PATENT COOPERATION TREATY

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY
(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44*bis*)

Applicant's or agent's file reference 203P001NP1WO	**FOR FURTHER ACTION**	See item 4 below
International application No. PCT/US2016/047698	International filing date *(day/month/year)* 19 August 2016 (19.08.2016)	Priority date *(day/month/year)* 21 August 2015 (21.08.2015)
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant ARC287BC CORPORATION		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 7 sheets, including this cover sheet.

   In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

☒	Box No. I	Basis of the report
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

	Date of issuance of this report 27 February 2018 (27.02.2018)
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Form PCT/IB/373 (January 2004)

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To: John H. Choi
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United States of America

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43*bis*.1)

Date of mailing *(day/month/year)*	04 NOV 2016
Applicant's or agent's file reference 203P001NP1WO	**FOR FURTHER ACTION** See paragraph 2 below

International application No.	International filing date *(day/month/year)*	Priority date *(day/month/year)*
PCT/US16/47698	19 August 2016 (19.08.2016)	21 August 2015 (21.08.2015)

International Patent Classification (IPC) or both national classification and IPC
IPC(8) - B62M1/24, B62M1/30, B62M1/32 (2016.01)
CPC - B62M1/24, B62M1/30, B62M1/32

Applicant ARC287BC Corporation

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1 *bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Fom PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

Name and mailing address of the ISA/US	Date of completion of this opinion	Authorized officer
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-8300	21 October 2016 (21.10.2016)	Shane Thomas PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US16/47698

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of:
   - [X] the international application in the language in which it was filed.
   - [ ] a translation of the international application into _____ which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. [ ] This opinion has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43*bis*.1(a)).

3. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, this opinion has been established on the basis of a sequence listing:
   - a. [ ] forming part of the international application as filed:
     - [ ] in the form of an Annex C/ST.25 text file.
     - [ ] on paper or in the form of an image file.
   - b. [ ] furnished together with the international application under PCT Rule 13*ter*.1(a) for the purposes of international search only in the form of an Annex C/ST.25 text file.
   - c. [ ] furnished subsequent to the international filing date for the purposes of international search only:
     - [ ] in the form of an Annex C/ST.25 text file (Rule 13*ter*.1(a)).
     - [ ] on paper or in the form of an image file (Rule 13*ter*.1(b) and Administrative Instructions, Section 713).

4. [ ] In addition, in the case that more than one version or copy of a sequence listing has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that forming part of the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

5. Additional comments:

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US16/47698

Box No. V **Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step and industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	NONE	YES
	Claims	1-42	NO
Inventive step (IS)	Claims	NONE	YES
	Claims	1-42	NO
Industrial applicability (IA)	Claims	1-42	YES
	Claims	NONE	NO

2. Citations and explanations:

Claims 1-6, 11-21, 26-34 and 37-41 lack novelty under PCT Article 33(2) as being anticipated by US 4,829,841 A (Ogawa).

As per claim 1, Ogawa discloses a motion transfer apparatus comprising a gear assembly (11; figures 5, 6) coupled to a rider-powered vehicle (bicycle; figure 5) having at least one wheel (6) operably coupled to a wheel shaft (50; figure 6) rotatable on a frame (cam member 50 rotates, i.e. relative to frame 1; figures 6, 7; column 6, lines 55-60); at least one pedal (28; figure 5) engaging the gear assembly (via rocking arm 27) and movable by an appendage (foot; column 6, lines 45-50) within a predetermined angular range (as shown; figure 5; column 7, lines 10-15) to apply a force (via the foot); and at least one crank arm (27) with a predetermined length coupled to the at least one pedal (as shown) and to the gear assembly (as shown; figure 6) for applying the force directly from the pedal to the gear assembly to rotate the at least one wheel (as shown; figure 5; column 5, lines 1-10).

As per claim 16, Ogawa discloses a rider-powered vehicle comprising a frame (1; figure 5); a wheel shaft (50; figure 6) rotatable on the frame (cam member 50 rotates, i.e. relative to frame 1; figures 6, 7; column 7, lines 50-55); at least one wheel (6; figure 5) attached to and rotating about the wheel shaft (via wheel axle 36 and bearing balls 37; figure 6; column 5, lines 55-60); a gear assembly (11; figures 5, 6) coupled to the at least one wheel (via wheel axle 36; figure 6); at least one pedal (28; figure 5) engaging the gear assembly (via rocking arm 27; figures 5, 6) and movable by an appendage (foot) within a predetermined angular range (as shown; figure 5; column 7, lines 10-15) to apply a force (via foot); and at least one crank arm (27; figure 5) with a predetermined length coupled to the at least one pedal (as shown) and to the gear assembly (as shown; figure 6) for applying the force directly from the pedal to the gear assembly to rotate the at least one wheel (as shown; figure 5; column 5, lines 1-10).

