



(22) Date de dépôt/Filing Date: 2020/11/07

(41) Mise à la disp. pub./Open to Public Insp.: 2021/02/01

(45) Date de délivrance/Issue Date: 2021/12/21

(30) Priorité/Priority: 2020/10/18 (US17/073368)

(51) Cl.Int./Int.Cl. *A63G 21/04* (2006.01),
A63G 21/08 (2006.01), *A63G 21/12* (2006.01),
A63G 27/00 (2006.01)

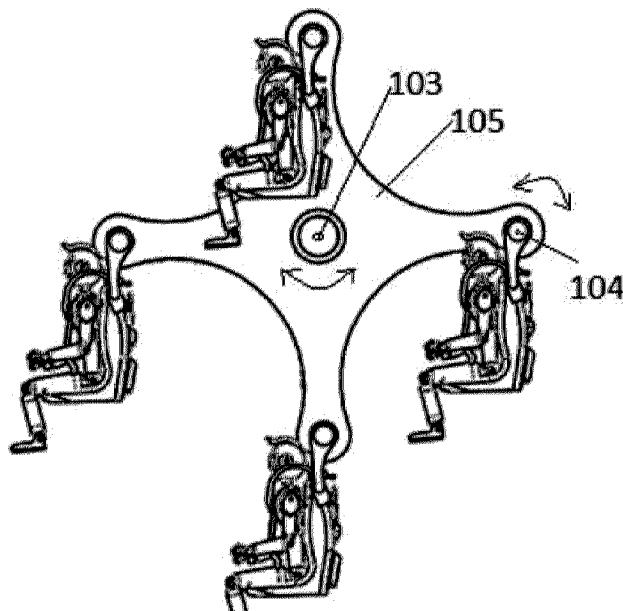
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(54) Title: AMUSEMENT RIDE



(57) Abrégé/Abstract:

An amusement ride allows at least one rider to rotate/swing around a distal axis, wherein said distal axis is rotatable around an axle projecting away from said distal axis, wherein the axle is in parallel direction with said distal axis, wherein the axle rotatably connected to a vehicle so that said axle is perpendicular to a travel direction of the vehicle, wherein the vehicle is moving through a running rails.

ABSTRACT

An amusement ride allows at least one rider to rotate/swing around a distal axis, wherein said distal axis is rotatable around an axle projecting away from said distal axis, wherein the axle is in parallel direction with said distal axis, wherein the axle rotatably connected to a vehicle so that said axle is perpendicular to a travel direction of the vehicle, wherein the vehicle is moving through a running rails.

Amusement Ride

1. FIELD OF THE INVENTION:

The invention relates to the field of amusement rides. More particularly,
5 the invention to be used to adding at least one Ferris wheel to a moving vehicle and having a dynamic Ferris wheel amusement ride.

2. BACKGROUND

Amusement rides have long been some of the well liked riders in amusement parks. Rider load and unload at a platform, typically at the low
10 elevation. At the beginning of each ride cycle, an amusement ride vehicle is locked to be safe to upload riders. Vehicle is then released to gain kinetic energy from potential energy, if it is at the highest point of the track, or from electrical motor installed on the vehicle or track. The amusement ride track typically includes various loops, turns, inversions and other configuration
15 intended to thrill the rider. A number of amusement rides have been devised in which riders can apparently race each other in a simulated dragster format.

Traditional amusement rides travel along rail tracks and provide their riders with stationary seat which fix the motion of the riders to the direction of
20 the travel of vehicle.

The overall effect attained by traditional amusement rides is to statically couple riders to the vehicle and therefore sense essentially the same motions in forces experienced by the vehicles in which they ride. This problem is experienced by most amusement rides, which due to static nature of the ride
25 provides the same ride sensation and experience every time it is ridden.

Nowadays amusement rides have evolved from simple equipment to advanced and technically sophisticated equipment with special mechanisms and various movements. Thanks to virtual reality and by using new

technology, new designs and software, riders experience more joy and excitement of amusement rides.

