PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number: 19/331,004

APPLICATION AS FILED - PART I

FOR	(Column 1) NUMBER FILED	(Column 2) NUMBER EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY FEE($)
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), (i), 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 =	* 0	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) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	SMALL ENTITY RATE($)	SMALL ENTITY ADDITIONAL FEE($)	OR	OTHER THAN SMALL ENTITY RATE($)	OTHER THAN SMALL ENTITY ADDITIONAL FEE($)
AMENDMENT A	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))									
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	

		(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA	RATE($)	ADDITIONAL FEE($)		RATE($)	ADDITIONAL FEE($)
AMENDMENT B	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))									
	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.

Ex. 1149
IPR2025-01407, Crüzr v. Tethrd

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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
19/331,004	09/17/2025	3632	1468	305774-401012	14	1

CONFIRMATION NO. 8375

FILING RECEIPT

24728
Bradley Arant Boult Cummings LLP
IP Department
1230 Peachtree Street NE
Promenade Tower, Suite 2100
ATLANTA, GA 30309

Date Mailed: 10/03/2025

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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 17/867,553 07/18/2022 PAT 11,964,175
which is a CON 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.

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The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 19/331,004**

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**** 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

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(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).

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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

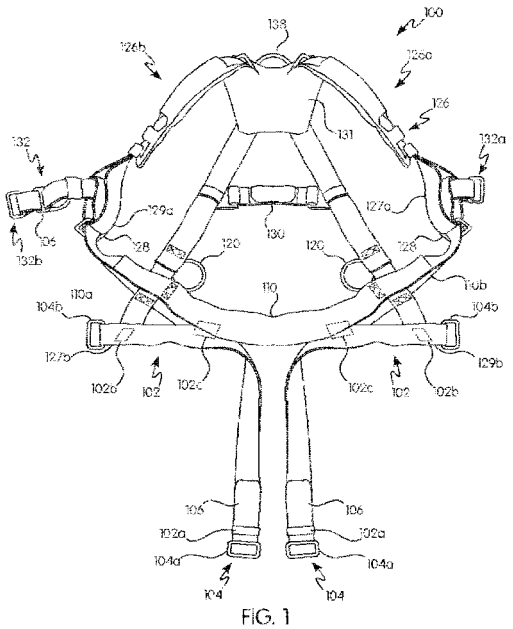


FIG. 1

(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.

[Continued on next page]

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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.

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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 **147** 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 though 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.

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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

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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.

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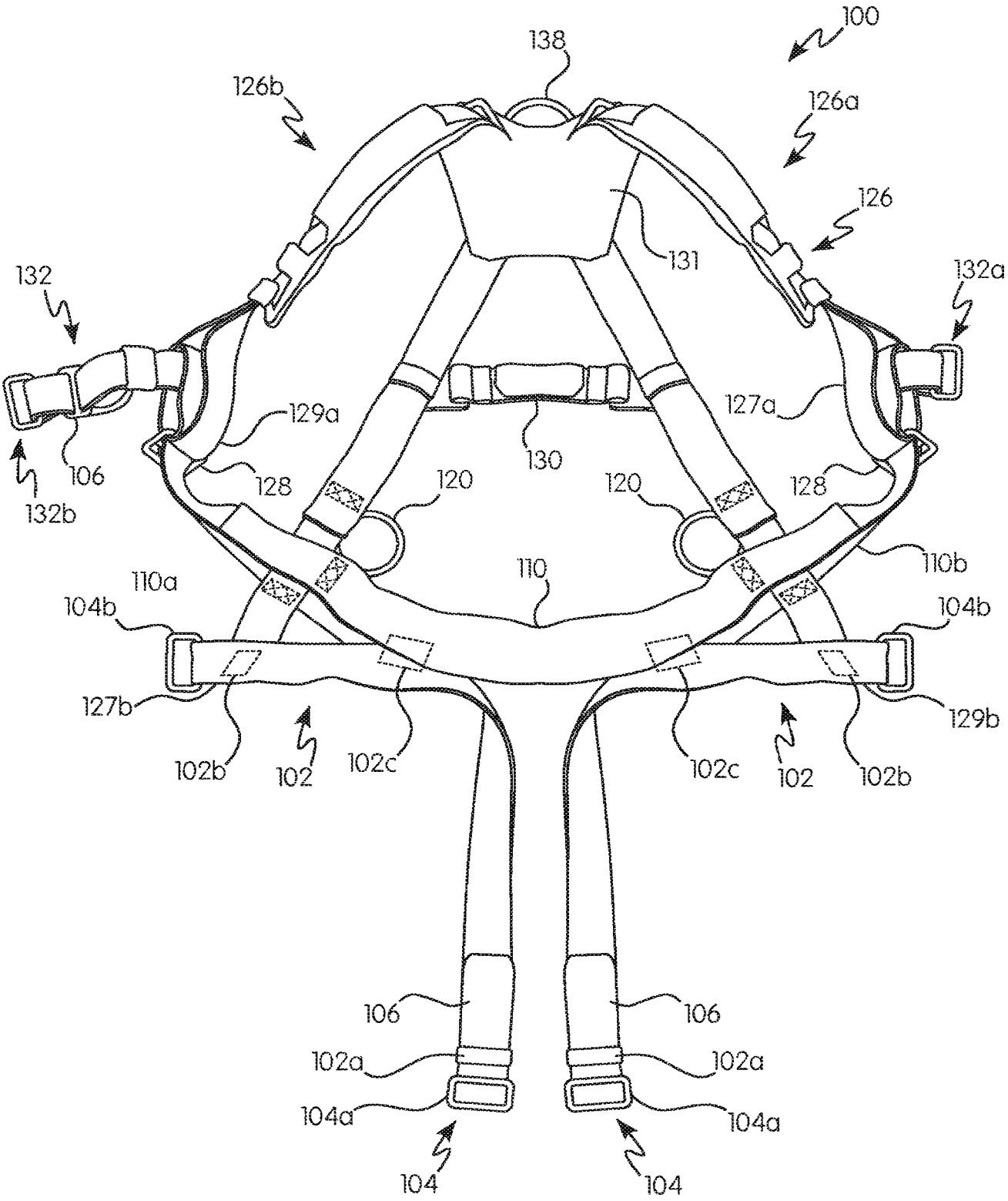

100
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126b
126a
126
131
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132a
129a
127a
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132b
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110
104b
104b
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104

FIG. 1

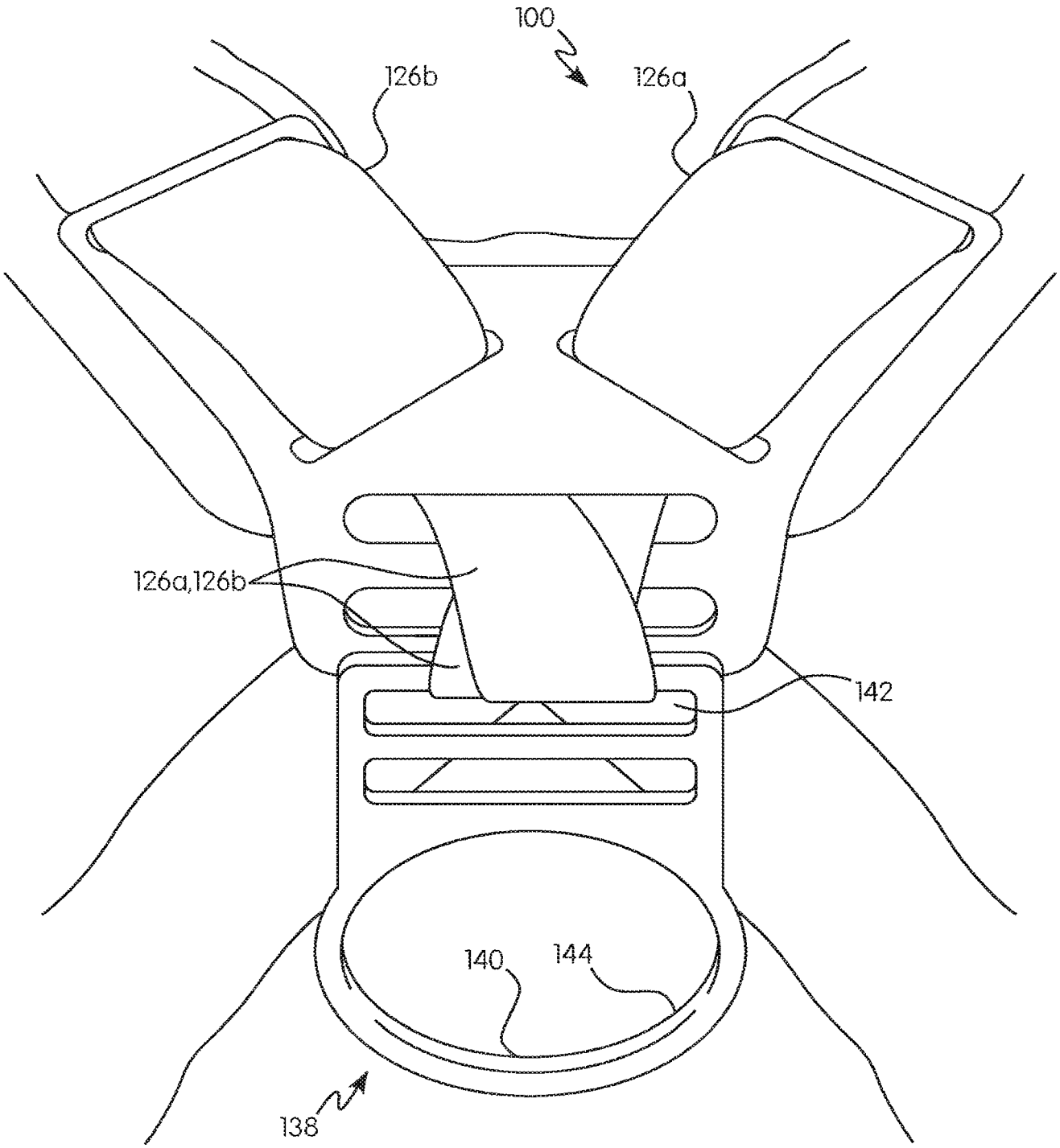


FIG. 2

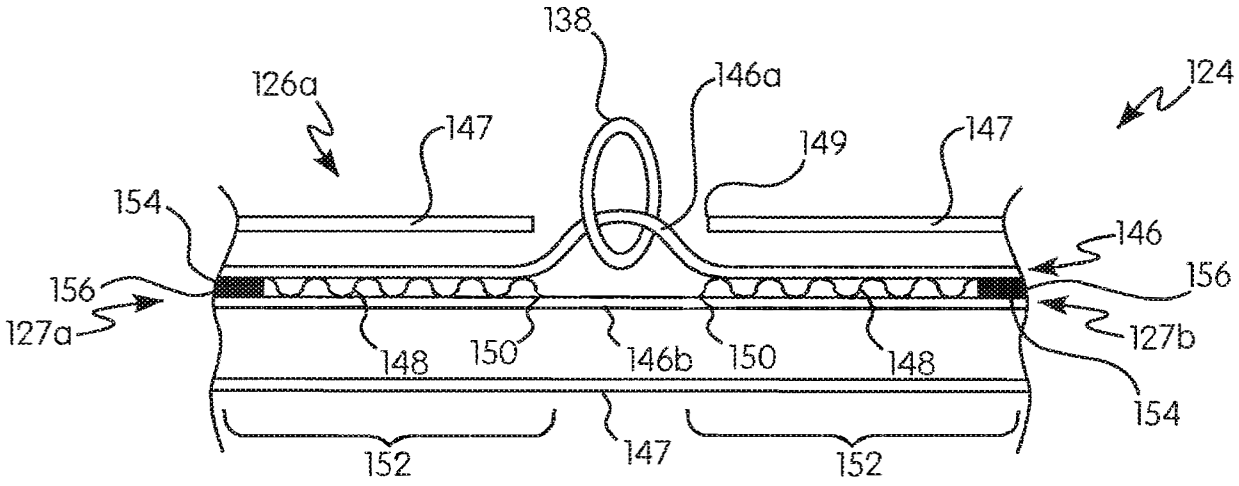


FIG. 3A

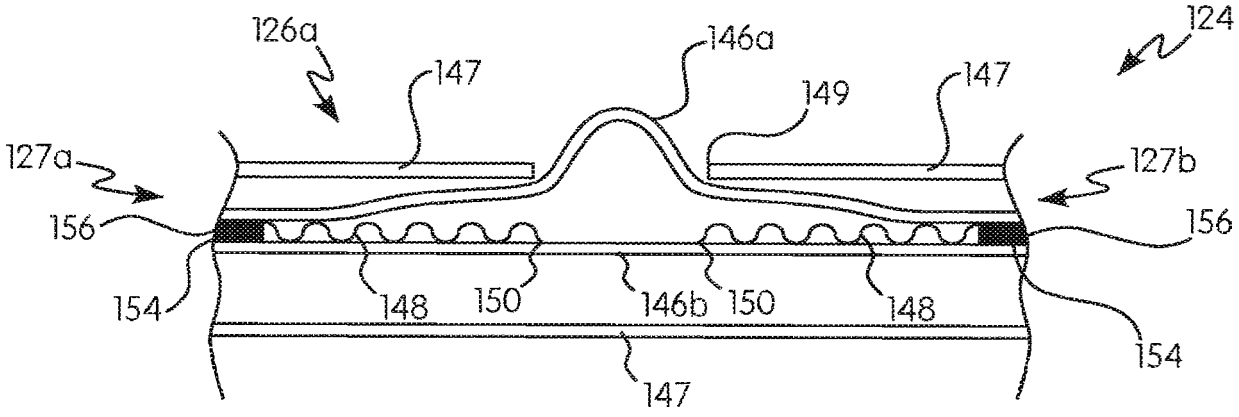


FIG. 3B

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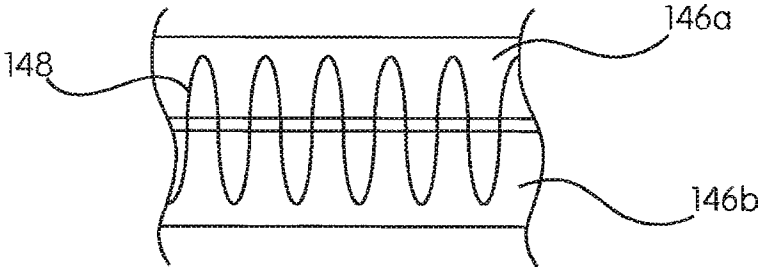


FIG. 4A

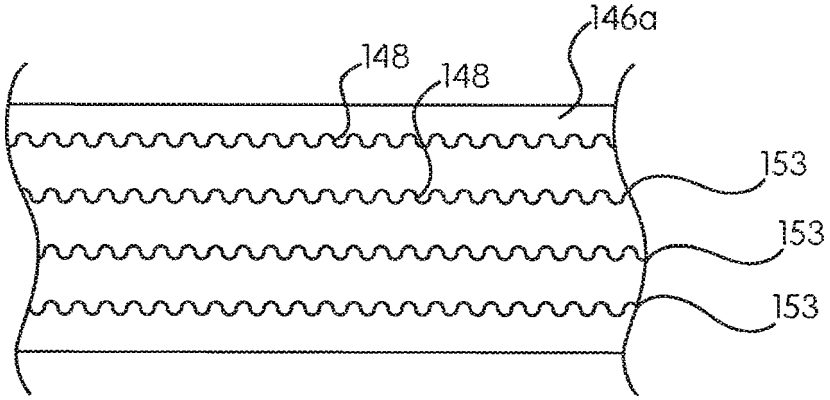


FIG. 4B

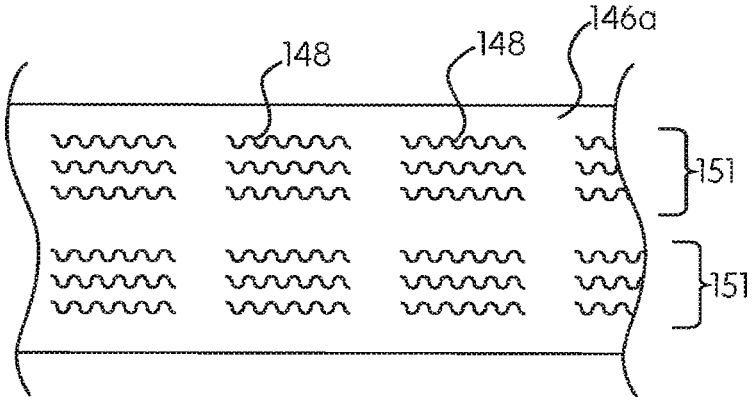


FIG. 4C

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	US 8 584 799 B1 (DENNINGTON MARK [US]) 19 November 2013 (2013-11-19)	19
A	figures -----	1-18

☐ Further documents are listed in the continuation of Box C.

☒ See patent family annex.

* Special categories of cited documents :

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"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

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
13 February 2018	20/02/2018

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Andlauer, Dominique

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Form PCT/ISA/210 (second sheet) (April 2005)

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/US2017/064684

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 8584799 B1	19-11-2013	NONE	

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(71) Demandeur: **Sperian Fal Protectin France**
18104 Vierzon (FR)

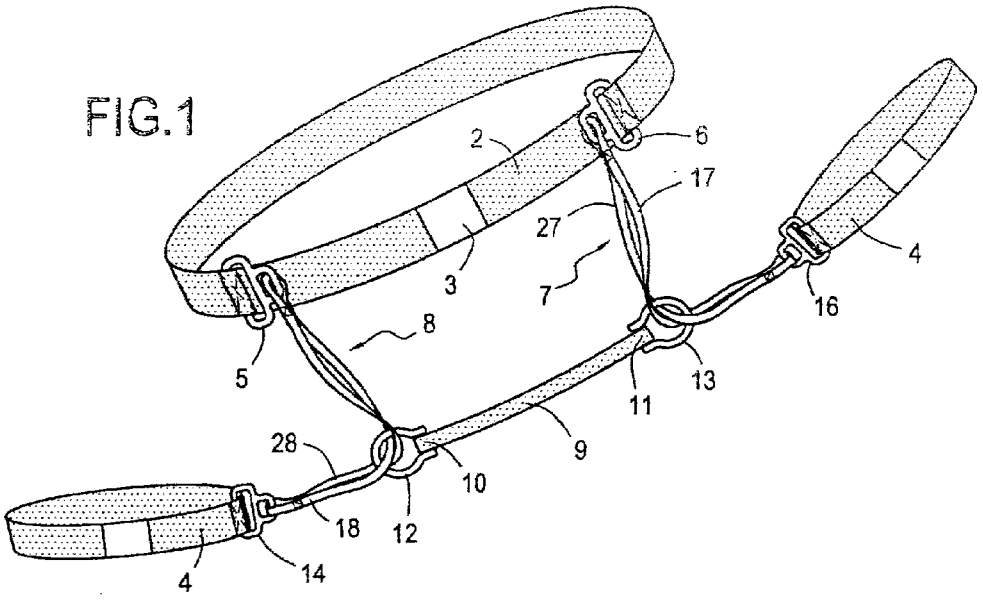
(72) Inventeur: **Dussenne, Francois**
B-1490 Court Saint Etienne (BE)

(74) Mandataire: **Eidelsberg, Olivier Nathan**
Cabinet Flechner
22, avenue de Friedland
75008 Paris (FR)

(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.

FIG.1



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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 déplacement 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 destiné 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-

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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 équilibré 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 coulissent 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 coulissent 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 lanière 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 coulissement a lieu avec un certain frottement permettant d'assurer un coulissement 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 dosseret destiné à s'appliquer autour du bassin de l'utilisateur et à y être fixé par une ceinture 2 ajustable

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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 coulissement de l'anneau 41 par un système de blocage 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 coulissé 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-

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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 coulissent 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 équilibré 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 dosseret 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 principale 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 coulissent le long des courroies auxiliaires.

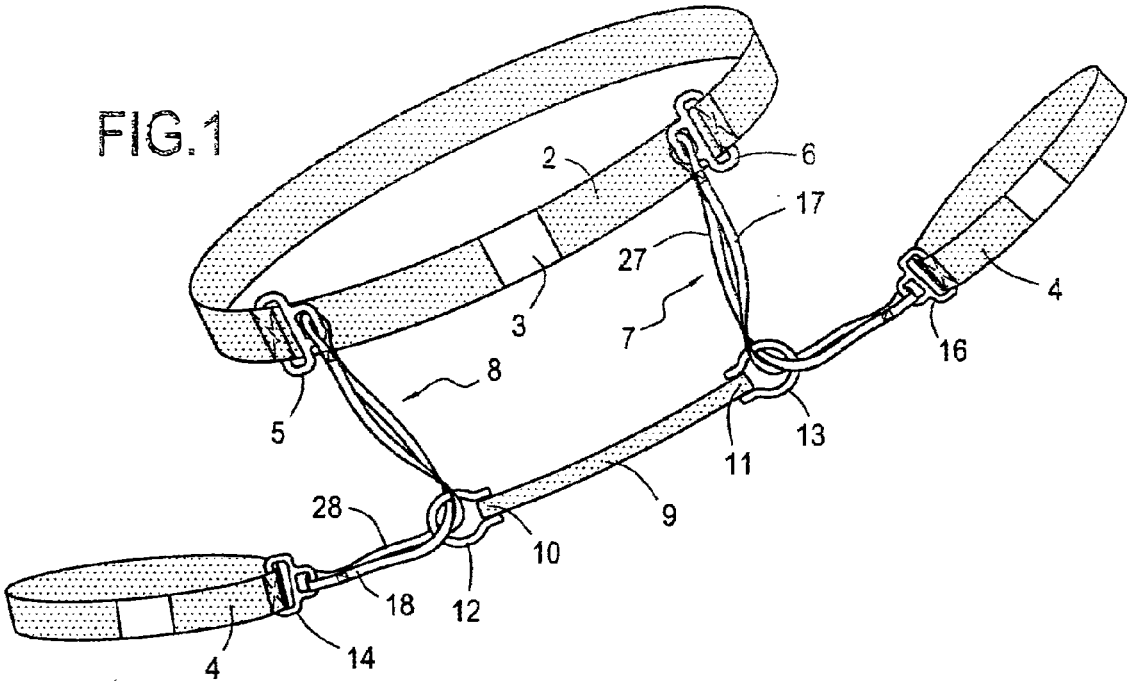
6. Dispositif suivant l'une des revendications 1 à 5, **caractérisé en ce que** les moyens de réglage automatique sont constitués par le fait qu'il est prévu au moins deux anneaux fixées à la courroie centrale formant pont, notamment à ses deux extrémités, et qui coulissent le long des courroies auxiliaires 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,

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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.

FIG.1



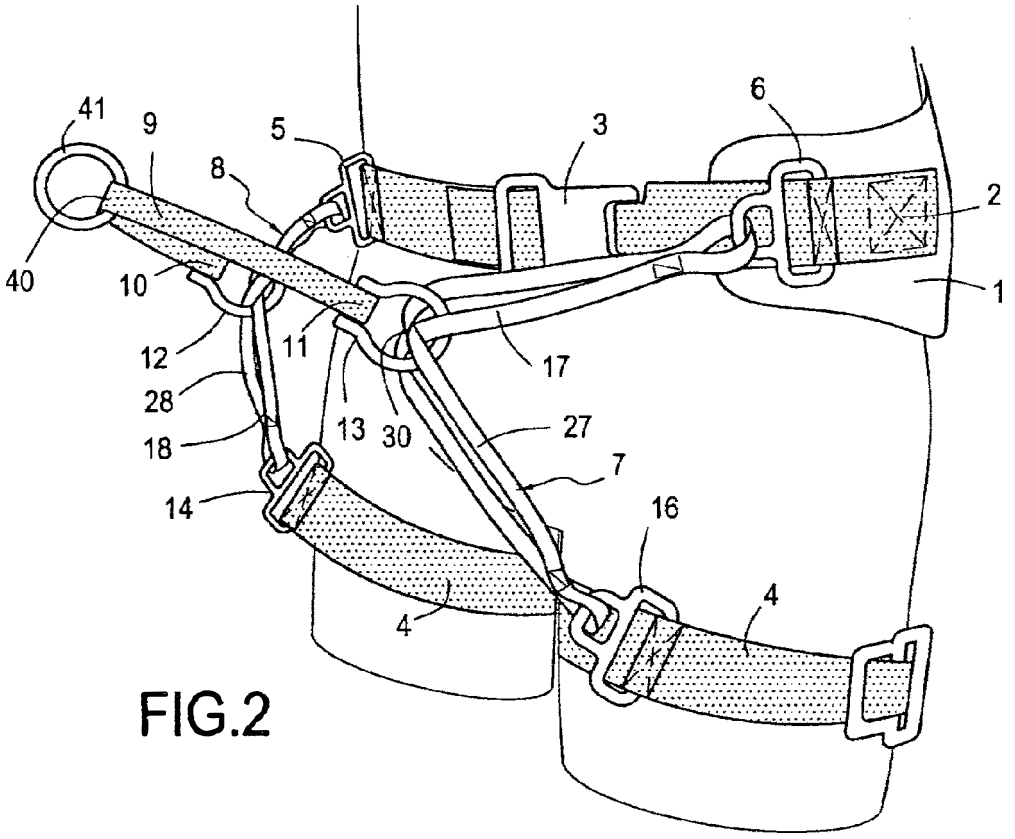


FIG.2

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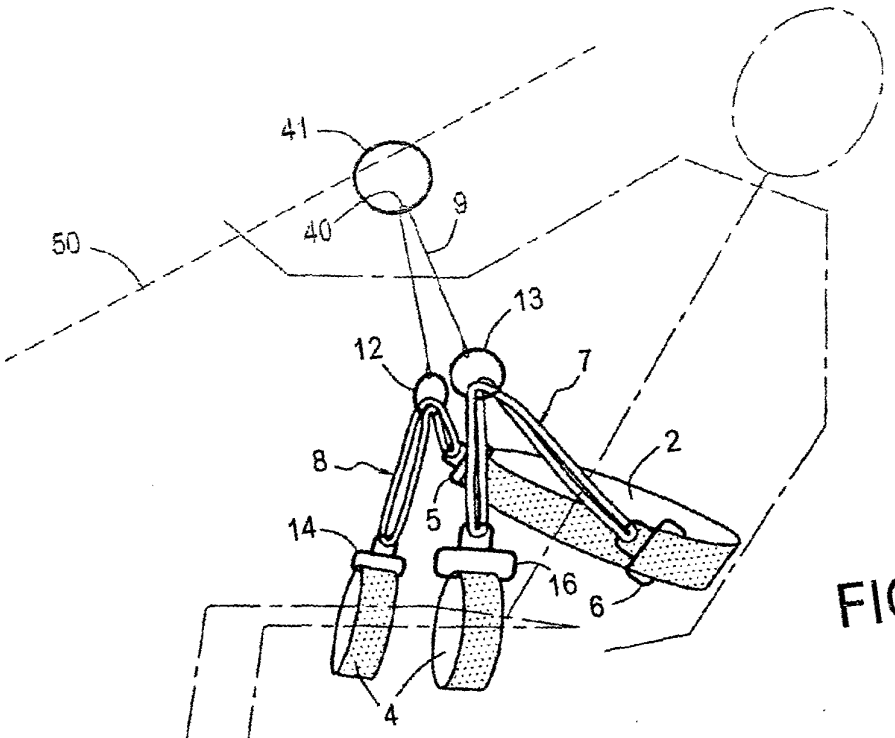


FIG.3

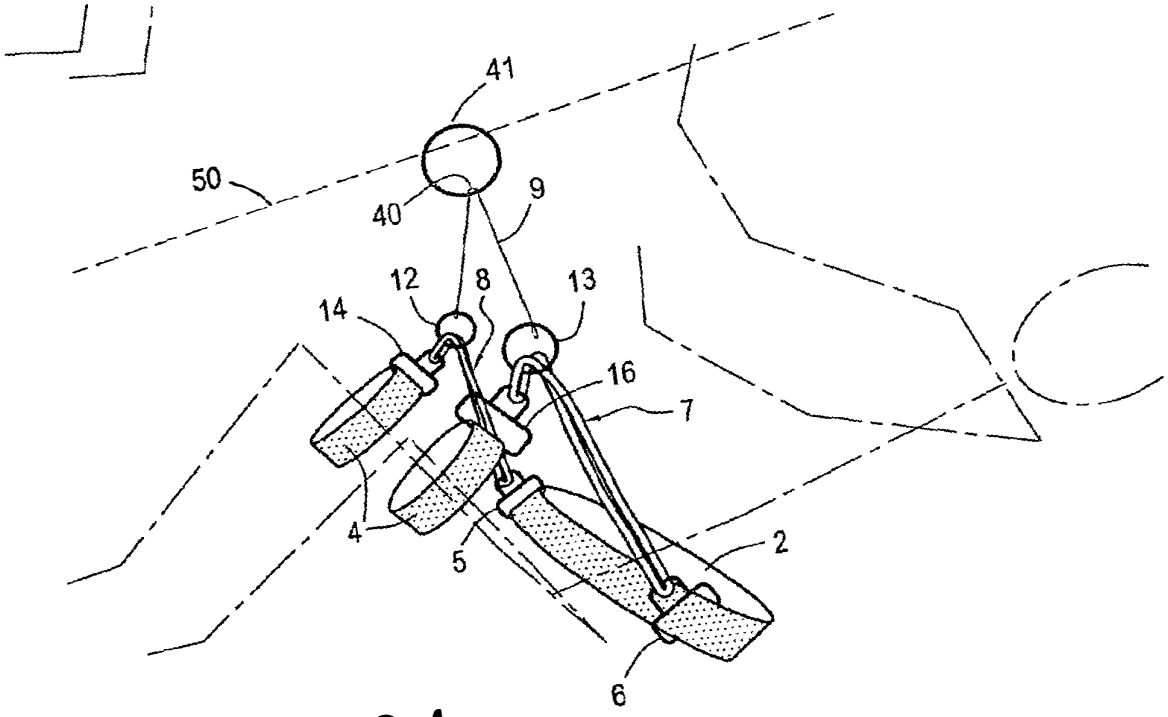


FIG.4

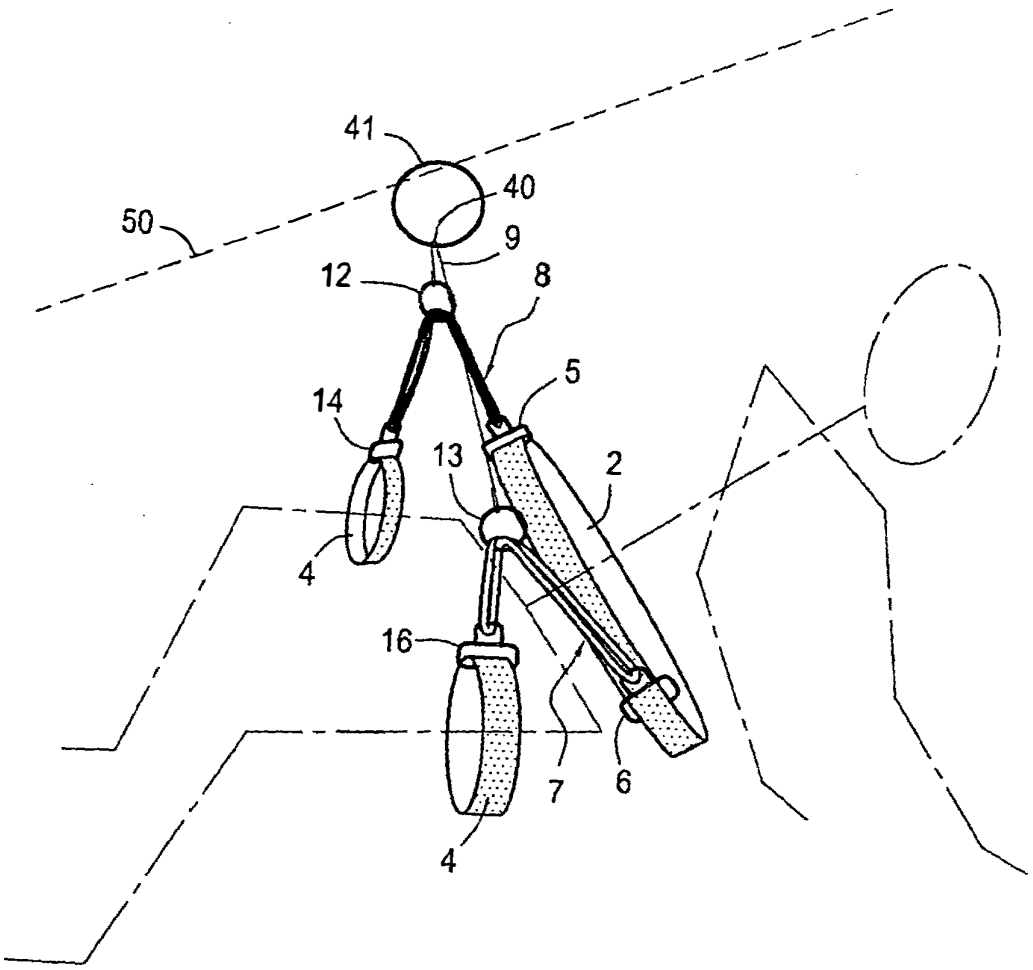


FIG.5

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RAPPORT DE RECHERCHE EUROPEENNE

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DOCUMENTS CONSIDERES COMME PERTINENTS

Catégorie	Citation du document avec indication, en cas de besoin, des parties pertinentes	Revendication concernée	CLASSEMENT DE LA DEMANDE (IPC)
X	US 2002/042942 A1 (COLORADO JUANCARLOS [US]) 18 avril 2002 (2002-04-18) * figures 1,3,4 * * page 4, ligne 2,3, alinéa 113 * * page 4, ligne 5, alinéa 115 * * page 5, ligne 4-7, alinéa 121 * * page 5, ligne 9-15, alinéa 121 * * page 5, ligne 6-10, alinéa 123 * * page 5, ligne 20-25, alinéa 0123 * * page 6, ligne 1-4, alinéa 133 * * page 7, ligne 1-5, alinéa 135 * -----	1-5	INV. A62B35/00
			DOMAINES TECHNIQUES RECHERCHES (IPC)
			A62B A61G

Le présent rapport a été établi pour toutes les revendications

Lieu de la recherche	Date d'achèvement de la recherche	Examinateur
La Haye	7 avril 2008	Paul, Adeline

CATEGORIE DES DOCUMENTS CITES

X : particulièrement pertinent à lui seul
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O : divulgation non-écrite
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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	

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

RÉFÉRENCES CITÉES DANS LA DESCRIPTION

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Documents brevets cités dans la description

- US 2002042942 A **[0005]**

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(71) Applicant: **CARRS BILLINGTON AGRICULTURE (SALES) LTD** [GB/GB]; Old Croft, Stanwix, Carlisle, Cumbria CA3 9BA (GB).

(72) Inventor: **GRIFFITHS, Stephen**; c/o AYD Ltd, Hendy, Waunfawr, Caernarfon, Gwynedd LL55 4BX (GB).

(74) Agent: **STUTTARD, Garry**; Urquhart-Dykes & Lord LLP, Arena Point, Merrion Way, Leeds, West Yorkshire LS2 8PA (GB).

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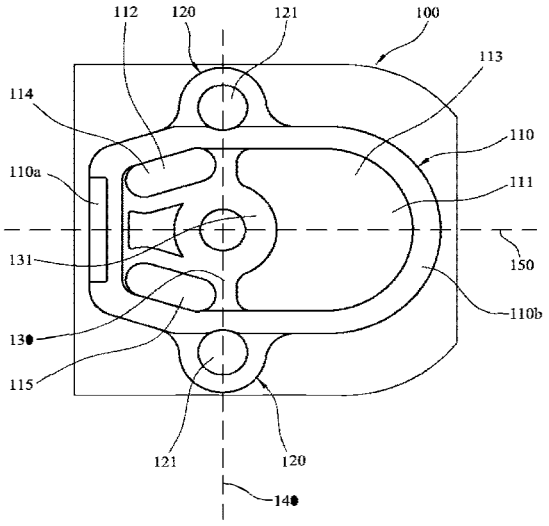


Figure 3

(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.

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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

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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.

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 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.

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.

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 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.

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 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 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

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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 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 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 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.

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 (*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 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 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 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 invention suitable to be fitted to a female user; and

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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).

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 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 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 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, 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.

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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 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 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 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 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 apertures and third aperture are aligned along a first axis which extends substantially transverse to a second axis of the connector.

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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.

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.

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. 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.

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.

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

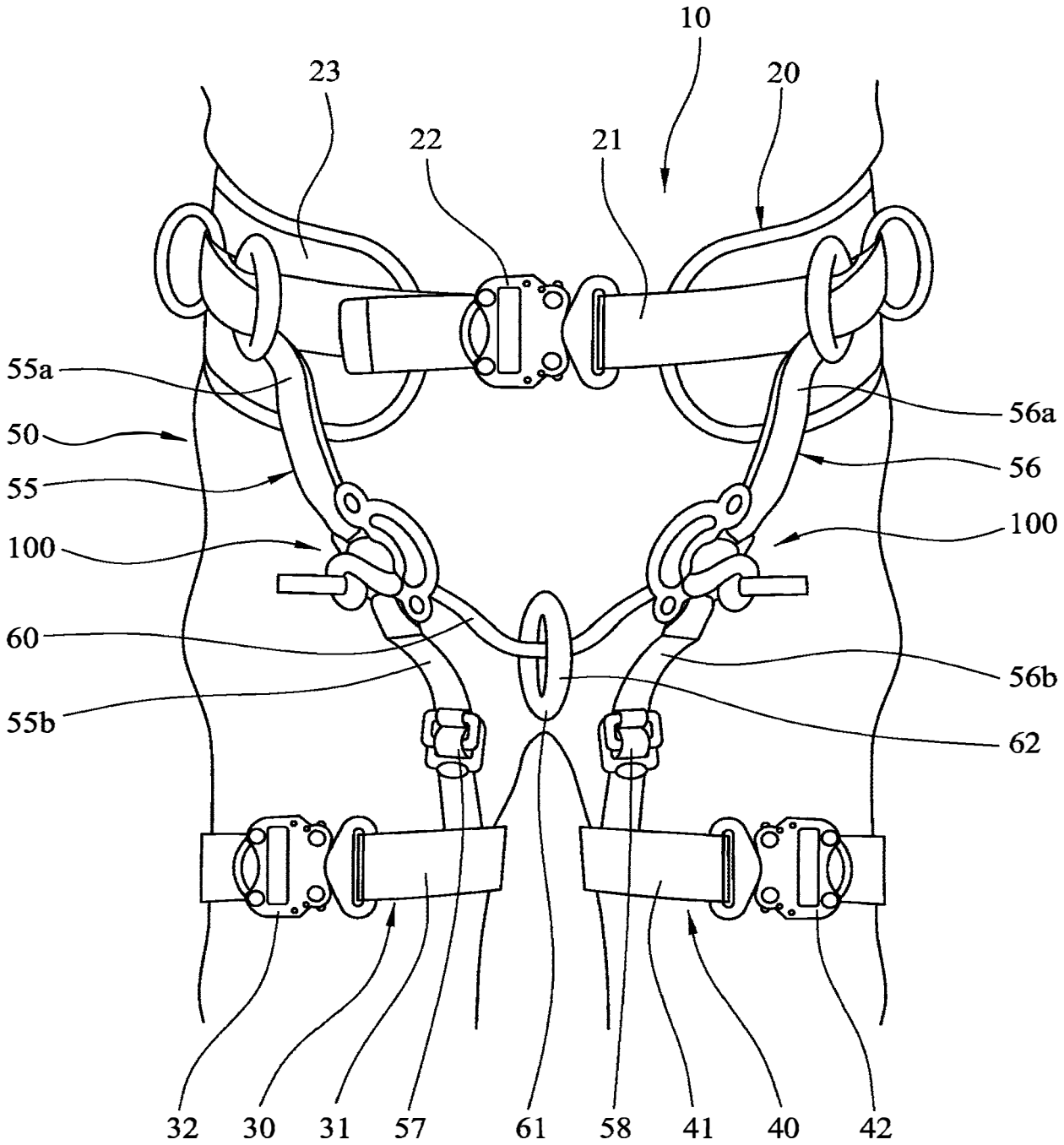


Figure 1

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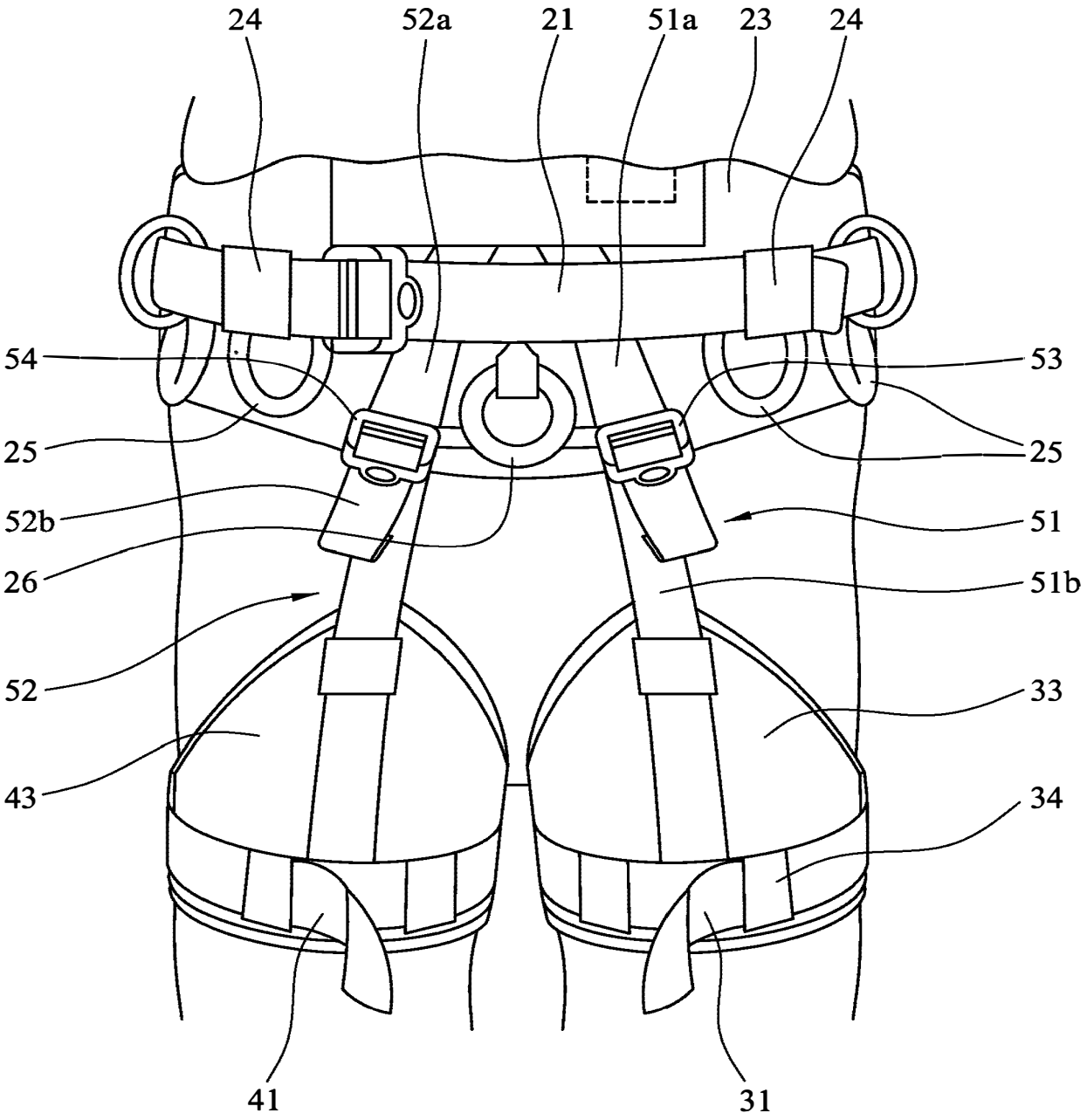


Figure 2

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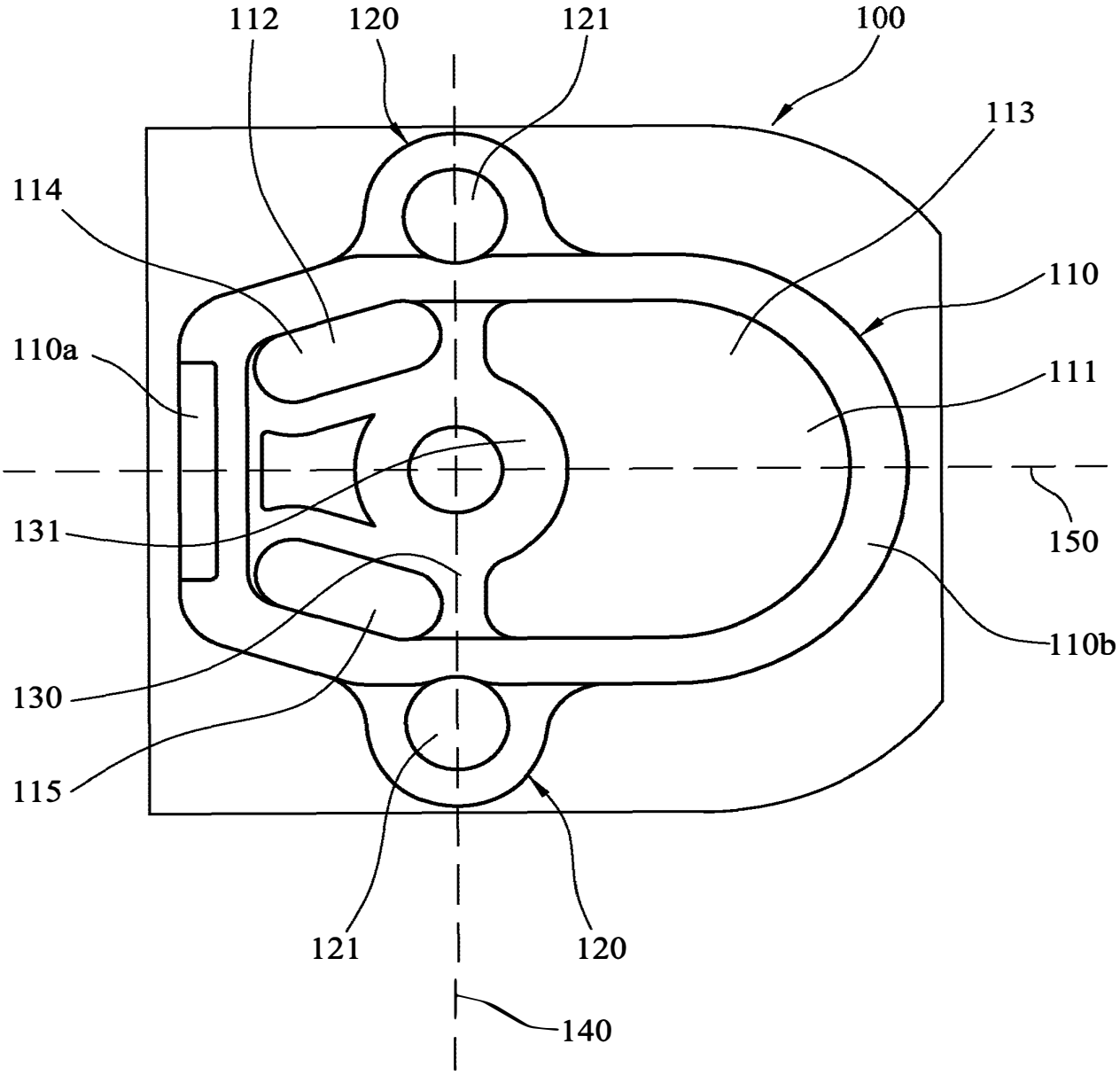


Figure 3

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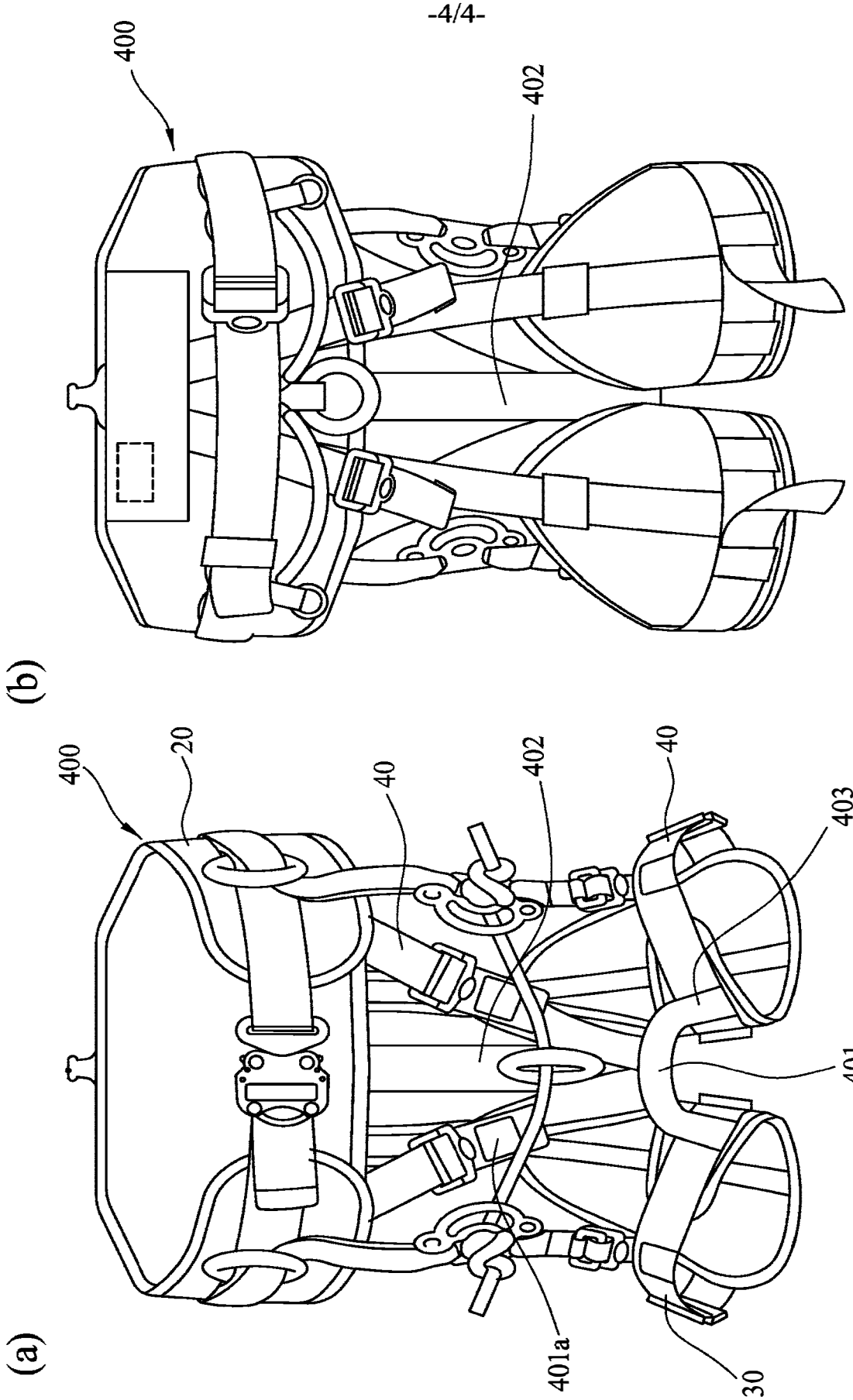


Figure 4

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INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2017/052664

A. CLASSIFICATION OF SUBJECT MATTER
INV. A62B35/00
ADD. A63B27/00

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	US 8 333 262 B1 (CARPENTER AMANDA [US] ET AL) 18 December 2012 (2012-12-18)	1-4,8,9, 14-25, 27-31
A	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	5-7, 10-13, 26,32-36

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[X] Further documents are listed in the continuation of Box C.

[X] 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

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"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

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
20 November 2017	24/11/2017

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Zupancic, Gregor

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Form PCT/ISA/210 (second sheet) (April 2005)

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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/20160229062509/http://www.teufelberger.com:80/en/products/arboriculture/harnesses-for-arboriculture/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-Gebrauchsanleitung-treeMOTION-Seilbru_cke_Druck.pdf [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/20121019193421/http://dmmprofessional.com/products/small-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	

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF TENNESSEE

TETHRD, LLC,	)	
	)	
PLAINTIFF,	)	Civil Action No. 1:24-cv-00076
	)	Chief Judge Campbell
v.	)	Magistrate Judge Holmes
	)	
CRÜZR SADDLES LLC,	)	JURY DEMAND
	)	
DEFENDANT.	)	
	)	

FIRST AMENDED AND SUPPLEMENTAL COMPLAINT
FOR PATENT INFRINGEMENT

Plaintiff Tethrd, LLC ("Tethrd") files this First Amended and Supplemental Complaint and demands a jury trial seeking relief for patent infringement by Defendant CRÜZR Saddles LLC ("Cruzr"), as follows:

NATURE OF THE ACTION

1. This is an action for patent infringement arising under the patent laws of the United States, Title 35, United States Code.

THE PARTIES

2. Tethrd is a Delaware limited liability company with its principal place of business located at 2409 Pulaski Hwy, Columbia, TN 38401.

3. Tethrd is a global leader in the saddle-hunting industry. Founded in 2018, Tethrd was the world's first outdoor sporting goods company focused on ultralight elevated hunting.

4. Since the company's inception, Tethrd's mission is to design and engineer the world's best saddle-hunting equipment with a passion for safety, performance, and quality.

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5. In the pursuit of the lightest, most versatile, and safest hunting system ever created the founders of Tethrd have devoted years to perfecting the ultimate hunting saddle and bridge rope assembly.

6. After countless hours of development and product testing stages, Tethrd finally accomplished its goal of providing the most comfortable and safest hunting saddles on the market today.

7. Tethrd offers a number of products including the Ultralock Saddle, Ultralock SD Saddle, Phantom Saddle, Phantom Elite Saddle, and GRIT Workhorse Saddle.[1]

8. Tethrd's products have received national recognition for their innovative designs. For example, the Phantom Saddle earned the New Product Launch Showcase Award at the 2020 Archery Trade Association Show.

9. Upon information and belief, Cruzr is a Tennessee limited liability company with its principal place of business located at 1380 N Washington Ave, Suite C, Cookeville, TN 38501.

10. Cruzr is a direct competitor of Tethrd and offers saddle-hunting equipment for sale across the United States through distributors and through its online website.[2]

JURISDICTION AND VENUE

11. This Court has jurisdiction over the subject matter of this action pursuant to 28 U.S.C. §§ 1331 and 1338(a) because this action arises under the patent laws of the United States, Title 35, United States Code, including 35 U.S.C. § 271, *et seq.*

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[1] ULTRALOCK SADDLE, https://tethrd.com/products/ultralock-saddle (last visited August 12, 2024); ULTRALOCK SD SADDLE, https://tethrd.com/products/ultralock-sd (last visited August 12, 2024); PHANTOM SADDLE, https://tethrd.com/products/phantom-saddle (last visited August 12, 2024); PHANTOM ELITE SADDLE, https://tethrd.com/products/phantom-elite-saddle (last visited August 12, 2024); GRIT WORKHORSE SADDLE KIT, https://gritgear.com/products/workhorse-saddle (last visited August 12, 2024).

[2] CRÜZR SHOP, https://cruzr.com/cruzr-shop/ (last visited August 12, 2024).

