CLAIMS

1. A bi-rotating directional input and constant rotating directional output wheel ~~system~~ device ~~capable of preventing reverse rotation wheel system from generation following damp, which relates to an improved bi-rotating directional input and constant rotating directional output wheel system, applied in a~~for a power system driven by a manual force or engine or electric motor or fluid motor comprising:~~;~~ ~~through controlling the changing of the rotating direction of an input shaft, the bi-rotating directional input and constant rotating directional output wheel system capable of preventing reverse rotation wheel system from generating following damp is enabled to generate output with the same or different speed ratio while being in different input rotating direction, and~~ an unidirectional output shaft (3000);

a bi-directional input shaft (2000) being coaxially sleeved within the output shaft,

the device characterized ~~in that~~by further comprising:

a first unidirectional transmission device (303) ~~is respectively installed~~ located between ~~a first driving rotating directional~~an input wheel (202; 402; 602) ~~set~~ and ~~a bi-rotating directional joint~~the input shaft, the input shaft being arranged to rotate bi-directionally and the first unidirectional transmission device being arranged to rotate the input wheel in a non-driving direction when the input shaft is rotating in the non-driving direction and to disengage from the input shaft when the input shaft is rotating in the driving direction~~,~~;

a second unidirectional transmission device (301) located between ~~a first~~an output ~~driving rotating directional output~~ wheel (204; 404; 605; 615) ~~set~~ and ~~a constant rotating directional output rotation part~~the output shaft, the second unidirectional transmission device being arranged to rotate the output shaft in the driving direction when the output wheel is rotating in the driving direction and to disengage the output shaft when the output wheel is rotating in the non-driving direction; ~~and~~

a third unidirectional transmission device (302) located between the ~~constant rotating directional output rotation part~~output shaft and the ~~joint input shaft~~input shaft, the third unidirectional transmission device arranged to rotate the output shaft in the driving direction when the input shaft is rotating in the driving direction and disengage the output shaft when the input shaft is rotating in the non-driving direction~~,~~; and

direction of rotation reversing means (203; 403; 603, 606, 607; 603, 616, 617) located between the input wheel and the output wheel, the direction of rotation

reversing means arranged to reverse the direction of rotation between the input wheel and the output wheel. ~~thereby preventing the transmission set in the first driving rotating direction from being linked and generating the following damp while being driven in a second driving rotating direction.~~

~~2. A bi-rotating directional input and constant rotating directional output wheel system capable of preventing reverse rotation wheel system from generation following damp as claimed in claim 1, wherein configured by a planetary gear system, the input shaft and the output shaft are coaxially sleeved, it mainly consists:~~

~~--one end of the input shaft (2000) is installed to penetrate through a housing of transmission wheel system (500) through a bearing structure, the other end of the input shaft (2000) is installed to penetrate through the output shaft (3000) through a unidirectional transmission device (302), and a bearing is installed between the output shaft (3000) and the housing of transmission wheel system (500);~~

~~--housing of transmission wheel system (500): combined in a machine body (600), the housing of transmission wheel system (500) is served to be installed with the machinery components which are adopted by assembling the bi-rotating directional input and constant rotating directional output wheel system capable of preventing reverse rotation wheel system from generating following damp;~~

~~--machine body (600): formed as a relatively static machinery structural body;~~

~~--a unidirectional transmission device (303) is installed between the input shaft (2000) and a sun gear (202);~~

~~--a planetary gear (203) is installed between an outer annular wheel (204) and the sun gear (202); the center of the planetary gear (203) revolves on a planetary gear shaft (201), and one end of the planetary gear shaft (201) is fastened in the housing of transmission wheel system (500);~~

~~--a unidirectional transmission device (301) is installed between the annular structural body of the outer annular wheel (204) and the output shaft (3000);~~

~~--the sun gear (202), the planetary gear (203) and the outer annular wheel (204) are configured by gears or friction wheels;~~

~~--according to the disclosed structure, the input shaft (2000) is driven in the first driving rotating direction, and through the unidirectional transmission device (302), the output shaft (3000) is driven for performing the first driving rotating directional output thereby forming a first transmission wheel system; at this moment, the unidirectional transmission device (301) and the unidirectional transmission device~~