DESCRIPTION:

5 Described amusement ride simulating a dynamic Ferris wheel and allows at least one rider to rotate/swing around a distal axis, wherein said distal axis is rotatable around an axle projecting away from said distal axis, wherein the axle is in parallel direction with said distal axis, wherein the axle rotatably connected to a vehicle so that said axle is perpendicular to a travel direction of
10 the vehicle, wherein the vehicle is moving through a running rails.

SUMMARY OF THE INVENTION:

Therefore, the object of the present invention is an amusement ride allows at least one rider to rotate/swing around a distal axis, wherein said
15 distal axis is rotatable around an axle projecting away from said distal axis, wherein the axle is in parallel direction with said distal axis, wherein the axle rotatably connected to a vehicle so that said axle is perpendicular to a travel direction of the vehicle, wherein the vehicle is moving through a running rails, comprising:

20 a track including at least one supporting column, at least one set of running rails having an embark point; said at least one supporting column having a bottom section and a top section, said bottom section of said at least one supporting column adapted to be mounted on a ground, and said top section of said supporting column connected to said at least one set of running rails to
25 support said amusement ride;

at least one vehicle arranged to carry at least one rider along said at least one set of running rails, said at least one vehicle mounted and guided on said

at least one set of running rails and having a travel direction, and said at least one vehicle comprises a main body;

at least one rotary arm rotatably connected to the main body of said at least one vehicle wherein said at least one rotary arm rotates around a rotation
5 axis that is perpendicular to the travel direction of said at least one vehicle;

at least one seat assembly comprising a chassis rotatably/pivotally connected to said at least one rotary arm distal from said rotation axis wherein the chassis rotates/swings around a pivot axis that is in parallel direction with said rotation axis of said at least one rotary arm, and at least one passenger
10 seat mounted on the chassis distal from said pivot axis wherein said at least one passenger seat could be face forward, backward, sideward, upward or downward with respect to the travel direction;

at least one drive means mounted between the main body of said at least one vehicle and said at least one rotary arm to rotate said at least one rotary
15 arm around said rotation axis;

at least one launch system accelerating, or providing initial motion for, said at least one vehicle by using a launch system such as linear motors, or vehicle is towed to the highest point of the track and then potential energy is converted to kinetics energy to provide required speed for said at least vehicle;

at least one power means providing required power for said at least one
20 drive means comprising at least one bus bar set, transferring electrical power to said at least one vehicle, or at least one battery mounted on the main body of said at least one vehicle.

said at least one vehicle moves along said at least one set of running rails
25 which is configured with one or more of groups consisting of turns or loop, or inversion.

said at least one vehicle further comprises at least two sets of bogies mounting and guiding the main body of said at least one vehicle on said at least one set of running rails.

said at least one seat assembly further comprises a restraint for restraining
30 said at least one rider through motions in all three planes.

said at least one drive means comprising at least one actuator or motor gearbox providing required torque for rotating said at least one rotary arm.

The described amusement ride allows said at least one rider to rotate/swing around said pivot axis substantially due to centrifugal forces as
 5 said at least one rotary arm rotates, and said at least one vehicle moves along said at least one set of running rails. Also the rider may return to an initial orientation due to gravity, depends on the condition.

BRIEF DESCRIPTION OF DRAWINGS:

10 Other features and advantages of described invention will become apparent in the following detailed description of preferred embodiments with reference to the appended drawings, of which:

Figure 1A is a perspective view of described amusement ride, and shows the direction of the vehicle while moving along the running rail and rotation axis of
 15 the rotary arm which is perpendicular to the rail direction.

Figure 1B is a view of the rotary arm with two arms and four riders.

Figure 2A is a perspective view of described amusement ride with rotary arm including one arm and two riders at each side.

Figure 2B is a perspective view rotary arm with one arm and two riders.

20 **Figure 3A** is a front view of described amusement ride and shows track, vehicle and bogies and drive means.

Figure 3B is a side view of described amusement ride with one arm and two riders at each side.

