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# TURBOPATENT<sup>®</sup>

SmartShell<sup>™</sup>

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## SmartShell Package Contents

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventors: Patrick Donohue

Confirmation No.: 7190

Applicant: Patrick

Art Unit: 3617

Application No.: 14/680,027

Examiner: KOTTER, KIP T

Filing Date: April 06, 2015

Atty. Docket: FSP0661-C1

Title: **Terrain Resilient Wheel Maintaining a Uniform Elevation**

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

***Mail Stop Amendment***

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

Commissioner:

In reply to the Non Final Office Action dated June 13, 2016, Applicant submits the following Amendment and Remarks.

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

Remarks and Arguments begin on page 4 of this paper.

It is not believed that extensions of time are required beyond those that may otherwise be provided for in documents accompanying this paper. However, if additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. §1.136(a), and any additional fees required to continue prosecution or appeal of this application (including issue fee, fees for net addition of claims or forwarding to appeal) are hereby authorized to be charged to our Deposit Account No. 50-1691.

### *Amendments to the Claims*

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

Claim 1. (previously presented) A wheel, comprising:

a central hub;

a flexible rim;

a spoke assembly extending from the central hub to the flexible rim, the spoke assembly comprising a plurality of spokes, each spoke of the plurality of spokes having a spoke length defined to be a distance along the spoke of the plurality of spokes from a point of contact of the spoke of the plurality of spokes on the flexible rim to a point of origin of the spoke of the plurality of spokes at the central hub; and

the spoke assembly configured such that contact of the flexible rim with an object as the wheel moves forward changes the spoke assembly as follows: (a) a first spoke length of a first spoke of the plurality of spokes decreases, (b) a plurality of second spoke lengths increase for a plurality of second spokes of the plurality of spokes, each of the plurality of second spokes having a point of contact on the flexible rim directly adjacent to a point of contact of the first spoke of the plurality of spokes on the flexible rim, and (c) at least one third spoke length decreases for the at least one third spoke different than the first spoke and having a point of contact on the flexible rim directly adjacent to the plurality of second spokes.

Claim 2. (previously presented) The wheel of claim 1, further comprising:

the central hub comprising a plurality of hub components symmetrically arranged around a central axle; and

the spoke assembly configured to move between the plurality of hub components and the central axle.

Claims 3-5. (canceled)

Claim 6. (previously presented) The wheel of claim 1, further comprising:

the plurality of spokes joined end-to-end into a closed periphery.

Claims 7-8. (canceled)

Claim 9. (previously presented) The wheel of claim 2, further comprising:

each of the spoke of the plurality of spokes comprising teeth to mate with a gear adjoining to the central axle.

Claims 10-20. (canceled)

### ***Remarks***

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 1–2, 6, and 9 are pending in the application, with claim 1 being the independent claim. Claims 3–5, 7–8, and 10–20 are sought to be canceled without prejudice to or disclaimer of the subject matter therein. These changes are believed to introduce no new matter, and their entry is respectfully requested.

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

#### ***Objection to the Specification***

The disclosure is objected to because of alleged informalities

#### ***Objections to the Drawings***

The drawings are objected to as allegedly failing to comply with 37 CFR 1.84(p)(4) because reference character “102” has been used to designate both axle mounts and what appears to be “mounting holes” in Fig. 1.

The drawings are further objected to as allegedly failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 108 (See paragraph [0013]) and 310 (See paragraph [0017]).

The drawings are further objected to as allegedly failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) in Fig. 6 not mentioned in the description: 602.

The drawings are further objected to under 37 CFR 1.83(a).

***Rejections under 35 U.S.C. § 112***

Claims 1, 2, 6 and 9 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as allegedly failing to comply with the written description requirement. The Applicant now respectfully traverses this rejection.

Claims 1, 2, 6 and 9 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention. The Applicant now respectfully traverses this rejection.

***Rejections under 35 U.S.C. § 102***

Claims 1 and 6 are rejected under pre-AIA 35 U.S.C. 102(b) as being allegedly anticipated by Kugelmann, Sr. (US 5,492,390; hereinafter “Kugelmann”). The Applicant now respectfully traverses this rejection.