~~(303) are in the idle rotating state;~~

~~--according to the disclosed structure, the input shaft (2000) is driven in the second driving rotating direction; through the unidirectional transmission device (303), the sun gear (202) is driven then the planetary gear (203) and the outer annular wheel (204) are driven; further through the annular structural body of the outer annular wheel (204) and the unidirectional transmission device (301), the output shaft (3000) is driven for outputting in the same rotating direction as the first driving rotating direction thereby forming a second transmission wheel system; at this moment, the unidirectional transmission device (302) is in the idle rotating state.~~

2. The device of claim 1, wherein:

the input wheel comprises a sun gear (202);

the output wheel comprises an outer annular wheel (204);

the direction of rotation reversing means comprises a planetary gear (203) rotationally engaged between the sun gear and the outer annular wheel.

~~3. A bi-rotating directional input and constant rotating directional output wheel system capable of preventing reverse rotation wheel system from generation following damp as claimed in claim 1, wherein configured by an epicycle gear system, the input shaft and the output shaft are coaxially sleeved, it mainly consists:~~

~~--one end of the input shaft (2000) is installed to penetrate through a housing of transmission wheel system (500) through a bearing structure, the other end of the input shaft (2000) is installed to penetrate through the output shaft (3000) through a unidirectional transmission device (302), and a bearing is installed between the output shaft (3000) and the housing of transmission wheel system (500);~~

~~--housing of transmission wheel system (500): combined in a machine body (600), the housing of transmission wheel system (500) is served to be installed with the machinery components which are adopted by assembling the bi-rotating directional input and constant rotating directional output wheel system capable of preventing reverse rotation wheel system from generating following damp;~~

~~--machine body (600): formed as a relatively static machinery structural body;~~

~~--the unidirectional transmission device (303) is installed between the input shaft (2000) and an inner bevel wheel (402);~~

~~--an epicycle gear (403) is installed between an outer bevel wheel (404) and the inner bevel wheel (402); the center of the epicycle gear (403) revolves on an epicycle gear shaft (401); one end of the epicycle gear shaft (401) is combined on an annular support~~

~~rack of epicycle gear (400), and the annular support rack of epicycle gear (400) is fastened in the housing of transmission wheel system (500);~~

~~--the unidirectional transmission device (301) is installed between the outer bevel wheel (404) and the output shaft (3000);~~

~~--the inner bevel wheel (402), the epicycle gear (403) and the outer bevel wheel (404) are configured by gears or friction wheels;~~

~~--the relation of transmission ratio of the inner bevel wheel (402) driving the epicycle gear (403) can be acceleration, deceleration or equal speed;~~

~~--the relation of transmission ratio of the epicycle gear (403) driving the outer bevel wheel (404) can be acceleration, deceleration or equal speed;~~

~~--according to the disclosed structure, the input shaft (2000) is driven in the first driving rotating direction, and through the unidirectional transmission device (302), the output shaft (3000) is driven for performing the first driving rotating directional output thereby forming a first transmission wheel system; at this moment, the unidirectional transmission device (301) and the unidirectional transmission device (303) are in the idle rotating state;~~

~~--according to the disclosed structure, the input shaft (2000) is driven in the second driving rotating direction, through the unidirectional transmission device (303), the inner bevel wheel (402) is driven then the epicycle gear (403) and the outer bevel wheel (404) are driven; further through the outer bevel wheel (404) and the unidirectional transmission device (301), the output shaft (3000) is driven for outputting in the same rotating direction as the first driving rotating direction thereby forming a second transmission wheel system; at this moment, the unidirectional transmission device (302) is in the idle rotating state.~~

3. The device of claim 1, wherein:

the input wheel comprises a first bevel wheel (402);

the output wheel comprises a second bevel wheel (404);

the direction of rotation reversing means comprises an epicycle gear (403) rotationally engaged between the first and the second bevel wheels.

4. The device of claim 3, wherein the transmission ratio of the epicycle gear (403) can cause the output wheel to rotate at a faster, slower, or the same speed as the input wheel.