Figure 4A is a side view of the rotary arm and shows the two degree freedom
 25 between rider and the vehicle and how the rider is distal from the rotation pivot axis.

Figure 4B is a side view of the rotary arm and shows the two degree freedom between rider and the vehicle, and how the orientation between rider and rotary arm is changing in relation to the vertical line 950.

Figure 5A, is a perspective view of described amusement ride and shows two degree of freedom between rider and vehicle.

Figure 5B is a perspective view of described amusement ride and seat assembly, and shows how drive means rotates the rotary arm.

DETAILED DESCRIPTION OF EMBODIMENT

The description which follows and the embodiments described therein are provided by way of illustration of an example of particular embodiment of principles of present invention. This example is provided for the purposes of explanation and not limitation of those principles and of the invention.

Referring to Figures 1 to 5, the preferred embodiment of an amusement ride, according to present invention is shown to comprise:

The track, the vehicle, the rotary arm, the drive means, the launch system, and the power means.

The track including at least one supporting column 402 and at least one running rails 401 are preferably configured with one or more of group consisting of turns, loops or inversion. (See figure 2A);

The vehicle 350 (See Figure 3A) arranged to carry at least one rider on the running rails 401 comprising the main body 325, at least two sets of bogies 510, installed the main body for the purpose of mounting and guiding the vehicle on the running rails and having a travel direction 101, each set of bogie including at least two bogies installed on rear end and front end of the main body 325 of the vehicle. (See figures 2A and 2B)

The rotary arm 105 having an axle 103 rotatably connected to the main body 325 of the vehicle wherein the rotary arm 105 rotates around a rotation axis

102, wherein the rotation axis 102 of said rotary arm is approximately perpendicular to the travel direction 101 of said vehicle 350. (See Figures 1A, 1B, and 3A)

at least one seat assembly 660 comprising a chassis 650
5 rotatably/pivotally connected to said rotary arm 105 or 205, distal from said rotation axis 102 wherein the chassis rotates/swings around a pivot axis 104 that is in parallel direction with said rotation axis 102 of said rotary arm, and at least one passenger seat 601 mounted on the chassis, distal from said pivot axis 104, the restraint 602 for restraining said rider through motions in all three
10 planes. (See Figure 2B, 5B)

at least one drive means 301 mounted between the main body 325 of said at least one vehicle and rotary arm 105 or 205 providing required power for rotating said at least one rotary arm. (See Figure 1B, 2A)

at least one launch system comprising LSM 521,522 accelerating/
15 decelerating said at least one cylindrical vehicle.

at least one set bar means 523 transferring electrical power to vehicle.

The batteries 302 could provide required electrical power for drive means 301. (See Figure 2A)

While the present invention has been described in connection with what is
20 considered the most practical and preferred embodiment, it is understood that this invention is not limited to the disclosed embodiment but is intended to cover various arrangements included within the spirit and scope of the broadest interpretation so as to encompass all such modifications and equivalent arrangement.

WHAT IS CLAIMED IS:

1. An amusement ride, comprising:
 - a track including at least one supporting column, at least one set of running rails having an embark point; said at least one supporting column having a
 - 5 bottom section and a top section, said bottom section of said at least one supporting column adapted to be mounted on a ground, and said top section of said supporting column connected to said at least one set of running rails to support said amusement ride;
 - at least one vehicle arranged to carry at least one rider along said at least one
 - 10 set of running rails, said at least one vehicle mounted and guided on said at least one set of running rails and having a travel direction, and said at least one vehicle comprises a main body;
 - at least one rotary arm rotatably connected to the main body of said at least one vehicle wherein said at least one rotary arm rotates around a rotation axis
 - 15 that is perpendicular to the travel direction of said at least one vehicle;
 - at least one seat assembly comprising a chassis rotatably/pivotally connected to said at least one rotary arm and distal from said rotation axis so that the chassis rotates/swings around a pivot axis that is in parallel direction with said rotation axis of said at least one rotary arm, and at least one passenger seat
 - 20 mounted on the chassis distal from said pivot axis;
 - at least one drive means mounted between the main body of said at least one vehicle and said at least one rotary arm to rotate said at least one rotary arm around said rotation axis;
 - at least one launch system accelerating, or providing initial motion for, said at
 - 25 least one vehicle; and,
 - at least one power means providing required power for said at least one drive means.

