(54) Titre : MACHINE EFFICACE POUR LA CONVERSION D'UNE FORCE DE GRAVITATION
(54) Title: EFFICIENT MACHINE FOR CONVERTING GRAVITATIONAL FORCE
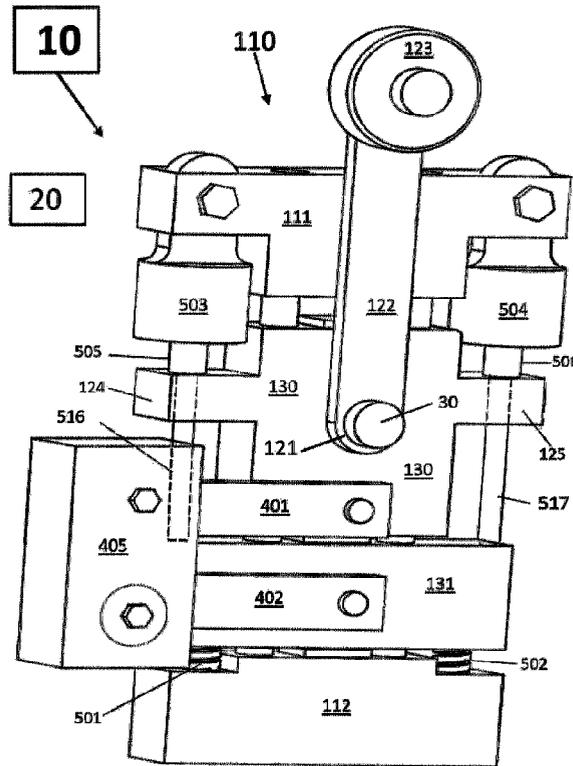
(57) Abrégé/Abstract:

A device for effectively converting gravitational force including multi-linear motion platforms. One of the platforms mounts a rotating axis center to rotate the orbiting object travelling on circular path and on the dome shape non-circular path for converting the gravitational force. The generated force is directly acting on the rotation axis center passing the live counterforce L shape gear-lever electromagnetic operation mechanism to be offset and stored by the compression springs during the orbiting object travelling through the first half of the dome shape non-circular path then unleashes to transfer to output mechanism with the gravitational force converted by the orbiting object during the second half of the dome shape non-circular path.

555   gravitational force converted by the orbiting object to the output mechanism of the machine.

ABSTRACT

A device for effectively converting gravitational force including multi-linear motion platforms. One of the platforms mounts a rotating axis center to rotate the orbiting object travelling on

560   circular path and on the dome shape non-circular path for converting the gravitational force. The generated force is directly acting on the rotation axis center passing the live counterforce L shape gear-lever electromagnetic operation mechanism to be offset and stored by the compression springs during the orbiting object travelling through the first half of the dome shape non-circular path then unleashes to transfer to output mechanism with the gravitational force converted by

565   the orbiting object during the second half of the dome shape non-circular path.

DRAWINGS:

TITLE OF THE INVENTION

EFFICIENT MACHINE FOR CONVERTING GRAVITATIONAL FORCE

FIELD OF THE INVENTION

The invention relates to the green technology machines which convert the gravitational force of
5 the earth to do work efficiently instead of using gasoline, propane, fossil fuel etc. that affect the
environment and increase pollution in the air.

BACKGROUND OF THE INVENTION

In the green technology industry, there are many friendly green technologies such as: wind,
water, solar, etc. machines. These machines apply the natural resources to do works but they
10 cannot meet the demand of the world. The world definitely needs more green technology
machines that are more suitable and efficient to do work to reduce the air pollution and global
warming.

There has been a Force Converter Apparatus and Method, Canada patent number is CA2816624,
the U.S. Pat. No. 9,797,492 discloses a device that links the rotation center to a weight to rotate
15 through eight different sections of a revolution for generating centrifugal force to displace the
rotation center from one resting position to another resting position to convert an input force to
a larger output force while maintaining substantially constant input speed ratio.

SUMMARY OF THE INVENTION

The present invention provides an apparatus and method to efficiently convert unlimited
20 gravitational force of the earth to do work by applying the force generated from the motion of
the orbiting object (mass) while it is intermittently travelling on two symmetrical non-circular
paths of a dome shape (Parabolic Curve) positioned on both sides of the vertical axis center of
the machine. The converted gravitational force, which is generated by the motion of the orbiting
object, is applied to move the rotation axis center back and forth between home rotation axis
25 center and resting rotation axis center to transfer to the output mechanism of the machine for
generating power for doing any work may desired.

According to an embodiment of the invention, there is provided an apparatus and method for converting the gravitational force generated by the motion of an orbiting object while it is travelling on the first half of the dome shape non-circular path is passing over a live counterforce

30   L shape gear-lever electromagnetic clutch operation mechanism to be offset and stored by the plurality of compression springs while the rotation axis center is moving from home rotation axis center to resting rotation axis center. As the orbiting object continuing to travel on the second half of the dome shape non-circular path the controller receives a signal to immediately turn off the power to disconnect the live counterforce L shape gear-lever electromagnetic clutch

35   operation mechanism to release (unleash) the forces which were held in the springs to combine with the gravitational force converted by the motion of the orbiting object while it is travelling on the second half of the dome shape non-circular path and its rotation axis center is moving from resting rotation axis center to home rotation axis center to transfer these combined forces to the output mechanism of the machine to do the work.

40   According to another embodiment of the present invention, there is provided a method for utilizing the functions of the live counterforce L shape gear-lever electromagnetic clutch operation mechanism, two linear motion platforms, two electric linear actuators, two compression springs and a plurality of flat springs for offsetting and transferring the gravitational force that converted by the motion of the orbiting object while it is travelling on the first half and

45   the second half of the symmetric adjacent non-circular paths of the dome shape to move its rotation axis center back and forth between home rotation axis center and resting rotation axis center to transfer the gravitational force converted by the motion of the orbiting object to the output mechanism of the machine to do work. When the orbiting object is passing by 330-degree the controller intermittently receives the signal from one of the sensors to immediately activate

50   the live counterforce L shape gear-lever electromagnetic clutch operation mechanism and two electric linear actuators to link two linear motion platforms together for the gravitational force converted by the motion of the orbiting object and the forces from two electric linear actuators passing over to be neutralized (offset) and stored by a pair of the compression springs while the orbiting object is travelling through the first half of the dome shape non-circular path and its

55   rotation axis center is moving from home rotation axis center to resting rotation axis center. After the orbiting object passing 360-degree the forces were held in the springs are immediately released to combine with the centrifugal force converted by the motion of the orbiting object while it is travelling through the second half of the dome shape non-circular path and the rotation axis center is moving from resting rotation axis center to home rotation axis center are fully

60   transferred to the output mechanism of the machine to do any work may desired.