~~4. A bi-rotating directional input and constant rotating directional output wheel system capable of preventing reverse rotation wheel system from generation following damp as claimed in claim 1, wherein configured by transmission devices in different transmission rotating directions, the input shaft and the output shaft are coaxially sleeved, it mainly consists:~~

~~--one end of the input shaft (2000) is installed to penetrate through a housing of transmission wheel system (500) through a bearing structure, the other end of the input shaft (2000) is installed to penetrate through the output shaft (3000) through a unidirectional transmission device (302); a bearing is installed between the output shaft (3000) and the housing of transmission wheel system (500);~~

~~--housing of transmission wheel system (500): combined in a machine body (600), the housing of transmission wheel system (500) is served to be installed with the machinery components which are adopted by assembling the bi-rotating directional input and constant rotating directional output wheel system capable of preventing reverse rotation wheel system from generating following damp;~~

~~--machine body (600): formed as a relatively static machinery structural body;~~

~~--the input shaft (2000) penetrates a transmission wheel (602), and the unidirectional transmission device (303) is installed between the above two;~~

~~--the transmission wheel (602) and a transmission wheel (603) perform transmission in different rotating directions, the transmission wheel (603) and a transmission wheel (606) are jointly combined on a rotation shaft (604), and a bearing is installed between the rotation shaft (604) and the housing of transmission wheel system (500);~~

~~--the transmission wheel (602), (603) is configured by a gear or friction wheel;~~

~~--the transmission wheel (605), (606) is configured by a pulley or chain wheel;~~

~~--the transmission wheel (606) and the transmission wheel (605) is configured by a pulley driven by a transmission belt (607) or chain wheel or an inner gear set of a transmission wheel set in the same rotating direction;~~

~~--the unidirectional transmission device (301) is installed between the transmission wheel (605) and the output shaft (3000);~~

~~--the relation of transmission ratio between the transmission wheel sets in different rotating directions can be acceleration, deceleration or equal speed;~~

~~--the relation of transmission ratio between the transmission wheel sets in the same rotating direction can be acceleration, deceleration or equal speed;~~

~~--the transmission wheel set in the same rotating direction includes being installed with the transmission belt (607) including being configured by a pulley with a flat belt,~~

~~V-shaped belt, tooth belt or steel belt, or a chain wheel provided with a chain;~~

~~--according to the disclosed structure, the input shaft (2000) is driven in the first driving rotating direction, and through the unidirectional transmission device (302), the output shaft (3000) is driven for performing the first driving rotating directional output thereby forming a first transmission wheel system; at this moment, the unidirectional transmission device (301) and the unidirectional transmission device (303) are in the idle rotating state;~~

~~--according to the disclosed structure, the input shaft (2000) is driven in the second driving rotating direction, through the unidirectional transmission device (303), the transmission wheel (602) is driven, then the transmission wheel (602) drives the transmission wheel (603) and the transmission wheel (606), then the transmission wheel (606) further drives the transmission wheel (605), so as to drive the output shaft (3000) through the unidirectional transmission device (301) for outputting in the first driving rotating direction thereby forming a second transmission wheel system; at this moment, the unidirectional transmission device (302) is in the idle rotating state.~~

5. The device of claim 1, wherein:

the input wheel comprises a first transmission wheel (602);

the output wheel comprises a second transmission wheel (615);

the direction of rotation reversing means comprises:

a third transmission wheel (603) arranged to rotationally engage the first transmission wheel;

a transmission belt (607) arranged to rotationally engage the second transmission wheel; and

a fourth transmission wheel (606) rotationally fixed to the third transmission wheel and arranged to rotationally engage the transmission belt.

6. The device of claim 5, wherein the transmission ratios of the transmission wheels (602, 615, 603, 606) can cause the output wheel to rotate at a faster, slower, or the same speed as the input wheel.

~~5. A bi-rotating directional input and constant rotating directional output wheel system capable of preventing reverse rotation wheel system from generation following damp as claimed in claim 1, wherein configured by a gear set or friction wheel set in different transmission rotating directions, the input shaft and the output shaft are~~

coaxially sleeved, it mainly consists:

--one end of the input shaft (2000) is installed to penetrate through a housing of transmission wheel system (500) through a bearing structure, the other end of the input shaft (2000) is installed to penetrate through the output shaft (3000) through a unidirectional transmission device (302), and a bearing is installed between the output shaft (3000) and the housing of transmission wheel system (500);

--housing of transmission wheel system (500): combined in a machine body (600), the housing of transmission wheel system (500) is served to be installed with the machinery components which are adopted by assembling the bi-rotating directional input and constant rotating directional output wheel system capable of preventing reverse rotation wheel system from generating following damp;