12. This Court has personal jurisdiction over Cruzr because Cruzr is a limited liability company organized and existing under the laws of the state of Tennessee and residing in Cookeville, Tennessee. Further, upon information and belief, Cruzr regularly conducts business in this judicial district and has committed acts of patent infringement in this judicial district, the state of Tennessee, and throughout the United States.

13. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391 and 1400(b) because Cruzr has a regular and established place of business in this judicial district and, upon information and belief, has committed acts of infringement in this judicial district.

TETHRD'S U.S. PATENT NO. 11,964,175 B2

14. On April 23, 2024, the United States Patent and Trademark Office ("USPTO") duly and legally issued United States Patent No. 11,964,175 B2, entitled "Bridge Rope Assembly" (the "175 Patent"). A true and correct copy of the 175 Patent is attached hereto as Exhibit A.

15. Claim 1 of the issued 175 Patent contained a typographical error, whereby "min body" should correctly state "main body." *See* Exhibit A.

16. During the prosecution of the application that led to the 175 Patent, the claim language submitted by Tethrd on January 3, 2024 included the correct term, "main body." The examiner issued a notice of allowance on January 30, 2024. However, the USPTO incorrectly printed the issued claim language.

17. The typographical error and the correct term are clear from reviewing the file history and claims of the 175 Patent.

18. On October 11, 2024, Tethrd submitted a Request for Certificate of Correction due to Patent Office Mistake to amend the "min body" typographical error in Claim 1 of the 175 Patent.

19. On November 12, 2024, the USPTO duly and legally issued a Certificate of Correction, certifying that in Claim 1 of the 175 Patent, "min" should be changed to "main." A true and correct copy of the Certificate of Correction is attached hereto as Exhibit G.

20. Tethrd owns all right, title, and interest in and to the 175 Patent, including the right to bring suit for past, present, and future patent infringement, and to recover damages for past and ongoing patent infringement.

21. The 175 Patent describes a bridge rope assembly intended to engage both ends of a safety harness (*i.e.*, hunting saddle).

22. The rope bridge described in the 175 Patent is attached to a rope tether wrapped around a tree with a connector.

23. These safety harnesses are typically worn by an individual and secured to trees to prevent the person from falling. The safety harness engages the individual's buttocks and allows them to sit in the saddle with the ability to maneuver around the tree from an elevated position from the ground.

PRIOR COMMUNICATIONS WITH CRUZR

24. By letter dated July 23, 2020 (the "2020 Letter"), Tethrd provided notice of Claim 1 of United States Patent Application No. 16/736,345 with the USPTO (the "345 Application"). The 2020 Letter informed Cruzr that its Adjustable Amsteel Bridge infringes at least one claim of the 345 Application. A true and correct copy of the copy of the 345 Application claims and the 2020 Letter are attached hereto as Exhibits B and C, respectively.

25. By letter dated September 5, 2023 (the "2023 Letter"), Tethrd provided Cruzr a copy of United States Patent No. 11,504,556 B2, entitled "Bridge Rope Assembly" (the "556 Patent"). The 2023 Letter informed Cruzr that its Cruzr XC saddle and Archon saddle infringe at

Filed: August 11, 2025

Filed on behalf of:
Petitioner
Crüzr Saddles LLC

By: Brenton R. Babcock (Reg. No. 39,592)
Yang Wang (limited recognition pending)
Sterlington, PLLC
228 Park Ave. South #97956
New York, NY 10003
Tel.: (212) 433-2993
Email: brent.babcock@sterlingtonlaw.com
yang.wang@sterlingtonlaw.com

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

CRÜZR SADDLES LLC,

Petitioner,

v.

TETHRD, LLC,

Patent Owner.

Case No. IPR2025-01407
Patent No. 11,964,175

PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 11,964,175

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I. INTRODUCTION

Petitioner Crüzr Saddles LLC ("Crüzr") respectfully requests *Inter Partes* Review of U.S. Patent No. 11,964,175 ("the '175 Patent") (Ex. 1001) and the cancellation of claims 1-14 (the "Challenged Claims") as anticipated and/or obvious under 35 U.S.C. §§ 102 and/or 103. This petition is supported by the technical Declaration of Tobe Sherrill (Ex. 1015), founder of Sherrilltree arborist supply and RopeLogic splicing operations, and the authentication Declaration of Nicholas Taylor (Ex. 1016), digital librarian and internet archivist for the Los Alamos National Laboratory.

II. MANDATORY NOTICES

A. Real Party-In-Interest Under 37 C.F.R. § 42.8(b)(1)

Crüzr certifies that Crüzr Saddles LLC is the real party-in-interest.

B. Related Matters Under 37 C.F.R. § 42.8(b)(2)

Patent Owner Tethrd, LLC ("Tethrd") has asserted the original '175 Patent against Crüzr in an original Complaint filed on August 12, 2024, and the corrected '175 Patent against Crüzr in a First Amended and Supplemental Complaint ("FASC") filed on December 3, 2024, both cases captioned *Tethrd, LLC v. Crüzr Saddles LLC*, Case No. 1:24-cv-00076 (M.D. Tenn.). Exs. 1007, 1009. Crüzr was served with the original Complaint on August 14, 2024, and the FASC on December 3, 2024. Exs. 1008, 1010.

On October 11, 2024, Tethrd formally requested that the USPTO correct the '175 Patent's only independent claim (Ex. 1005 at 4-9), and on November 12, 2024, the USPTO responded by issuing a Certificate of Correction (Ex. 1 at 15; Ex. 1005 at 1-3). Accordingly, the corrected '175 Patent has been in litigation since December 3, 2024. Exs. 1009, 1010. For purposes of this IPR proceeding, "the '175 Patent" will refer to the corrected '175 Patent.

C. Lead and Backup Counsel Under 37 C.F.R. § 42.8(b)(3)

Lead counsel is Brenton R. Babcock (Reg. No. 39,592). Backup counsel is Yang Wang (provisional registration pending). A Power of Attorney accompanies this Petition.

D. Service Information Under 37 C.F.R. § 42.8(b)(4)

Crüzr consents to electronic service by email at:

brent.babcock@sterlingtonlaw.com;

yang.wang@sterlingtonlaw.com; and

hope.vanetten@sterlingtonlaw.com.

III. PAYMENT OF FEES

Crüzr authorizes the Office to charge the fees specified by 37 C.F.R. §§ 42.203(a) and 42.15(b) to Deposit Account **607344** as well as any additional fees that might be due in connection with this Petition.

IV. REQUIREMENTS FOR IPR UNDER 37 C.F.R. § 42.204

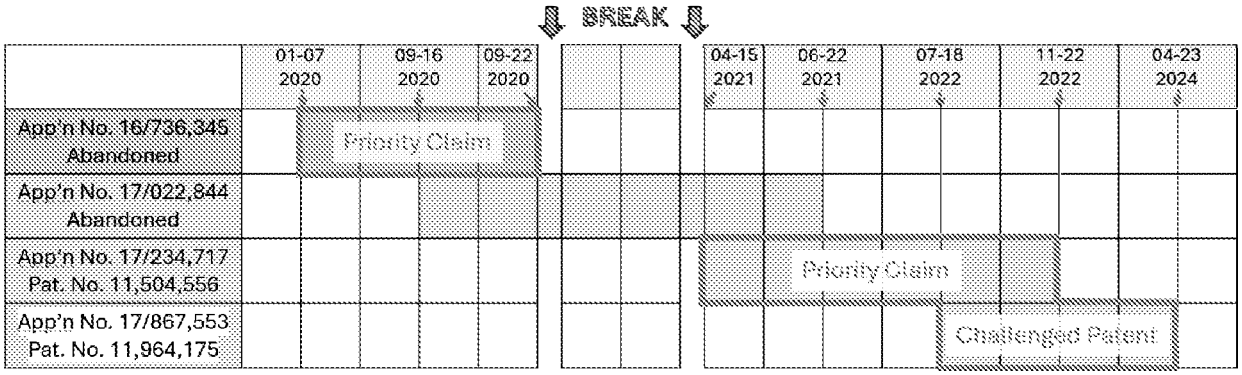
A. Grounds for Standing Under 37 C.F.R. § 42.204(a)

Crüzr hereby certifies that the '175 Patent is available for *inter partes* review and that Crüzr is not barred or estopped from requesting *inter partes* review challenging any of the '175 Patent's claims on the grounds identified herein.

B. Statement of Relief Requested Under 37 C.F.R. § 42.104(b)(1)-(2)

Crüzr respectfully requests *inter partes* review of Claims 1-14 of the '175 Patent, filed on July 18, 2022, which is a continuation of U.S. Application No. 17/231,717 (now U.S. Patent No. 11,504,556 ("the '556 Patent")), filed April 15, 2021, which claims priority benefit of U.S. Application No. 16/736,345 (abandoned), filed January 7, 2020. Ex. 1201 at 1. From a superficial reading of the foregoing, the earliest ***possible*** priority date of the '175 Patent would appear to be **January 7, 2020**.

Importantly here, however, the '175 Patent is ***not*** entitled to the priority benefit of the earliest-filed U.S. Application No. 16/736,345 because of a break in continuity of the '175 Patent's priority claim:



As illustrated above, the '175 Patent does ***not*** claim priority benefit to the intermediate U.S. Application No. 17/022,844 filed September 16, 2020. Because of this break in continuity of the priority claim, the earliest priority date of the '175 Patent is **April 15, 2021**, the filing date of its parent '556 Patent.

Crüzr requests review of the Challenged Claims on the three grounds set forth in the claim charts herein. An explanation of how the Challenged Claims are unpatentable is provided in the form of discussions and claim charts, which indicate where each claim element can be found in the cited prior art.

Additional support for each ground of unpatentability is set forth in the Declaration of Tobe Sherrill, referenced throughout this Petition. *See* Ex. 1015 ¶¶ 41-130. Mr. Sherrill's testimony is offered as evidence of the knowledge that a POSITA would have possessed at the time of the claimed invention. Further, the Declaration of Nicholas Taylor authenticates the publication dates of the YouTube videos and Internet message forum threads relied upon in this Petition, and that those Internet printed publications were accessible to persons concerned with the

art to which those publications relate. *See* Ex. 1016 ¶¶ 9-731.

C. The '175 Patent is Entitled to a Priority Date of April 15, 2021 Because of a Break in Continuity of the Claimed Priority

Three earlier U.S. applications are related to the '175 Patent: (1) Application No. 16/736,345, filed on January 7, 2020; (2) Application No. 17/022,844, filed on September 16, 2020; and (3) Application No. 17/231,717, filed on April 15, 2021, issued as U.S. Patent No. 11,504,556 on November 22, 2022.

Throughout the prosecution history of the '175 Patent, Tethrd only cited and referred to Application No. 16/736,345 and Application No. 17/231,717, and consistently omitted intermediate Application No. 17/022,844. As illustrated in the diagram above, Application No. 17/231,717 was never co-pending with application No. 16/736,345, as is required for a proper priority claim under 35 U.S.C. § 119(e)(1), and thus the claimed priority chain is broken because Tethrd failed to include the intermediate Application No. 17/022,844 in the priority claim.

First, in the Related U.S. Application Data, Tethrd claimed that the '175 Patent is a "continuation of application No. 17/231,717 filed on Apr. 15, 2021, now Pat. No. 11,504,556, which is a continuation of application No. 16/736,345. filed on January 7, 2020, now abandoned." Ex. 1001 at 1. The intermediate Application No. 17/022,844 is not referenced. *Id.*

Second, in the Cross-Reference to Related Application of the '175 Patent, Tethrd stated that "[t]his application is a continuation and I claim the benefit of

U.S. application Ser. No. 16/736,345, now abandoned, filed on Jan. 7, 2020 and U.S. application Ser. No. 17/231, 717 filed on Apr. 15, 2021". Ex. 1001, Col. 1:6-10. Again, intermediate Application No. 17/022,844 is not referenced. *Id.*

Third, in the disclosure of Domestic Benefit/National Stage Information in Application Data Sheet under 37 C.F.R. § 1.76, Tethrd only claimed U.S. Application Ser. No. 16/736,345, filed on January 7, 2020, and U.S. Application Ser. No. 17/231,717, filed on April 15, 2021. Ex. 1005 at 89. Once again, Tethrd did not include intermediate Application No. 17/022,844:

Domestic Benefit/National Stage Information:

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

Prior Application Status	Pending		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
	Continuation of	17231717	2021-04-15
Prior Application Status	Abandoned		Remove
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
17231717	Continuation of	16736345	2020-01-07

Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the **Add** button. Add

Ex. 1005 at 89.

Tethrd's Initial Infringement Contentions, served on March 10, 2025, are entirely consistent with the above. Ex. 1135 at 3.

The USPTO's rules and procedures set forth the legal requirements for referencing prior applications:

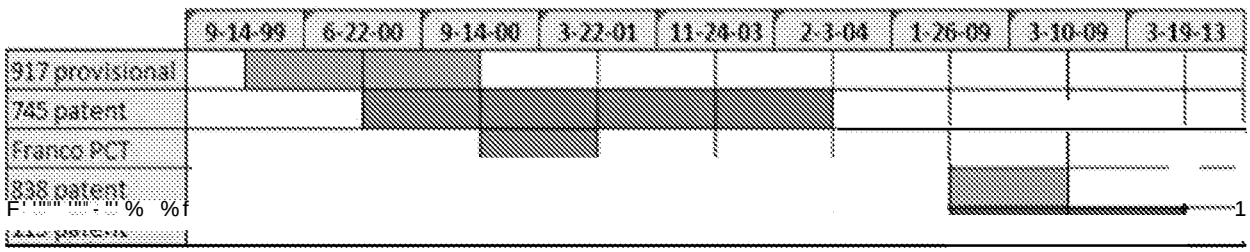
> [A]ny nonprovisional application . . . that claims the benefit of one or more prior-filed nonprovisional applications . . . ***must contain or be amended to contain a reference to each such prior-filed application***, identifying it by application number (consisting of the series code and serial number) . . . .

37 C.F.R. § 1.78(d)(2) (emphases added).

> The reference to the prior applications must identify all of the prior applications and indicate the relationship . . . between each nonprovisional application in order to establish copendency throughout the entire chain of prior applications. ***Appropriate references must be made in each intermediate application in the chain of prior applications***. A specific reference is required to each prior-filed application in a chain of applications and cannot be incorporated by reference from a prior application.

MPEP § 211.01(b) (emphases added).

In *Droplets, Inc. v. E-Trade Bank*, 887 F.3d 1309 (Fed. Cir. 2022), the specification of the disputed '115 Patent included a priority claim to the '838 Patent and the '917 Provisional, but did not claim benefit to the intermediate '745 Patent and Franco PCT:



Droplets, 887 F.2d at 1312, 1322.

In determining that the '115 Patent's incorporation by reference of the '838 Patent was insufficient to entitle it to the priority benefit of the '745 Patent and '917 Provisional, the Federal Circuit affirmed the Board's decision:

> [W]e conclude that ***a patent must contain a specific reference to each prior-filed application to be entitled to those applications' earlier filing dates***. Incorporation by reference cannot satisfy this statutorily mandated specific reference requirement.

Droplets, 887 F.3d at 1322 (emphases added); *see also Medtronic CoreValve, LLC v. Edwards Lifesciences Corp.*, 741 F.3d 1359, 1360, 1365 (Fed. Cir. 2014).

Accordingly, the '175 Patent is ***not*** entitled to the priority benefit of the filing date of Application No. 16/736,345 because of a break in continuity of the '175 Patent's priority claim. The earliest priority date of the '175 Patent is **April 15, 2021**, the filing date of Application No. 17/231,717 (the '556 Patent).

D. The Three Grounds of Unpatentability Presented in this IPR Petition

Crüzr presents three grounds of unpatentability in this Petition:

- **Ground 1** is based on the correct priority date for the '175 Patent, namely, **April 15, 2021**. Crüzr expects that Tethrd will dispute that priority date (*see* Ex. 1137 at 14; Ex. 1138 at 29), despite the clear evidence and legal

authority discussed herein. Thus, out of an abundance of caution, Crüzr presents Ground 2 and Ground 3 as alternative grounds of unpatentability.

- **Ground 2** assumes *arguendo* that the priority date for the '175 Patent is (incorrectly) **January 7, 2020**. Ground 2 relies, in part, on third-party printed publications that published during the 35 U.S.C. § 102(b)(1)(A) one-year grace period from January 7, 2019 – January 6, 2020. Because the '175 Patent was filed under the first-to-file regime of the AIA, these third-party printed publications are prior art to the '175 Patent and can be considered by the Board in an IPR proceeding.
- **Ground 3** also assumes *arguendo* that the priority date for the '175 Patent is (incorrectly) **January 7, 2020**. However, Ground 3 relies *only* on printed publications that published on or before January 6, 2019, that is, before the 35 U.S.C. § 102(b)(1)(A) one-year grace period.

Crüzr's three grounds of unpatentability are summarized in the table below:

Ground	Claims	Basis for Unpatentability
Ground 1 (Priority = 4/15/21)	1, 6, 11, 14	Anticipated Under 35 U.S.C. § 102 and/or Obvious under 35 U.S.C. § 103 over ▪ YouTube - Tethrd Mantis VS The Phantom Saddles (Ex. 1132), or alternatively ▪ YouTube - Tethrd PHANTOM Review and How-To Tutorial! (Ex. 1133), or ▪ Saddle Hunter - Tethrd Phantom's Bridge Knot (p1) (Ex. 1116)

	2, 3	Obvious under 35 U.S.C. § 103 over references for Claim 1, in further view of ▪ YouTube - DIY Utilibridge (Ex. 1125), or alternatively ▪ SaddleHunter - DIY utillibridge (p1) (Ex. 1075)
	4, 5, 7	Obvious under 35 U.S.C. § 103 over references for Claim 1, or alternatively ▪ SaddleHunter - DIY Utilibridge (p2) (Ex. 1074)
	8, 9, 10, 12, 13	Obvious under 35 U.S.C. § 103 over references for Claim 4, or alternatively ▪ SaddleHunter - DIY Utilibridge (p1) (Ex. 1073 at 2)
Ground 2 (Priority *arguendo* = 1/07/20)	1, 6, 14	Obvious under 35 U.S.C. § 103 over ▪ YouTube - Tree Saddle Bridge Basics (Ex. 1134), in view of ▪ SaddleHunter - Prusik Knots (p1) (Ex. 1099), and ▪ SaddleHunter - Amsteel Brummel Lock ? (p1) (Ex. 1061), and ▪ YouTube - Hunting SOBs How to Splice Samson Predator Rope (Ex. 1130), and ▪ YouTube - Hunting Saddle Modifications - DIY (Ex. 1129), and ▪ SaddleHunter - Smallest diameter on tether rope (p1) (Ex. 1107), or alternatively ▪ SaddleHunter - Sewn webbing bridge ? (p1) (Ex. 1103), in further view of ▪ YouTube - How to Add a Webbing Bridge to a Tree Saddle (Ex. 1126), or alternatively ▪ SaddleHunter - Before I become a cutter.... (p1) (Ex. 1066)

	2	Obvious under 35 U.S.C. § 103 over references for Claim 1, in further view of ▪ SaddleHunter - How to make an Amsteel Bridge (p2) (Ex. 1082) or alternatively ▪ SaddleHunter - Replacing the bridge carabiner?? (p1) (Ex. 1100)
	3	Obvious under 35 U.S.C. § 103 over references for Claim 1, in further view of ▪ SaddleHunter - Mantis Bridge Length (p1) (Ex. 1090) or alternatively ▪ SaddleHunter - Replacing the bridge carabiner?? (p1) (Ex. 1100)
	4. 5	Obvious under 35 U.S.C. § 103 over references for Claim 3, or alternatively ▪ SaddleHunter - Diy shorter mantis bridge (p2) (Ex. 1072)
	7	Obvious under 35 U.S.C. § 103 over references for Claim 4, in further view of ▪ HammockForums - Smallest continuous loop of amsteel blue possible (p1) (Ex. 1038) or alternatively ▪ HammockForums - Continuous loop pictoral (p20) (Ex. 1032), or ▪ HammockForums - Stuck on Hennessy continuous loops... (p1) (Ex. 1041)
	8, 9, 12, 13	Obvious under 35 U.S.C. § 103 over references for Claim 7, in further view of

		▪ SaddleHunter – H2 Triad Bridge (p2) (Ex. 1078) or alternatively ▪ SaddleHunter - Amsteel and the bury's (p1) (Ex. 1057)
	10, 11	Obvious under 35 U.S.C. § 103 over references for Claim 9, in further view of ▪ SaddleHunter - Adjustable bridge ideas? (p1) (Ex. 1054) or alternatively ▪ SaddleHunter - Amsteel Prussic (p1) (Ex. 1064), or ▪ SaddleHunter - How I tie a stronger Prussik knot. (p1) (Ex. 1081), or ▪ SaddleHunter - Paracord (p2) (Ex. 1098)
Ground 3 (Priority *arguendo* = 1/07/20)	1, 6, 14	Obvious under 35 U.S.C. § 103 over ▪ YouTube - Mantis Saddle - Setup and Directions (Ex. 1131), in view of ▪ ArboristSite - Amsteel Blue Splicing Experiments (p1) (Ex. 1024), and ▪ Samson - 12-Strand Eye-and-Eye Tail Splice (Ex. 1018), and ▪ YouTube - Hunting Saddle Modifications - DIY (Ex. 1129), and ▪ SaddleHunter - Smallest diameter on tether rope (p1) (Ex. 1107), in further view of ▪ SaddleHunter - Mantis Bridge Mods (p1) (Ex. 1091), or alternatively ▪ SaddleHunter - Before I become a cutter.... (p1) (Ex. 1066)
	2	Obvious under 35 U.S.C. § 103 over references for Claim 1, or alternatively

		▪ HammockForums - Everything you always wanted to know about Amsteel but were afraid to ask (p3) (Ex. 1034), or ▪ SaddleHunter - Mantis Bridge Length (p1) (Ex. 1090)
	3, 4	Obvious under 35 U.S.C. § 103 over references for Claims 1, or alternatively ▪ SaddleHunter - Mantis Bridge Length (p1) (Ex. 1090), or ▪ SaddleHunter - Tethrd Mantis dimensions (p1) (Ex. 1115)
	5	Obvious under 35 U.S.C. § 103 over references for Claim 4, or alternatively ▪ SaddleHunter - Amsteel (p1) (Ex. 1055)
	7-9, 12, 13	Obvious under 35 U.S.C. § 103 over references for Claim 4, in further view of ▪ HammockForums - Continuous loop pictoral (p20) (Ex. 1032), or alternatively ▪ L-36.com - Loops, Loups, and Loupes (2012-10-01) (Ex. 1046)
	10, 11	Obvious under 35 U.S.C. § 103 over references for Claim 9, in further view of ▪ SaddleHunter - Amsteel Prussic (p1) (Ex. 1064)

V. BACKGROUND AND PRELIMINARY MATTERS

A. The Long History of Rope Harnesses, Rope Knots, and Rope Splicing, Including Users Frequently Modifying Their Equipment Components in Myriads of Ways

Ropes, rope splicing, and knots have a long history that goes back centuries, particularly in the nautical and sailing arts. The uses of ropes and joining techniques were adopted and advanced several decades ago in subsequent arts, such as safety ropes and harnesses. In about the past two decades, that technology was further employed and adapted in other similar arts, such as outdoor suspension hammocks and tree care and management slings and harnesses. Most recently, during about the past decade, those same technologies were adopted in the field of saddle hunting. Ex. 1015 ¶¶ 41-42.

B. The Frequent Public Sharing of Splicing Techniques and Component Modifications on The Internet via, For Example, Popular YouTube Videos and Active Internet Message Boards

Historically, as reflected in small part in the exhibits filed with this Petition, members of the arborist, hammock, and saddle hunting communities openly shared information about their various equipment components and their do-it-yourself modifications to those components. That public sharing was generally intended to freely provide information to members of their community or other interested persons, helping to develop the knowledge base and disseminate information to like-minded individuals, including the goal of advancing safety, comfort, and cost-

savings. When Internet video sharing (*e.g.*, YouTube) and Internet message boards came into existence, the public sharing of information grew exponentially, including the dissemination of innumerable online discussions, videos, and photographs. *Id.* ¶ 43.

While patents in these arts do exist, they are nowhere near as voluminous as in other arts (*e.g.*, semiconductors, pharmaceuticals, cellular technologies, etc.). In general, members of these communities typically did not file patent applications on their contributions, largely because of the general sense that the various equipment components and modifications were already known by others, were already in the public domain, and/or were obvious modifications. In addition, the level of ordinary skill in the art here is not as high as in other arts, so persons of ordinary skill were not particularly patent-savvy. *Id.* ¶ 44.

C. Tethrd's Active Uploading of YouTube Videos and Participation in Internet Message Board Threads

As discussed further below (and as reflected in many of the exhibits filed with this Petition), since at least as early as 2018, Tethrd's principals were actively involved in public Internet discussions involving saddle hunting equipment and modifications to that equipment and the components thereof (including saddle bridges) on YouTube and on the SaddleHunter message board. For example, Tethrd maintains a popular YouTube channel named "Tethrd Nation" < https://www.youtube.com/c/ TethrdNation > that began in mid-2018. Named

inventor Gregory Alan Godfrey ("Greg Godfrey") maintains a popular YouTube channel named "G2 Outdoors" < https://www.youtube.com/@G2Outdoors > that began in early 2016. In addition, with respect to the SaddleHunter message board, alias "g2outdoors" corresponds to named inventor Greg Godfrey.

D. Tethrd Provided None of the Most Relevant Prior Art (*e.g.*, YouTube Videos and Internet Message Board Threads) to the Patent Examiners in the '175 Patent Application or Any of its Family Members

Despite Tethrd's and the named inventors' knowledge of—and active participation in—the public sharing of information about saddle hunting equipment and modifications to various equipment components (including saddle bridges), Tethrd did not disclose *any* of that Internet information the USPTO. As outlined in this Petition, much of that withheld information was highly material to the claims of the '175 Patent. Particularly in view of the dearth of patents in this art, the concealed Internet prior art would have been highly relevant for the patent examiners to have fully evaluated the patentability of the claims of the '175 Patent. *Id.* ¶ 45.

E. The Challenged '175 Patent

1. A Fully Buried Bridge Was Well-Known in the Prior Art

Tethrd asserts that its "main body" (or saddle bridge), which has one end buried through its body to create a double-thickness rope, is a patentable innovation:

> 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***.

Ex. 1001, Col. 1:38-42 (emphases added).

In the field of the '175 Patent, this feature—splicing a rope to create a double layer thickness—is frequently referred to as a rope splice being "fully buried". Ex. 1015 ¶ 47.

Initially, as discussed below, the '175 Patent's claims are significantly narrower than a fully buried bridge in which the ends are buried "a sufficient distance such that a double layer of rope is created". The claims recite that the two rope ends are "adjacent to each other", which the '175 Patent teaches is within a distance of 3.0 inches or less. *See infra* Section V.H.4. The claims also recite that both the eye loop and the friction hitch loop are "configured to engage" the bridge loops, which the '175 Patent teaches means spliced to interlock with the bridge loops. *See infra* Part V.H.3. In any event, contrary to Tethrd's assertions, a fully buried bridge was well-known in the prior art, none of which was disclosed to the USPTO. Ex. 1015 ¶ 48.

For example, in as early as 2012, Samson Rope Technologies, Inc. ("Samson"), the well-known manufacturer of synthetic ropes such as Amsteel,

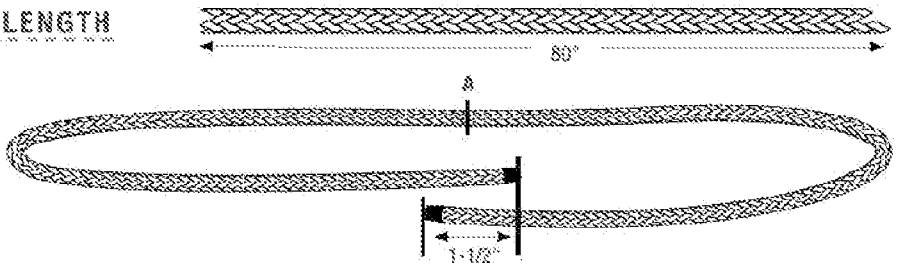
provided ubiquitous splicing instructions for making a "fully buried" eye-and-eye tail splice:

SAMSON SPLICING INSTRUCTIONS

12-Strand Eye-and-Eye Tail Splice

STEP 1 **MARKING TAIL LENGTH**

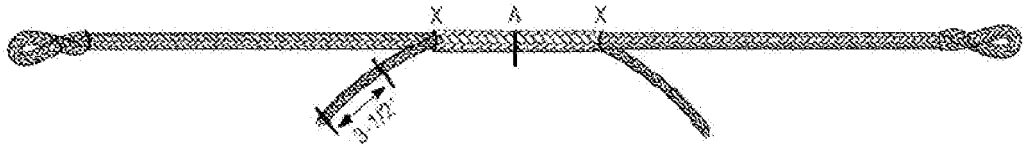
Mark the center point of the rope. This is Mark A. Bring both ends of the rope towards the center point as shown and overlap the tails 1-1/2".



* * *

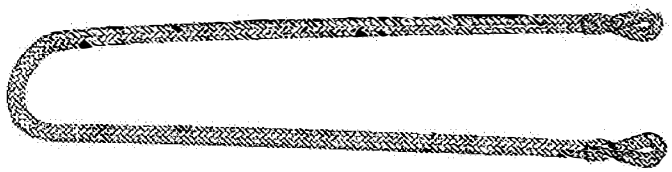
STEP 7 **MARKING AND CUTTING ENDS**

Smooth all slack from the rope, working from the Brummels to the center mark. Mark where the tapered ends exit the rope at both Marks X. Pull both tapered ends out from Mark X, measure 3-1/2" from previous mark where the tapers exited at Mark X (this is the section of both tapered ends that overlap in the center section), and cut off at an angle.



STEP 8 **FINISHING SPLICE**

Milk all slack from the Eye-and-Eye Tail. The goal is to keep the diameter and fullness of the rope consistent tied into a climbing hitch. When all slack has been removed and the diameter is consistent, lock stitch the eyes at both ends.

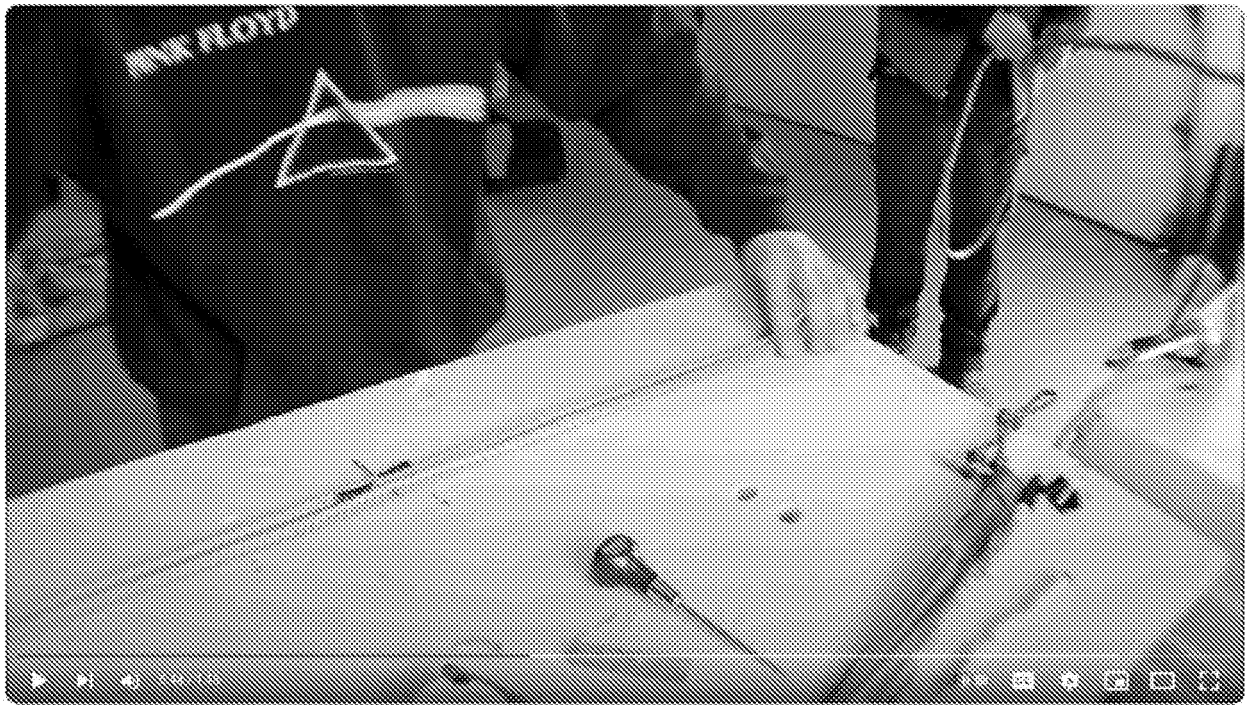


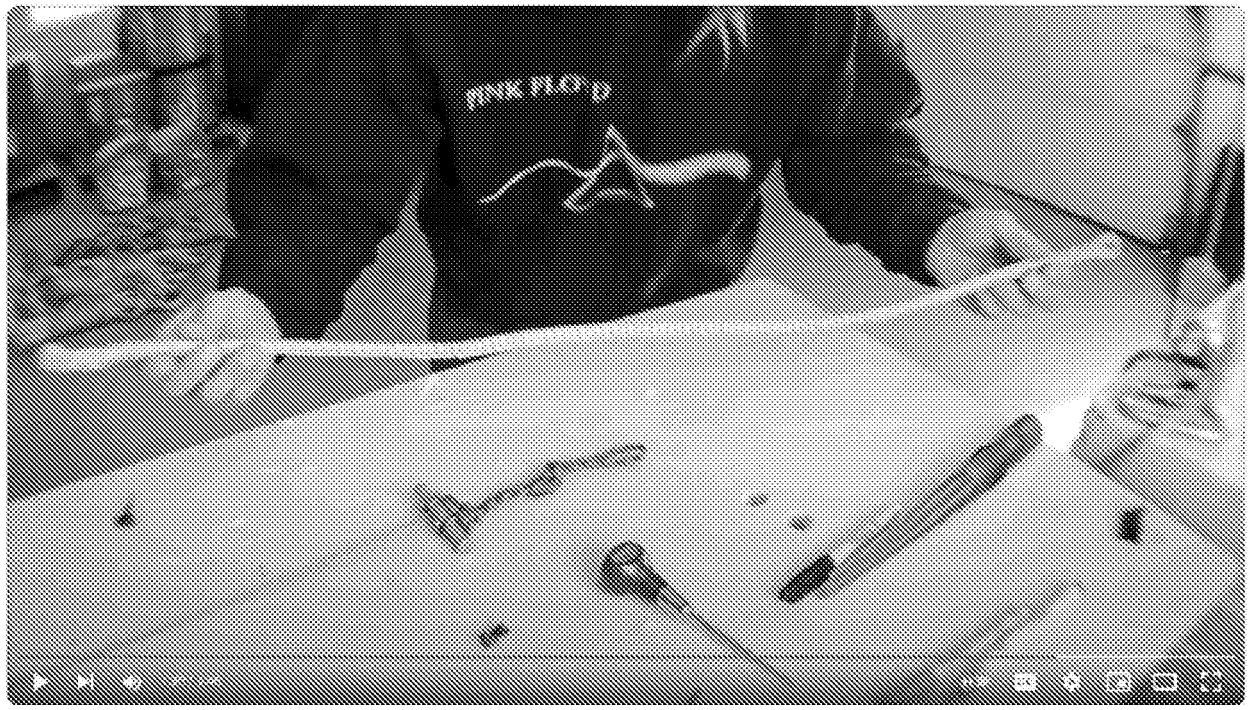
SamsonRope.com | Email CustServ@SamsonRope.com | Tel +1.360.384.4669

© 2018 Samson Rope Technologies, Inc. All rights reserved. [illegible]

Ex. 1018 at 1-3; Ex. 1015 ¶ 49.

Creating such a fully-buried bridge has been commonly done for more than a decade, as shown in this 2013 YouTube video:

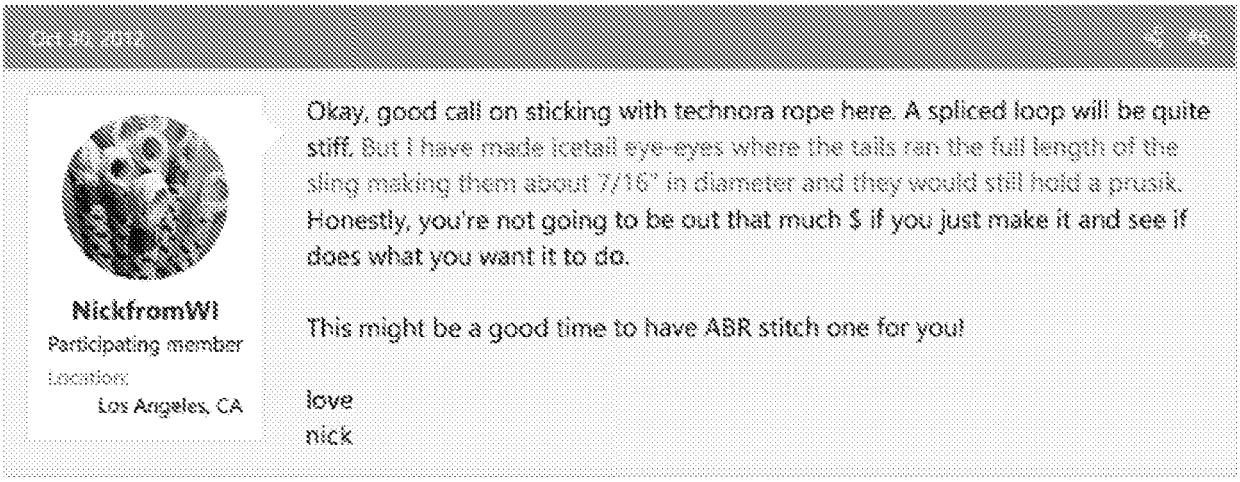






Ex. 1128 at 1-2; Ex. 1015 ¶ 50.

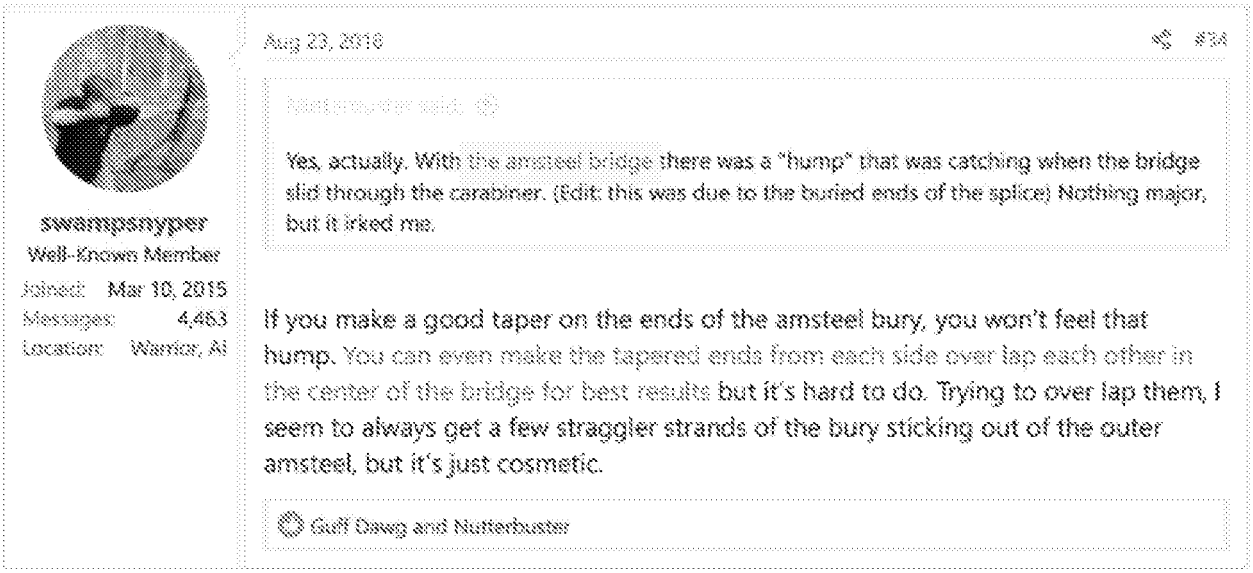
For further examples, arborists and saddle hunters frequently discussed making such fully-buried bridges in online forums:



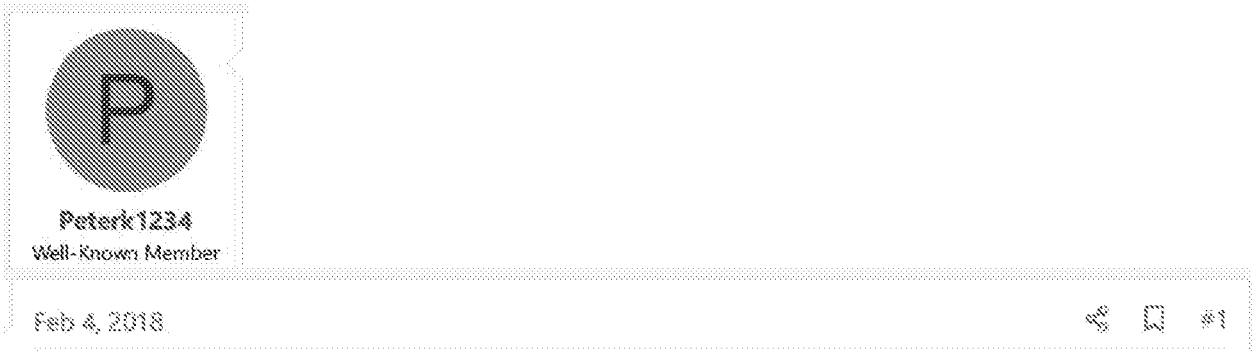
Ex. 1124 at 5.



Ex. 1060 at 6.


Aug 23, 2018
#34
swampsnyper
Well-Known Member
Joined: Mar 10, 2015
Messages: 4,463
Location: Warrior, Al
Yes, actually. With the amsteel bridge there was a "hump" that was catching when the bridge slid through the carabiner. (Edit: this was due to the buried ends of the splice) Nothing major, but it irked me.
If you make a good taper on the ends of the amsteel bury, you won't feel that hump. You can even make the tapered ends from each side over lap each other in the center of the bridge for best results but it's hard to do. Trying to over lap them, I seem to always get a few straggler strands of the bury sticking out of the outer amsteel, but it's just cosmetic.
Gulf Dawg and Nutterbuster

Ex. 1106 at 5.


Peterk1234
Well-Known Member
Feb 4, 2018
#1

problem. I used 1/4" amsteel for the bridge, although it looks a lot bigger because I buried as much line as possible.



Ex. 1076 at 1-2.

Peterk1234
Well-Known Member

Feb 11, 2018 #5

Not to be critical, but your bridge looks a bit tattered. It may be from the splices on your rope, I can't tell. Just a safety concern.

That was my first bridge; just a test. Not tattered though. You are probably looking at the blind stitches. They are just not that blind

Here is the final version. A bit longer and a bit cleaner. I only blind stitched one end and I have the tag ends buried almost the entire length of my 33 inch bridge. It is solid.



Ex. 1105 at 2; *see* Ex. 1015 ¶ 51.

Such fully buried bridges—in which the spliced ends meet ***in the middle*** of the bridge and the eye loop is spliced to interlock with the first bridge loop—disclose the "main body" recited in Claim 1 claims of the '175 Patent. Ex. 1015 ¶ 52. Additional prior art discussed in the unpatentability claim charts below disclose fully buried bridges in which the spliced ends meet ***at the end*** of the bridge (and also that the eye loop is spliced to interlock with the first bridge loop). *See infra* Section VIII. Accordingly, contrary to Tethrd's assertions, a fully buried bridge was well-known in the prior art and not innovative. *Id.* ¶ 53.

2. An UHMWPE (*e.g.*, Amsteel) Bridge Was Well-Known in the Prior Art

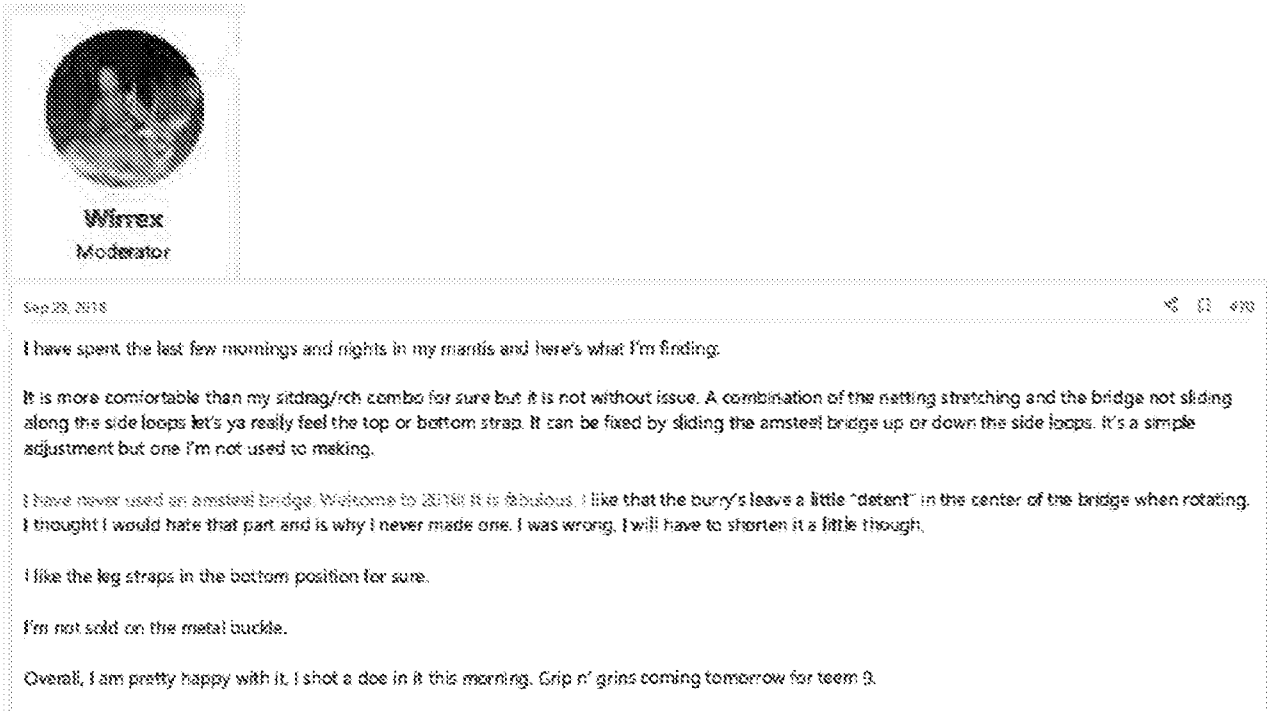
Tethrd asserts that making its "main body" (or saddle bridge) from Amsteel—a brand of ultra-high molecular weight polyethylene (UHMWPE) rope, which is lightweight and very strong—is an advance in the art:

> 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***.

Ex. 1001, Col. 1:53-56.

Contrary to Tethrd's assertions, Amsteel bridges were well-known in the prior art, none of which Tethrd disclosed to the USPTO. Ex. 1015 ¶ 55.

Perhaps the most well-known prior art Amsteel bridge was the bridge that ***Tethrd*** itself sold with its own Mantis saddle, which Tethrd introduced into the marketplace in 2018:



Wirrex
Moderator

Sep 28, 2018 #10

I have spent the last few mornings and nights in my mantis and here's what I'm finding:

It is more comfortable than my sitdrag/rch combo for sure but it is not without issue. A combination of the netting stretching and the bridge not sliding along the side loops let's ya really feel the top or bottom strap. It can be fixed by sliding the amsteel bridge up or down the side loops. It's a simple adjustment but one I'm not used to making.

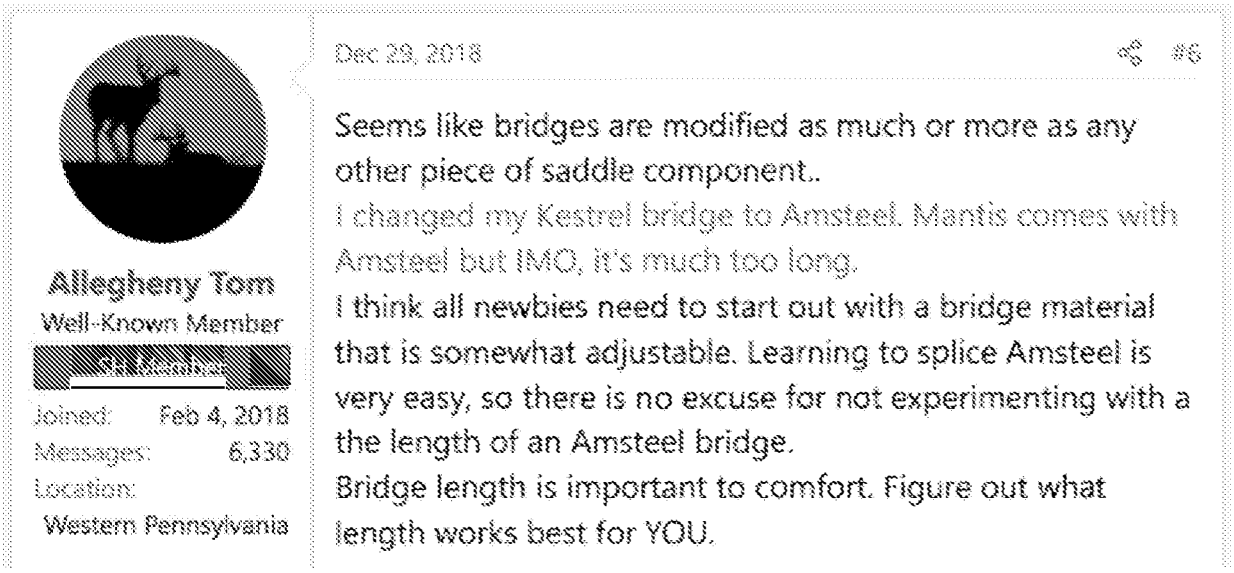
I have never used an amsteel bridge. Welcome to 2018! It is fabulous. I like that the burry's leave a little "detent" in the center of the bridge when rotating. I thought I would hate that part and is why I never made one. I was wrong. I will have to shorten it a little though.

I like the leg straps in the bottom position for sure.

I'm not sold on the metal buckle.

Overall, I am pretty happy with it. I shot a doe in it this morning. Grip n' grins coming tomorrow for team 9.

Ex. 1096 at 2.

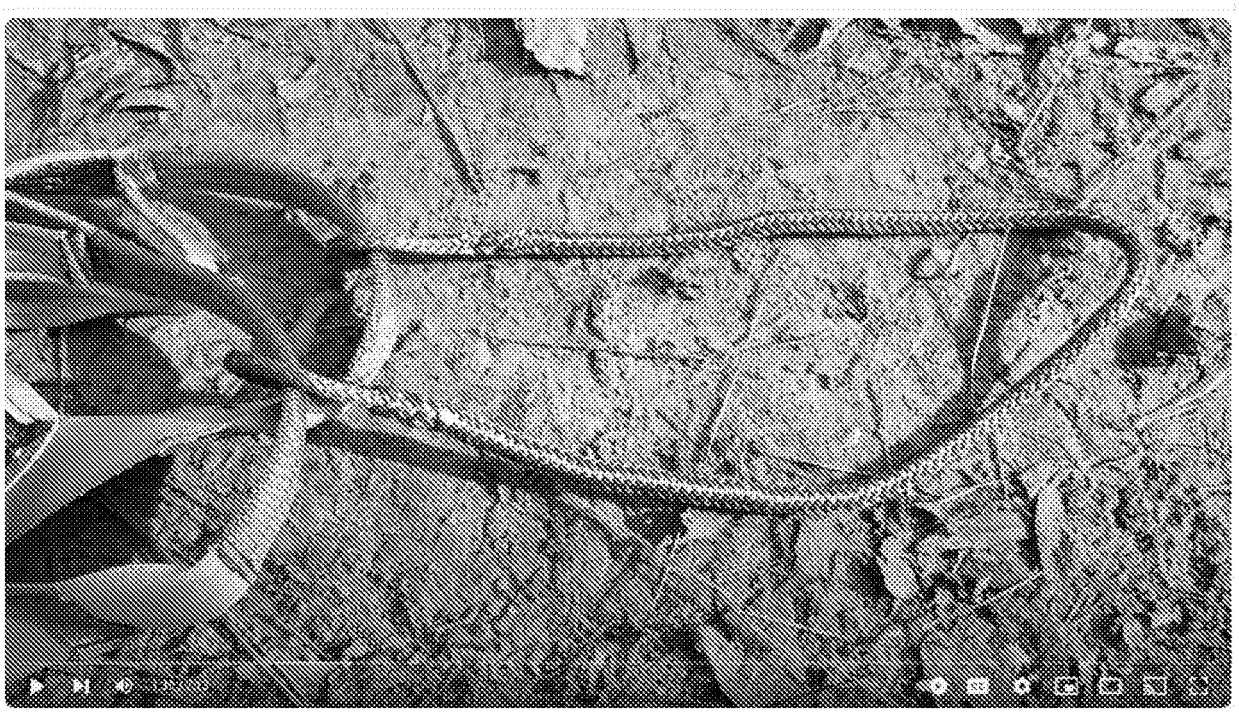


Allegheny Tom
Well-Known Member
Joined: Feb 4, 2018
Messages: 6,330
Location: Western Pennsylvania

Dec 29, 2018 #6

Seems like bridges are modified as much or more as any other piece of saddle component..
I changed my Kestrel bridge to Amsteel. Mantis comes with Amsteel but IMO, it's much too long.
I think all newbies need to start out with a bridge material that is somewhat adjustable. Learning to splice Amsteel is very easy, so there is no excuse for not experimenting with a the length of an Amsteel bridge.
Bridge length is important to comfort. Figure out what length works best for YOU.

Ex. 1122 at 3.



Mantis Saddle - Setup and Directions

Tethrd Nation
48.6K subscribers
Subscribe

83,192 views Dec 30, 2018

1:28
connects your bridge is made of AM steel
1:30
blue 1/4 inch it's very strong almost
1:34
8,000 pound breaking strength it also
1:36
has a benefit of being ultra light
1:38
weather resistant and it slides very
1:41
easily in and out of our climbing
1:42
carabiners these are your lineman loops

Ex. 1131 at 1, 3-4; Ex. 1015 ¶ 56. Note that this video was posted by Tethrd and features Greg Godfrey, one of the named inventors on the '175 Patent. Accordingly, contrary to Tethrd's assertions, an Amsteel bridge was well-known in the prior art and not innovative. Ex. 1015 ¶ 56.