According to a further embodiment of the invention, there is provided a controller for intermittently activating two electric linear actuators and the live counterforce L shape gear-lever electromagnetic clutch operation mechanism to link two independent linear motion platforms to perform the work. The gravitational forces converted by the orbiting object while it is travelling

65   on the two halves of the dome shape non-circular paths when its rotation axis center is being moved back and forth between the home rotation axis center and resting rotation axis center to transfer the gravitational force converted by the motion of the orbiting object to efficiently do the work.

According to still a final embodiment of the invention, the controller receives the signals from

70   one of the plurality of sensors to intermittently provide the power to activate the linear actuators and the live counterforce L shape gear-lever electronic clutch operation mechanism to link a main linear platform and a follower linear platform together to synchronize the force from two electric linear actuators with the gravitational force converted by the motion of the orbiting object that directly acts on two linear motion platforms to ensure the said forces are gradually

75   increasing to be able to overcome the compression spring forces to efficiently move the rotation axis center backwardly from home rotation axis center to resting rotation axis center to transfer the forces from electric linear actuators and the gravitational force converted by the motion of the orbiting object while it is travelling through the first half of the dome shape non-circular path to the output mechanism of the machine to efficiently do work.

80   Other embodiments and features of the invention will become apparent to those ordinarily skill in the art upon review of the following of specific embodiments of the invention in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred embodiments of the invention will now be described, by way of example, with
85   reference to the accompanying drawings, in which:

FIGURE 1 shows the machine 10 when the device rotation axis center 30 is positioned at the resting rotation axis center 137 and two compression springs are compressed to hold the centrifugal force converted by the motion of the orbiting object;

FIGURE 2 shows the machine 10 when the rotation axis center 30 is positioned at home rotation
90   axis center 136 and two compression springs are at the equilibrium positions;

FIGURE 3 shows the circular path, non-circular paths 133 and the positions of rotating axis centers 136, 137.

FIGURE 4 shows the travelling paths of the orbiting object including dome shape non-circular paths, circular path or the rotating axis center and sensors.

95   FIGURE 5 is an isometric view of an embodiment of the device 10 illustrates the live counterforce L shape gear-lever electromagnetic clutch operation mechanism.

DETAILED DESCRIPTION OF THE INVENTION

Referring to the figures, a preferred embodiment of the Efficient Machine for Converting Gravitational Force according to the present invention machine is generally indicated by
100   reference numeral 10.

Machine 10 best seen in Fig. 1 is operated by a light duty DC gear motor. This machine is covered by a steel case (not shown) to ensure the machine is safe and capable of continuing to operate while it is in the sea, on the land or on the mountains and able to operate when the weather is not normal, such as heavy raining, flooding or storming etc. The protecting steel case cover

105   machine 10 has at least one entrance door. This entrance door can be opened for inspection or maintenance only when the device 10 is shut off.

Referring to Figs. 1 and 2, a machine frame 110 (not shown) holds an upper linear rail holder 111 and a lower linear rail holder 112 (Figs 1, 2). These rail holders can be welded or bolted securely onto the machine frame. Two parallel hardened and smoothed finishing rail shafts 113 and 114

110   are held rigidly by two linear rail holders 111, 112 (Fig 2). A main linear motion platform 130 and a follower linear motion platform 131 of the machine 10 are intermittently moving back and forth on two parallel linear rails 113, 114.

In order to perform the work efficiently, the linear motion platforms 130, 131 must be low friction and high quality to ensure the main linear platform that mounts a motor for rotating the rotation

115   axis center 30 (Figs 1, 2) are easily moving back and forth along a vertical axis or longitudinal axis 50 (Fig 3). Please note that, the vertical axis of machine 10 connects from 0-degree to 180-degree or from 12 o'clock to 6 o'clock which is from the middle of the dome shaped non-circular path to the middle of the circular path. The two linear motion platforms are independent of each other. They are intermittently connected together by a live counterforce L shape gear-lever

120   electromagnetic clutch operation mechanism 40 (Fig 5), so that when a light force is applied to move one of the linear motion platforms, both are moving together precisely.

Beneath the center of the main linear motion platform 130 mounts a DC gear motor (not show) for rotating the rotating arm 122. The DC gear motor is connected to the controller 20 to perform the work at a desired low speed operation. The shaft 121 (Figs 1,2) of the motor extends through

125   an open hole at the center of the main linear motion platform 130 to connect to the inner end of rotating arm 122 and the outer end of the rotating arm is mounted an orbiting object (a mass) 123. The rotating arm and the orbiting object are rotated around the motor shaft 121. It means that the shaft of the motor is the rotating axis center 30 of the machine 10.

Referring again to Figs 1 and 2, the main linear platform 130 that mounts the rotation axis center

130   is precisely connected to the follower linear platform 131 by a high quality and zero backlash live counterforce L shape gear-lever electromagnetic clutch operation mechanism 40 (Fig 5). This

connection ensures when the live counterforce L shape gear-lever electromagnetic clutch operation mechanism is activated to connect two linear motion platforms 130 and 131 together for the gravitational force converted by the orbiting object while it is travelling on the first half

135   of the dome shape non-circular path passing over to be compressed and stored in the compression springs.

Referring to a plurality of heavy-duty flat springs 138, 139 and 140 which best seen in the figure 2. There is a first heavy-duty flat spring 138 is held stably on the top of the main linear motion platform 130. The force needed to deflect this flat spring is slightly stronger than the gravitational

140   force converted by the motion of the orbiting object that acts on the rotation center 30. Most of the time, this spring is touching the upper rail holder 111 to prevent the rotation axis center from moving away from home rotation axis center 136. When the power is supplied to activate the live counterforce L shape gear-lever electromagnetic clutch operation mechanism, the flat spring 138 is immediately moved away from top rail holder 111 to create a space. This space ensures

145   the gravitational force converted by the motion of the orbiting object while it is travelling through first half of the dome shape non-circular path is fully transferred to compress and stored in the compression springs while the rotation axis center is being moved from home rotation axis center 136 to resting rotation axis center 137 (Fig 3).