2. The amusement ride of claim 1 wherein said at least one vehicle moves along said at least one set of running rails which is configured with one or more of groups consisting of turns or loop, or inversion.
3. The amusement ride of claim 1 wherein said at least one vehicle further
5 comprises at least two sets of bogies for mounting and guiding the main body of said at least one vehicle on said at least one set of running rails.
4. The amusement ride of claim 1 wherein said at least one seat assembly further comprises a restraint for restraining said at least one rider through motions in all three planes.
- 10 5. The amusement ride of claim 1 wherein said at least one power means comprising at least one bus bar set or at least one battery mounted on said at least on vehicle.
6. The amusement ride of claim 1 wherein said at least one drive means comprising at least one actuator or motor gearbox providing required torque
15 for rotating said at least one rotary arm.
7. The amusement ride of claim 1 allows said at least one rider to rotate/swing around said pivot axis and changing an orientation substantially due to centrifugal forces as said at least one rotary arm rotates, and said at least one vehicle moves along said at least one set of running rails.

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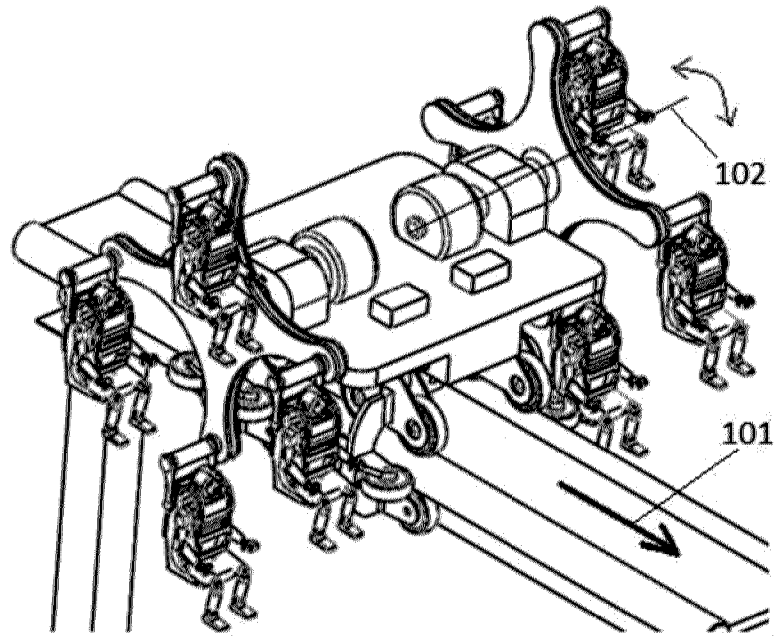