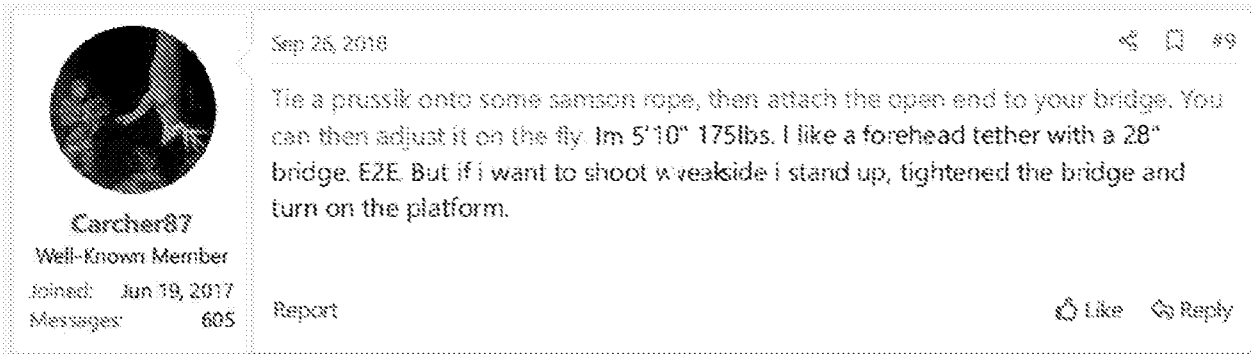
3. A Closed Loop Friction Hitch (*e.g.*, Prusik Knot) Was Well-Known in the Prior Art

Tethrd asserts that using a closed loop "friction hitch" with a saddle bridge is an advance in the art. *See* Claim 1. A common type of closed loop friction hitch is called a "Prusik knot". When the friction hitch is loosened, the bridge can freely slide through the hitch; and when the hitch is tightened, the bridge is held firmly by the hitch due to friction between the ropes. Thus, a friction hitch allows the usable length of the bridge to be adjustable. *Id.* ¶ 57.

Initially, as discussed below, the '175 Patent's claims are significantly narrower than a closed loop friction hitch being used with a bridge. The claims recite that both the eye loop and the friction hitch loop are "configured to engage" the bridge loops, which the '175 Patent teaches means spliced to interlock with the bridge loops. *See infra* Section V.H.3. In any event, contrary to Tethrd's assertions, using a closed loop friction hitch with a bridge was well-known in the prior art, but not disclosed to the USPTO. Ex. 1015 ¶ 58.

For example, an eye-to-eye bridge was fixed in length, and many arborists and saddle hunters preferred an adjustable length bridge, which could be

accomplished by removing one of the bridge's eye loops and replacing it with a friction hitch (*e.g.*, a Prusik knot):



Ex. 1067 at 4.

Sep 22, 2017

Ontariofarmer
Well-Known Member
SH Member
Joined: Dec 25, 2015
Messages: 5,261

I am going to try my bridge with a prussic for now.



> If I do this I can quietly lengthen my bridge if I wish to move around the tree. Or adjust for a leaning or sitting position.
>
> No carabiners either.

Ex. 1051 at 1-2; *see* Ex. 1015 ¶ 59.

4. Using an UHMWPE Friction Hitch (*e.g.*, Amsteel Prusik Knot) on an UHMWPE Line (*e.g.*, Amsteel Rope) Was Well-Known in the Prior Art

Tethrd asserts that using an Amsteel friction hitch (*e.g.*, a Prusik knot) on an Amsteel saddle bridge was an innovation, and claims this combination in Claim 10 of the '175 Patent ("wherein the main body and the friction hitch each are comprised of U[H]MWPE"). While some uninformed commentators may have been unaware of such usage in the prior art, a POSITA would have known that the prior art regularly taught that usage. Ex. 1015 ¶ 60. Several such examples are illustrated below and discussed in more detail in the Sherrill Declaration:

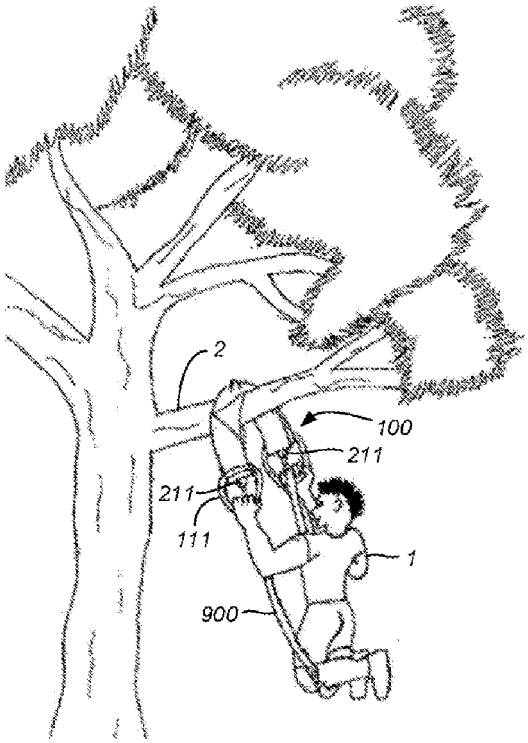


FIG. 9

Ex. 1019 (*e.g.*, UHMWPE rope used for suspension line and Prusik knot friction hitch).

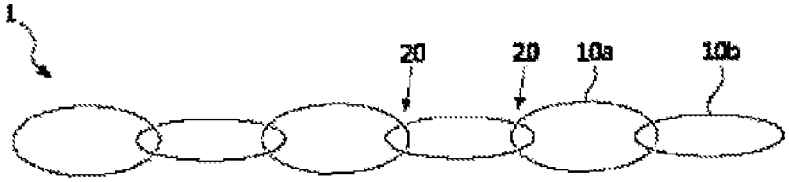
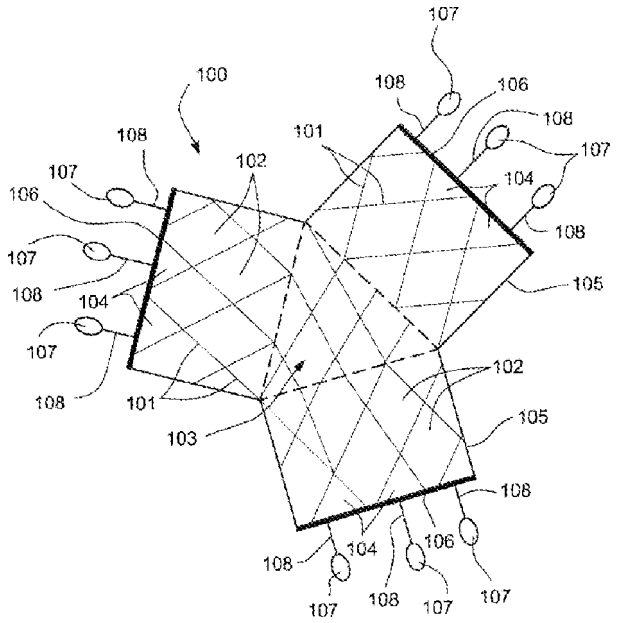


FIG. 1

Ex. 2021 (*e.g.*, UHMWPE rope used for suspension chain's links interconnected with Prusik knots).



Ex. 1022 (*e.g.*, UHMWPE rope used for air cargo net mesh and connecting ropes joined by Prusik knots).

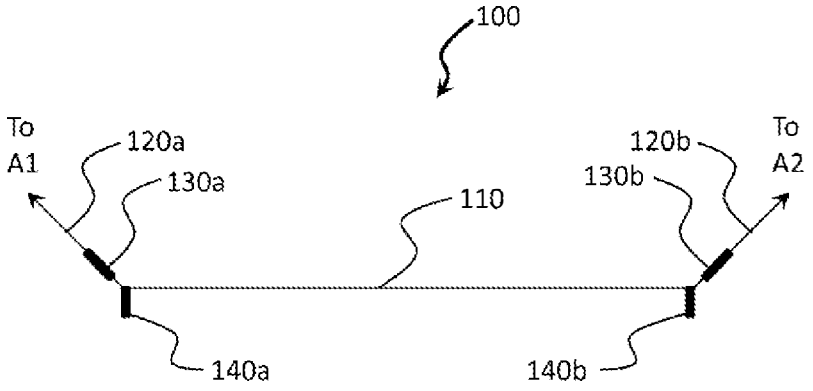


Fig. 2

Ex. 1023 (*e.g.*, UHMWPE rope used for hammock suspension lines connected by taut-line hitches.[1]); *see* Ex. 1015 ¶¶ 61-64.

Accordingly, using an Amsteel friction hitch (*e.g.*, a Prusik knot) on an Amsteel rope has long been taught by the prior art. Ex. 1015 ¶ 65.

F. The Prosecution History of the '175 Patent

During the prosecution of the '175 Patent, the first and only office action was a non-statutory double patenting rejection over the '556 Patent on December 14, 2023; there were no substantive rejections. *Id.* ¶ 67; Ex. 1005 at 52-57.

G. The Level of Ordinary Skill in the Art

A review of the prior art reveals that a person of ordinary skill in the art here would not necessarily have extensive academic credentials. Ex. 1015 ¶ 26. Rather, a POSITA would typically be an active sportsman (*e.g.*, bow hunter, hammock camper, or yachtsman), a professional arborist, or safety harness specialist. *Id.* Accordingly, Crüzr proposes the following definition of a POSITA:

> A person of ordinary skill in the art at the time of the invention would have had a high school education and would have had approximately 1-2 years of experience in designing, constructing, and/or modifying harness structures and their component parts

---

[1] A "taut-line hitch" is a type of adjustable friction hitch. *See* https://knots3d.com/en/taut-line-hitch-knot.

> (including having experience with saddles, slings, ropes, knots, and basic splicing techniques) used in applications such as saddle hunting, tree care and management, outdoor suspension hammocks, nautical/sailing lines, and safety harnesses.

Id.

H. Claim Construction

In the co-pending district court litigation, Crüzr has proposed claim constructions for the asserted claims of the '175 Patent as set forth below. Exs. 1140-1141. In contrast, Tethrd has proposed that no claim terms require construction. Ex. 1139. As of the date of filing this Petition, the parties have not filed any Markman briefs and the District Court has not scheduled a Markman hearing.

1. The Claim Preamble is Limiting

The claim preamble provides the context for the invention—"a bridge rope assembly"—and provides the antecedent basis for claim terms in the body of the claim, namely, "a first bridge loop" and "a second bridge loop". Further the claim preamble provides important structural information that informs a POSITA regarding the physical relationships of the elements in the body of the claim, namely, that (i) the "bridge rope assembly" is "configured to couple together a tree rope" to other components of the assembly; and (ii) the "first bridge loop and [the] second bridge loop [are] on a harness", not unrelated components as recited in the

body of the claim. Ex. 1015 ¶ 71. Here, a POSITA would not have been able to understand Claim 1 without the preamble, which therefore is "necessary to give life, meaning, and vitality" to the claim. *See, e.g.*, *Shoes by Firebug LLC v. Stride Rite Children's Group, LLC*, 962 F.3d 1362, 1368 (Fed. Cir. 2020) ("While antecedent basis alone is not determinative of whether a preamble is limiting, use of preamble terms to define positive limitations in the body of claims can evince an inventor's intent that the preamble limit[s] the scope of the claim. This is the case here."); *see also* Ex. 1015 ¶ 71.

2. "Configured to Couple Together a Tree Rope" Has a Hazy Outer Boundary Under *Nautilus*, But the Claim is Not Insolubly Ambiguous so the Board Can Evaluate Patentability in this IPR Proceeding

The claim preamble recites that the bridge assembly is "configured to couple together a tree rope" with other components of the assembly. This recital renders Claim 1 indefinite under 35 U.S.C. § 112 because it fails to provide a POSITA with an understanding of the ***outer boundaries*** of the claims. Ex. 1015 ¶ 72. Importantly, however, this claim is not "insolubly ambiguous", and the prior art presented herein would certainly be encompassed by the challenged claims. Thus, the Board can proceed with this IPR proceeding by construing this claim phrase based on its ordinary meaning.

To elaborate, while the preamble of Claim 1 recites that the bridge assembly is "configured to couple together a tree rope . . .", none of the claims provide any

further recital about either the "tree rope" or how the bridge assembly is "configured" for coupling to the tree rope. Further, other than the recitals themselves in the preamble of Claim 1, the terms "tree rope" and "couple" are found nowhere in the '175 Patent's specification. Ex. 1015 ¶ 73.

Figure 5 of the '175 Patent depicts a line or strap that encircles a tree and connects to the bridge assembly, but those elements are unnumbered and not discussed elsewhere in the patent's specification:

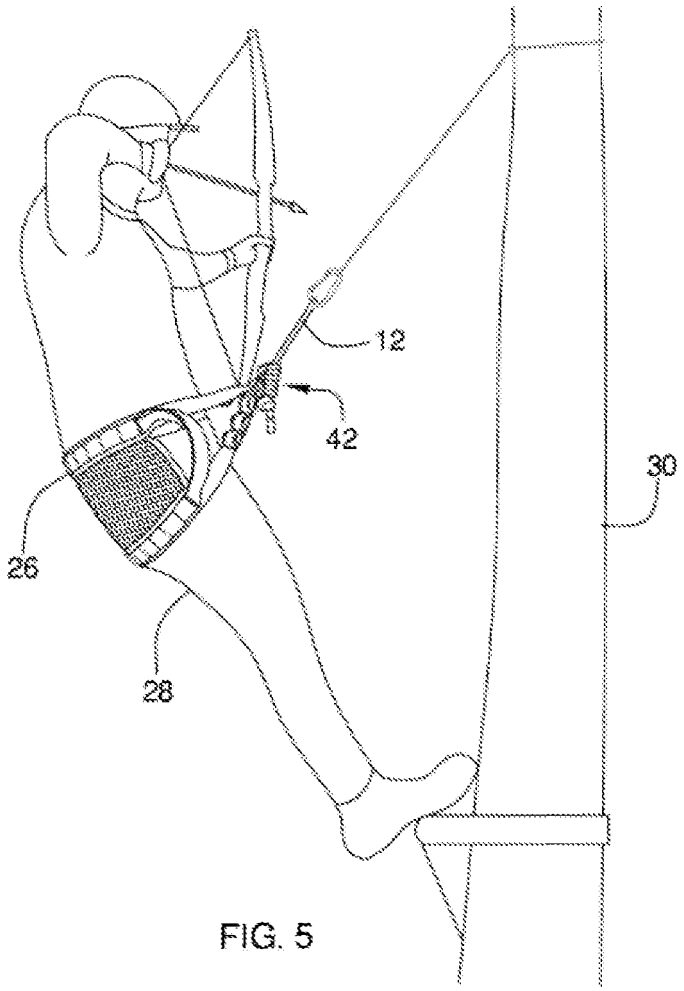


FIG. 5

Ex. 1001, Fig. 5; Ex. 1015 ¶ 74.

A POSITA would understand from Figure 5 that the highlighted element would likely be a lineman's rope, a tree tether, or a similar component made from some type of cordage or webbing, and that the connection to the bridge assembly would likely be via a carabiner, a ring, a link, a knot, or a splice of some kind. Ex. 1015 ¶ 75. Accordingly, while the outer boundary of Claim 1 is unclear, the claim would include within its scope, *inter alia*, a tree tether rope and a carabiner, which are the elements disclosed in the prior art presented in this Petition. *Id.*

The ordinary meaning of "configure" and "configured" is "to design or adapt to form a specific configuration or for some specific purpose."[2] Ex. 1015 ¶ 76. Thus, in the context of the '175 Patent, the recited bridge rope assembly would be designed or constructed in a particular manner. *Id.*

The ordinary meaning of "couple" is "to fasten, link, or associate together in a pair or pairs" or "to join; connect".[3] *Id.* ¶ 77. In the context of the '175 Patent, the connection or joining could be direct or indirect, *e.g.*, through one or more intermediate elements. *Id.*

[2] https://www.collinsdictionary.com/dictionary/english/configure

[3] https://www.collinsdictionary.com/dictionary/english/couple

In the context of the '175 Patent, the ordinary meaning of a "tree rope" is "a line (or other cordage) or webbing (or other strap) that encircles a tree trunk, including a lineman's rope and a tree tether". *Id.* ¶ 78. Thus, the preamble phrase should be construed as "A bridge rope assembly designed or constructed in a particular manner to connect or join, either directly or indirectly, a line (or other cordage) or webbing (or other strap) that encircles a tree trunk, including a lineman's rope and a tree tether, to a first bridge loop and a second bridge loop, the bridge rope assembly including:" *Id.*

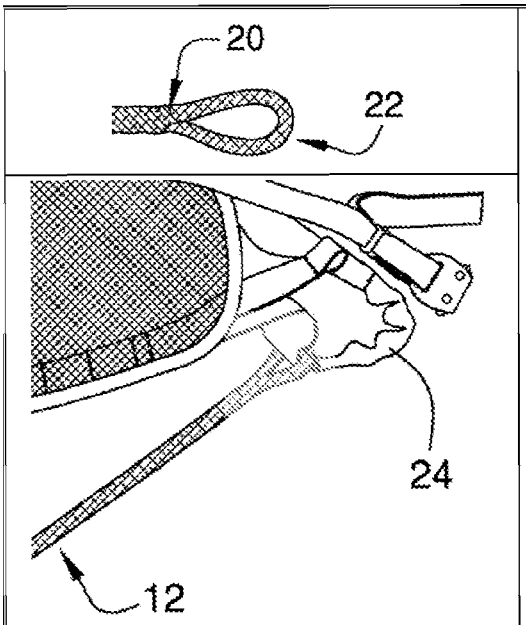
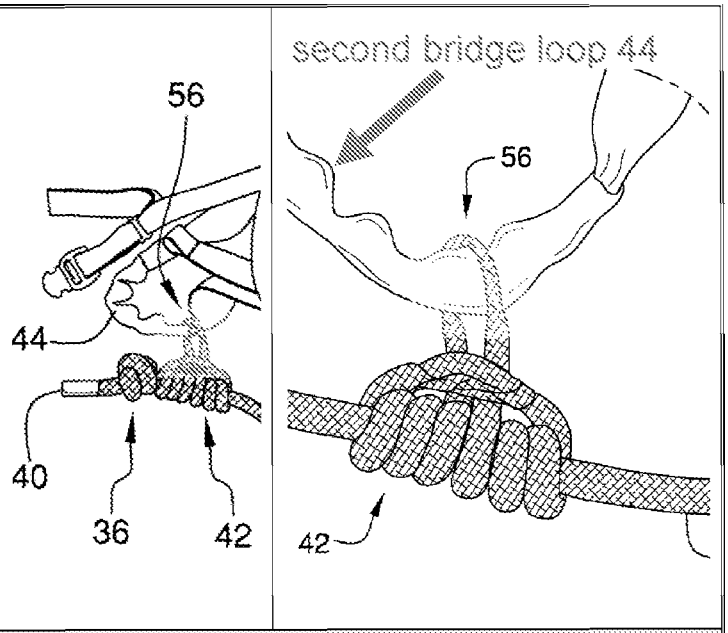
The Board has confirmed that it can proceed with an IPR when the indefiniteness relates to a *Nautilus*-type outer boundary problem as opposed to an insolubly ambiguous problem. *E.g.*, *Mylan Pharm. Inc. et al. v. Horizon Pharma USA Inc. et al.*, IPR2017-01995 (PTAB Mar. 28, 2019) ("In determining whether a petitioner has carried its burden of establishing unpatentability, ***we need not necessarily determine the outer boundaries of a claim*** in reaching a conclusion as to whether the asserted prior art anticipates a claim or renders it obvious.") (emphasis added).

Consequently, even though Claim 1 is indefinite, the claims are not insolubly ambiguous and thus the Board can proceed with this IPR proceeding by adopting the ordinary meaning for this claim phrase.

3. "Being Configured to Engage" Means "Spliced to Interlock With"

Claim 1 of the '175 Patent recites, *inter alia*, "the eye loop being configured to engage the first bridge loop" and "the friction hitch being configured to engage the second bridge loop". Notably, the patent drafter did not simply recite that "the eye loop connects the first bridge loop" or that "the friction hitch connects the second bridge loop". Instead, the patent drafter used the "configured to engage with" language to emphasize that the eye loop and the friction hitch were specially constructed to interlock with the bridge loops. Ex. 1015 ¶ 79.

As shown in the left-hand column below, the corrected '175 Patent repeatedly explains how the spliced "eye loop" of the main body and the friction hitch each "engages" a "bridge loop" of the saddle:

<table>
<tr>
<td>
</td>
<td>
</td>
</tr>
<tr>
<td>Ex. 1001, Figs. 1 & 3 (excerpts)</td>
<td>Ex. 1001, Figs. 3 & 4 (excerpts) (annotation added)</td>
</tr>
<tr>
<td>The eye loop [22] is configured to engage a first bridge loop [24] of a harness. (Abstract; Col. 1:63-64).

The eye loop 22 is configured to engage a first bridge loop 24 of a harness 26 . . . . (Col. 3:8-9).

[T]he eye loop 22 of the main body 12 is engaged on the first bridge loop 24 of the harness 26. (Col. 5:33-34).</td>
<td>The friction hitch 42 is . . . configured to engage a second bridge loop 44 of the harness 26. (Col. 4:43-46).

The narrow portion 56 of the closed loop 46 [of the friction hitch 42] will typically be engaged with the second bridge loop 44 . . . . (Col. 5:43-44).</td>
</tr>
</table>

Ex. 1015 ¶ 80.

Similarly, as shown in the right-hand columns above, the '175 Patent repeatedly explains how a "friction hitch" also "engages" a second bridge loop of the saddle on the opposite side. Ex. 1015 ¶ 81. The use of the term "engage" is

entirely consistent in the text and figures of the '175 Patent, showing that the eye loop is spliced around the first bridge loop such that the bridge loop passes directly through the eye loop, creating a permanent engagement. *Id.* Similarly, the friction hitch is spliced around the second bridge loop such that the bridge loop passes directly through the friction hitch, again creating a permanent engagement. *Id.*

With respect to the main body, the patent teaches that the claimed "configured to" is a particular type of rope splicing: "The ***splice* 20** may be a ***straight splice*** or a ***locked brummel splice***." Ex. 1001, Cols. 2:58 – 3:7. (emphases added); *id.* ("Generally, as it will be understood below, it is the ***splice* 20** which creates one or two tags ***which is important***."). With respect to the friction hitch, the '175 Patent also teaches that the claimed "configured to" is a particular type of rope splicing: "As with the main body **12**, the ***splice* 54** may be a ***locked brummel splice* 54** or a ***straight splice*** . . . ." Ex. 1001, Col. 4:55-65 (emphases added). Ex. 1015 ¶¶ 82-83.

The ordinary meaning of "configure" and "configured" is "to design or adapt to form a specific configuration or for some specific purpose,"[4] and the ordinary meaning of "engage" is "to interlock with or cause to come into frictional driving

[4] https://www.collinsdictionary.com/dictionary/english/configure

contact with" or "to mesh together".[5] Ex. 1015 ¶ 84. Accordingly, the claim term "being configured to engage" should be construed to mean the "spliced to interlock with". *Id.*

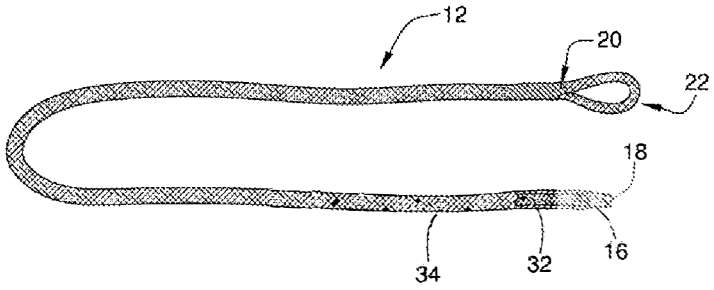
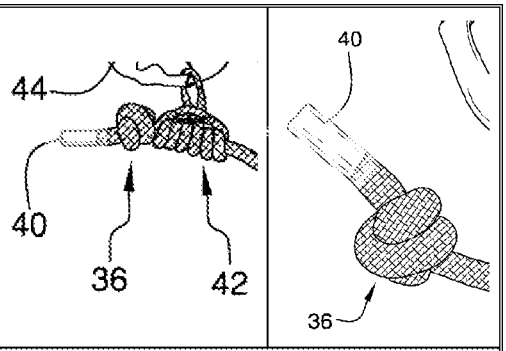
4. "Adjacent to" Means "Within a Distance of 3.0 Inches or Less from"

Claim 1 of the '175 Patent recites, *inter alia*, that "the first end is positioned within the second portion adjacent to the second end" and Claim 4 of the '175 Patent recites "a stop knot in the second portion adjacent to the second end".

The ordinary meaning of "adjacent" is "next to each other" or "near or close (to something); adjoining".[6] Ex. 1015 ¶ 86. As shown in the left-hand column below, the '175 Patent repeatedly explains that the "first end" of the main body is positioned "adjacent" to, or "less than 2.0 inches" (or "between 0.5 inches and 3.0 inches") from the "second end" of the main body:

[5] https://www.collinsdictionary.com/dictionary/english/engage

[6] https://www.collinsdictionary.com/dictionary/english/adjacent

	
Ex. 1001, Fig. 1	**Ex. 1001, Figs. 3 & 4 (excerpts)**
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. (Abstract; Cols. 1:66 – 2:3). [T]he 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**. (Col. 3:19-25). 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. (Col. 3:52-55). The widening of the second portion **34 . . .** allows the first portion **32** to nearly extend through the second portion **34**. (Col. 4:25-29).	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. (Col. 26-30). 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. (Col. 3:31-33). Shrink wrap **40** is then applied over the second **34** portion at a juncture of the first end **16** and second portion **34**. (Col. 4:29-31).

Ex. 1015 ¶ 86.

Similarly, as shown in the right-hand column above, the '175 Patent repeatedly explains how both ends of the main body extend through the stop knot and the shrink wrap at the very end of the main body, and that a "securing member" is positioned at the "juncture" of the two ends. Ex. 1015 ¶ 87. The ordinary meaning of "juncture" is "a point or line of joining or connection; joint".[7] *Id.*

The use of the term "adjacent" is entirely consistent in the text and figures of the '175 Patent, showing that the two ends of the main body are positioned no more than 2.0 inches (or at the very most 3.0 inches) from each other. Ex. 1015 ¶ 88. Therefore, in light of the patent's specification, the claim term "adjacent to" should be construed to mean the "within a distance of 3.0 inches or less from". *Id.*

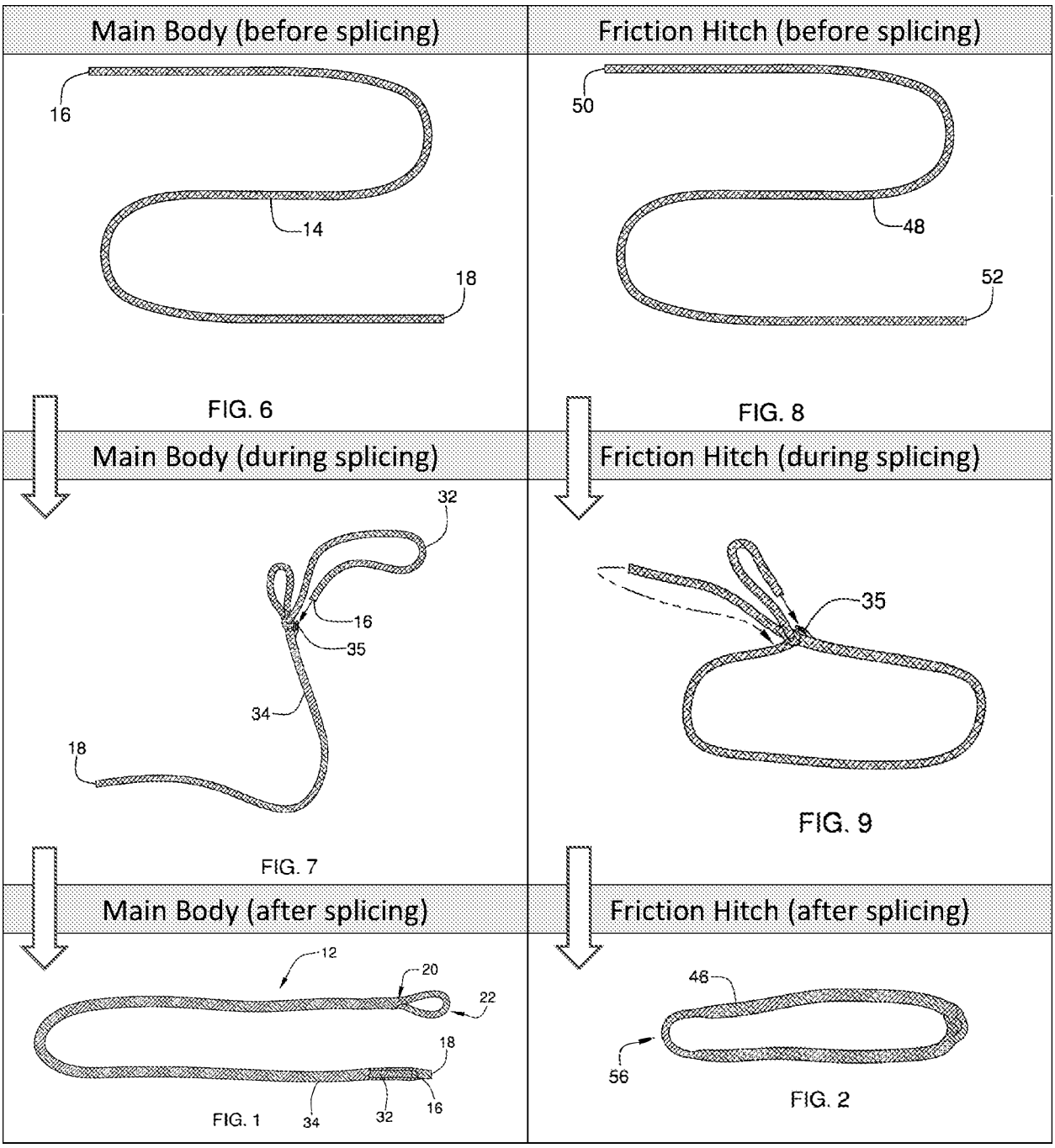
5. "Length" Means "Linear Measurement Before Splicing"

With respect to the claimed "main body", Claim 2 recites, *inter alia*, the "the rope has a ***length*** from the first end to the second end between 72.0 inches and 126.0 inches". Similarly, with respect to the claimed "friction hitch", Claim 7 recites "the closed loop has a ***length*** between 40.0 inches and 60.0 inches". While the word "length" is normally unambiguous, here the lengths of the each of the

[7] https://www.collinsdictionary.com/dictionary/english/juncture

ropes shrink during the splicing process. *E.g.*, Ex. 1001, Col. 4:25-29 ("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**."). Accordingly, the claims should be construed to clarify that the "lengths" recited are the linear measurements ***before*** splicing. Ex. 1015 ¶ 89.

In using the term "length", each of these claims is directed to the starting length of the rope before splicing, as shown in the figures below:



E.g., *E*x. 1001, Figs. 1, 2, & 6-9; *see* Ex. 1015 ¶ 90.

With respect to the main body, the '175 Patent teaches that "[t]he rope **14** may have a ***length*** from the first end **16** to the second end **18** between 72.0 inches and 126.0 inches." Ex. 1001, Col. 3:47-48 (emphasis added). Similarly, with

respect to the friction hitch, the '175 Patent teaches that "[t]he single rope **48** of the closed loop **46** has a ***length*** between 40.0 inches and 60.0 inches . . . ." *Id.*, Col. 5:8-9 (emphasis added). These distances would be understood by a POSITA to be the linear measurements of the ropes before splicing. Ex. 1015 ¶ 91.

The above understanding is confirmed by the patent drafter's consistent use of the word "length" when referring to a linear measurement ***before*** splicing (Claims 2 and 7), as opposed to using other terms (*viz.*, "distance" and "circumference") when referring to measurements ***after*** splicing (Claims 3, 8-9, and 12-14). Ex. 1015 ¶ 92. Accordingly, the claim term "length" should be construed to mean the "linear measurement before splicing". *Id.*

6. "Distance Of" Means "Linear Measurement After Splicing From the Base of"

Claims 3 and 12 of the '175 Patent recite, *inter alia*, "a ***distance of*** the eye loop to the second end" "is between 24.0 inches and 40.0 inches". Because the claim recites a distance with respect to an "eye loop", the claimed distance is related to a linear measurement after splicing of the eye loop. Ex. 1015 ¶ 93.

This limitation is arguably ambiguous in its use of the preposition "of"—the claimed distance could be measured from the tip of the eye loop, the center of the eye loop, the base of the eye loop, or perhaps some other location on the eye loop. *Id.* ¶ 94. However, the '175 Patent's specification provides guidance in this regard, teaching that "[t]he distance from the stop knot 36 to the eye loop 22 is

approximately 31.0 inches". Ex. 1001, Col. 4:39-40. Figure 3 of the '175 Patent illustrates this claimed feature:

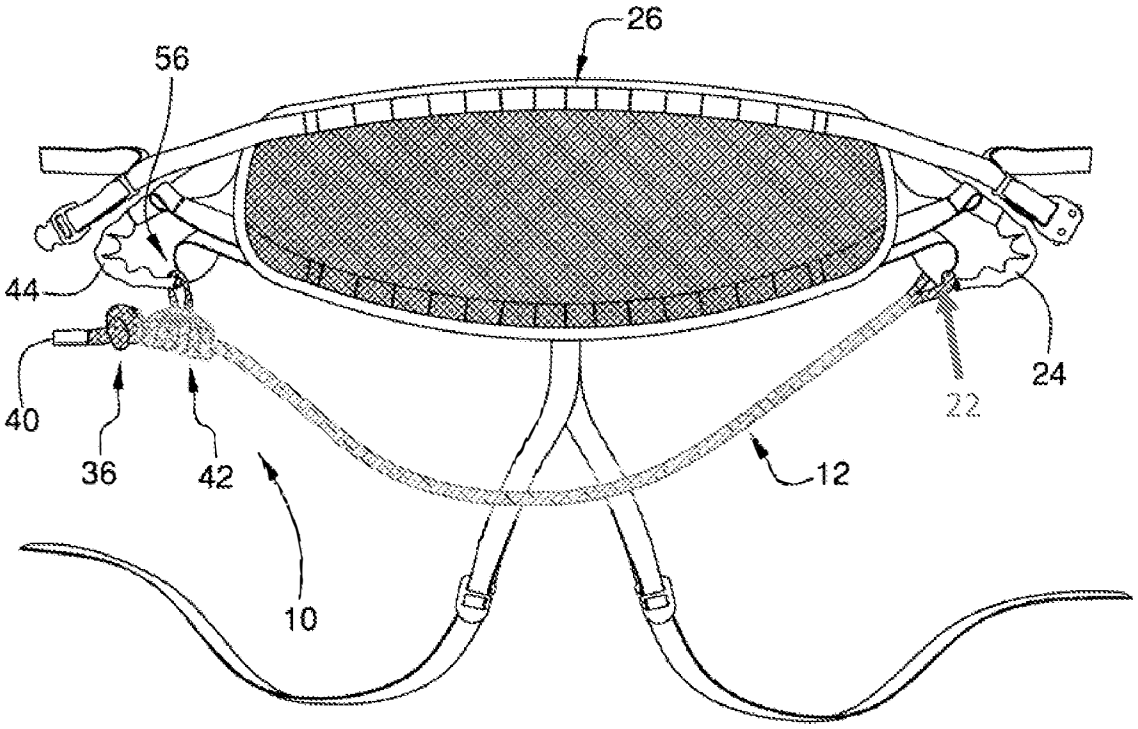


FIG. 3

Ex. 1001, Fig. 3; *see* Ex. 1015 ¶ 94.

The disclosed "approximately 31.0 inches" measurement is generally a parameter for the adjustability of the bridge (*i.e.*, the claimed "main body"). Ex. 2015 ¶ 95. In particular, when loosened, the friction hitch 42 can be adjusted (or slid) from the stop knot 36 on one end (for the maximum length of the bridge) to the base of the eye loop 22 on the other end (for the minimum length of the bridge). *Id.* The friction hitch would not be adjusted beyond the base of the eye loop because the bridge widens at that location due to the eye loop configuration, and the first bridge loop also creates a functional limit. *Id.* In Claim 1, the recited

"between 24.0 inches and 40.0 inches" is related to the adjustability of the bridge (albeit to the "second end" as opposed to the "stop knot"). *Id.* Accordingly, the claim term "distance of" should be construed to mean the "linear measurement after splicing from the base of". *Id.*

VI. THE PRIOR ART

A. The State of the Art

As discussed above, the relevant prior art here includes not only hunting saddles, but also tree care and management slings and harnesses, safety ropes and harnesses, outdoor suspension hammocks, nautical/sailing lines, and ropes and splices in general. Thus, the art was very well-developed in the 2020 time frame. Ex. 1015 ¶ 96.

B. Public Internet Message Forums are Printed Publications for Purposes of IPR Proceedings

As technology advances, the term "printed publication" has expanded beyond traditional paper publication forms such as books, magazines, and journals. As explicitly stated in the MPEP, "[a]n electronic publication, including an online database or ***Internet publication*** (e.g., ***discussion group, forum, digital video***, or social media post), is considered to be a 'printed publication' within the meaning of 35 U.S.C. 102(a)(1) and pre-AIA 35 U.S.C. 102(a) and (b) provided the publication was accessible to persons concerned with the art to which the

document relates." MPEP § 2128.II.F (emphases added); *see Suffolk Tech v. AOL & Google*, 752 F.3d 1358, 1365 (Fed. Cir. 2014).

C. Analogous Art Here Includes Hunting Saddles, Tree Care and Management Slings and Harnesses, Outdoor Suspension Hammocks, Safety Ropes and Harnesses, Nautical/Sailing Lines, and Ropes and Splices in General

The '175 Patent states that "[t]he disclosure relates to harness rope structures . . . ." Ex. 1001, Col. 1:38. While the disclosure is directed to a hunting saddle, the claims are not limited to saddle hunting. Ex. 1015 ¶ 97. For the '175 Patent and its family, Tethrd only submitted patent prior art references under Cooperative Patent Classification (CPC) Class A62B, which includes hunting saddles, tree care and management slings and harnesses, and safety ropes and harnesses. However, the examiners cited references from other CPC classes as well, including, for example, Class A45F (*e.g.*, outdoor suspension hammocks), Class B63B (*e.g.*, nautical/sailing lines), and Class D07B (*e.g.*, ropes and splices in general):

CPC Class	Sub-class	Reference Cited	Cited by Tethrd Application	Cited By	Priority Date
A62B Hunting saddles					
Tree saddle	35/0031	US20220249886A1	US17/867,553 (Ex. 1005 at 58)	Exam'r	Feb. 9, 2021
A62B Tree care and management slings and harnesses					
Lanyard assembly	35/0037	US20230054395A1	US17/867,553 (Ex. 1005 at 59)	Exam'r	Jan. 31, 2020

Arborist's climbing rope	1/16	US20100162882A1	US17/867,553 (Ex. 1005 at 58)	Exam'r	Aug. 14, 2007
A62B Safety ropes and harnesses					
Safety harness	35/04	US20060207828A1	US17/867,553 (Ex. 1005 at 58)	Exam'r	Feb. 18, 2005
Harness with integrated fall arrest system	35/0025	US20090255756A1	US16/736,345 (Ex. 1002 at 15)	Appl.	Dec. 13, 2007
A45F Outdoor suspension hammocks					
Multiple-loop support strap and method for hanging a hammock	3/22	US9003579B1	US17/867,553 (Ex. 1005 at 58)	Exam'r	Apr. 25, 2012
Single piece hammock strap with integral woven eyelets	3/24	US10918194B2	US17/867,553 (Ex. 1005 at 58)	Exam'r	Nov. 9, 2015
B63B Nautical/sailing lines					
Controlled failure point for a rope or mooring loop	21/04	US11597476B2	US17/867,553 (Ex. 1005 at 59)	Exam'r	Aug. 25, 2020
Offset wake surf tow system and method	34/67	US20230094095A1	US18/602,822 (Ex. 1006 at 23)	Exam'r	May 2, 2021
D07B Ropes and splices					
String, rope, or strap with repetitively spaced holes/flexible-eyelets	1/148	US10604892B1	US17/231,717 (Ex. 1004 at 47)	Exam'r	Apr. 23, 2016
Braided line splices and methods of splicing to form same	1/185	US5699657A	US17/231,717 (Ex. 1004 at 2)	Exam'r	May 23, 1996

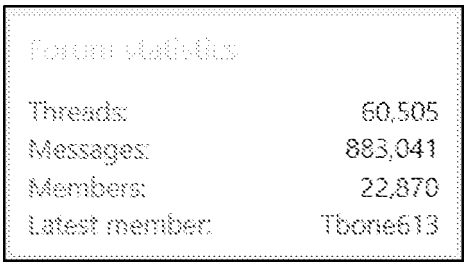
Therefore, with respect to the '175 Patent, analogous art encompasses hunting saddles, tree care and management slings and harnesses, safety ropes and harnesses, outdoor suspension hammocks, nautical/sailing lines, and ropes and splices in general. Ex. 1015 ¶ 97.

D. YouTube Videos (Exs. 1125-1134)

Web-based public videos also qualify as printed publications under 35 U.S.C. § 102(a)(1). *E.g., NxtGen Toys, LLC, v. ZipString, LLC*, IPR2024-01213 (PTAB Feb. 24, 2025) (YouTube video; summarizing cases); *MerchSource LLC v. DODOCase VR, Inc.*, IPR2018-00494 (PTAB Aug. 22, 2018) (YouTube video).

E. SaddleHunter Message Board Posts (Exs. 1048-1123)

The SaddleHunter Internet message board is a well-known and popular message board for the saddle hunting community. *See* < https://saddlehunter.com/community/index.php >; Ex. 1015 ¶ 98. The message board's current statistics are as follows:



Id.

The SaddleHunter message board was started in around 2014 (*id.*), and as reflected in small part in the exhibits filed with this Petition, the message board

was well-known and frequently used by the saddle hunting community in the 2020 time frame and earlier. Ex. 1015 ¶ 99.

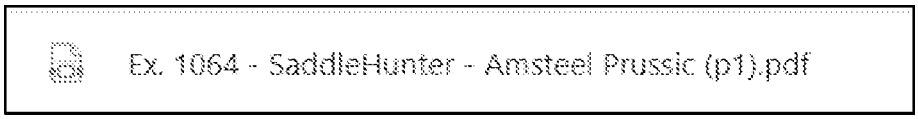
In their myriads of discussions about saddle hunting equipment and modifications thereto, members of the saddle hunting community also regularly referenced information from the hammock and arborist arts, including discussions about ropes, splices, and knots. Ex. 1015 ¶ 100. For example, the following threads on the SaddleHunter message board filed with this Petition refer to "hammock":



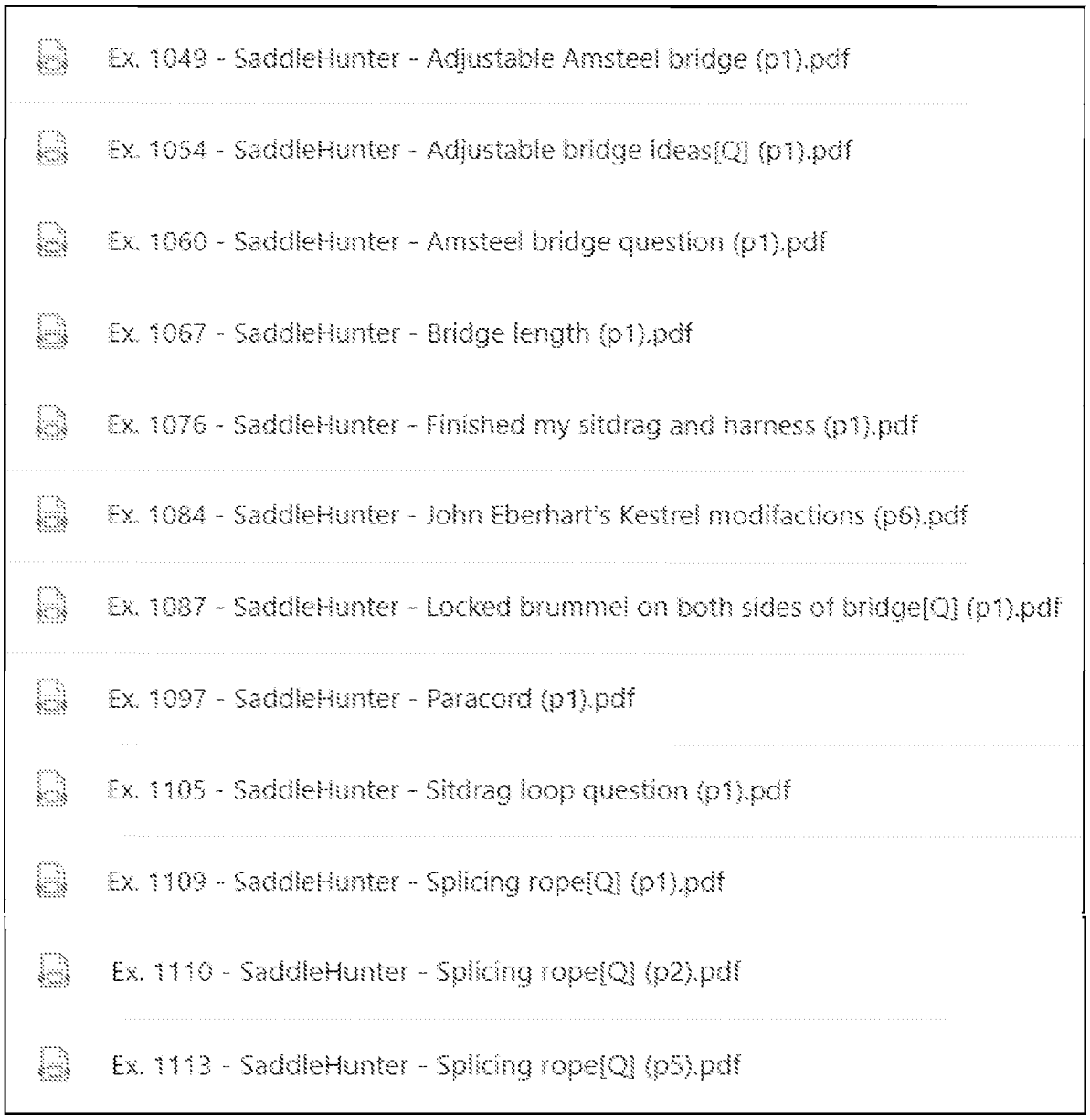
The following threads on the SaddleHunter message board included with this Petition refer to "arborist":



The following thread on the SaddleHunter message board included with this Petition refer to "TreeBuzz":



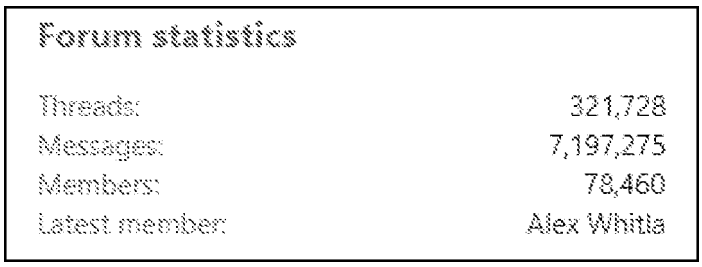
The following threads on the SaddleHunter message board included with this Petition refer to "YouTube":



See Ex. 1015 ¶¶ 100-103.

F. ArboristSite Message Board Posts (Exs. 1024-1025)

The ArboristSite Internet message board is a well-known and popular message board for the tree care and management community. *See* < https://www.arboristsite.com/ >; Ex. 1015 ¶ 104. The message board's current statistics are as follows:

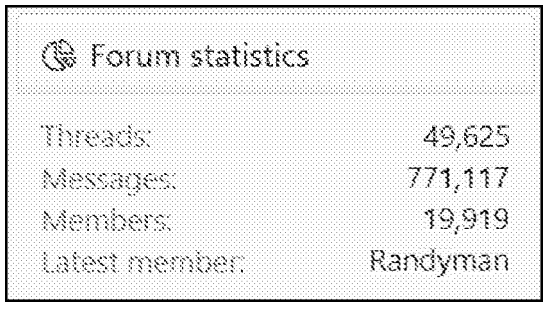


Id.

The ArboristSite message board was started in around 2001, and as reflected in small part in the exhibits filed with this Petition, the message board was well-known and frequently referenced by not only the arborist community, but also the saddle hunting community, in the 2020 time frame and earlier. Ex. 1015 ¶ 105.

G. TreeBuzz Message Board Posts (Ex. 1124)

The TreeBuzz Internet message board is also a well-known and popular message board for the tree care and management community. *See* < https://www.treebuzz.com/forum/ >; Ex. 1015 ¶ 106. The message board's current statistics are as follows:



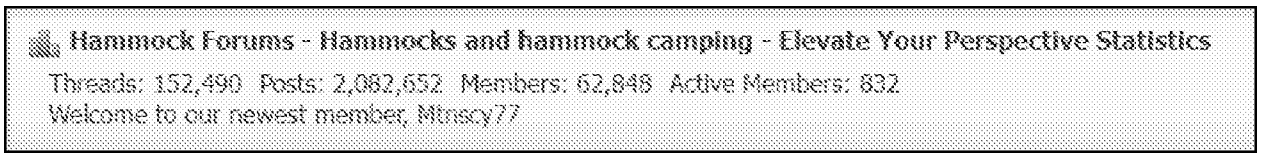
Id.

The TreeBuzz message board was started in around 2001, and as reflected in small part in the exhibits filed with this Petition, the message board was well-

known and frequently referenced by not only the arborist community, but also the saddle hunting community, in the 2020 time frame and earlier. Ex. 1015 ¶ 107.

H. HammockForums Message Board Posts (Exs. 1026-1045)

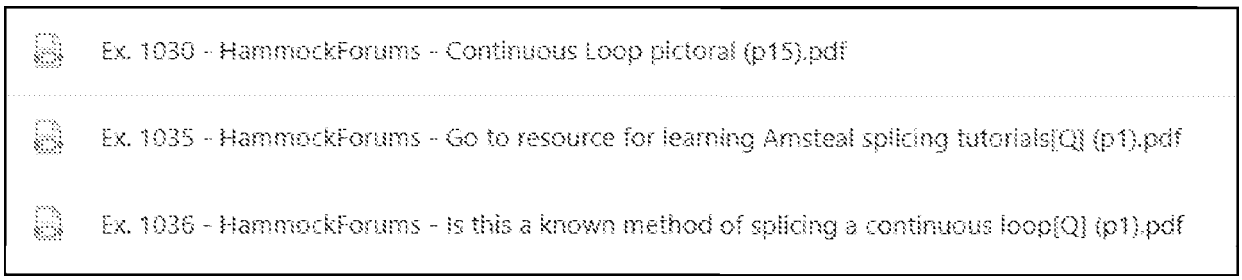
The HammockForums Internet message board is a well-known and popular message board for the hammock camping community. *See* < https://www.hammockforums.net/forum/forum.php >; Ex. 1015 ¶ 108. The message board's current statistics are as follows:



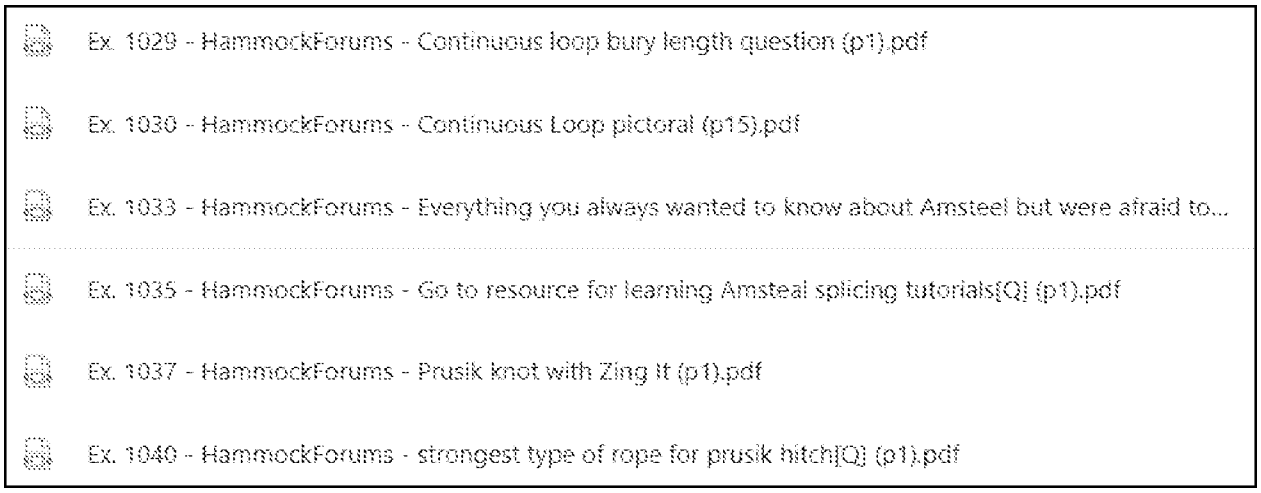
Id.

The HammockForums message board was started in around 2006, and as reflected in small part in the exhibits filed with this Petition, the message board was well-known and frequently referenced by not only the hammock camping community, but also the saddle hunting community, in the 2020 time frame and earlier. Ex. 1015 ¶ 109.

The following threads on the HammockForums message board included with this Petition refer to the "L-36" website:



The following threads on the HammockForums message board refer to "YouTube":



See Ex. 1015 ¶¶ 110-111.