The second heavy-duty flat spring 139 is held on the top of the follower linear motion platform

150   131 (Fig 2). This heavy-duty flat spring intermittently touches the bottom of the main linear motion platform 130 when the power is removed to disengage the live counterforce L shape gear-lever electromagnetic clutch operation mechanism. In contrast, when the power provides to engage the live counterforce L shape gear-lever electromagnetic clutch operation mechanism, the flat spring 139 is immediately moved away to create an air space between the flat spring 139

155   and the bottom of the main linear motion platform 130. This air space ensures that the gravitational force converted by the motion of the orbiting object, while it is travelling through the first half of the dome shape non-circular path and while its rotation center moves from home rotation axis center 136 to resting rotation axis center 137, is fully transferred to compress and store in the compression springs 501 and 502 (best seen in Fig 1).

160   It is a third heavy-duty flat spring 140 (Fig 2) is held on the top of the lower linear rail holder 112. This flat spring provides shock absorber and prevents the linear motion platforms from traveling over the resting rotation axis center position.

Referring next to Figure 5 is a live counterforce L shape gear-lever electromagnetic clutch operation mechanism 40. This live counterforce L shape gear-lever electromagnetic clutch
165   operation mechanism is operated by two independent gear sections 419, 420. These gear sections are intermittently engaged to provide the work as a bridge or a mediator to connect two linear motion platforms 130 and 131 (Figs 1 and 2) together for the gravitational force converted by the motion of the orbiting object while it is travelling on the first half of the dome shape non-circular path is passing over to be transferred to the output mechanism of the machine to do
170   work.

The gear section 420 and the L shape gear-lever 401 are made from a solid tool steel material. The gear end section of the live counterforce L shape gear-lever electromagnetic clutch operation mechanism 40 is freely swinging on the L shape lever shaft 403 when gear-lever 401 does not engage with gear-lever 402. The gear end section of the gear-lever 401 holds the shaft 403. This
175   shaft rotates freely inside two bearings 406 and 426. The bearing 426 is held by the rear wall of house 405 and bearing 406 is held by the front wall of house 405. Shaft 403 is positioned inside the bearings 406 and 426 by two bolts 410 and 418 at both ends. The non-gear end of the stable L shaft counterforce gear-lever 401 connects to the main linear motion platform 130 (Figs 1, 2) by a heavy-duty pin 416 (Figs 2, 5).

180   The gear section 419 and the live L shape gear-lever 402 are also made from a tool steel material. The gear section 419 engages with the gear section 420 of the stable L shape gear lever 401 to perform the work. The shaft 404 of the gear section of the live gear-lever 402 rotates freely inside two bearings 427 and 407. The bearing 427 is held by the rear wall of house 405 and bearing 407 is held by the front wall of house 405. Shaft 404 is positioned inside the bearings 407 and 427 by
185   two bolts 411 and 412 at both ends (bolt 412 not show). The non-gear end of the stable L shaft counterforce gear-lever 402 connects to the main linear motion platform 131 by a heavy-duty

pin 417 (Figs 2, 5). When power is provided to activate the electromagnetic clutch, the live counterforce L shape gear-lever electromagnetic clutch operation 402 functions the same as the stable gear-lever 401 does.

190 As seen in Figure 5, the gear section 419 of the live gear lever 402 is mounted on the side of the magnetizable flange 414. The magnetizable flange 415 of the gear lever 402 is mounted stable on the shaft 404. Two magnetizable flanges 414 and 415 are independent of each other allowing each to freely swing and slide on the shaft 404 when the power is not provided to operate the electromagnetic clutch. In contrast, when the live counterforce L shape gear-lever

195 electromagnetic clutch operation mechanism is activated, it is functioning similar to the way that the scissor does. If there is a force applied to move gear-lever 401 inwardly, the gear-lever 402 is moved along correspondingly. Similarly, since gear lever 401 and gear lever 402 are connected, so that when gear-lever 401 carries 10 Newton, it is automatically transferred to gear-lever 402 the same amount of 10 Newton. It means gear-lever 401 and gear-lever 402 are carrying the

200 same force. When power is removed from the electromagnetic clutch operation gear 402, the two gear-levers are disengaged and each gear-lever moves independently. If a force provides to pull or push one lever, it doesn't transfer to the other lever.

As described above, when the live counterforce L shape gear-lever electromagnetic clutch operation mechanism is powered to engage two gear-levers 401 and 402, the live counterforce

205 L shape gear-lever electromagnetic clutch operation mechanism provides the work like a bridge (a link or mediator). The functioning of the live counterforce L shape gear-lever electromagnetic clutch operation mechanism ensures the gravitational force that converted by the motion of the orbiting object 123, while it is travelling on the first half of dome shape non-circular path 134 (Fig 3) from 330-degree to 360-degree, and the forces from two linear actuators 503 and 504 are fully

210 transferred to compress and store (hold) in the springs 501 and 502 (Fig 1) while the rotation axis center 30 is moving from home rotation axis center 136 to the resting rotation axis center 137 (Fig 3).

According to the invention, in order to perform the work efficiently, the combination of the gravitational force that converted by the motion of the orbiting object 123 during the first half of

215   the dome shape non-circular path 134 and the forces from two electric linear actuators 503 and 504 must be higher than the force that needed to compress the springs at their equilibrium level. This is to ensure the gravitational force converted by the motion of the orbiting object during the first half of the dome shape non-circular path and the additional forces from two electric linear actuators, while the rotation axis center is moving from the home rotation axis center 136 to the

220   resting rotation axis center 137, are fully transferred to compress and store in the compression springs 501 and 502.

As described above, in operation of the machine 10, as soon as the orbiting object 123 is passing by the vertical axis 50, which is at 360-degree or zero degree, the controller receives a signal from a sensor 508 (Figs 3 and 4) to immediately disengage the counterforce L shape gear-lever

225   electromagnetic operation mechanism 40 (Fig 5) to allow gear-levers 401 and 402 to move independently. It means while the orbiting object is reaching 360-degree the huge forces that were held from two springs 501 and 502 are immediately released (unleashed) to combine with the gravitational force that converted by the motion of the orbiting object 123 from the second half of the dome shape non-circular path from 360-degree to 30-degree, so they are being fully

230   transferred to the output mechanism of the machine 10, while the rotation axis center 30 is moving from resting rotation axis center 137 to home rotation axis center 136, and the compression springs 501 and 502 are returning to their equilibrium levels.

According to one embodiment of the invention, the first half of the dome shape non-circular path and the second half of the dome shape non-circular path are adjacent and symmetrical. The first

235   half of the dome shape non-circular path 134 is positioned on the left side of the vertical axis 50 of the machine 10 and the second half of the dome shape non-circular path 133 is positioned on the right (Fig 3).