--machine body (600): formed as a relatively static machinery structural body;

--the input shaft (2000) penetrates a transmission wheel (602), and the unidirectional transmission device (303) is installed between the above two;

--the transmission wheel (602) and a transmission wheel (603) perform transmission in different rotating directions, the transmission wheel (603) and a transmission wheel (616) are jointly combined on a rotation shaft (604), and a bearing is installed between the rotation shaft (604) and the housing of transmission wheel system (500);

--a transmission wheel (616) drives the transmission wheel (617) revolving on the rotation shaft (618) then drives the transmission wheel (615) thereby forming the transmission wheel set in the same rotating direction;

--the rotations shaft (618) is combined in the housing of transmission wheel system (500), the transmission wheel (617) revolves on the rotation shaft (618); or the transmission wheel (617) is combined on the rotation shaft (618) and the transmission wheel (617) and the rotation shaft (618) jointly perform the revolving operation, and a bearing is installed between the rotation shaft (618) and the housing (500);

--the transmission wheel (615) is sleeved on the output shaft (3000), and the unidirectional transmission device (301) is installed between the above two;

--the transmission wheel (602), (603), (615), (616), (617) is configured by a gear or friction wheel;

--the relation of transmission ratio between the transmission wheel sets in different rotating directions can be acceleration, deceleration or equal speed;

--the relation of transmission ratio between the transmission wheel sets in the same rotating direction can be acceleration, deceleration or equal speed;

--the transmission wheel set in the same rotating direction includes being installed

~~with an inner gear set or inner friction wheel set;~~

~~-according to the disclosed structure, the input shaft (2000) is driven in the first driving rotating direction, and through the unidirectional transmission device (302), the output shaft (3000) is driven for performing the first driving rotating directional output thereby forming a first transmission wheel system; at this moment, the unidirectional transmission device (301) and the unidirectional transmission device (303) are in the idle rotating state;~~

~~-according to the disclosed structure, the input shaft (2000) is driven in the second driving rotating direction, through the unidirectional transmission device (303), the transmission wheel (602) is driven, then the transmission wheel (602) drives the transmission wheel (603) and the transmission wheel (616), then the transmission wheel (616) further drives the transmission wheel (615) through the transmission wheel (617); and through the unidirectional transmission device (301), the transmission wheel (615) drives the output shaft (3000) for outputting in the first driving rotating direction thereby forming a second transmission wheel system; at this moment, the unidirectional transmission device (302) is in the idle rotating state.~~

7. The device of claim 1, wherein:

the input wheel comprises a first transmission wheel (602);

the output wheel comprises a second transmission wheel (615);

the direction of rotation reversing means comprises:

a third transmission wheel (603) arranged to rotationally engage the first transmission wheel;

a fourth transmission wheel (606) rotationally fixed to the third transmission wheel; and

a fifth transmission wheel (617) arranged to rotationally engage the second transmission wheel.

8. The device of claim 7, wherein the transmission ratios of the transmission wheels (602, 615, 603, 606, 617) can cause the output wheel to rotate at a faster, slower, or the same speed as the input wheel.

9. The device of any of the preceding claims, wherein a clutch device (CL100) is included between the output shaft (3000) and a revolving load (3001) for controlling the operations of coupling for releasing the revolving load to the output shaft.

~~6. A bi-rotating directional input and constant rotating directional output wheel system capable of preventing reverse rotation wheel system from generation following damp as claimed in claim 2, 3, 4 or 5, wherein a clutch device (CL100) can be further installed between the output shaft (3000) and a revolving load (3001) for controlling the operations of coupling or releasing to the output.~~

10. The device of claim 9, wherein the clutch device (CL100) is operable by way of manual force, or mechanical force, or torque, or centrifugal force, or electromagnetic force or hydraulic force.

~~7. A bi-rotating directional input and constant rotating directional output wheel system capable of preventing reverse rotation wheel system from generation following damp as claimed in claim 6, wherein the installed clutch device (CL100) includes utilizing the manual force, or mechanical force, or torque, or centrifugal force, or electromagnetic force or hydraulic force for controlling the engaged operation for connecting the output shaft (3000) and the revolving load (3001) for transmission, or the disengaged operation for terminating the transmission relation between the output shaft (3000) and the revolving load (3001).~~