I. L-36.com (Exs. 1046-1047)

L-36.com is popular website that is frequently referenced in the prior art as a useful source of information and instructions for splicing rope, particularly Amsteel. Ex. 1015 ¶ 112. As noted above, the L-36.com website is referenced as a reliable source of splicing instructions in the HammockForums message board. *Id.*

J. Samson Splicing Instructions (Ex. 1018)

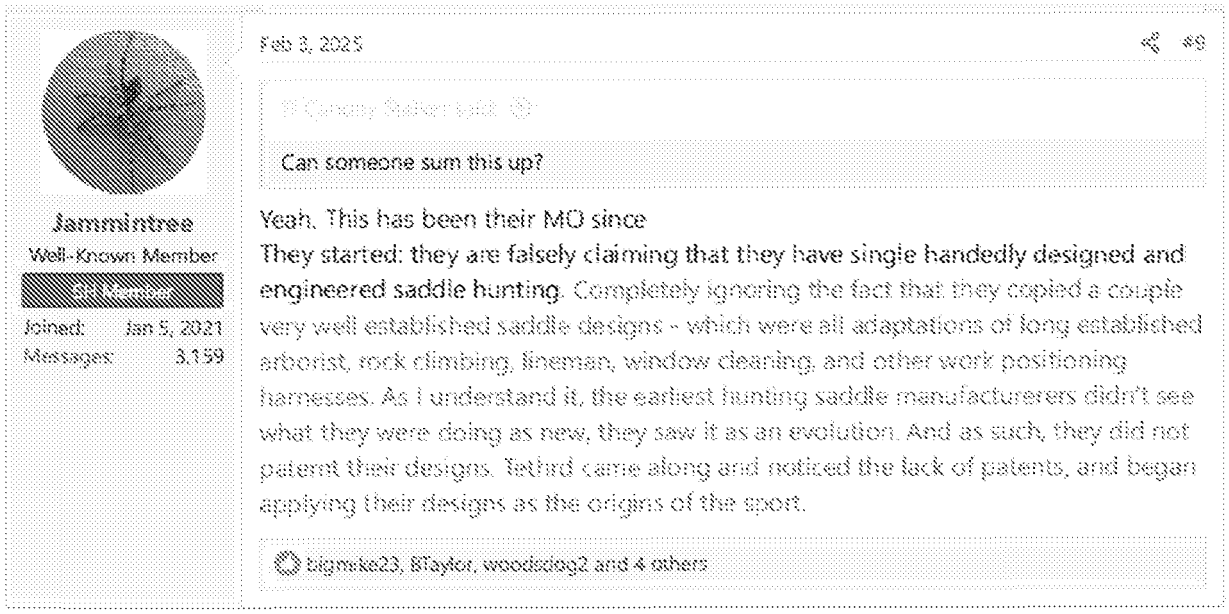
Samson Rope Technologies, Inc. is the manufacturer of a variety of rope products, including particularly the Amsteel rope discussed extensively in the prior art and claimed in the patent as UHMWPE (*see* Claims 10 & 11). Ex. 1015 ¶ 113. The Samson splicing instructions are frequently referenced in the prior art as a useful source of information and instructions for splicing synthetic rope, particularly Amsteel. *Id.*

VII. THE PTAB IS THE BEST FORUM TO RESOLVE THIS UNIQUE PATENTABILITY DISPUTE

The USPTO is the best forum to evaluate the patentability issues presented in this IPR Petition for a number of reasons, including the following:

- The USPTO has unique expertise in evaluating patent application priority dates (and particularly relevant here, breaks in continuity in applicants' priority claims) for patent family chains under 35 U.S.C. § 120.
- The USPTO has unique expertise in evaluating status of information on the Internet (and particularly relevant here, YouTube videos and public message forum posts) as printed publications under 35 U.S.C. § 102(b).
- The USPTO has an important public policy interest in reinforcing inventors' ongoing duty to disclose all material prior art known to them (and particularly relevant here, not just submitting patents obtained from a routine patent search) under 37 C.F.R. § 1.56 and MPEP § 2001. In this case,

members of the saddle hunting community have recognized that printed publications on the Internet, and particularly posts on the *SaddleHunter* message forum, are a key source of prior art in this field (none which Tethrd provided to the USPTO during the prosecution of the '175 Patent):



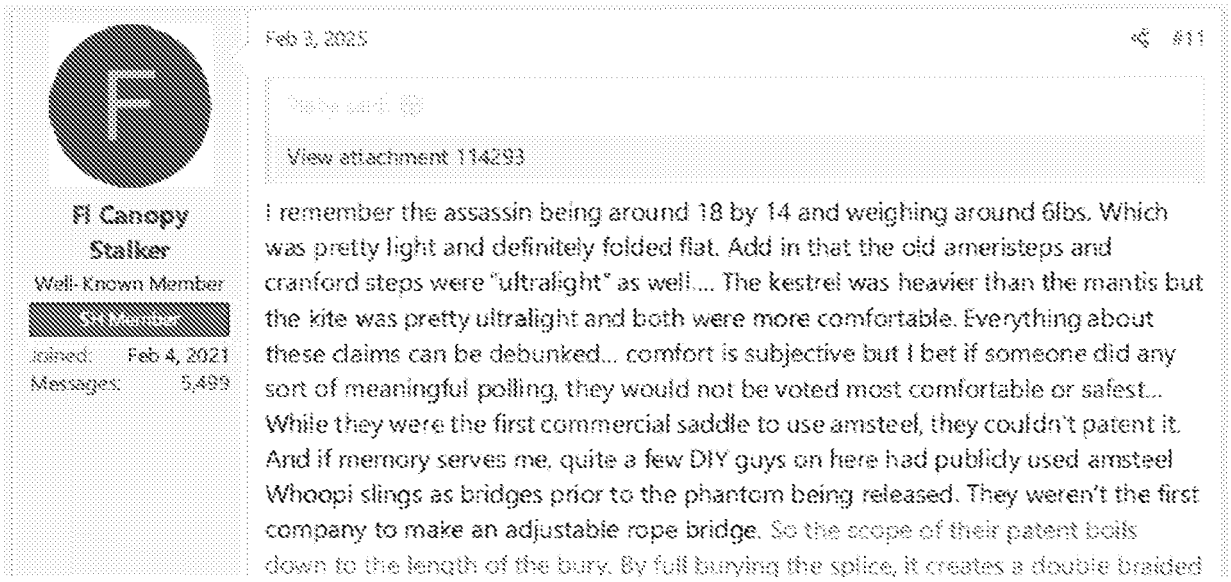
Feb 3, 2025 #9

Can someone sum this up?

Jammintree
Well-Known Member
Joined: Jan 5, 2021
Messages: 3,159

Yeah. This has been their MO since
They started: they are falsely claiming that they have single handedly designed and engineered saddle hunting. Completely ignoring the fact that they copied a couple very well established saddle designs - which were all adaptations of long established arborist, rock climbing, lineman, window cleaning, and other work positioning harnesses. As I understand it, the earliest hunting saddle manufacturerers didn't see what they were doing as new, they saw it as an evolution. And as such, they did not patent their designs. Tethrd came along and noticed the lack of patents, and began applying their designs as the origins of the sport.

bigmike23, BTaylor, woodsdog2 and 4 others



Feb 3, 2025 #11

View attachment 114293

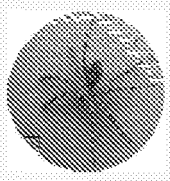
FI Canopy Stalker
Well-Known Member
Joined: Feb 4, 2021
Messages: 5,499

I remember the assassin being around 18 by 14 and weighing around 6lbs. Which was pretty light and definitely folded flat. Add in that the old ameristeps and cranford steps were "ultralight" as well.... The kestrel was heavier than the mantis but the kite was pretty ultralight and both were more comfortable. Everything about these claims can be debunked... comfort is subjective but I bet if someone did any sort of meaningful polling, they would not be voted most comfortable or safest... While they were the first commercial saddle to use amsteel, they couldn't patent it. And if memory serves me, quite a few DIY guys on here had publicly used amsteel Whoopi slings as bridges prior to the phantom being released. They weren't the first company to make an adjustable rope bridge. So the scope of their patent boils down to the length of the bury. By full burying the splice, it creates a double braided

rope. This allows better holding for knots and hitches which is common practice in the rope world as a whole. Samson literally has splicing instructions on their website for amsteel with an eye. They list a minimum length of bury, however they do not have a maximum bury suggestion. So the patent office literally gave them a patent for splicing a rope. Which never should have happened. To me it just further shows the lack of "due diligence" performed by the USPO... without sounding political here, it's one of the government organizations that if DOGE cut, I wouldn't be the least bit upset about

Last edited: Feb 3, 2025

milz, Bwhans, BTaylor and 3 others



Jammintree

Well-Known Member

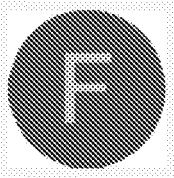
Sit Member

Joined: Jan 5, 2021
Messages: 3,159

Feb 3, 2025 #28

I wonder if all the saddle hunting companies will pool their resources and hire a patent lawyer to prove that many of tethrds patents were issued without cause. Certainly some searches on this forum would generate lots of evidence that undermines tethrds claims of origination.

bowhuntr09, Sage, Topdog and 7 others



FI Canopy Stalker

Well-Known Member

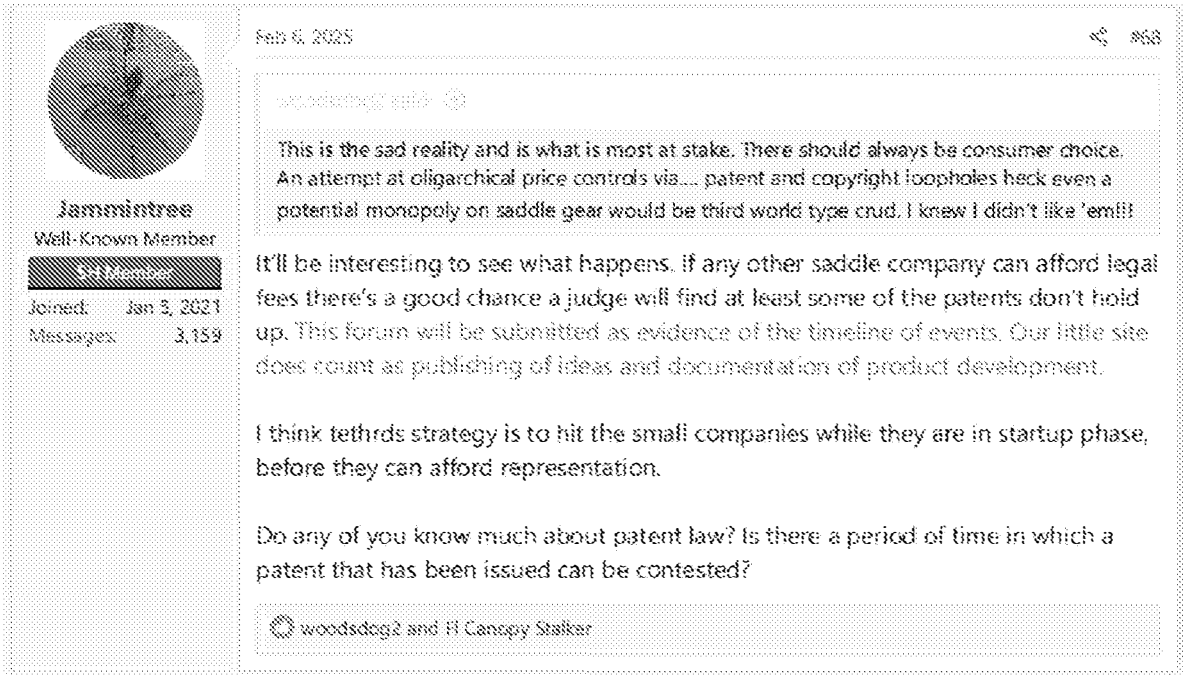
Sit Member

Joined: Feb 4, 2021
Messages: 5,499

Feb 3, 2025 #37

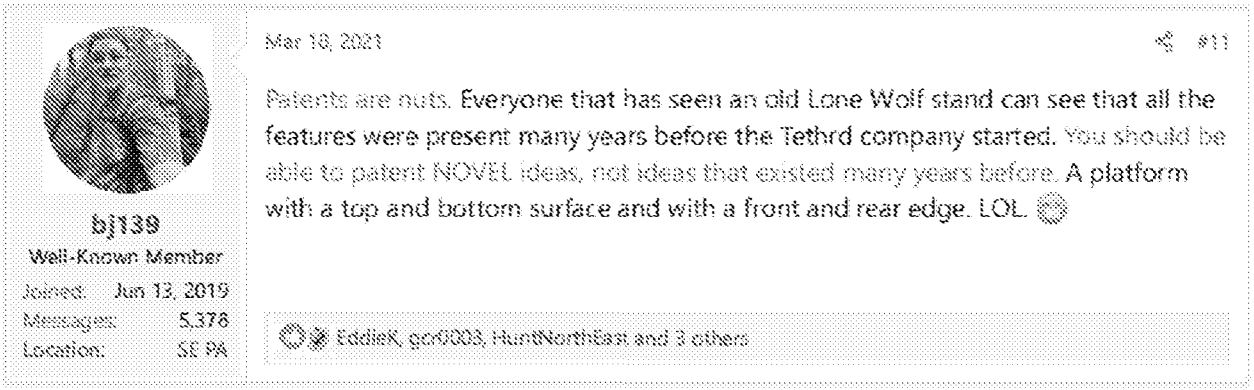
Truth is, this forum and its archives may literally be the thing that helps, Cruzr, latitude, hang free and timber ninja win this... Anyone who takes the time to read up in here should be able to find where any of their "patent" ideas came from as they aren't patent-able if they are already out on a public space or if they aren't new or non-obvious

bowhuntr09, Topdog, Porter and 6 others



Ex. 1145 at 4, 5, 12, 14, 25.

- The USPTO has an important public interest in maintaining its institutional integrity and public reputation for quality patent examination. In this case, members of the saddle hunting, and specifically posts on the *SaddleHunter* message forum, have suggested that the USPTO is issuing meritless patents without the benefit of the most relevant prior art from the Internet:



Mar 22, 2021 #108

FI Canopy Stalker
Well-Known Member
5+ Member
Joined: Feb 4, 2021
Messages: 5,499

> I am the patent engineer at Tethrd. In addition to the patents granted, we have several unpublished patent applications submitted and we continue to submit patent applications as we develop new ideas to make saddle hunting better for all. The patents are expensive and time consuming, but they are the only enforceable means to protect Tethrd's inventions. It is smart business.

I agree from the standpoint that is the only enforceable means, and it's smart business. however for patents to be approved, it has to be a design or improvement that the common person cannot come up with or "non obvious". Being that most of us on this forum are working class people who are not manufacturers or engineers, come up with ideas or share them, then most of these ideas are obvious. So why patent them? What happens if people begin writing the patent office with proof that these patent pending innovations are actually just DIY ideas normal working class people came up with and we're already utilizing non commercially?

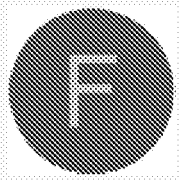
Plebe, Gator, TNSTAAFL and 1 other person

Mar 22, 2021 #109

FI Canopy Stalker
Well-Known Member
5+ Member
Joined: Feb 4, 2021
Messages: 5,499

> I see little risk when I examine our patent claims against the prior art. We have run into cases where we needed to adjust or pull claims based on duty of candor and good faith, but overall our claims are founded when evaluated against the prior art.

And for the record lawyers rarely admit their client are in the wrong... I mean what good is a defense attorney for a murderer, if the attorney got up and said my client didn't kill this man the way these prior witnesses claim he did, he actually did it like this? Not saying the company you represent made an exact replica, I mean none of us DIY'ers throw the logo on our ideas..... I am just saying as a whole, the idea was implemented here and you run to the patent office with it, I am not against it, I just think if people here are truly bothered by what this company did, that they all take the time to write the patent office with pictures of the concepts that have later been patent pending so that the Patent office has a true chance to do their homework free of fancy law lingo because most of these people working patents only research the paperwork submitted and have zero idea what is "non obvious" and what is not.



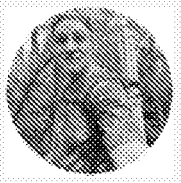
FI Canopy Stalker
Well-Known Member
5+ Member
Joined: Feb 4, 2021
Messages: 5,499

Mar 23, 2021 #116

> I thought the patent office was just an archiving office and didn't search for conflicts with any existing patents anymore. Am I wrong?

They do only check your patent claims against existing patents which is why I said perhaps people should write in with proof these ideas were in use prior to someone patenting them to prove that the ideas are obvious, that would make getting patents on other peoples ideas much much harder

bj139

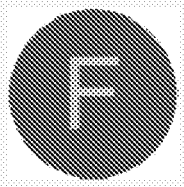


bj139
Well-Known Member
Joined: Jun 13, 2019
Messages: 5,378
Location: SE PA

Mar 23, 2021 #121

The internet should make it easier to search for existing "prior art" even if it is simply in common use by many people and not commercially produced. In the olden days it would have been more difficult. It seems today they issue patents for anything submitted and rely on the courts to decide later. They may be overworked and can not do an exhaustive search. The courts will decide eventually anyway. The picture I posted of the Lone Wolf stand has pretty much all the design features of the Predator platform only bigger. If they are patenting smallness then maybe that is novel. I read before you can DIY and use any patent for yourself and not for sale and not violate any patents but I am not sure if this is true.

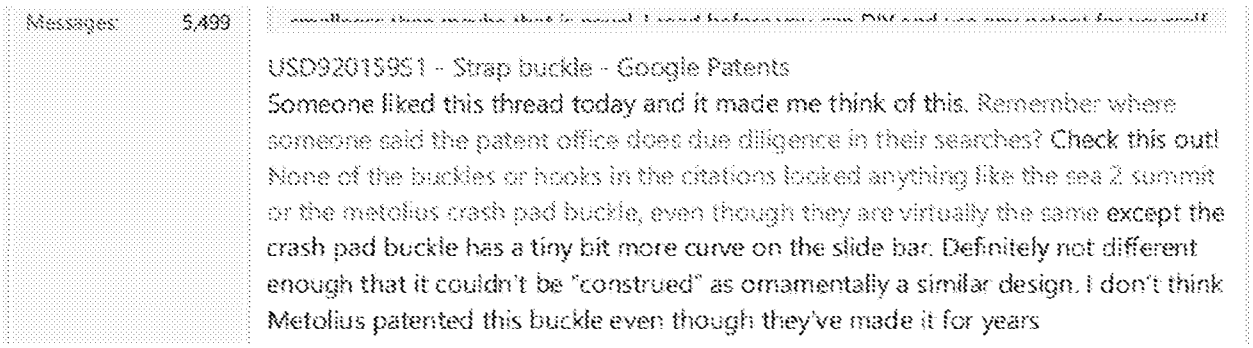
FI Canopy Stalker



FI Canopy Stalker
Well-Known Member
5+ Member
Joined: Feb 4, 2021

Jun 27, 2021 #127

> The internet should make it easier to search for existing "prior art" even if it is simply in common use by many people and not commercially produced. In the olden days it would have been more difficult. It seems today they issue patents for anything submitted and rely on the courts to decide later. They may be overworked and can not do an exhaustive search. The courts will decide eventually anyway. The picture I posted of the Lone Wolf stand has pretty much all the design features of the Predator platform only bigger. If they are patenting



Ex. 1144 at 5, 40-42, 44, 47, 50-51.

VIII. THE CHALLENGED CLAIMS ARE UNPATENTABLE

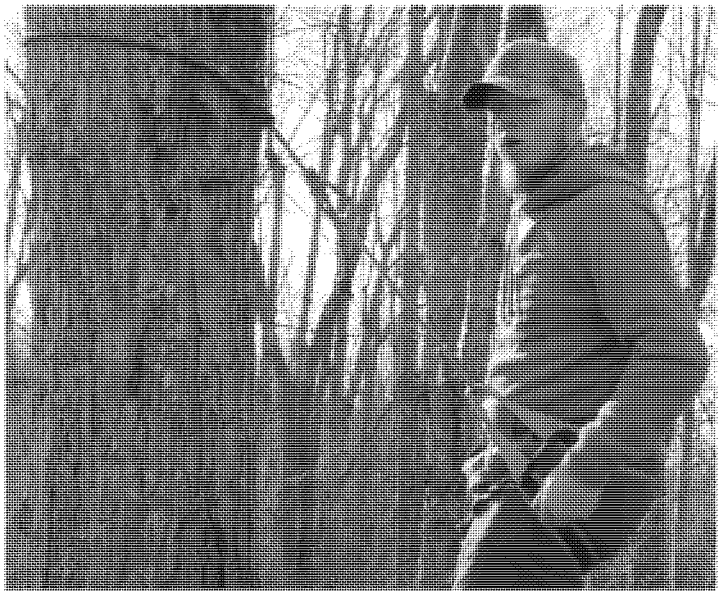
Claims 1-14 of the '175 Patent are unpatentable under 35 U.S.C. § 102 and/or Obvious Under 35 U.S.C. § 103, as set forth in the three grounds of unpatentability set forth below. Ex. 1015 ¶¶ 115-130.

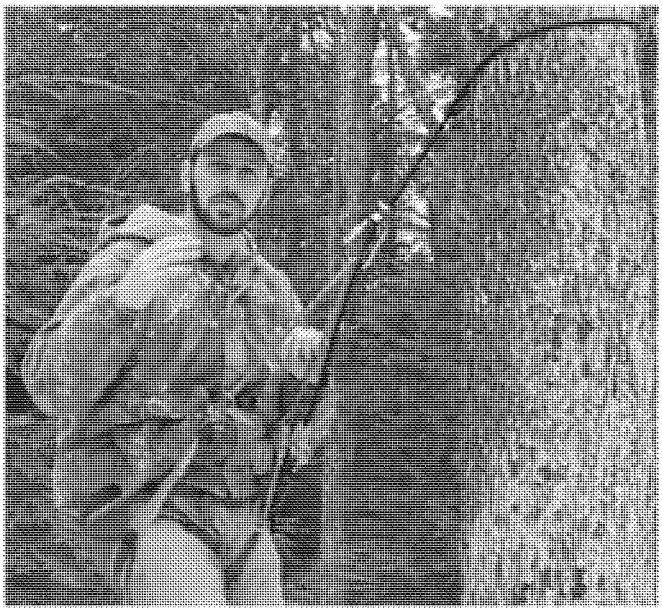
A. Ground 1: Claims 1-14 are Anticipated Under 35 U.S.C. § 102 and/or Obvious Under 35 U.S.C. § 103 Over The Tethrd Phantom Saddle YouTube Videos and The DIY Utilibridge YouTube Video and SaddleHunter Forum Posts

Ground 1 relies on the correct priority date for the '175 Patent of April 15, 2021.

1. Ground 1 – Claim Chart

The following claim chart sets forth sets forth the details of **Ground 1** for the unpatentability of Claims 1-14 of the '175 Patent in view of the YouTube videos describing the Tethrd Phantom Saddle (**Ex. 1132)** (alt. Exs. 1133, 1116) and the YouTube video (**Ex. 1125**) and SaddleHunter forum posts (alt. Exs. 1073, 1074, 1075) describing the Tethrd Phantom Saddle and the DIY Utilibridge:

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:	**YouTube - Tethrd Mantis VS The Phantom Saddles (Ex. 1132)**  Tethrd Mantis VS The Phantom Saddles Hunt Appalachia 6.99K subscribers Subscribe 39,805 views Jan 21, 2020  (*e.g.*, Ex. 1132 @ 15:14) **—OR—**

	YouTube - Tethrd PHANTOM Review and How-To Tutorial! (Ex. 1133)  Tethrd PHANTOM Review and How-To Tutorial! Average Jack Archery 6.3K subscribers Subscribe 48,326 views Jan 26, 2020  (*e.g.*, Ex. 1133 @ 2:18)
a main body comprising a rope having a first end and a second end,	**YouTube - Tethrd Mantis VS The Phantom Saddles (Ex. 1132 at 11)**

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; and

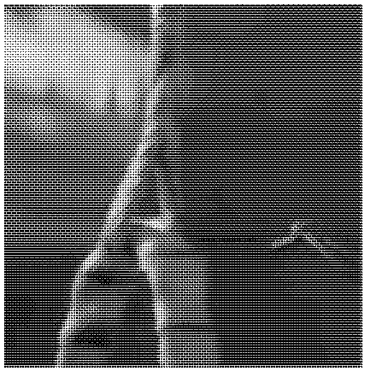


Tethrd Mantis VS The Phantom Saddles

Hunt Appalachia
6.99K subscribers
Subscribe

39,805 views Jan 21, 2020

7:51
but the beauty in this bridge is the
7:55
construction of it so this is a quarter
7:58
inch piece of AM steel that is spliced
8:00
all the way back through itself and it's



(*e.g.*, Ex. 1132 @ 8:00)

—OR—

YouTube - Tethrd PHANTOM Review and How-To Tutorial! (Ex. 1133 at 10-11)



Tethrd PHANTOM Review and How-To Tutorial!

Average Jack Archery
60K subscribers
Subscribe

48,326 views Jan 26, 2020

5:51
system is really slick it's an entire
5:53
piece of AM steel where the berry' is
5:55
all the way through the entire length

* * *

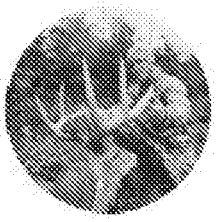
6:14
also allowing that buried to go from one
6:16
end to the other it gave this other



(*e.g.*, Ex. 1133 @ 2:13)

—OR—

Saddle Hunter - Tethrd Phantom's Bridge Knot (Ex. 1116 at 1)

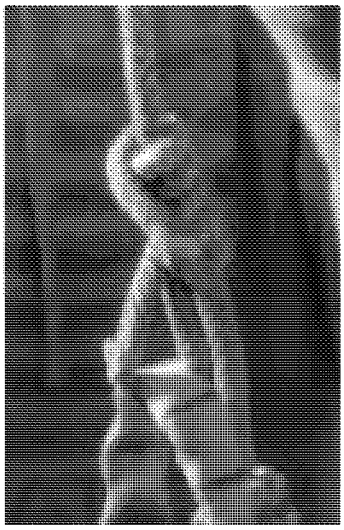


flinginairos
Well-Known Member

Apr 13, 2020 #2

The bridge on the Phantom is spliced all the way back through itself so it's essentially not a hollow core rope anymore. The prussic is made from 3/16 spliced continuous loop and the main line of the bridge is 1/4" spliced back inside and is a little less than 1/2" final diameter. It was fully drop tested and the prussic slid less than 1/4" with a 300lb dummy falling 6'. It works very well!

a friction hitch being positioned on the main body between the second end and the eye loop, the friction hitch being configured to engage the second bridge loop, the	**YouTube - Tethrd Mantis VS The Phantom Saddles (Ex. 1132 at 11)**

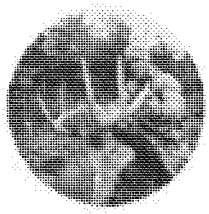
friction hitch comprising a closed loop.	8:00 all the way back through itself and it's 8:03 using a 3/16 prusik that is a continuous 8:07 loop splice so there's no extra knots on 8:10 the AM steel it's just a prusik knot so 8:13  (*e.g.*, Ex. 1132 @ 8:00) **—OR—** **YouTube - Tethrd PHANTOM Review and How-To Tutorial! (Ex. 1133 at 11)** 6:16 end to the other it gave this other 6:18 completely knotless prusik which is also 6:21 just buried in on itself so you don't 6:23 any other knots here it gave it enough



(*e.g.*, Ex. 1133 @ 2:13)

—OR—

Saddle Hunter - Tethrd Phantom's Bridge Knot (Ex. 1116 at 1)



flinginairos
Well-Known Member

Apr 13, 2020 #2

The bridge on the Phantom is spliced all the way back through itself so it's essentially not a hollow core rope anymore. The prussic is made from 3/16 spliced continuous loop and the main line of the bridge is 1/4" spliced back inside and is a little less than 1/2" final diameter. It was fully drop tested and the prussic slid less than 1/4" with a 300lb dummy falling 6'. It works very well!

2. The bridge rope assembly according to claim 1, wherein the rope has a length from the first end to the second end between 72.0 inches and 126.0 inches.	**YouTube - DIY Utilibridge (Ex. 1125 at 2)**



DIY Utilibridge

Pushing Up Daisies
143 subscribers
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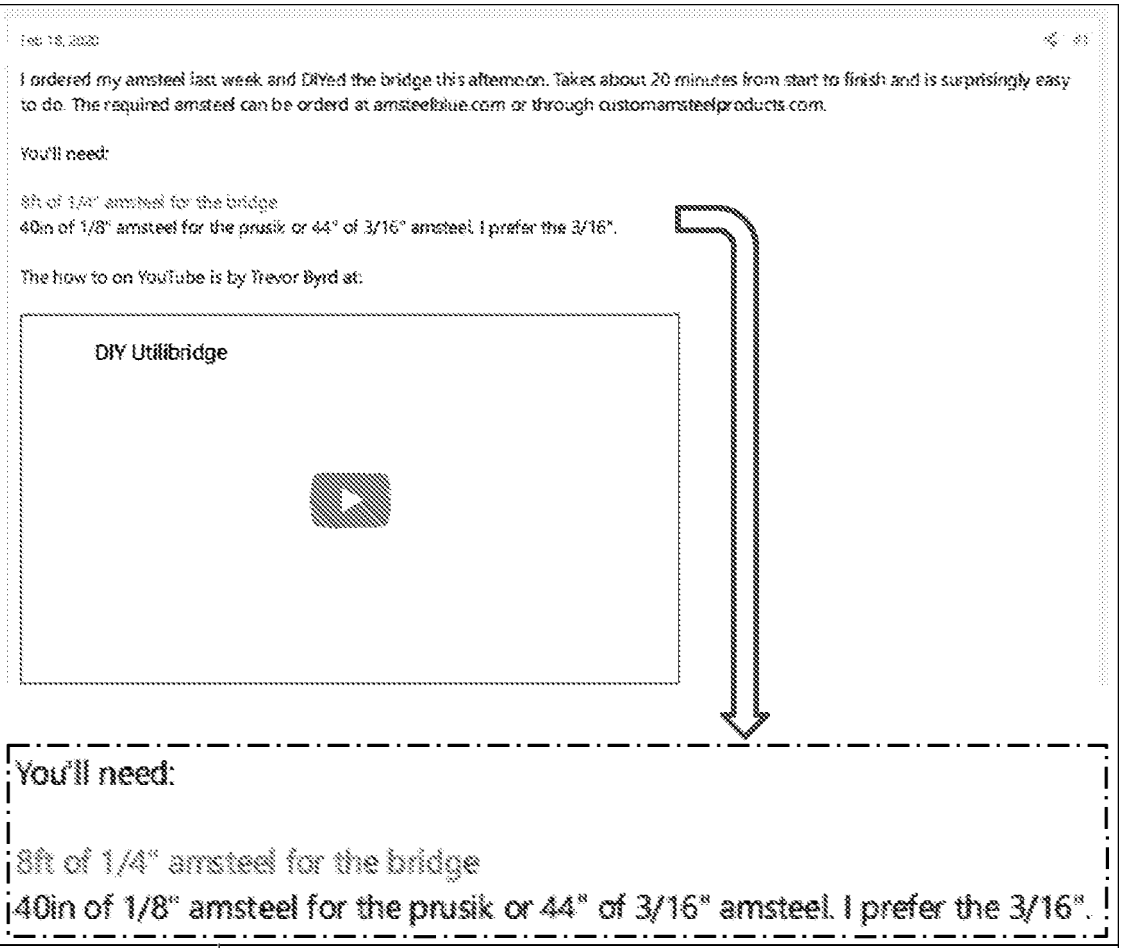
25,267 views Jan 19, 2020

0:18
and what the kit is gonna consist of is
0:22
8 feet of quarter inch am steel gonna

—OR—

SaddleHunter - DIY utillibridge (p1) (Ex. 1075 at 1)





3. The bridge rope assembly according to claim 1, wherein a distance of the eye loop to the second end is between 24.0 inches and 40.0 inches.	**YouTube - Tethrd Mantis VS The Phantom Saddles (Ex. 1132 at 4)** 

Tethrd Mantis VS The Phantom Saddles

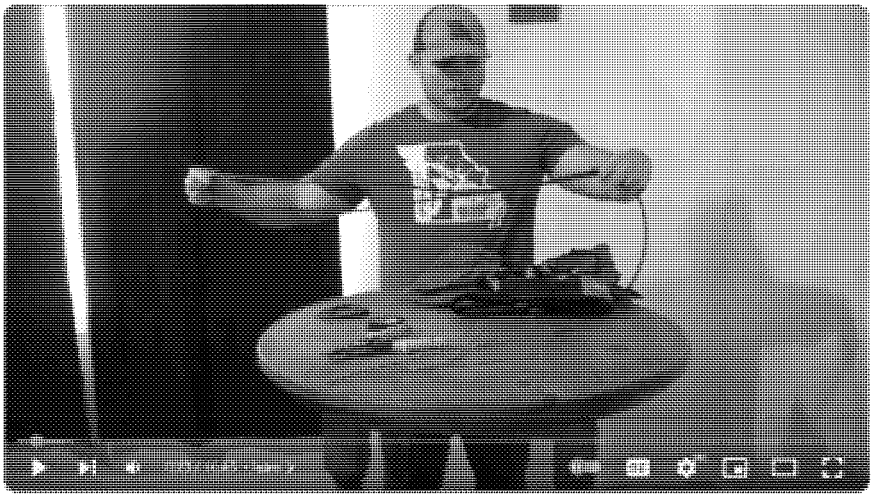
Hunt Appalachia
6.95K subscribers
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39,805 views Jan 21, 2020

2:14
the the phantom will go from basically
2:16
zero to about thirty inches

—OR—

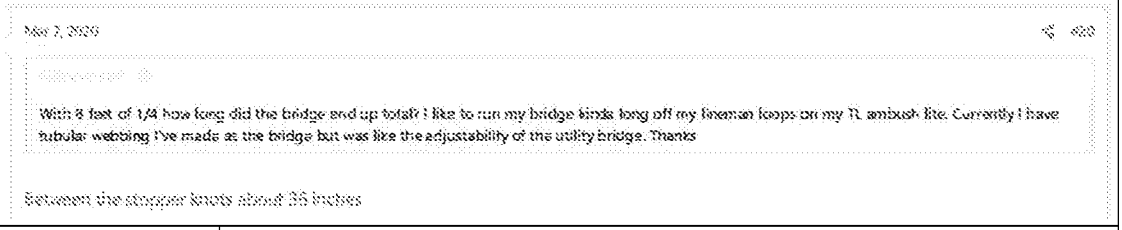
YouTube - DIY Utilibridge (Ex. 1125 at 2)



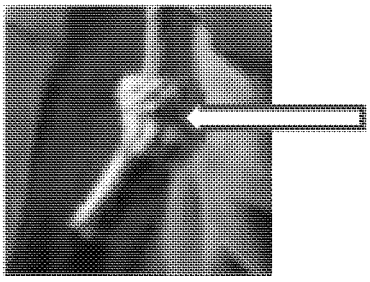
DIY Utilibridge

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25,267 views Jan 19, 2020

	16:05 the length here from the actual we're 16:17 looking at approximately thirty it's 16:22 hard to see that about thirty six after 16:25 the knot it'll be about 34 inches of 16:28 adjustability that's it alright guys if **—OR—** **SaddleHunter - DIY utillibridge (p1) (Ex. 1075 at 5)**  
4. The bridge rope assembly according to claim 3, wherein the main body includes a stop knot in the second portion adjacent to the second end.	**YouTube - Tethrd Mantis VS The Phantom Saddles (Ex. 1132)**

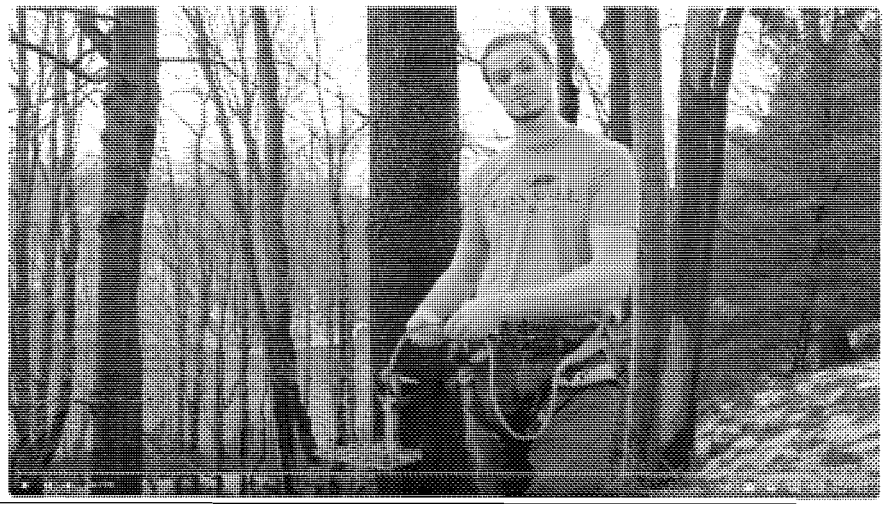


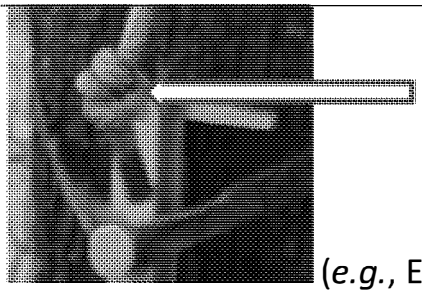
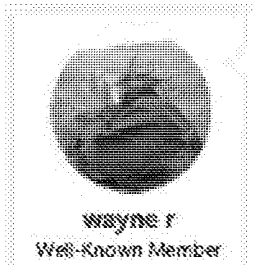


(*e.g.*, Ex. 1132 @ 7:54)

—OR—

YouTube - Tethrd PHANTOM Review and How-To Tutorial! (Ex. 1133)

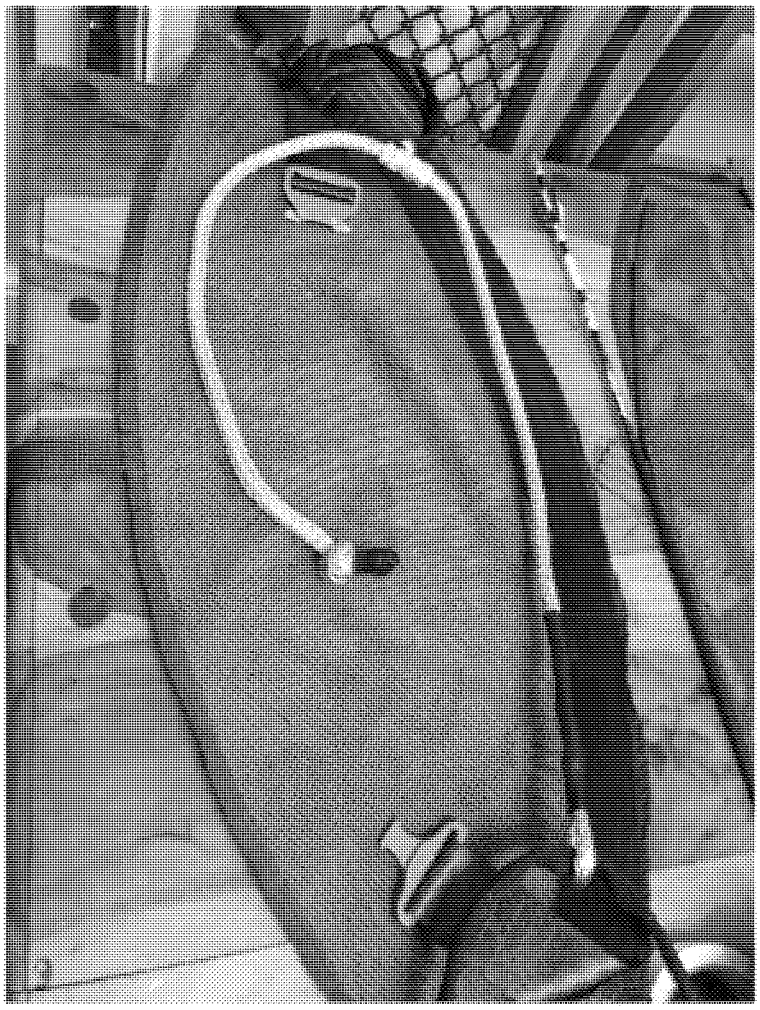


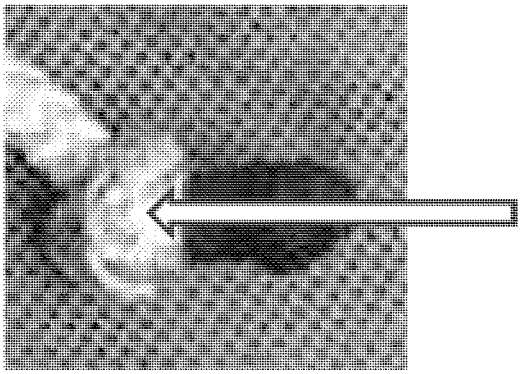
	 (*e.g.*, Ex. 1133 @ 6:36) **—OR—** **SaddleHunter - DIY utillibridge (p1) (Ex. 1075 at 2)** 

Feb 21, 2020

Real simple to do I am liking it so far, regards wayne

Share





	—OR— **YouTube - DIY Utilibridge (Ex. 1125 at 12)**  **DIY Utilibridge** Pushing Up Daisies 143 subscribers Subscribe 25,267 views Jan 19, 2020 16:05 the length here from the actual we're 16:17 looking at approximately thirty it's 16:22 hard to see that about thirty six after 16:25 the knot it'll be about 34 inches of 16:28 adjustability that's it alright guys if **—OR—** **SaddleHunter - DIY Utilibridge (p2) (Ex. 1074 at 1)**



Jan 11, 2020 #21

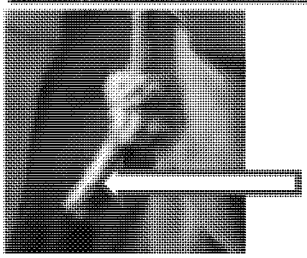
What are you guys using for a stopper knot on the Amsteel? Everything I read about Amsteel, and my own experience, says that it doesn't hold knots very well. Seems like a big fat splice of some kind would work better.

I just tied a double overhand knot

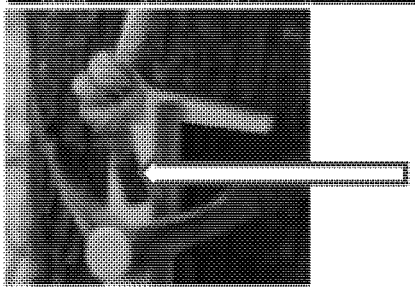
5. The bridge rope assembly according to claim 4, further including a securing member being positioned on the main body at a juncture of the first and second ends to retain the first and second ends at a static position relative to each other.

YouTube - Tethrd Mantis VS The Phantom Saddles (Ex. 1132)





(*e.g.*, Ex. 1132 @ 7:54)

	—OR— **YouTube - Tethrd PHANTOM Review and How-To Tutorial! (Ex. 1133)**   (*e.g.*, Ex. 1133 @ 6:36) **—OR—** **YouTube - DIY Utilibridge (Ex. 1125)**

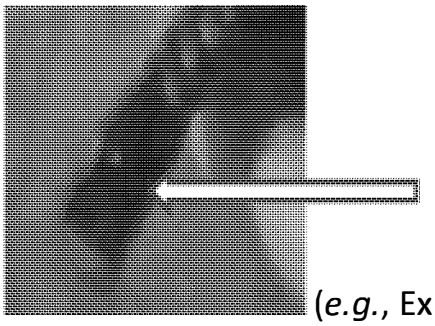


DIY Utilibridge

Pushing Up Daisies
143 subscribers

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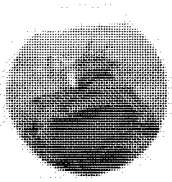
25,267 views Jan 19, 2020



(*e.g.*, Ex. 1125 @ 15:56)

—OR—

SaddleHunter - DIY utillibridge (p1) (Ex. 1075 at 2)

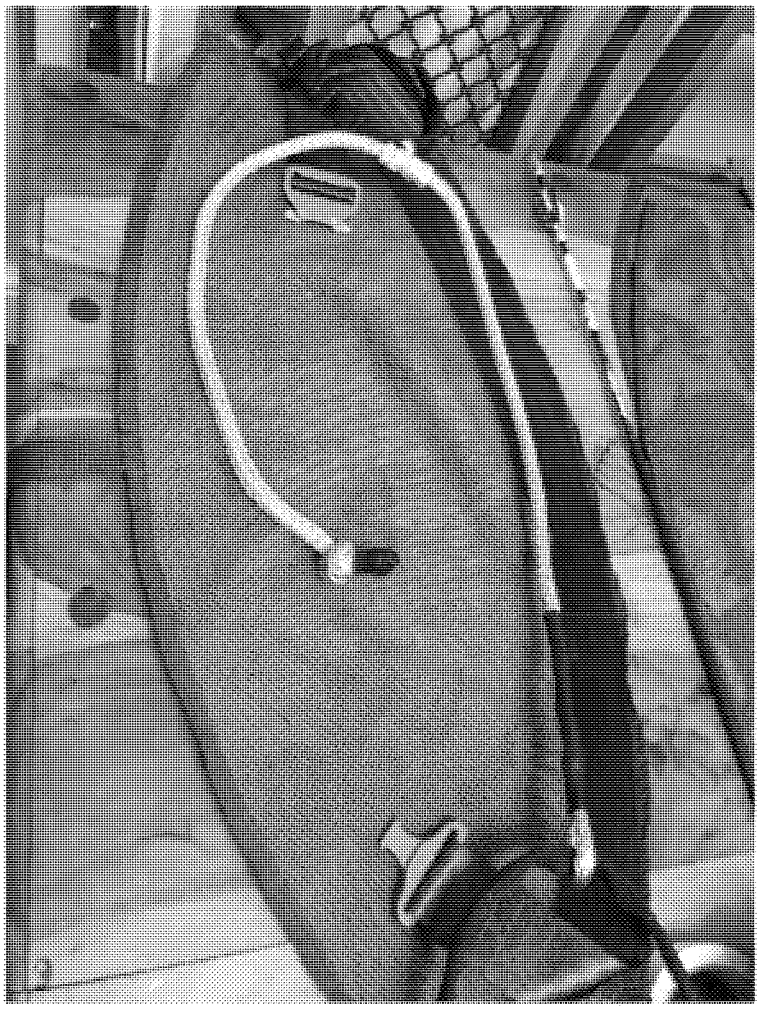


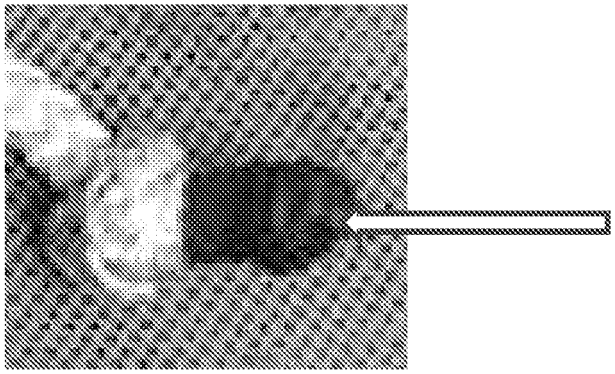
wayne r
Well-Known Member

Feb 21, 2020

Real simple to do I am liking it so far, regards wayne

Share





6. The bridge rope assembly according to claim 4, wherein the closed loop comprises a single rope being formed into the closed loop.	**YouTube - Tethrd Mantis VS The Phantom Saddles (Ex. 1132 at 11)**  8:00 all the way back through itself and it's 8:03 using a 3/16 prusik that is a continuous 8:07 loop splice so there's no extra knots on 8:10 the AM steel it's just a prusik knot so 8:13 **—OR—** **YouTube - Tethrd PHANTOM Review and How-To Tutorial! (Ex. 1133 at 11)**

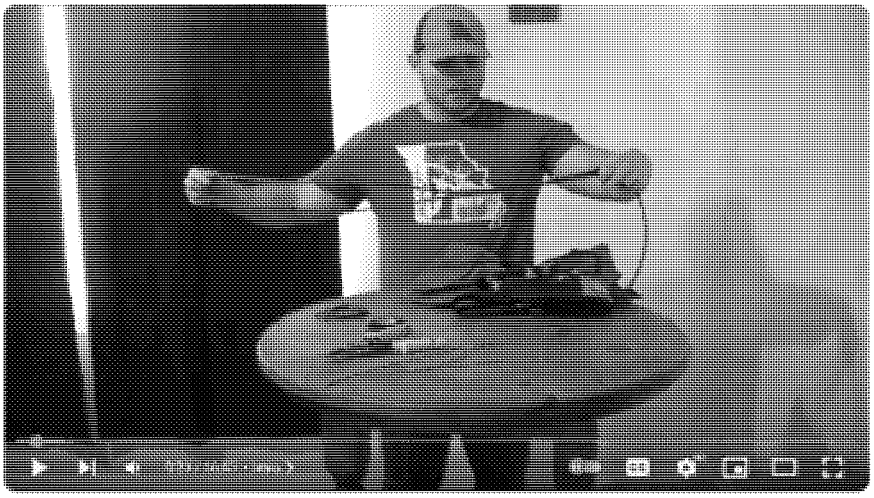


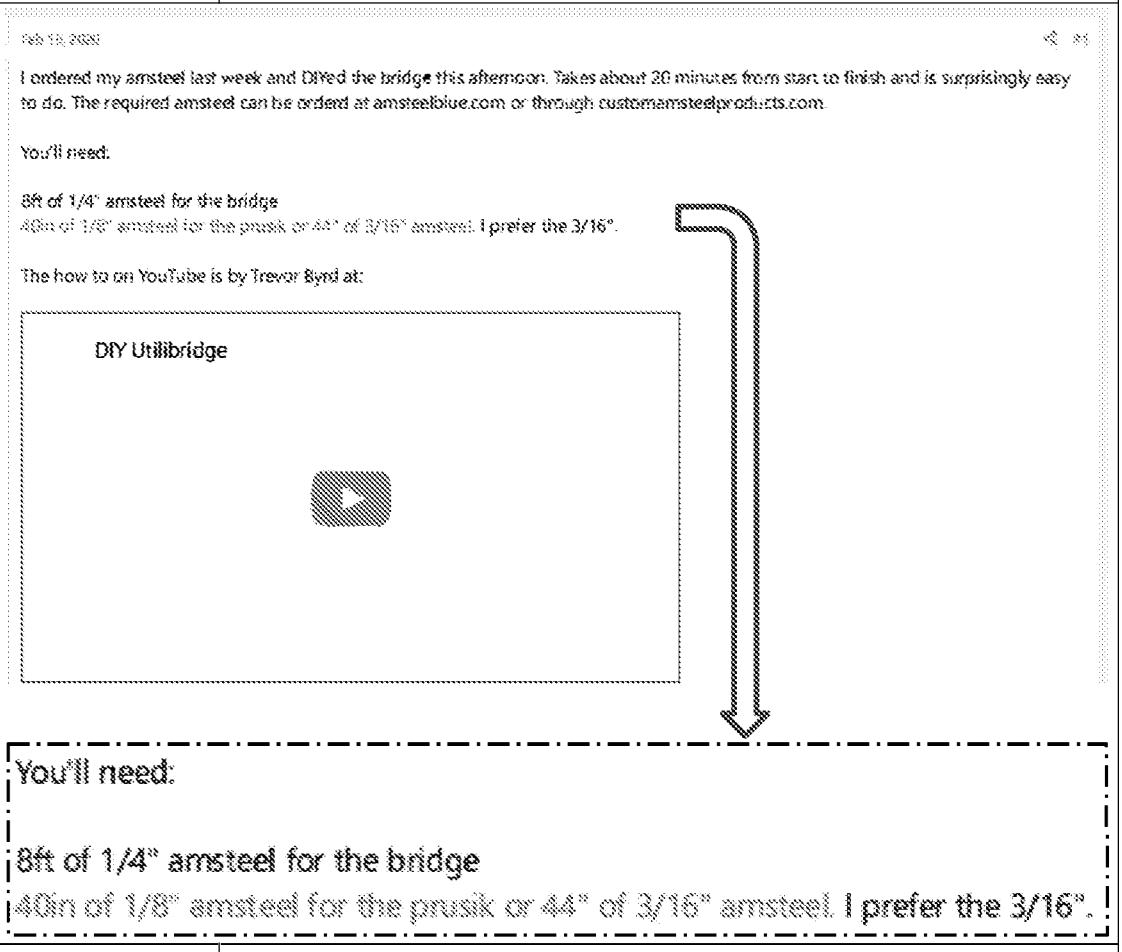
6:16
end to the other it gave this other
6:18
completely knotless prusik which is also
6:21
just buried in on itself so you don't
6:23
any other knots here it gave it enough

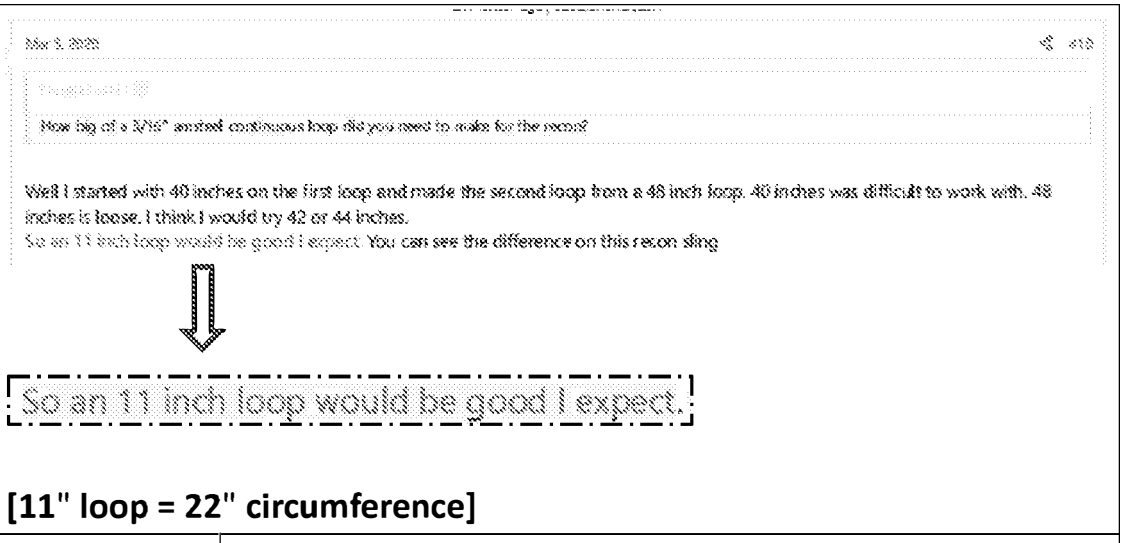
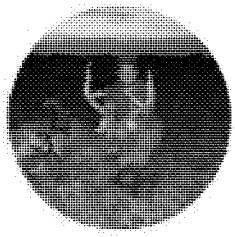
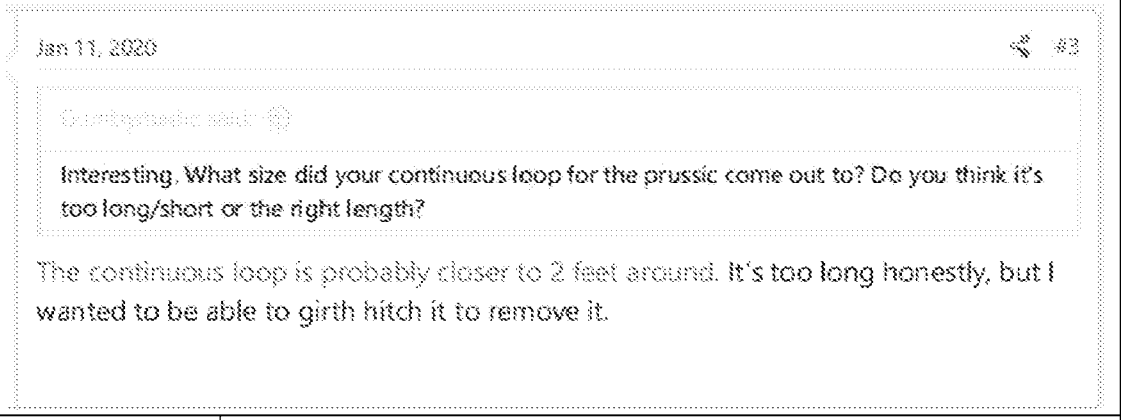
—OR—

Saddle Hunter - Tethrd Phantom's Bridge Knot (p1) (Ex. 1116 at 1)



	Apr 13, 2020 #2 The bridge on the Phantom is spliced all the way back through itself so it's essentially not a hollow core rope anymore. The prussic is made from 3/16 spliced continuous loop and the main line of the bridge is 1/4" spliced back inside and is a little less than 1/2" final diameter. It was fully drop tested and the prussic slid less than 1/4" with a 300lb dummy falling 6'. It works very well!
7. The bridge rope assembly according to claim 6, wherein the single rope of the closed loop has a length between 40.0 inches and 60.0 inches.	**YouTube - DIY Utilibridge (Ex. 1125 at 2, 7)**  **DIY Utilibridge** Pushing Up Daisies 143 subscribers Subscribe 25,267 views Jan 19, 2020 0:25 have 40 inches of eighth inch and steel * * * **Continuous Loop** 7:56 loop so this is 40 inches right here **—OR—**

	SaddleHunter - DIY utillibridge (p1) (Ex. 1075 at 1)  Nugget Well-Known Member  I ordered my amsteel last week and DIYed the bridge this afternoon. Takes about 20 minutes from start to finish and is surprisingly easy to do. The required amsteel can be ordered at amsteelblue.com or through customamsteelproducts.com. You'll need: 8ft of 1/4" amsteel for the bridge 40in of 1/8" amsteel for the prusik or 44" of 3/16" amsteel. I prefer the 3/16". The how to on YouTube is by Trevor Byrd at: DIY Utillibridge You'll need: 8ft of 1/4" amsteel for the bridge 40in of 1/8" amsteel for the prusik or 44" of 3/16" amsteel. I prefer the 3/16".
8. The bridge rope assembly according to claim 7, wherein the closed loop has a total circumference of between 20.0 inches and 30.0 inches.	**SaddleHunter - DIY utillibridge (p1) (Ex. 1075 at 4)**  Ontariofarmer Well-Known Member

	 **[11" loop = 22" circumference]**
	—OR— **SaddleHunter - DIY Utilibridge (p1) (Ex. 1073 at 2)** 
	
9. The bridge rope assembly according to claim 1, wherein	**[SAME AS CLAIM 8]**

the closed loop has a total circumference of between 20.0 inches and 30.0 inches	
10. The bridge rope assembly according to claim 9, wherein the main body and the friction hitch each are comprised of U[H]MWPE.	**YouTube - Tethrd Mantis VS The Phantom Saddles (Ex. 1132 at 11)**  Tethrd Mantis VS The Phantom Saddles Hunt Appalachia 8.99K subscribers Subscribe 39,805 views Jan 21, 2020

7:51
but the beauty in this bridge is the
7:55
construction of it so this is a quarter
7:58
inch piece of AM steel that is spliced
8:00
all the way back through itself and it's
8:03
using a 3/16 prusik that is a continuous
8:07
loop splice so there's no extra knots on
8:10
the AM steel it's just a prusik knot so

—OR—

YouTube - Tethrd PHANTOM Review and How-To Tutorial! (Ex. 1133 at 10-11)



Tethrd PHANTOM Review and How-To Tutorial!