Figure 1A

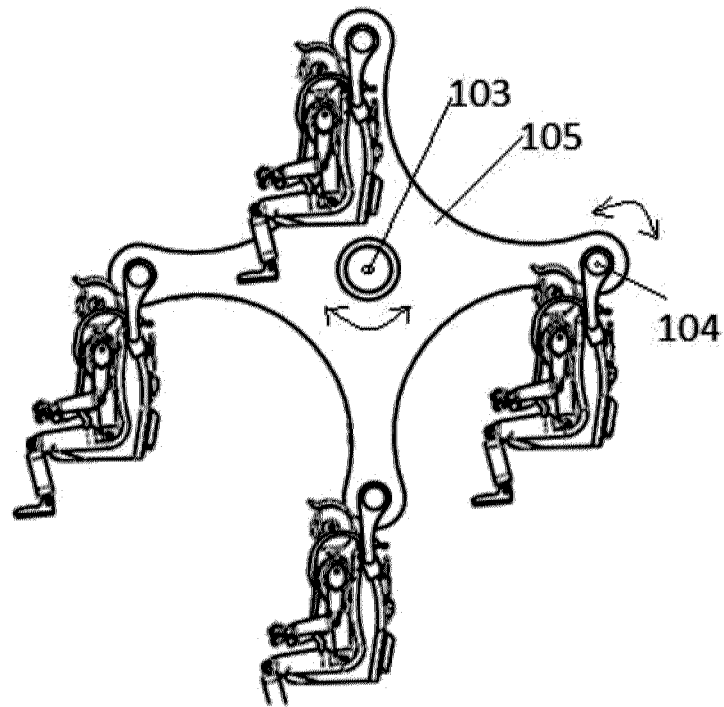


Figure 1B

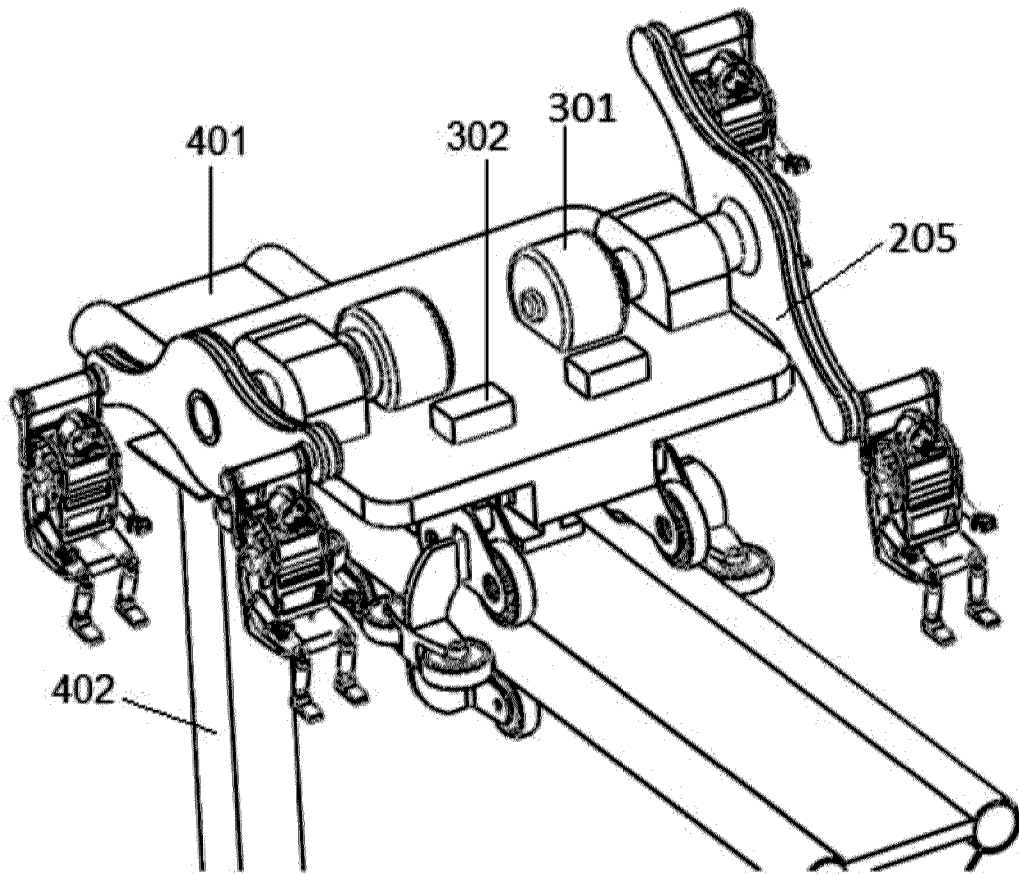


Figure 2A