While the orbiting object is travelling on the first half of the dome shape non-circular path 134, the gravitational force converted by the motion of the orbiting object is passing over the live

240   counterforce L shape gear-lever electromagnetic clutch operation mechanism to directly move

the rotation axis center 30 from home rotation axis center 136 to resting rotation axis center 137

to transfer the said force to be offset and stored in the compression springs 501 and 502. As soon

as the orbiting object 123 is reaching 360-degree, it is continuing to travel on the second half of

the dome shape non-circular path 135, the gravitational force that converted by the orbiting

245   object is combined with the forces released from the compression springs while the compression

springs are returning to the springs' equilibrium level. This means that the forces stored in the

springs and the gravitational force converted by the orbiting object while it is travelling on the

second half of the dome shape non-circular path are fully transferred to the output mechanism

of the machine while the rotation axis center is moving from the resting rotation axis center 137

250   to the home rotation axis center 136 (Fig 3).

Please note that, the orbiting object must intermittently travel on two halves of the dome shape

non-circular paths 134 and 135 which are adjacent and symmetrical to convert and transfer the

gravitational force converted by the motion of the orbiting object to the output mechanism of

the machine to do work. The two halves non-circular paths 134 and 135 of the dome shape where

255   the orbiting object is travelling on to convert the gravitational force and transfer to the output

ensure the energy consumed by the motor is remained the same level as the orbiting object is

rotating on the circular path when its rotation center is stationary (stable). It means, while the

orbiting object is travelling on circular path and its rotation axis center is stationary and while the

orbiting object is intermittently traveling on a circular path and continuing to travel on two halves

260   of the dome shape non-circular paths to move its rotation axis center back and forth between

home rotation axis center and resting rotation center to convert and transfer the gravitational

force that acts on the motion of the orbiting object to do the work, the energy consumes by the

motor is remained about the same. It should be noted that the orbiting object must travel on the

adjacent and symmetrical first half and second half of the dome shape non-circular paths 134,

265   135 to convert and transfer the gravitational force to the output mechanism of the machine to

do work to ensure that the invention apparatus and method are capable of converting unlimited

gravitational force of the earth to efficiently do the work by applying the function of the centrifugal force as a mediator or a link.

As described above, machine 10 is operated by a DC motor. It can be started by a momentary
270   switch or by any standard electrical engine starter like the one used for starting the engine of the vehicle. If it is desirable, machine 10 can also be started manually by a hand crank or by pulling a rope like the ones that used to start gasoline engines in the old days.

After starting machine 10, the speed of the orbiting object 123 is increasing to reach the desired operation level, the controller will hold the same speed until machine 10 is shut
275   off. Whenever machine 10 is in operation, the orbiting object 123 is continuously traveling on circular path 132 and on two halves of the dome shape non-circular paths 134 and 135 (Fig 3) repeatedly every revolution. The circular path starts from 30-degree and ends at 330-degree and the dome shape non-circular path start from 330-degree and end at 30-degree (Fig 3). As soon as the orbiting object passing the end of the circular path, it continuously makes a light turn for
280   directing inward to travel on the first half of the dome shape non-circular path 134 (Fig 3), which is inside the circular path.

When the orbiting object starts to travel on the first half of the dome shape non-circular path 134, which is from 330-degree to 360-degree, the rotation axis center 30 (Fig 3) is also being moved from the home rotation axis center 136 to the resting rotation axis center 137. The
285   gravitational force converted by the motion of the orbiting object (mass) 123 while it is travelling on the first half of the dome shape non-circular path 134 is being neutralized and stored in the compression springs by utilizing the functions of the counterforce L shape gear-lever electromagnetic clutch operation mechanism 40 (Fig 5), two linear motion platforms 130 and 131, two compression springs 501 and 502 and two electric linear actuators.

290   When the orbiting object starts to travel on the second half of the dome shape non-circular path 134, which is from 360-degree to 30-degree, the rotation axis center 30 (Fig 3) is being moved from the resting rotation axis center 137 to the home rotation axis center 136. The forces stored in the compression springs and the gravitational force converted by the motion of the orbiting

object during the second dome shape non-circular path are fully transferred to the output

295   mechanism of the machine to do work.

Please note that, the gravitational force converted by the orbiting object from the first half of the dome shape non-circular path 134 is slightly lower than the force that needs to compress the compression springs from the springs' equilibrium level, so this force alone cannot compress springs 501, 502 to move the rotation axis center backward yet. The additional forces from the

300   extending rods of two electrical linear actuators 503 and 504 (Fig 1) combined with the gravitational force converted by the motion of the orbiting object from the first half of the dome shape non-circular path 134 to ensure the rotation axis center is moved from the home rotation axis center to resting rotation axis center precisely and efficiently.

Referring to two electrical linear actuators 503 and 504 as best seen in Figures 1 and 2, the

305   electric linear actuator 503 is mounted on the left shoulder 511 and the electric linear actuator 504 is mounted on right shoulder 512 of the upper rail holder 111. As described previously, this upper rail holder is rigidly bolted or welded on the machine frame 110 which is not shown. Since the upper rail holder is welded or bolted stable on the machine frame, the electrical linear actuators are also stably mounted onto the machine frame 110.

310   The linear rods 505, 506, 516 and 517 of the electrical linear actuators 503 and 504 are always at retract positions or at the closed positions when the power is disconnected. When the end of the large extendable sections of the rods 505 and 506 of the electric linear actuators 503 and 504 are at the retract positions, they do not touch the shoulders 124 and 125 of the main linear motion platform 130 (Figs 1, 2). Similarly, when the end of the small extendable sections of the rods 516

315   and 517 of the electrical linear actuators 503 and 504 are also at the retract positions, they do not touch the shoulders of the follower linear motion platform 131.

When electricity provides to activate the electric linear actuators 503, 504, the large sections 505, 506 and the small sections 516 and 517 are immediately extending to provide the forces to combine with the gravitational force converted by the motion of the orbiting object from the first

320   half of the dome shape non-circular path 134 to: a) move the main linear motion platform 130

and the following linear motion platform 131 (Figs 1, 2) from the home rotation axis center 136 to the resting rotation axis center 137, and b) transfer to compress and store in the compression springs 510, 502. On the other hand, when the power is turned off or disconnected from the electric linear actuators, the rods 505, 506, 516 and 517 are immediately retracted to provide the spaces for the rotation axis center moving from resting rotation axis center 137 to home rotation axis center 136 to transfer the forces which stored in the compression springs to the output mechanism of the machine to do work.