Average Jack Archery
63K subscribers
Subscribe

48,326 views Jan 26, 2020

	5:51 system is really slick it's an entire 5:53 piece of AM steel where the berry' is 5:55 all the way through the entire length * * * 6:14 also allowing that buried to go from one 6:16 end to the other it gave this other 6:18 completely knotless prusik which is also 6:21 just buried in on itself so you don't 6:23 any other knots here it gave it enough 6:25 bite because we all know that am steel 6:27 is a very 6:27 like small diameter rope and it's hard **—OR—** **Saddle Hunter - Tethrd Phantom's Bridge Knot (p1) (Ex. 1116 at 1)**



Apr 13, 2020 #1

Hey y'all, been a while since I've posted but I was looking at the Phantom saddle and though it's quite cool, I noticed some things that rang my safety alarm: the Amsteel bridge is adjustable with a prusik of exactly the same diameter and material. Is there a climbing instructor, arborist, or anyone else who can explain why

11. The bridge rope assembly according to claim 1, wherein the main body is comprised of UHMWPE.	**[SAME AS CLAIM 10]**
12. The bridge rope assembly according to claim 9, wherein a distance of the eye loop to the second end is between 24.0 inches and 40.0 inches.	**[SAME AS CLAIM 3]**
13. The bridge rope assembly according to claim 12, wherein the closed loop has a total circumference of	**[SAME AS CLAIM 8]**

between 20.0 inches and 30.0 inches.	
14. The bridge rope assembly according to claim 12, wherein a distance between the first and second ends is less than 2.0 inches.	**[SAME AS CLAIM 1]**

Ex. 1015 ¶ 116.

2. Ground 1 – Reasons to Combine

A POSITA would have been readily motivated to combine the prior art of Ground 1. Ex. 1015 ¶ 117. The primary YouTube videos of Exhibits 1132 and 1133 both describe the Tethrd Phantom Saddle, which includes a bridge rope (the "main body" claimed in the '175 Patent) that Tethrd named the "UtiliBridge". The secondary other YouTube video (Ex. 1125) and the SaddleHunter forum posts (Exs. 1125 & 1073-1075) all describe a do-it-yourself bridge for the Tethrd Phantom saddle, or a "DIY Utilibridge". Thus, all of these prior art references discuss a bridge for the Tethrd Phantom. *Id.*

The primary YouTube videos of Exhibits 1132 and 1133 each disclose the claimed concepts of (a) a spliced eye loop (*e.g.*, a locked Brummel) whose tag end is fully buried to the end of the bridge; and (b) a continuous loop friction hitch (*e.g.*, a Prusik knot) on the end opposite the eye loop, thus rendering Claims 1, 4-6, 10-11, and 14 wholly anticipated (or at a minimum readily obvious). *Id.* ¶ 118.

The remaining claims with entirely expected and wholly unsurprising quantitative limitations (*viz.*, Claims 2-3, 7-9, and 12-13) are disclosed in the secondary DIY Utilibridge references, rendering those claims obvious in combination with the primary references. *Id.*

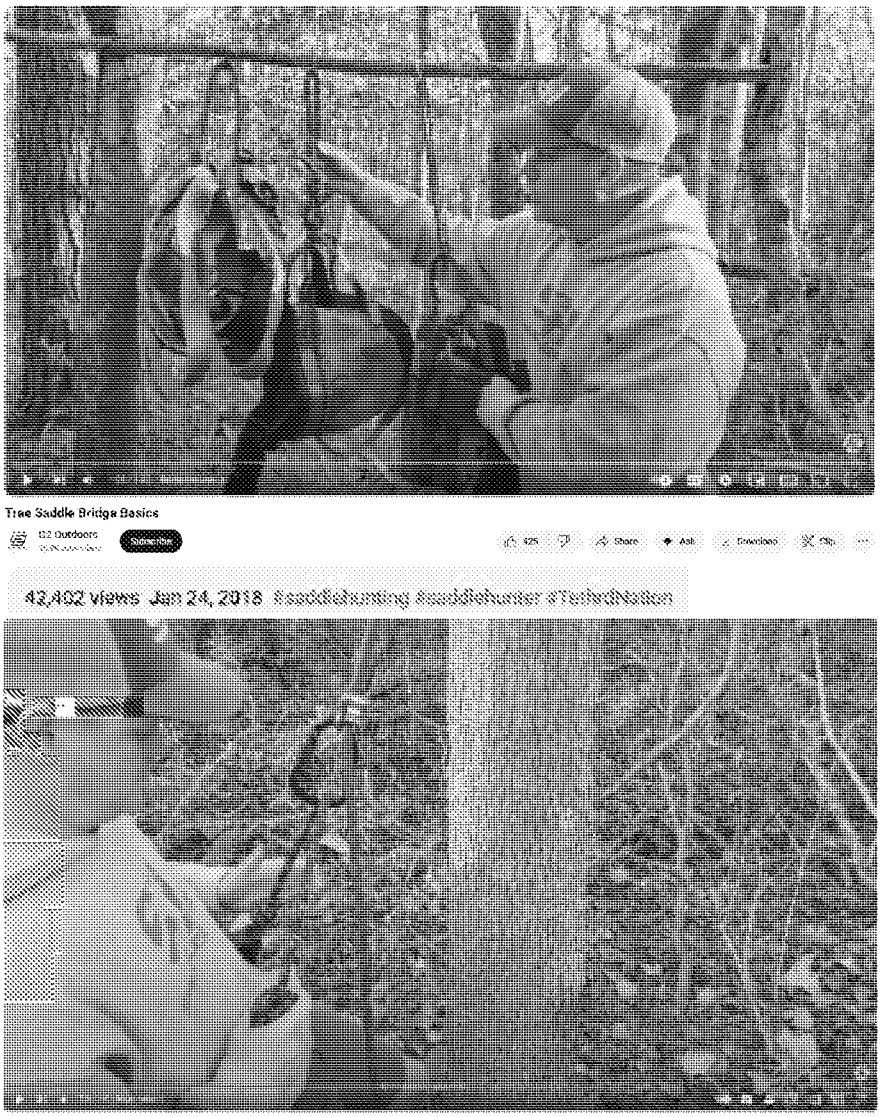
B. Ground 2: Claims 1-14 Would Have Been Obvious Under 35 U.S.C. § 103 Over the Aero Hunter Kestrel Saddle and G2 Outdoors DIY Saddle YouTube Video in View of the YouTube Videos, the SaddleHunter Forum Posts, and the HammockForums Forum Posts Describing Modifications to the Components Thereof

Ground 2 assumes *arguendo* that the priority date for the '175 Patent is (incorrectly) **January 7, 2020**. **Ground 2** relies, in part, on third-party printed publications that published during the 35 U.S.C. § 102(b)(1)(A) one-year grace period from January 7, 2019 – January 6, 2020. Ex. 1015 ¶ 119.

1. Ground 2 – Claim Chart

The following claim chart sets forth the details of **Ground 2** for the unpatentability of Claims 1-14 of the '175 Patent in view of the YouTube video describing the Aero Hunter Kestrel saddle and the G2 Outdoors DIY saddle (**Ex. 1134**) and the YouTube videos (**Exs. 1126, 1129, 1130**) and the SaddleHunter forum posts (**Exs. 1054, 1061, 1082, 1090, 1099, 1107**) (alt. Exs. 1064, 1066, 1072, 1078, 1081, 1098, 1100, 1103) describing various modifications to the Samson Predator rope bridge and the Samson Amsteel rope bridge, respectively, used with those saddles, as well as the HammockForums forum posts (**Ex. 1038**)

(alt. Exs. 1032, 1041) providing basic parameters and techniques for splicing a continuous loop friction hitch (*e.g.*, Prusik knot):

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:	**YouTube - Tree Saddle Bridge Basics (Ex. 1134)**  (*e.g.*, Ex. 1134 at 1:36)

	1:20 very well so not my favorite bridge this 1:24 is the arrow hunter Kestrel this is a 1:26 fantastic bridge it comes with Samson 1:28 predator this is an 11 millimeter 1:30 climbing rated rope extremely strong 1:33 slides very well through a bridge this 1:36 is a great bridge option this is the **—OR—**  Tree Saddle Bridge Basics G2 Outdoors Subscribe 42,402 views Jan 24, 2018 #saddlehunting #saddlehunter #TetherNation

	 (*e.g.*, Ex. 1134 at 2:55) 1:36 is a great bridge option this is the 1:38 bridge I use on my DIY saddle so I made 1:41 this saddle and I use quarter inch am 1:43 steel-blue this is a very very thin rope 1:46 a very very slippery rope 1:48 there's no knots in this rope generally * * * 2:00 this bridge is spliced back into itself 2:03 there's no knots it's a little bit 2:04 stronger you don't lose as much strength 2:06 in the rope so there's really no right
a main body comprising a rope	**SaddleHunter - Prusik Knots (p1) (Ex. 1099 at 4)**

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; and	
	Aug 20, 2019 #8 I don't know if it makes a difference, but I made my bridge with a full bury (meaning the entire length of the bridge has Amsteel in the core) so the Amsteel is more dense...it doesn't have the "give" that a single strand of Amsteel has. Does that double Amsteel allow a Prusik to grip better? I don't know.
	—AND— **YouTube - Hunting SOBs How to Splice Samson Predator Rope (Ex. 1130)**



Hunting SOBs How to Splice Samson Predator Rope

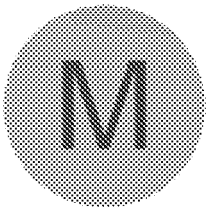
Hunting SOBs Subscribe

6,344 views Jul 22, 2019

0:22
what's up guys a Jeremy here with hunting uh Sophie's again and I threw
0:28
out on the side 100 pages of saddle hunter and sell hunter nation basically the slots here of the sampson
0:35
predator and wrote if anybody's ever told you this is easy there's one guy on there and he said he had no trouble with
0:41
it but a lot of people do have trouble with it but i've got some tips and tricks that are actually gonna go
0:47
through the squats i couldn't find any videos online of actually splicing this

—AND—

SaddleHunter - Amsteel Brummel Lock ? (p1) (Ex. 1061)



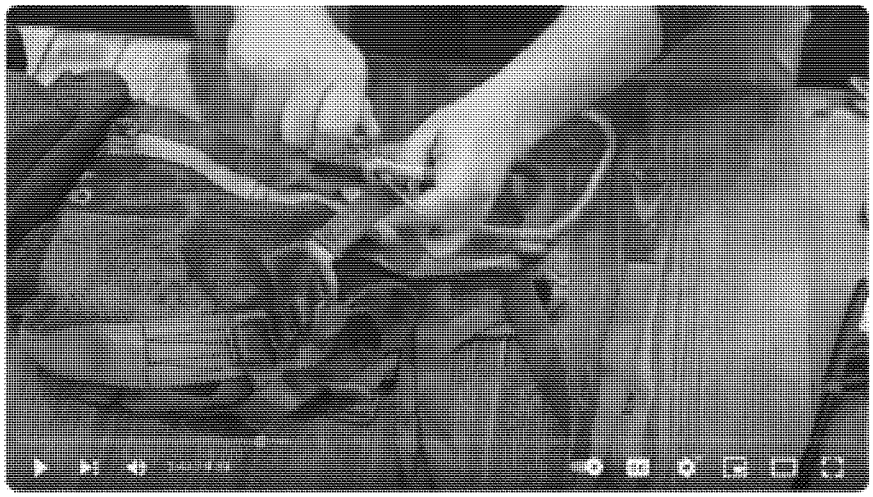
Mag1
Well-Known Member

May 30, 2019 #1

Quick question on doing a Brummel lock. Can you do one side around say a saddle loop? I'm actually trying to make my own soft fid for trying to make up some predator eye splices, and need to loop it thru the finger trap type material while making the lock. I thought you could do one side, but I cannot figure out the correct wording on a google search to get any results..... justbseen another post on g2's video, I'll have to recheck that one. It's been awhile.
Thanks

—AND—

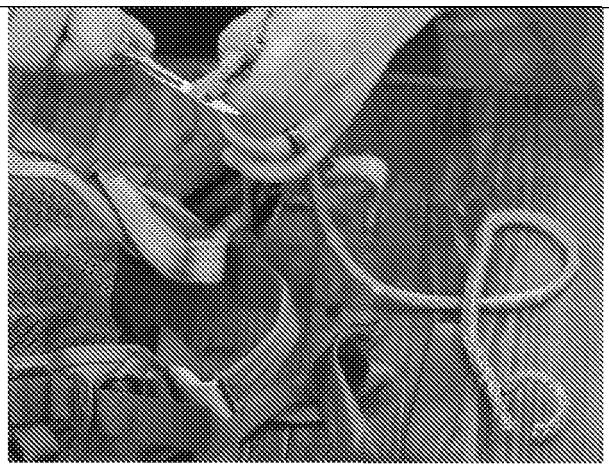
YouTube - How to Add a Webbing Bridge to a Tree Saddle (Ex. 1126)



How to Add a Webbing Bridge to a Tree Saddle

Gary Blevins Subscribe 84 Share Download

7,487 views Apr 3, 2019

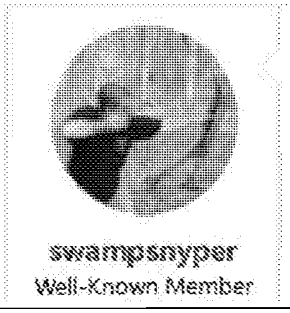
	 (*e.g.*, Ex. 1156 at 2:56)

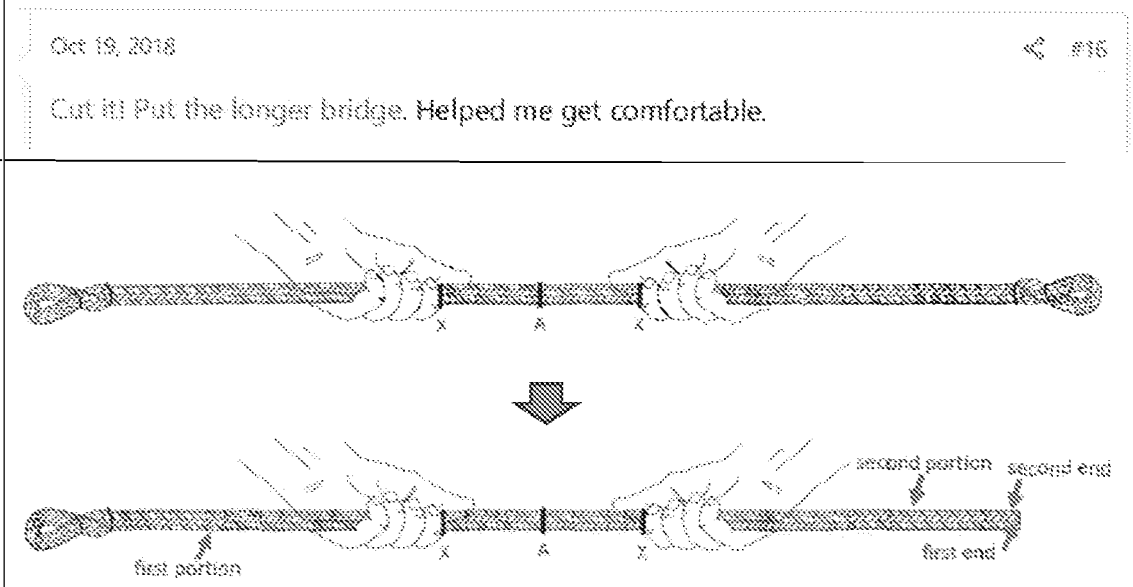
	0:14 the only things are really looking crazy 0:17 about on the Manus the way it comes is 0:19 for me the bridge too long and so a 0:24 hundred with it all season with the 0:31 original bridge on it and I played 0:35 around to see if a shorter bridge may be 0:39 more comfortable and so I'll put 0:40 different bridges on it and just let the 0:42 original one on it to see what I would 0:46 like it my previous set will have 0:48 24-inch bridge and it seems that's what 0:51 I that's the magic number for midgets on 0:53 this Center also like the 24-inch bridge 0:56 and so I'm going to cut this one off and * * *

1:14
thing off with if you want to see you
1:17
know how different bridges affect your
1:20
comfort one thing I use was a Whoopie
1:23
sling I might be wondering what what
1:26
Whoopie sling is you've never seen one
1:28
you have a fixed loop of one end and
1:30
then this other end you can make the
1:35
look bigger okay
1:38
or you can short it down but whenever
1:41
you pull on it from both directions it
1:44
doesn't slip so you can actually use
1:46
this as an adjustable bridge so you can

—OR—

Saddle Hunter - Before I become a cutter (p1) (Ex. 1066 at 5)





a friction hitch being positioned on the main body between the second end and the eye loop, the friction hitch being configured to engage the second bridge loop, the friction hitch comprising a closed loop.

YouTube - Hunting Saddle Modifications - DIY (Ex. 1129)



	3:20 flopping around so what I've done is 3:23 I've tied a friction hitch this was just 3:25 a prusik onto the other side of my 3:28 saddle so I got the free end tight end 3:32 of the saddle and then the actual 3:33 sliding portion of it is on that bridge 3:35 rope and what this basically gives me is 3:38 it gives me an adjustable length for 3:41 that bridge so when I'm walking into the **—AND—** **Saddle Hunter - Smallest diameter on tether rope (p1) (Ex. 1107 at 3)**  Carolina_trad_hntr Member

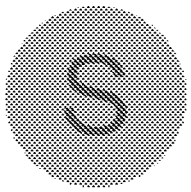
Jun 18, 2018 #7

1/4" amsteel in a continuous loop worked extremely well for me for several hours yesterday on the Predator rope that came with the Kestrel. No slippage on my bridge or tether. I put it through several "tests" and it worked great.



—OR—

SaddleHunter - Sewn webbing bridge ? (p1) (Ex. 1103 at 3-4)

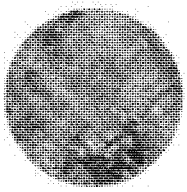


Spur
Active Member

Feb 4, 2019 #9

With amsteel, you can try a whoopie sling out of 1/4 inch amsteel so you can adjust until you find the right length before making it permamnent, or alternatively just some good climbing rope girth hitched one end and a prussik on the other to find that ideal length for the bridge. At least that is how I will be doing it when my amsteel comes in

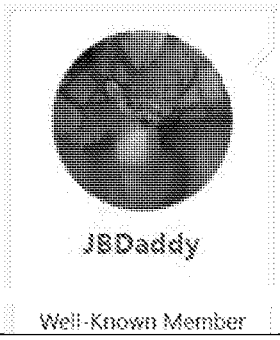
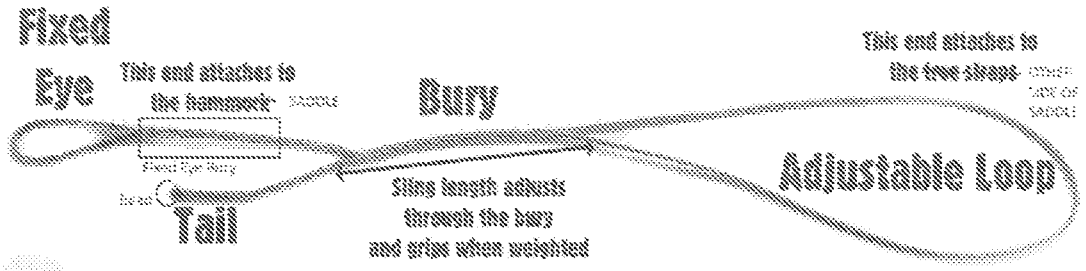
SaddleHunter - Sewn webbing bridge ? (p1) (Ex. 1103 at 3)



Blacksmith
Well-Known Member
Bl Member

Feb 5, 2019 #10

Im using 11mm. locked Brummel on left side and a pruisic on the right. Just ordered some sewn pruisics to do away w/the big knots. I like to adjust my bridge once in awhile along w/my tether height. Someone posted a vid. showing not to run rope into webbing as it would cut the web

2. The bridge rope assembly according to claim 1, wherein the rope has a length from the first end to the second end between 72.0 inches and 126.0 inches.	**SaddleHunter - How to make an Amsteel Bridge (p2) (Ex. 1082 at 3-4)**  JSDaddy Well-Known Member Mar 29, 2018 #23 So I'm planning a 20-36" adjustable bridge, with a 4 inch fixed loop around my saddle webbing at one side, a carabiner on the adjustable side, and a 4 inch tail (with a bead on it to prevent it from ever getting sucked too far into the adjustment bury). My math is coming out to about 7 feet of amsteel to start with.  **—OR—** **SaddleHunter - Replacing the bridge carabiner?? (p1) (Ex. 1100 at 5)**  Ontariofarmer Well-Known Member

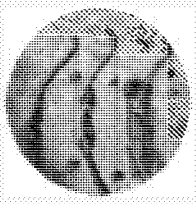
Mar 8, 2018 #11

Craig Knight

What long of a piece of Amsteel did you start out with?

I used 8 feet and buried the end of the whoppie sling back into itself instead of a knot.
I think you could get away with 7 feet easy if you used a knot like @g2outdoors did. Or if you don't want it 40 inches you can shorten it.

3. The bridge rope assembly according to claim 1, wherein a distance of the eye loop to the second end is between 24.0 inches and 40.0 inches.	**SaddleHunter - Mantis Bridge Length (p1) (Ex. 1090 at 3)**

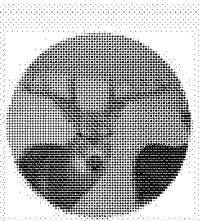


GCTerpfan
Moderator
Staff member

Aug 10, 2018 #4

Most people that are talking about shortening their bridge are referring to the Kestrel. The bridge on the Kestrel came extremely long so many people, including myself shorten it to somewhere between 24"-30". The Mantis already comes set up at 30", So,i t's less likely you will have to adjust the Mantis bridge length.

SaddleHunter - Mantis Bridge Length (p1) (Ex. 1090 at 3)



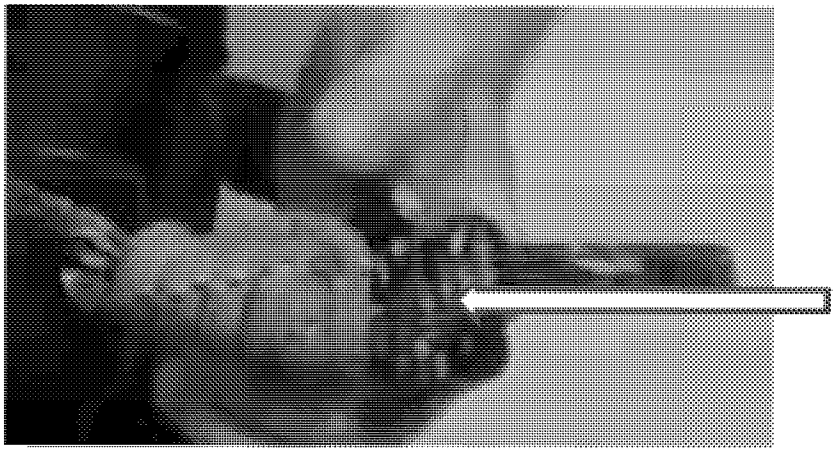
Apex7
Well-Known Member

	Aug 10, 2018 #5 I like about a 26 inch bridge. My bridge is made out of predator rope it's the one that came with my Kestrel. I have a ropeman on it so it's adjustable . Works great for me . I back it up with a prusik .
	—OR— **SaddleHunter - Replacing the bridge carabiner?? (p1) (Ex. 1100 at 3)**  Ontariofarmer Well-Known Member
	Mar 8, 2018 #8 I just put a whoppie sling made out of 6 mm amsteel on my saddle. That means I have no carabiners on my bridge and I have a bridge than I can easily adjust from 20 to 36 inches and it made my Kestrel lighter. It now weighs 2.48 pounds minus a tether and linemans belt. Before the change it weighed almost
4. The bridge rope assembly according to claim 3, wherein the main body includes a stop knot in the second portion adjacent to the second end.	**YouTube - Hunting Saddle Modifications – DIY (Ex. 1129)**



Hunting Saddle Modifications - DIY

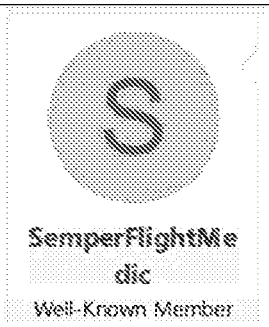
43,588 views Jun 3, 2018



(e.g., Ex. 1129 at 1:52)

—OR—

SaddleHunter - Diy shorter mantis bridge (p2) (Ex. 1072 at 7)



Dec 27, 2019 #37

I agree. I think the purpose of it is to prevent one from inadvertently pulling the tag end back through the hollow core. And as you mentioned, it does make it tidy. Without it, I think the amsteel would unravel. Although, you could tie an overhand knot in the end and put some heat shrink or tape over the end. Probably wouldn't look as neat and tidy as the "finished end" though.

5. The bridge rope assembly according to claim 4, further including 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.

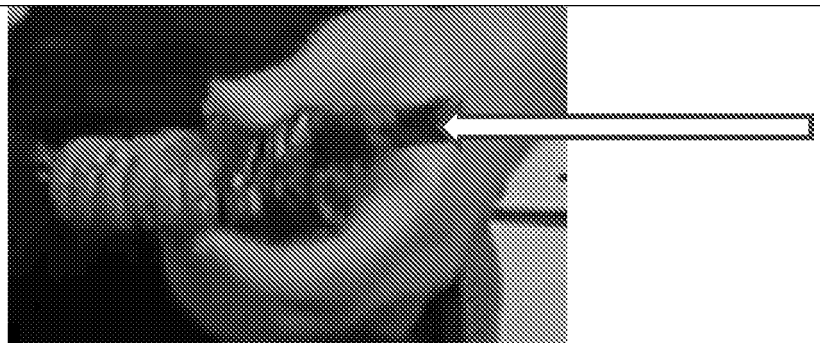
YouTube - Hunting Saddle Modifications – DIY (Ex. 1129)



Hunting Saddle Modifications - DIY

DIY Sportsman

43,547 views Jun 3, 2018



(*e.g.*, Ex. 1129 at 3:35)

—OR—

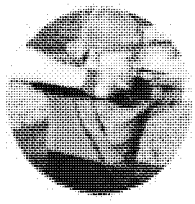
SaddleHunter - Diy shorter mantis bridge (p2) (Ex. 1072 at 7)



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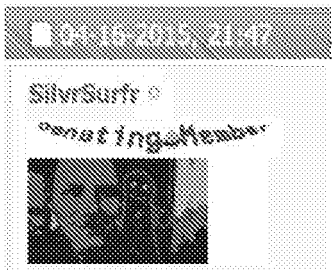
6. The bridge rope assembly according to claim 4, wherein the closed loop comprises a single rope being formed into the closed loop.	**Saddle Hunter - Smallest diameter on tether rope (p1) (Ex. 1107 at 3)**



Carolina_trad_hntr
Member

Jun 18, 2018 #7

1/4" amsteel in a continuous loop worked extremely well for me for several hours yesterday on the Predator rope that came with the Kestrel. No slippage on my bridge or tether. I put it through several "tests" and it worked great.

7. The bridge rope assembly according to claim 6, wherein the single rope of the closed loop has a length between 40.0 inches and 60.0 inches.	**HammockForums - Smallest continuous loop of amsteel blue possible (p1) (Ex. 1038 at 3)**  **—OR—** **HammockForums - Continuous Loop pictoral (p20) (Ex. 1032 at 4)** 

#19

Using the excellent pictures I made up a couple 12" continuous loops today using 7/64 Amsteel. I know that shorter buries are suggested in this thread, but after watching the videos on Sampson Rope, I decided to use 8" buries.

Using 8" buries I found that I needed 20" of Amsteel just for 2 x 8" buries plus about 4" shrinkage allowance in the main loop due to the buries.

So to make a 12" loop I ended needing about 44" total
12" loop requires 24"
Left bury requires 8" + 2" shrinkage = 10"
Right bury requires 8" + 2" shrinkage = 10"

—OR—

HammockForums - Stuck on Hennessy continuous loops... (p1) (Ex. 1041 at 1)

10-24-2015, 11:03

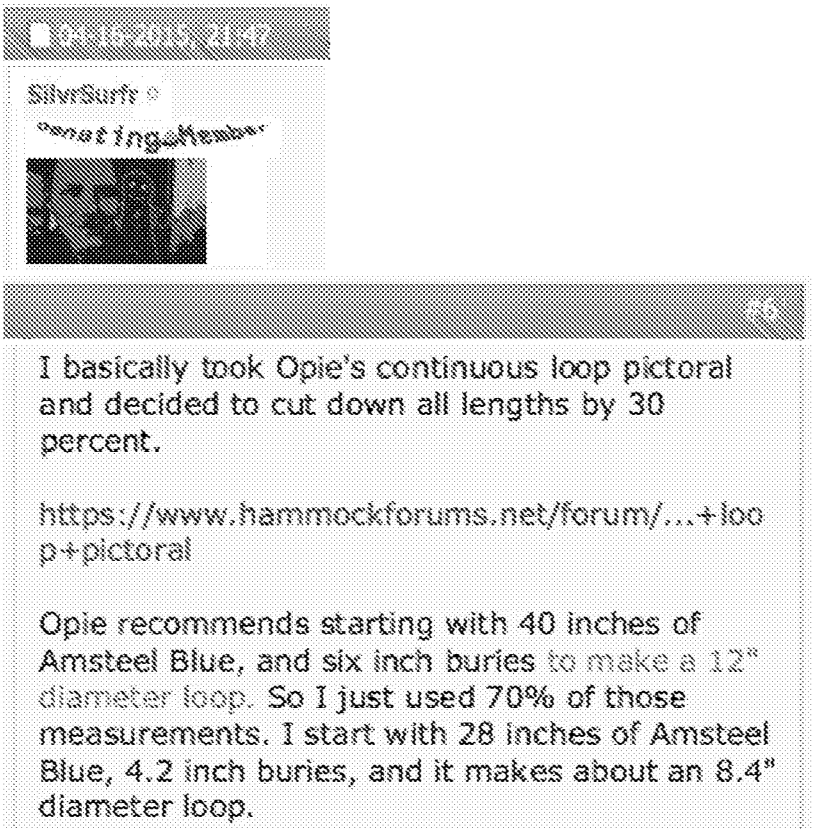
gmcttr

Senior Member

#2

Here's a video that lays out the process very nicely. You can vary the length and length of the buries to suit your own taste. 6" of bury will do nicely. The length of the bury does not need to increase for longer loops.

You will need to start with ~ 44" (30" for the loop, 2" for shrinkage, 12" for two 6" buries) of rope for each 15" loop. This will change if you change the length of the buries.

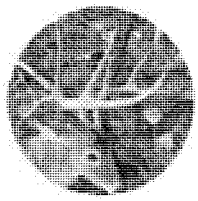
8. The bridge rope assembly according to claim 7, wherein the closed loop has a total circumference of between 20.0 inches and 30.0 inches.	**HammockForums - Smallest continuous loop of amsteel blue possible (p1) (Ex. 1038 at 3)**  **—OR—** **HammockForums - Continuous Loop pictoral (p20) (Ex. 1032 at 4)** 

#19

Using the excellent pictures I made up a couple 12" continuous loops today using 7/64 Amsteel. I know that shorter buries are suggested in this thread, but after watching the videos on Sampson Rope, I decided to use 8" buries.

—OR—

SaddleHunter - H2 Triad Bridge (p2) (Ex. 1078 at 3)



Gator
Well-Known Member

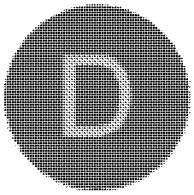
Mar 2, 2020 #30

How big are the continuous loops? And what size amsteel on the loops?

Mine are 13.5"

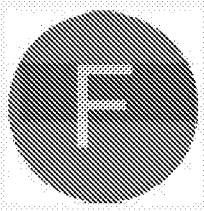
—OR—

SaddleHunter - Amsteel and the bury's (p1) (Ex. 1057 at 7)



deleted_user02
New Member

	Dec 13, 2018 #15 Man I appreciate all the responses. It has helped a ton. I am going with a 8 inch bury on the 12" continuous loop. I am using it as a modified sheets bend to capture the gathered end of a fleece saddle them I am attaching my bridge to it with a locked brumel on on side and a lock stich on the other.
9. The bridge rope assembly according to claim 1, wherein the closed loop has a total circumference of between 20.0 inches and 30.0 inches	**[SAME AS CLAIM 8]**
10. The bridge rope assembly according to claim 9, wherein the main body and the friction hitch each are comprised of U[H]MWPE.	**SaddleHunter - Adjustable bridge ideas? (p1) (Ex. 1054 at 1)**  SkrauseS Active Member
	Nov 25, 2019 #1 So I bought the tethrd mantis feel like I am going to be happy with it. Even though I wanted the flex but because of the 10 week period decided to go with the mantis. The one reason why I wanted the flex is because of the adjustable bridge. How do I get one so I can put one on my mantis so if it's pinching me I can fix it.
	SaddleHunter - Adjustable bridge ideas? (p1) (Ex. 1054 at 2)



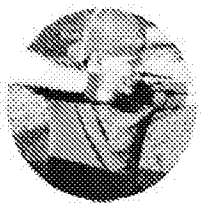
ffastfzr
Member

Nov 26, 2018 #6

If you make about a 6 or 8 inch loop out of paracord or amsteel, and run that through one of the molle loops on the saddle towards the back, then clip a carabiner to the bridge and pull that over until it's tight enough and attach the biner to the loop you ran through your molle. Either that or make a small prusik that you put on your bridge, attach the tail to the loop the bridge is attached to and then just pull until you've got it short enough to hike. I don't suggest using the prusik to shorten your bridge while you are at height.

—OR—

SaddleHunter - Amsteel Prussic (p1) (Ex. 1064 at 2)



Carolina_trad_hn
tr
Member

Jun 17, 2018 #3

Worked like a charm. Replaced the prussic on my adjustable bridge and tether. That's a pretty good weight savings for effort and cost involved. Amsteel is the wonder rope, I love it. Wonder how amsteel prussic on amsteel bridge would work, as long as the diameter rule is followed...may be too slick.

—OR—

SaddleHunter - How I tie a stronger Prussik knot. (p1) (Ex. 1081 at 1)



Oct 6, 2016 #1

However my personal goal is to keep my saddle gear as light as possible and in doing so I'm using far lighter lines, at my own risk and thusly I look to save or replace ALL the tensile strength of my lines I can. I make this post in case someone now or in the future wishes to do the same. So in the light of working with sufficient rope rather than overkill:)

Yey! My BlueWater 4mm Titan (Dyneema) prusik cord came in the mail today. It's 1000 lb. Test.

SaddleHunter - How I tie a stronger Prussik knot. (p1) (Ex. 1081 at 6)



Oct 7, 2016 #12

I have two prussik knots yes...
Not because of the smaller rope im using but rather its always good to have at least one back up to your primary.
But yes as a by product it does bring more tensile strength on board.

So in my case we are talking 1 on my sitdrag and one on my lineman?
Or do you have 2 on your tether?

SaddleHunter - How I tie a stronger Prussik knot. (p1) (Ex. 1081 at 7)



Oct 7, 2016 #17

Yes my 14' (total rope length before knots) 5.5mm dyneema tether line and the 2' worth of 4mm dyneema for the 2 prussiks are wonderfully light.

SaddleHunter - How I tie a stronger Prussik knot. (p1) (Ex. 1081 at 7-8)



Oct 7, 2016 #19

I found 5.5mm dyneema, but not sure which line your using. However the brand I found comes in at 1.24 lbs per 100ft. Wow that is light!!!!!!

I'm on BlueWater Titan 5.5mm in the color of black, 14' worth before knots for the tether...

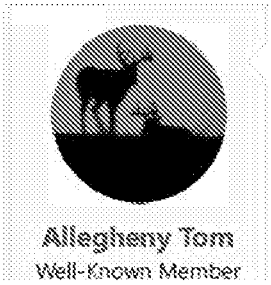
And BlueWater Titan 4mm in camo ...2 maybe 2.5 ft for my two prussiks.

Yes it's wonderfully light and plenty strong in my opinion.

Dyneema is just another company's trademarked name for UHMWPE which is what AmSteel is.

If I'm doing my math right and the manufacturer's claims are accurate about what this stuff weighs....
My whole tether rope with the two prussiks on it weighs in at 3.21 ounces.

	—OR— **SaddleHunter - Paracord (p2) (Ex. 1098 at 1)**  Dec 5, 2018 #21 Why can't Amsteel be used for a Prusik? If it's a continuous loop will that make a difference?
	SaddleHunter - Paracord (p2) (Ex. 1098 at 2)  Dec 5, 2018 #23 Be safe and if you want to test an amsteel prussik do it but have your muddy prussik backing it up.
11. The bridge rope assembly according to claim 1, wherein the main body is comprised of UHMWPE.	**[SAME AS CLAIM 10]**
12. The bridge rope assembly according to claim 9, wherein a	**[SAME AS CLAIM 3]**

distance of the eye loop to the second end is between 24.0 inches and 40.0 inches.	
13. The bridge rope assembly according to claim 12, wherein the closed loop has a total circumference of between 20.0 inches and 30.0 inches.	**[SAME AS CLAIM 8]**
14. The bridge rope assembly according to claim 12, wherein a distance between the first and second ends is less than 2.0 inches.	**[SAME AS CLAIM 1]** **SaddleHunter - Prusik Knots (p1) (Ex. 1099 at 4)**  Allegheny Tom Well-Known Member Aug 20, 2019 #9 I don't know if it makes a difference, but I made my bridge with a full bury (meaning the entire length of the bridge has Amsteel in the core) so the Amsteel is more dense...it doesn't have the "give" that a single strand of Amsteel has. Does that double Amsteel allow a Prusik to grip better? I don't know.

Ex. 1015 ¶ 120.

2. Ground 2 – Reasons to Combine

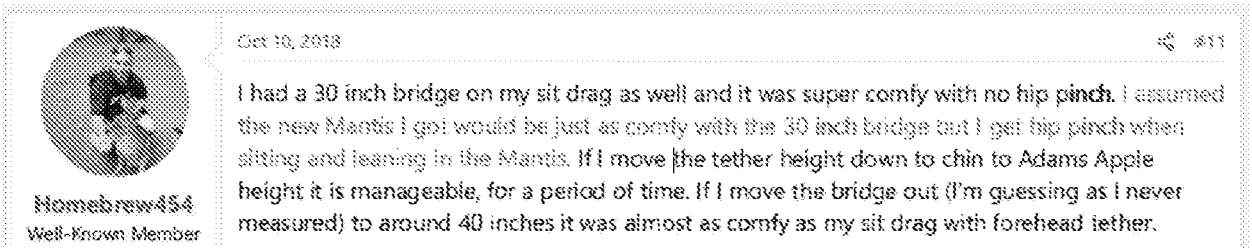
A POSITA would have been readily motivated to combine the prior art of Ground 2. *Id.* ¶ 121. As reflected in the discussions in the prior art above,

POSITAs frequently recognized the following problems with fixed-length bridges and bridges that were not fully buried:

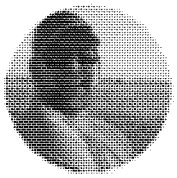
1) A fixed-length bridge (a) can be too long or too short, causing discomfort when sitting; and (b) can be cumbersome when walking wearing the saddle (*e.g.*, excessive dangle).

2) In a non-fully buried bridge, bumps or humps at spliced joints (a) can be areas of potential weakness/failure; and (b) can prevent the bridge from sliding smoothly through the carabiner when the saddle wearer is pivoting during active hunting.

Id.



Ex. 1114 at 4.



Dragsmack
Well-Known Member
Joined: Dec 10, 2017
Messages: 224

Oct 19, 2018 #1

Maybe Im crazy, I know Im weird....but I was pretty comfy in my Kestral with a tubular webbing bridge. I bought the Mantis and hunted last week and had the infamous hip pinch.

This morning I measured my Kestral bridge at 36 inches. I used my linesman belt to find a comfortable length in the Mantis which was about 36 plus inches. I am putting the tether about head high and I lean 75% of the time. My bridge length preference seems at odds with most everyone else is finding. I am 5'9" and 215lbs with a gut and not much of a butt.

Im going to REI to buy some more webbing but I hate to cut that Amsteel bridge if Im making a mistake. What do you guys think?

Ex. 1066 at 1.



10-17-2018, 02:53 #10

jadekayak
Senior Member

Join Date:	Apr 2016
Location:	new zealand
Hammock:	DIY gathered end

> Originally Posted by **greenbigfrog**
> *Hi!*
> *I've been trying to find a proper answer to this question for hours now. A lot of people mention in their tutorials on splicing one should taper the ends that are buried for not only aesthetic reasons, but also reducing the breaking strength by only 10% instead of often a lot more when not tapering.*
>
> *What's the reason though, that tapering affects the change of breaking strength?*

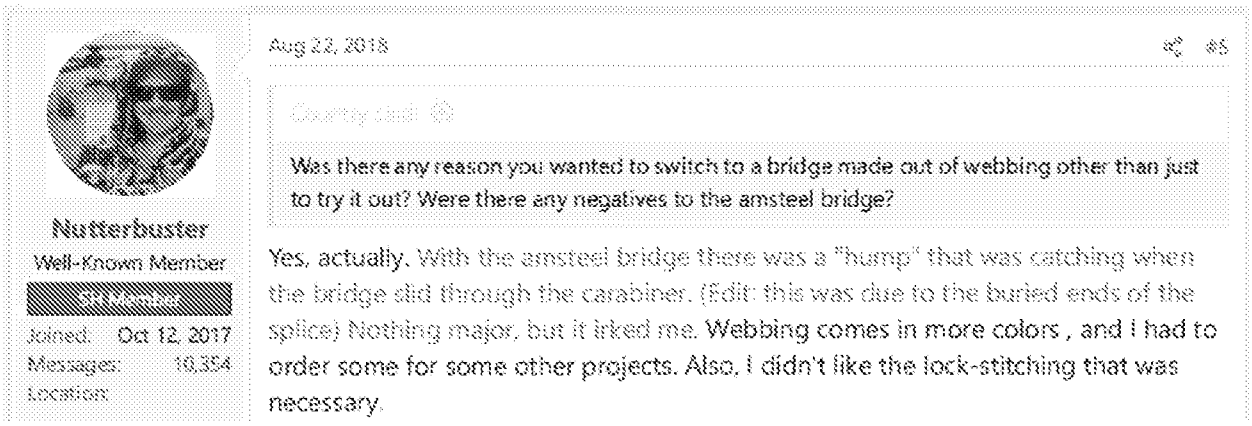
Go to sampson ropes site and they explain this perfectly.

Basically ,an abrupt termination on the bury profuces a lump that causes excessive strain on the li e and promotes failure at this point.

The longer the taper the less strain on the line and less chance if failure.

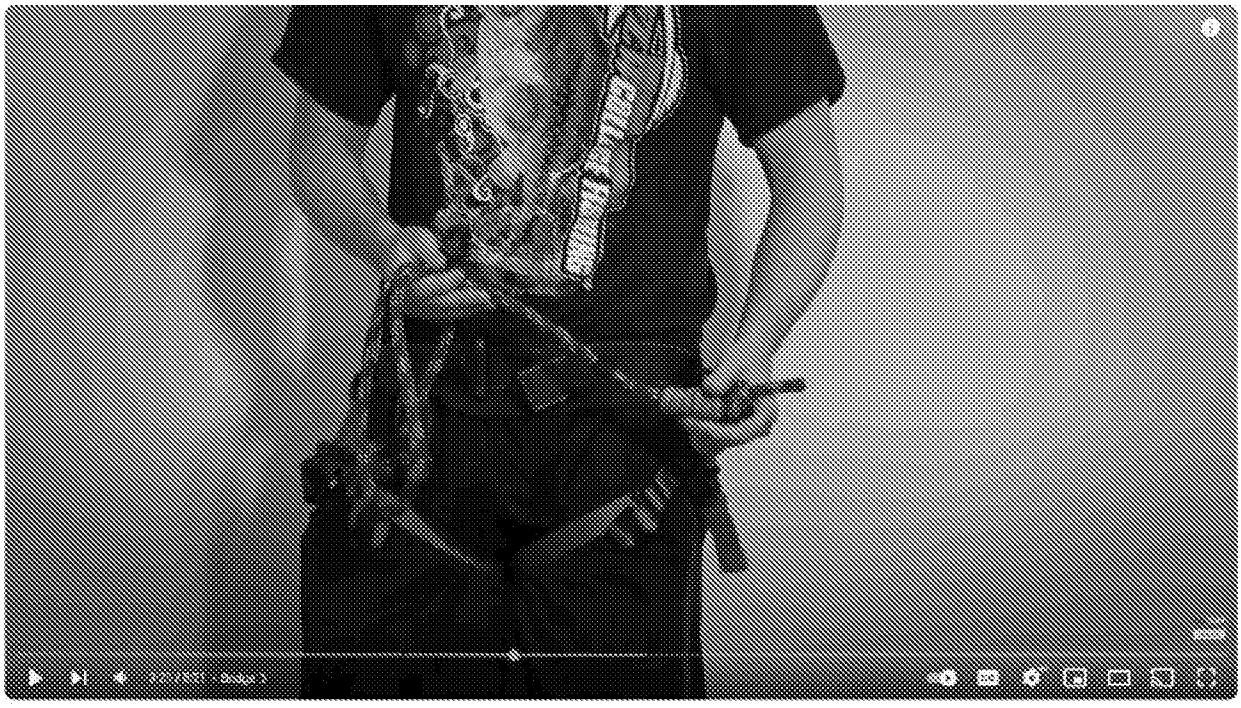
A side effect of this is that it is also easier to pull the bury through the line

Ex. 1044 at 5-6.



Ex. 1106 at 2; *see* Ex. 1015 ¶ 121.

As further reflected in the discussions in the prior art, saddle hunters in the prior art solved these problems using adjustable bridges (as opposed to fixed bridges) and fully buried bridges (as opposed to non-fully buried bridges). Ex. 1015 ¶ 122. In particular, saddle hunters in the prior art openly taught the community that removal of the spliced eye on one end of a fixed-length bridge and replacing it with a friction hitch would allow the bridge to have an adjustable length; and that a full-length internal bury of a fixed eye tail (or tag end) would eliminate humps and bumps in the bridge. *Id.*



Hunting Saddle Modifications - DIY

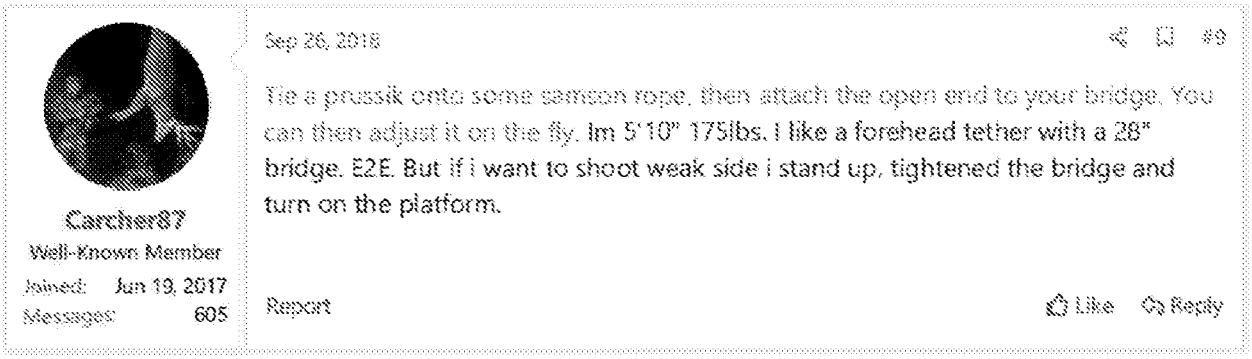
DIY Sportsman

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3:10
one downside with a bridge it's a little
3:12
bit too short is that you need to
3:15
basically tuck it into the waist loop to
3:19
be able to walk and kind of keep it from
3:20
flopping around so what I've done is
3:23
I've tied a friction hitch this was just
3:25
a prusik onto the other side of my
3:28
saddle so I got the free end tight end
3:32
of the saddle and then the actual
3:33
sliding portion of it is on that bridge
3:35
rope and what this basically gives me is
3:38
it gives me an adjustable length for
3:41
that bridge so when I'm walking into the
3:43
woods I can loosen that thing up all the
3:45
way it's long enough to throw over my
3:47
shoulders so then when I'm walking I'll
3:51
not only have the bridge over my
3:53
shoulders but I can also have the
3:56
Lyman's belt draped over my shoulders so
4:00
I can walk in like this

Ex. 1129 at 6-7.



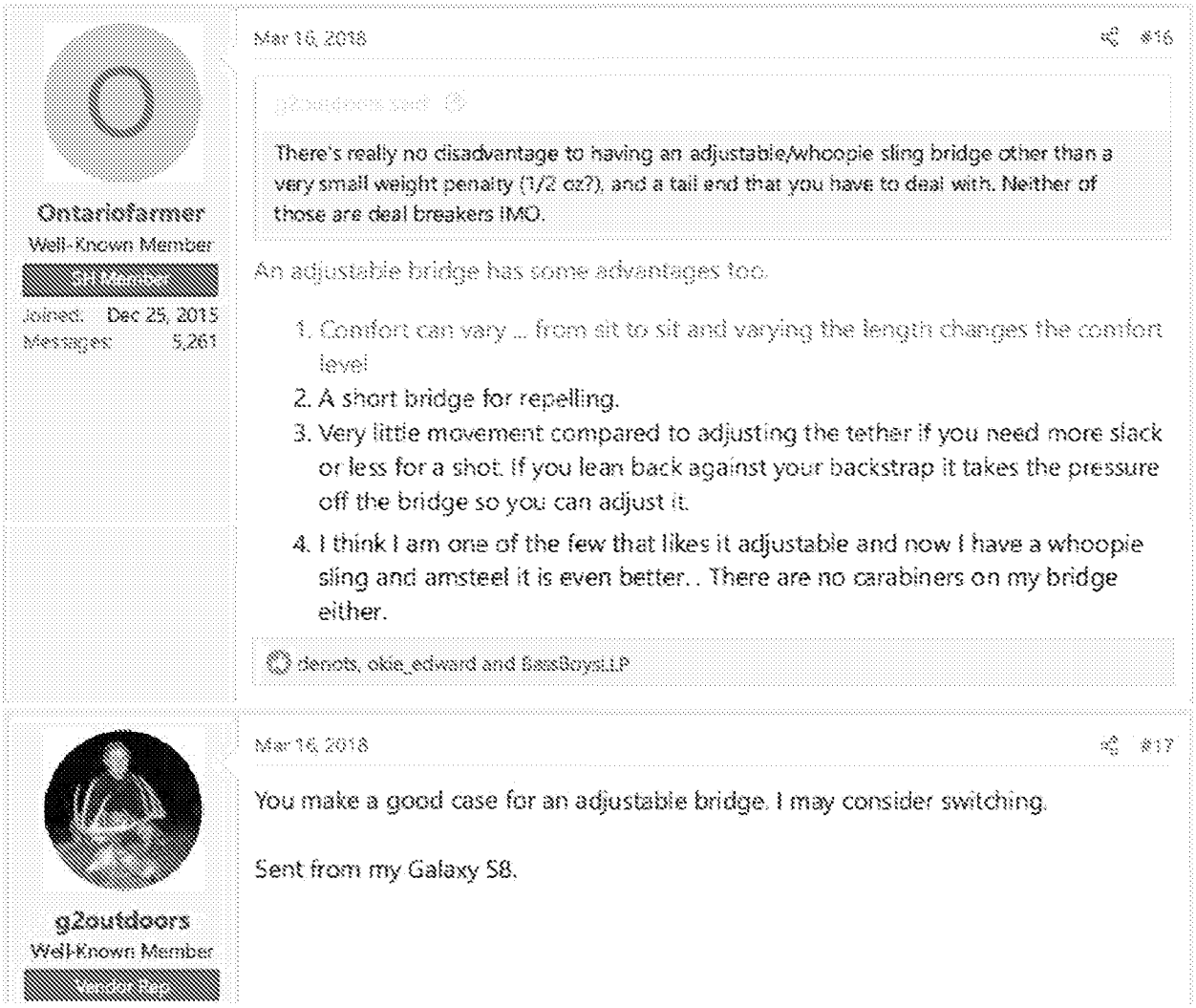
Sep 26, 2018 #9

Tie a prussik onto some samson rope, then attach the open end to your bridge. You can then adjust it on the fly. Im 5'10" 175lbs. I like a forehead tether with a 28" bridge. E2E. But if I want to shoot weak side I stand up, tightened the bridge and turn on the platform.

Carcher87
Well-Known Member
Joined: Jun 19, 2017
Messages: 605

Report Like Reply

Ex. 1067 at 4.



Mar 16, 2018 #16

There's really no disadvantage to having an adjustable/whoopie sling bridge other than a very small weight penalty (1/2 oz?), and a tail end that you have to deal with. Neither of those are deal breakers IMO.

An adjustable bridge has some advantages too.