As per claim 31, Ogawa discloses a cycle comprising a frame (1; figure 5); front (as shown connected to front fork 2; figure 5) and rear (50; figure 6) wheel shafts each rotatable on the frame (the front wheel shaft and cam member 50 rotate, i.e. relative to frame 1; figures 5-7; column 6, lines 55-60); at least one front wheel (3; figure 5) attached to and rotating with the front wheel shaft rotatable on the frame (as shown; figure 5); at least one rear wheel (6) attached to and rotating about the rear wheel shaft (via wheel axle 36 and bearing balls 37; figure 6; column 5, lines 55-60); a gear assembly (11; figures 5, 6) coupled to a gear-rotated wheel selected from the group consisting of the at least one front wheel and the at least one rear wheel (rear wheel 6; figure 5), wherein the gear assembly includes a one-way clutch (41; figure 6) engaging the gear-rotated wheel (6; via 36) for applying a force in a one-way rotational direction to the gear-rotated wheel (clutch surfaces 32B and 32A constitute clutch mechanism 41 for transmitting a rotation of intermediate members 32 to wheel axle 36 only in one direction when connected, and for allowing wheel axle 36 and rear wheel 6 to rotate freely when disconnected; column 2, lines 1-5; column 4, lines 1-5; column 5, lines 25-35); at least one pedal (28; figure 5) engaging the gear assembly (via rocking arm 27) and movable by an appendage (foot; column 6, lines 45-50) within a predetermined angular range (as shown; figure 5; column 7, lines 10-15) to apply the force (via the foot), wherein the appendage is selected from the group consisting of a prosthetic member, a single hand, a single foot (only one rocking arm 27 is provided on one side for a single foot, in a compatible embodiment; figure 9; column 8, lines 50-55), a single forearm, a single foreleg, and a pair of hands, a pair of feet, and a pair of legs, wherein the predetermined angular range of movement of the at least one pedal is less than 360 degrees (as shown; figure 5; column 7, lines 10-20); at least one crank arm (right rocking arm 27; figure 5) with a predetermined length coupled to the at least one pedal (as shown) and to the gear assembly (as shown; figure 6) for applying the force directly from the pedal to the gear assembly to rotate the at least one gear-rotated wheel by the one-way clutch in the one-way rotational direction (as shown; figure 5; column 5, lines 1-10); and a restorative member (left rocking arm 27; figure 5) generating a restorative force to return the pedal and the at least one crank arm from a lower stroke position to an upper stroke position (when pedal 28 is depressed to rotate rocking arm 27 on the left side in FIG. 5, a movement bisymmetrical with the case of turning the rocking arm 27 on the right side is performed to raise the pedal 28 of rocking arm 27 on the right side in the drawing, so that pedals 28 are alternately depressed, in a compatible embodiment; column 4, line 60 to column 5, line 5).

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US16/47698

Supplemental Box

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-***-Continued from Box V: Citations and Explanations-***-

As per claims 2 and 17, Ogawa discloses the motion transfer apparatus and rider-powered vehicle of claims 1 and 16, respectively, and further discloses wherein the appendage is selected from the group consisting of a prosthetic member, a single hand, a single foot (only one rocking arm 27 is provided on one side for a single foot, in a compatible embodiment; figure 9; column 8, lines 50-55), a single forearm, a single foreleg, and a pair of hands.

As per claims 3, 18 and 32, Ogawa discloses the motion transfer apparatus, rider-powered vehicle and cycle of claims 1, 16 and 31, respectively, and further discloses wherein the rider-powered vehicle is selected from the group consisting of a bicycle (as shown; figure 5), a tricycle, a cargo bike, a paddleboat, a wheelchair, a rider-powered passenger-carrying vehicle, a velocipede, a handcar, a railroad handcar, and a rider-powered aircraft.

As per claims 4 and 19, Ogawa discloses the motion transfer apparatus and rider-powered vehicle of claims 1 and 16, respectively, and further discloses wherein the predetermined angular range of movement of the pedal is less than 360 degrees (as shown; figure 5; column 7, lines 10-20).

As per claims 5, 20 and 33, Ogawa discloses the motion transfer apparatus, rider-powered vehicle and cycle of claims 4, 19 and 31, respectively, and further discloses wherein the predetermined angular range of movement of the pedal is about 45 degrees (as shown; figure 5; column 7, lines 10-20).

