans des positions penchées autre qu'une position d'équilibre de départ, et ce de manière automatique, c'est à dire sans intervention manuelle sur le dispositif.

Revendications

1. Dispositif de suspension destiné à être appliqué à un utilisateur ou à un objet de forme quelconque pour lui permettre d'être suspendu à une corde principale et comportant au moins un support de charge principal, par exemple une ceinture (1) à dossier destiné à entourer le bassin de l'utilisateur, et au moins deux supports de charge auxiliaires, par exemple deux cuissardes (4) destinées à chacune entourer une cuisse de l'utilisateur, et un système de liaison pour relier le au moins un support de charge princi-

pale au aux moins deux supports de charge auxiliaires, le système de liaison étant constitué d'au moins une première courroie (7) reliant le au moins un support de charge principal à l'un des deux supports auxiliaires et une deuxième courroie (8) reliant le au moins un support principal au deuxième support auxiliaire et d'une courroie (9) centrale reliée à chacune des au moins deux courroies auxiliaires, **caractérisé en ce qu'il** est prévu des moyens de réglage automatique de l'équilibrage de l'utilisateur ou de l'objet, de sorte que celui ci, à l'état suspendu à la corde principale, lorsqu'il passe d'une position à une autre dans un domaine de positions correspondant à un basculement vers l'avant, l'arrière, la gauche, la droite ou une combinaison de deux basculements de ce genre, reste en une position équilibrée, dans laquelle il peut rester, notamment en étant inerte comme un mannequin.

2. Dispositif suivant la revendication 1, **caractérisé en ce que** la suspension s'effectue en au moins un point (40) de suspension de la courroie centrale.
3. Dispositif suivant la revendication 1 ou 2, **caractérisé en ce que** les moyens de réglage automatique sont agencés de manière à régler automatiquement la résultante des forces appliquées par les charges sur le au moins un point de suspension de la courroie centrale de sorte que cette résultante ait une composante latérale, c'est à dire dans le plan de la courroie, sensiblement nulle.
4. Dispositif suivant l'une des revendications 1 à 3, **caractérisé en ce que** les moyens de réglage automatique sont agencés de manière à régler la position relative de la courroie (9) centrale par rapport au aux moins deux courroies auxiliaires, en fonction des mouvements de l'utilisateur.
5. Dispositif suivant l'une des revendications 1 à 4, **caractérisé en ce que** il est prévu au moins deux anneaux (10, 13) fixés à la courroie centrale formant pont, notamment à ses deux extrémités, et qui coulisent le long des courroies auxiliaires.
6. Dispositif suivant l'une des revendications 1 à 5, **caractérisé en ce que** les moyens de réglage automatique sont constitués par le fait qu'il est prévu au moins deux anneaux fixés à la courroie centrale formant pont, notamment à ses deux extrémités, et qui coulisent le long des courroies auxiliaires et qu'au moins une des courroies (7, 9) auxiliaires, de préférence chacune des au moins deux courroies auxiliaires est constituée de deux lanières (17, 27; 18, 28) s'étendant sensiblement sur la même longueur et sensiblement parallèlement l'une à l'autre, les deux lanières passant à l'intérieur de l'anneau coulissant le long de la courroie auxiliaire respective,

l'une des lanières étant torsadée par rapport à l'autre, de sorte que ladite une des lanières pénètre dans l'anneau par l'un des côtés de l'anneau et l'autre lanière y pénètre par l'autre côté et ladite l'une des lanières sort du côté par lequel ladite autre lanière est entrée et l'autre lanière sort de l'anneau par le côté par lequel ladite l'une des lanière y est entrée.

7. Dispositif suivant la revendication 6, **caractérisé en ce que** les lanières (17, 27; 18, 28) sont en forme de bandes plates qui forment une surface dite de Möbius.

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FIG.1

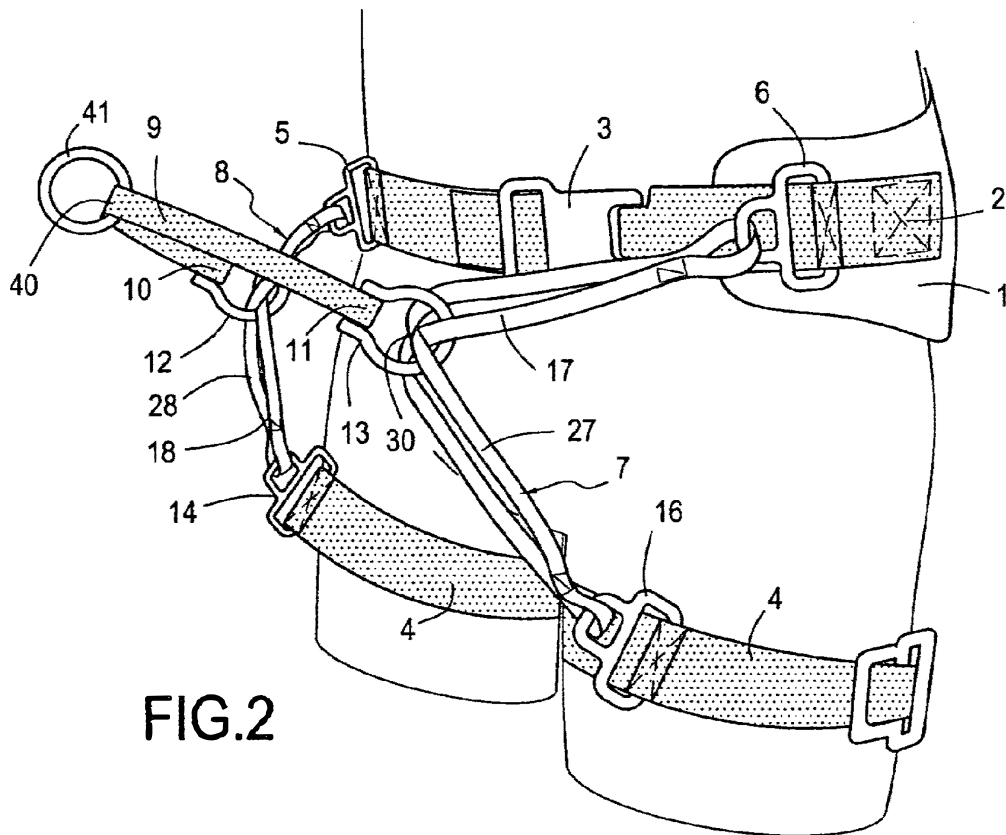
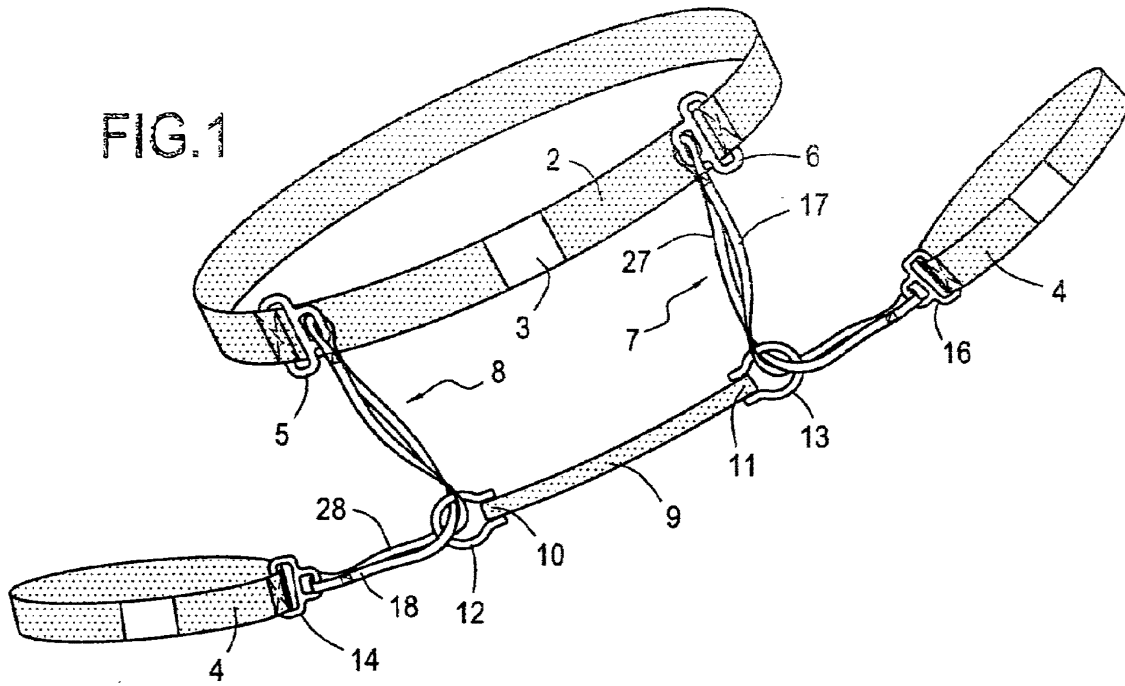
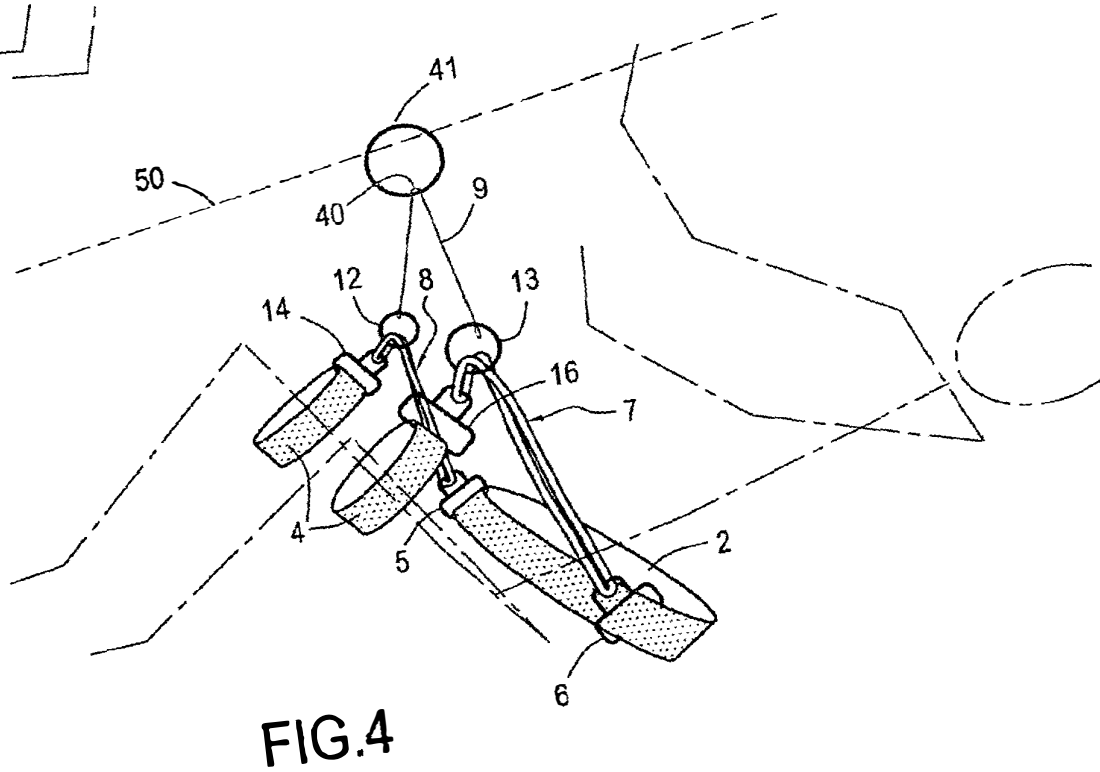
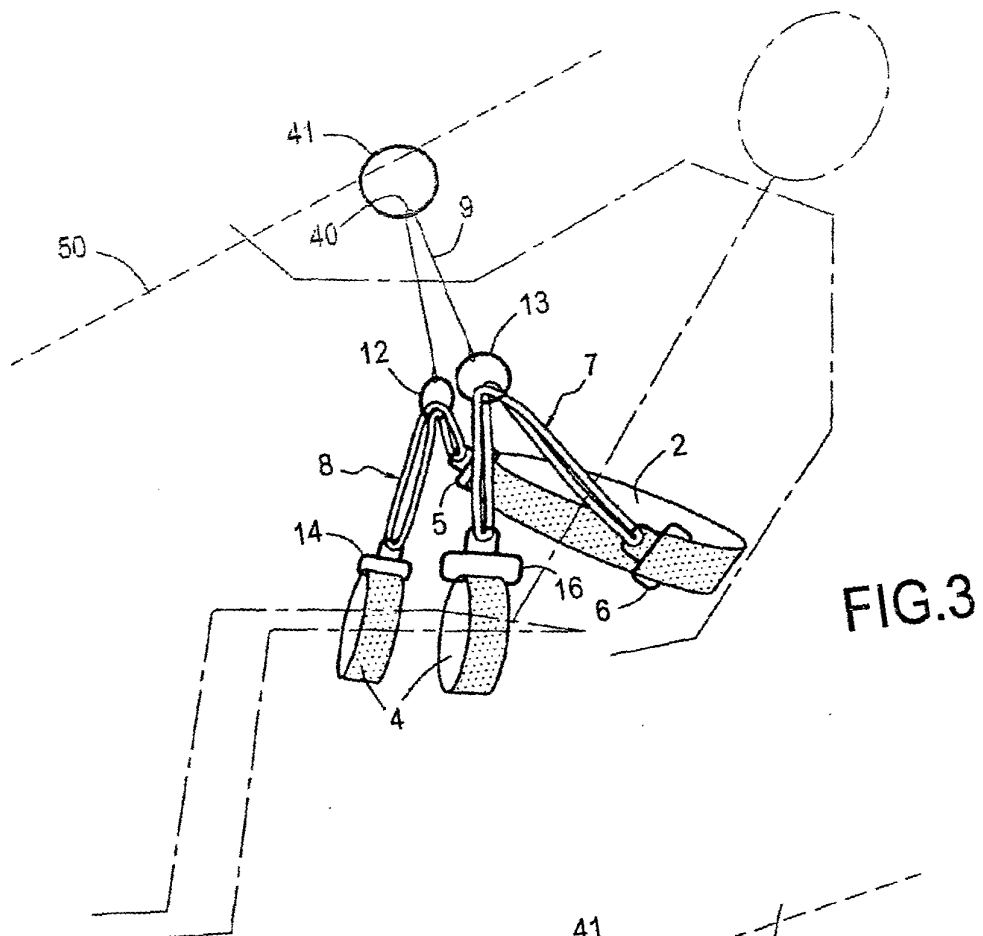


FIG.2



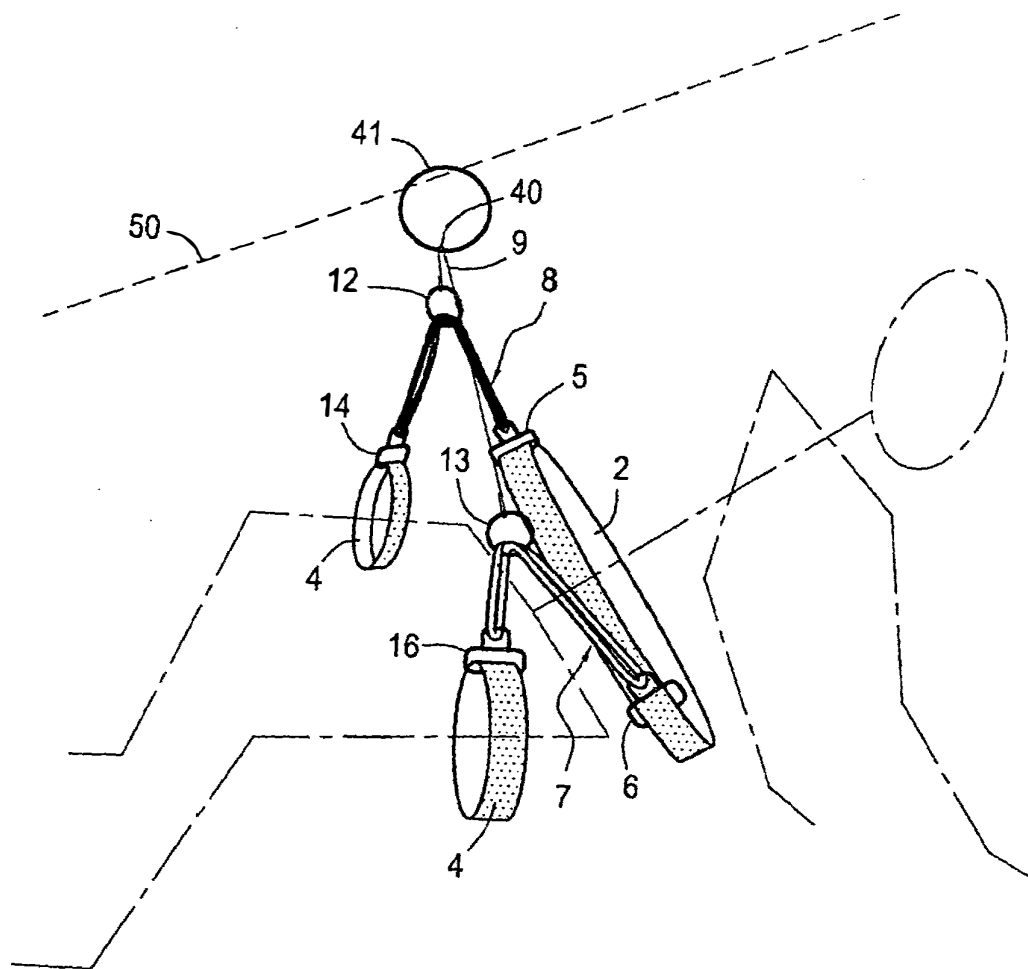


FIG.5

EPO FORM 1503 03.82 (P04C02) 1-1

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EP 07 29 1408

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Document brevet cité au rapport de recherche	Date de publication	Membre(s) de la famille de brevet(s)	Date de publication
US 2002042942 A1	18-04-2002	AUCUN	

Pour tout renseignement concernant cette annexe : voir Journal Officiel de l'Office européen des brevets, No.12/82

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Documents brevets cités dans la description

- US 2002042942 A [0005]

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	Filing Date		2025-09-17
	First Named Inventor	Walter Ernest Power II	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	305774-401011	

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	3	EP1932565	EP		2008-06-18	Dussenne		☐

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(Not for submission under 37 CFR 1.99)

Application Number	19330989
Filing Date	2025-09-17
First Named Inventor	Walter Ernest Power II
Art Unit	
Examiner Name	
Attorney Docket Number	305774-401011

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	1	SaddleHunter, Tie in Height in relation to sitting or leaning, April 5, 2017-August 4, 2017, https://saddlehunter.com/community/index.php?threads/tie-in-height-in-relation-to-sitting-or-leaning.3289/	☐
	2	SaddleHunter, Upgrade your Tethrd Mantis into a Tethrd Phantom (Amsteel prussik bridge) (1), January 17, 2020, https://saddlehunter.com/community/index.php?threads/upgrade-your-tethrd-mantis-into-a-tethrd-phantom-amsteel-prussik-bridge.23972/	☐
	3	SaddleHunter, Upgrade your Tethrd Mantis into a Tethrd Phantom (Amsteel prussik bridge) (2), January 18, 2020-January 21, 2020, https://saddlehunter.com/community/index.php?threads/upgrade-your-tethrd-mantis-into-a-tethrd-phantom-amsteel-prussik-bridge.23972/page-3	☐
	4	SaddleHunter, What do I need?, December 27, 2018-December 29, 2018, https://saddlehunter.com/community/index.php?threads/what-do-i-need.11456/#post-171205	☐
	5	SaddleHunter, What size tethrd mantis do I need????, February 13, 2019-February 14, 2019, https://saddlehunter.com/community/index.php?threads/what-size-tethrd-mantis-do-i-need.12704/	☐
	6	Samson Rope, 12-Strand Eye-and-Eye Tail Splice, July 2012, https://www.samsonrope.com/docs/default-source/splice-instructions/12strand_c1_eye_and_eye_tail_web.pdf?sfvrsn=1e0022aa_2	☐
	7	TreeBuzz, Ice Tail loop, October 28, 2012-October 30, 2012, https://www.treebuzz.com/forum/threads/ice-tail-loop.23817/#post-334252	☐
	8	Pushing Up Daisies, DIY Utilibridge, January 19, 2020, https://www.youtube.com/watch?v=JJQKI_KMIik	☐
	9	Gary Blevins, How to Add a Webbing Bridge to a Tree Saddle, April 3, 2019, https://www.youtube.com/watch?v=uShoMcW477I	☐