Claims 1, 2, 6 and 9 are rejected under pre-AIA 35 U.S.C. 102(b) as being allegedly anticipated by Tolkachev (US 2004/0051373 A1). The Applicant now respectfully traverses this rejection.

***Other Matters***

Claim 9 is objected to because of an informality.

***Conclusion***

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

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

Respectfully submitted on December 5, 2016,

FSP L.L.C.

/Charles Mirho/  
Charles Mirho  
Attorney for Applicant  
Registration No. 4-1199

Client Summary Letter (Word)

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# FIRM LETTERHEAD

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Re: U.S. Patent Application No. 14/680,027

Filing Date: 04/06/2015

Title: Terrain Resilient Wheel Maintaining a Uniform Elevation

Inventors: Patrick Donohue

Our Reference: FSP0661-cl

Action Required - Office Action Response Due 9/12/2016

Dear \_\_\_\_\_,

Attached for your review is a copy of the Non-Final Office Action received in connection with the above referenced patent application, along with a copy of the published application, current pending claims, and applied prior art. The initial deadline to file a response in the Patent Office is 9/12/2016, but this deadline can be extended retroactively to 12/12/2016 with extension of time fees.

The Examiner has indicated that:

The disclosure is objected to because of informalities;

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "102" has been used to designate both axle mounts and what appears to be "mounting holes" in Fig. 1;

The drawings are further objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 108 (See paragraph [0013]) and 310 (See paragraph [0017]);

The drawings are further objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) in Fig. 6 not mentioned in the description: 602;

The drawings are further objected to under 37 CFR 1.83(a);

Claim 9 is objected to because of the following informality: The phrase "each of the spoke of the plurality of spokes" should be replaced with – each spoke of the plurality of spokes –for clarity;

Claims 1-2, 6, and 9 are rejected under 35 U.S.C. § 112(a) or 35 U.S.C. § 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement;

Claims 1-2, 6, and 9 are rejected under 35 U.S.C. § 112(b) or 35 U.S.C. § 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention;

Claims 1-2, 6, and 9 are rejected under pre-AIA 35 U.S.C. § 102(b) as being anticipated by Tolkachev (US 2004/0051373 A1).

\_\_\_\_\_ will review the office action and prior art, and provide you with a recommendation prior to filing a response. In the meantime, please do not hesitate to contact us if you have any questions.

Best regards,

Office Action Report (PDF)

# Office Action Report

Report generated: Jan 5th 2017

Title Terrain resilient wheel maintaining a uniform elevation

Application no. 14/680,027

Application filed April 6th 2015

First inventor Patrick Donohue

Docket no. FSP0661-cl

Publication no. N/A

Art Unit 3617

## PROSECUTION STATISTICS: KOTTER, KIP

Applications approved after



## EXAMINATION STATISTICS

Examiner	Art Unit	Class
KOTTER, KIP	3617	152

## CITED ART

Kugelmann US 5,492,390 A  
 Tolkachev US 2004/0051373 A1

## DISPOSITION

Dispositions in 24 Months	153	2396	806
Allowance rate	78%	84%	79%
Pendency (months)	35	28	41
Disposition expectation	Mar 2018	Aug 2017	Sep 2018

## PROSECUTION FORECAST

Office actions to grant	1.9	1.3	2.2
Granted with one RCE	17%	12%	20%
Granted with two+ RCEs	8%	3%	11%
Granted with an interview	37%	27%	24%
Granted with an appeal	6%	3%	5%
Percent on appeal	0%	1%	2%

Converted (OCR) Office Action (PDF)





UNITED STATES PATENT AND TRADEMARK OFFICE

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United States Patent and Trademark Office  
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/680,027	04/06/2015	Patrick Donohue	FSP0661-c1	7190
29586	7590	06/13/2016	EXAMINER	
FSP LLC 431 H Street Crescent City, CA 95531			KOTTER, KIP T	
			ART UNIT	PAPER NUMBER
			3617	
			NOTIFICATION DATE	DELIVERY MODE
			06/13/2016	ELECTRONIC