As best seen in Figures 3 and 4, when the orbiting object is passing 330-degree (Fig. 3) to start to travel on the first half of the dome shape non-circular path, the sensor 507 sends a signal to the controller 20 to immediately activate the electrical linear actuators 503 and 504 to extend the rods 505, 506, 516 and 517 to provide the additional forces. The forces from the electric linear actuators combine with the gravitational force that converted by the motion of the orbiting object, while it is travelling from the beginning to the end of the first half of the dome shape non-circular path 134 (Fig 3) and while the rotation axis center 30 is moving from home rotation axis center 136 to resting rotation axis center 137, are transferred and stored in the compression springs accurately and timely.

In order to move the rotation axis center from home rotation axis center 136 to resting rotation axis center 137 to transfer the gravitational force converted by the motion of the orbiting object to store in the compress springs properly and precisely, the forces from two electric linear actuators and the gravitational force that converted by the motion of the orbiting object during the first half of the dome shape non-circular path must gradually increasing to provide the sufficient force to compress two compression springs 501, 502 and move the rotation axis center from home rotation axis center to the resting rotation axis center precisely and timely. It means while the orbiting object is travelling on the first half of the dome shape non-circular path from 330-degree to 360-degree to convert the gravitational force to do work, the home rotation axis center, the first linear platform and the second linear motion platform are moving together while the rotation axis center 30 (Fig 3) is moving from home rotation axis center 136 to resting rotation axis center (137).

As described above, while the machine 10 is in operation, the combination of the gravitational

350 force converted by the motion of the orbiting object during the first half of the dome shape non-circular path 134 and the forces from two electric linear actuators are fully transferred and stored in the compression springs. While the orbiting object is travelling throughout the second half of the dome shape non-circular path 134 starting from 360-degree to 30-degree, the forces were stored in the compression springs are released to transfer to the output mechanism of the

355 machine to do the work.

Please note, the first half of the dome shape non-circular path 134 and the second half of the dome shape non-circular path 135 are perfectly identical or they are adjacent and symmetrical. It means the second half of the non-circular path 135 is a mirror image of the first half of the non-circular path 134 and vice-versa.

360 According to the invention, multiple machine units 10 should be connected in series to provide higher output force and smoother operation. To minimize the vibration and produce a higher output force level, two units or more should be connected together. Each unit must be identical. The home rotation center of the above unit should be aligned with the home rotation center of the below unit. For a two-unit machine, the rotation arm of the first unit must face opposite the

365 rotation arm of the second unit. If connecting 3, 4 and 6 units together, the angle between the rotating arm of each unit must be the same.

MODIFICATION

Having described the preferred embodiments, it will be appreciated by those skilled in the art that various modifications may be made to the structures described above. For example, any

370 other type of adjustable pneumatic cylinder, adjustable pneumatic rotary actuators that function with a cam, or electric solenoids, and any servo motor, steep motor, electrical, electronic providing similar functions could be used instead of electric linear actuators. Other types of elastic material or springs could be used to offset the gravitational force and store it while the orbiting object travels throughout the first section of non-circular path. Furthermore, any steep

375 motors, servo motors or counters could be used to replace the sensors. The live counterforce L

shape gear-lever could be replaced by any suitable electrical or mechanical devices that could automatically engage and disengage the gear mechanism to provide the same function. Finally, the first and the second of the dome shape non-circular paths 134 and 135 can both be equally increased or decreased to have a bigger or smaller arc (non-circular paths) to be suitable with the

380 desired construction and ensure the Efficient Machine for Converting Gravitational Force can be connected in a series to produce higher output force to do the work as demanded.

As will be apparent to those skilled in the art in the light of the foregoing disclosure, many alterations and modifications are possible in the practice of this invention without departing from the spirit or scope thereof.

385 Accordingly, the scope of the invention is to be construed in accordance with the substance defined by the following claims.

CLAIMS:

1. A device for converting gravity force comprising:

a steel case;

390 a power source to supply power to rotate a motor;

an orbiting object (123);

wherein the rotating arm (122) is connected to the orbiting object (123) at one end, and is connected to the motor at the other end;

wherein the rotating arm (122) rotates the orbiting object (123) travelling on a

395 circular path (132) and a non-circular path (133), which includes a first half (134) and a second half (135) of a dome shape;

a plurality of linear motion platforms (130, 131) with at least one main linear platform (130) and at least one follower linear motion platform (131);

a live counterforce L shape gear-lever electromagnetic clutch operation

400 mechanism (40);

shape gear-lever could be replaced by any suitable electrical or mechanical devices that could automatically engage and disengage the gear mechanism to provide the same function. Finally, the first and the second of the dome shape non-circular paths 134 and 135 can both be equally increased or decreased to have a bigger or smaller arc (non-circular paths) to be suitable with the

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a live counterforce L shape gear-lever electromagnetic clutch operation

400 mechanism (40);

wherein the live counterforce L shape gear-lever electromagnetic clutch operation mechanism is activated to link a plurality of linear motion platforms together to move the rotation axis center from home rotation center to resting rotation axis center to transfer the gravitational force converted by the motion of the orbiting object to compress and store in the springs (501, 502);

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whereas a pair of compression springs (501, 502) located in between the linear motion platforms (131) and the lower linear rail holder (112) are being offset and store the gravitational force converted by the motion of the orbiting object while it is travelling on the first half of the dome shape non-circular path (134); and

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whereas the compressed springs immediately release the stored forces to combine with the gravitational force converted by the orbiting object during the second half of the dome shape non-circular path (135) and the rotation axis center is being moving from the resting rotation axis center to transfer to the output mechanism of the machine;

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an electronic controller receiving and sending signals to control the live counterforce L shape gear-lever electromagnetic clutch operation mechanism and electric linear actuators (503, 504); and

a plurality of flat springs is intermittently providing spaces and occasionally providing dampers between components while the machine is in operation.

420   2.   A device as claimed in claim 1 wherein the steel case has at least one entrance door openable only when the machine is shut off.

3.   A device as claimed in claim 1, wherein the plurality of the linear motion platforms including a main linear motion platform and a follower linear motion platform are intermittently moving back and forth on parallel shafts along the vertical axis of the device.

425   4.   A device as claimed in claim 3, wherein the main linear motion platform mounting a motor connecting to the rotating arm for rotating the orbiting object.

5.   A device as claimed in claim 3, further comprising a plurality of linear motion platforms linking together by the live counterforce L shape gear-lever electromagnetic clutch operation mechanism.

430   6.   A device as claimed in claim 3, wherein the main linear motion platform and the follower linear motion platform are intermittently linked together for transferring the gravitational force converted by the motion of the orbiting object to compress the compression springs.