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10	G2 Outdoors, How to splice Amsteel for a bridge on your hunting saddle, March 4, 2018, https://www.youtube.com/watch?v=dqhRint-doE	☐
11	ArbCan, How to Splice an eye and eye tail, April 5, 2013, https://www.youtube.com/watch?v=lsX6pJ6x8ml	☐
12	DIY Sportsman, Hunting Saddle Modifications - DIY, June 3, 2018, https://www.youtube.com/watch?v=kMyIwFmaxaQ	☐
13	Tethrd Nation, Mantis Saddle - Setup and Directions, December 30, 2018, https://www.youtube.com/watch?v=2NLafE7jLNU	☐
14	Hunt Appalachia, Tethrd Mantis VS The Phantom Saddles, January 21, 2020, https://www.youtube.com/watch?v=P6l6mEwFJf4	☐
15	Average Jack Archery, Tethrd PHANTOM Review and How-To Tutorial!, January 26, 2020, https://www.youtube.com/watch?v=fURC1rE2DO0	☐
16	G2 Outdoors, Tree Saddle Bridge Basics, January 24, 2018, https://www.youtube.com/watch?v=IWetJo0-pNA	☐
17	SaddleHunter, Amsteel Brummel Lock ?, May 30, 2019-September 3, 2019, https://saddlehunter.com/community/index.php?threads/amsteel-brummel-lock.14552/	☐
18	Hunting SOBs, Hunting SOBs How to Splice Samson Predator Rope, July 22, 2019, https://www.youtube.com/watch?v=USci9Ct8xQQ	☐
19	SaddleHunter, Sewn webbing bridge ?, February 1, 2019-February 25, 2019, https://saddlehunter.com/community/index.php?threads/sewn-webbing-bridge.12417/	☐
20	SaddleHunter, How to make an Amsteel Bridge, March 5, 2018-March 29, 2018, https://saddlehunter.com/community/index.php?threads/how-to-make-an-amsteel-bridge.5913/page-2	☐

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21	SaddleHunter, Mantis Bridge Length, August 10, 2018, https://saddlehunter.com/community/index.php?threads/mantis-bridge-length.7795/	☐
22	SaddleHunter, Diy shorter mantis bridge, December 12, 2019-December 27, 2019, https://saddlehunter.com/community/index.php?threads/diy-shorter-mantis-bridge.11342/page-2	☐
23	HammockForums, Smallest continuous loop of amsteel blue possible, April 16, 2015-April 17, 2015, https://www.hammockforums.net/forum/showthread.php/108782-Smallest-continuous-loop-of-amsteel-blue-possible	☐
24	HammockForums, Stuck on Hennessy continuous loops..., October 25, 2013, https://hammockforums.net/forum/showthread.php/82063-Stuck-on-Hennessy-continuous-loops	☐
25	SaddleHunter, Amsteel and the bury's, December 10, 2018-June 29, 2020, https://saddlehunter.com/community/index.php?threads/amsteel-and-the-bury%E2%80%99s.11045/	☐
26	SaddleHunter, Adjustable bridge ideas?, November 25, 2019-November 27, 2019, https://saddlehunter.com/community/index.php?threads/adjustable-bridge-ideas.22095/	☐
27	SaddleHunter, How I tie a stronger Prussik knot., October 6, 2016-October 7, 2016, https://saddlehunter.com/community/index.php?threads/how-i-tie-a-stronger-prussik-knot.2006/	☐
28	SaddleHunter, Paracord, December 6, 2018, https://saddlehunter.com/community/index.php?threads/paracord.10909/page-2	☐
29	SaddleHunter, Prusik Knots, August 18, 2019-August 20, 2019, https://saddlehunter.com/community/index.php?threads/prusik-knots.17123/#post-245664	☐
30	https://knots3d.com/en/taut-line-hitch-knot KNOTS 3D Tautline Hitch (Tent-line Hitch Rigger's Hitch Adjustable Hitch ABOK #1856	☐

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Signature	/Adam J. Thompson/	Date (YYYY-MM-DD)	2025-10-02
Name/Print	Adam J. Thompson	Registration Number	72,831

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305774-401011

Title of Invention

BRIDGE ROPE ASSEMBLY

Application Information

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CONFIRMATION # 1069

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PATENT CENTER # 72442156

FILING DATE -

CUSTOMER # 24728

FIRST NAMED
INVENTOR Walter Ernest POWER II

CORRESPONDENCE
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Documents

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WO_2018111624_A1.pdf	31	Foreign Reference	2324 KB

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YouTube - How to Splice an eye and eye tail_IDS_PT2_NPL11.pdf	E2D9D4B87DB8C1A0E9BF51BC480375D463C319307D260A8B 3EC791043032C2645ADD4513AE3D5D162A4623A18627E97C1 2DA37B86622113DB25C98F91D4BCDF2
YouTube - Hunting Saddle Modifications - DIY_IDSPT2_NPL12.pdf	A998A775B3578A32BE8AC0532AAA37C2DC23101C0998F9D9 C7E3CBF28EF3C745A8F5D2F3F2254368BFA0F4C8CF5B158E 5483FFC53EBC6C46D07ED3BC6407A92F
YouTube - Mantis Saddle - Setup and Directions_IDSPT2_npl13.pdf	261D6F1D0196C0DFC0C2CA55AAAC1C16F5DD969180B72D98 6A8BC0FF4C4EF25B1DBA8E836BCC7F600E001E85E45C5B11 7D419A29BDA1D0151779A7954B163F38
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Stuck on Hennessy continuous loops_IDSpt2_npl24.pdf	CB596FF605D2F87A2547533CB46230F53F613A9471D53CFDA C745F415C87B8C7AC4EA6E84C434B83CD258407D6F972B7B 918AF7270740C6565094884E644F685
Amsteel and the burys_saddlehunter_IDSpt2_np l25.com.pdf	A94398A003B24F3D3565BCFE4F71373F44BFBC5B68690D957 41AF732DB31F440EA4D8CF2DD870DEA684FE0678F7D6D9E9 4E2A48538F74A2CD8DC1E56CFD246C7
SaddleHunter--Adjustable bridge ideas_saddlehunter_IDSpt2_npl 26.com.pdf	189D52986E1881423B8989675E4B0C54FAD2654B0F3FACCCDD 76CF538E7B5A4E68AD1887585A7080FA46F2B33C027457178F 178C539F61FBE84A50B57485F7968
How I tie a stronger Prussik knot_saddlehunter_IDS- pt2NPL27.com.pdf	3E40E66C7E044DEE2EF7D90C00A5758ABD25C0CBA32F9032 7D2AF724DB915279B976C21310CEE5BDC EE61D42460E36AF 3676B524F7FD4E70C8F6C3F56485287C
Paracord _ Page 2 _ saddlehunter_IDS_pt2NPL28.c om.pdf	DD713331C521790EB4B8F5BD877D3C40F8FCDC F9ACE1EDA FD981A712B80B92E97C1049A32889167B01747E22BD2D13AE 09F5737E542DF06C75421A68BE3CF50C
Prusik Knot or_saddlehunter_IDS_PT2_NP L29.com.pdf	DB30E0AC1BF2CA6674D21FE66EAD8139E58C4510FB6F13C5 6829BBB1D80FBA84167864CF23042A6C7F2AF12DE8F7D87A7 5408666D3E4B826E2B7C075D379A7B7
Taut-line Hitch_Knot Animation_Knots 3D_IDSpt2_NPL30.pdf	E56686276DF3151026DE6E07F57AE2AA96EEF6414A3E78E4D 1EBE670CACC474BFFFCF8E842F8B47F7C1C1DCC168D8792 E9B42EE43AB5114D6DC282A16364EA8B
305774-401011-2025-10-02- IDS Written Assertion under 37 CFR 198 - sb0008c.pdf	7CCF603A1DD68B1E9FA5363121FB620F32964D472084B2C84 8826CC36C1B84E73E17293FD40DECB0645BFDC2F098913759 8709ACF4BE4CDA4578F44D9AE18B60
EP_1932565_A1.pdf	3CFB637B989D281F22F14C6595905BCE867B697EFB679DA06 E325492D020B92B521E2322998F9C850CC3583A07B9BC4CB2 0E6CC4A32A20457E60E828ADE1E9ED
305774-401011-2025-10-02- Tethrd_IDS_2_sg.pdf	1A1678B465018C172CE8E5C090A3682BDD0724F1F17F45FC9 410E63C75AF1F4C044B0BB710475DC92D8CE510A6CA7EE08 082F82908B7C815081D5EDE6C206CFB
WO_2018051068_A1.pdf	7936F37ED7ADC8816FBB14E6FCC0DB91E0C447AA8C8426D2 C7EF16817404C85F41EFBEF37452082F6C037EFC4B53F91F0 2B1B8E5FB1ADABEA777CF0D175E05F5
WO_2018111624_A1.pdf	544A00E0000F3D78896FBEC2A87955E9AC05CAD9CC02ED05

14FCAF2EBD4A28B601AA9D4810435C8F29702CFA1EB88A41
6D029BF0051AB3193126503FCDC0435F

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for 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.

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

INFORMATION DISCLOSURE STATEMENT SIZE FEE – WRITTEN ASSERTION UNDER 37 CFR 1.98

Complete if Known

Application or Patent No.: 19/330,989	First Named Inventor: Walter Ernest Power, II	Art Unit:
Filing Date: September 17, 2025	Attorney Docket Number: 305774-401011	Examiner:

Please see 37 CFR 1.17(v) and attached Instructions for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

- ☐ 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 37 CFR 1.17(v)(1).
- ☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(2).
- ☐ The IDS is accompanied by the IDS size fee under 37 CFR 1.17(v)(3).

NOTE: This form must be accompanied by PTO/SB/08a and/or PTO/SB/08b or equivalent.

DEPOSIT ACCOUNT

The Director is authorized to charge the fee indicated above in the amount of \$ _____ for the IDS submitted herewith to deposit account 60-6905.

SIGNATURE

This form must be signed in accordance with 37 CFR 1.33. See 37 CFR 1.4(d) for signature requirements and certifications.

If applicant or patent owner is a juristic entity (e.g., an LLC or corporation), this form must be signed by a registered practitioner. See 37 CFR 1.31.

If applicant or patent owner is a person or persons, this form may be signed by either a registered practitioner, or the applicant or patentee. Note that if multiple people together are the applicant or patentee (e.g., there are joint inventors who together are the applicant), then a signature is required from each person who is an applicant or patentee. *Submit multiple forms if more than one signature is required, see below*.*

Signature /Adam J. Thompson/	Date October 2, 2025
Name (Print/Typed)	Practitioner Registration Number (if applicable) 72831

☐ * Total of _____ forms are submitted.

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0070. Public burden for this form is estimated to average 2 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Office of the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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**Instructions for Filling out the
“Information Disclosure Statement Size Fee – Written Assertion Under 37 CFR 1.98” Form
(Not to be Submitted to the USPTO)**

Note: This form is to be used when applicant or patent owner files an Information Disclosure Statement (IDS) for consideration by the examiner. This form must be accompanied by PTO/SB/08a and/or PTO/SB/08b or equivalent.

Determining the cumulative number of applicant-provided or patent owner-provided items of information

The IDS size fee is based on the cumulative number of items of information provided by an applicant or patent owner during the pendency of the application or reexamination proceeding. It is the applicant’s and patent owner’s responsibility to track the cumulative number of items of information provided in the application or proceeding and provide a written assertion of any applicable IDS size fee due.

In determining the applicable written assertion for the cumulative number of applicant-provided or patent owner-provided items of information, “provided” refers to the items cited on an IDS under 37 CFR 1.98(a)(1) by an applicant or patent owner, whether or not an actual copy of the cited item is submitted by the applicant or patent owner to the USPTO. If a particular item provided by an applicant or patent owner on an IDS was not considered because the item was non-compliant and that particular item is provided on an IDS a second time in the same application or patent, it will not be counted again.

An item of information that an applicant cited in a parent application will not be counted in a child application (e.g., a continuation, continuation-in-part, or divisional application) for the purpose of the IDS size fees unless it is resubmitted, i.e., provided by the applicant on an IDS in the child application. Applicants who wish to avoid paying the IDS size fees in a child application for items of information considered in a parent application may do so by not resubmitting the items. An item of information must be resubmitted in the continuing application if the applicant desires the item of information to be printed on the patent. See MPEP 609.02, subsection II.A.2.

The cumulative count is determined for each application or patent separately. Continuing, CPA, and reissue applications and post-issuance proceedings will start with a count of zero. A request for continued examination (RCE) is not the filing of a new application, and thus the count will not reset when an RCE is filed.

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Check “[] No IDS size fee is required under 37 CFR 1.17(v) at this time” on the above PTO/SB/08c form when the IDS does not cause the cumulative number of applicant-provided or patent owner-provided items in this application or proceeding to:

- exceed 50, 100, or 200 items of information.

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- exceed 50 items of information but not exceed 100 items of information.

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Select only one assertion on the PTO/SB/08c form above.

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This section should only be filled out if the IDS size fee is due. Fees may be paid by check or money order (made payable to the Director of the United States Patent and Trademark Office), credit card (Form PTO-2038), or deposit account. When paying by deposit account, the amount of the IDS size fee to be charged to the deposit account must be specified to comply with 37 CFR 1.98(a)(4). General authorizations to charge fees to a deposit account are not compliant written assertions. When paying by credit card, to protect your credit card information, do not submit Form PTO-2038 electronically through USPTO’s patent electronic filing system or any other USPTO Web site.

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The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013), <https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf>.

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

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		19330989	
	Filing Date		2025-09-17	
	First Named Inventor	Walter Ernest Power II		
	Art Unit			
	Examiner Name			
	Attorney Docket Number	305774-401011		

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	1	ArboristSite, Amsteel Blue Splicing Experiments, April 18, 2008-April 30, 2008, https://www.arboristsite.com/threads/amsteel-blue-splicing-experiments.66833/	☐
	2	ArboristSite, Biners and rope bridge, December 26, 2013-January 8, 2014, https://www.arboristsite.com/threads/biners-and-rope-bridge.249017/	☐
	3	HammockForums, Continuous loop bury length question, April 21, 2012-April 22, 2012, https://www.hammockforums.net/forum/showthread.php/51354-Continuous-loop-bury-length-question	☐
	4	HammockForums, Continuous Loop pictoral, November 14, 2012-February 24, 2013, https://www.hammockforums.net/forum/showthread.php/13779-Continuous-Loop-pictoral/page20	☐
	5	HammockForums, Everything you always wanted to know about Amsteel but were afraid to ask, February 10, 2016-February 11, 2016, https://www.hammockforums.net/forum/showthread.php/121554-Everything-you-always-wanted-to-know-about-Amsteel-but-were-afraid-to-ask	☐
	6	HammockForums, Everything you always wanted to know about Amsteel but were afraid to ask, February 13, 2016-January 29, 2017, https://www.hammockforums.net/forum/showthread.php/121554-Everything-you-always-wanted-to-know-about-Amsteel-but-were-afraid-to-ask/page3	☐
	7	HammockForums, Prusik knot with Zing It, April 12, 2015-April 13, 2015, https://www.hammockforums.net/forum/showthread.php/108611-Prusik-knot-with-Zing-It	☐
	8	HammockForums, Splicing loops in Amsteel question and Improved Soft Shackle, June 18, 2015, https://www.hammockforums.net/forum/showthread.php/111436-Splicing-loops-in-Amsteel-question-and-Improved-Soft-Shackle	☐
	9	HammockForums, Why does one taper while splicing, April 16, 2018-April 17, 2018, https://www.hammockforums.net/forum/showthread.php/146220-Why-does-one-taper-while-splicing	☐

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
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Application Number	19330989
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Art Unit	
Examiner Name	
Attorney Docket Number	305774-401011

10	L-36, Loops, Loups, and Loupes, November 2, 2012, https://web.archive.org/web/20121102115036/https://l-36.com/loop.php	☐
11	SaddleHunter, Adjustable amsteel bridge for sit drag - how to?, September 29, 2017-September 30, 2017, https://saddlehunter.com/community/index.php?threads/adjustable-amsteel-bridge-for-sit-drag-how-to.4206/#post-54924 3/	☐
12	SaddleHunter, Adjustable bridge (1), September 22, 2017-September 24, 2017, https://saddlehunter.com/community/index.php?threads/adjustable-bridge.4138/	☐
13	SaddleHunter, Adjustable bridge (2), September 24, 2017-September 26, 2017, https://saddlehunter.com/community/index.php?threads/adjustable-bridge.4138/page-2	☐
14	SaddleHunter, Adjustable bridge (3), September 26, 2017-December 31, 2018, https://saddlehunter.com/community/index.php?threads/adjustable-bridge.4138/page-3	☐
15	SaddleHunter, Amsteel (1), December 28, 2018-December 30, 2018, https://saddlehunter.com/community/index.php?threads/amsteel.11483/#post-171562	☐
16	SaddleHunter, Amsteel (2), December 30, 2018-January 6, 2019, https://saddlehunter.com/community/index.php?threads/amsteel.11483/page-2#post-1742414 4	☐
17	SaddleHunter, Amsteel blue vs amsteel?, May 24, 2018-May 25, 2018, https://saddlehunter.com/community/index.php?threads/amsteel-blue-vs-amsteel.6668/#post-97728	☐
18	SaddleHunter, Amsteel bridge question, July 21, 2017-August 8, 2017, https://saddlehunter.com/community/index.php?threads/amsteel-bridge-question.3490/#post-43814	☐
19	SaddleHunter, Amsteel Prussic, June 17, 2018-January 11, 2020, https://saddlehunter.com/community/index.php?threads/amsteel-prussic.6920/	☐
20	SaddleHunter, Amsteel questions, April 1, 2018-April 2, 2018, https://saddlehunter.com/community/index.php?threads/amsteel-questions.6226/#post-88871	☐

**INFORMATION DISCLOSURE
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Art Unit	
Examiner Name	
Attorney Docket Number	305774-401011

21	SaddleHunter, Before I become a cutter...., October 19, 2018, https://saddlehunter.com/community/index.php?threads/before-i-become-a-cutter.9631/#post-146016	☐
22	SaddleHunter, Bridge length, September 24, 2018-January 25, 2021, https://saddlehunter.com/community/index.php?threads/bridge-length.8926/	☐
23	SaddleHunter, DIY Utilibridge (1), January 11, 2020, https://saddlehunter.com/community/index.php?threads/diy-utilibridge.23753/	☐
24	SaddleHunter, DIY Utilibridge (2), January 11, 2020, https://saddlehunter.com/community/index.php?threads/diy-utilibridge.23753/page-2	☐
25	SaddleHunter, DIY utilibridge, February 18, 2020-March 7, 2020, https://saddlehunter.com/community/index.php?threads/diy-utilibridge.24863/	☐
26	SaddleHunter, Finished my sitdrag and harness, February 4, 2018-February 6, 2018, https://saddlehunter.com/community/index.php?threads/finished-my-sitdrag-and-harness.5625/	☐
27	SaddleHunter, Fixed vs Whoopie bridge, October 14, 2018, https://saddlehunter.com/community/index.php?threads/fixed-vs-whoopie-bridge.9490/	☐
28	SaddleHunter, H2 Triad Bridge, February 28, 2020-March 16, 2020, https://saddlehunter.com/community/index.php?threads/h2-triad-bridge.24626/page-2#post-359295	☐
29	SaddleHunter, H2 vs tethrd? (1), March 17, 2020-March 20, 2020, https://saddlehunter.com/community/index.php?threads/h2-vs-tethrd.24713/page-9#post-359619	☐
30	SaddleHunter, H2 vs tethrd? (2), March 20, 2020-March 22, 2020, https://saddlehunter.com/community/index.php?threads/h2-vs-tethrd.24713/page-10	☐
31	SaddleHunter, Mantis Bridge Mods, October 8, 2018-October 12, 2018, https://saddlehunter.com/community/index.php?threads/mantis-bridge-mods.9285/	☐