1. Comfort can vary ... from sit to sit and varying the length changes the comfort level
2. A short bridge for repelling.
3. Very little movement compared to adjusting the tether if you need more slack or less for a shot. If you lean back against your backstrap it takes the pressure off the bridge so you can adjust it.
4. I think I am one of the few that likes it adjustable and now I have a whoopie sling and amsteel it is even better.. There are no carabiners on my bridge either.

dennots, okie_edward and BassBoysLLP

Ontariofarmer
Well-Known Member
Joined: Dec 25, 2015
Messages: 5,261

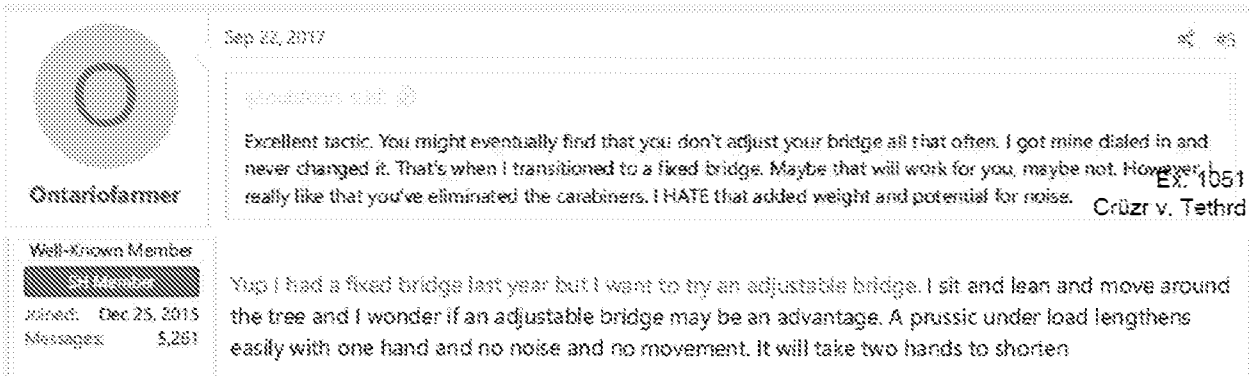
Mar 16, 2018 #17

You make a good case for an adjustable bridge. I may consider switching.

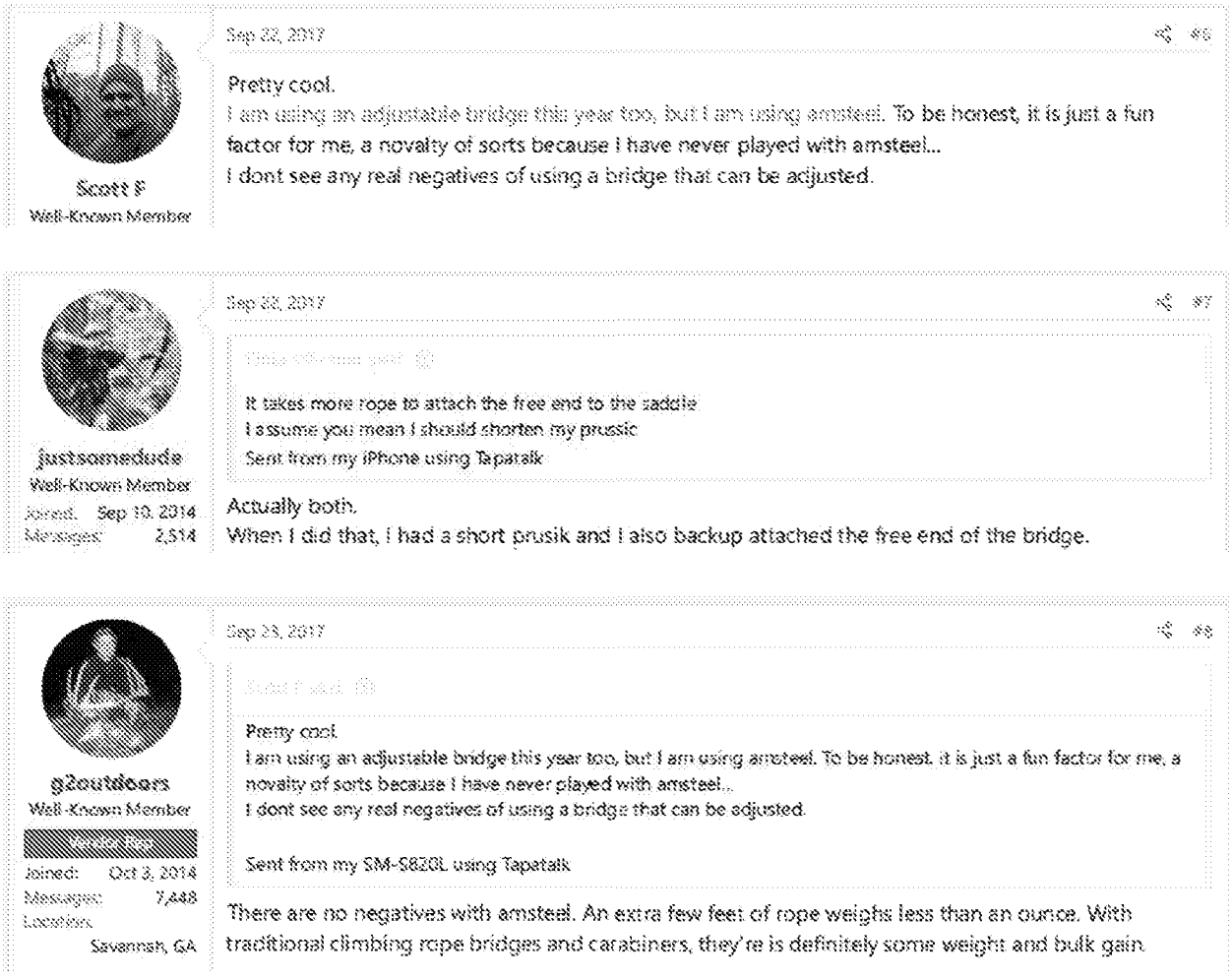
Sent from my Galaxy S8.

g2outdoors
Well-Known Member

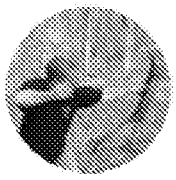
Ex. 1063 at 5-6.



Ex. 1051 at 2-3.



Ex. 1051 at 3.



swampsnyper
Well-Known Member
Joined: Mar 10, 2015
Messages: 4,463
Location: Warrior, Al

Aug 23, 2018 #34

Yes, actually. With the amsteel bridge there was a "hump" that was catching when the bridge slid through the carabiner. (Edit: this was due to the buried ends of the splice) Nothing major, but it irked me.

If you make a good taper on the ends of the amsteel bury, you won't feel that hump. You can even make the tapered ends from each side over lap each other in the center of the bridge for best results but it's hard to do. Trying to over lap them, I seem to always get a few straggler strands of the bury sticking out of the outer amsteel, but it's just cosmetic.

Ex. 1106 at 5.



Blacksmith
Well-Known Member
Joined: Dec 10, 2018
Messages: 2,728
Location: Bucyrus OH

Jan 6, 2019 #20

I just made my first amsteel 24" bridge. To get enough bury They meet in the middle of the 24" Don't like that bump in the middle when rotating. How little of bury can we get by with if stitched

Ex. 1056 at 3.

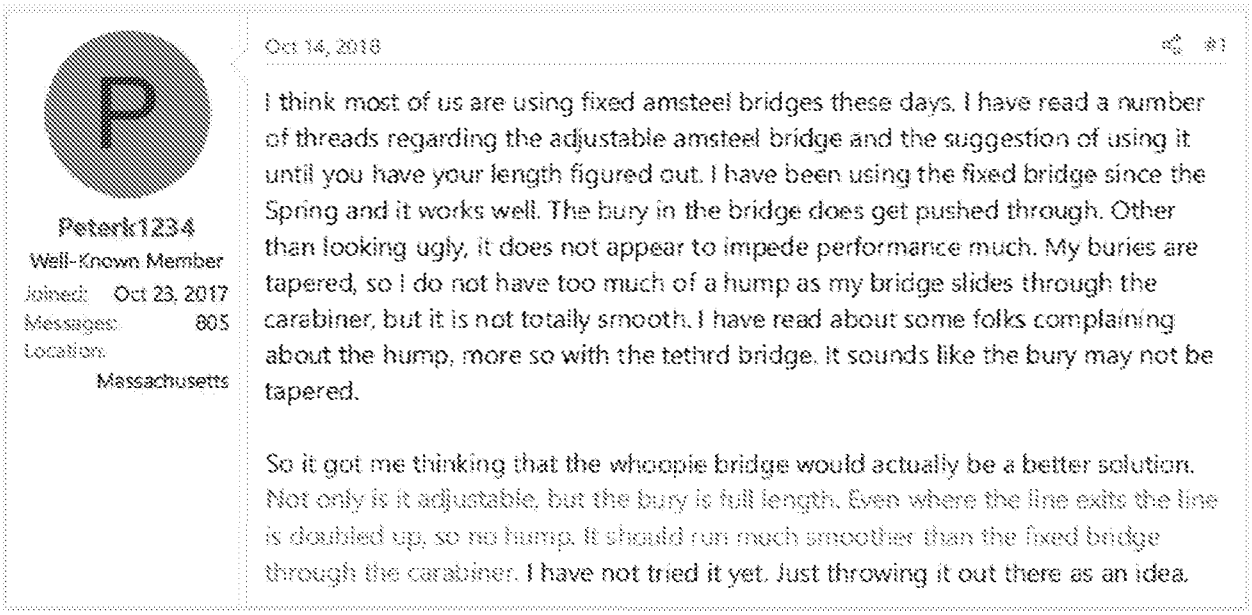


ICU outdoors
New Member
Joined: Sep 12, 2018
Messages: 19
Location: NE Texas

Sep 13, 2018 #8

I made a 28" bridge and made my locked in bury 8-10" the other end I pulled through all the way to the locked in bury and pulled it out past the locked bury about 3/4" then cut it with about 3/4" sticking out. I milked the rope back over it the best I could and stitch locked it in with the orange cord. After working the rope with my weight on the caribiner it pulled the last 3/4" that was sticking out mostly inside. This way it's a solid line without the need to taper the ends so there's no bump when sliding from hip to hip. Also if for some reason later on I want to make my bridge longer I can cut the stitches and pull the loop out to my desired length and re-stitch. The issue with that would be a blunt end that's not tapered which would make shifting your hips a little bumpier.

Ex. 1108 at 3.



Oct 14, 2018 #1

Peterk1234
Well-Known Member
Joined: Oct 23, 2017
Messages: 805
Location: Massachusetts

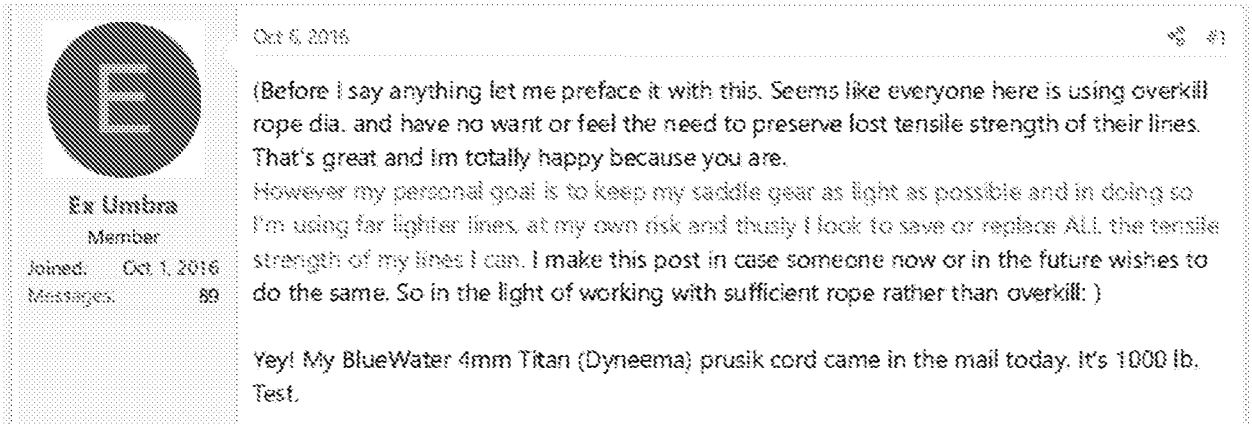
I think most of us are using fixed amsteel bridges these days. I have read a number of threads regarding the adjustable amsteel bridge and the suggestion of using it until you have your length figured out. I have been using the fixed bridge since the Spring and it works well. The bury in the bridge does get pushed through. Other than looking ugly, it does not appear to impede performance much. My buries are tapered, so I do not have too much of a hump as my bridge slides through the carabiner, but it is not totally smooth. I have read about some folks complaining about the hump, more so with the tethrd bridge. It sounds like the bury may not be tapered.

So it got me thinking that the whoopie bridge would actually be a better solution. Not only is it adjustable, but the bury is full length. Even where the line exits the line is doubled up, so no hump. It should run much smoother than the fixed bridge through the carabiner. I have not tried it yet. Just throwing it out there as an idea.

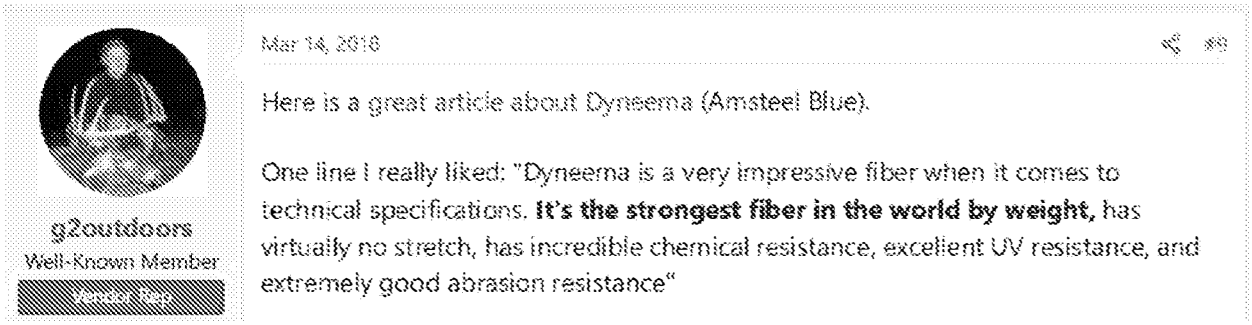
Ex. 1077 at 1; *see* Ex. 1015 ¶ 122.

Accordingly, a POSITA familiar with the prior art would have been readily motivated to combine the references of Ground 2 to make a bridge that is both adjustable in length and fully buried. Ex. 1015 ¶ 123.

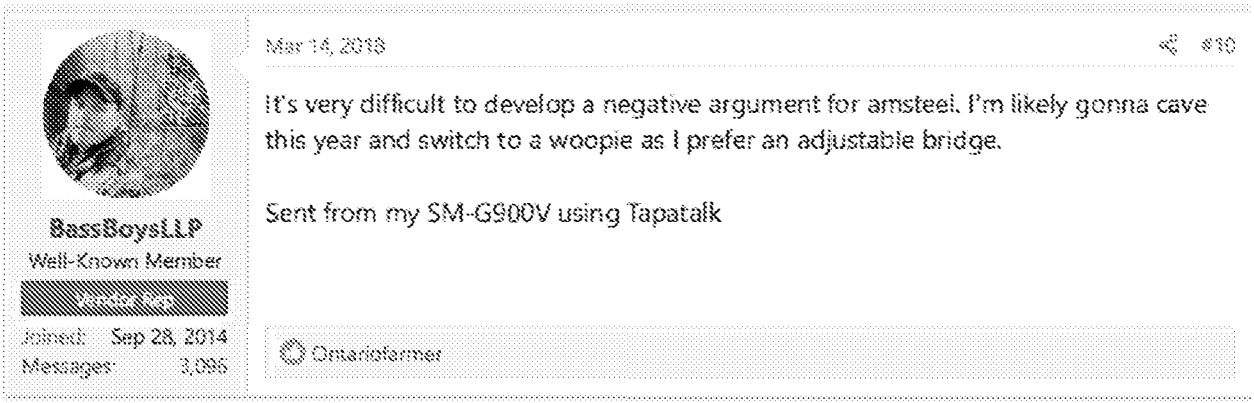
In addition, as further reflected in the discussions in the prior art, POSITAs also recognized the benefits of using Amsteel (or other UHMWPE materials) for the ropes used in saddle hunting, including saddle bridges and Prusik knots. *Id.* ¶ 124. These synthetic rope materials have the benefits of having very high strength and very low weight, and excellent abrasion resistance. *Id.*



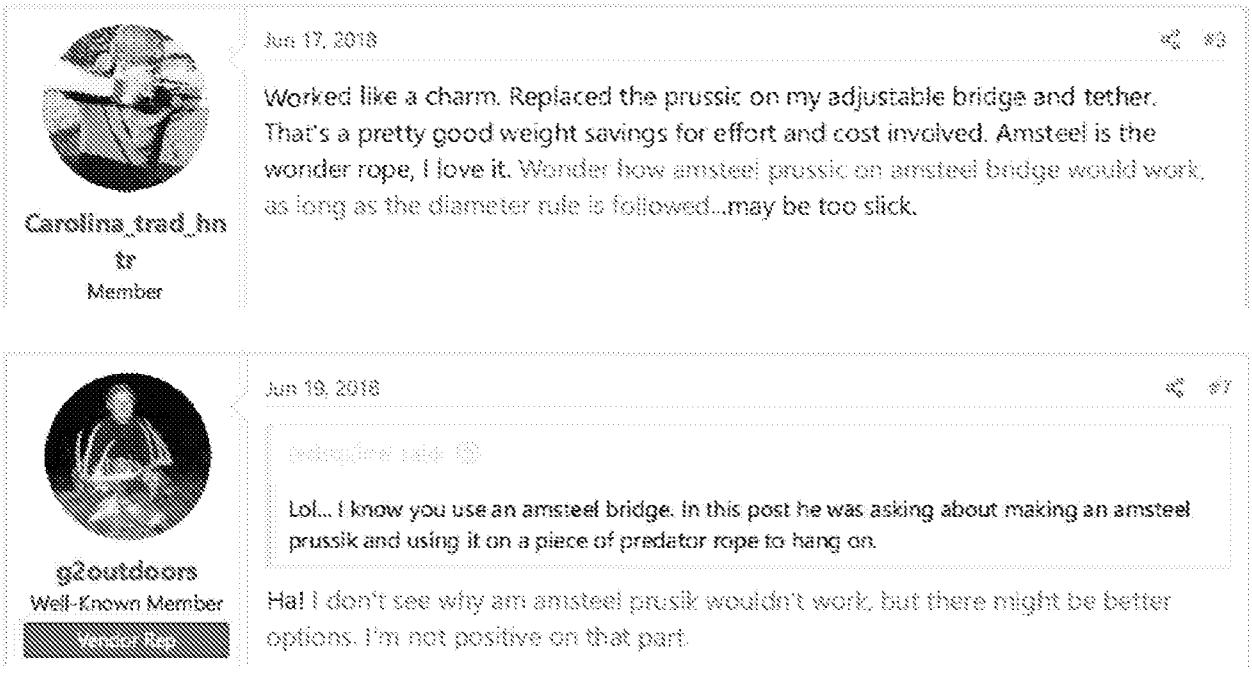
Ex. 1063 at 3.

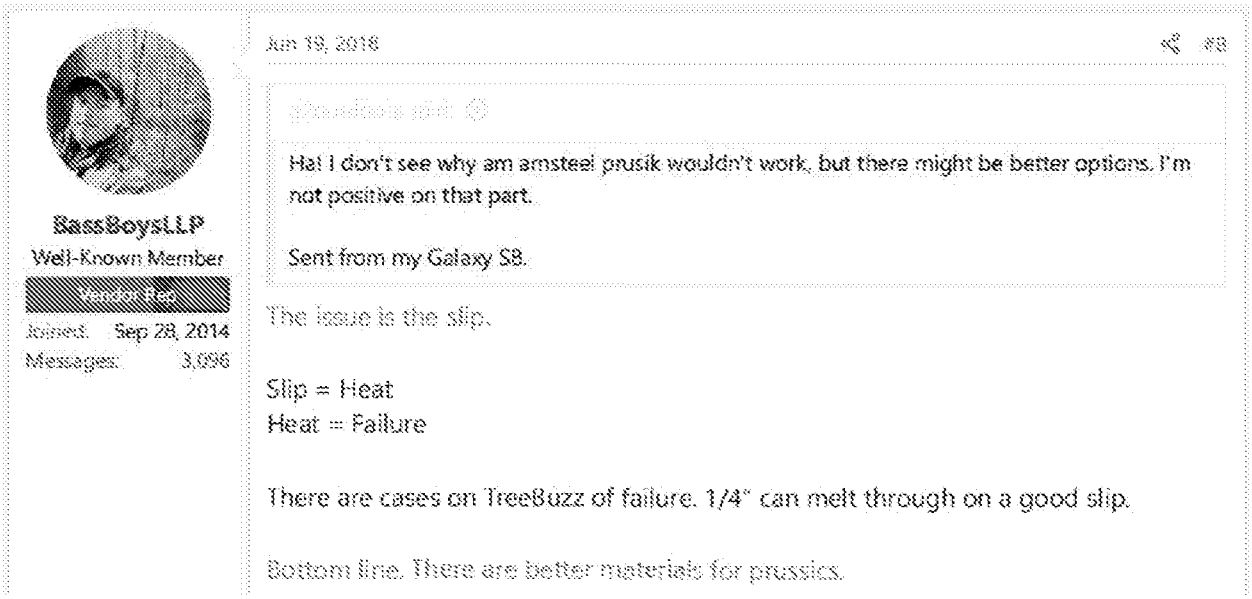


Ex. 1063 at 4; *see* Ex. 1015 ¶ 124.

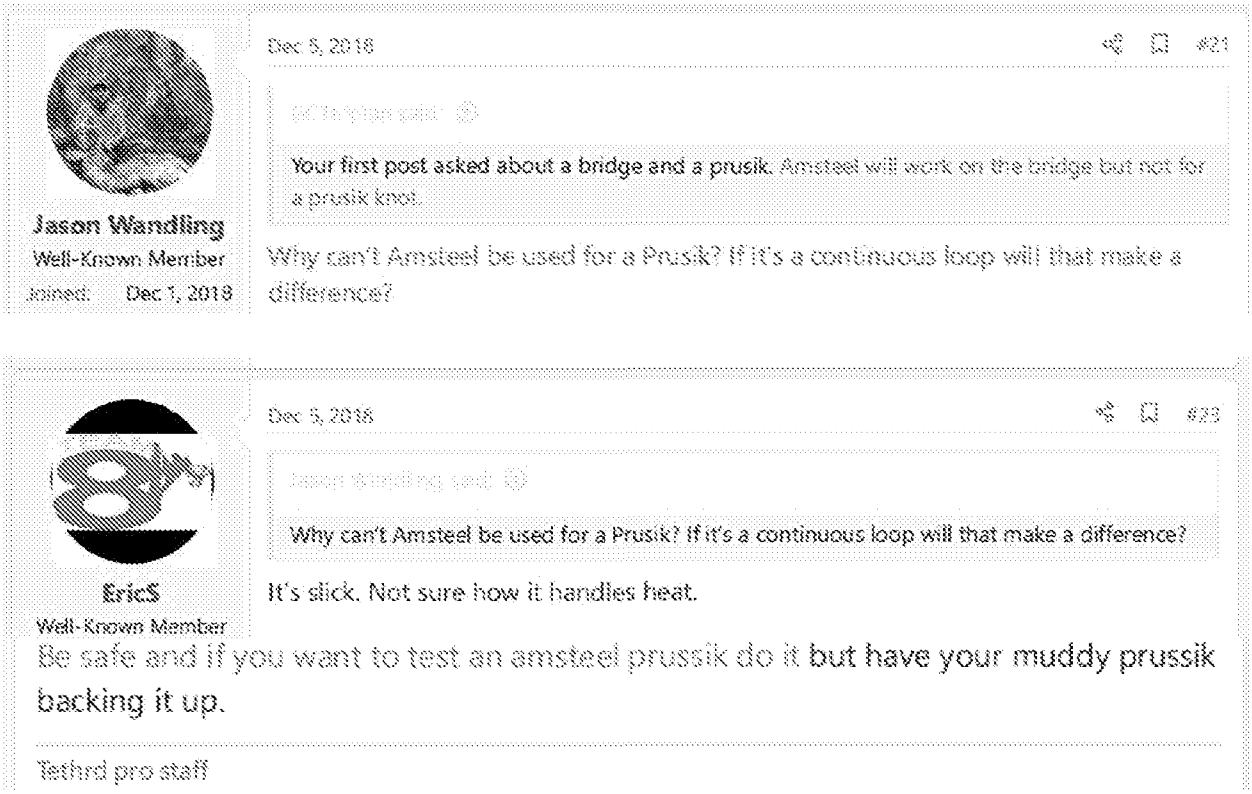


While some uniformed commentators in the saddle hunting community may have questioned the use of Amsteel-on-Amsteel, they were apparently unaware of the prior art, which a POSITA would have known. *See, e.g.*, Section V.E.4; Ex. 1015 ¶ 125. And with respect to saddle hunting in particular, the use of an Amsteel Prusik knot on an Amsteel bridge had certainly been proposed in prior art discussions, including some involving Tethrd personnel (*e.g.*, inventor Greg Godfrey):





Ex. 1064 at 2-3.



Ex. 1098 at 1-2; *see* Ex. 1015 ¶ 125.

Accordingly, as the pubic discussions in the prior art above reveal, a POSITA would have at least found it obvious to try using an Amsteel Prusik knot on an Amsteel bridge. Ex. 1015 ¶ 126. In that time frame, there were only a limited number of identified, predictable options for adding a friction hitch to an Amsteel bridge, and there would have been a reasonable expectation that an Amsteel Prusik knot would be successful. *Id.*

The remaining claims with entirely expected and wholly unsurprising quantitative limitations (*viz.*, Claims 2-3, 7-9, and 12-13) are disclosed in the secondary references, rendering those claims obvious in combination with the primary references. Ex. 1015 ¶ 127.

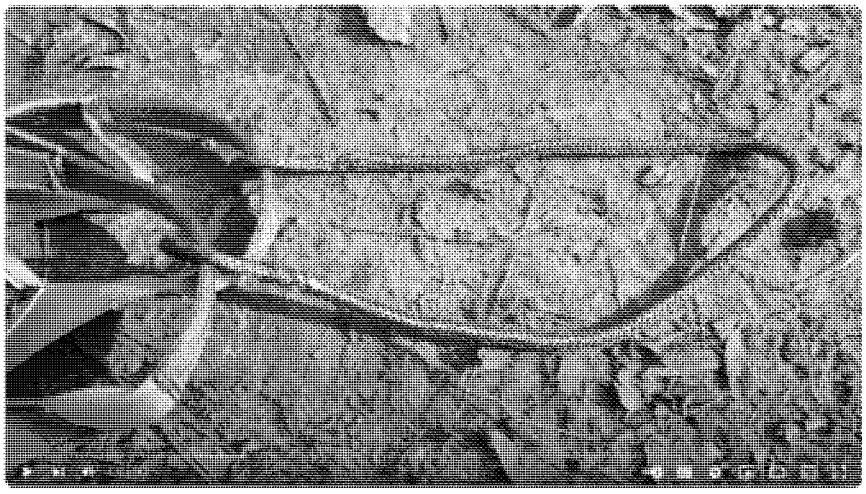
C. Ground 3: Claims 1-14 Would Have Been Obvious Under 35 U.S.C. § 103 Over The Tethrd Mantis Saddle YouTube Video in View of the Hunting Saddle Modifications DIY YouTube Video, the ArboristSite Amsteel Blue Splicing Experiments Forum Posts, the SaddleHunter Forum Posts, the HammockForums Forum Posts, the Samson Splicing Instructions, and the L-36 Splicing Directions Describing Modifications to the Components Thereof

Ground 3 assumes *arguendo* that the priority date for the '175 Patent is (incorrectly) **January 7, 2020**. **Ground 3** relies *only* on printed publications that published on or before January 6, 2019, that is, before the 35 U.S.C. § 102(b)(1)(A) one-year grace period. Ex. 1015 ¶ 128.

1. Ground 3 – Claim Chart

The following claim chart sets forth the details of **Ground 3** for the unpatentability of Claims 1-14 of the '175 Patent in view of the YouTube video (**Ex. 1131**) describing the Tethrd Mantis Saddle, and the YouTube video (**Ex. 1129**), the ArboristSite forum post (**Ex. 1024**), the SaddleHunter forum posts (**Exs. 1064**, **1091**, **1107**) (alt. Exs. 1055, 1066, 1090, 1115), and the Samson splicing instructions (**Ex. 1018**) describing various modifications to the Samson Amsteel rope bridge used with that saddle, as well as the HammockForums forum posts (**Ex. 1032**) (alt. Ex. 1034) and the and L-36.com splicing directions (alt. Ex. 1046) providing basic parameters and techniques for splicing a continuous loop friction hitch (*e.g.*, Prusik knot):

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:	**YouTube – Mantis Saddle - Setup and Directions (Ex. 1131)**  Mantis Saddle - Setup and Directions Tethrd Nation Subscribe

	 (*e.g.*, Ex. 1130 @ 5:28)
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	**YouTube – Mantis Saddle - Setup and Directions (Ex. 1131)**  Mantis Saddle - Setup and Directions Tethrd Nation Subscribe

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; and	83,192 views Dec 30, 2010 **ArboristSite - Amsteel Blue Splicing Experiments (p1) (Ex. 1024 at 4-6)**

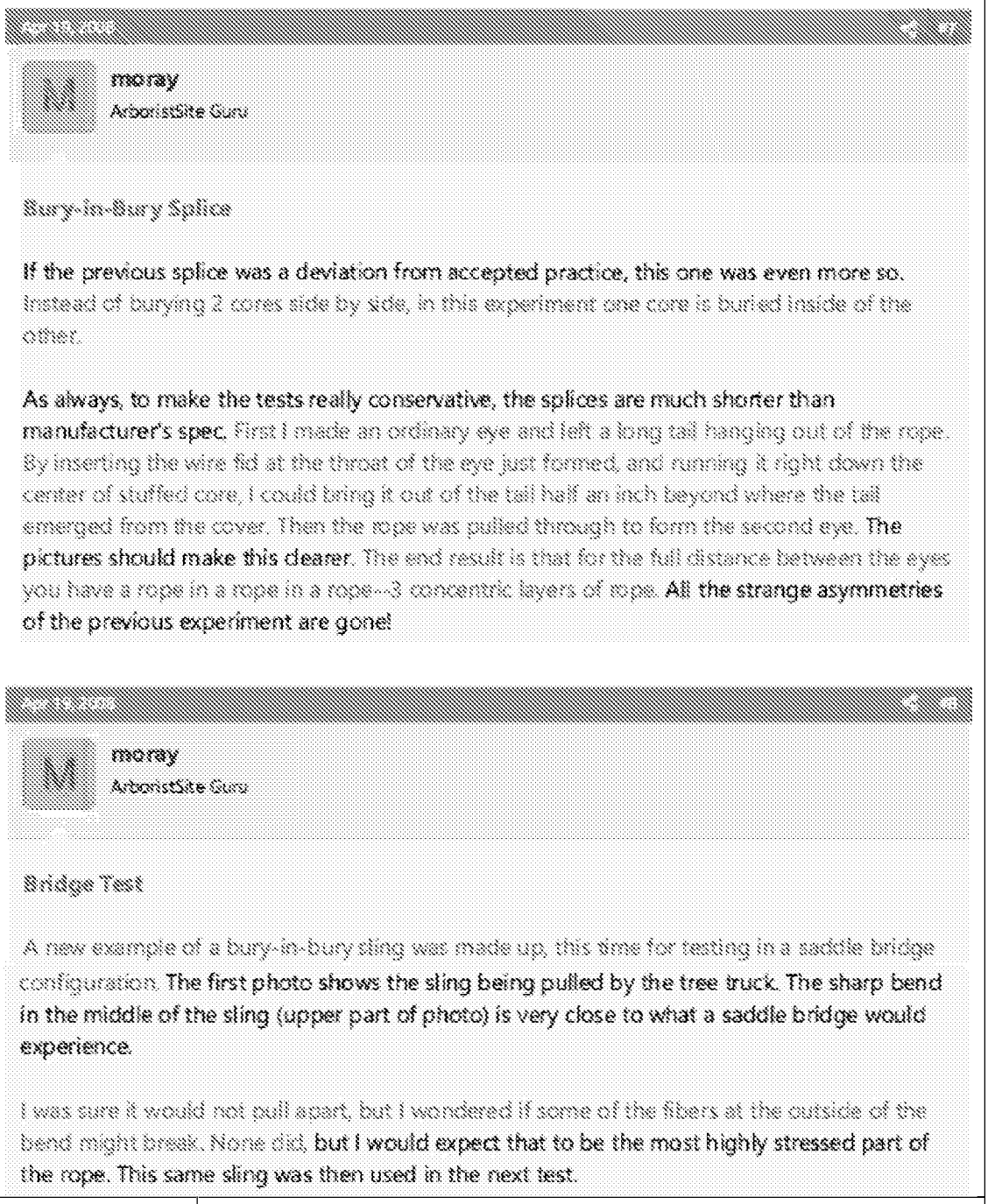
Jan 13, 2011 #1

moray
ArboristSite Guru

Side-by-Side Splice

In splicing short Eye and Eye slings, it is often necessary to overlap the tapered tail from one eye with the tapered tail from the other. When well done, the result is a nearly uniform rope diameter from one eye to the other. Even though I knew the 9 inches of my saddle bridge was way too short to accomodate 2 legal splices in 3/16 Am8, I thought I would go through the motions anyway. I soon discovered that Am8 is roomy enough inside to hold 2 full-diameter ropes side by side! This is practically impossible with Tenex, and it offered up a new possibility for the short sling.

I made up a double-eye sling in which each buried tail extended the full length of the rope and emerged at the throat of the other eye. The distance between the eyes was about 5.5 inches, much shorter than the prescribed minimum of 8 inches. I went directly to the pull test without bothering to taper and bury the tails. My friend Jack and I hooked it up between two of his trucks and he started pulling while I took photos.



moray
ArboristSite Guru

Bury-in-Bury Splice

If the previous splice was a deviation from accepted practice, this one was even more so. Instead of burying 2 cores side by side, in this experiment one core is buried inside of the other.

As always, to make the tests really conservative, the splices are much shorter than manufacturer's spec. First I made an ordinary eye and left a long tail hanging out of the rope. By inserting the wire fid at the throat of the eye just formed, and running it right down the center of stuffed core, I could bring it out of the tail half an inch beyond where the tail emerged from the cover. Then the rope was pulled through to form the second eye. The pictures should make this clearer. The end result is that for the full distance between the eyes you have a rope in a rope in a rope—3 concentric layers of rope. All the strange asymmetries of the previous experiment are gone!

moray
ArboristSite Guru

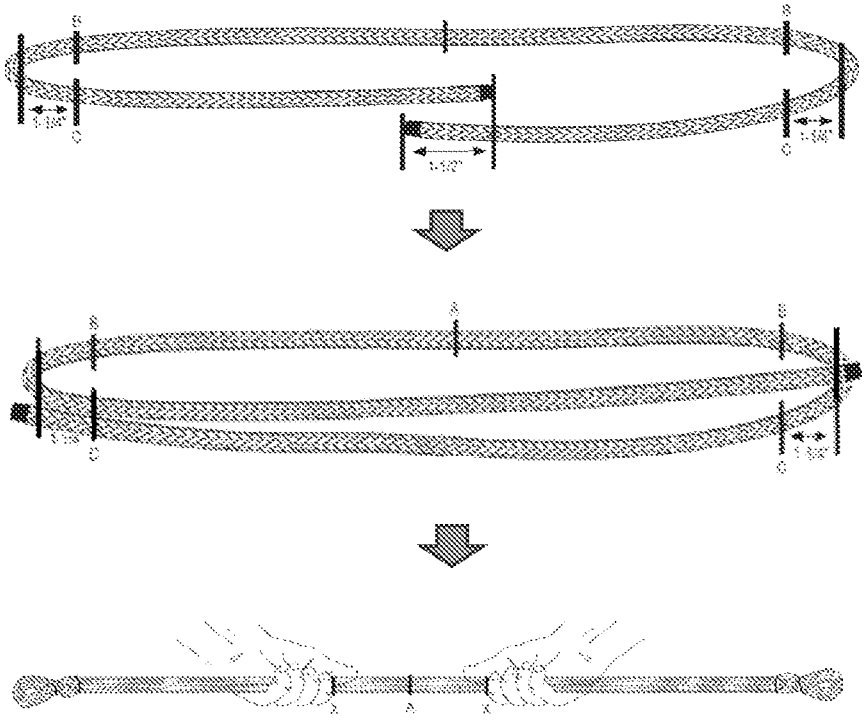
Bridge Test

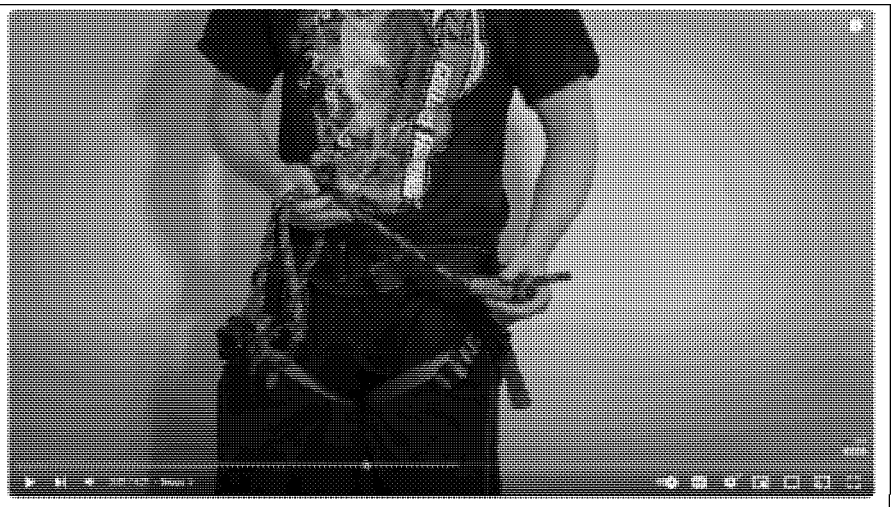
A new example of a bury-in-bury sling was made up, this time for testing in a saddle bridge configuration. The first photo shows the sling being pulled by the tree truck. The sharp bend in the middle of the sling (upper part of photo) is very close to what a saddle bridge would experience.

I was sure it would not pull apart, but I wondered if some of the fibers at the outside of the bend might break. None did, but I would expect that to be the most highly stressed part of the rope. This same sling was then used in the next test.

—AND—

Samson - 12-Strand Eye-and-Eye Tail Splice (Ex. 1018 at 1-2)

	SAMSON SPLICING INSTRUCTIONS 12-Strand Eye-and-Eye Tail Splice  **–AND–** **YouTube – Hunting Saddle Modifications – DIY (Ex. 1129 at 6)**



Hunting Saddle Modifications - DIY

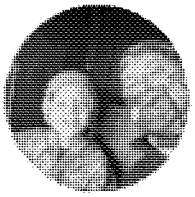
DIY Sportsman [redacted] Subscribe

[redacted] views Jun 3, 2018

3:20
. . . so what I've done is
3:23
I've tied a friction hitch this was just
3:25
a prusik onto the other side of my
3:28
saddle so I got the free end tight end
3:32
of the saddle and then the actual
3:33
sliding portion of it is on that bridge
3:35
rope and what this basically gives me is
3:38
it gives me an adjustable length for
3:41
that bridge

–AND–

SaddleHunter - Mantis Bridge Mods (p1) (Ex. 1091 at 2)

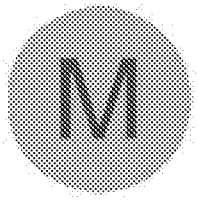


d_rek
Well-Known Member

Oct 8, 2018 #3

I will probably shorten my stock mantis bridge by 4-6" by undoing one of the splices and cutting a length of the amsteel off.

SaddleHunter - Mantis Bridge Mods (p1) (Ex. 1091 at 3)



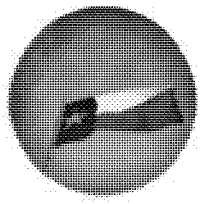
Mag1
Well-Known Member

Oct 12, 2018 #4

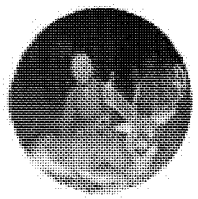
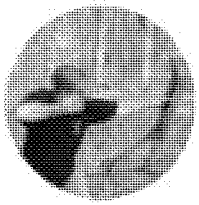
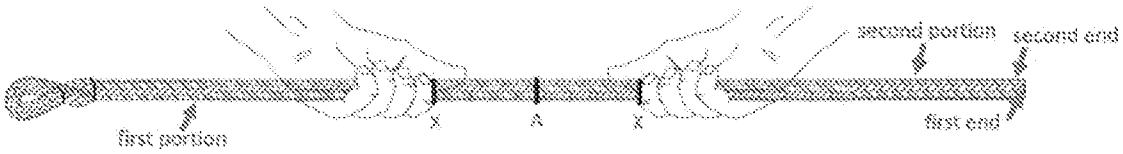
I believe the mantis bridge was made before they sewed the eye/loop material on. I took mine off and you cannot undo it without cutting one side. (maybe I missed

–OR–

SaddleHunter - Before I become a cutter.... (p1) (Ex. 1066 at 1-2)



IkemanTX
Well-Known Member

	Oct 19, 2018 #2 I would tuck the amsteel bridge into the belt for several dots before cutting it. If you decide you really do like the 36" length, then cut after several sits of proof.
	SaddleHunter - Before I become a cutter.... (p1) (Ex. 1066 at 4)  Wirrex Moderator
	Oct 19, 2018 #11 Thanks, I drew it out just to make sure. There isn't any way to do it without cutting. Both sides are locked Brummells.
	SaddleHunter - Before I become a cutter.... (p1) (Ex. 1066 at 5)  swampsnyper Well-Known Member
	Oct 19, 2018 #16 Cut it! Put the longer bridge. Helped me get comfortable.
	
a friction hitch being positioned on the	**SaddleHunter - Smallest diameter on tether rope (p1) (Ex. 1107 at 3)**

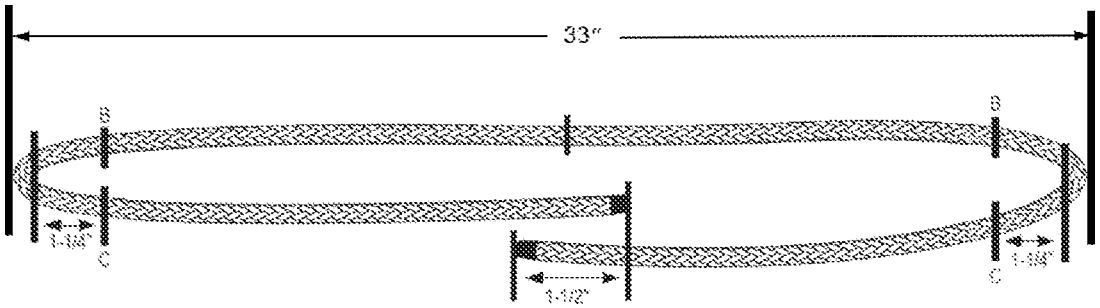
main body between the second end and the eye loop, the friction hitch being configured to engage the second bridge loop, the friction hitch comprising a closed loop.	

	Jun 18, 2018 #7 1/4" amsteel in a continuous loop worked extremely well for me for several hours yesterday on the Predator rope that came with the Kestrel. No slippage on my bridge or tether. I put it through several "tests" and it worked great. 
2. The bridge rope assembly according	**Samson - 12-Strand Eye-and-Eye Tail Splice (Ex. 1018 at 1-2)**

to claim 1, wherein the rope has a length from the first end to the second end between 72.0 inches and 126.0 inches.	SAMSON SPLICING INSTRUCTIONS 12-Strand Eye-and-Eye Tail Splice

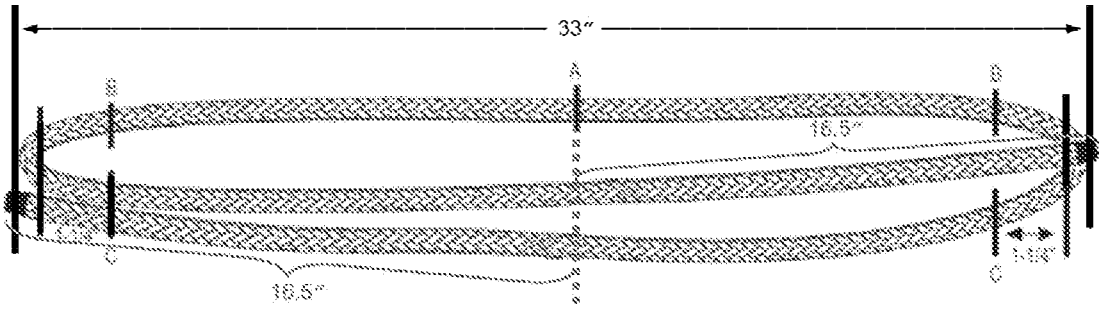
The desired tail length will dictate the starting length of cordage required. For a 33" finished eye-and-eye tail, an 80" length of 3/8" rope is required.

Samson Ice Tail 33" bridge (traditional Full-Bury splice):



SL = 80"
EL = 33" + 33" + 1.5" (overlap) = 67.5"
Est. Shrinkage ≈ 1 – (67.5"/80") = 15.6%

Samson Ice Tail 33" bridge (modified Side-by-Side or Bury-in-Bury splice):



Estimate shrinkage from traditional full-bury splice is increased by 50% to 23.4% for the two additional 16.5" lengths used in a Side-by-Side or Bury-in-Bury splice.

SL = (80" - 1.5") + ((16.5" + 16.5") x 1.234) = 119.2"

Estimate shrinkage from traditional full-bury splice is increased by 100% to 31.2% for the two additional 16.5" lengths used in a Side-by-Side or Bury-in-Bury splice.

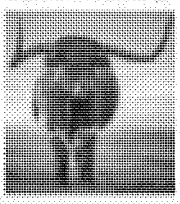
SL = (80" - 1.5") + ((16.5" + 16.5") x 1.312) = 121.8"

–OR–

HammockForums – Everything you always wanted to know about Amsteel but were afraid to ask (p3) (Ex. 1034 at 2)

FJRpilot

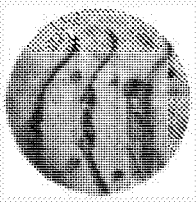
Senior Member



So wanted to mention some information that I've been researching about shrinkage when splicing Amsteel. We all know that when you splice Amsteel, you experience shrinkage due to the length of the bury, there is not a lot of information that I could find about exactly how to determine the amount of shrinkage. The articles I have read seem to indicate that you should factor in about 20% of the length of the bury. So if your using 7\64, which needs an 8" bury, the piece of Amsteel you bury this into will shrink by 1.6". If your doing precision splicing (like with Grizz's Ariel), you will need to factor this into the lengths of Amsteel you are making for the suspension. So far 20% seems to be working..

–OR–

SaddleHunter - Mantis Bridge Length (p1) (Ex. 1090 at 3)



GCTerpfan
Moderator
Staff member

Aug 10, 2018 #4

Most people that are talking about shortening their bridge are referring to the Kestrel. The bridge on the Kestrel came extremely long so many people, including myself shorten it to somewhere between 24"-30". The Mantis already comes set up at 30", So,i t's less likely you will have to adjust the Mantis bridge length.

–AND–

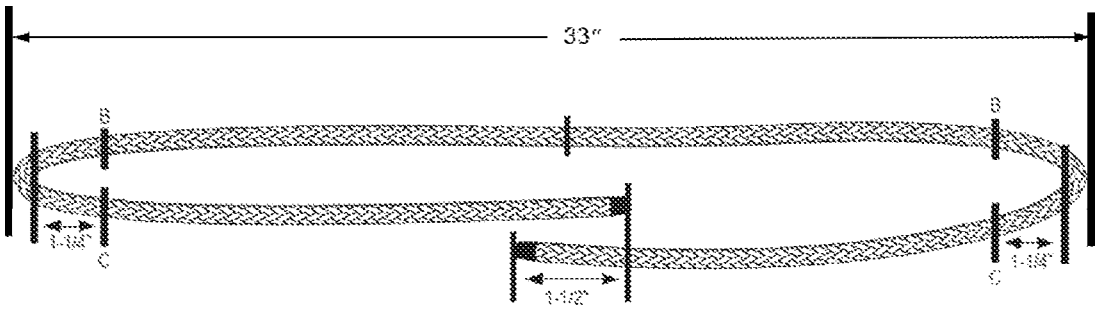
Samson - 12-Strand Eye-and-Eye Tail Splice (Ex. 1018 at 1)

SAMSON SPLICING INSTRUCTIONS

12-Strand Eye-and-Eye Tail Splice

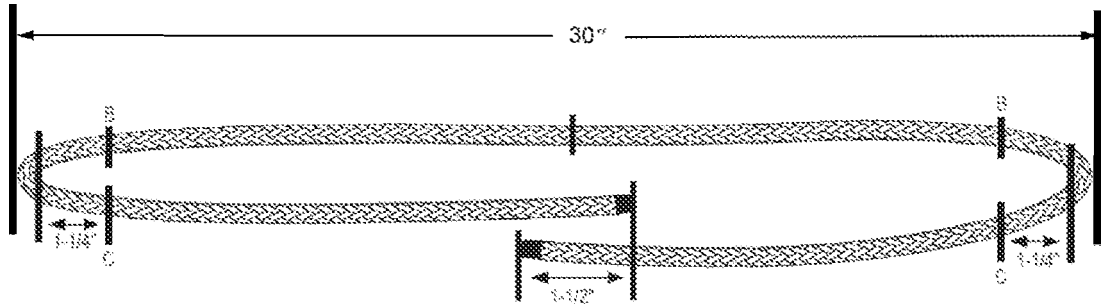
The desired tail length will dictate the starting length of cordage required. For a 33" finished eye-and-eye tail, an 80" length of 3/8" rope is required.

Samson Ice Tail 33" bridge (traditional Full-Bury splice):



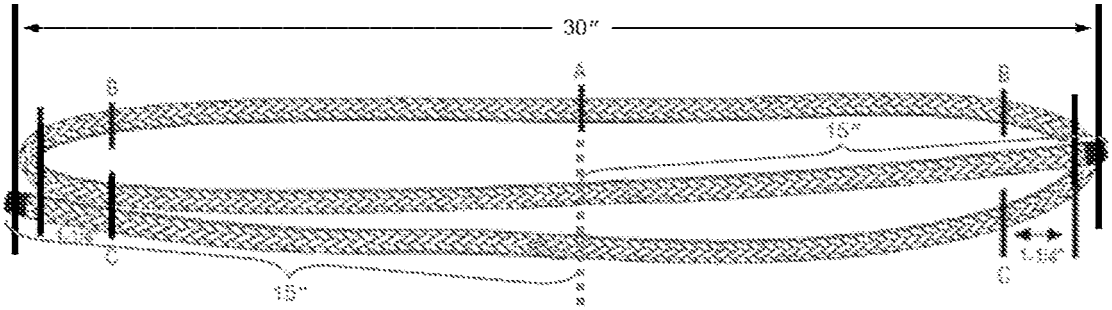
SL = 80"

Mantis 30" bridge (3" shorter than Ice Tail 33" bridge) (traditional Full-Bury splice):

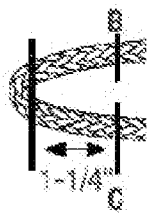
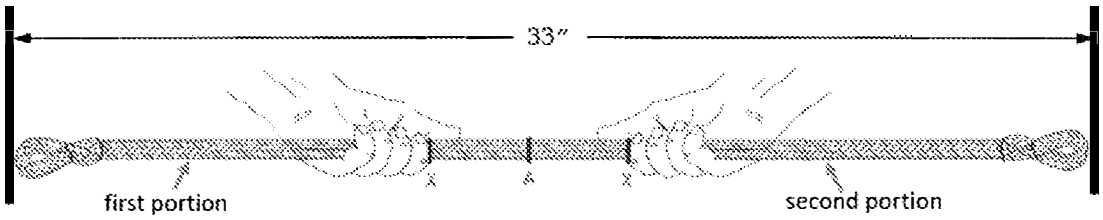


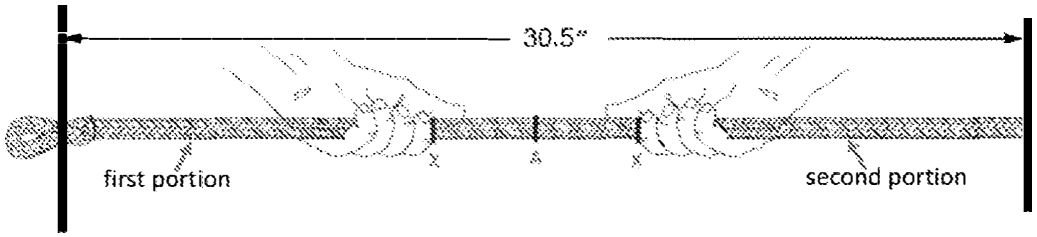
EL = 30" + 30" + 1.5" (overlap) = 61.5"
Est. Shrinkage ≈ 20% (per prior arts forums)
SL = 61.5" ÷ (1 - 0.20) = 76.9"

Mantis 30" bridge (modified Side-by-Side or Bury-in-Bury splice):



Estimate shrinkage from traditional full-bury splice is increased by 50% to 30% for the two additional 15" lengths used in a Side-by-Side or Bury-in-Bury splice.

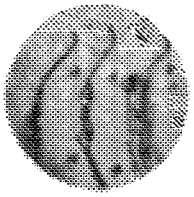
	SL = (76.9" - 1.5") + ((15" + 15") x 1.30) = 114.4" Estimate shrinkage from traditional full-bury splice is increased by 100% to 40% for the two additional 15" lengths used in a Side-by-Side or Bury-in-Bury splice. SL = (76.9" - 1.5") + ((15" + 15") x 1.40) = 117.4"
3. The bridge rope assembly according to claim 1, wherein a distance of the eye loop to the second end is between 24.0 inches and 40.0 inches.	**Samson - 12-Strand Eye-and-Eye Tail Splice (Ex. 1018 at 1)** SAMSON SPLICING INSTRUCTIONS 12-Strand Eye-and-Eye Tail Splice STEP 2 MARKING EYE SIZE Mark the size of the eye on each tail. From the inside of the eye, mark both legs of the eye at 1-1/4". These are Marks B and C, as shown. 
	The desired tail length will dictate the starting length of cordage required. For a 33" finished eye-and-eye tail, an 80" length of 3/8" rope is required. **Samson Ice Tail 33" bridge (modified Side-by-Side or Bury-in-Bury splice):** 



Dist. = 33" - 1.25" - 1.25" = 30.5"

–OR–

SaddleHunter - Mantis Bridge Length (p1) (Ex. 1090 at 3)



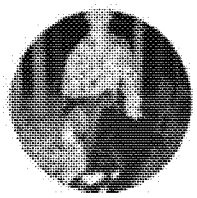
GCTerpfan
Moderator
Staff member

Aug 10, 2018 #4

Most people that are talking about shortening their bridge are referring to the Kestrel. The bridge on the Kestrel came extremely long so many people, including myself shorten it to somewhere between 24"-30". The Mantis already comes set up at 30", So,i t's less likely you will have to adjust the Mantis bridge length.