7.   A device as claimed in claim 3, wherein the plurality of linear motion platforms is intermittently engaged to move together from a home rotation axis center to a resting rotation

435   axis center when the power is supplied to activate the live counterforce L shape gear-lever electromagnetic clutch operation mechanism.

8.   A device as claimed in claim 3, wherein the main linear motion platform and the follower linear platform are disengaged to move independently of each other when the power is removed from the live counterforce L shape gear-lever electromagnetic clutch operation mechanism.

440   9.   A device as claimed in claim 1 and further comprising a plurality of electric linear actuators are intermittently activated to provide the additional force for combining with the gravitational force converted by the motion of the orbiting object to transfer to compress and store in the compression springs.

10.   A device as claimed in claim 1 and further comprising a controller means receiving and

445   sending signals from the plurality of sensors for either providing or removing the power that activate or deactivate electric linear actuators and the live counterforce L shape gear-lever electromagnetic clutch operation mechanism that control the motion of orbiting object and the rotation axis center.

11.   A device as claimed in claim 9 and further comprising means for receiving the signals from

450   the sensors when the rotating arm is passing by 330-degree and 360-degree for controlling the movements of the rotation axis center and the motion of the orbiting object.

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12. A device as claimed in claim 9, and further comprising means for sending the signal to activate the linear actuators and the live counterforce L shape gear-lever electromagnetic clutch operation mechanism when the orbiting object is arriving at 330-degree and providing another

455 signal to immediately deactivate the linear actuators when the orbiting object is arriving at 360-degree.

13. A device as claimed in claim 12, wherein the live counterforce L shape gear-lever electromagnetic clutch operation mechanism is intermittently engaged to link a plurality of linear motion platforms together to convert and transfer the gravitational force converting by the

460 motion of the orbiting object to compress and store the gravitational force in the compression springs.

14. A device as claimed in claim 12, wherein two gear sections (419, 420) of the live counterforce L shape gear-lever electromagnetic clutch operation mechanism function like a scissor-style while the power is supplied and then the two levers become free to move

465 independently when the power is removed.

15. A device as claimed in claim 12 and further comprising means wherein the live counterforce L shape gear-lever electromagnetic clutch operation mechanism and a plurality of electric linear actuators are intermittently engaged to link two linear motion platforms for transferring gravitational force converted by motions of orbiting object to the output of the

470 machine.

16. A device as claimed in claim 1, wherein the pair of compression springs (501, 502) providing the compression forces for offsetting or neutralizing the centrifugal force while the orbiting object is travelling through the first half of the dome shape non-circular section from 330-degree to 360-degree.

475 17. A device as claimed in claim 15, further synchronizing means wherein a pair of compression springs is compressed to store the gravitational force converted by the motion of the orbiting object while it is travelling from 330-degree to 360-degree and its rotation axis center is moving from home rotation axis center to resting rotation axis center, then the compressed

springs unleash the forces and freely return to the equilibrium level and concurrently pushing the rotation axis center to move from the resting rotation axis center to home rotation center while the orbiting object is travelling through second half of the dome shape non-circular path from 360-degree to 30-degree.

18. A device as claimed in claim 1, wherein a heavy-duty flat spring (138) intermittently provides a space between the top rail holder and the main linear motion platform while the live counterforce L shape gear-lever electromagnetic clutch operation mechanism and the electric linear actuators are being activated to control the movement of the rotation axis center (30) and the motion of orbiting object to travel through the first half of non-circular path.

19. A device as claimed in claim 1 and further comprising a heavy-duty flat spring on the top of the follower linear motion platform (131) touching the bottom of the main linear platform (130) during the rotation axis center moving from the resting rotation axis center to home rotation axis center.

20. A method of converting gravitational force, comprising the steps of:

a) providing an input force for rotating the rotating arm (122) connecting to the orbiting object (123) travelling on a circular path (132) and a dome shape non-circular path (133);

b) tracking the motions of the orbiting object by one of the plurality of sensors for providing the signal to activate the live counterforce L shape gear-lever electromagnetic clutch operation mechanism and electric linear actuators to link two linear motion platforms together to control the movement of the rotation axis center between home rotation axis center and resting rotation axis center; and

c) intermittently activate the electric linear actuators and the live counterforce L shape gear-lever electromagnetic clutch operation mechanism to synchronize the movements of the linear motion platforms with the motion of the orbiting path to travel on the two halves of the dome shape non-circular paths and circular path;

505   d)   combining: 1) a gravitational force converted by the orbiting object while the orbiting object travelling on the first half of dome shape non-circular path with 2) electric linear actuator forces to compress the compression springs for offsetting and storing the combined forces in the compression springs then immediately release the said forces to combine with 3) a gravitational force converted by the orbiting object while the orbiting object is travelling on the second half of dome shape non-circular path, to transfer to the

510   output of the machine to do work;

e)   wherein the plurality of flat springs providing the dampers between components; and

intermittently moving away for providing the clearance spaces.

21.   A method as claimed in claim 20, further comprising the step of rotating the orbiting

515   object on the circular path and on the two halves of the dome shape non-circular paths (134, 135) of a revolution for intermittently converting the gravitational force and transferring to the output of the machine.

22.   A method as claimed in claim 20, further comprising the rotation of the orbiting object on the first half of the dome shape non-circular path from about 330-degree to 360-degree, and on

520   the second half of the dome shape non-circular path from 360-degree to about 30-degree.

23.   A method as claimed in claim 20, further comprising a step of moving the rotation axis center from the home rotation axis center to the resting rotation axis center to control the orbiting object to travel on first half of the dome shape non-circular path from about 330-degree to 360-degree.

525   24.   A method as claimed in claim 20, further comprising the step of positioning the first non-circular path (134) at the left side of a vertical axis of the machine (50) and the second half of the dome shape non-circular path (135) positioned at the right side of the vertical axis, wherein the first half and the second half of the dome shape non-circular path are adjacent and symmetrical.

25.   A method as claimed in claim 20, further comprising the steps of:

530   rotating the orbiting object to travel on the dome shape non-circular paths, where the gravitational force is converted by the orbiting object and stored in the plurality of compression springs; and

moving the rotation axis center back and forth between home rotation axis center and resting rotation axis center while the orbiting object is travelling on dome shape non-

535   circular paths and while the rotation axis center is stably positioned at home rotation axis center and the orbiting object is only travelling on the circular path, the energy level consumed by the motor is constant.