As per claims 6, 21 and 34, Ogawa discloses the motion transfer apparatus, rider-powered vehicle and cycle of claims 5, 20 and 33, respectively, and further discloses wherein the predetermined angular range of movement of the pedal is between about 67.5 degrees clockwise from a vertical direction (90 - 26.5 = 63.5 degrees; figure 5; column 7, lines 10-20) to about 112.5 degrees clockwise from the vertical direction (90 + 18.5 = 108.5 degrees; column 7, lines 10-20).

As per claims 11, 26 and 37, Ogawa discloses the motion transfer apparatus, rider-powered vehicle and cycle of claims 1, 16 and 31, respectively, and further discloses further comprising an engagement member (33; figure 6) for allowing the wheel shaft (50) to freely rotate relative to the frame (1; cam member 50 rotates relative to frame 1 via balls 33; figures 6, 7; column 6, lines 55-68).

As per claims 12, 27 and 38, Ogawa discloses the motion transfer apparatus, rider-powered vehicle and cycle of claims 11, 26 and 37, respectively, and further discloses wherein the engagement member (33) is at least one roller bearing (balls 33; figure 6; column 6, lines 65-68).

As per an alternate interpretation of claims 11, 26 and 37, Ogawa discloses the motion transfer apparatus, rider-powered vehicle and cycle of claims 1, 16 and 31, respectively, and further discloses further comprising an engagement member (lubricating oil; column 5, lines 10-15) for allowing the wheel shaft (50) to freely rotate relative to the frame (1; lubricating oil is sealed in rotary driving device 11 for lubrication, i.e. of cam member 50 as it rotates, as shown at seal members 42 in figure 2 in a compatible embodiment; figure 6; column 5, lines 10-15).

As per claims 13, 28 and 39, Ogawa discloses the motion transfer apparatus, rider-powered vehicle and cycle of the alternate interpretation of claims 11, 26 and 37, respectively, and further discloses wherein the engagement member is composed of a lubricant (lubricating oil; column 5, lines 10-15).

As per claims 14, 29 and 40, Ogawa discloses the motion transfer apparatus, rider-powered vehicle and cycle of claims 1, 16 and 31, respectively, and further discloses wherein the gear assembly (11) includes a plurality of stepper gears (32, shown in figure 4 in a compatible embodiment; figure 6) for increasing the power transfer of the force from the at least one crank arm (27) to the at least one wheel (6; axial movement-rotation converting and transmitting mechanisms 34 are formed in intermediate members 32 so that loss in the transmitted force due to the frictional contact and the like is low, thus improving the efficiency, and the driving force of rocking arms 27 is directly transmitted to rear wheel 6; figure 6; column 5, lines 15-20, 55-60).

As per claims 15 and 30, Ogawa discloses the motion transfer apparatus and rider-powered vehicle of claims 1 and 16, respectively, and further discloses wherein the at least one wheel (6) is selected from the group consisting of a front wheel attached to the wheel shaft rotatable on a front member of the frame; and a rear wheel (rear wheel 6; figure 5) attached to the wheel shaft (50, via rear axle 36; figure 6) rotatable on a rear member (47) of the frame (1; cam member 50 rotates on connecting rings 47 of frame 1; figure 1; column 2, lines 50-55; column 6, lines 50-55).

As per claim 41, Ogawa discloses the cycle of claim 31, and further discloses wherein the at least one pedal (28) is integrally formed and fixed to the at least one crank arm (27) in an aligned configuration (pedal 28 is fixedly mounted on rocking arm 27, shown to be in an aligned configuration; figure 5; column 5, lines 65-68).

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US16/47698

Supplemental Box

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Claims 1, 7-10, 16, 22-25, 31, 35, 36 and 42 lack novelty under PCT Article 33(2) as being anticipated by US 2008/0085798 A1 (Miller).

As per claim 1, Miller discloses a motion transfer apparatus comprising a gear assembly (40; hub 40 has one way clutches 42, where pawls contact ratchet teeth, i.e. on a gear, and in a compatible embodiment, the bicycle is shifted into higher or lower gears; figures 2, 13; paragraphs [0091], [0118]) coupled to a rider-powered vehicle (100; figure 1) having at least one wheel (84) operably coupled to a wheel shaft (43; via hub shell 41; figure 13; paragraph [0090]) rotatable on a frame (60; via axle bearings 55; figures 1, 13; paragraph [0093]); at least one pedal (16; figure 2) engaging the gear assembly (via crank 15) and movable by an appendage (foot; paragraph [0086]) within a predetermined angular range (arc B depicts the length of the stroke of CVD 10; figure 21; paragraph [0107]) to apply a force (via the foot); and at least one crank arm (15A, 15B; figure 2) with a predetermined length coupled to the at least one pedal and to the gear assembly (as shown) for applying the force directly from the pedal to the gear assembly to rotate the at least one wheel (as shown; figure 1; paragraph [0091]).