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

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

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

charles.a.mirho@fspllc.com  
PATENTS@FSPLLC.COM  
jane@fspllc.com

## Office Action Summary

**Application No.**

14/680,027

**Applicant(s)**

DONOHUE, PATRICK

**Examiner**

KIP T. KOTTER

**Art Unit**

3617

**AIA (First Inventor to File)**

Status

No

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 14 June 2015.
- A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_\_.
- 2a)  This action is **FINAL**. 2b)  This action is non-final.
- 3)  An election was made by the applicant in response to a restriction requirement set forth during the interview on \_\_\_\_\_; the restriction requirement and election have been incorporated into this action.
- 4)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims\***

- 5)  Claim(s) 1,2,6 and 9 is/are pending in the application.
- 5a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 6)  Claim(s) \_\_\_\_\_ is/are allowed.
- 7)  Claim(s) 1,2,6 and 9 is/are rejected.
- 8)  Claim(s) \_\_\_\_\_ is/are objected to.
- 9)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

\* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see [http://www.uspto.gov/patents/init\\_events/pph/index.jsp](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).

**Application Papers**

- 10)  The specification is objected to by the Examiner.
- 11)  The drawing(s) filed on 6 April 2015 is/are: a)  accepted or b)  objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

**Certified copies:**

- a)  All b)  Some\*\* c)  None of the:
1.  Certified copies of the priority documents have been received.
  2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date \_\_\_\_\_.
- 3)  Interview Summary (PTO-413) Paper No(s)/Mail Date. \_\_\_\_\_.
- 4)  Other: \_\_\_\_\_.

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The present application is being examined under the pre-AIA first to invent provisions.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to because of the following informalities:
  - The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “**102**” has been used to designate both axle mounts and what appears to be “mounting holes” in Fig. 1.
  - The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: **108** (*See* paragraph [0013]) and **310** (*See* paragraph [0017]).
  - The lead lines for reference characters should contact their corresponding structures in the drawings (note lead lines for two of the reference characters **202** in Fig. 2, the lead line for reference character **206** in Fig. 2, two lead lines for reference character **302** in Fig. 3, the lead line for reference character **406** in Fig. 4, the lead line for reference character **308** in Fig. 5, the lead line for reference character **102** in Fig. 6, the lead line for reference character **204** in Fig. 6, the lead line for reference character **302** in Fig. 6, lead lines for three of the reference characters **402** in Fig. 7, and the lead line for one of the reference characters **204** in Fig. 8). Also, gaps **212** and **214** in Fig. 2 should be indicated by a leader with a freestanding arrow directed to the corresponding gaps.
  - The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) in Fig. 6 not mentioned in the description: **602**.

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- The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following must be shown or the feature(s) canceled from the claim(s):
  - The at least one third spoke length decreases for the at least one third spoke different than the first spoke as set forth in claim 1.
  - The plurality of spokes joined end-to-end into a closed periphery as set forth in claim 6.
  - Each spoke of the plurality of spokes comprising teeth as set forth in claim 9.
- A reference character is needed to designate the “point of origin of the spoke” for a better understanding of the invention as it is unclear where this point of origin is located.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

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be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

*Specification*

2. The disclosure is objected to because of the following informalities:
  - The phrase “a axis mount 102” in paragraph [0015] should be changed to -- an axle mount 102 -- for grammatical clarity.
  - The phrase “(give example materials for cover 206)” in paragraph [0015] should be deleted.
  - The phrase “the axis mount 102” in paragraph [0015] should be replaced with -- the axle mount 102 -- for clarity.
  - The phrase “coupled the hub component 302” in paragraph [0017] should be replaced with -- coupled to the hub component 302 -- for grammatical clarity.
  - The phrase “coordination motion of the bands 402” in paragraph [0020] should be replaced with -- coordinating motion of the bands 402 -- for clarity.
  - The term “axle308” in paragraph [0021] should be replaced with -- axle 308 -- to correct an apparent typographical error.
  - The term “axis 208” in paragraph [0021] should be replaced with -- axle 208 -- for clarity.
  - Reference character **714** has been used to describe a “component” (paragraph [0019]) and an “outer circumference” (paragraphs [0030, 0032 and 0033]).

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- The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The specification does not describe a point of origin of the spoke at the central hub as set forth in claim 1 and each spoke of the plurality of spokes comprising teeth to mate with a gear adjoining to the central axle as set forth in claim 9.