**INFORMATION DISCLOSURE
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Art Unit	
Examiner Name	
Attorney Docket Number	305774-401011

32	SaddleHunter, Mantis fixed bridge concerns, February 25, 2019-March 2, 2019, https://saddlehunter.com/community/index.php?threads/mantis-fixed-bridge-concerns.12961/	☐
33	SaddleHunter, None lock stitched bridge?, January 1, 2019-January 3, 2019, https://saddlehunter.com/community/index.php?threads/none-lock-stitched-bridge.11583/#post-172794	☐
34	SaddleHunter, Official "Tethrd Mantis" Review Thread!, September 18, 2018-October 5, 2018, https://saddlehunter.com/community/index.php?threads/official-tethrd-mantis-review-thread.8527/page-4	☐
35	SaddleHunter, Replacing the bridge carabiner??, March 7, 2018-March 20, 2018, https://saddlehunter.com/community/index.php?threads/replacing-the-bridge-carabiner.5936/	☐
36	SaddleHunter, Saddleplooza, February 20, 2018-February 22, 2018, https://saddlehunter.com/community/index.php?threads/saddleplooza.5765/	☐
37	SaddleHunter, sealing amsteel ends, December 27, 2018-December 28, 2018, https://saddlehunter.com/community/index.php?threads/sealing-amsteel-ends.11436/#post-170302	☐
38	SaddleHunter, shifting, December 2, 2018-December 5, 2018, https://saddlehunter.com/community/index.php?threads/shifting.10859/#post-161652	☐
39	SaddleHunter, Sitdrag loop question, February 3, 2018-February 11, 2018, https://saddlehunter.com/community/index.php?threads/sitdrag-loop-question.5609/	☐
40	SaddleHunter, Slummin' it in a Kestrel, August 22, 2018-August 23, 2018, https://saddlehunter.com/community/index.php?threads/slummin-it-in-a-kestrel.8059/page-2	☐
41	SaddleHunter, Smallest diameter on tether rope, June 18, 2018-July 23, 2018, https://saddlehunter.com/community/index.php?threads/smallest-diameter-on-tether-rope.6938/	☐
42	SaddleHunter, Spliced Amsteel, September 1, 2018-September 18, 2018, https://saddlehunter.com/community/index.php?threads/spliced-amsteel.8291/	☐

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	Art Unit		
	Examiner Name		
	Attorney Docket Number		305774-401011

43	SaddleHunter, Splicing rope? (1), January 12, 2016-January 13, 2016, https://saddlehunter.com/community/index.php?threads/splicing-rope.1197/	☐
44	SaddleHunter, Splicing rope? (2), January 13, 2016-January 16, 2016, https://saddlehunter.com/community/index.php?threads/splicing-rope.1197/page-2	☐
45	SaddleHunter, Splicing rope? (3), January 16, 2016-January 23, 2016, https://saddlehunter.com/community/index.php?threads/splicing-rope.1197/page-3	☐
46	SaddleHunter, Splicing rope? (4), January 23, 2016-August 6, 2018, https://saddlehunter.com/community/index.php?threads/splicing-rope.1197/page-4	☐
47	SaddleHunter, Splicing rope? (5), August 6, 2018-August 24, 2018, https://saddlehunter.com/community/index.php?threads/splicing-rope.1197/page-5	☐
48	SaddleHunter, Tether and Bridge Length, October 10, 2018-October 11, 2018, https://saddlehunter.com/community/index.php?threads/tether-and-bridge-length.9367/	☐
49	SaddleHunter, Tethrd Mantis dimensions, September 25, 2018-October 1, 2018, https://saddlehunter.com/community/index.php?threads/tethrd-mantis-dimensions.8936/	☐
50	SaddleHunter, Tethrd Phantom's Bridge Knot, April 13, 2020-November 23, 2020, https://saddlehunter.com/community/index.php?threads/tethrd-phantom-s-bridge-knot.25999/#post-366527	☐

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		19330989
	Filing Date		2025-09-17
	First Named Inventor	Walter Ernest Power II	
	Art Unit		
	Examiner Name		
	Attorney Docket Number	305774-401011	

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☐ 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).

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☐ See attached certification statement.

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Signature	/Adam J. Thompson/	Date (YYYY-MM-DD)	2025-10-02
Name/Print	Adam J. Thompson	Registration Number	72,831

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APPLICATION #
19/330,989

RECEIPT DATE / TIME
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Title of Invention

BRIDGE ROPE ASSEMBLY

Application Information

APPLICATION TYPE Utility - Reissue

PATENT # -

CONFIRMATION # 1069

FILED BY Sandy Barthelus Gellineau

PATENT CENTER # 72427819

FILING DATE -

CUSTOMER # 24728

FIRST NAMED
INVENTOR Walter Ernest POWER II

CORRESPONDENCE
ADDRESS -

AUTHORIZED BY Anna Baker

Documents

TOTAL DOCUMENTS: 52

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
ArboristSite - Amsteel Blue Splicing Experiments_npl1.pdf	9	Non Patent Literature	4509 KB
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SaddleHunter - Tethrd Phantoms Bridge Knot-NPL50.pdf	5	Non Patent Literature	4165 KB
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HammockForums - Everything you always wanted to know about Amsteel but were afraid to ask_2_npl6.pdf	78A9F354ACB1AEC8CAD839CC060D08AA4F9F57678DB91607A222AD662ACA9E3EA2BFE3B275DC883EB55760C225DD4EE0D7D946BFCA65B532F93C84FDF9C93B64
HammockForums - Prusik knot with Zing It_npl7.pdf	1A4A0759FA1E90443D44A0B7D1C7E0545AC43863F65CD5B06DDC541CBD73626C87A3282F5891F5248A85C8A8A7D643C8082E93638FD030273D89A38E52111064
HammockForums - Splicing loops in Amsteel question and Improved Soft Shackle_npl8.pdf	C92AD088F0F417F5F9E767D62F866A8A8B3DD685032DE1212E3D0BB2708DF124B45504DFA7D9F01C222172EB4575B85FC3C3D3600DA461C217E0A6310A8F7EA1
HammockForums - Why does one taper while splicing_npl9.pdf	4C0F5020449D4EAD89037CA9DFC66437EE3DBE0DE2D16567422AED3BE0AEFFFC75D7740A1056FB06B0467B16C9AFE204279B0A8EF77F3695EE677604F63FB734
L-36 - Loops Loups and Loupes_NPL10.pdf	7833A55994C086E8F07133CB79005A57E37C128E1679D86C16D5F5B44110C99A00C2970BB1CAC1FCBF878FFB3B97B35EDBA62E817836BA510E15FBBEAD961286
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SaddleHunter - Splicing rope 1_NPL43.pdf	92F1FAA9C3679CE390A2AE0BCE1C027E9DBD6D1914E37C40FB79AB5B72C2C5E99E7E0B85B2A26B052215FB7624C8B7A75B90185089F5DC13652D5C4C31046899
SaddleHunter - Splicing rope 2_NPL44.pdf	40FF453245B41A81F7483A58F27CE2696C8220C73BFE0A7F6F276A9DC30803D3D199D2682B99F867017CF6375A3724E1C3E95B1515916003361FC87D77F61CFA
SaddleHunter - Splicing rope 3_NPL45.pdf	C36034FB77119923590127A55BDA2A85672FFE2D8845C1690CBDF660DF53AD468EFE8F85DBADF58DEE61C73EF646393E327739ADAB1C18EB8D543B6472237CD4
SaddleHunter - Splicing rope 4_npl46.pdf	3E9EEAA7DBB71A8155859ECCD3D7337AAD34D023124862F7906969C6A920A2BEB37359B81A7C54C6591A8C4B12889A8DF77FDD034CCFF54B3E7B520B2F5AB9E9
SaddleHunter - Splicing rope 5_NPL47.pdf	95773A307084117637892D977B6E3967975DE7F22C8AE977197FACB617C624E11827259D335589F26BDB2A83311C9632A7487B1A2E3B6C848FF7E2D02017A295
SaddleHunter - Tether and Bridge Length_NPL48.pdf	DB577EC4D2074010A3BCE1860B9B9D2BBA93ED826D46DCDA92DA999D0D9D67A306395A8571E47CB338A07C56DFF0744333F2749B6D00778072257E6165879335
SaddleHunter - Tethrd Mantis dimensions_NPL49.pdf	7ED53F8CFEA851FE9288A3A4B481A9FFB2601A91C059E5C6B62145ED9FF041E065E733CBAC05A2F2C0725B4E3970393561EA21DEA5EE8C726488A189573C3580
SaddleHunter - Tethrd Phantoms Bridge Knot-NPL50.pdf	AE7795DEE87E64F55BE79DCE245F2BE3EA65A96D27C3B337EF2BC27C3E01B95655352D7E46A7443B1772850405BEBD47F3A5E6D58EF9D6970E3C3D4029E284E7
305774-401011-2025-10-02-IDS Written Assertion under 37 CFR 198 - sb0008c.pdf	7CCF603A1DD68B1E9FA5363121FB620F32964D472084B2C848826CC36C1B84E73E17293FD40DECB0645BFDC2F0989137598709ACF4BE4CDA4578F44D9AE18B60
305774-401011-2025-10-02Tethrd_IDS_1final.pdf	E065C10DA0CB4D23F759079FB7F44519AACA87AE93B7A975E7C853F2A9F027B6E14E870688A3ECE56AB63BE2A2A06062C405D4F1A3559E55873585BECAB3D234

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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



UNITED STATES
PATENT AND TRADEMARK OFFICE

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Alexandria, VA 22313 - 1450
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ELECTRONIC PAYMENT RECEIPT

APPLICATION #
19/330,989

RECEIPT DATE / TIME
10/02/2025 01:01:24 PM Z ET

ATTORNEY DOCKET #
305774-401011

Title of Invention

BRIDGE ROPE ASSEMBLY

Application Information

APPLICATION TYPE Utility - Reissue

PATENT # -

CONFIRMATION # 1069

FILED BY Sandy Barthelus Gellineau

PATENT CENTER # 72427819

AUTHORIZED BY Anna Baker

CUSTOMER # 24728

FILING DATE -

CORRESPONDENCE ADDRESS -

FIRST NAMED INVENTOR Walter Ernest POWER II

Payment Information

PAYMENT METHOD
DA / 606905

PAYMENT TRANSACTION ID
E202502D02476083

PAYMENT AUTHORIZED BY
Sandy Barthelus Gellineau

PRE-AUTHORIZED ACCOUNT
606905

PRE-AUTHORIZED CATEGORY
37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.21 (Miscellaneous fees and charges)

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
1832	FILING AN INFORMATION DISCLOSURE STATEMENT THAT CAUSES THE CUMULATIVE NUMBER OF APPLICANT-PROVIDED ITEMS OF INFORMATION TO EXCEED 50 BUT NOT EXCEED 100	200.00	1	200.00
TOTAL AMOUNT:				200.00

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

New Applications Under 35 U.S.C. 111

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

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

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

New International Application Filed with the USPTO as a Receiving Office

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

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	305774-401011
		Application Number	
Title of Invention	BRIDGE ROPE ASSEMBLY		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

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

Inventor Information:

Inventor 1					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Walter	Ernest	POWER	II	
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Carver	State/Province	MN	Country of Residence	US
Mailing Address of Inventor:					
Address 1		2409 Pulaski Hwy			
Address 2					
City	Columbia	State/Province	TN		
Postal Code	38401	Country	US		
Inventor 2					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Gregory	Alan	GODFREY		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Richmond Hill	State/Province	GA	Country of Residence	US
Mailing Address of Inventor:					
Address 1		2409 Pulaski Hwy			
Address 2					
City	Columbia	State/Province	TN		
Postal Code	38401	Country	US		
Inventor 3					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Carl	Eugene	Kossuth		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					

Ex. 1150

Application Data Sheet 37 CFR 1.76		Attorney Docket Number		305774-401011	
		Application Number			
Title of Invention		BRIDGE ROPE ASSEMBLY			
City	Rolla	State/Province	MO	Country of Residence	US
Mailing Address of Inventor:					
Address 1		2409 Pulaski Hwy			
Address 2					
City	Columbia	State/Province	TN		
Postal Code	34801	Country	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.					Add

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence information of this application.			
Customer Number	24728		
Email Address	patentdocketing@bradley.com	Add Email	Remove Email

Application Information:

Title of the Invention	BRIDGE ROPE ASSEMBLY		
Attorney Docket Number	305774-401011	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	9	Suggested Figure for Publication (if any)	

Filing By Reference:

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

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

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

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Ex. 1150

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	305774-401011
		Application Number	
Title of Invention	BRIDGE ROPE ASSEMBLY		

Representative Information:

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

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	24728		

Domestic Benefit/National Stage Information:

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

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

Prior Application Status		Patented		Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
	reissued of	17231717	2021-04-15	11504556	2022-11-22
Prior Application Status		Abandoned		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
17231717	Continuation of	17022844	2020-09-16		
Prior Application Status		Abandoned		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
17022844	Continuation of	16736345	2020-01-07		
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.					

Foreign Priority Information:

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	305774-401011
		Application Number	
Title of Invention	BRIDGE ROPE ASSEMBLY		

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

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ^j (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

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

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

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	305774-401011
		Application Number	
Title of Invention	BRIDGE ROPE ASSEMBLY		

Authorization or Opt-Out of Authorization to Permit Access:

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

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

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

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

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

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

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

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

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

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

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	305774-401011
		Application Number	
Title of Invention	BRIDGE ROPE ASSEMBLY		

Applicant Information:

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

Applicant 1

If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.

[Clear](#)

☒ Assignee
 ☐ Legal Representative under 35 U.S.C. 117
 ☐ Joint Inventor

☐ Person to whom the inventor is obligated to assign.
 ☐ Person who shows sufficient proprietary interest

If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:

Name of the Deceased or Legally Incapacitated Inventor:

If the Applicant is an Organization check here. ☒

Organization Name Tethrd LLC

Mailing Address Information For Applicant:

Address 1 2409 Pulaski Hwy

Address 2

City Columbia State/Province TN

Country US Postal Code 38401

Phone Number Fax Number

Email Address

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

Assignee Information including Non-Applicant Assignee Information:

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	305774-401011
		Application Number	
Title of Invention	BRIDGE ROPE ASSEMBLY		

Assignee 1

Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.

If the Assignee or Non-Applicant Assignee is an Organization check here. ☐

Prefix	Given Name	Middle Name	Family Name	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

Address 1			
Address 2			
City		State/Province	
Country		Postal Code	
Phone Number		Fax Number	
Email Address			

Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button.

Signature:

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

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

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

Signature	/Adam J. Thompson/		Date (YYYY-MM-DD)	2025-09-17
First Name	Adam J.	Last Name	Thompson	Registration Number
				72,831

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

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	305774-401011
		Application Number	
Title of Invention	BRIDGE ROPE ASSEMBLY		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

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

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



UNITED STATES
PATENT AND TRADEMARK OFFICE

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

APPLICATION #
19/330,989

RECEIPT DATE / TIME
09/17/2025 10:53:41 AM Z ET

ATTORNEY DOCKET #
305774-401011

Title of Invention

BRIDGE ROPE ASSEMBLY

Application Information

APPLICATION TYPE Utility - Reissue

PATENT # 11504556

CONFIRMATION # 1069

FILED BY Sandy Barthelus Gellineau

PATENT CENTER # 72328047

FILING DATE -

CUSTOMER # 24728

FIRST NAMED INVENTOR Walter Ernest Power, II

CORRESPONDENCE ADDRESS -

AUTHORIZED BY ADAM THOMPSON

Documents

TOTAL DOCUMENTS: 13

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
305774-401011-2025-09-17-Reissue Application DataSheet finalV.pdf	9	Application Data Sheet	179 KB
305774-GENERAL POA executed.pdf	1	Power of Attorney	226 KB
305774-401011-2025-09-17-EXECUTED_DECLARATION with supplemental sheet executed.pdf	4	Reissue Oath or Declaration	640 KB
US PATENT NO 11504556 final.pdf	14	Miscellaneous Incoming Letter	8987 KB
305774-401011- REISSUE	2	Fee Worksheet (SB06)	387 KB

Ex. 1150

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PATENT APPLICATION FEE
TRANSMITTAL.pdf

305774-401011-2025-09-17- 556 Patent Preliminary Amendment final.pdf	3	Preliminary Amendment	229 KB
305774-401011 556 Patent Unintentional Delay Petition.pdf	3	Miscellaneous Incoming Letter	238 KB
305774-401011 - 11504556 - 2025-09-17- Statement Under 37 CFR 373c.pdf	3	Assignee showing of ownership per 37 CFR 3.73	169 KB
305774-401011- 2025-09-17- Reissue Transmittal - aia0050 FINAL.pdf	2	Transmittal Reissue Application	513 KB
305774-401011-2025-09-17- PETITION TO ACCEPT UNINTENTIONAL DELAYED DOMESTIC PRIORITY CLAIM final.pdf	6	Miscellaneous Incoming Letter	392 KB
305774-401011_401012- Assignment fully executed.pdf	8	Assignee showing of ownership per 37 CFR 3.73	182 KB
305774-401011-2025-09-17- REISSUE APPLN CONSENT OF ASSIGNEE STATEMENT OF NON-ASSIGNMENT FINAL.pdf	2	Consent of Assignee accompanying the declaration	329 KB
305774-401011-2025-09-17- MARKED UP ADSFINALv.pdf	9	Miscellaneous Incoming Letter	1669 KB

Digest

DOCUMENT

305774-401011-2025-09-17-
Reissue Application DataSheet
finalIV.pdf

305774-GENERAL POA
executed.pdf

MESSAGE DIGEST(SHA-512)

C06A580FC33372D208D6B66B98A20F760B25EDF9C2494E6B6
03BA3B0DD67F85F1A17AAC753BE7ED6D32DC5B4DCEAFEE8
2A7FDE65D84CE8019CCFC7A43F1445E1

3C4A36E681EA87F11AD8B5890223E2E7C9271CA7ADBF10EF
8B1595DC328F73CA9934AE6DD77DCF658324590146E343CB1
161C63C0AB8222C2739CC41F9D540C5