–OR–

SaddleHunter - Tethrd Mantis dimensions (p1) (Ex. 1115 at 10)



valerio024
Well-Known Member

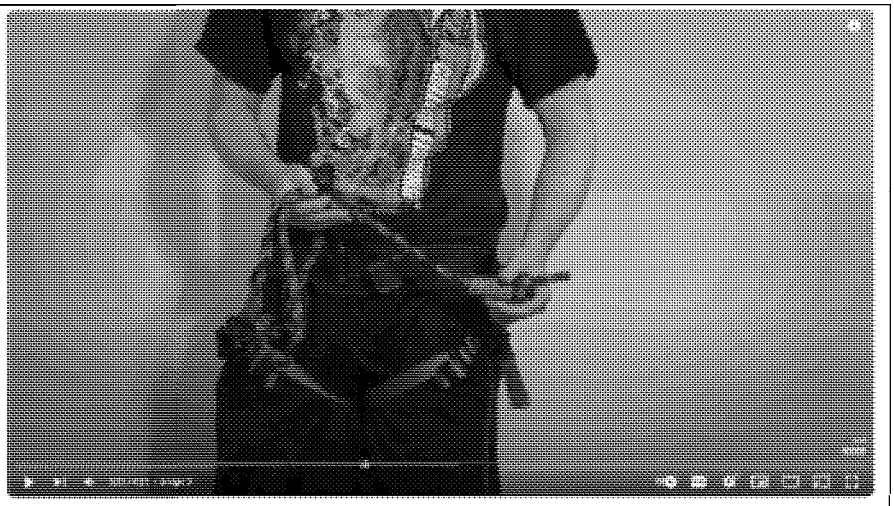
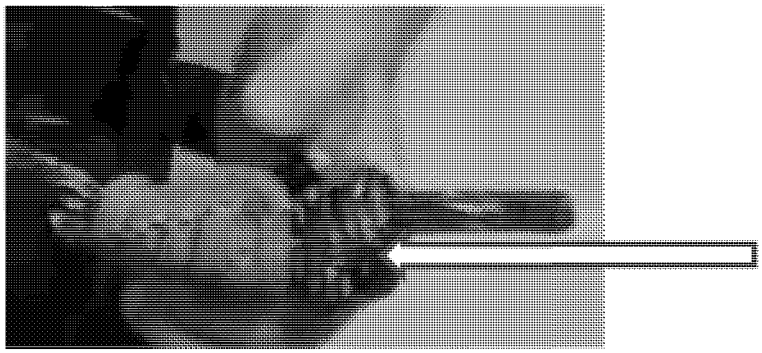
Oct 1, 2018 #13

Here are some unofficial measurements of a large Tethrd Mantis.
Weight: 17.2 ounces
Weight with Tethrd ropes and carabiners: 2lbs 15.4 ounces
Bridge loop to Bridge loop: 32.25in
Seat Width: 23 inches
Seat Height: 14 inches

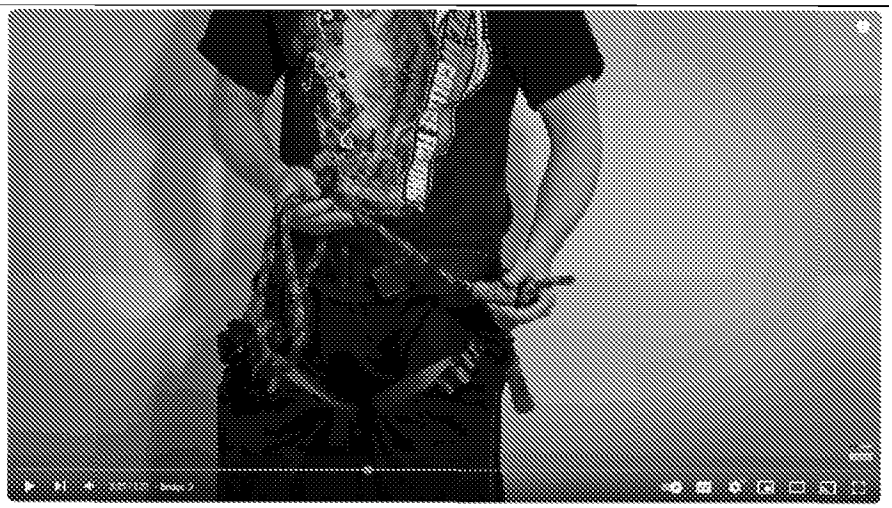


Mantis bridge: 30" bridge, ~2.5" eyes
Dist. ≈ 30" - 2.5" - 2.5" = 25"

4. The bridge rope assembly according	**YouTube - Hunting Saddle Modifications – DIY (Ex. 1129)**

to claim 3, wherein the main body includes a stop knot in the second portion adjacent to the second end.	 Hunting Saddle Modifications - DIY DIY Sportsman Subscribe 43,547 views Jan 3, 2018  (e.g., Ex. 1129 at 1:52)
5. The bridge rope assembly according to claim 4, further including 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	**YouTube - Hunting Saddle Modifications - DIY (Ex. 1129)**

static position relative to each other.

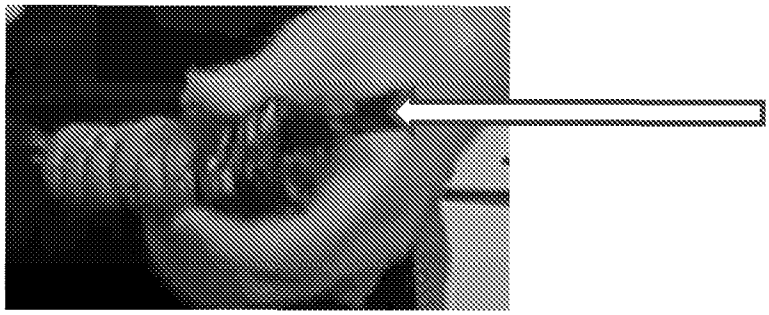


Hunting Saddle Modifications - DIY

DIY Sportsmen

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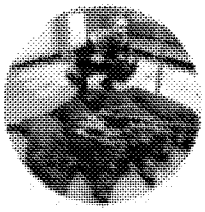
43,547 views Jun 3, 2018



(*e.g.*, Ex. 1129 at 3:35)

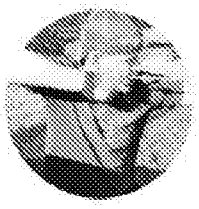
–OR–

SaddleHunter - Amsteel (p1) (Ex. 1055 at 5)



Skeet16

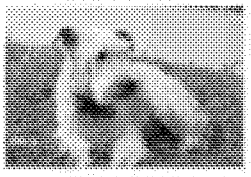
Active Member

	Dec 30, 2018 #16 Ok guys, got my Amsteel and my DIY fid, ready to splice. What's the best way to cut and then secure the ends? Burning seems to leave a huge blob that's not gonna fit in the fid. Thanks I use a surgical scalpel. Needs to be sharp whatever you use. I then put heat shrink over the ends.
6. The bridge rope assembly according to claim 4, wherein the closed loop comprises a single rope being formed into the closed loop.	**SaddleHunter - Smallest diameter on tether rope (p1) (Ex. 1107 at 3)**  Carolina_trad_hntr Member

Jun 18, 2018 #7

1/4" amsteel in a continuous loop worked extremely well for me for several hours yesterday on the Predator rope that came with the Kestrel. No slippage on my bridge or tether. I put it through several "tests" and it worked great.



7. The bridge rope assembly according to claim 6, wherein the single rope of the closed loop has a length between 40.0 inches and 60.0 inches.	**HammockForums - Continuous loop pictoral (p20) (Ex. 1032 at 4)** 07-15-2013, 04:04 UncleClark Senior Member  Using the excellent pictures I made up a couple 12" continuous loops today using 7/64 Amsteel. I know that shorter buries are suggested in this thread, but after watching the videos on Sampson Rope, I decided to use 8" buries. Using 8" buries I found that I needed 20" of Amsteel just for 2 x 8" buries plus about 4" shrinkage allowance in the main loop due to the buries. So to make a 12" loop I ended needing about 44" total 12" loop requires 24" Left bury requires 8" + 2" shrinkage = 10" Right bury requires 8" + 2" shrinkage = 10" I tapered the ends using a razor blade cutting a shallow angle across the rope. I hope this is OK **—OR—** **L-36.com - Loops, Loups, and Loupes (2012-10-01) (Ex. 1046 at 2)**

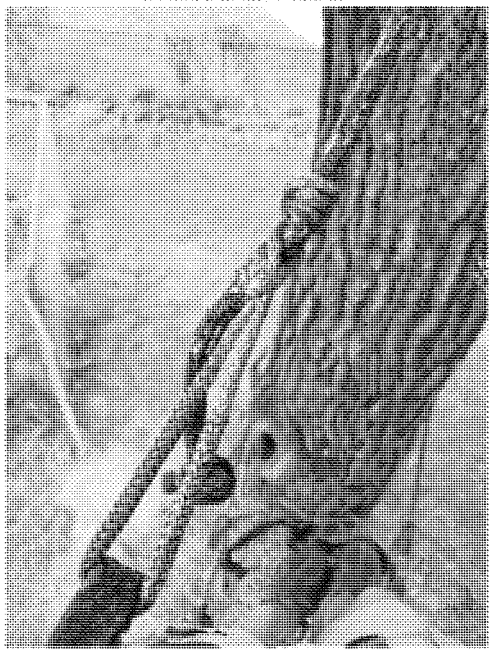
For 12" loop:

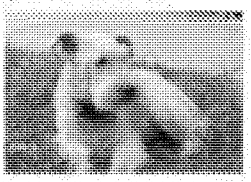
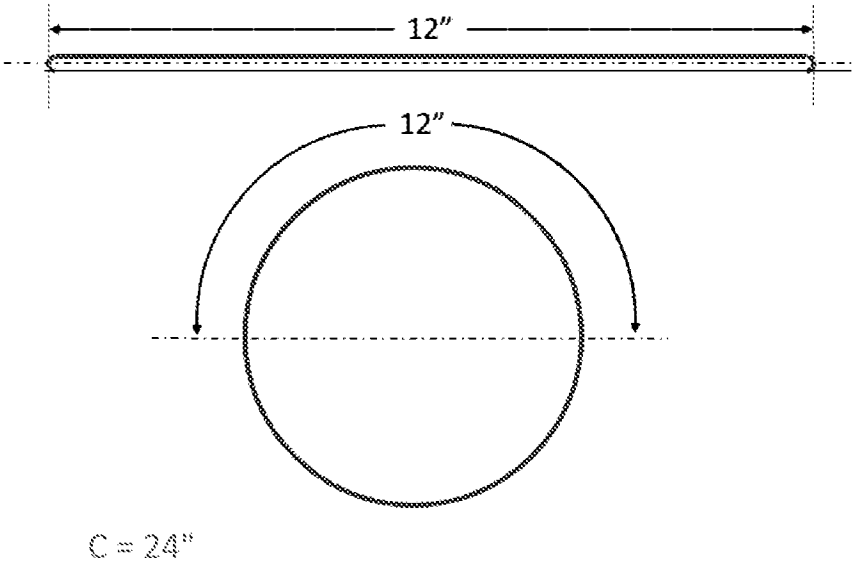
Instructions

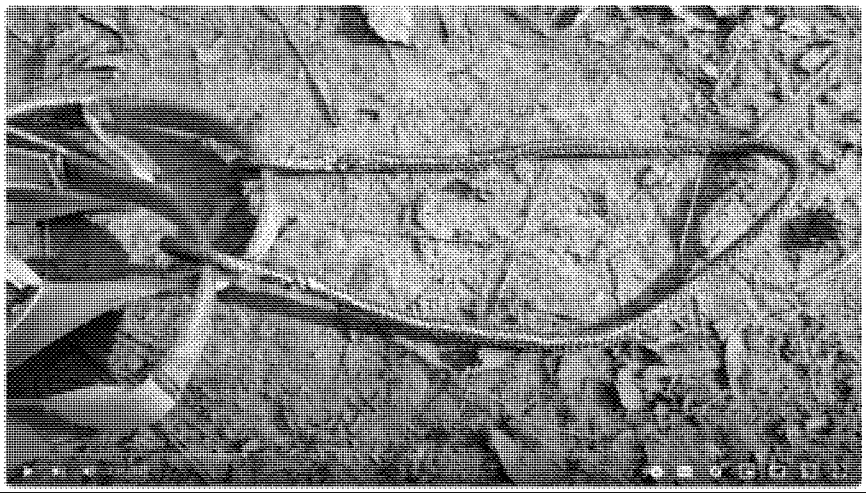
Loop Diameter	7.64	Inches
Line Size	7/64 Diameter of Amsteel	
Calculate		
Loop size	0.25	OD of loop double braid
Line Length	55.375	Total rope needed
Mark	14.25	From center mark
Extended Length	12	Tip to tip

Instructions

Loop Diameter	7.64	Inches
Line Size	3/16 Diameter of Amsteel	
Calculate		
Loop size	0.375	OD of loop double braid
Line Length	57.625	Total rope needed
Mark	14.375	From center mark
Extended Length	12	Tip to tip

	 Estimate ~12" loop 1/4" Amsteel C = 24" D = C/π = 24/3.14 = 7.64" **Instructions** Loop Diameter: 7.64 Inches Line Size: 1/4 Diameter of Amsteel Calculate Loop size: 0.5 OD of loop double braid Line Length: 59.25 Total rope needed Mark: 14.375 From center mark Extended Length: 12 Tip to tip
8. The bridge rope assembly according to claim 7, wherein the closed loop has a total circumference of	**HammockForums – Continuous loop pictoral (p20) (Ex. 1032 at 4)**

between 20.0 inches and 30.0 inches.	02-20-2013, 14:02 UncleClark Senior Member  Using the excellent pictures I made up a couple 12" continuous loops today using 7/64 Amsteel.  **—OR—** **L-36.com - Loops, Loups, and Loupes (2012-10-01) (Ex. 1046 at 2)** **For 12" loop:** C = 24"
9. The bridge rope assembly according to claim 1, wherein the closed loop has a total	**[SAME AS CLAIM 8]**

circumference of between 20.0 inches and 30.0 inches	
10. The bridge rope assembly according to claim 9, wherein the main body and the friction hitch each are comprised of U[H]MWPE.	**SaddleHunter - Amsteel Prussic (p1) (Ex. 1064 at 1)**  Carolina_trad_hntr Member Jun 17, 2018 #3 Worked like a charm. Replaced the prussic on my adjustable bridge and tether. That's a pretty good weight savings for effort and cost involved. Amsteel is the wonder rope, I love it. Wonder how amsteel prussic on amsteel bridge would work, as long as the diameter rule is followed...may be too slick. **—OR—** **YouTube – Mantis Saddle - Setup and Directions (Ex. 1131)** 

Mantis Saddle - Setup and Directions

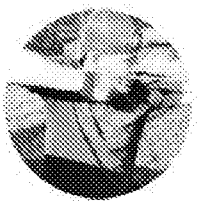
Tethrd Nation [redacted] subscribers Subscribe

83,192 views Dec 30, 2018

1:26
bridge loops is where your bridge
1:28
connects your bridge is made of AM steel
1:30
blue 1/4 inch it's very strong almost
1:34
8,000 pound breaking strength it also
1:36
has a benefit of being ultra light
1:38
weather resistant and it slides very

—AND—

SaddleHunter - Smallest diameter on tether rope (p1) (Ex. 1107 at 3)

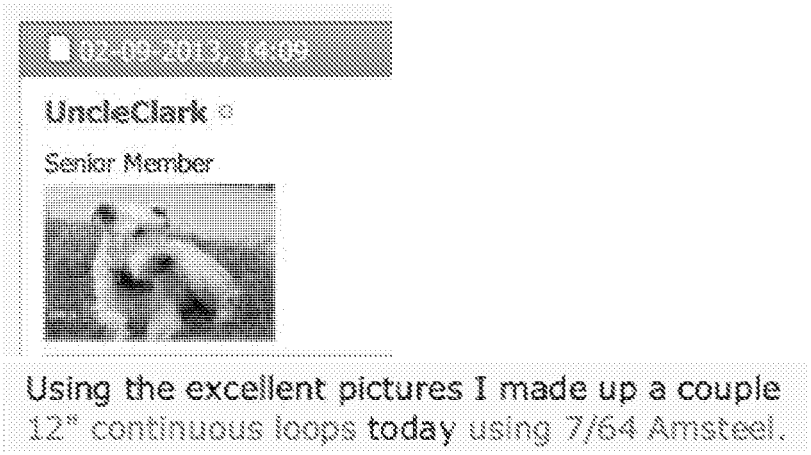


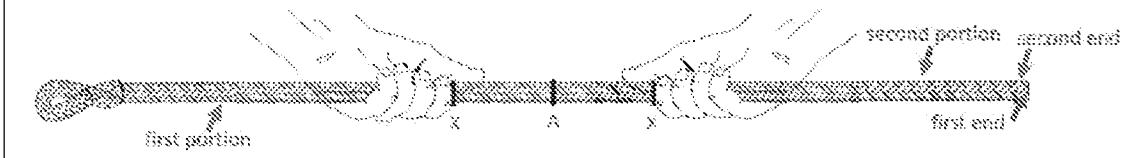
Carolina_trad_hn
tr
Member

Jun 18, 2018 #7

1/4" amsteel in a continuous loop worked extremely well for me for several hours yesterday on the Predator rope that came with the Kestrel. No slippage on my bridge or tether. I put it through several "tests" and it worked great.



	—OR— **HammockForums – Continuous loop pictoral (p20) (Ex. 1032 at 4)** 
11. The bridge rope assembly according to claim 1, wherein the main body is comprised of UHMWPE.	**[SAME AS CLAIM 10]**
12. The bridge rope assembly according to claim 9, wherein a distance of the eye loop to the second end is between 24.0 inches and 40.0 inches.	**[SAME AS CLAIM 3]**
13. The bridge rope assembly according to claim 12, wherein the closed loop has a total circumference of between 20.0 inches and 30.0 inches.	**[SAME AS CLAIM 8]**

14. The bridge rope assembly according to claim 12, wherein a distance between the first and second ends is less than 2.0 inches.	**[SAME AS CLAIM 1]**
	

Ex. 1015 ¶ 129.

2. Ground 3 – Reasons to Combine

A POSITA would have been readily motivated to combine the prior art of Ground 3 for the same reasons as set forth in the reasons to combine for Ground 2. *See supra* Section VIII.B.2; Ex. 1015 ¶ 130.

IX. TETHRD'S ALLEGED SECONDARY CONSIDERATIONS LACK A NEXUS TO THE SPECIFIC FEATURES OF THE CLAIMED INVENTION AND CANNOT OVERCOME THE STRONG EVIDENCE OF OBVIOUSNESS HERE

In the co-pending district court litigation, Tethrd has argued that various public discussions about its Phantom commercial product (relying largely on Internet publications, such as the SaddleHunter message board and YouTube)

provide objective indicia of non-obviousness.[8] *See* Ex. 1138 at 5-29. Of course, with respect to Ground 1, Tethrd's Phantom product ***is*** the prior art itself, so any such evidence is irrelevant. *E.g.*, *Yita LLC v. MacNeil IP LLC*, 69 F.4th 1356, 1364 (Fed. Cir. 2023) ("[O]ur case law makes clear that 'objective evidence of nonobviousness lacks a nexus if it exclusively relates to a feature that was "*known* in the prior art"'—not necessarily well-known.") (emphasis in original). Similarly, with respect to Grounds 2 and 3, as discussed in detail in this Petition, the general Phantom product features discussed on the Internet were all known in the prior art (*e.g.*, a fully-buried bridge, an Amsteel bridge, a fully-buried Amsteel bridge, an adjustable bridge, a closed-loop Prusik knot, an Amsteel Prusik knot, and Amsteel Prusik knot on an Amsteel bridge, etc.). Again, those prior art features were known, and thus are not relevant to the nexus inquiry. *Id.; see Hamilton Beach Brands, Inc. v. Courtesy Prods., LLC*, IPR2014-01257 (PTAB Feb. 24, 2016) ("Patent Owner does not identify any evidence indicating that the claimed

[8] Tethrd's recent reliance on printed publications on the Internet in an effort to ***defend*** the '175 Patent is in sharp contrast to Tethrd's intentional withholding of that same type of Internet information to ***obtain*** the '175 Patent.

disposable brew baskets or any other claimed feature had unique properties or advantages beyond those found in the prior art relied on by Petitioner.").

Importantly here, to establish the requisite nexus, the secondary considerations must be a "direct result of the unique characteristics of the claimed invention." *In re Huang*, 100 F.3d 135, 140 (Fed. Cir. 1996); *Saint-Gobain Abrasives, Inc. v. 3M Innovative Properties Co.*, IPR2014-01281 (PTAB Feb. 23, 2016). For example, as explained in this Petition, all of the '175 Patent's claims require that both the eye loop and the friction hitch be spliced to interlock with the saddle loops, which is a permanent engagement. *See supra* Section V.H.3. A simple attachment or connection is not claimed. *Id.* Further, the claims all require that the two ends of the spliced bridge be within a distance of 3.0 inches or less from each other. *See supra* Section V.H.4. A fully buried that only extends through the usable sliding length of the bridge (*e.g.*, to the stop knot) is not claimed. *Id.* While these specific features are required by the claims, Tethrd has not shown that they are addressed anywhere in the cited evidence. *See Qualtrics, LLC v. OpinionLab, Inc.*, IPR2014-00356 (PTAB July 30, 2015) (affording little weight to evidence not "tie[d] . . . to the specific features of the claimed invention.").

Accordingly, Crüzr is not aware of any evidence of secondary considerations with the required nexus to the invention ***as claimed***, but reserves the right to

respond to such evidence, if presented. Further, where, as here, a strong *prima facie* case of obviousness exists, even relevant secondary considerations supported by substantial evidence may not dislodge the final conclusion of obviousness. *See, e.g.*, *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007).

X. CONCLUSION

Based on the substantial new and noncumulative prior art presented in this Petition for each of the Challenged Claims of the '175 Patent, there is more than a reasonable likelihood that each of those claims is unpatentable. Crüzr therefore respectfully requests that the Board grant this petition for *inter partes* review of the '175 Patent.

Respectfully submitted,

STERLINGTON, PLLC

Dated: August 11, 2025

By: */ Brenton R. Babcock /*
Brenton R. Babcock (Reg. No. 39,592)
Attorneys for Petitioner
Crüzr Saddles LLC
(212) 433-2993

CERTIFICATE OF COMPLIANCE

Pursuant to 37 C.F.R. § 42.24(d), the undersigned certifies that this Petition for *Inter Partes* Review complies with the type-volume limitation of 37 C.F.R. § 42.24(a). The word count application of the word processing program used to prepare this Petition indicates that the Petition contains 13,990 words, including footnotes, and excluding the parts of the Petition exempted by 37 C.F.R. § 42.24(a).

Respectfully submitted,

STERLINGTON, PLLC

Dated: August 11, 2025

By: */ Brenton R. Babcock /*
Brenton R. Babcock (Reg. No. 39,592)
Attorneys for Petitioner
Crüzr Saddles LLC
(212) 433-2993

CERTIFICATE OF SERVICE

The undersigned certifies service pursuant to 37 C.F.R. §§ 42.6(e) and 42.205(b) on the Patent Owner by Federal Express of an electronic copy of this **PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 11,964,175** and supporting materials at the current known correspondence address for the Patent Owner:

Kaufhold Dix Patent Law
P. O. Box 89626
Sioux Falls, SD 57109

The undersigned additionally certifies courtesy service pursuant to 37 C.F.R. §§ 42.6(e) and 42.205(b) on litigation counsel for Patent Owner via e-mail of an electronic copy of this **PETITION FOR *INTER PARTES* REVIEW OF U.S. PATENT NO. 11,964,175** and supporting materials at the below:

Bradley Arant Boult Cummings LLP

Daniel Huynh (dhuynh@bradley.com)
Eliza del Carmen (edelcarmen@bradley.com)
André J. Bahou (ajbahou@bradley.com)
Josh Kleppin (jkleppin@bradley.com)

Dated: August 11, 2025

/ Brenton R. Babcock /
Brenton R. Babcock (Reg. No. 39,592)
Attorneys for Petitioner
Crüzr Saddles LLC

Doc Code: IDS.SIZEFEE
Document Description: Assertion of whether IDS Size Fee Due

PTO/SB/08C (01-25)
Approved for use through 01/31/2028. OMB 0651-0070
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INFORMATION DISCLOSURE STATEMENT SIZE FEE – WRITTEN ASSERTION UNDER 37 CFR 1.98

Complete if Known

Application or Patent No.:	First Named Inventor:	Art Unit:
19/331,004	Walter Ernest Power, II	
Filing Date:	**Attorney Docket Number:**	**Examiner:**
September 17, 2025	305774-401012	

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):

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☑ 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.

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

☐ * Total of _____ forms are submitted.

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(**Not for submission under 37 CFR 1.99)**

Application Number	19331004
Filing Date	2025-09-17
First Named Inventor	Walter Ernest POWER II
Art Unit	
Examiner Name	
Attorney Docket Number	305774-401012

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	2	WO2018051068	WO		2018-03-22	Griffith		☐
	3	EP1932565	EP		2008-06-18	Dussenne		☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
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	Art Unit	
	Examiner Name	
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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/	☐
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	7	TreeBuzz, Ice Tail loop, October 28, 2012-October 30, 2012, https://www.treebuzz.com/forum/threads/ice-tail-loop.23817/#post-334252	☐
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	9	Gary Blevins, How to Add a Webbing Bridge to a Tree Saddle, April 3, 2019, https://www.youtube.com/watch?v=uShoMcW477I	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Filing Date	2025-09-17
	First Named Inventor	Walter Ernest POWER II
	Art Unit	
	Examiner Name	
	Attorney Docket Number	305774-401012

	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	☐
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	12	DIY Sportsman, Hunting Saddle Modifications - DIY, June 3, 2018, https://www.youtube.com/watch?v=kMylwFmaxaQ	☐
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	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	☐
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
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	Filing Date	2025-09-17
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	Art Unit	
	Examiner Name	
	Attorney Docket Number	305774-401012

	21	SaddleHunter, Mantis Bridge Length, August 10, 2018, https://saddlehunter.com/community/index.php?threads/mantis-bridge-length.7795/	☐
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	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	☐
	31	Civil Action No. 1:24-cv-00076, FIRST AMENDED AND SUPPLEMENTAL COMPLAINT FOR PATENT INFRINGEMENT, Filed 12/03/24	☐

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	19331004
	Filing Date	2025-09-17
	First Named Inventor	Walter Ernest POWER II
	Art Unit	
	Examiner Name	
	Attorney Docket Number	305774-401012

	32	PETITION FOR INTER PARTES REVIEW OF U.S. PATENT NO. 11,964,175, Filed: August 11, 2025	☐

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	Application Number	19331004
	Filing Date	2025-09-17
	First Named Inventor	Walter Ernest POWER II
	Art Unit	
	Examiner Name	
	Attorney Docket Number	305774-401012

CERTIFICATION STATEMENT

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

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

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☐ See attached certification statement.

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

☐ A certification statement is not submitted herewith.

SIGNATURE

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

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

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

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APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
19/331,004	**10/02/2025 03:54:40 PM Z ET**	**305774-401012**

Title of Invention

BRIDGE ROPE ASSEMBLY

Application Information

APPLICATION TYPE	Utility - Reissue	PATENT #	-
CONFIRMATION #	8375	FILED BY	Sandy Barthelus Gellineau
PATENT CENTER #	72562121	FILING DATE	09/17/2025
CUSTOMER #	24728	FIRST NAMED INVENTOR	Walter Ernest POWER II
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Anna Baker

Documents

TOTAL DOCUMENTS: 37

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
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Samson 12-Strand Eye-and-Eye Tail Splice_IDS_pt2_NPL6-NPL.pdf	3	Non Patent Literature	850 KB
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IPR Petition_signed.pdf	187	Miscellaneous Incoming Letter	15715 KB
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DOCUMENT	MESSAGE DIGEST(SHA-512)
SaddleHunter - Tie in Height in relation to sitting or leaning_npl1_IDSpt2-NPL.pdf	B670064044C6403E2BEF4BD0F8F79953DCE4D8B7FF941E252 D0EB25E105067965CA02EFEEBD5DB3B901E463D375A1A054 4801A98CA02DCFA7F4BC0616F2329CE
SaddleHunter - Upgrade your Tethrd Mantis into a Tethrd Phantom Amsteel prussik bridge 2-NPL.pdf	E0E6F8B1ECEA1BBC179564E680839D65AA18406D654D2197F 40510672AC1AF050134F6B5AAA622657E6E26F511DDE984A6 DA2DB0B7772C6E855337B894C5F713
SaddleHunter - Upgrade your Tethrd Mantis into a Tethrd Phantom_Amsteel prussik bridge_1_NPL2.pdf	D2CF51217B8E85A487944DB6CFE4A8DF525C7103F339A573A 872E399412F7DB21EA622FDFAEBD8E0F667EBC0D42EE1443 6C3957DE03A8284AC09BC8972FC53AB
SaddleHunter - What do I	1920409AC03D672BA2409D5DFC193B433C4E2DD1D07F4C11

need_IDSpt2_npl4-NPL.pdf	629EF7A000824DCC67A85F8EAE8AA50DF7E0C1844F2256CCFAF854FC9A83A5D3F64A434BF4DC48BE
SaddleHunter - What size tethrd mantis do I need_IDSpt2_npl5-NPL.pdf	70ABD8861BA8060B747970C64B521074A6A5E6FD43FC8ABD4ED6FB1B174EEB8F6B0A3FB590770FCB77ABBB2216EE324A6F4A0FE8647F0DAC330ED90590B2D8A7
Samson 12-Strand Eye-and-Eye Tail Splice_IDS_pt2_NPL6-NPL.pdf	C760080FC488F0CDE4A0446C42195855E2425E647572F599B1B9F9C5CD5A28529D826395B084F754F2B2122C8F4DE25776BD1390BD352315E036EFDE5A79F82F
TreeBuzz - Ice Tail loop_IDS_pt2_npl7-NPL.pdf	CD8E768A2A89FEB75501BB972B4925A1BCE3B9DAD7F30D25CD88B645B862789CB655C69B36E23FF2718F240ED33E6D67367D1B26A02B0A5DC44BB62E1CD4231F
YouTube - DIY Utilibridge_IDS_pt2_NPL8-NPL.pdf	D4A7629E3455E7E2DEC71AFE455B913BAEEC672A5A7FDAE64614169A36B6932F53ED3B3C3383851496E9804E8774E74C7DD7189ADE4ED2A15FCFC68417B56ED8
YouTube - How to Add a Webbing Bridge to a Tree Saddle_IDS_pt2_NPL9-NPL.pdf	019AF2F7A8C8211BD5028ED2267C3024E216B2E2D61FC250F853F59A90DB56F7ABFC2B75E59E454D76BF6DC81B66C1D0AD12F5D1E732892BC36443EC5B396AFB
YouTube - How to splice Amsteel for a bridge on your hunting saddle_IDS_pt2_NPL10-NPL.pdf	B89F5BC5D0FACCDFC023F016243316FB3A3C1B70FC4F08199335D551B6EEBE7505503BDF2748594C1F967791151A32B7E17A1B46C6FD0F7EF9386284C5865874
YouTube - How to Splice an eye and eye tail_IDS_PT2_NPL11-NPL.pdf	E2D9D4B87DB8C1A0E9BF51BC480375D463C319307D260A8B3EC791043032C2645ADD4513AE3D5D162A4623A18627E97C12DA37B86622113DB25C98F91D4BCDF2
YouTube - Hunting Saddle Modifications - DIY_IDSPT2_NPL12-NPL.pdf	A998A775B3578A32BE8AC0532AAA37C2DC23101C0998F9D9C7E3CBF28EF3C745A8F5D2F3F2254368BFA0F4C8CF5B158E5483FFC53EBC6C46D07ED3BC6407A92F
YouTube - Mantis Saddle - Setup and Directions_IDSPt2_npl13-NPL.pdf	261D6F1D0196C0DFC0C2CA55AAAC1C16F5DD969180B72D986A8BC0FF4C4EF25B1DBA8E836BCC7F600E001E85E45C5B117D419A29BDA1D0151779A7954B163F38
YouTube - Tethrd Mantis VS The Phantom Saddles_IDSPt2_NPL14-NPL.pdf	FEFB2C8C883B906DC451B9BCBA5B3F347417A79801A2E55BAD7F36DE53860AF5A64A7FC04BC4D7C0EA5A63F1BF3B308022C2588E65B9D03D6FA72ECA7F6F3E0C
YouTube - Tethrd PHANTOM Review and How-To Tutorial_IDSPt3_NPL15-NPL.pdf	15CF570D09BF09C979E1CCB89FC970B35FF621F4775BAA6745274A555429ACBB867DF5F59227D0EA6394D88A30643367F02055DA38AD3A8C4BBA611712672725

Tree Saddle Bridge Basics - YouTube_IDSpt2_NPL_16-NPL.pdf	908762CA7899706F2903EA4D64ACAF1262F493742E810219FCF690203BA558D14590FFE836AFF73F3576713BD7C20CDDF87495A308B27F2C0027D18F21AF71BC
SaddleHunter--Amsteel Brummel Lock_saddlehunter_IDSpt2_NPL17.com-NPL.pdf	2D89FCE1BB6E2E20ACF49DF31A465C29A80F8BF0AEC3A5014CA4F530E14EE02EC8B242B652FC057545BC58FAC7F5247F63BECCCF150B603450474D2EF8FDEE07
Hunting SOBs How to Splice Samson Predator Rope - YouTube_IDSpt2_NPL18-NPL.pdf	28551A1FE6596E0F84BE7DC0D9DE7BF9DB03DA7681F99F66866FAFE987D04C985F00DBA3485B5584F0D70BE944F399B179FB22B282A762B8AB15CB13DF52FEF8
SaddleHunter--Sewn webbing bridge_saddlehunter_IDSpt2_NPL19.com-NPL.pdf	6A2492191A261B7756D1FCE891F5160906D673B4AB394BBC79EA1F4920D4169435CE629671879595EA82907AEAAE432A38994F20F7AFC57664D9E8BF3A8FBDE9
How to make an Amsteel Bridge _saddlehunter_IDSpt2_NPL20.com-NPL.pdf	50BE2B6D719A5666F5B9F7970D408F33421362B4978ACFCEDF57BAAAAB89D18E103AFEB6E7280B660904559318E3359A0D854BF94267D23BDBE012280D44D06A
Mantis Bridge Length_saddlehunter_IDSpt2_NPL21.com-NPL.pdf	91FCEE4DBD40E1FD73AF1C0B1901E94ED520F9C97CF6FE572BA184EB74D4F4F4099AC0D7AE781215D14E83BD7F60DA7B4DC0F790C85BF8BA0FC6EC40C50418A6
Diy shorter mantis bridge_saddlehunter_NPL22.com-NPL.pdf	2AD0CCA5BC0708D6CC02907229C982293F5CC33B730D8C51D720E985B49475D7444E0DF6AB53698080C0C6BB75E8ABB6BB1930474A74C86C20945F27120DE4F4
Smallest continuous loop of amsteel blue possible_IDSpt2_npl23-NPL.pdf	BD8A627511DB71864C37EB6A8F70352DB2953B092BE38C2ED4315760855E2AA6C2694F5362ED72A019AEE575E2107870BF5756BEBA16CC16DDE3CB9C31F0876C
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Amsteel and the burys_saddlehunter_IDSpt2_npl25.com-NPL.pdf	A94398A003B24F3D3565BCFE4F71373F44BFBC5B68690D95741AF732DB31F440EA4D8CF2DD870DEA684FE0678F7D6D9E94E2A48538F74A2CD8DC1E56CFD246C7
SaddleHunter--Adjustable bridge ideas_saddlehunter_IDSpt2_npl26.com-NPL.pdf	189D52986E1881423B8989675E4B0C54FAD2654B0F3FACCDD76CF538E7B5A4E68AD1887585A7080FA46F2B33C027457178F178C539F61FBE84A50B57485F7968
How I tie a stronger Prussik knot_saddlehunter_IDS-pt2NPL27.com-NPL.pdf	3E40E66C7E044DEE2EF7D90C00A5758ABD25C0CBA32F90327D2AF724DB915279B976C21310CEE5BDCEE61D42460E36AF3676B524F7FD4E70C8F6C3F56485287C
Paracord _ Page 2 _	DD713331C521790EB4B8F5BD877D3C40F8FCDCF9ACE1EDA

saddlehunter_IDS_pt2NPL28.com-NPL.pdf	FD981A712B80B92E97C1049A32889167B01747E22BD2D13AE09F5737E542DF06C75421A68BE3CF50C
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Taut-line Hitch_Knot Animation_Knots 3D_IDSpt2_NPL30-NPL.pdf	E56686276DF3151026DE6E07F57AE2AA96EEF6414A3E78E4D1EBE670CACC474BFFFCF8E842F8B47F7C1C1DCC168D8792E9B42EE43AB5114D6DC282A16364EA8B
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WO_2018051068_A1-FOR.pdf	7936F37ED7ADC8816FBB14E6FCC0DB91E0C447AA8C8426D2C7EF16817404C85F41EFBEF37452082F6C037EFC4B53F91F02B1B8E5FB1ADABEA777CF0D175E05F5
WO_2018111624_A1-FOR.pdf	544A00E0000F3D78896FBEC2A87955E9AC05CAD9CC02ED0514FCAF2EBD4A28B601AA9D4810435C8F29702CFA1EB88A416D029BF0051AB3193126503FCDC0435F
2024_12_03 DE 036 First Amended Complaint.pdf	5EA1C62A13EA9B5598EBBBE1D692602C0B75D2DF81E23B4D7F66F8B73A58B8549A6F3830B89BB5117B20BA78888072D0A00E97372A77A258FE0737F8B756BCE4
IPR Petition_signed.pdf	1F1F7F2C9BF15BA677F26B87CF8010ABF2F30A5468D1FFDE2732E551003358DB4104623EAC1B7B43EAF78C51AF613D6F34D1AA541620302C3F00992D5D1291A9
305774-401012-IDS Written Assertion under 37 CFR 198 - sb0008c.pdf	096A9CA6C07A2E89BA6CE9C2583AB923246E5E79495E60B333B25167F5506DE706AA77F733D92CE1D83A0A2355CCC0C39501A3326BEFF8FDDD661B1A79BB78BF
305774-401012-2025-10-02-Tethrd_IDS_2_sg.pdf	59E0019A6A1070932A33669744ECD5430527DB0FB6B9B188207990012700C105F4D4707D077C6428459151763067D8566682C26D8CC27BBA39DB79B489D664BF

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

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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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Doc Code: IDS.SIZEFEE
Document Description: Assertion of whether IDS Size Fee Due

PTO/SB/08C (01-25)
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INFORMATION DISCLOSURE STATEMENT SIZE FEE – WRITTEN ASSERTION UNDER 37 CFR 1.98

Complete if Known

Application or Patent No.:	First Named Inventor:	Art Unit:
19/331,004	Walter Ernest Power, II	
Filing Date:	**Attorney Docket Number:**	**Examiner:**
September 17, 2025	305774-401012	

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):

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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.

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

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

☐ * Total of _____ forms are submitted.

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Ex. 1149
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(Not to be Submitted to the USPTO)

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(Not for submission under 37 CFR 1.99)

Application Number	19331004
Filing Date	2025-09-17
First Named Inventor	Walter Ernest Power, II
Art Unit	
Examiner Name	
Attorney Docket Number	305774-401012

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (**Not for submission under 37 CFR 1.99)**		
	Application Number	19331004
	Filing Date	2025-09-17
	First Named Inventor	Walter Ernest Power, II
	Art Unit	
	Examiner Name	
	Attorney Docket Number	305774-401012

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	Application Number	19331004
	Filing Date	2025-09-17
	First Named Inventor	Walter Ernest Power, II
	Art Unit	
	Examiner Name	
	Attorney Docket Number	305774-401012

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	Art Unit	
	Examiner Name	
	Attorney Docket Number	305774-401012

CERTIFICATION STATEMENT

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

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

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☐ See attached certification statement.

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

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

Signature	/Adam J. Thompson/	Date (YYYY-MM-DD)	2025-10-02
Name/Print	Adam J. Thompson	Registration Number	72831

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APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
19/331,004	**10/02/2025 03:51:10 PM Z ET**	**305774-401012**

Title of Invention

BRIDGE ROPE ASSEMBLY

Application Information

APPLICATION TYPE	Utility - Reissue	PATENT #	-
CONFIRMATION #	8375	FILED BY	Sandy Barthelus Gellineau
PATENT CENTER #	72559970	FILING DATE	09/17/2025
CUSTOMER #	24728	FIRST NAMED INVENTOR	Walter Ernest POWER II
CORRESPONDENCE ADDRESS	-	AUTHORIZED BY	Anna Baker

Documents

TOTAL DOCUMENTS: 52

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
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ArboristSite - Biners and rope bridge_npl2-NPL.pdf	6	Non Patent Literature	2439 KB
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HammockForums - Why does one taper while splicing_npl9-NPL.pdf	4C0F5020449D4EAD89037CA9DFC66437EE3DBE0DE2D16567422AED3BE0AEFFFC75D7740A1056FB06B0467B16C9AFE204279B0A8EF77F3695EE677604F63FB734
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SaddleHunter - Adjustable	003CE0E29600DCF25921510A6083A314CF111AC29499E325A

amsteel bridge for sit drag - how to_npl11-NPL.pdf	863620F9974898ECC63CD07BB9B57ABCD56C7338063D302F4FB4536FF8090C19AD2B0A7958EF122
SaddleHunter - Adjustable bridge_1_npl_12-NPL.pdf	0AD5BE05E04E7598343BD43996FA085DA1B5690FA94AABC866E8CDD4D99995C646D9A9167CD2CE564E20F77C5589572EA2D6D6732A9BBA72CEB3A9A4C0A8ADE7
SaddleHunter - Adjustable bridge_2_npl13-NPL.pdf	48CD796C6B98D2B43B45A847E239E7BBEB041C09F6C710A46A549A9C2657FA13236B6FF5F03F4FEC5B55ACE6EC002BF96BE8FA318EF978F5E708D5211123DFD2
SaddleHunter - Adjustable bridge_3_NPL14-NPL.pdf	61E27BA17E8F895C398199CD0BC22B00A3614D6FCF3A82CBBB3615C6293E2CD72C1E4A9FC740C51503D7F8ED25A308D98308956489A1C2A0199C0034281D1887
SaddleHunter - Amsteel_1_NPL15-NPL.pdf	4A8F4C0A4266F947F1BED37503E86D2141CB09A1D0206F4B221B24E8C84C65FABE5BC4CEFA9500381C3F416082AC7629BD2C332DCB0F1FFCA8933949B7A47028
SaddleHunter - Amsteel - 2npl16-NPL.pdf	0E1FEFE95B5CB3564749191568756D0290CEDB17DE40FFAF35BBDD59EDF8C390BFD809A0DDD4D7F55AFC39E2308181BD66D4ACD60F0A871F293FEA2D448B3677
SaddleHunter - Amsteel blue vs amsteel_NPL_17-NPL.pdf	FDB5EFFF9CE1DFD222259CFADF9AA0E9A91714BD5A0253FB1C3C18997FCBD822C864B9DFE52EA3DB2B2D2E61E30308074F103C9F3D0E28AD4E0E641BA30598E6
SaddleHunter - Amsteel bridge question_NPL18-NPL.pdf	94FD012D3931CE683EBB2B5D9F4941DF3371933204EE6854B8C0461B9594C4CF6DE27953210DF7B469800029537BAA43D187F716E2242B2B473042071C0145DF
SaddleHunter - Amsteel Prussic_NPL19-NPL.pdf	E885A6C3294631CF326FF440C1379FE585943ADFE85E5A0B02229A15441FD546F0DF717298A157C67DA8FA557E8D0FF206E34ED2E5A0FFE1880EECBD184F368A
SaddleHunter - Amsteel questions_NPL20-NPL.pdf	F95DC9C2451BB5ECDDF0998A9F82CE8FBF4E6DF08840F243B72E780AE7C62B1074B89427698BA46F99B05D4511031E05301B97411E5F0B0F4F3E8726B2C887DD
SaddleHunter - Before I become a cutter_npl21-NPL.pdf	BAABBB1AE1615A401BE2358981DDEF26B1F07F623470404517CE57A09694FF1B7AFF3A7616A8ACB36DF632AD1BB211D225C9FDE4C5D5F65389038AF617FF0F88
SaddleHunter - Bridge length_npl22-NPL.pdf	5AE3023E725A79CFF671557178C34363109EC5A526A93B2704060F22405876906491EAEED2CE7F2F2BC6748084823C4344BD3463C874C02DBC35C518A71180AE
SaddleHunter - DIY Utilibridge_1_NPL23-NPL.pdf	29425F1BC3F54815E1AFBF3A7C03C6988C8A33157B4392E5B547D0FD3129044CD062F36FE57DF205938EA9A0138C0B5EE58136C1E546051C1310E502F04DACCB
SaddleHunter - DIY Utilibridge_2_NPL24-NPL.pdf	7FAF74B2BD5B00C53B265702C0743C8BBF0EFEE04358B03FB1E55C2CB9184CA9416D47F842EB7282C5A317DF2DD22C7A9C44BDCA5A9FFD68C7ECF6B92D029B47

SaddleHunter - DIY utillibridge_NPL25-NPL.pdf	A2838BB0C5C84AEDDF29E30DD5906437DE5C87826AB7184D A797A930BA7A000A5DE6A2DDDEA24F12C9B367B10E0CBC9 C044BB183E760E98004AC7D7994817D8B
SaddleHunter - Finished my sitdrag and harness_NPL26-NPL.pdf	321F576A3C6A86A591BDF80457D889DF9A439B4F46287B7DB AFEA48EB069815B4DB394EF01CCFD33F0D281C68CA17F816 AE2FF4E537BC088CA4B8EBFA2448FC0
SaddleHunter - Fixed vs Whoopie bridge_NPL27-NPL.pdf	2FDF61F06C5099E1E49F01B49B804E2D340505362614186A78 D606A8B94AF14BA6A308B342A98FAC821BA71BC49A93E34D FEA4B0CB3F8479F0A992A6310AABD3
SaddleHunter - H2 Triad Bridge_NPL28-NPL.pdf	6B1D6E94578567B941E5D07D160E9D641751D2EAB67F01679 F642BCD47119D1A8F09457571CE842C558AB3834DAC7A2BA 74F66A2997713A19737306DDA0E90AC
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SaddleHunter - Mantis Bridge Mods_NPL31-NPL.pdf	BD53FBC870A4913969C0DA0F3C507A255A53C604B9B9F7C34 00F122AB51D914CEC26AF1409B9A50D8B54400A8648F7E826 4E3C516B6CCAA03367844D158B1249
SaddleHunter - Mantis fixed bridge concerns_NPL32-NPL.pdf	4FEC10BFEBFD821C139E5A5E5DC9C1D26A31D8E1F6D54986 703D5F12D2ADF542E9BA78FD26C2D4AE3EB18EB473B0E6D5 92A6DDE0C38F37A78BCF4C63FC1BA46C
SaddleHunter - None lock stitched bridge_npl33-NPL.pdf	773E0FC1EBA93B6EFB5503EF6330B55E9904D8B8DED6E821 6D32DAF7FCE246CF009256A7146003AF2874757FF6B22BB89 4E320228C255E0C072832F3B989AED3
SaddleHunter - Official Tethrd Mantis_Review Thread_NPL34-NPL.pdf	6623302E37809B39CED69CDFC4EFDBA12C2B51FE95B5F162 0CB742A25D145C69FB91DFBF17F2EF59F2621405635F764C4 879B511E521B23B7033B806BE079F85
SaddleHunter - Replacing the bridge carabiner_NPL35-NPL.pdf	08865DF0250956411B0522C502DF96A54F4919B143A9A939C6 1038EAC7EEFDFB8E9F6B26D79619FAB39E565A459A458C237 DCB21DDCABAD4DA0258A360A38F1E
SaddleHunter - Saddleplooza_NPL36-NPL.pdf	420CC75A1E786E690215CEED15E2DE42281BE64A26FC5F0C AECDB0FA156F9A38576D6384112CACED2C213522921E4ADC B6D8A63EB9EF7759C6BA22D4397B51DF
SaddleHunter - sealing amsteel ends_NPL37-NPL.pdf	7A32AB31A4436F8FC28B3A2F9B62021726A0596331066E78C5 EB12D1FB5D1A5E7AC3C037076FF1A68A3B47643449BF200F5 8A2B04A3C4E29A151807EF485DD99
SaddleHunter - shifting_npl38-NPL.pdf	1EADF72F3CA976FCE880FA33662BB2F1084BC80CF74E95CB 631BFF8B1F1CCDFF74EAE907D1D019BA30E0B2B1472ADB20

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SaddleHunter - Sitdrag loop question_NPL39-NPL.pdf	49C0ECE63535251B2CCE1FD86B9BDC42437D0CA3F1D0F688D03990C929C38437C6C47F9D4F211CD33990F06470D42DCD12CCFB38AECF48F3BE84CFAC0C024146
SaddleHunter - Slummin it in a Kestrel_NPL40-NPL.pdf	03FF82718F6CD35208FC21267661AA4BF0E4E85F48328955BA28DAF406390C88A62F06A3883B9CC9FF8E6C9BFB8413BB202FD0D45041A86ECC0B3D6192B372C9
SaddleHunter - Smallest diameter on tether rope_NPL41-NPL.pdf	99D51D5FA30EF33B548D7ED47C19A981A8579D781FF8B835EBE9447B302D0518449CE44BCD21D1CEC259BB1AED036772A35FDAF0AB0150666621972FE7C4A168
SaddleHunter - Spliced Amsteel_NPL42-NPL.pdf	5C3566D403A80E04FB32AA159B17593EEFD066135F449DBB9A2422B92F939800A8E90E66C66EA0687405F3E031D88362A77193E31C8C8586DB686E7DD5F52FEC
SaddleHunter - Splicing rope 1_NPL43-NPL.pdf	92F1FAA9C3679CE390A2AE0BCE1C027E9DBD6D1914E37C40FB79AB5B72C2C5E99E7E0B85B2A26B052215FB7624C8B7A75B90185089F5DC13652D5C4C31046899
SaddleHunter - Splicing rope 2_NPL44-NPL.pdf	40FF453245B41A81F7483A58F27CE2696C8220C73BFE0A7F6F276A9DC30803D3D199D2682B99F867017CF6375A3724E1C3E95B1515916003361FC87D77F61CFA
SaddleHunter - Splicing rope 3_NPL45-NPL.pdf	C36034FB77119923590127A55BDA2A85672FFE2D8845C1690CBDF660DF53AD468EFE8F85DBADF58DEE61C73EF646393E327739ADAB1C18EB8D543B6472237CD4
SaddleHunter - Splicing rope 4_npl46-NPL.pdf	3E9EEAA7DBB71A8155859ECCD3D7337AAD34D023124862F7906969C6A920A2BEB37359B81A7C54C6591A8C4B12889A8DF77FDD034CCFF54B3E7B520B2F5AB9E9
SaddleHunter - Splicing rope 5_NPL47-NPL.pdf	95773A307084117637892D977B6E3967975DE7F22C8AE977197FACB617C624E11827259D335589F26BDB2A83311C9632A7487B1A2E3B6C848FF7E2D02017A295
SaddleHunter - Tether and Bridge Length_NPL48-NPL.pdf	DB577EC4D2074010A3BCE1860B9B9D2BBA93ED826D46DCDA92DA999D0D9D67A306395A8571E47CB338A07C56DFF0744333F2749B6D00778072257E6165879335
SaddleHunter - Tethrd Mantis dimensions_NPL49-NPL.pdf	7ED53F8CFEA851FE9288A3A4B481A9FFB2601A91C059E5C6B62145ED9FF041E065E733CBAC05A2F2C0725B4E3970393561EA21DEA5EE8C726488A189573C3580
SaddleHunter - Tethrd Phantoms Bridge Knot-NPL50-NPL.pdf	AE7795DEE87E64F55BE79DCE245F2BE3EA65A96D27C3B337EF2BC27C3E01B95655352D7E46A7443B1772850405BEBD47F3A5E6D58EF9D6970E3C3D4029E284E7
305774-401012-IDS Written Assertion under 37 CFR 198 - sb0008c.pdf	096A9CA6C07A2E89BA6CE9C2583AB923246E5E79495E60B333B25167F5506DE706AA77F733D92CE1D83A0A2355CCC0C39501A3326BEFF8FDDD661B1A79BB78BF

305774-401012-2025-10-02-Tethrd_IDS_1.pdf

30E9BF02174D3ABF734C5B0A1A9FB60B2572E300DCD579723
3999B16F01A6F7868207ADA1F7A8C495D40DC3E5A7C97A803
25322E75E6099E2277C371DB1E128F

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APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
19/331,004	**10/02/2025 03:51:10 PM Z ET**	**305774-401012**

Title of Invention

BRIDGE ROPE ASSEMBLY

Application Information

APPLICATION TYPE	Utility - Reissue	PATENT #	-
CONFIRMATION #	8375	FILED BY	Sandy Barthelus Gellineau
PATENT CENTER #	72559970	AUTHORIZED BY	Anna Baker
CUSTOMER #	24728	FILING DATE	09/17/2025
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Walter Ernest POWER II

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
DA / 606905	**E202502F52496316**	**Sandy Barthelus Gellineau**

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
606905	**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)**

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Document Description: Power of Attorney

PTO/AIA/82B (07-13)
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Application Number	Filing Date

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OR

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

Tethrd LLC

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☐ 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 supplie[illegible] If of the applicant (e.g., where the applicant is a juristic entity).

Signature	Walter Ernest Power, II	Date (Optional)	
Name	Walter Ernest Power, II		
Title	CTO, Tethrd LLC		

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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REISSUE APPLICATION: CONSENT OF ASSIGNEE; STATEMENT OF NON-ASSIGNMENT	Docket Number (Optional) 305774-401012

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	Date Patent Issued
11,964,175	April 23, 2024

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	Date
/Adam J. Thompson/	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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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	305774-401012
	Application Number	
Title of Invention	BRIDGE ROPE ASSEMBLY	

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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

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	305774-401012
	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	38401	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	305774-401012	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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	305774-401012
	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	17867553	2022-07-18	11964175	2024-04-23
Prior Application Status	Patented			Remove	
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
17867553	Continuation 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. Add

Foreign Priority Information:

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	305774-401012
	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).

Remove

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

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

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

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	305774-401012
	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	305774-401012
	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 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	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. 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	305774-401012
	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.

Remove

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

Prefix	**Given Name**	Middle Name	**Family Name**	Suffix

Mailing Address Information For Assignee including Non-Applicant Assignee:

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

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

Signature:

Remove

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

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

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

Signature	/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. Add

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	305774-401012
	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.**

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 CooperationTreaty.

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.

PTO/AIA/06 (09-20)
Approved for use through 03/31/2026. OMB 0651-0033
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.

REISSUE APPLICATION DECLARATION BY THE ASSIGNEE	Docket Number (optional) 305774-401012

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	State	Country
Carver	MN	US

Mailing Address

2409 Pulaski Hwy

City	State	Zip	Country
Columbia	TN	38401	US

☑ Additional Inventors are named on separately numbered sheets attached hereto.

Patent Number 11,964,175	Patent Issue Date April 23, 2024

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.

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 0651-0033. Public burden for this form is estimated to average 46 minutes 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.**

Docusign Envelope ID: 0F1BB639-C6B8-4BB8-9764-260BA78D389C

PTO/AIA/06 (09-20)
Approved for use through 03/31/2026. OMB 0651-0033
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.

REISSUE APPLICATION DECLARATION BY THE ASSIGNEE	Docket Number (Optional) 305774-401012

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. Nos. 16/736,345 and 17/022,844. 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: 24728

OR

☐ Firm or Individual Name					
Address					
City		State		Zip	
Country					
Telephone		Email			

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.

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	

PTO/AIA/10 (06-12)
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 contains a valid OMB control number.