Appropriate correction is required.

### ***Claim Objections***

3. Claim 9 is objected to because of the following informality: The phrase “each of the spoke of the plurality of spokes” should be replaced with -- each spoke of the plurality of spokes -- for clarity. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

(a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

5. The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 1, 2, 6 and 9 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains

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subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 1, there is no support in the original disclosure for the limitation “at least one third spoke length decreases for the at least one third spoke *different than the first spoke*” (emphasis added).

Regarding claim 6, there is no support in the original disclosure for the limitation “the plurality of spokes joined end-to-end into a closed periphery. While paragraph [0016] provides support for bands that can be joined at their ends into a closed periphery, it is clear from Applicant’s disclosure that the spokes represent different structures than the bands. For example, paragraph [0018] states that “each spoke from the hub 310 to the rim 106 comprises two bands pressed together” in describing the embodiment of Fig. 3. Inasmuch as the spokes are defined as the two bands pressed together, the spokes of the embodiment of Fig. 3 would not be joined “end-to-end”. With respect to the embodiment shown in Fig. 7, paragraph [0030] states “each end of a band **402** forms a spoke of the hub”. There is no indication from the disclosure that these ends are joined together “end-to-end”. With respect to the embodiment shown in Fig. 8, paragraph [0033] states “each spoke of the hub comprises a portion of a band 402 and a portion of a band 204”. There is no indication from the disclosure that these spokes are joined “end-to-end”.

7. The following is a quotation of 35 U.S.C. 112(b):
  - (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.

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8. The following is a quotation of 35 U.S.C. 112 (pre-AIA), second paragraph:  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
9. Claims 1, 2, 6 and 9 are rejected under 35 U.S.C. 112(b) or 35 U.S.C. 112 (pre-AIA), second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the inventor or a joint inventor, or for pre-AIA the applicant regards as the invention.

Regarding claim 1, the limitation “a point of origin of the spoke of the plurality of spokes at the central hub” renders the claim indefinite because it is unclear what would be considered the point of origin of the spokes at the hub for Applicant’s various embodiments.

***Claim Rejections - 35 USC § 102***

10. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.
11. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.



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12. Claims 1 and 6 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Kugelmann, Sr. (US 5,492,390; hereinafter “Kugelmann”).

Kugelmann discloses a wheel, comprising: a central hub **12**; a flexible rim **34**; a spoke assembly extending from the central hub to the flexible rim, the spoke assembly comprising a plurality of spokes **20, 22, 23, 26, 29** and **30**, each spoke of the plurality of spokes having a spoke length defined to be a distance along the spoke of the plurality of spokes from a point of contact of the spoke of the plurality of spokes on the flexible rim to a point of origin of the spoke of the plurality of spokes at the central hub as shown in at least Figs. 1-3; and the spoke assembly configured (*See* Fig. 2) such that contact of the flexible rim with an object (sand or mud as described in lines 14-16 of col. 5) as the wheel moves forward changes the spoke assembly as follows: a first spoke length of a first spoke **26** of the plurality of spokes decreases, a plurality of second spoke lengths increase for a plurality of second spokes **23, 29** of the plurality of spokes, each of the plurality of second spokes having a point of contact on the flexible rim directly adjacent to a point of contact of the first spoke of the plurality of spokes on the flexible rim as shown in Fig. 2, and at least one third spoke length decreases for the at least one third spoke **22, 30** different than the first spoke and having a point of contact on the flexible rim directly adjacent to the plurality of second spokes as described in lines 17-25 of col. 4, and wherein the plurality of spokes are considered to be joined end-to-end with the rim into a closed periphery as shown in Fig. 2.