305774-401011-2025-09-17-EXECUTED_DECLARATION with supplemental sheet executed.pdf	DC8251EB9F7736086CBD71D99380C866430A999A78C93A33648A94445F6DB38A71009DB4CF7E0F4C36ACC01B0FA76D5CF5A91A00CE2BAE6E69F99849145FEE06
US PATENT NO 11504556 final.pdf	E9C840706284828400E53D1D0995840808F84C5BEBE2E5E6E8E5CB25412EE6D8503390C629B77DC1A85C4C2F84EE3ED1242B18A4C76E2ED2F3DE41B05833A1BE
305774-401011- REISSUE PATENT APPLICATION FEE TRANSMITTAL.pdf	8397111EA406D315D685D898395DDEA98FCC604AFE2A12A872136DECADE539B659F066F8D81488149DB2FCC4A7513D24CB6EF3DB4AC0FF704EC7E9E0C75F1119
305774-401011-2025-09-17-556 Patent Preliminary Amendment final.pdf	EAD51B2BFE127CF8A0DDCF8F012777B51523BA3F57A6C5887D68D965ACE6886299A8FA8F36BC3E8F6FF7758BA8FC5220E5503839D8C70C142B001FF5B718FBB4
305774-401011 556 Patent Unintentional Delay Petition.pdf	09C19408625EC061090350BF517955D38380BF578D6926FAB1B4EFB47CCDED088ED9A1ED6392F681FD80C894845A70DDC8AFB42B1CC11869DF6E5D7D3A50B764
305774-401011 - 11504556 - 2025-09-17- Statement Under 37 CFR 373c.pdf	B85161A158916F7509C9F1DAFEFC7D4E75607D1414FFB859477997F2EE2165531D58C13A95A6C2554420F54E77B865E6468A84F85025E2CC9C1E781A7F508131
305774-401011- 2025-09-17- Reissue Transmittal - aia0050 FINAL.pdf	C3B4B3E2D6A1E2368C373E963ECE642F82C318DE8263F26302010C1BD45D6EB7DF6F3648BDA07299ED97675A2221D501DF7CD71DC13B99EAF337BF872D743ACF
305774-401011-2025-09-17-PETITION TO ACCEPT UNINTENTIONAL DELAYED DOMESTIC PRIORITY CLAIM final.pdf	4064C2812D4918E4F10DF36E3D5C7D9A441B20509BA27E4DA01FAB83995FC0ABAD90222F567D1DA25807C5F773D102CF5FB56F23C0AF51DF664FBF722CEE67C9
305774-401011_401012- Assignment fully executed.pdf	12EAE3D97194454507A1CA75074EA644E1A76F0887AD242BCD93CF71B9E71C8BFAC10A7647BE60B6AB6DD1342ACA9FFA209F715EE8958C0BF50268E2E35A9C61
305774-401011-2025-09-17-REISSUE APPLN CONSENT OF ASSIGNEE STATEMENT OF NON-ASSIGNMENT FINAL.pdf	00B1BA20C44BFB006318F1982DCFFEC4E365BD8EBEC81F77C6FB3C65E6B87924EFBA2CBD28CBB3CDEE1CD9374246F212BF1FE2AB0196A0C3968C5DA37C986512
305774-401011-2025-09-17-MARKED UP ADSFINALv.pdf	7737684B209A35A01D9B5F62BE305AB0952169E80C58F2F1F69E4230A9A82E3848ADE195D10253EA0B20E23AEAEF50AF9F6078D71C40BA9D565F95A52CF2D3C4

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.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	TETH115
		Application Number	17/231,717
Title of Invention	Bridge Rope Assembly		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

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

Inventor Information:

Inventor 1					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Walter	Ernest	Power	II	
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Carver	State/Province	MN	Country of Residence	US
Mailing Address of Inventor:					
Address 1	904 Ridgcrest Drive				
Address 2					
City	Carver	State/Province	MN		
Postal Code	55315	Country	US		
Inventor 2					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Gregory	Alden	Godfrey		
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					
City	Richmond Hill	State/Province	GA	Country of Residence	US
Mailing Address of Inventor:					
Address 1	50 Sunbury Drive				
Address 2					
City	Richmond Hill	State/Province	GA		
Postal Code	31324	Country	US		
Inventor 3					Remove
Legal Name					
Prefix	Given Name	Middle Name	Family Name	Suffix	
	Carl	Eugene	Kossuth	III	
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service					

Ex. 1150

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	TETH115		
		Application Number	17/231,717		
Title of Invention	Bridge Rope Assembly				
City	Rolla	State/Province	MO	Country of Residence	US
Mailing Address of Inventor:					
Address 1	10470 Vineyard Drive				
Address 2					
City	Rolla	State/Province	MO		
Postal Code	65401	Country	US		
All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.				Add	

Correspondence Information:

Enter either Customer Number or complete the Correspondence Information section below. For further information see 37 CFR 1.33(a).			
☐ An Address is being provided for the correspondence information of this application.			
Customer Number	14088		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	Bridge Rope Assembly		
Attorney Docket Number	TETH115	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	<u>9</u>	Suggested Figure for Publication (if any)	

Filing By Reference:

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

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

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

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)
☐ Request Not to Publish. I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application has not and will not be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Ex. 1150

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	TETH115
		Application Number	<u>17/231,717</u>
Title of Invention	BRIDGE ROPE ASSEMBLY		

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.			
Please Select One: ☒ Customer Number ☐ US Patent Practitioner ☐ Limited Recognition (37 CFR 11.9)			
Customer Number			

Domestic Benefit/National Stage Information:

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

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

Prior Application Status	Pending	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
<u>17231717</u>	Continuation of	17022844	2020-09-16
Prior Application Status	Abandoned	Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
<u>17022844</u>	Continuation of	16736345	2020-01-07
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.			

Foreign Priority Information:

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	TETH115
		Application Number	<u>17/231,717</u>
Title of Invention	Bridge Rope Assembly		

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ^j (if applicable)

Additional Foreign Priority Data may be generated within this form by selecting the **Add** button.

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

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

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	TETH115
		Application Number	17/231,717
Title of Invention	Bridge Rope Assembly		

Authorization or Opt-Out of Authorization to Permit Access:

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

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

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

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

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

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

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

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

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

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

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	TETH115
		Application Number	17/231,717
Title of Invention	Bridge Rope Assembly		

Applicant Information:

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

Applicant	1	Remove
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section. Clear		
☒ Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:		
Name of the Deceased or Legally Incapacitated Inventor:		
If the Applicant is an Organization check here. ☒		
Organization Name	Tethrd LLC	
Mailing Address Information For Applicant:		
Address 1	904 Ridgecrest Drive	
Address 2		
City	Carver	State/Province MN
Country	US	Postal Code 55315
Phone Number		Fax Number
Email Address		
Additional Applicant Data may be generated within this form by selecting the Add button. Add		

Assignee Information including Non-Applicant Assignee Information:

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

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	TETH115
		Application Number	17/231,717
Title of Invention	Bridge Rope Assembly		

Assignee	1
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.	
Remove	
If the Assignee or Non-Applicant Assignee is an Organization check here. ☒	
Organization Name	Tethrd, LLC
Mailing Address Information For Assignee including Non-Applicant Assignee:	
Address 1	304 Ridgecrest Drive
Address 2	
City	Carver
State/Province	MN
Country	US
Postal Code	55315
Phone Number	
Fax Number	
Email Address	
Additional Assignee or Non-Applicant Assignee Data may be generated within this form by selecting the Add button. Add	

Signature:[Remove](#)

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

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

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

Signature	~~/seankaufhold/~~ /Adam J. Thompson	Date (YYYY-MM-DD)	~~2021-04-15~~
First Name	~~Sean A.~~ Adam J.	Last Name	~~Kaufhold~~ Thompson
Registration Number	~~46828~~		72,831
Additional Signature may be generated within this form by selecting the Add button. Add			

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	TETH115
		Application Number	<u>17/231,717</u>
Title of Invention	Bridge Rope Assembly		

This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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

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

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 216(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Walter Ernest Power II

Patent No.: 11,504,556

Issue Date: November 22, 2022 Attorney Docket: 305774-401011

Title: Bridge Rope Assembly

PETITION TO ACCEPT UNINTENTIONALLY DELAYED CLAIM OF PRIORITY

Mail Stop: Petition
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, VA 22313-1450

September 17, 2025

CUSTOMER NO. 24728

Dear Honorable Commissioner:

This is a Petition to Accept an Unintentionally Delayed Claim of Priority accompanying Form PTO/SB/445 (01-25) with a request for reissue of U.S. Patent No. 11,504,556 (“556 Patent”). Patent Owner submits this Petition to provide an additional explanation of the circumstances surrounding the delay that establishes the entire delay was unintentional. As an initial matter, Patent Owner notes that MPEP 1417(II) provides that a Petition to Accept an Unintentionally Delayed Claim of Priority may be filed along with a reissue application.

On April 15, 2021, Patent Owner filed the application for the 556 Patent (e.g., App. No. 17/231,717, “717 Application”), and Patent Owner intended for the 717 Application to properly claim priority to earlier-filed App. Nos. 16/736,345 and 17/022,844 (respectively, “345 Application” and “844 Application”) such that the 717 Application was entitled to a January 7, 2020 priority date (e.g., the filing date of the 345 Application) as evidenced by the priority information included in the cross-reference section in the Specification. Patent Owner believed that its counsel, Sean Kaufhold and Brendan Dix of Kaufhold Dix Patent Law (“Kaufhold Dix”), made a proper priority claim to the 345 Application and the 844 Application by claiming priority to both applications in the Application Data Sheet for the 717 Application. While Kaufhold Dix properly claimed priority to the 844 Application, Kaufhold Dix unintentionally failed to properly claim priority to the 345 Application by omitting the intervening 844 Application as a continuation application claiming the benefit of, and priority to the 345 Application on the

Application Data Sheet for the 717 Application. Kaufhold Dix were unaware that the claim of priority to the 345 Application unintentionally omitted a claim to priority for the intervening 844 Application. Patent Owner intended to make a proper priority claim to the 844 Application and 345 Application and was not aware of the improper priority claim at the time of filing the 717 Application. Kaufhold Dix did not discover the improper priority claim and did not correct the priority claim prior to the issuance of the 556 Patent.

On July 18, 2022, Patent Owner filed App. No. 17/867,553 (“553 Application”) as a continuation of the 717 Application. Patent Owner intended for the 553 Application to properly claim priority to the 345 Application, the 844 Application, and the 717 Application, such that the 553 Application was entitled to a January 7, 2020 priority date. Patent Owner believed that Kaufhold Dix made a proper priority claim to the 345 Application, the 844 Application, and the 717 Application and neither Kaufhold Dix nor the Patent Owner were aware of the missing priority claim for the intervening 844 Application. Kaufhold Dix unintentionally failed to properly claim priority to the 345 Application and the 844 Application. Patent Owner was not aware of the improper priority claim at the time of filing the 553 Application. Neither Kaufhold Dix nor Patent Owner were aware of the improper priority claim and did not correct the priority claim prior to the 553 Application issuing as U.S. Patent No. 11,964,175 (“175 Patent”).

Patent Owner filed a complaint against CRÜZR Saddles LLC (“Crüzr”) alleging infringement of the 175 Patent on December 3, 2024. On July 2, 2025, Crüzr served its invalidity contentions on Patent Owner alleging that the 175 Patent included an improper priority claim to the 345 Application and the 844 Application. Patent Owner asked Kaufhold Dix about the alleged improper priority claim, and Kaufhold Dix informed Patent Owner that they did not understand why Crüzr was alleging that the 175 Patent included an improper priority claim. On August 11, 2025, Crüzr filed a petition for Inter Partes Review of the 175 Patent, further alleging that the 175 Patent included an improper priority claim to the 345 Application and the 844 Application. Patent Owner, again, asked Kaufhold Dix about the improper priority claim, and Sean Kaufhold discovered the improper claim to priority in the Application Data Sheets for both the 717 Application and the 553 Application. Patent Owner requested that Kaufhold Dix correct the priority claims for both the 717 Application and the 553 Application. Patent Owner contacted Adam J. Thompson (e.g., current counsel for Patent Owner) to correct the priority

claim. Thus, from April 15, 2021 (e.g., the filing date of the 717 Application) until the filing of the present reissue application, the entire delay to correct the priority for the 717 Application has been unintentional.

CONCLUSION

The foregoing is presented as a full and complete explanation for the delay in correcting priority for the present reissue application. It is believed that the claims are in condition for allowance, and such action is courteously solicited. If any issues remain that can be resolved by telephone, the Examiner is respectfully requested to contact the undersigned at 404-868-2742.

If our assessment of additional fees due is in error, please charge any fees that might be due or credit any overpayment to our Deposit Account No. 60-6905. It is now believed that the application is in condition for allowance and such allowance is respectfully requested.

Respectfully submitted,

BRADLEY ARANT BOULT CUMMINGS LLP

Date: September 17, 2025

/Adam J. Thompson/

By: Adam J. Thompson

Reg. No. 72,831

Attorneys for Patent Owner

Bradley Arant Boulton Cummings LLP

Promenade Tower, Suite 2100

1230 Peachtree Street NE

Atlanta, GA 30309

Phone: 404-868-2100

Fax: 404-868-2010

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REISSUE APPLICATION: CONSENT OF ASSIGNEE; STATEMENT OF NON-ASSIGNMENT		Docket Number (Optional) 305774-401011
This is part of the application for a reissue patent based on the original patent identified below.		
Name of Patentee(s) Tethrd LLC		
Patent Number 11,504,556	Date Patent Issued November 22, 2022	
Title of Invention Bridge Rope Assembly		
1. ☒ Filed herein is a statement under 37 CFR 3.73(c). (Form PTO/AIA/96) 2. ☐ Ownership of the patent is in the inventor(s), and no assignment of the patent is in effect. One of boxes 1 or 2 above must be checked. If multiple assignees, complete this form for each assignee. If box 2 is checked, skip the next entry and go directly to "Name of Assignee." The written consent of all assignees and inventors owning an undivided interest in the original patent is included in this application for reissue.		
The assignee(s) owning an undivided interest in said original patent is/are		

and the assignee(s) consents to the accompanying application for reissue.		
Name of assignee (if assigned)/inventor (if not assigned) Tethrd LLC		
Signature /Adam J. Thompson/	Date September 17, 2025	
Typed or printed name and title of person signing for assignee (if assigned) Adam J. Thompson Attorney of Record, Reg. No. 72,831		

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UNITED STATES
PATENT AND TRADEMARK OFFICE

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

APPLICATION #
19/330,989

RECEIPT DATE / TIME
09/17/2025 10:53:41 AM Z ET

ATTORNEY DOCKET #
305774-401011

Title of Invention

BRIDGE ROPE ASSEMBLY

Application Information

APPLICATION TYPE Utility - Reissue

PATENT # 11504556

CONFIRMATION # 1069

FILED BY Sandy Barthelus Gellineau

PATENT CENTER # 72328047

AUTHORIZED BY ADAM THOMPSON

CUSTOMER # 24728

FILING DATE -

CORRESPONDENCE ADDRESS -

FIRST NAMED INVENTOR Walter Ernest Power, II

Payment Information

PAYMENT METHOD
CARD / 1004

PAYMENT TRANSACTION ID
E20259GA56295400

PAYMENT AUTHORIZED BY
Sandy Barthelus Gellineau

PRE-AUTHORIZED ACCOUNT
606905

PRE-AUTHORIZED CATEGORY
37 CFR 1.16 (National application filing, search, and examination fees); 37 CFR 1.17 (Patent application and reexamination processing fees); 37 CFR 1.19 (Document supply fees); 37 CFR 1.21 (Miscellaneous fees and charges)

FEE CODE	DESCRIPTION	ITEM PRICE(\$)	QUANTITY	ITEM TOTAL(\$)
2014	FILING OF REISSUE PATENT APPLICATION-SMALL ENTITY	140.00	1	140.00
2114	REISSUE SEARCH FEE OR REISSUE (DESIGN CPA) SEARCH FEE	308.00	1	308.00
2314	REISSUE EXAMINATION FEE OR REISSUED (DESIGN CPA) EXAMINATION FEE	1020.00	1	1020.00
2469	PETITION FOR THE DELAYED SUBMISSION OF A PRIORITY OR BENEFIT CLAIM, DELAY GREATER THAN TWO YEARS	1200.00	1	1200.00

TOTAL AMOUNT:	\$2,668.00
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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

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Document Description: Power of Attorney

PTO/AIA/82B (07-13)

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POWER OF ATTORNEY BY APPLICANT

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

Application Number	Filing Date

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

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

24728

OR

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☒ The address associated with the above-mentioned Customer Number

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Address

City

State

Zip

Country

Telephone

Email

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

Tethrd LLC

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

SIGNATURE of Applicant for Patent

The undersigned (whose title is supplied)

Signature

Walter Ernest Power, II

Name

Walter Ernest Power, II

Title

CTO, Tethrd LLC

If of the applicant (e.g., where the applicant is a juristic entity).

Date (Optional)

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

☐ Total of forms are submitted.

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Ex. 1150

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REISSUE LITIGATION

PTO/AIA/50 (10-17)

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REISSUE PATENT APPLICATION TRANSMITTAL			
Address to: Mail Stop Reissue Commissioner for Patents P.O. Box 1450 Alexandria, VA 22313-1450	Attorney Docket No. First Named Inventor Original Patent Number Original Patent Issue Date (Month/Day/Year) Priority Mail Express® Label No.	305774-401011 Walter Ernest Power, II 11,504,556 November 22, 2022 	
APPLICATION FOR REISSUE OF: (Check applicable box) ☒ Utility Patent ☐ Design Patent ☐ Plant Patent			
APPLICATION ELEMENTS (37 CFR 1.173) 1. ☒ Fee Transmittal Form (PTO/SB/56) 2. ☒ Applicant asserts small entity status. See 37 CFR 1.27 3. ☐ Applicant certifies micro entity status. See 37 CFR 1.29. Applicant must attach form PTO/SB/15A or B or equivalent. 4. ☒ Specification and Claims in double column copy of patent format (amended, if appropriate) 5. ☒ Drawing(s) (proposed amendments, if appropriate) 6. ☒ Reissue Oath/Declaration or Substitute Statement (37 CFR 1.175) (PTO/AIA/05, 06, or 07) 7. ☒ Application Data Sheet NOTE: Benefit claims under 37 CFR 1.78 and foreign priority claims under 37 CFR 1.55 MUST be set forth in an Application Data Sheet (ADS). 8. ☒ Original U.S. Patent currently assigned? ☒ Yes ☐ No (If Yes, check applicable box(es)) ☒ Written Consent of all Assignees (PTO/AIA/53) ☒ 37 CFR 3.73(c) Statement (PTO/AIA/96) 9. ☐ CD-ROM or CD-R in duplicate, Computer Program (Appendix) or large table ☐ Landscape Table on CD 10. Nucleotide and/or Amino Acid Sequence Submission (If applicable, items a. – c. are required) a. ☐ Computer Readable Form (CRF) b. ☐ Specification Sequence Listing on: i. ☐ CD-ROM (2 copies) or CD-R (2 copies); or ii. ☐ Paper c. ☐ Statements verifying identity of above copies		ACCOMPANYING APPLICATION PARTS 11. ☐ Statement of status and support for all changes to the claims. See 37 CFR 1.173(c). 12. ☒ Power of Attorney 13. ☐ Information Disclosure Statement (IDS) PTOSB/08 or PTO-1449 ☐ Copies of citations attached 14. ☐ English translation of Reissue Oath/Declaration (if applicable) 15. ☐ Return Receipt Postcard (MPEP § 503) (Should be specifically itemized) 16. ☒ Preliminary Amendment (37 CFR 1.173; MPEP § 1453) 17. ☒ Other: <u>Petition to Accept an Unintentionally Delayed Claim</u> <u>of Priority and additional explanation of the circumstances</u> <u>surrounding the delay that establishes the entire delay</u> <u>was unintentional. Patent Owner files an assignment from</u> <u>the inventors to Patent Owner concurrently with this reissue</u> <u>application.</u> ☐ This is a continuation reissue or divisional reissue application (i.e., a second or subsequent reissue application for the same issued patent). (Check box if applicable.)	
18. CORRESPONDENCE ADDRESS ☒ The address associated with Customer Number: <u>24728</u> OR ☐ Correspondence address below			
Name			
Address			
City	State	Zip Code	
Country	Telephone		
Email			
Signature	/Adam J. Thompson/		Date
Name (Print/Type)	Adam J. Thompson	Registration No.	72831

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Doc Code: REIS.DECL

Document Description: Reissue Oath or Declaration

PTO/AIA/06 (09-20)

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REISSUE APPLICATION DECLARATION BY THE ASSIGNEE		Docket Number (optional) 305774-401011	
I hereby declare that: The residence and mailing address of the inventor or joint inventors are stated below. Name of the Assignee: Tethrd LLC I am authorized to act on behalf of the assignee (if the assignee is a juristic entity). The entire title to the patent identified below is vested in said assignee, or if there are multiple assignees/owners, all assignees/owners have executed a Reissue Application Declaration to account for the entire title of the patent identified below.			
Inventor Walter Ernest Power, II			
Residence: City Carver		State MN	Country US
Mailing Address 2409 Pulaski Hwy			
City Columbia	State TN	Zip 38401	Country US
☒ Additional Inventors are named on separately numbered sheets attached hereto.			
Patent Number 11,504,556		Patent Issue Date 11-22-2022	
I believe said inventor(s) to be the original inventor or original joint inventors of the subject matter which is described and claimed in said patent, for which a reissue patent is sought on the invention titled: Bridge Rope Assembly			
the specification of which ☒ is attached hereto. ☐ was filed on _____ as reissue application number _____. The above-identified application was made or authorized to be made by me. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. I believe the original patent to be wholly or partly inoperative or invalid, for the reasons described below. (Check all boxes that apply.) ☐ by reason of a defective specification or drawing. ☐ by reason of the patentee claiming more or less than he had the right to claim in the patent. ☒ by reason of other errors.			