26.   A method as claim in claim 20 and further comprising the steps of:

(a) intermittently linking two linear motion platforms by the live counterforce L

540   shape gear-lever electromagnetic clutch operation mechanism to transfer the forces from the electric linear actuators and the gravitational force converted by the motion of orbiting object while travelling on the first half of the dome shape non-circular path for compressing and storing in the compression springs;

(b) combining the forces released from the compression springs with the

545   gravitational force converted by the motion of the orbiting object from the first half of the dome shape non-circular path to transfer to the output of the machine while the rotation axis center is moving from home rotation axis center to resting rotation axis center.

27.   A method as claimed in claim 20 further comprising the steps of:

550   providing the plurality of the flat springs to function as the damper between components;

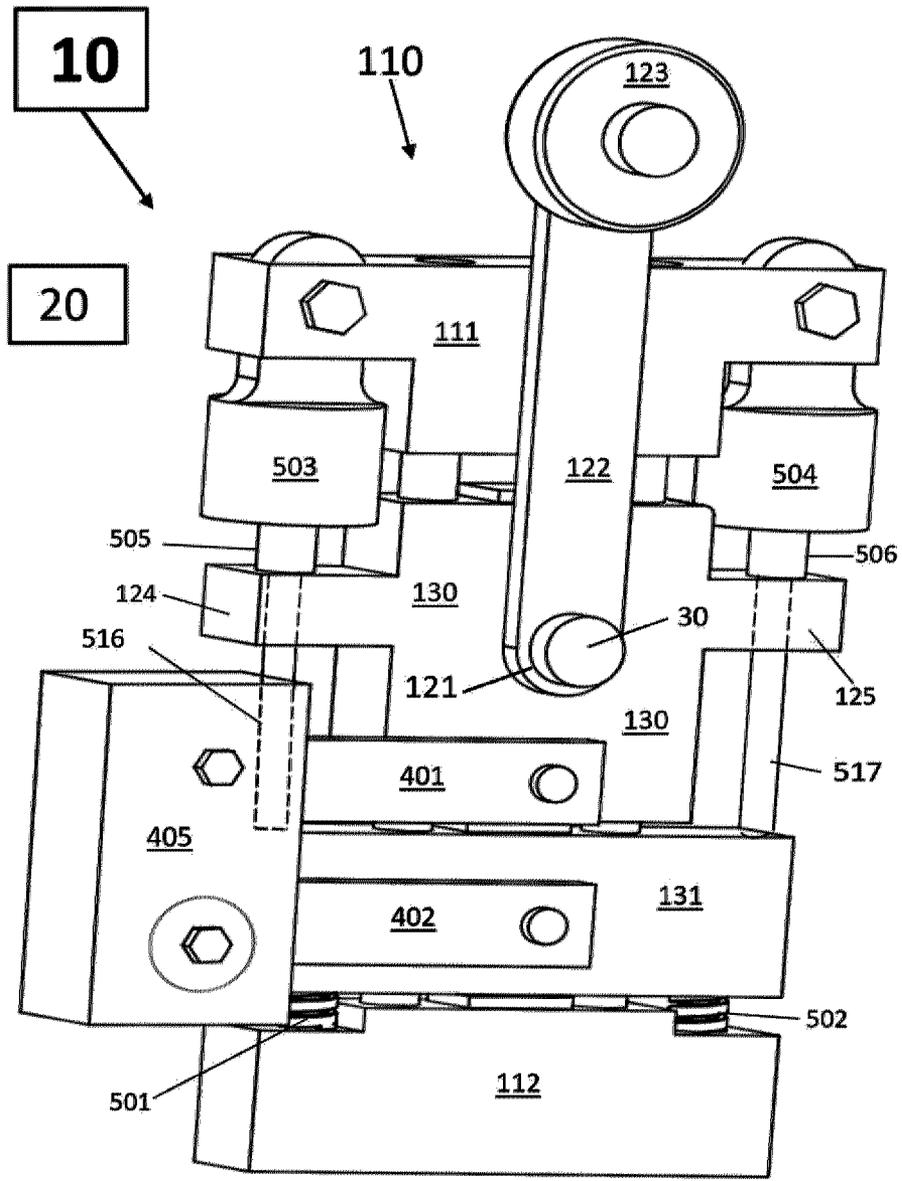positioning the plurality of the flat springs between components; and

creating at least a gap between the upper linear rail holders and the main linear motion platforms while the rotation axis center moving back and forth to transfer the

555   gravitational force converted by the orbiting object to the output mechanism of the machine.
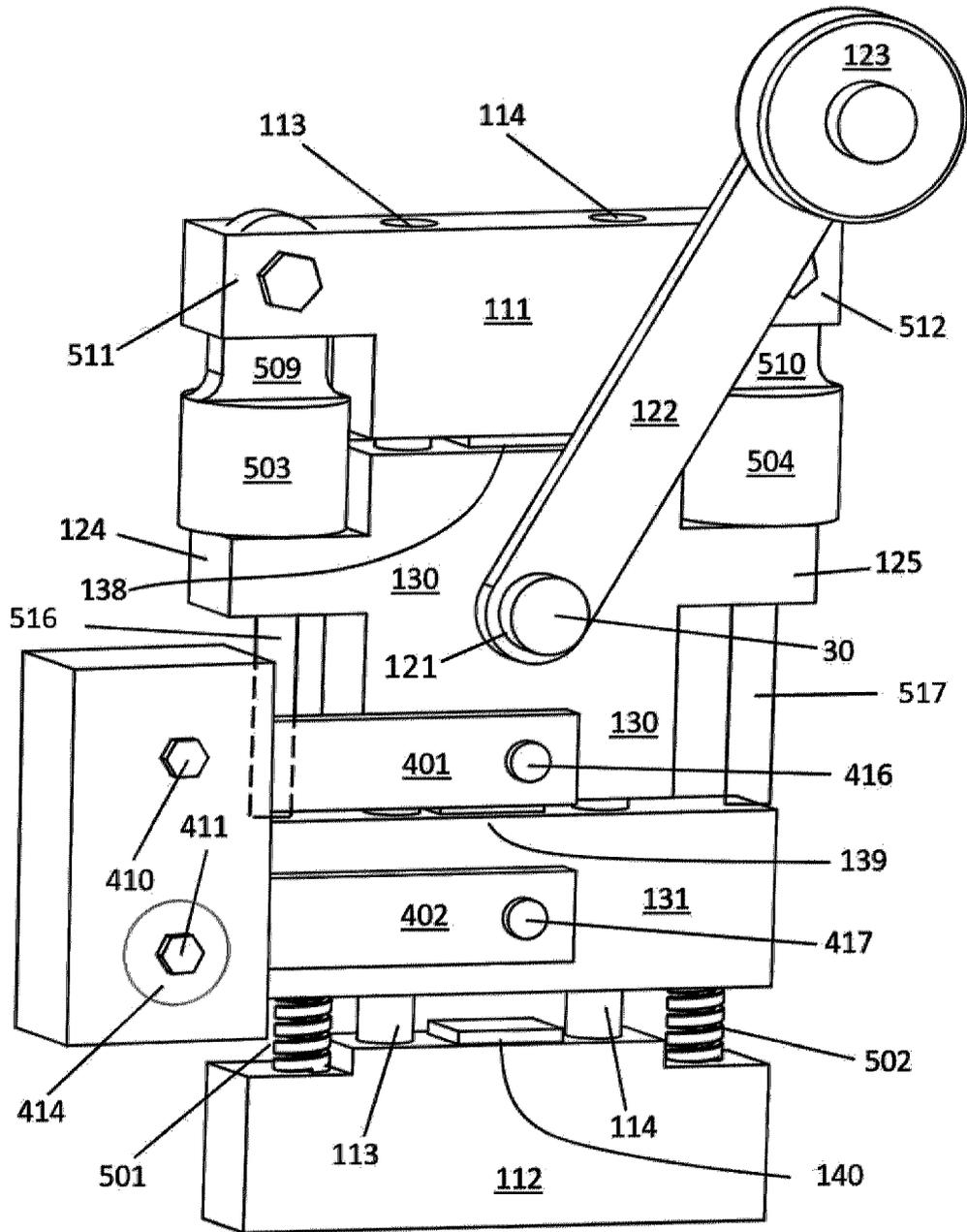
ABSTRACT