13. Claims 1, 2, 6 and 9 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Tolkachev (US 2004/0051373 A1).

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Tolkachev discloses a wheel, comprising: a central hub **H**; a flexible rim **1**; a spoke assembly extending from the central hub to the flexible rim, the spoke assembly comprising a plurality of spokes **S**, each spoke of the plurality of spokes having a spoke length defined to be a distance along the spoke of the plurality of spokes from a point of contact of the spoke of the plurality of spokes on the flexible rim to a point of origin of the spoke of the plurality of spokes at the central hub as shown in Figs. 2-4; and the spoke assembly configured such that contact of the flexible rim with an object **Z** as the wheel moves forward changes the spoke assembly as follows: a first spoke length of a first spoke (unlabeled spoke radially aligned with the central axis of the wheel in Figs. 2 and 4) of the plurality of spokes decreases, a plurality of second spoke lengths increase for a plurality of second spokes (unlabeled spokes offset approximately 90° in both the clockwise and counterclockwise direction from the first spoke as shown in Figs. 3 and 4) of the plurality of spokes, each of the plurality of second spokes having a point of contact on the flexible rim directly adjacent to a point of contact of the first spoke of the plurality of spokes on the flexible rim as evident from Figs. 3 and 4, and at least one third spoke length decreases for the at least one third spoke (unlabeled spokes offset approximately 135° in both the clockwise and counterclockwise direction from the first spokes as shown in Figs. 3 and 4) different than the first spoke and having a point of contact on the flexible rim directly adjacent to the plurality of second spokes as evident from Figs. 3 and 4, further comprising: the central hub comprising a plurality of hub components **10, 20, 30, 40, 50, 60, 70, 80** symmetrically arranged around a central axle **5**; and the spoke assembly configured to move between the plurality of hub components and the central axle as evident from Figs. 1-4, further comprising: the plurality of spokes are considered to be joined end-to-end with the rim into a closed periphery as evident

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from Fig. 1, and further comprising: each spoke of the plurality of spokes comprising teeth (unlabeled gear surface of spokes shown in the embodiment of Fig. 9) to mate with a gear at C adjoining to the central axle 5 as described in paragraphs [0070] and [0071].

### *Conclusion*

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KIP T. KOTTER whose telephone number is (571)272-7953. The examiner can normally be reached on Mon. - Fri., 9:00 - 4:00pm est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Samuel J. Morano can be reached on (571)272-6684. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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

/KIP T KOTTER/  
Primary Examiner, Art Unit 3617

Converted (OCR) Previous Claims (Word)

AMENDMENTS TO THE CLAIMS

The listing of claims below will replace all prior versions and listings of claims in this application. Please amend the claims as follows.

Claim 1. (currently amended) A wheel, comprising:

a central hub;

a flexible rim;

a ~~drive band configuration~~ spoke assembly extending from the central hub to the flexible rim, the spoke assembly comprising a plurality of ~~flexible bands extending as spokes, each~~ spoke of the plurality of spokes having a spoke length defined to be a distance along the spoke of the plurality of spokes from a point of contact of the ~~central hub~~ spoke of the plurality of spokes on the flexible rim to a point of origin of ~~[[to]] the rim;~~ spoke of the plurality of spokes at the central hub; and

the ~~hub and band configuration~~ spoke assembly configured to cause such that contact of the flexible rim with an object as the wheel moves forward changes the spoke assembly as follows: (a) a first spoke length of a first spoke of the plurality of spokes decreases, (b) a plurality of second spoke lengths increase for a plurality of second spokes of the plurality of spokes, each of the plurality of second spokes having a point of contact on the flexible rim directly adjacent to ~~flex toward~~ a point of contact of the first spoke of the plurality of spokes on the flexible rim, and away from (c) at least one third spoke length decreases for the ~~hub as at~~ least one third spoke different than the first spoke and having a point of contact on the flexible rim directly adjacent to the ~~wheel moves;~~ plurality of second spokes.

Claim 2. (currently amended) The wheel of claim 1, further comprising:

the central hub comprising a plurality of hub components symmetrically arranged around a central axle; and

the ~~band configuration fitted~~ spoke assembly configured to move between the plurality of hub components and the central axle.

Claims 3-5. (canceled)

Claim 6. (currently amended) The wheel of claim 1, further comprising:

the ~~drive band configuration comprising bands~~ plurality of spokes joined ~~at their ends~~ end-to-end into a closed ~~four-sided~~ periphery.

Claims 7-8. (canceled)

Claim 9. (currently amended) The wheel of claim 2, further comprising:

each ~~band~~ of the spoke of the plurality of spokes comprising teeth to mate with a gear adjoining to the central axle.

Claims 10-20. (canceled)

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