[Page 1 of 2]

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REISSUE APPLICATION DECLARATION BY THE ASSIGNEE

Docket Number (Optional) 305774-401011

At least one error upon which reissue is based is described below. If the reissue is a broadening reissue, a claim that the application seeks to broaden must be identified and the box below must be checked:

The error is an improper priority claim to earlier-filed App. No. 16/736,345. Patent owner has submitted a Petition to Accept an Unintentionally Delayed Claim of Priority along with this reissue application.

[Attach additional sheets, if needed.]

☒ The application for the original patent was filed under 37 CFR 1.46 by the assignee of the entire interest.

I hereby appoint:

☒ Practitioners associated with Customer Number:

24728

OR

☐ Practitioner(s) named below:

Name	Registration Number

as my/our attorney(s) or agent(s) to prosecute the application identified above, and to transact all business in the United States Patent and Trademark Office connected therewith.

Correspondence Address: Direct all communications about the application to:

☒ The address associated with Customer Number:

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OR

☐ Firm or Individual Name

Address

City

State

Zip

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Signature

Walter Ernest Power, II

Date (Optional)

Legal name of person signing

Walter Ernest Power, II

Address of Assignee

2409 Pulaski Hwy, Columbia, TN 38401

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SUPPLEMENTAL SHEET FOR DECLARATION**ADDITIONAL INVENTOR(S)**

Supplemental Sheet (for PTO/AIA/08,09)

Page 1 of 1**Legal Name of Additional Joint Inventor, if any:**

(E.g., Given Name (first and middle (if any)) and Family Name or Surname)

Gregory Alan Godfrey

Inventor's
Signature

Date (Optional)

Residence: City Richmond Hill

State GA

Country United States

2409 Pulaski Hwy

Mailing Address

City Columbia

State TN

Zip 34801

Country US

Legal Name of Additional Joint Inventor, if any:

(E.g., Given Name (first and middle (if any)) and Family Name or Surname)

Carl Eugene Kossuth, III

Inventor's
Signature

Date (Optional)

Residence: City Rolla

State MO

Country United States

2409 Pulaski Hwy

Mailing Address

City Columbia

State TN

Zip 34801

Country US

Legal Name of Additional Joint Inventor, if any:

(E.g., Given Name (first and middle (if any)) and Family Name or Surname)

Inventor's
Signature

Date (Optional)

Residence: City

State

Country

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City

State

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Routine uses of the information in this record may include disclosure to: 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law; 2) a federal, state, local, or international agency, in response to its request; 3) a contractor of the USPTO having need for the information in order to perform a contract; 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record; 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record; 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations; 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals; 8) another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)); 9) the Office of Personnel Management (OPM) for personnel research purposes; and 10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

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

Doc Code: PET.OP

Document Description: Petition for Review by the Office of Petitions

PTO/SB/445 (01-25)

Approved for use through 11/30/2027. OMB 0651-0032

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

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

**PETITION TO ACCEPT AN UNINTENTIONALLY DELAYED CLAIM UNDER 35 U.S.C. 119(e)
(37 CFR 1.78(c)) AND/OR TO ACCEPT AN UNINTENTIONALLY DELAYED CLAIM UNDER 35 U.S.C.
120, 121, 365(c), or 386(c) (37 CFR 1.78(e)) FOR THE BENEFIT OF A PRIOR-FILED APPLICATION**

Page 1 of 5

First named inventor: Walter Ernest Power II

Application No.: 17/231,717 Art Unit: 3634

Filed: 04/15/2021 Examiner: Candace L. Bradford

Title: Bridge Rope Assembly

Attention: Office of Petitions
Mail Stop Petition
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, VA 22313-1450
 FAX 571-273-8300

When filing via USPTO patent electronic filing system, use Doc Code PET.PCT (Petition for review by the PCT Legal Office) for applications filed under 35 U.S.C. 371 and/or if the reference to the prior-filed application(s) includes an international application or an international design application. In all other instances, use Doc Code PET.OP (Petition for review by the Office of Petitions).

NOTE: If information or assistance is needed in completing this form, please contact the Office of Petitions at 571-272-3282.

APPLICANT HEREBY PETITIONS FOR ACCEPTANCE OF AN UNINTENTIONALLY DELAYED BENEFIT CLAIM TO A PRIOR-FILED APPLICATION UNDER 37 CFR 1.78(c) AND/OR 37 CFR 1.78(e).

NOTE: For a petition under 37 CFR 1.78(e), the above-identified application must have been filed during the pendency of the prior application or during the pendency of an intermediate application similarly entitled to the benefit of the filing date of the prior application. For a petition under 37 CFR 1.78(c), the above-identified application must have been filed within 12 months of the filing date of the provisional application or be entitled to claim the benefit under 35 U.S.C. 120, 121, or 365(c) of an application that was filed within 12 months of the filing date of the provisional application, except as provided in 37 CFR 1.78(b).

NOTE: A grantable petition requires the following items:

- (1) the reference required by 35 U.S.C. 119(e) and 37 CFR 1.78(a)(3) to the prior-filed provisional application and/or the reference required by 35 U.S.C. 120 and 37 CFR 1.78(d)(2) to the prior-filed nonprovisional application, international application designating the United States, or international design application designating the United States, unless previously submitted;
- (2) the petition fee set forth in 37 CFR 1.17(m) and the applicable fee (if any) set forth in 37 CFR 1.17(w); and
- (3) a statement that the entire delay between the date the benefit claim was due under 37 CFR 1.78(d)(3) and/or 37 CFR 1.78(a)(4) and the date the benefit claim was filed was unintentional. The Director may require additional information where there is a question as to whether the delay was unintentional.

1. The required reference to the prior-filed application:

- ☒ The above-identified application was filed on or after September 16, 2012, and the reference is either set forth in the attached corrected application data sheet (ADS) or in a corrected ADS that was previously submitted.
- ☐ The above-identified application was filed prior to September 16, 2012, and the reference is either (1) set forth in a supplemental ADS, (2) set forth in the attached amendment to the first sentence(s) of the specification, or (3) set forth in a supplemental ADS or amendment to the first sentence(s) of the specification that was previously submitted. See 37 CFR 1.78(h).

Reminder: Any ADS which corrects or updates the information of record must comply with 37 CFR 1.76(c)(2) (or for applications filed prior to September 16, 2012, pre-AIA 37 CFR 1.76(c)).

A Federal agency may not conduct or sponsor, and a person is not required to respond to, nor shall a person be subject to a penalty for failure to comply with an information collection subject to the requirements of the Paperwork Reduction Act of 1995, unless the information collection has a currently valid OMB Control Number. The OMB Control Number for this information collection is 0651-0032. Public burden for this form is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. 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.

**PETITION TO ACCEPT AN UNINTENTIONALLY DELAYED CLAIM UNDER 35 U.S.C. 119(e)
(37 CFR 1.78(c)) AND/OR TO ACCEPT AN UNINTENTIONALLY DELAYED CLAIM UNDER 35 U.S.C.
120, 121, 365(c), or 386(c) (37 CFR 1.78(e)) FOR THE BENEFIT OF A PRIOR-FILED APPLICATION**

Page 2 of 5

2. Petition fee:

(A) For delay greater than two years:

37 CFR 1.17(m)(1)

- ☐ Other than a small or micro entity (undiscounted) fee \$ _____ (Fee Code 1469).
- ☒ Small entity fee \$ ^{1200.00} _____ (Fee Code 2469). Applicant asserts small entity status. See 37 CFR 1.27.
- ☐ Micro entity fee \$ _____ (Fee Code 3469). Applicant has established or is establishing micro entity status. See 37 CFR 1.29. Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

(B) For delay less than or equal to two years:

37 CFR 1.17(m)(2)

- ☐ Other than a small or micro entity (undiscounted) fee \$ _____ (Fee Code 1454).
- ☐ Small entity fee \$ _____ (Fee Code 2454). Applicant asserts small entity status. See 37 CFR 1.27.
- ☐ Micro entity fee \$ _____ (Fee Code 3454). Applicant has established or is establishing micro entity status. See 37 CFR 1.29. Form PTO/SB/15A or B or equivalent must either be enclosed or have been submitted previously.

3. Statement: The entire delay between the date the benefit claim was due under 37 CFR 1.78(d)(3) and/or 37 CFR 1.78(a)(4) and the date the benefit claim was filed was unintentional.

Petitioner is reminded that a change in circumstance or a delay resulting from a deliberately chosen course of action does not become an "unintentional" delay because, for example:

- the applicant does not consider any patent to be of sufficient value to justify the financial expense of obtaining the patent; or
- the applicant remains interested in eventually obtaining a patent, but simply seeks to defer patent fees and patent prosecution expenses.

NOTE: Where the petition under 37 CFR 1.78(c) and/or 37 CFR 1.78(e) is filed more than two years after the date the priority or benefit claim was due, the United States Patent and Trademark Office requires an additional explanation of the circumstances surrounding the delay that establishes the entire delay was unintentional. This requirement is in addition to the requirement to provide a statement that the entire delay was unintentional. See *Clarification of the Practice for Requiring Additional Information in Petitions Filed in Patent Applications and Patents Based on Unintentional Delay*, 85 FR 12222 (March 2, 2020). See MPEP 711.03(c)(II)(C)-(F) for additional guidance on the information required to establish that the entire delay was unintentional.

☒ Because this petition under 37 CFR 1.78(c) and/or 37 CFR 1.78(e) is being filed more than two years after the date the priority or benefit claim was due, additional explanation of the circumstances surrounding the delay that establishes the entire delay was unintentional is enclosed herewith. Note: If this box is checked, section 2A must also be completed.

Reminder: Presentation of a benefit claim may prompt a requirement to pay the continuing application fee set forth in 37 CFR 1.17(w), if the actual filing date of the application is more than six years after the earliest benefit date. See 37 CFR 1.78(d)(3)(i) and 37 CFR 1.17(w).

**PETITION TO ACCEPT AN UNINTENTIONALLY DELAYED CLAIM UNDER 35 U.S.C. 119(e)
(37 CFR 1.78(c)) AND/OR TO ACCEPT AN UNINTENTIONALLY DELAYED CLAIM UNDER 35 U.S.C.
120, 121, 365(c), or 386(c) (37 CFR 1.78(e)) FOR THE BENEFIT OF A PRIOR-FILED APPLICATION**

Page 3 of 5

WARNING:

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

/Adam J. Thompson/

Signature*

Adam J. Thompson

Typed or Printed Name

Bradley Arant Boult Cummings LLP Promenade Tower

Address

1230 Peachtree Street NE Suite 2100 Atlanta, Georgia 30309

Address

September 17, 2025

Date

72,831

Registration Number, if applicable

404.868.2100

Telephone Number

* This petition must be signed in accordance with 37 CFR 1.33. Please see 37 CFR 1.4(d) for the signature requirements. Submit multiple forms if more than one signature is required.

Enclosures:

☒ Application Data Sheet (see instructions starting on page 4)

☒ Fee (along with supporting documentation, if required)

☐ Other: _____

CERTIFICATE OF MAILING OR TRANSMISSION [37 CFR 1.8(a)]

I hereby certify that this correspondence is being:

☐ Deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to: Mail Stop Petition, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

☐ Transmitted by the USPTO patent electronic filing system or by facsimile to 571-273-8300, to the USPTO on the date shown.

Date

Signature

Typed or printed name of person signing certificate

Instructions for Petition to Accept an Unintentionally Delayed Claim under 35 U.S.C. 119(e) (37 CFR 1.78(c)) and/or to Accept an Unintentionally Delayed Claim under 35 U.S.C. 120, 121, 365(c), or 386(c) (37 CFR 1.78(e)) for the Benefit of a Prior-Filed Application

(Not to be Submitted to the USPTO)

When filing electronically via the USPTO patent electronic filing system, use Doc Code PET.PCT (Petition for review by the PCT Legal Office) for applications filed under 35 U.S.C. 371 and/or if the reference to the prior-filed application(s) includes an international application or an international design application. In all other instances, use Doc Code PET.OP (Petition for review by the Office of Petitions).

1. The reference required to the prior-filed application:

a. For applications filed on or after September 16, 2012, the reference must be set forth in a corrected application data sheet (ADS). See 37 CFR 1.76.

Note: Any ADS filed after the filing of the application is considered a corrected (or updated) ADS even if an ADS was not previously submitted. A corrected ADS must identify the information that is being changed with underlining for insertions and strike-through or brackets for text removed. In general, the identification of the information being changed should be made relative to the most recent filing receipt. For example, where the most recent filing receipt for the application shows no benefit claim, the entire benefit claim must be shown with underlining in the corrected ADS. In addition, if the ADS identified an incorrect provisional application number and the most recent filing receipt included the incorrect provisional application number, the corrected ADS should identify the incorrect provisional application number being deleted with strike-through or brackets, and should identify the correct provisional application number being added with underlining. For more information regarding a corrected ADS in an application filed on or after September 16, 2012, see MPEP 601.05(a), subsection II.

A corrected ADS may include all of the section headings listed in 37 CFR 1.76(b) with all appropriate data for each heading or only those sections (including the section headings) containing changed or updated information. See 37 CFR 1.76(c)(2). A corrected ADS must identify the application by application number and be properly signed.

Use of the corrected Web-based ADS is recommended for registered users of the USPTO patent electronic filing system because it will pre-populate with information of record; applicants can then type in the desired changes, and the system will create a PDF version with the appropriate strike-through and underlining. For more information, see the Quick Start Guide for "Application Data Sheet to Update and/or Correct Information" available at <https://www.uspto.gov/sites/default/files/documents/Corrected-WebADS-QSG.pdf>

Applicants may also use Form PTO/AIA/14, which may be printed and marked up to comply with 37 CFR 1.76(c).

Instructions for Petition to Accept an Unintentionally Delayed Claim under 35 U.S.C. 119(e) (37 CFR 1.78(c)) and/or to Accept an Unintentionally Delayed Claim under 35 U.S.C. 120, 121, 365(c), or 386(c) (37 CFR 1.78(e)) for the Benefit of a Prior-Filed Application

(Not to be Submitted to the USPTO)

b. For applications filed before September 16, 2012, the reference to the prior-filed application may be made in a supplemental ADS in compliance with pre-AIA 37 CFR 1.76(c) or in an amendment in the first sentence(s) of the specification following the title. See 37 CFR 1.78(h).

Note: For applications filed before September 16, 2012, any ADS submitted after the filing date of the application is a supplemental ADS, regardless of whether an original ADS was submitted with the application papers on filing. Supplemental ADS papers must be labeled Supplemental ADS or Supplemental Application Data Sheet, include each of the seven section headings listed in pre-AIA 37 CFR 1.76(b) with all appropriate data for the section heading, and identify the information that is being changed. See pre-AIA 37 CFR 1.76(c). A supplemental ADS must also identify the application by application number and be properly signed. For more information regarding a supplemental ADS in an application filed before September 16, 2012, see MPEP 601.05(b), subsection II.

2. Petition fee:

The petition fee is set forth in 37 CFR 1.17(m) and must be included with the petition. Petitioner is advised to refer to the current fee schedule at <https://www.uspto.gov/learning-and-resources/fees-and-payment/uspto-fee-schedule>.

Note: Effective January 19, 2025, presentation of a benefit claim under 35 U.S.C. 120, 121, 365(c), or 386(c) may prompt a requirement to pay the continuing application fee set forth in 37 CFR 1.17(w), if the actual filing date of the application is more than six years after the earliest benefit date. See 37 CFR 1.78(d)(3)(i) and 37 CFR 1.17(w).

3. Statement:

37 CFR 1.78(c) and 37 CFR 1.78(e) require a statement that the entire delay between the date the benefit claim was due and the date the benefit claim was filed was unintentional. The required statement(s) is included in this form.

Note: the Director may require additional information where there is a question whether the delay was unintentional.

[Page 5 of 5]

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Walter Ernest Power II

Patent No.: 11,504,556

Issue Date: November 22, 2022 Attorney Docket: 305774-401011

Title: Bridge Rope Assembly

PRELIMINARY AMENDMENT IN APPLICATION FOR REISSUE

Mail Stop: Reissue
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, VA 22313-1450

September 17, 2025

CUSTOMER NO. 24728

Dear Honorable Commissioner:

This is a Preliminary Amendment filed concurrently with a request for reissue for U.S. Patent No. 11,504,556. The following amendment is made relative to the issued patent pursuant to 37 C.F.R. § 1.173. Accordingly, the Patent Owner respectfully requests entry of this Preliminary Amendment.

Amendments to the Specification begins on page **2** of this paper.

Remarks begin on page **3** of this paper.

AMENDMENTS TO THE SPECIFICATION

Please replace column 1, lines 6 to 9 with the following:

This application is a reissue application of U.S. Patent No. 11,504,556, which is a continuation application, which claims the benefit of and priority to U.S. Application and I hereby claim the benefit under 35 U.S.C. Section 120 of U.S. patent application Ser. No. 16/736,345 filed Jan. 7, 2020 and U.S. patent application Ser. No. 17/022,844 filed Sep. 16, 2020, entitled Bridge Rope Assembly, which is a continuation of, claims the benefit of and priority to, U.S. Application No. 16/736,345, filed on January 7, 2020, entitled Bridge Rope Assembly, the contents of which are hereby incorporated by reference in their entireties as if set forth herein.

REMARKS

This Preliminary Amendment is filed concurrently with an application for reissue for U.S. Patent No. 11,504,556. Claim 1 is pending with claim 1 being independent. The claim has not been amended. All amendments to the Specification have been made relative to the issued patent pursuant to 37 C.F.R. § 1.173. No new matter is added.

This reissue has been filed because the patent is wholly or partly inoperative by reason of an improper priority claim. Patent Owner has submitted a Petition to Accept an Unintentionally Delayed Claim of Priority along with this reissue application.

It is believed that the claim is in condition for allowance, and such action is courteously solicited. If any issues remain that can be resolved by telephone, the Examiner is respectfully requested to contact the undersigned at 404-868-2742.

If our assessment of additional fees due is in error, please charge any fees that might be due or credit any overpayment to our Deposit Account No. 60-6905. It is now believed that the application is in condition for allowance and such allowance is respectfully requested.

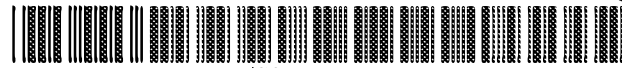
Respectfully submitted,

BRADLEY ARANT BOULT CUMMINGS LLP

Date: September 17, 2025

/Adam J. Thompson/
By: Adam J. Thompson
Reg. No. 72,831
Attorneys for Applicant

Bradley Arant Boulton Cummings LLP
Promenade Tower, Suite 2100
1230 Peachtree Street NE
Atlanta, GA 30309
Phone: 404-868-2100
Fax: 404-868-2010



US011504556B2

(12) **United States Patent**
Power, II et al.