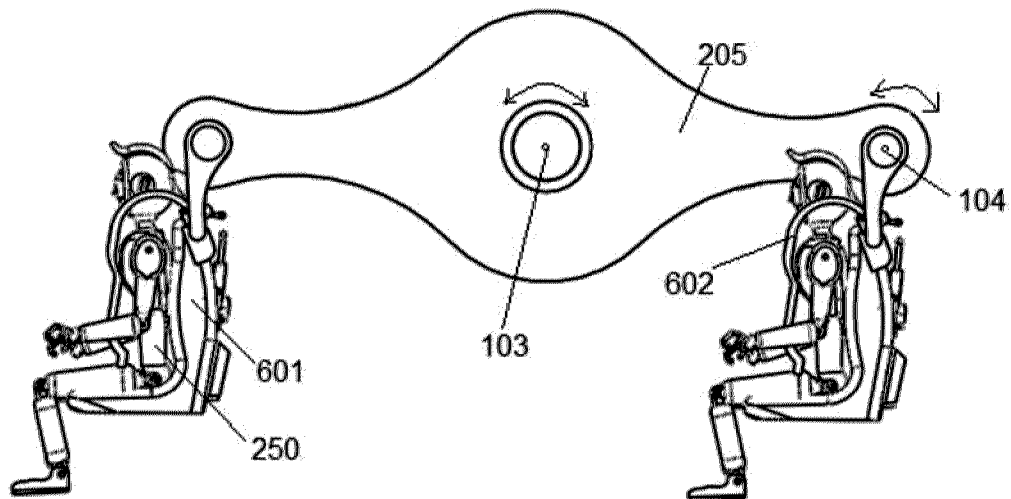


Figure 2B

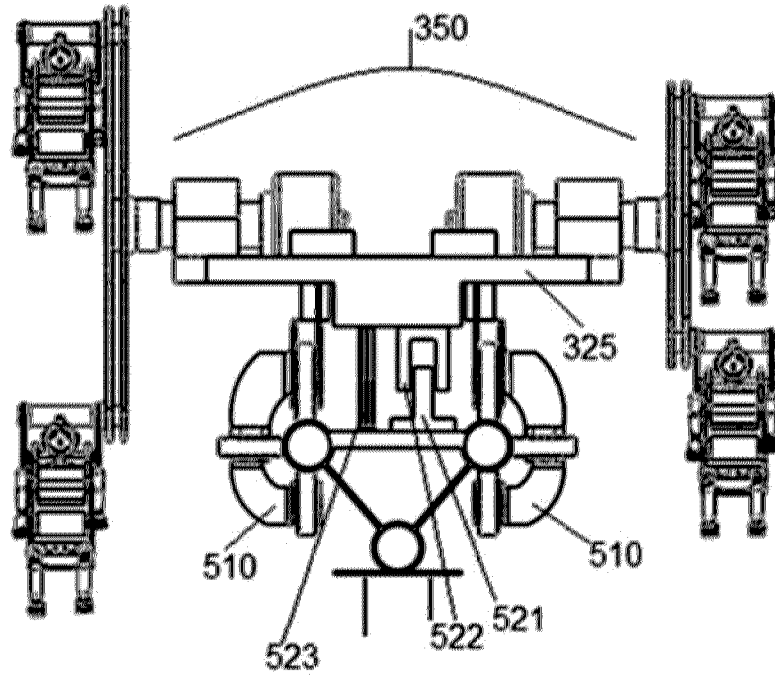


Figure 3A

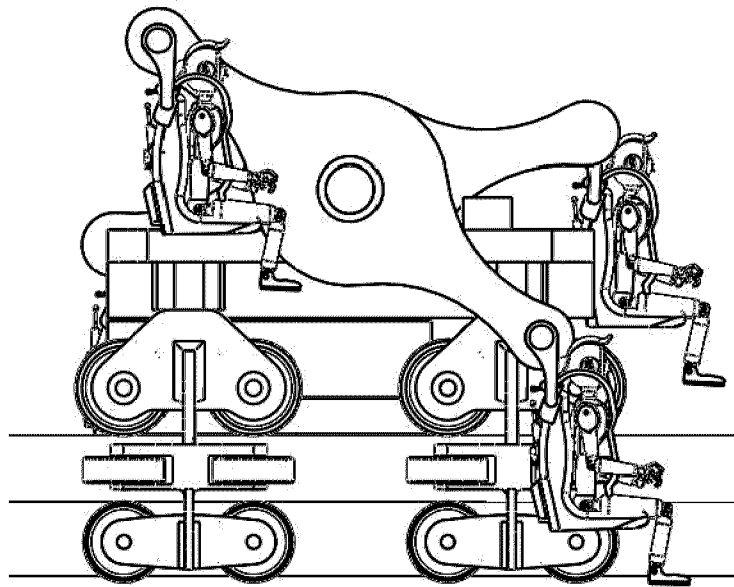