As per claim 16, Miller discloses a rider-powered vehicle comprising a frame (10; figure 1); a wheel shaft (43; figure 13; paragraph [0094]) rotatable on the frame (via axle bearings 55; paragraph [0093]); at least one wheel (84; figure 1) attached to and rotating about the wheel shaft (via hub bearings 45; figure 13; paragraph [0093]); a gear assembly (40; hub 40 has one way clutches 42, where pawls contact ratchet teeth, i.e. on a gear, and in a compatible embodiment, the bicycle is shifted into higher or lower gears; figures 2, 13; paragraphs [0091], [0118]) coupled to the at least one wheel (via hub shell 41; figure 13; paragraph [0090]); at least one pedal (16; figure 2) engaging the gear assembly (via crank 15) and movable by an appendage (foot; paragraph [0086]) within a predetermined angular range (arc B depicts the length of the stroke of CVD 10; figure 21; paragraph [0107]) to apply a force (via the foot); and at least one crank arm (15A, 15B; figure 2) with a predetermined length coupled to the at least one pedal and to the gear assembly (as shown) for applying the force directly from the pedal to the gear assembly to rotate the at least one wheel (as shown; figure 1; paragraph [0091]).

As per claim 31, Miller discloses a cycle comprising a frame (10; figure 1); front (connected at fork 86; figure 1) and rear (43; figure 13; paragraph [0094]) wheel shafts each rotatable on the frame (as shown; figure 1); at least one front wheel (80) attached to and rotating with the front wheel shaft rotatable on the frame (as shown; paragraph [0074]); at least one rear wheel (84) attached to and rotating about the rear wheel shaft (via hub bearings 45; figure 13; paragraph [0093]); a gear assembly (40; hub 40 has one way clutches 42, where pawls contact ratchet teeth, i.e. on a gear, and in a compatible embodiment, the bicycle is shifted into higher or lower gears; figures 2, 13; paragraphs [0091], [0118]) coupled to a gear-rotated wheel selected from the group consisting of the at least one front wheel and the at least one rear wheel (84; figure 2), wherein the gear assembly includes a one-way clutch (hub 40 comprises hub shell 41, which on its inside diameter are one way clutches 42; figure 13; paragraphs [0090], [0091]) engaging the gear-rotated wheel (via drive cable 52; figure 2) for applying a force in a one-way rotational direction to the gear-rotated wheel (as shown; figure 1; paragraph [0095]); at least one pedal (16; figure 2) engaging the gear assembly (via crank 15) and movable by an appendage (foot; paragraph [0086]) within a predetermined angular range (arc B depicts the length of the stroke of CVD 10; figure 21; paragraph [0107]) to apply the force (via the foot), wherein the appendage is selected from the group consisting of a prosthetic member, a single hand, a single foot (single foot; paragraph [0086]), a single forearm, a single foreleg, and a pair of hands, a pair of feet, and a pair of legs, wherein the predetermined angular range of movement of the at least one pedal is less than 360 degrees (30 degrees; figure 21); at least one crank arm (15A, 15B; figure 2) with a predetermined length coupled to the at least one pedal and to the gear assembly (as shown) for applying the force directly from the pedal to the gear assembly to rotate the at least one gear-rotated wheel by the one-way clutch in the one-way rotational direction (as shown; figure 1; paragraph [0091]); and a restorative member (51; figures 2, 13) generating a restorative force to return the pedal and the at least one crank arm from a lower stroke position to an upper stroke position (return spring 51 returns crank 15 and attached pedal 16 to the top of the stroke; paragraph [0095]).