(10) **Patent No.: US 11,504,556 B2**
(45) **Date of Patent: Nov. 22, 2022**

(54) **BRIDGE ROPE ASSEMBLY**

(56) **References Cited**

(71) Applicant: Tethrd LLC, Carver, MN (US)

U.S. PATENT DOCUMENTS

(72) Inventors: **Walter Ernest Power, II**, Carver, MN (US); **Gregory Alan Godfrey**, Richmond Hill, GA (US); **Carl Eugene Kossuth, III**, Rolla, MO (US)

330,087 A * 11/1885 Bins F16G 3/00
57/201
2,303,954 A * 12/1942 Roke E04G 21/3276
248/228.7
2,600,395 A * 6/1952 Domoj D07B 1/185
124/90
3,738,449 A * 6/1973 Arancio A62B 35/0037
182/7
4,036,101 A * 7/1977 Burnett F16G 11/14
87/8
4,099,750 A * 7/1978 McGrew D07B 1/185
114/221 R
4,962,929 A * 10/1990 Melton, Jr. A63B 69/38
224/267
5,050,704 A * 9/1991 Olsson A62B 35/0018
182/135

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: 17/231,717

(22) Filed: Apr. 15, 2021

(65) **Prior Publication Data**

US 2021/0228923 A1 Jul. 29, 2021

(Continued)

FOREIGN PATENT DOCUMENTS

DE 455971 C * 2/1928 A62B 35/0075
FR 1602226 A * 10/1970 D07B 1/162

(Continued)

Primary Examiner — Daniel P Cahn

Assistant Examiner — Candace L Bradford

(57) **ABSTRACT**

A bridge rope assembly includes a main body comprising a rope that has a first end and a second end. The rope has a splice therein to form an eye loop in the main body. The eye loop is configured to engage a first bridge loop of a harness. The main body comprises a first portion including the first end and a second portion including the second end. The first portion extends through the second portion of the main body such that the first end is positioned adjacent to the second end. A distance between the first and second ends is less than 2.0 inches.

Related U.S. Application Data

(63) Continuation of application No. 17/022,844, filed on Sep. 16, 2020, now abandoned, and a continuation of application No. 16/736,345, filed on Jan. 7, 2020, now abandoned.

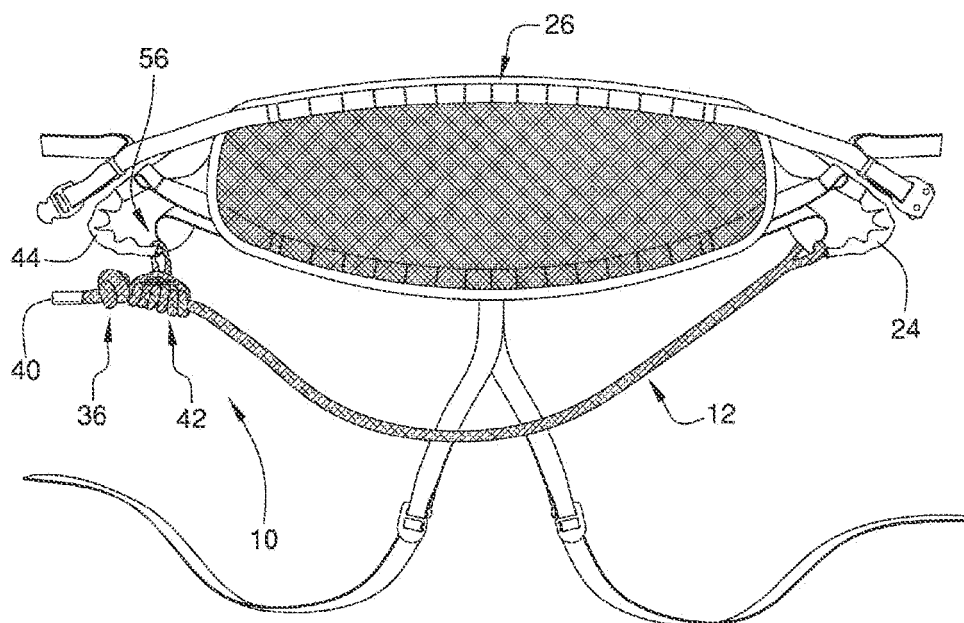
(51) **Int. Cl.**
A62B 35/00 (2006.01)

(52) **U.S. Cl.**
CPC **A62B 35/0075** (2013.01); **A62B 35/0037** (2013.01)

(58) **Field of Classification Search**
CPC A62B 35/0037; A62B 35/0075;
D07B 1/185; D07B 1/148; D07B 1/162;
D04C 1/12

See application file for complete search history.

1 Claim, 9 Drawing Sheets



(56)

References Cited**U.S. PATENT DOCUMENTS**

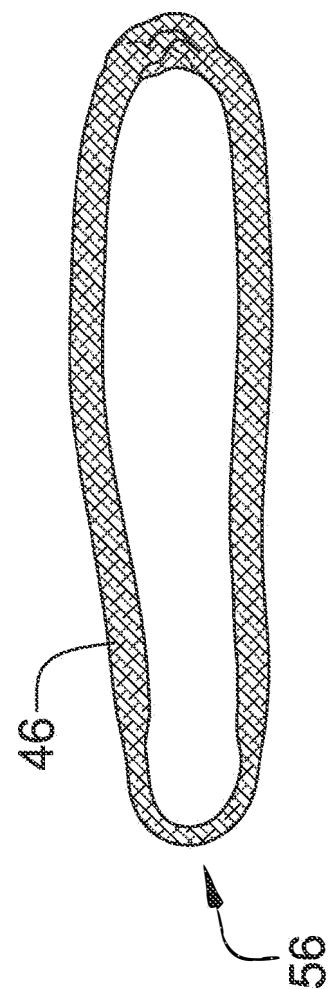
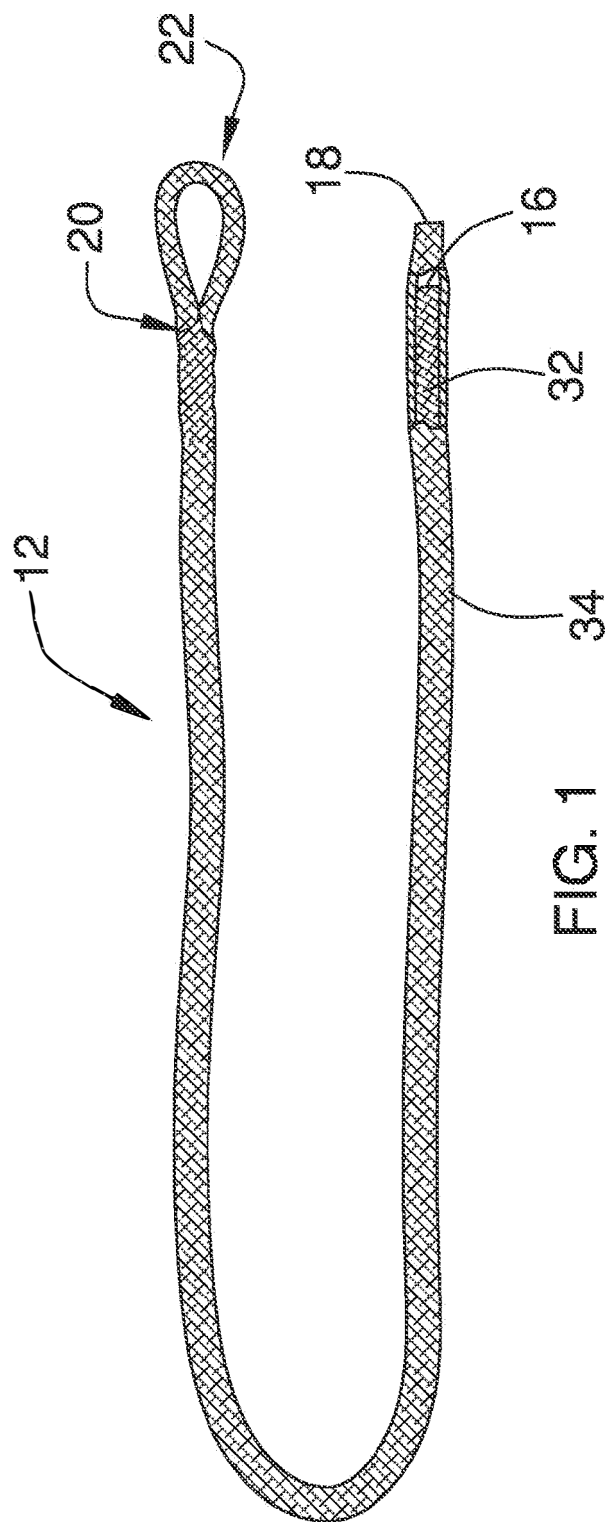
5,062,344 A * 11/1991 Gerker D07B 1/185
87/8
5,699,657 A * 12/1997 Paulson D07B 1/185
57/22
5,970,697 A * 10/1999 Jacobs F16L 3/137
57/22
6,712,181 B2 * 3/2004 Nichols A62B 1/16
182/5
7,182,361 B2 * 2/2007 Lewoczko B66F 1/00
254/131
7,814,938 B2 * 10/2010 Davis, Jr. A62B 1/16
174/115
8,061,479 B2 11/2011 Harris, Jr.
8,292,028 B2 10/2012 Wise
8,356,691 B2 1/2013 Griffith
8,584,799 B1 11/2013 Dennington
9,162,091 B2 * 10/2015 Kuhnert A62B 35/0068
9,320,925 B2 4/2016 Wise

9,808,659 B2 11/2017 Chevalier
10,258,814 B2 4/2019 Casebolt
10,694,892 B1 * 3/2020 Caliri D07B 1/148
2007/0102240 A1 * 5/2007 Wilson A62B 1/16
182/5
2008/0000719 A1 * 1/2008 Jones A62B 35/0075
182/3
2008/0179136 A1 7/2008 Griffith
2009/0255756 A1 10/2009 Green
2010/0213004 A1 * 8/2010 Petty A62B 35/0068
182/5
2015/0297937 A1 * 10/2015 Burkinshaw A63B 23/1218
482/139
2021/0101032 A1 * 4/2021 Power, II A62B 35/0012