A device for effectively converting gravitational force including multi-linear motion platforms. One of the platforms mounts a rotating axis center to rotate the orbiting object travelling on

560   circular path and on the dome shape non-circular path for converting the gravitational force. The generated force is directly acting on the rotation axis center passing the live counterforce L shape gear-lever electromagnetic operation mechanism to be offset and stored by the compression springs during the orbiting object travelling through the first half of the dome shape non-circular path then unleashes to transfer to output mechanism with the gravitational force converted by

565   the orbiting object during the second half of the dome shape non-circular path.
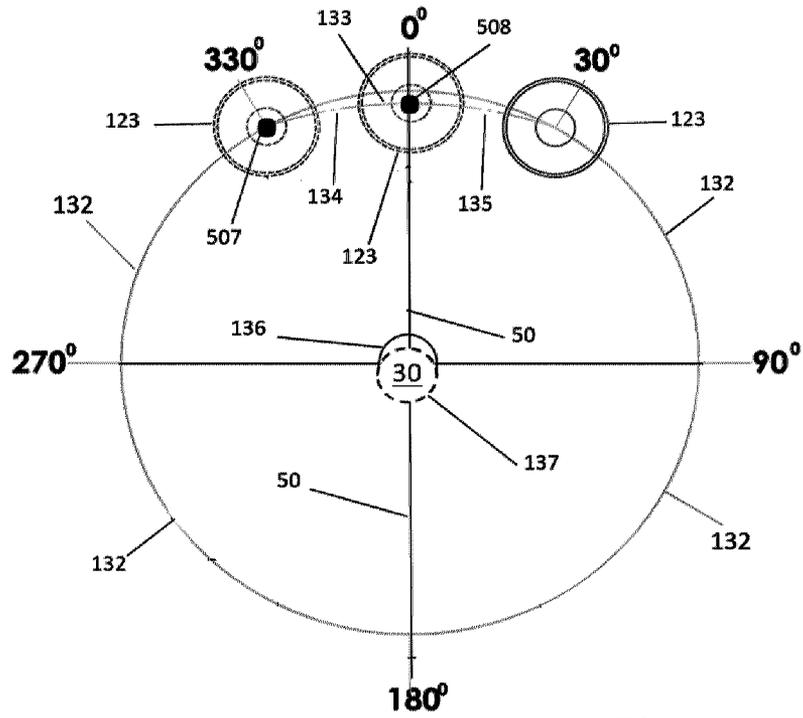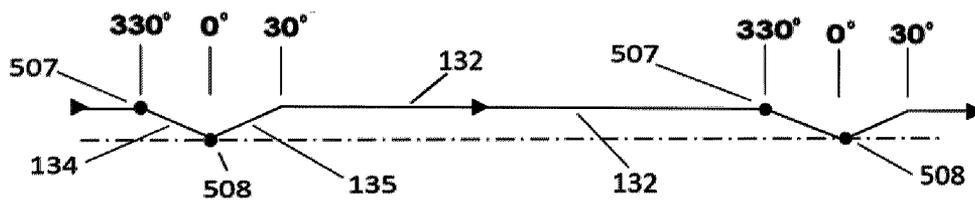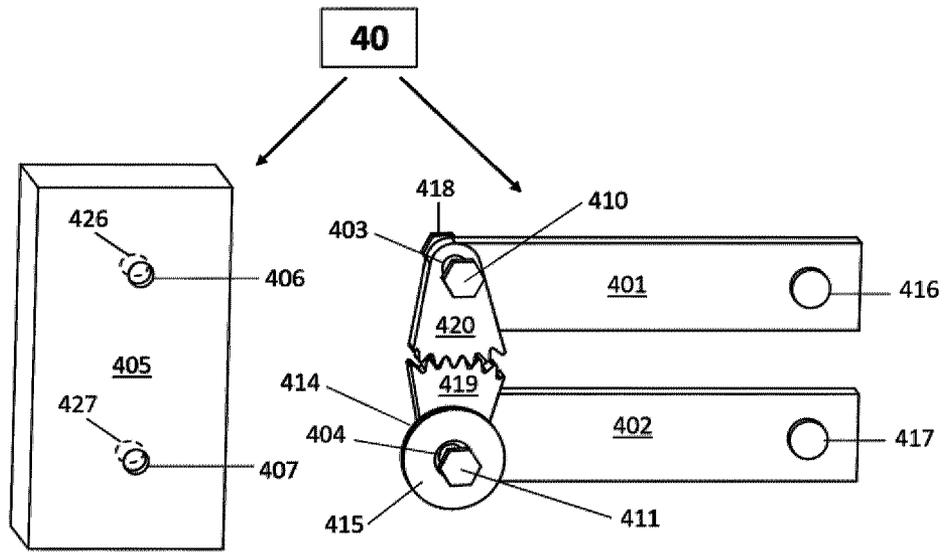
DRAWINGS:

Fig: 1

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Fig: 2

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Fig: 3

Fig: 4

Fig: 5

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123

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503   122   504

505   506

124   130

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121   130   125

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402   131

501   112   502