As per an alternate interpretation of claim 31, Miller discloses a cycle comprising a frame (10; figure 1); front (connected at fork 86; figure 1) and rear (43; figure 13; paragraph [0094]) wheel shafts each rotatable on the frame (as shown; figure 1); at least one front wheel (80) attached to and rotating with the front wheel shaft rotatable on the frame (as shown; paragraph [0074]); at least one rear wheel (84) attached to and rotating about the rear wheel shaft (via hub bearings 45; figure 13; paragraph [0093]); a gear assembly (40; hub 40 has one way clutches 42, where pawls contact ratchet teeth, i.e. on a gear, and in a compatible embodiment, the bicycle is shifted into higher or lower gears; figures 2, 13; paragraphs [0091], [0118]) coupled to a gear-rotated wheel selected from the group consisting of the at least one front wheel and the at least one rear wheel (84; figure 2), wherein the gear assembly includes a one-way clutch (hub 40 comprises hub shell 41, which on its inside diameter are one way clutches 42; figure 13; paragraphs [0090], [0091]) engaging the gear-rotated wheel (via drive cable 52; figure 2) for applying a force in a one-way rotational direction to the gear-rotated wheel (as shown; figure 1; paragraph [0095]); at least one pedal (16; figure 2) engaging the gear assembly (via crank 15) and movable by an appendage (foot; paragraph [0086]) within a predetermined angular range (arc B depicts the length of the stroke of CVD 10; figure 21; paragraph [0107]) to apply the force (via the foot), wherein the appendage is selected from the group consisting of a prosthetic member, a single hand, a single foot (single foot; paragraph [0086]), a single forearm, a single foreleg, and a pair of hands, a pair of feet, and a pair of legs, wherein the predetermined angular range of movement of the at least one pedal is less than 360 degrees (30 degrees; figure 21); at least one crank arm (15A, 15B; figure 2) with a predetermined length coupled to the at least one pedal and to the gear assembly (as shown) for applying the force directly from the pedal to the gear assembly to rotate the at least one gear-rotated wheel by the one-way clutch in the one-way rotational direction (as shown; figure 1; paragraph [0091]); and a restorative member (24; figures 2, 11) generating a restorative force to return the pedal and the at least one crank arm from a lower stroke position to an upper stroke position (dependent cable 31 wraps around dependent pulley 24 so that when crank 15A is depressed crank 15B rises, and vice versa; paragraph [0089]).

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WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

International application No.
PCT/US16/47698

Supplemental Box

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As per claims 7 and 22, Miller discloses the motion transfer apparatus and rider-powered vehicle of claims 1 and 16, respectively, and further discloses wherein the gear assembly (40) includes a one-way clutch (hub 40 comprises hub shell 41, which on its inside diameter are one way clutches 42; figure 13; paragraphs [0090], [0091]) coupling the at least one crank arm (15) to the at least one wheel (84; via drive cable 52; figure 2) for applying the force in a one-way rotational direction to the at least one wheel (as shown; figure 1; paragraph [0095]).

As per claims 8 and 23, Miller discloses the motion transfer apparatus and rider-powered vehicle of claims 1 and 16, respectively, and further discloses further comprising a restorative member (51; figures 2, 13) generating a restorative force to return the pedal and the at least one crank arm from a lower stroke position to an upper stroke position (return spring 51 returns crank 15 and attached pedal 16 to the top of the stroke; paragraph [0095]).

As per claims 9, 24, and 35 Miller discloses the motion transfer apparatus, rider-powered vehicle and cycle of claims 1, 23 and 31, respectively, and further discloses wherein the restorative member is a spring (spring 51; paragraph [0095]).

As per an alternate interpretation of claims 8 and 23, Miller discloses the motion transfer apparatus and rider-powered vehicle of claims 1 and 16, respectively, and further discloses further comprising a restorative member (24; figures 2, 11) generating a restorative force to return the pedal and the at least one crank arm from a lower stroke position to an upper stroke position (dependent cable 31 wraps around dependent pulley 24 so that when crank 15A is depressed crank 15B rises, and vice versa; paragraph [0089]).

As per claims 10, 25 and 36, Miller discloses the motion transfer apparatus and rider-powered vehicle of the alternate interpretation of claims 8, 23 and 31, respectively, and further discloses wherein the at least one crank arm includes first and second crank arms (15A, 15B figure 2); and wherein the restorative member is a pulley (dependent pulley 24; paragraph [0089]) attached to the first and second crank arms (via dependent cable 31; figure 11) for moving the first crank arm to the upper stroke position when the second crank arm is moved to the lower stroke position, and for moving the first crank arm to the lower stroke position when the second crank arm is moved to the upper stroke position (dependent cable 31 wraps around dependent pulley 24 so that when crank 15A is depressed crank 15B rises, and vice versa; paragraph [0089]).

As per claim 42, Ogawa discloses the cycle of claim 31, and further discloses wherein the gear assembly (40) includes a multi ratio transmission (in a compatible embodiment, lever crank 615 is similar to crank 15 but has lever slot 618 which includes multiple notches to allow compound pulley shaft 620 to be secured at various locations, so that the distance between compound pulley 622 and lever crank pivot 616 can be adjusted, in order to shift into higher or lower gears; figure 29; paragraph [0118]).

Claims 1-42 have industrial applicability as defined by PCT Article 33(4) because the subject matter can be made or used in industry.