FOREIGN PATENT DOCUMENTS

GB 1420783 A * 1/1976 A62B 35/0037
WO WO2018111624 6/2018

* cited by examiner



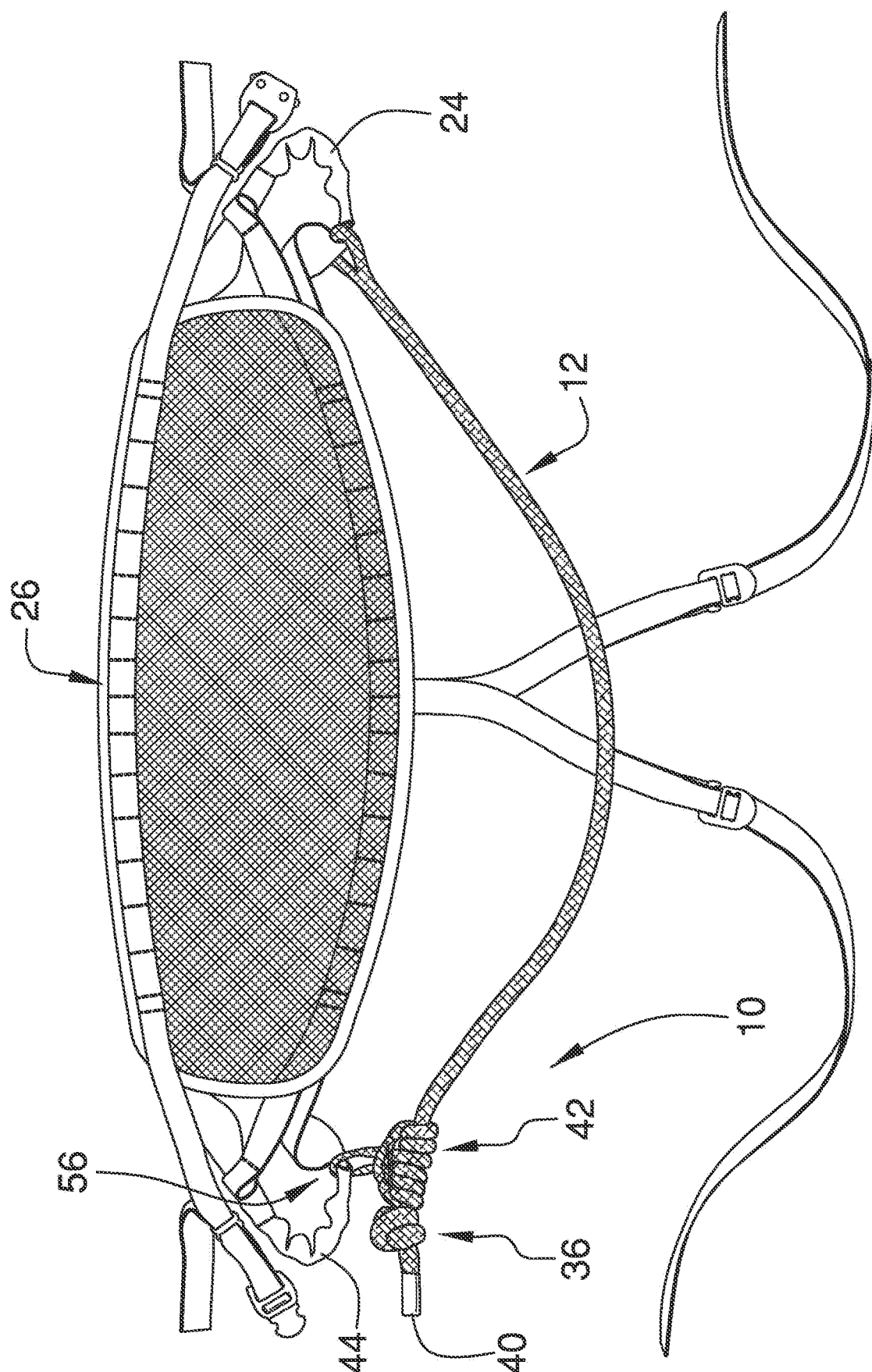


FIG. 3

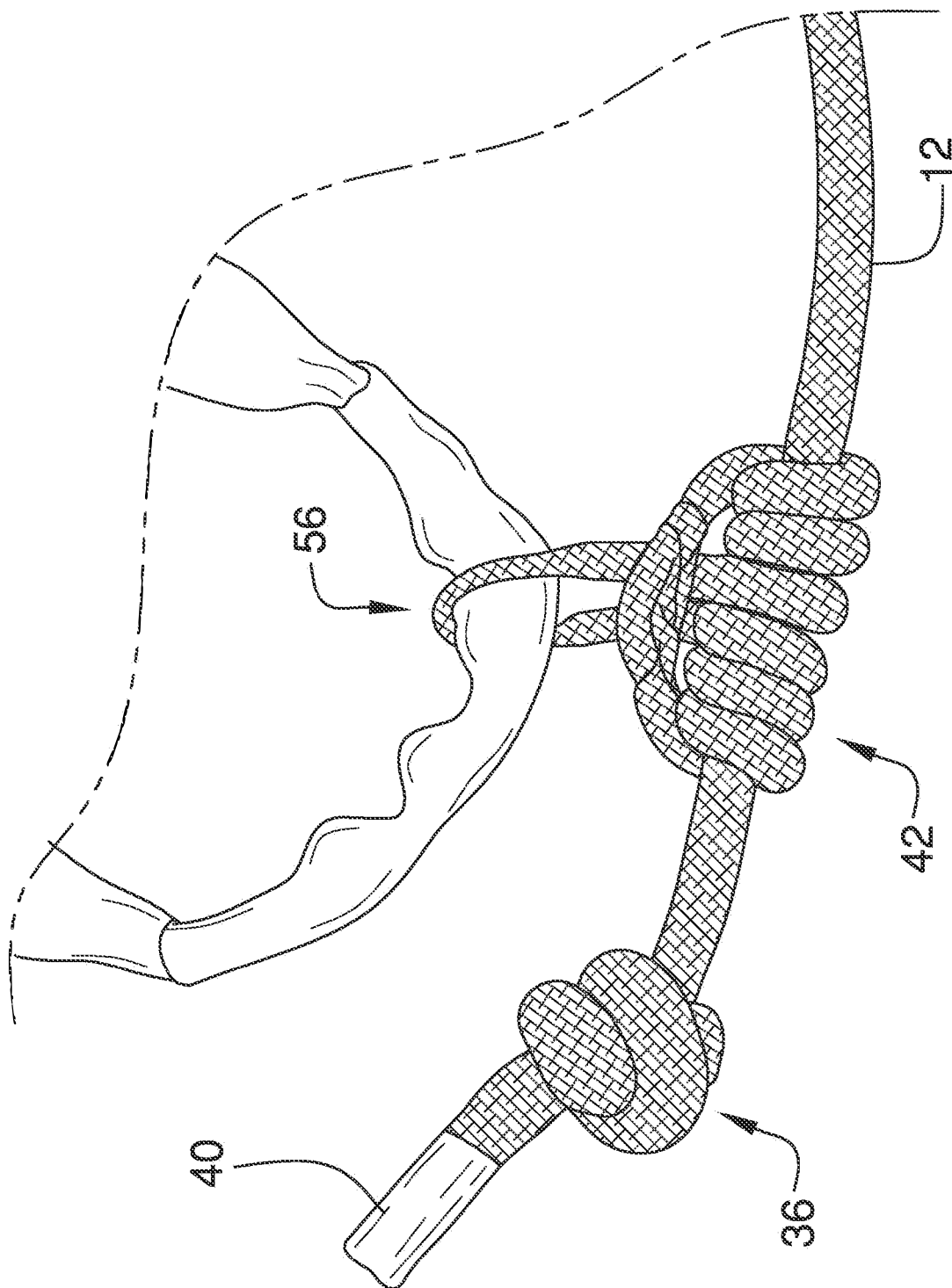


FIG. 4

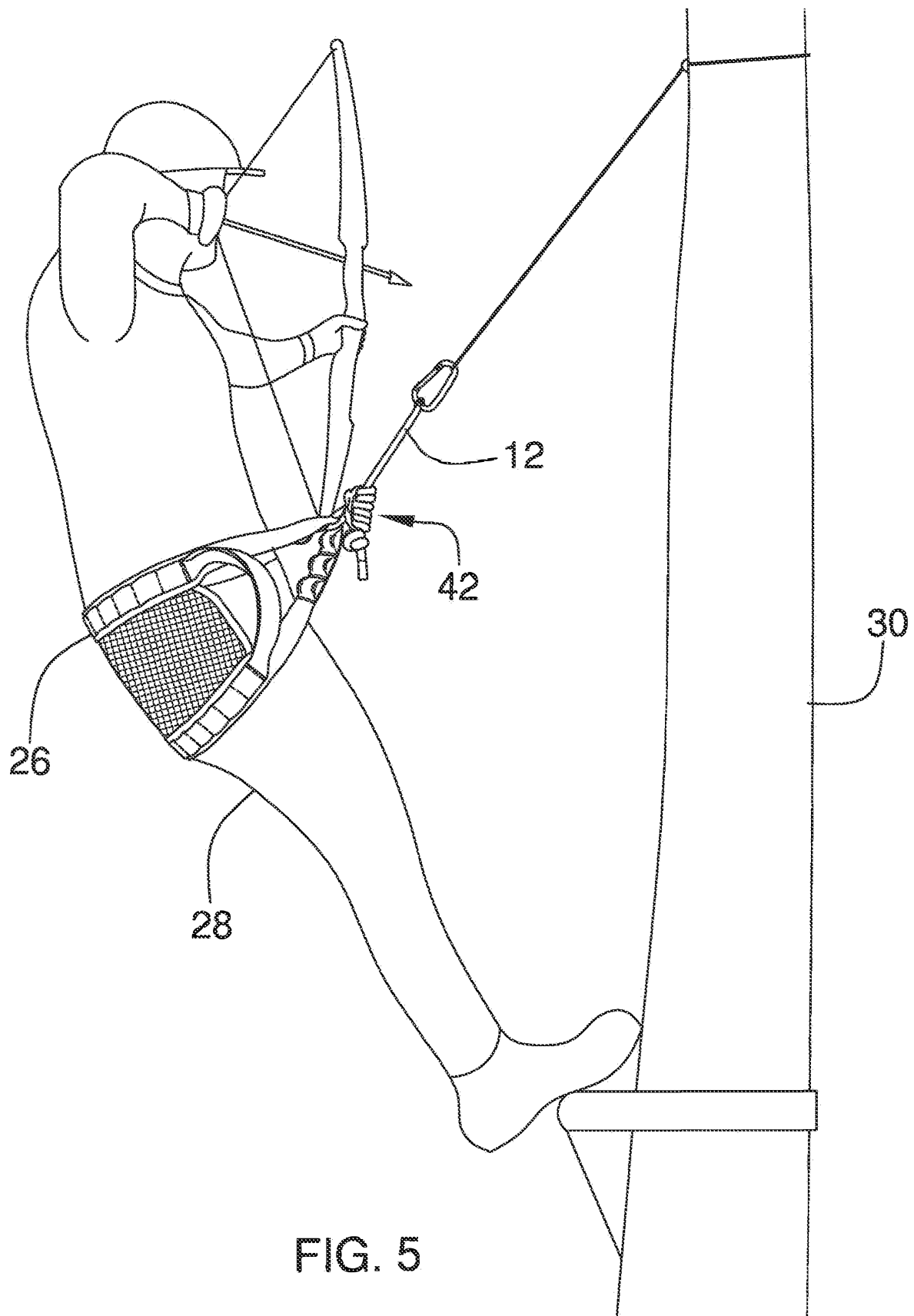


FIG. 5

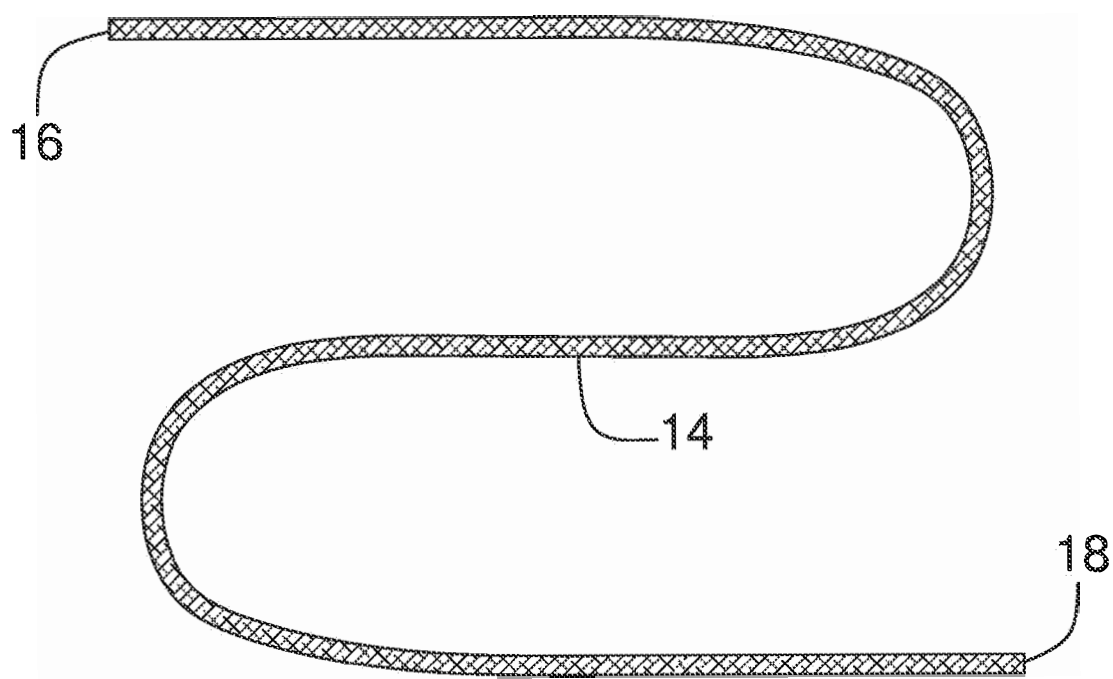


FIG. 6

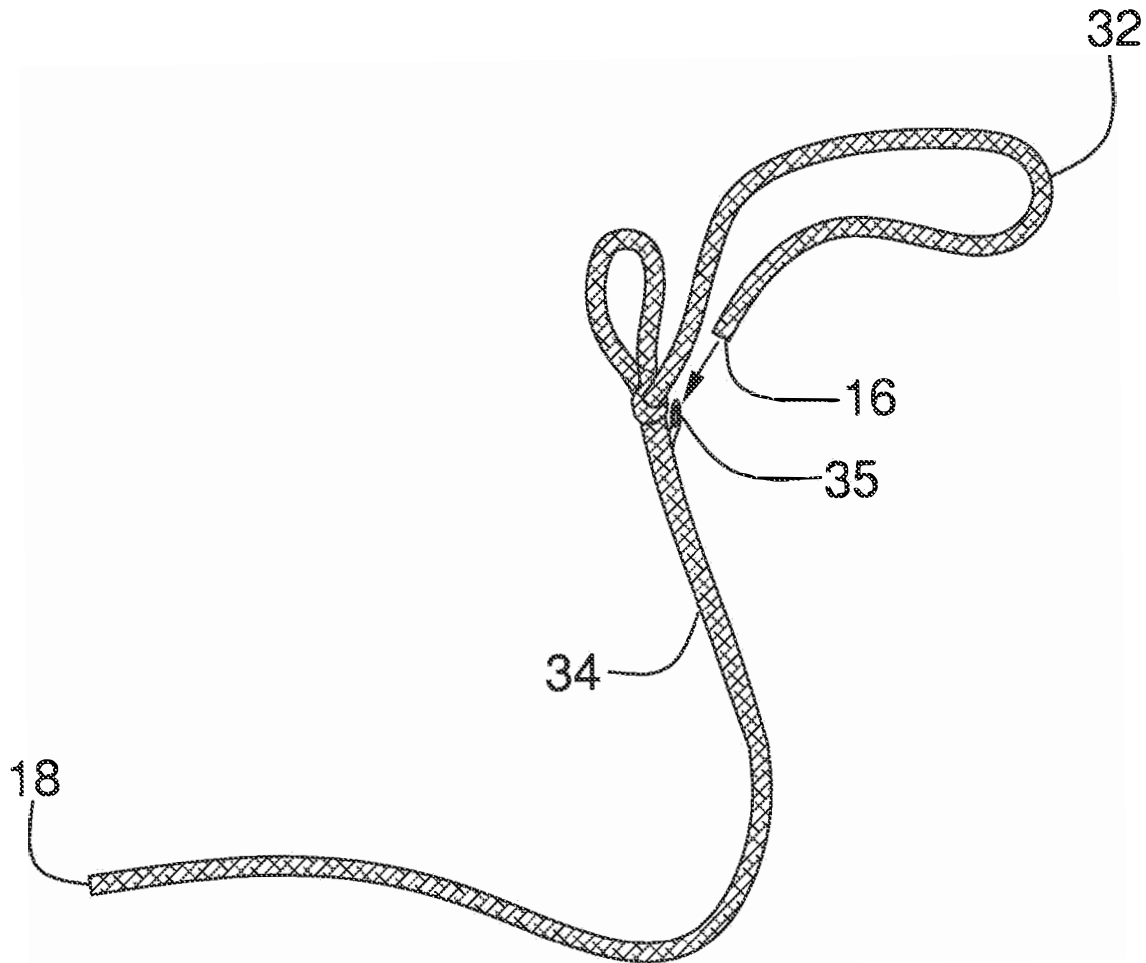


FIG. 7

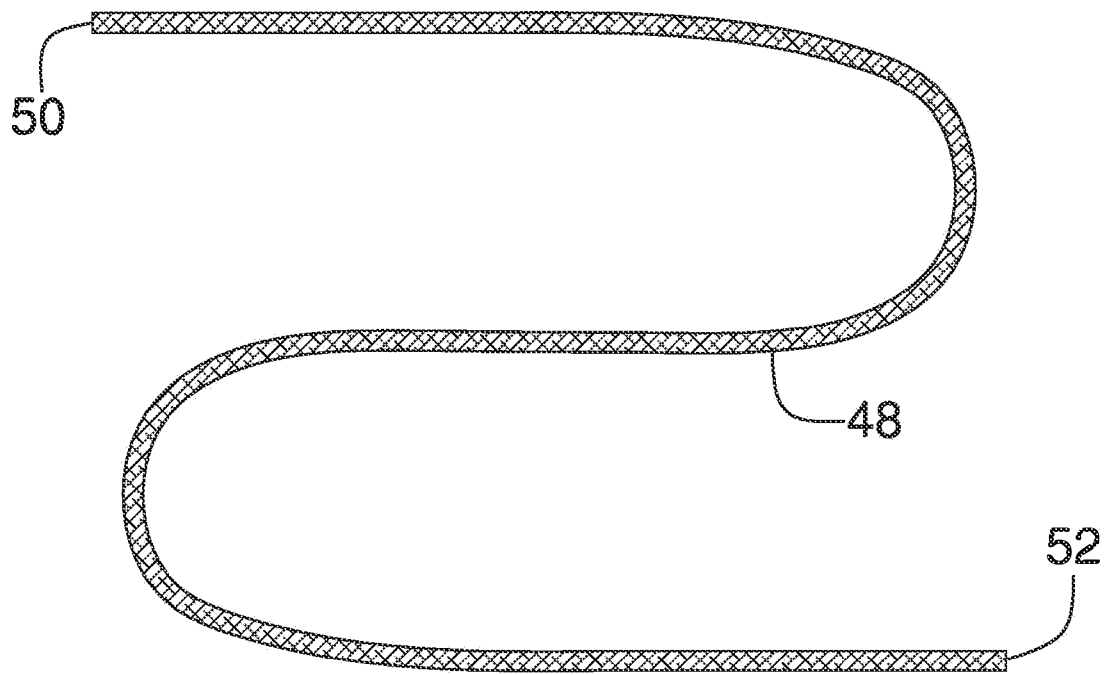


FIG. 8

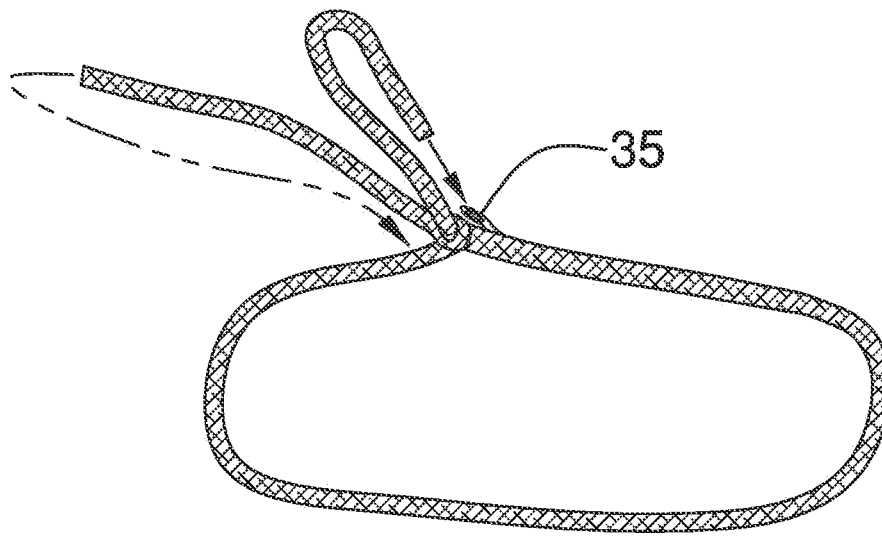


FIG. 9

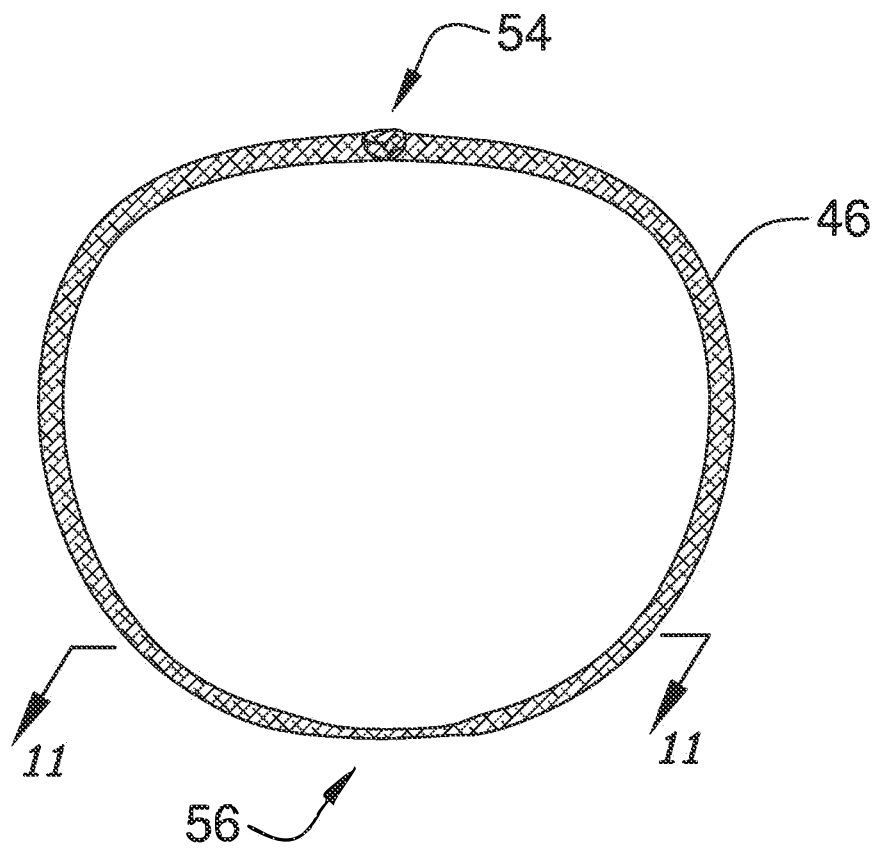


FIG. 10

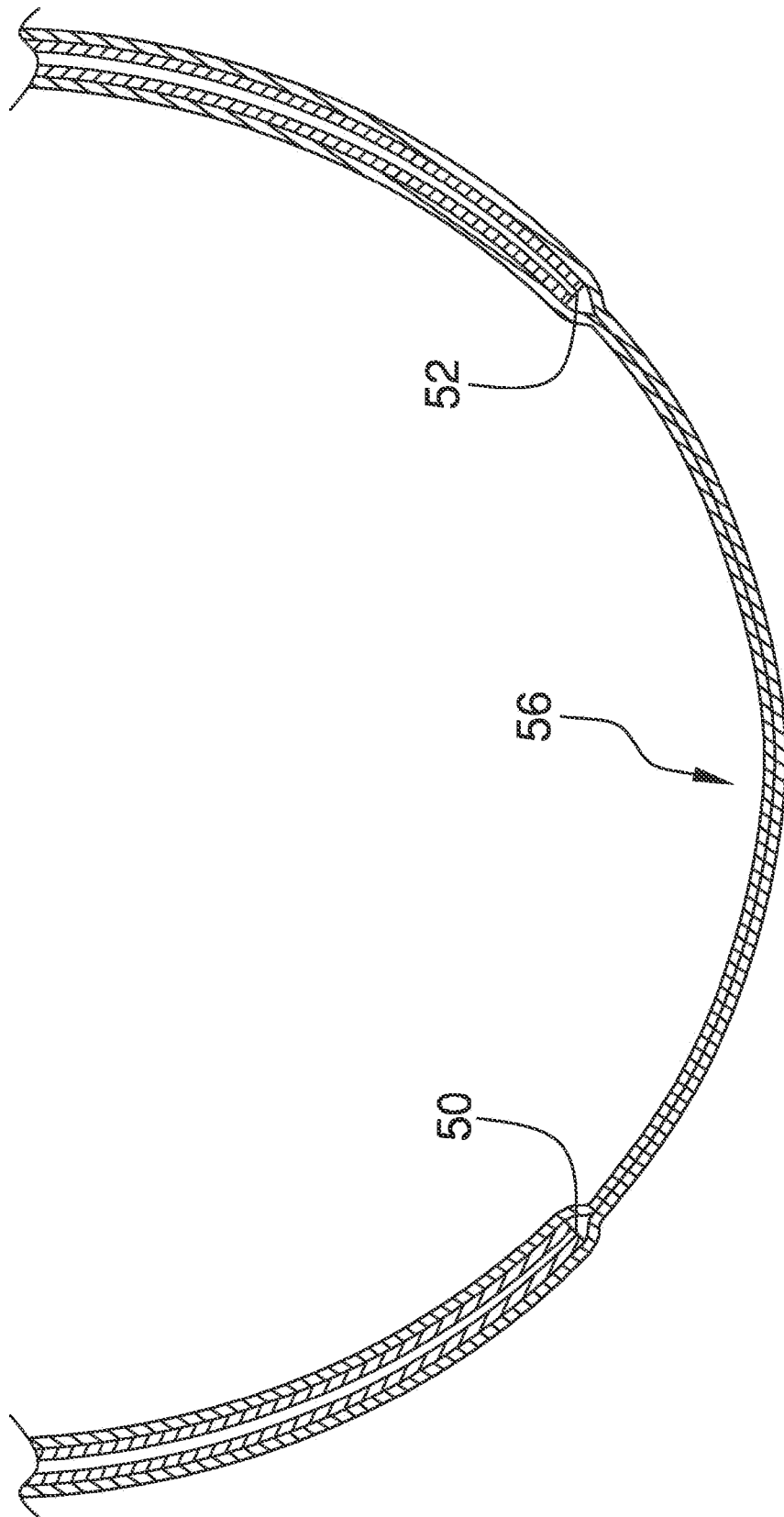


FIG. 11

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BRIDGE ROPE ASSEMBLY**CROSS-REFERENCE TO RELATED APPLICATIONS**

This application is a continuation application and I hereby claim the benefit under 35 U.S.C. Section 120 of U.S. patent application Ser. No. 16/736,345 filed Jan. 7, 2020 and U.S. patent application Ser. No. 17/022,844 filed Sep. 16, 2020.

STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT

Not Applicable

THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT

Not Applicable

INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC OR AS A TEXT FILE VIA THE OFFICE ELECTRONIC FILING SYSTEM

Not Applicable

STATEMENT REGARDING PRIOR DISCLOSURES BY THE INVENTOR OR JOINT INVENTOR

Not Applicable

BACKGROUND OF THE INVENTION**(1) Field of the Invention**

The disclosure relates to harness rope structures and more particularly pertains to a new harness rope structures for utilizing eye splices having fully buried rope ends which extend completely into their mating counterparts a sufficient distance such that a double layer of rope is created. It has been found that such a construction allows high strength materials that are otherwise susceptible to heat/friction damage, or are of such low friction that they do not typically retain a closed loop formation under stress, to be used safely for harness bridge ropes.

(2) Description of Related Art Including Information Disclosed Under 37 CFR 1.97 and 1.98

The prior art relates to harness ropes which are generally conventional and utilize rope materials that are of inferior strength but which have a higher coefficient of friction and a higher weight to strength ratio.