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	State	Country
Richmond Hill	GA	United States

Mailing Address: 2409 Pulaski Hwy

City	State	Zip	Country
Columbia	TN	34801	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	State	Country
Rolla	MO	United States

Mailing Address: 2409 Pulaski Hwy

City	State	Zip	Country
Columbia	TN	34801	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

Mailing Address

City	State	Zip	Country

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 21 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.** If filing this completed form by mail, send to: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Ex. 1149
IPR2025-01407, Crüzr v. Tethrd

Docusign Envelope ID: 0F1BB639-C6B8-4BB8-9764-260BA78D389C

Privacy Act Statement

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

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

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

Ex. 1149
IPR2025-01407, Crüzr v. Tethrd

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	Walter Ernest Power II		
Patent No.:	11,964,175		
Issue Date:	April 23, 2024	Attorney Docket:	305774-401012
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. 11,964,175 ("175 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 July 18, 2022, Patent Owner filed the application for the 175 Patent (e.g., App. No. 17/867,553, "553 Application"), and Patent Owner intended for the 553 Application to properly claim priority to the earlier-filed App. Nos. 16/736,345, 17/022,844, and 17/231,717 (respectively, "345 Application," "844 Application," and "717 Application") such that the 553 Application was entitled to a January 7, 2020 priority date (e.g., the filing data for 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, the 844 Application, and the 717 Application by claiming priority to all three applications in the Application Data Sheet for the 553 Application. While Kaufhold Dix properly claimed priority to the 717 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 553 Application. Kaufhold Dix were unaware that the claim of priority to the 345 Application unintentionally omitted a claim to priority to the intervening 844 Application. Patent Owner intended to make a proper priority claim to the 345 Application and the 844 Application and was not aware of the improper priority claim at the time of filing the 553 Application. Kaufhold Dix did not discover the improper priority claim and did not correct the priority claim prior to the issuance of the 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 Sheet for the 553 Application. Patent Owner requested that Kaufhold Dix correct the priority claims for the 553 Application. Patent Owner contacted Adam J. Thompson (e.g., current counsel for Patent Owner) to correct the priority claim. Thus, **from July 18, 2022 (e.g., the filing date of the 553 Application) until the filing of the present reissue application, the entire delay to correct the priority for the 553 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 Boult Cummings LLP
Promenade Tower, Suite 2100
1230 Peachtree Street NE
Atlanta, GA 30309
Phone: 404-868-2100
Fax: 404-868-2010

UNITED STATES
PATENT AND TRADEMARK OFFICE

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

ELECTRONIC PAYMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
19/331,004	**09/17/2025 11:05:58 AM Z ET**	**305774-401012**

Title of Invention

BRIDGE ROPE ASSEMBLY

Application Information

APPLICATION TYPE	Utility - Reissue	PATENT #	11964175
CONFIRMATION #	8375	FILED BY	Sandy Barthelus Gellineau
PATENT CENTER #	72326957	AUTHORIZED BY	ADAM THOMPSON
CUSTOMER #	24728	FILING DATE	-
CORRESPONDENCE ADDRESS	-	FIRST NAMED INVENTOR	Walter Ernest Power, II

Payment Information

PAYMENT METHOD	PAYMENT TRANSACTION ID	PAYMENT AUTHORIZED BY
CARD / 1004	**E20259GB07505498**	**Sandy Barthelus Gellineau**

PRE-AUTHORIZED ACCOUNT	PRE-AUTHORIZED CATEGORY
606905	**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**

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.

PTO/AIA/50 (10-17)
Approved for use through 03/31/2026. OMB 0651-0033
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.

REISSUE PATENT APPLICATION TRANSMITTAL

Address to:

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

Attorney Docket No.	305774-401012
First Named Inventor	Walter Ernest Power, II
Original Patent Number	11964,175
Original Patent Issue Date (Month/Day/Year)	April 23, 2024
Priority Mail Express® Label No.	

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:** Petition to Accept an Unintentionally Delayed Claim of Priority and additional explanation of the circumstances surrounding the delay that establishes the entire delay was unintentional. Patent Owner has filed an assignment from the inventors to the Patent Owner concurrently with this reissue application.

☐ 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: 24728 **OR** ☐ Correspondence address below

Name					
Address					
City		State		Zip Code	
Country		Telephone			
Email					

Signature	/Adam J. Thompson/	Date	September 17, 2025
Name (Print/Type)	Adam J. Thompson	Registration No.	72831

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 0651-0033. Public burden for this form is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. If filing this completed form by mail, send to: **Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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

Privacy Act Statement

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

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

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

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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #	RECEIPT DATE / TIME	ATTORNEY DOCKET #
19/331,004	**09/17/2025 11:05:58 AM Z ET**	**305774-401012**

Title of Invention

BRIDGE ROPE ASSEMBLY

Application Information

APPLICATION TYPE	Utility - Reissue	PATENT #	11964175
CONFIRMATION #	8375	FILED BY	Sandy Barthelus Gellineau
PATENT CENTER #	72326957	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)
305774-401012-Reissue Application DataSheet final-ADS.pdf	9	Application Data Sheet	2180 KB
305774-GENERAL POA executed.pdf	1	Power of Attorney	226 KB
US PATENT NO 11964175 FINAL.pdf	15	Miscellaneous Incoming Letter	9237 KB
305774-401012 175 -2025-09-17- Patent Unintentional Delay Petition FINAL.pdf	3	Miscellaneous Incoming Letter	189 KB
305774-401012 - -2025-09-17- Statement Under 37 CFR 373c final.pdf	3	Assignee showing of ownership per 37 CFR 3.73	117 KB
305774-401012-2025-09-17-	4	Reissue Oath or Declaration	854 KB

Declaration by Assignee_EXECUTED.pdf			
305774-401012 175-2025-09-17- Patent Preliminary Amendment FINAL.pdf	3	Preliminary Amendment	183 KB
305774-401012- 2025-09-17-Reissue Fee Transmittal sb0056.pdf	2	Fee Worksheet (SB06)	307 KB
305774-401012-2025-09-17-Reissue Transmittal - aia0050.pdf	2	Transmittal Reissue Application	504 KB
305774-401011_401012-Assignment fully executed.pdf	8	Assignee showing of ownership per 37 CFR 3.73	182 KB
305774-401012-2025-09-17-PETITION TO ACCEPT UNINTENTIONAL DELAYED DOMESTIC PRIORITY CLAIM.pdf	6	Miscellaneous Incoming Letter	328 KB
305774-401012-2025-09-17-REISSUE CONSENT OF ASSIGNEE executed final aia0053.pdf	2	Consent of Assignee accompanying the declaration	356 KB
305774-401012-2025-09-17-corrected ADS markedup FINALV.pdf	9	Miscellaneous Incoming Letter	2852 KB

Digest

DOCUMENT	MESSAGE DIGEST(SHA-512)
305774-401012-Reissue Application DataSheet final-ADS.pdf	F1E1C0634D9E19B8FA2CFE5F410A9E04928EDC9B38D58EDD3738FA1A06E17DFAA0D411DAC542488827683472197FE1F34E5F4B58FD4E945B082E138402E8C313
305774-GENERAL POA executed.pdf	3C4A36E681EA87F11AD8B5890223E2E7C9271CA7ADBF10EF8B1595DC328F73CA9934AE6DD77DCF658324590146E343CB1161C63C0AB8222C2739CC41F9D540C5
US PATENT NO 11964175 FINAL.pdf	3B9F1DCD1160C0D03B80D8A44A3DBD0F34989D0A41530AA51E5FD772A1C9680B9E9B26A1C71F0DB8615217FF6C3A67496728BF27A69942EC58641DEC7EAFD957
305774-401012 175 -2025-09-	76E62B2D48A1A5494401C543CD855368B097D6C9649E26771

17- Patent Unintentional Delay Petition FINAL.pdf	E22477B82AA7AE694ED99E039B53CA1610EC089349F0C965D59BA0A03DC0B2863C3EC03B0BAD841
305774-401012 - -2025-09-17-Statement Under 37 CFR 373c final.pdf	E9EF9D5D00C2E4912E2267FB91942630F1F8B79CA870117D8A03E9D772D624590F4480DE4E2F583873305CEC496BD12229B93A321A1979529337AE68C65A61C5
305774-401012-2025-09-17-Declaration by Assignee_EXECUTED.pdf	B0FE8C84D72567FC9777175A48884AB8B2D32C1306C0352953E2B0BBA2B3E3272441E932B87F0066DA79A20DBA27925F71D4B494856C03561654789603B7D6D7
305774-401012 175-2025-09-17- Patent Preliminary Amendment FINAL.pdf	97AC373680F9BFBA576734A3CF1AE4598D09A86111AE84BA171180D2C4798B82ECB430C3D08BD8BB66DDDA5C02B963087DD0F268878FB29AC374A562AE3B4F4E
305774-401012- 2025-09-17-Reissue Fee Transmittal sb0056.pdf	6428EFF1CAD2DB91BEF657DED479BD779BD3CC3EB73166F61A73DD2F6771A159D44F6EB50AB5A3B20AC9473BF702055451F30A96F07C73D3DB4CD5F7399190F4
305774-401012-2025-09-17-Reissue Transmittal - aia0050.pdf	2754A2D79AABC745D95B7AE07B2837579D567D760445E3B790AEC458F7AC44EBA0BE608E16C9B3E41411BE86506D9DDF0FDBA498419F7084878415C8CDE9E228
305774-401011_401012-Assignment fully executed.pdf	12EAE3D97194454507A1CA75074EA644E1A76F0887AD242BCD93CF71B9E71C8BFAC10A7647BE60B6AB6DD1342ACA9FFA209F715EE8958C0BF50268E2E35A9C61
305774-401012-2025-09-17-PETITION TO ACCEPT UNINTENTIONAL DELAYED DOMESTIC PRIORITY CLAIM.pdf	18C1EC041163AF7B92DBA9214AE03DB3CA0C4B5D500A5CD0825CD43EF98C1505BC25FB13513F29E44F92940B0A167B7B4DB2559432DCAC40238F9408406A0964
305774-401012-2025-09-17-REISSUE CONSENT OF ASSIGNEE executed final aia0053.pdf	04055312A6B39EAE052F02990FBF234DCD3E5BC70485CA2B2C0389EB365018AE1F8B6FA84189FD351CBA564259AF029C095BB36CDBF60B90894BE61F14155D81
305774-401012-2025-09-17-corrected ADS markedup FINALV.pdf	B416DA3246BDA7697F8F1DC477C61B637CDAF6F331DB498D7FF4C6701B98E4BDC5F4515886EED3220B51DF1FE9786F51917EA0A30D87D66281B361846B24A32B

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	TETH143
	Application Number	17/867,553
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	State/Province	Country of Residence
Jordan	MN	US

Mailing Address of Inventor:

Address 1	904 Ridgecrest Drive
Address 2	

City	State/Province	Postal Code	Country i
Carver	MN	55315	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	State/Province	Country of Residence
Richmond Hill	GA	US

Mailing Address of Inventor:

Address 1	50 Sunbury Drive
Address 2	

City	State/Province	Postal Code	Country i
Richmond Hill	GA	31324	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

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	TETH143
	Application Number	17/867,553
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 i	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	44088		
Email Address		Add Email	Remove Email

Application Information:

Title of the Invention	Bridge Rope Assembly		
Attorney Docket Number	TETH143	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)		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.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	TETH143
	Application Number	17/867,553
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)
17867553	Continuation of	17231717	2021-04-15
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	TETH143
	Application Number	17/867,553
Title of Invention	Bridge Rope Assembly	

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

Remove

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

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

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.
NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76	Attorney Docket Number	TETH143
	Application Number	17/867,553
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.

PTO/AIA/14 (11-15)
Approved for use through 04/30/2017. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	TETH143
	Application Number	17/867,553
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	TETH143
	Application Number	17/867,553
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	904 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)	2022-07-13
First Name	~~Sean A.~~ Adam J.	Last Name	~~Kaufhold~~ Thompson
Registration Number	~~46820~~ 72831		

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

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U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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Application Data Sheet 37 CFR 1.76	Attorney Docket Number	TETH143
	Application Number	17/867,553
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 CooperationTreaty.

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.

PTO/SB/56 (01-25)
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REISSUE APPLICATION FEE TRANSMITTAL FORM

Docket Number (Optional)
305774-401012

Application as Filed – Part 1

	(1) Claims in Patent	(2) Claims Filed in Reissue Application	(3) Number Extra	Micro Entity Rate ($)	Micro Entity Fee ($)	Small Entity Rate ($)	Small Entity Fee ($)	Undiscounted Rate ($)	Undiscounted Fee ($)
Total Claims (37 CFR 1.16(i))	(A)	(B)	* =	x =		x =		x =	
Ind. Claims (37 CFR 1.16(h))	(C)	(D)	** =	x =		x =		x =	
Application Size Fee (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $450 ($180 for small entity, $90 for micro entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
		Filing Fee (37 CFR 1.16(e))					$140.00		
		Search Fee (37 CFR 1.16(n))					$308.00		
		Examination Fee (37 CFR 1.16(r))					$1020.00		
		Total Filing Fee					$1468.00		

Application as Amended – Part 2

	(1) Claims Remaining After Amendment	(2) Highest Number Previously Paid For	(3) Extra Claims Present	Micro Entity Rate ($)	Micro Entity Fee ($)	Small Entity Rate ($)	Small Entity Fee ($)	Undiscounted Rate ($)	Undiscounted Fee ($)
Total Claims (37 CFR 1.16(i))	*** -	****	=	x =		x =		x =	
Ind. Claims (37 CFR 1.16(h))	*** -	*****	=	x =		x =		x =	
Application Size Fee (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is $450 ($180 for small entity, $90 for micro entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
			Total Additional Fee						

* Enter (B) – 20, or enter "0" if (B) is less than 20.
** Enter (D) – minus 3, or enter "0" if (D) is less than 3.
*** After any cancellation of claims.
**** If the "Highest Number of Total Claims Previously Paid For" is less than 20, enter "20" in this space.
***** If the "Highest Number of Independent Claims Previously Paid For" is less than 3, enter "3" in this space.

☒ Applicant asserts small entity status. See 37 CFR 1.27.

☐ Applicant certifies micro entity status. See 37 CFR 1.29.
Form PTO/SB/15A or 8 or equivalent must either be enclosed or have been submitted previously.

☒ The Director is hereby authorized to charge any additional fees under 37 CFR 1.16 or 1.17 which may be required, or credit any overpayment to Deposit Account No. 60-69 05.

☐ A check in the amount of $ _____ to cover the filing/additional fee is enclosed.

☒ Payment made via USPTO patent electronic filing system.

☐ Payment by credit card. Form PTO-2038 is attached. WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

/Adam J. Thompson/
Signature

September 17, 2025
Date

Adam J. Thompson
Typed or Printed Name

72831
Registration Number, if applicable

404.868.2742
Telephone Number

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 0651-0033. Public burden for this form is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection. Send comments regarding this burden estimate or any other aspect of this information collection, including suggestions for reducing this burden to the Chief Administrative Officer, United States Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450 or email InformationCollection@uspto.gov. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS.** If filing this completed form by mail, send to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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

Privacy Act Statement

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

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

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

Ex. 1149
IPR2025-01407, Crüzr v. Tethrd

PTO/AIA/96 (08-12)
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STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Tethrd LLC

Application No./Patent No.: 11964175 Filed/Issue Date: April 23, 2024

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.

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

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

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

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

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

4. From: _____ To: _____

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

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

5. From: _____ To: _____

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

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

6. From: _____ To: _____

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

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

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

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

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

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

/Adam J. Thompson/	September 17, 2025
Signature	Date
Adam J. Thompson	72831
Printed or Typed Name	Title or Registration Number

Privacy Act Statement

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

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

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

Ex. 1149
IPR2025-01407, Crüzr v. Tethrd

Docusign Envelope ID: 0F1BB639-C6B8-4BB8-9764-260BA78D389C

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.

Docusign Envelope ID: 0F1BB639-C6B8-4BB8-9764-260BA78D389C

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

Docusign Envelope ID: 0F1BB639-C6B8-4BB8-9764-260BA78D389C

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.]

Docusign Envelope ID: 0F1BB639-C6B8-4BB8-9764-260BA78D389C

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

9/1 5/2025 |2: 26 PM CDT, 2025.

Walter Ernest Power, II

Walter Ernest POWER, II

Docusign Envelope ID: 0F1BB639-C6B8-4BB8-9764-260BA78D389C

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

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

Gregory Alan GODFREY

Docusign Envelope ID: 0F1BB639-C6B8-4BB8-9764-260BA78D389C

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

Docusign Envelope ID: 0F1BB639-C6B8-4BB8-9764-260BA78D389C

ASSIGNEE:

9/15/2025 | 2:26 PM CDT

_____ day of _____ , 2025

Walter Ernest Power, II

Name: Walter Ernest Power, II

Title: CTO

Tethrd LLC

Docusign Envelope ID: 0F1BB639-C6B8-4BB8-9764-260BA78D389C

EXHIBIT A

Patents

TITLE	APPLICATION NO./ PATENT NO. JURISDICTION	FILING DATE ISSUE DATE	STATUS
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

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

First named inventor: Walter Ernest Power, II

Application No.: 17/867,553 Art Unit: 8375

Filed: 07/18/2022 Examiner: Amy Jo. Sterling

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.

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

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

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/	September 17, 2025
Signature*	Date
Adam J. Thompson	72,831
Typed or Printed Name	Registration Number, if applicable
Bradley Arant Boult Cummings LLP Promenade Tower	404.868.2100
Address	Telephone Number
1230 Peachtree Street NE Suite 2100 Atlanta, Georgia 30309	
Address	

* 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.

Privacy Act Statement

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

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

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

Ex. 1149
IPR2025-01407, Crüzr v. Tethrd

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor:	Walter Ernest Power II		
Patent No.:	11,964,175		
Issue Date:	April 23, 2024	Attorney Docket:	305774-401012
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. 11,964,175. 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 continuation and I claim the benefit of U.S. application Ser. No. 16/736,345, now abandoned, filed on Jan. 7, 2020 and U.S. application Ser. No.17/231,717 filed on Apr. 15, 2021.~~ is a reissue application of U.S. Patent No. 11,964,175, which is a continuation application, and claims the benefit of and priority to, U.S. Application No. 17/231,717 filed on April 15, 2021, entitled Bridge Rope Assembly, which is a continuation application of, and claims the benefit of and priority to, U.S. Application No. 17/022,844, filed Sep. 16, 2020, and entitled Bridge Rope Assembly, which is a continuation application of, and claims the benefit of and priority to, U.S. Application No. 16/736,345, filed on January 7, 2020, and entitled Bridge Rope Assembly, the entireties of each 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 Boult Cummings LLP
Promenade Tower, Suite 2100
1230 Peachtree Street NE
Atlanta, GA 30309
Phone: 404-868-2100
Fax: 404-868-2010

US011964175B2

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

(10) **Patent No.: US 11,964,175 B2**
(45) **Date of Patent: *Apr. 23, 2024**

(54) **BRIDGE ROPE ASSEMBLY**

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

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

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 87 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **17/867,553**

(22) Filed: **Jul. 18, 2022**

(65) **Prior Publication Data**

US 2022/0347501 A1 Nov. 3, 2022

Related U.S. Application Data

(63) Continuation of application No. 17/231,717, filed on Apr. 15, 2021, now Pat. No. 11,504,556, which is a continuation of application No. 16/736,345, filed on Jan. 7, 2020, now abandoned.

(51) **Int. Cl.**
F16M 11/00 (2006.01)
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 35/0075; A62B 35/0037; A62B 35/0012; A01M 31/02
See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

8,061,479	B2	11/2011	Harris, Jr.	
8,292,028	B2	10/2012	Wise	
8,356,691	B2	1/2013	Griffith	
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9,003,579	B1 *	4/2015	Pinholster, Jr.	A45F 3/22 5/120
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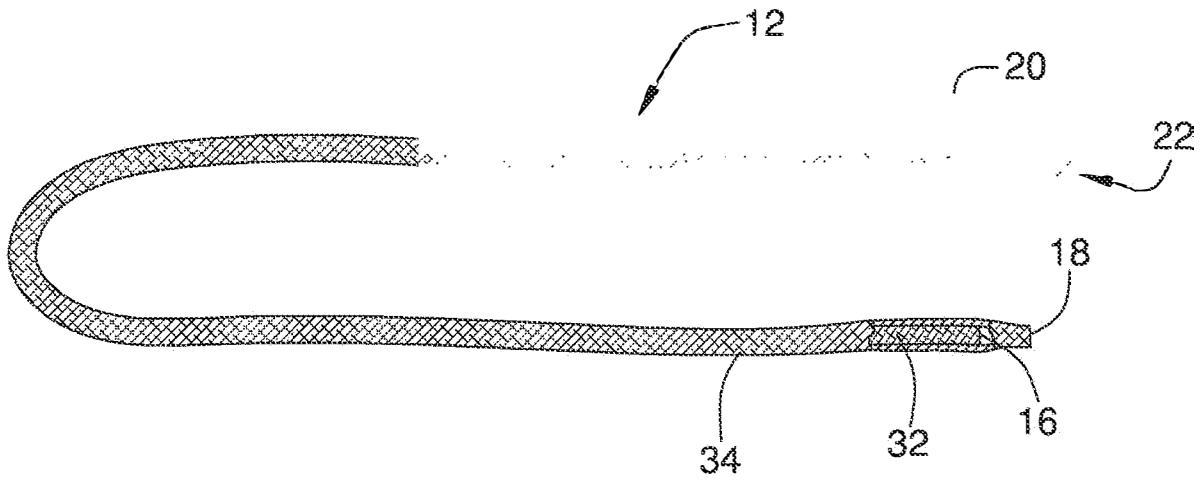
WO WO2018111624 6/2018

Primary Examiner — Amy J. Sterling

(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.

14 Claims, 9 Drawing Sheets



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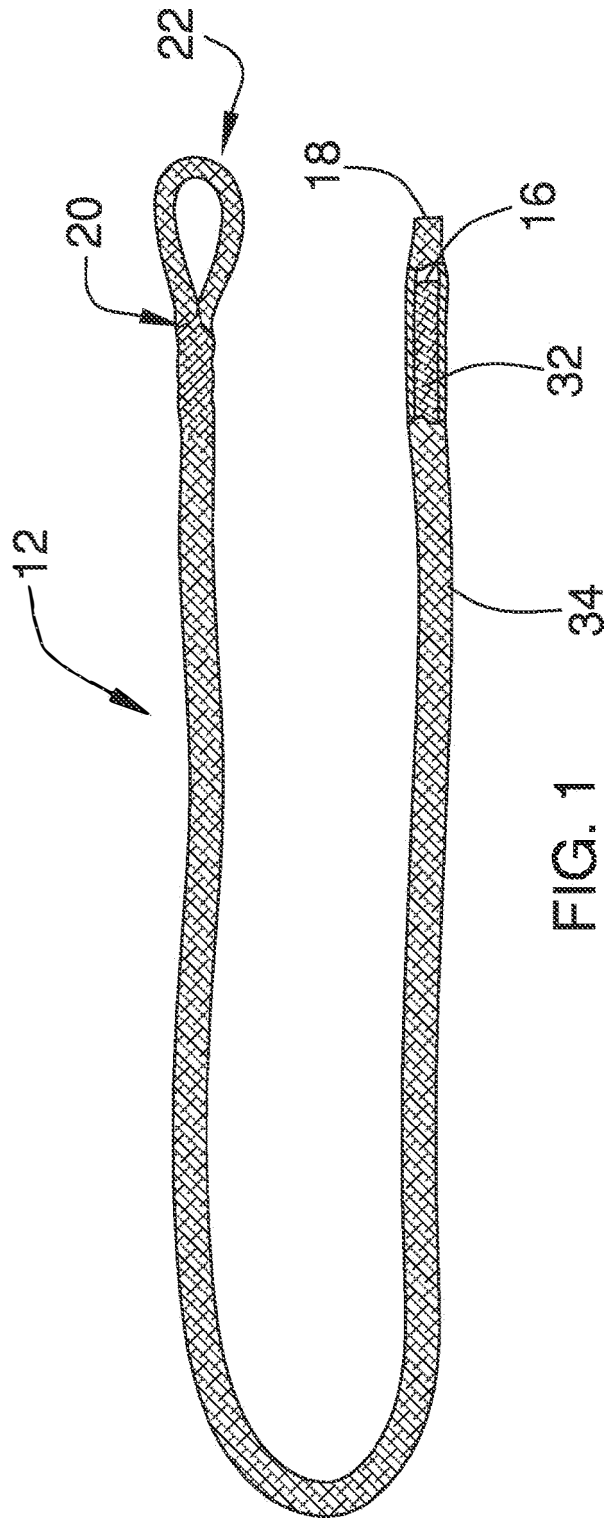


FIG. 1

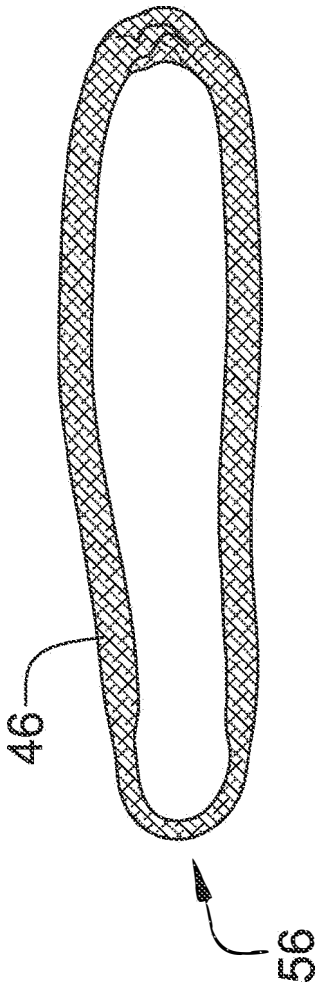


FIG. 2

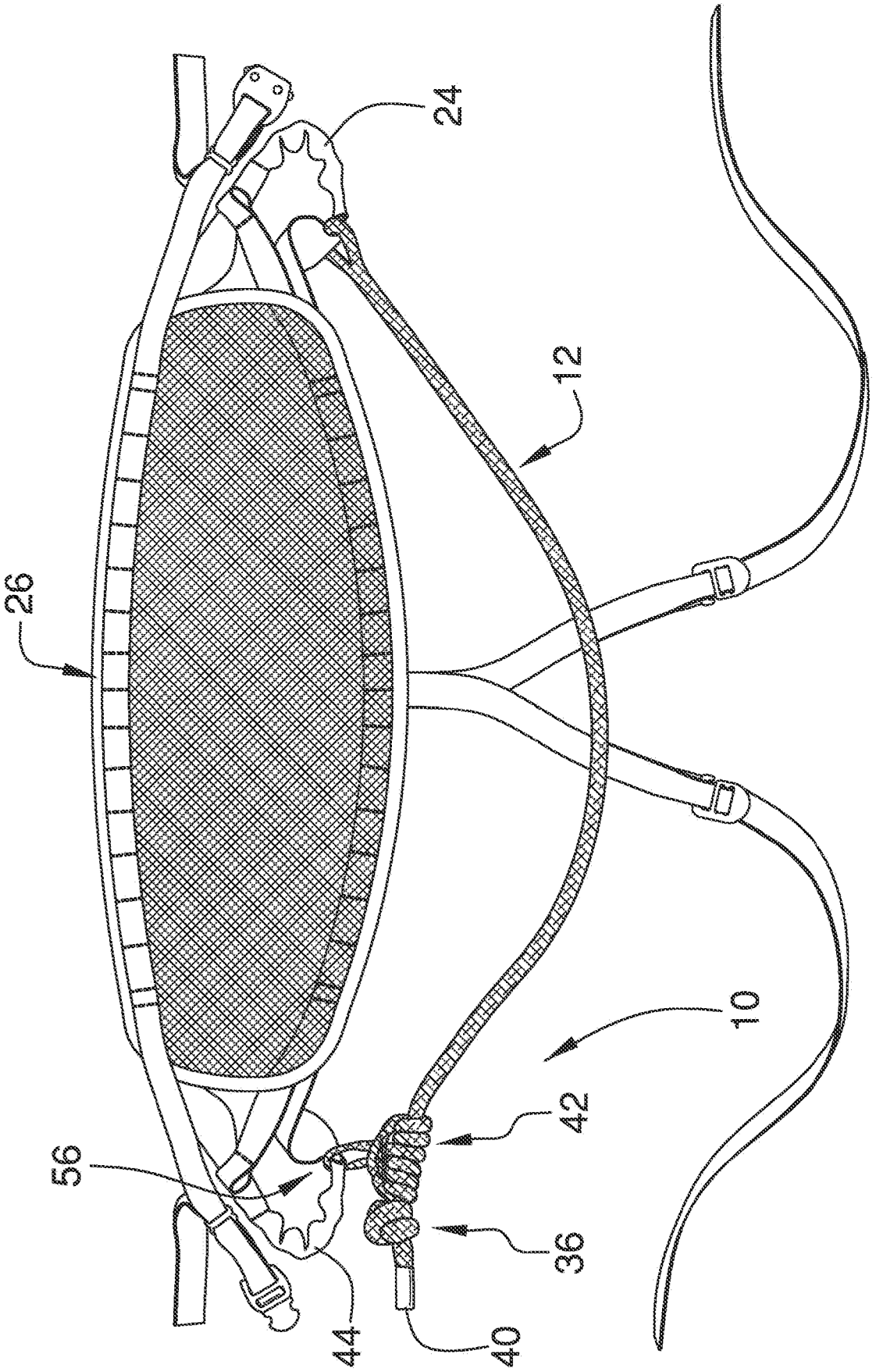


FIG. 3

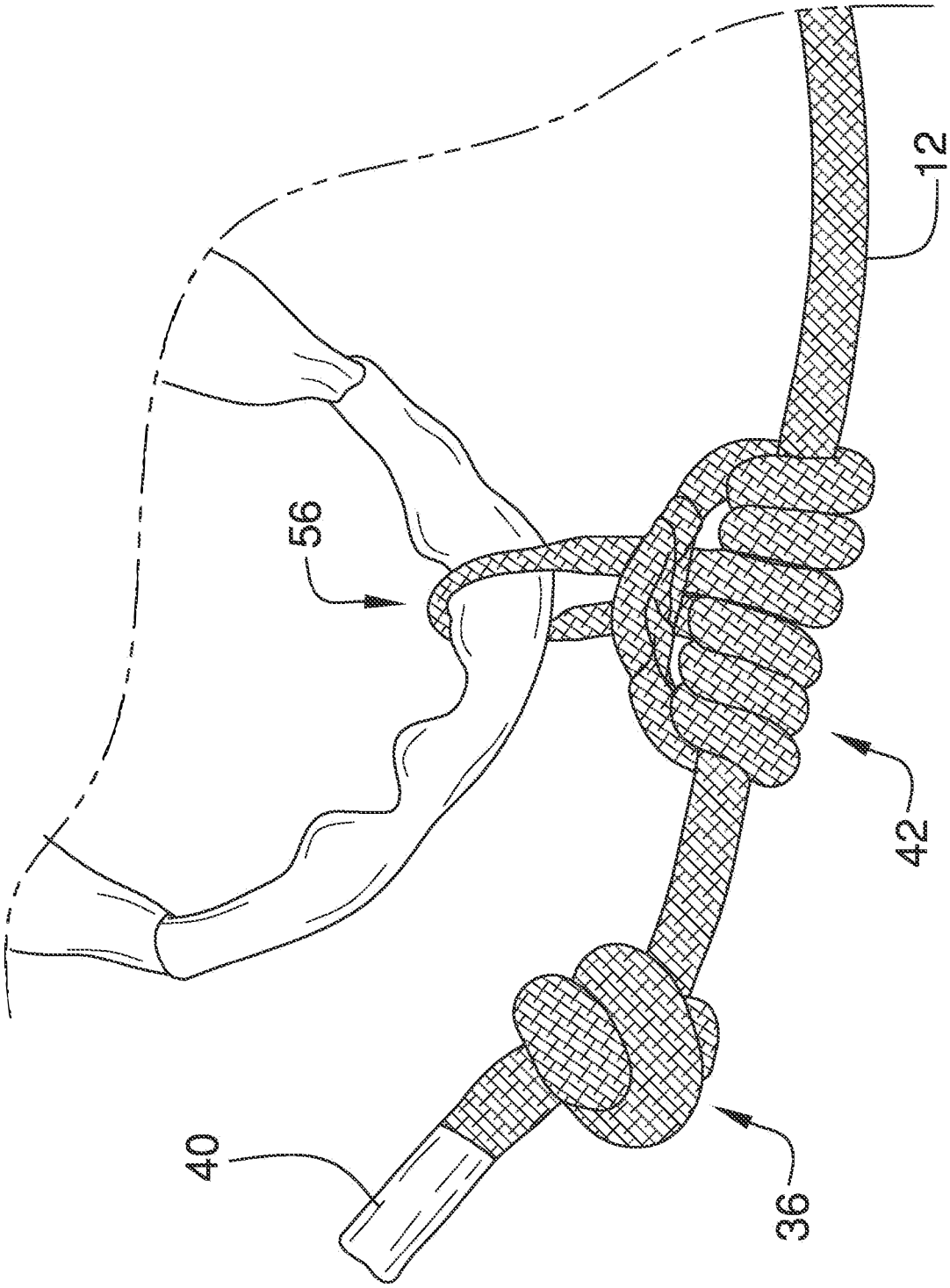


FIG. 4

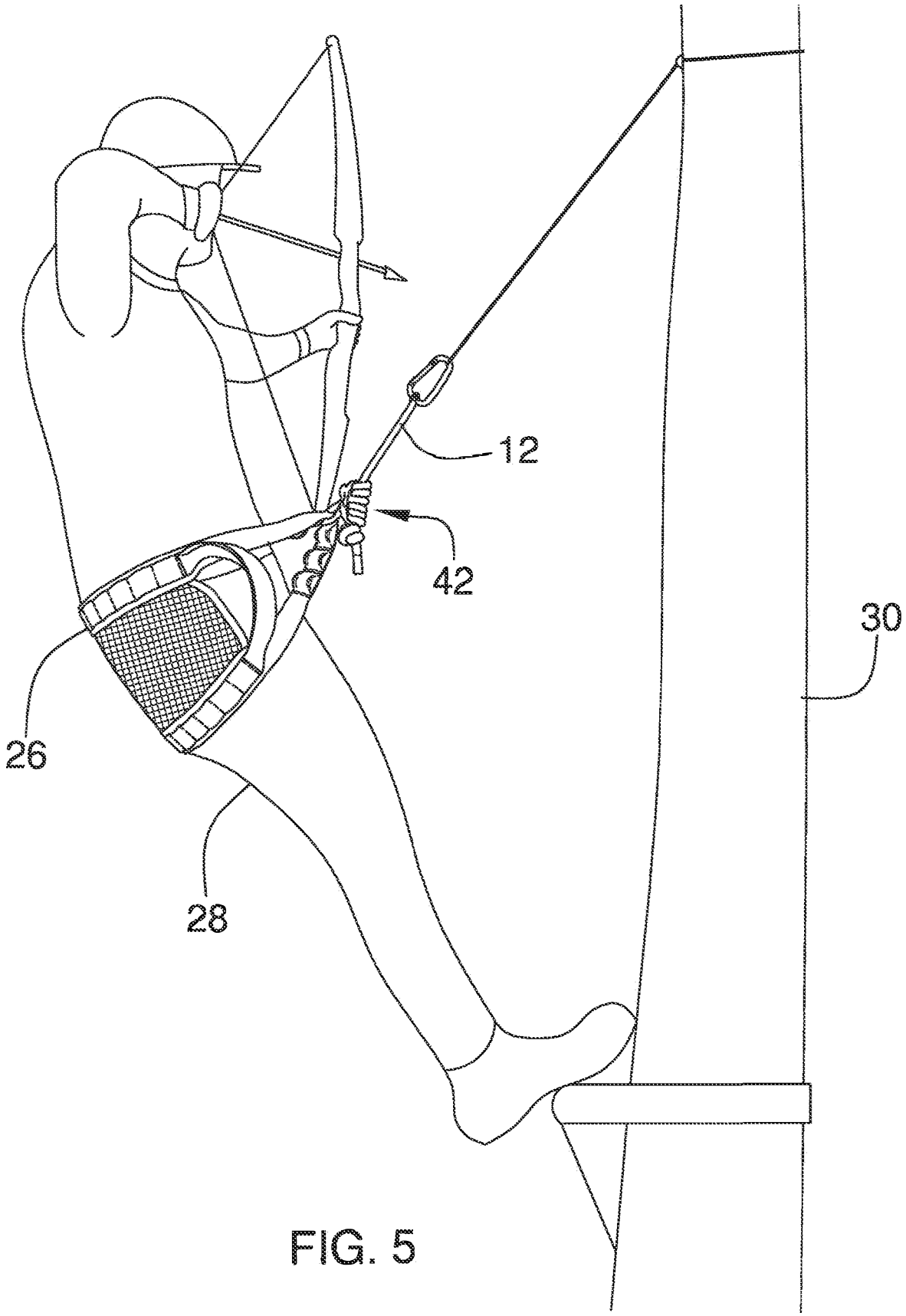


FIG. 5

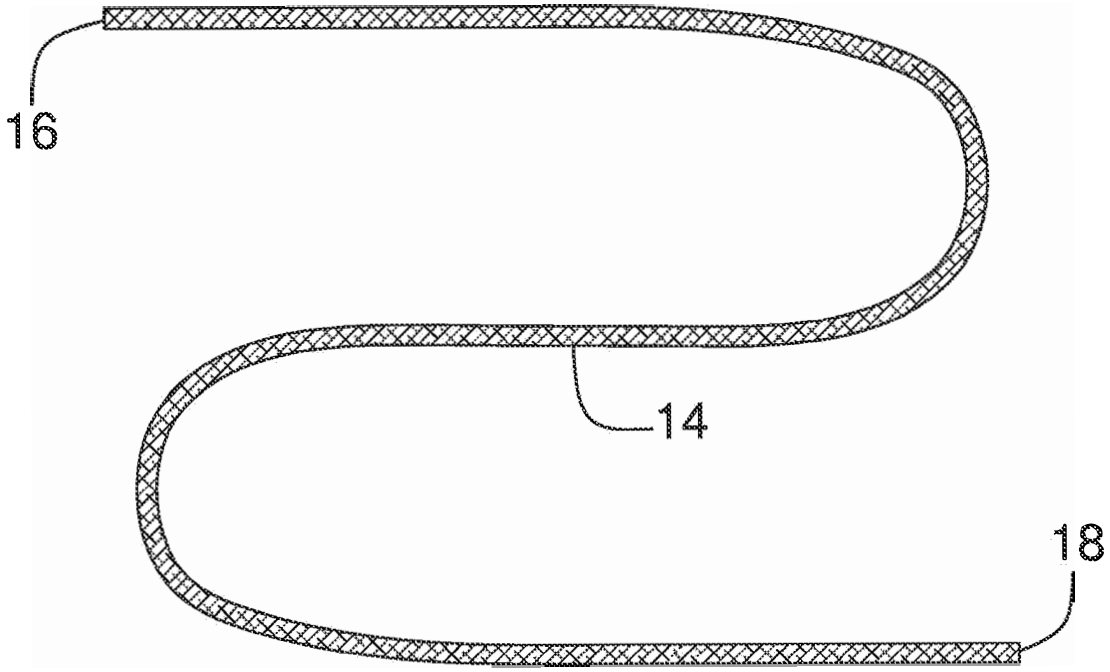


FIG. 6

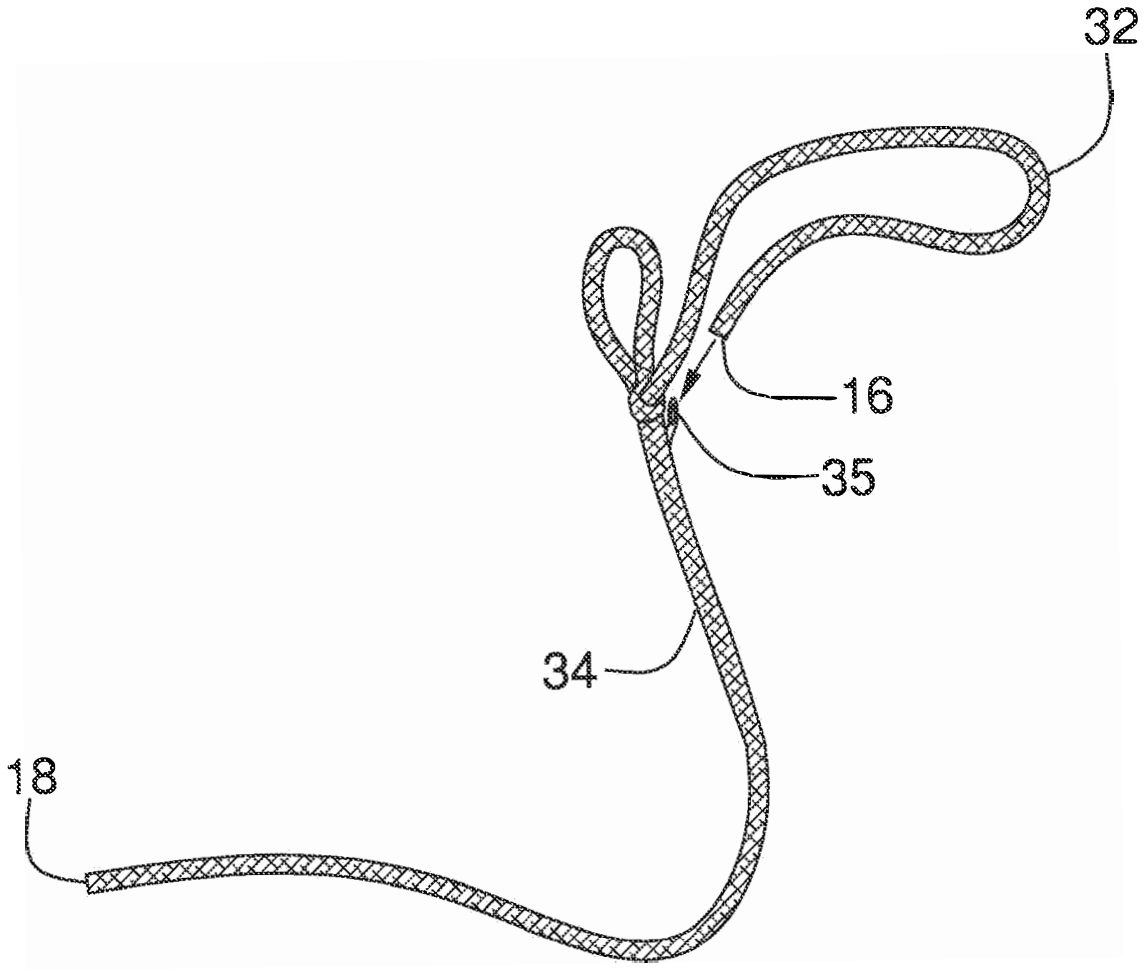


FIG. 7

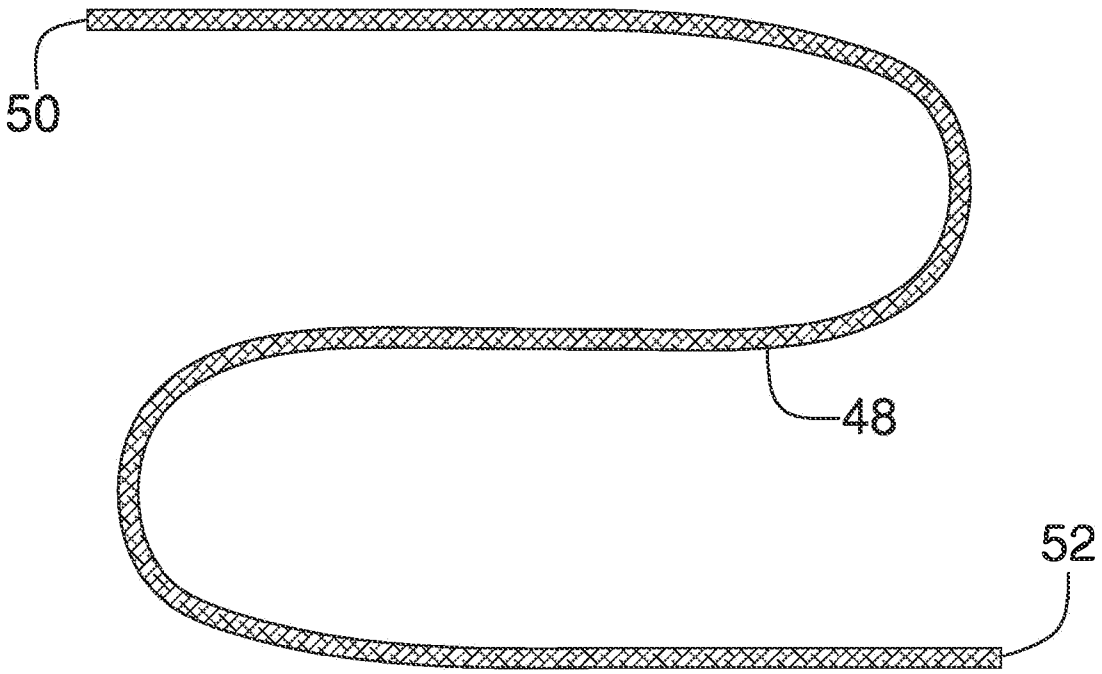


FIG. 8

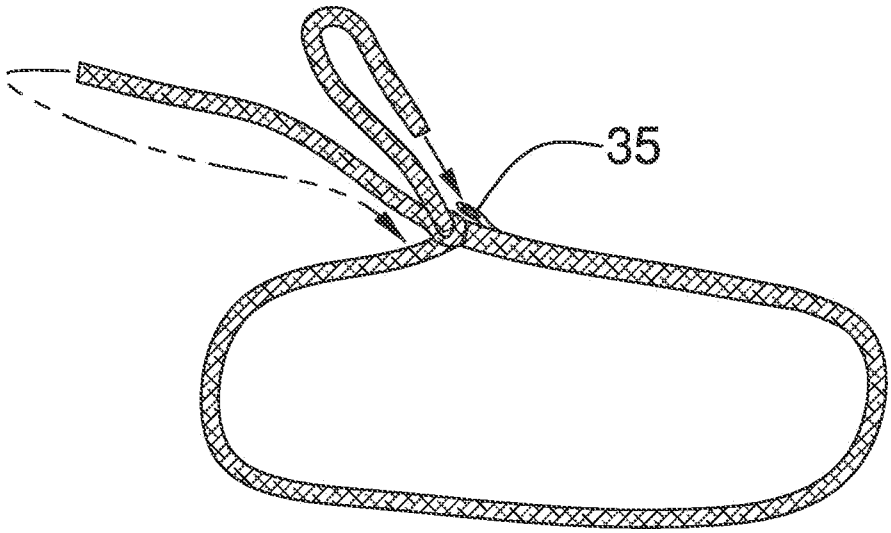


FIG. 9

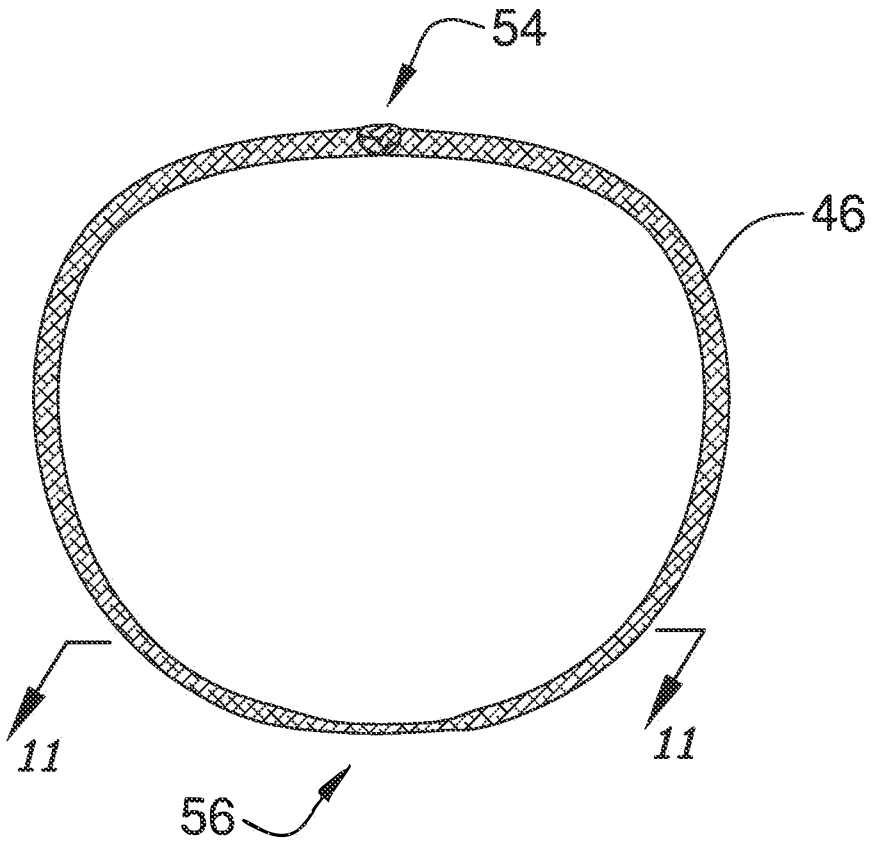


FIG. 10

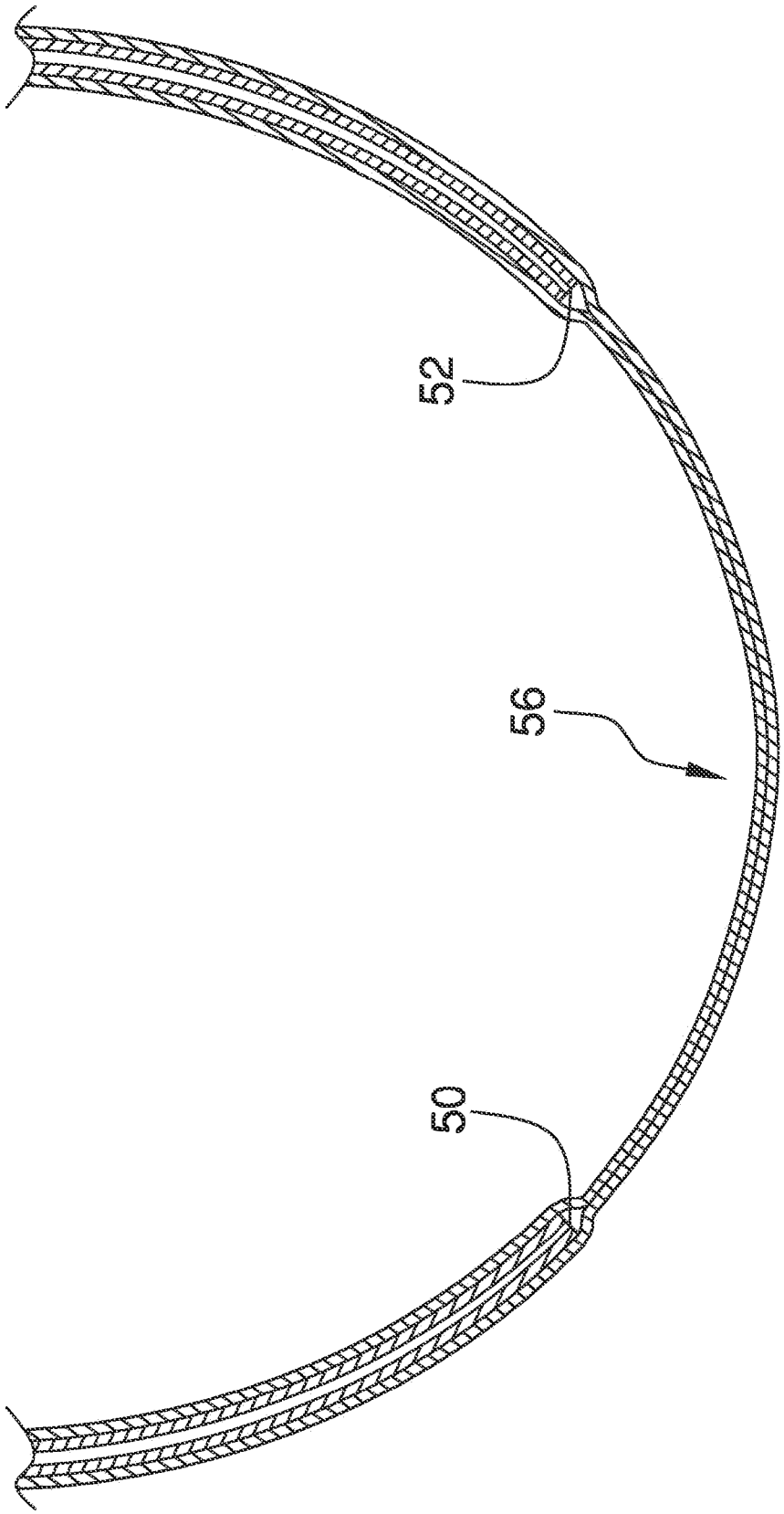


FIG. 11

BRIDGE ROPE ASSEMBLY

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation and I claim the benefit of U.S. application Ser. No. 16/736,345, now abandoned, filed on Jan. 7, 2020 and U.S. application Ser. No. 17/231,717 filed on Apr. 15, 2021.

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 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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IPR2025-01407, Crüzr v. Tethrd

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 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 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, WA 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

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 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 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.

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; and

a friction hitch being positioned on the min body between the second end and the eye loop, the friction hitch being configured to engage the second bridge loop, the friction hitch comprising a closed loop.

2. The bridge rope assembly according to claim **1**, wherein the rope has a length from the first end to the second end between 72.0 inches and 126.0 inches.

3. The bridge rope assembly according to claim **1**, wherein a distance of the eye loop to the second end is between 24.0 inches and 40.0 inches.

4. The bridge rope assembly according to claim **3**, wherein the main body includes a stop knot in the second portion adjacent to the second end.

5. The bridge rope assembly according to claim **4**, further including 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.

6. The bridge rope assembly according to claim **4**, wherein the closed loop comprises a single rope being formed into the closed loop.

7. The bridge rope assembly according to claim **6**, wherein the single rope of the closed loop has a length between 40.0 inches and 60.0 inches.

8. The bridge rope assembly according to claim **7**, wherein the closed loop has a total circumference of between 20.0 inches and 30.0 inches.

9. The bridge rope assembly according to claim **1**, wherein the closed loop has a total circumference of between 20.0 inches and 30.0 inches.

10. The bridge rope assembly according to claim **9**, wherein the main body and the friction hitch each are comprised of UMWPE.

11. The bridge rope assembly according to claim **1**, wherein the main body is comprised of UHMWPE.

12. The bridge rope assembly according to claim **9**, wherein a distance of the eye loop to the second end is between 24.0 inches and 40.0 inches.

13. The bridge rope assembly according to claim **12**, wherein the closed loop has a total circumference of between 20.0 inches and 30.0 inches.

14. The bridge rope assembly according to claim **12**, wherein a distance between the first and second ends is less than 2.0 inches.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE

CERTIFICATE OF CORRECTION

PATENT NO. : 11,964,175 B2
APPLICATION NO. : 17/867553
DATED : April 23, 2024
INVENTOR(S) : Walter Ernest Power, II, Gregory Alan Godfrey and Carl Eugene Kossuth, III

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In the Claims

Column 6, Line 20, in Claim 1:
min
Should be changed to:
--main--.

Signed and Sealed this
Twelfth Day of November, 2024

Katherine Kelly Vidal

Katherine Kelly Vidal
Director of the United States Patent and Trademark Office

Ex. 1149
IPR2025-01407, Crüzr v. Tethrd