BRIEF SUMMARY OF THE INVENTION

An embodiment of the disclosure meets the needs presented above by generally comprising a main body including a rope that has a first end and a second end. The rope has a splice therein to form an eye loop in the main body. The eye loop is configured to engage a first bridge loop of a harness. The main body comprises a first portion including the first end and a second portion including the second end. The first portion extends through the second portion of the main body

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such that the first end is positioned adjacent to the second end. A distance between the first and second ends is less than 2.0 inches.

There has thus been outlined, rather broadly, the more important features of the disclosure in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are additional features of the disclosure that will be described hereinafter and which will form the subject matter of the claims appended hereto.

The objects of the disclosure, along with the various features of novelty which characterize the disclosure, are pointed out with particularity in the claims annexed to and forming a part of this disclosure.

BRIEF DESCRIPTION OF SEVERAL VIEWS OF THE DRAWING(S)

The disclosure will be better understood and objects other than those set forth above will become apparent when consideration is given to the following detailed description thereof. Such description makes reference to the annexed drawings wherein:

FIG. 1 is a front view of a main body of a bridge rope assembly according to an embodiment of the disclosure.

FIG. 2 is a front view of a closed loop of an embodiment of the disclosure.

FIG. 3 is a front in-use view of an embodiment of the disclosure.

FIG. 4 is a front in-use view of an embodiment of the disclosure.

FIG. 5 is a side in-use view of an embodiment of the disclosure.

FIG. 6 is a front view of a rope used in forming a main body of an embodiment of the disclosure.

FIG. 7 is a front view of a step in forming the main body of an embodiment of the disclosure.

FIG. 8 is a front view of a single rope used in forming a friction hitch of an embodiment of the disclosure.

FIG. 9 is a front view of a step in forming a continuous loop of an embodiment of the disclosure.

FIG. 10 is a front view of the continuous loop of an embodiment of the disclosure.

FIG. 11 is a cross-sectional view taken along line 11-11 of FIG. 10 of an embodiment of the disclosure.

DETAILED DESCRIPTION OF THE INVENTION

With reference now to the drawings, and in particular to FIGS. 1 through 11 thereof, a new harness rope structure embodying the principles and concepts of an embodiment of the disclosure and generally designated by the reference numeral 10 will be described.

As best illustrated in FIGS. 1 through 11, the bridge rope assembly 10 generally includes a main body 12, as shown in FIGS. 1, 4, 6 and 7, comprising a rope 14 that has a first end 16 and a second end 18. The main body 12 has a splice 20 therein to form an eye loop 22 in the main body 12. The splice 20 may be a straight splice or a locked brummel splice. Each is well known in the art of rope manipulation within the harness arts. Generally, a locked brummel splice may be preferred as any buried tags (portions of rope extended within another portion of rope) cannot back themselves out as they are effectively "locked" in place with a knot. A downside of the locked brummel is the knot itself at the splice 20 which creates a bulge in the rope where the

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knot is formed. Buried tags that are the product of a straight splice are not locked in place and therefore can back themselves out when not under tension. However, a straight splice can be secured in place by stitching the resultant tag(s) in place once the tag is in a buried condition if desired. Generally, as it will be understood below, it is the splice 20 which creates one or two tags which is important.

The eye loop 22 is configured to engage a first bridge loop 24 of a harness 26 utilized to support a person 28 secured to a tree 30. After the formation of the eye loop, the main body 12 comprises a first portion 32 including the first end 16 and a second portion 34 including the second end 18. The first portion 32 is then extended through the second portion 34 of the main body 12 by threading the first end 16 into the second portion 34 adjacent to the eye loop 22. The first end 16 of a conventional buried tag, i.e. first portion 32, is typically retained within the second portion 34 in close proximity to the eye loop 22. However, in the current disclosure, the eye loop 22 is positioned proximate a central area of the rope 14 such that the first end 16 can be extended adjacently to the second end 18, wherein the first 32 and second 34 portions each extend away from the eye loop 22. The first end 16 will typically remain within the second portion 34 and will be located less than 2.0 inches from the second end 18.

The main body 12 includes a stop knot 36 in the second portion 34 adjacent to the second end 18 and therefore the stop knot 36 further includes the first portion 32 adjacent to the first end 16. The stop knot 36 may comprise, for example, a double fisherman's knot.

The juncture of the first 16 and second 18 ends may be covered with a securing member or otherwise bonded together with known methods and/or mechanical structures. These may include mechanical stitching, staples, glue, friction/heat bonding and the like. One type of securing member may comprise a heat shrink wrap sleeve having an interior coated with an adhesive to ensure a strong bond between the sleeve and the main body 12. The sleeve will extend in opposite directions away from a juncture of the first end 16 and the second portion 34 to ensure that the first end 16 does not move relative to the second portion 34 and protects the juncture from damage, such as for example from fraying. After the shrink wrap is heated and adhered to the second portion 34, the extra length of section portion 34 extending beyond the first end 16 may be removed such that the first 16 and second 18 ends are flush with each other.

The rope 14 may have a length from the first end 16 to the second end 18 between 72.0 inches and 126.0 inches. The main body 12 may further comprise a 0.25 inch braided rope though other rope diameters are contemplated with the width being typically less than 0.50 inches and generally at least 0.1875 inches. The second end 18 extends away from the eye loop 22 between 0.5 inches and 3.0 inches farther away than the first end 16 extends away from the eye loop 22, and more preferably less than 2.0 inches farther away. It should be understood that the first end 16 may extend outwardly of the second portion 34 a short distance and either be trimmed back such that it is flush with or within 1.0 inches of the second end 18 and thereafter secured in place. The burying of the first portion 32 within the second portion 34 may be facilitated with conventional threading/splicing tools 35. Increased friction between the first 32 and second 34 portions due to the increased diameter of the second portion 34 prevents movement of the first 32 and second 34 portions relative to each other to minimize mechanical failure. The increased diameter of the second portion 34 will also result in increased friction between the main body 12 and a friction

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hitch positioned on the main body 12. This minimizes mechanical failure of the bridge rope assembly 10 during standardized drop testing.

The main body 12 is comprised of a polyethylene, and in particular ultra high molecular weight polyethylene, typically known as UHMWPE. This material characteristically includes extremely long chains of polyethylene having 100,000 to 250,000 monomer units per molecule. Such material is available from numerous suppliers. One such material is sold under the trademark Amsteel. Amsteel is a trademark of Samson Rope Technologies, Inc. located at 2090 Thorton Street, Ferndale, Wash. This material may be blended with other materials; however, the rope may consist solely of UHMWPE. UHMWPE, while extremely strong, has a very low coefficient of friction. Therefore the extension of the first portion 32 through the second portion 34 further resists the movement of the first portion 32 outwardly away from the second portion 34 while increasing a thickness of main body 12 such that it may be gripped easier.

In one embodiment, the main body 12 comprises a rope that is 95.0 inches long and is comprised of 0.25 inch diameter Amsteel. A splice 20 is created and a locked brummel used such that a 39.0 inch tag line (first portion 32) is formed which is buried into what will be an approximately 50.0 inch remainder (second portion 34) of the rope 14. The widening of the second portion 34 to accept the first portion 32 causes the second portion 34 to shorten in length which allows the first portion 32 to nearly extend through the second portion 34. Shrink wrap 40 is then applied over the second 34 portion at a juncture of the first end 16 and second portion 34. It is heated to form a bond with the second portion 34 and compresses the first 32 and second 34 portions together. After the shrink wrap is heated and adhered to the second portion 34, the extra length of the second portion 34 extending beyond the first end 16 may be removed such that the first 16 and second 18 ends are flush with each other. The stop knot 36 is formed in the main body 12 adjacent to the shrink wrap 40 by way of a double fisherman's knot. The distance from the stop knot 36 to the eye loop 22 is approximately 31.0 inches.

A friction hitch 42, as shown particularly in FIGS. 2, 4, and 9-11, is positioned on the main body 12 between the stop knot 36 and the eye loop 22. The friction hitch 42 is formed in a conventional manner and is configured to engage a second bridge loop 44 of the harness 26. The friction hitch 42 comprises a closed loop 46. The closed loop 46 is comprised of a single rope 48 that is formed into a continuous splice using a conventional method except wherein a pair of ends (first end 50 and second end 52) of the single rope 48 are each buried into the closed loop 46 a distance of at least 40% of a total circumference of the closed loop 46, more particularly between 40% and at least 50% of the total circumference, though, for reasons stated below, a distance of less than 50% may be preferred.

Using conventional methods, the closed loop 46 is formed at with a splice 54 drawn together by ends 50 and 52 being drawn through the splice 54. As with the main body 12, the splice 54 may be a locked brummel splice 54 or a straight splice with the same disadvantages as mentioned above except with two tag lines, as shown in FIG. 9, instead of one. The first 50 and second 52 ends are then drawn through, or buried, in the continuous loop 46 with the first end 50 being positioned on one side of the locked splices 54 and the second end 52 being positioned on the other side of the locked splices 54. The first 50 and second 52 ends are thereby extending toward each other within the closed loop 46. However, they will typically remain spaced apart a

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distance of between 1.0 and 4.0 inches to create a narrow area 56 in the continuous loop 46 having a diameter that is less than a remainder of the continuous loop 46. Thus, the ends 50, 52 are each buried typically at least 40% and less than 50% of the total circumference of the continuous loop leaving the narrow area 56 to include less than 100% and greater than 80% of the total circumference.

The single rope 48 of the closed loop 46 has a length between 40.0 inches and 60.0 inches and the closed loop 46 will typically have a total circumference of between 20.0 inches and 30.0 inches. The single rope 48 may further comprise a $\frac{3}{16}$ inch braided rope, though other rope diameters are contemplated with the width being typically less than 0.50 inches and generally at least 0.125 inches. As with the main body 12, the friction hitch 42 is comprised of UHMWPE. By burying the first 50 and second 52 ends of the single rope 48 through a majority of the closed loop 46, the closed loop 46 will resist damage caused by movement of the first 50 and second 52 ends within closed loop 46 while ensuring that the closed loop 46 remains intact.

In one specific example of the friction hitch 42, the single rope 48 is 47.0 inches long and is comprised of a $\frac{3}{16}$ inch diameter of Amsteel rope, a type of braided rope comprised of UHMWPE. A brummel is formed 13.5" from a center point of the single rope 48 with tag ends of the single rope 48 each being buried to form a resultant closed loop 46 having a circumference from 22" to 24" depending on the stretch of the single rope 46 as it is formed into the closed loop 46. The narrow area 56 has a length being equal to between 3.0 inches and 4.0 inches. The closed loop 46 is formed into the friction hitch using what is commonly referred to as a Prusik knot.

In use, the eye loop 22 of the main body 12 is engaged on the first bridge loop 24 of the harness 26. The friction hitch 42 is formed in a conventional manner on the main body 12 and second bridge loop 44. The friction hitch 42 is positioned between the eye loop 22 and knot 36. The friction hitch 42 is conventional and can be selectively loosened and moved along the main body 12. However, the materials and structure of the main body 12 and friction hitch 42 will prevent failure and allow UHMWPE materials to be used in such a manner that they will pass standardized drop tests. The narrow portion 56 of the closed loop 46 will typically be engaged with the second bridge loop 44 and its narrow diameter will assist in locking it in grooves in the second bridge loop 44 should such be provided.

With respect to the above description then, it is to be realized that the optimum dimensional relationships for the parts of an embodiment enabled by the disclosure, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and all equivalent relationships to those illustrated in the drawings and described in the specification are intended to be encompassed by an embodiment of the disclosure.

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Therefore, the foregoing is considered as illustrative only of the principles of the disclosure. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the disclosure to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the disclosure. In this patent document, the word "comprising" is used in its non-limiting sense to mean that items following the word are included, but items not specifically mentioned are not excluded. A reference to an element by the indefinite article "a" does not exclude the possibility that more than one of the element is present, unless the context clearly requires that there be only one of the elements.

We claim:

1. A bridge rope assembly configured to couple together a tree rope to a first bridge loop and a second bridge loop on a harness, the bridge rope assembly including:

a main body comprising a rope having a first end and a second end, the main body having a splice therein to form an eye loop in the main body, the eye loop being configured to engage the first bridge loop, the main body comprising a first portion including the first end and a second portion including the second end, the first portion extending through the second portion of the main body such that the first end is positioned within the second portion adjacent to the second end, a distance between the first and second ends being less than 2.0 inches, the rope having a length from the first end to the second end between 72.0 inches and 126.0 inches, a distance of the eye loop to the second end being between 24.0 inches and 40.0 inches;

a securing member being positioned on the main body at a juncture of the first and second ends to retain the first and second ends at a static position relative to each other;

the main body including a stop knot in the second portion adjacent to the second end;

a friction hitch being positioned on the main body between the stop knot and the eye loop, the friction hitch being configured to engage the second bridge loop, the friction hitch comprising a closed loop, the closed loop comprising a single rope being formed into the closed loop with a splice, the splice having a pair of ends, each end of the pair of ends being buried into the closed loop a distance of at least 40% of a total circumference of the closed loop, the single rope of the closed loop having a length between 40.0 inches and 60.0 inches, the closed loop having a total circumference of between 20.0 inches and 30.0 inches;

the main body and the friction hitch each being comprised of UHMWPE.

* * * * *

REISSUE LITIGATION

PTO/AIA/96 (08-12)

Approved for use through 11/30/2020. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Tethrd LLC

Application No./Patent No.: 11,504,556

Filed/Issue Date: November 22, 2022

Titled: BRIDGE ROPE ASSEMBLY

Tethrd LLC, a Corporation

(Name of Assignee)

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

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

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
 - ☐ The extent (by percentage) of its ownership interest is _____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
 - ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

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

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

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

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

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

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel TBD, Frame TBD, or for which a copy thereof is attached.
- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

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

2. From: _____ To: _____

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

[Page 1 of 2]

This collection of information is required by 37CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450**

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

Ex. 1150

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STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
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6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.☐ Additional documents in the chain of title are listed on a supplemental sheet(s).☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

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

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

/Adam J. Thompson/

Signature

Adam J. Thompson

Printed or Typed Name

September 17, 2025

Date

72831

Title or Registration Number

[Page 2 of 2]

Privacy Act Statement

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

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

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

ASSIGNMENT

THIS ASSIGNMENT is made by **Walter Ernest POWER, II** residing at Carver, MN, **Gregory Alan GODFREY**, residing at Richmond Hill, GA, and **Carl Eugene KOSSUTH, III**, residing at Rolla, MO (hereinafter referred to as “Assignors”).

WHEREAS, Assignors has invented certain new and useful inventions and improvements set forth in applications for Letters Patent of the United States and certain foreign countries, the applications for which are listed on **Exhibit A** which is attached hereto (hereinafter referred to as the “Applications”).

WHEREAS, **Tethrd LLC**, a corporation organized under and pursuant to the laws of the State of Delaware, having its principal place of business at **2409 Pulaski Hwy, Columbia, TN 38401** (hereinafter referred to as “Assignee”), is desirous of acquiring the entire right, title and interest in and to said inventions and said Application for Letters Patent of the United States, and in and to any Letters Patent of the United States to be obtained therefore and thereon.

NOW, THEREFORE, in consideration of One Dollar (\$1.00) and other good and sufficient consideration, the receipt of which is hereby acknowledged, Assignors have sold, assigned, transferred and set over, and by these presents do sell, assign, transfer and set over, unto Assignee, its successors, legal representatives and assigns, the entire right, title and interest in and to the above-mentioned inventions and Application, and in and to any and all direct and indirect divisions, non-provisional applications, continuations and continuations-in-part of said Application, and any and all Letters Patent in the United States and all foreign countries which may be granted therefor and thereon, and reissues, reexaminations and extensions of said Letters Patent, and all rights under the International Convention for the Protection of Industrial Property, the same to be held and enjoyed by Assignee, for its own use and benefit and the use and benefit of its successors, legal representatives and assigns, to the full end of the term or terms for which Letters Patent may be granted and/or extended, as fully and entirely as the same would have been held and enjoyed by Assignors, had this sale and assignment not been made.

AND for the same consideration, Assignors hereby represent and warrant to Assignee, its successors, legal representatives and assigns, that, at the time of execution and delivery of these presents, except for any rights, titles and/or interests that have arisen to Assignee under law or that have already been transferred to Assignee, Assignors are the sole and lawful owners of the entire right, title and interest in and to the said inventions and Application, and that the same are unencumbered and that Assignors have good and full right and lawful authority to sell and convey the same in the manner herein set forth.

AND for the same consideration, Assignors hereby covenant and agree to and with Assignee, its successors, legal representatives and assigns, that Assignors will sign all papers and documents, take all lawful oaths and do all acts necessary or required to be done for the procurement, maintenance, enforcement and defense of the Application and any Letters Patent issuing therefrom for said inventions, without charge to Assignee, its successors, legal representatives and assigns, whenever counsel of Assignee, or counsel of its successors, legal representatives and assigns, shall advise: that any proceeding in connection with said inventions, or said Application, or any proceeding in connection with any Letters Patent or applications for Letters Patent for said inventions in any country, including but not limited to interference proceedings, is lawful and desirable; or, that any division, continuation or continuation-in-part of the Application, or any reissue, reexamination or extension of any Letters Patent, to be obtained thereon, is lawful and desirable.

AND Assignors warrant and represent that the Assignors individually are not aware of any information that is material to patentability of the above-mentioned inventions, namely, any information that, alone or in combination with other information, establishes on its face the unpatentability of the inventions or is inconsistent with arguments of patentability made to the U.S. Patent & Trademark Office. Material information may include devices, products, publications, and so forth, that are similar to the present inventions, and/or any public disclosure, commercial use, or offer for sale more than one year prior to the filing date of the Application.

AND Assignors hereby request the Commissioner of Patent and Trademarks to issue said Letters Patent of the United States to Assignee, as Assignee of said inventions and the

Letters Patent to be issued thereon, for the sole use and benefit of Assignee, its successors, legal representatives and assigns.

AND Assignors hereby grant the following individuals the power to insert on this Assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document:

BRADLEY ARANT BOULT CUMMINGS LLP

All practitioners at Customer Number 24728

[Signatures are on following pages.]

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of

9/15/2025 12:26 PM CDT, 2025.

Walter Ernest Power, II
Walter Ernest POWER, II

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of

9/15/2025 | 6:53 AM PDT, 2025.



Gregory Alan GODFREY

IN TESTIMONY WHEREOF, I have hereunto set my hand this _____ day of
9/11/2025 | 12:19 PM CDT, 2025.

Carl Eugene Kossuth, III
Carl Eugene KOSSUTH, III

ASSIGNEE:
_____ day of _____, 2025 9/15/2025 | 2:26 PM CDT

Walter Ernest Power, II

.....
Name: Walter Ernest Power, II

Title: CTO

Tethrd LLC

EXHIBIT A

Patents

<u>TITLE</u>	<u>APPLICATION NO./ PATENT NO. JURISDICTION</u>	<u>FILING DATE ISSUE DATE</u>	<u>STATUS</u>
BRIDGE ROPE ASSEMBLY	19/284,965 N/A U.S.	July 30, 2025 N/A	PENDING
BRIDGE ROPE ASSEMBLY	18/671,581 N/A U.S.	May 22, 2024 N/A	PENDING
BRIDGE ROPE ASSEMBLY	18/602,822 N/A U.S.	March 12, 2024 N/A	PENDING
BRIDGE ROPE ASSEMBLY	17/867,553 11,964,175 U.S.	July 18, 2022 April 23, 2024	ISSUED
BRIDGE ROPE ASSEMBLY	17/231,717 11,504,556 U.S.	April 15, 2021 November 22, 2022	ISSUED
BRIDGE ROPE ASSEMBLY	17/022,844 N/A U.S.	September 16, 2020 N/A	ABANDONED
BRIDGE ROPE ASSEMBLY	16/736,345 N/A U.S.	January 7, 2020 N/A	ABANDONED