Figure 3B

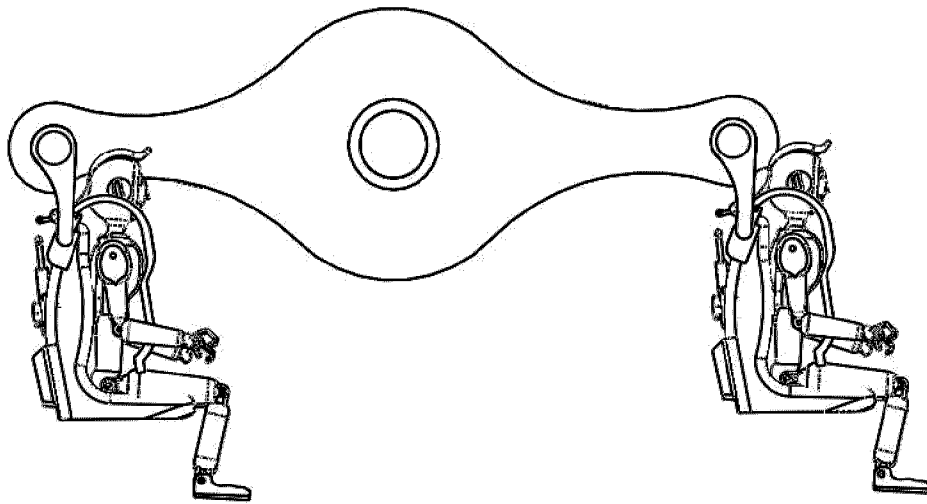


Figure 4A

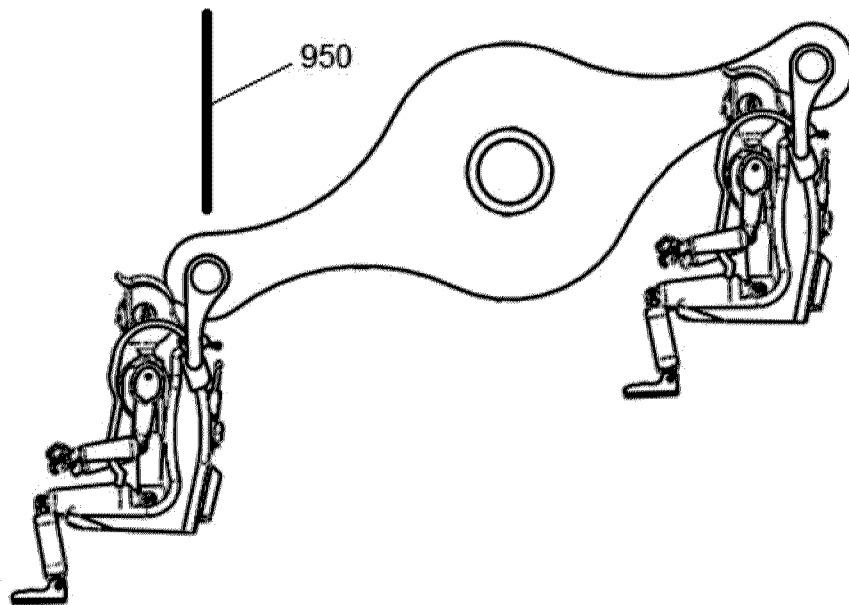


Figure 4B

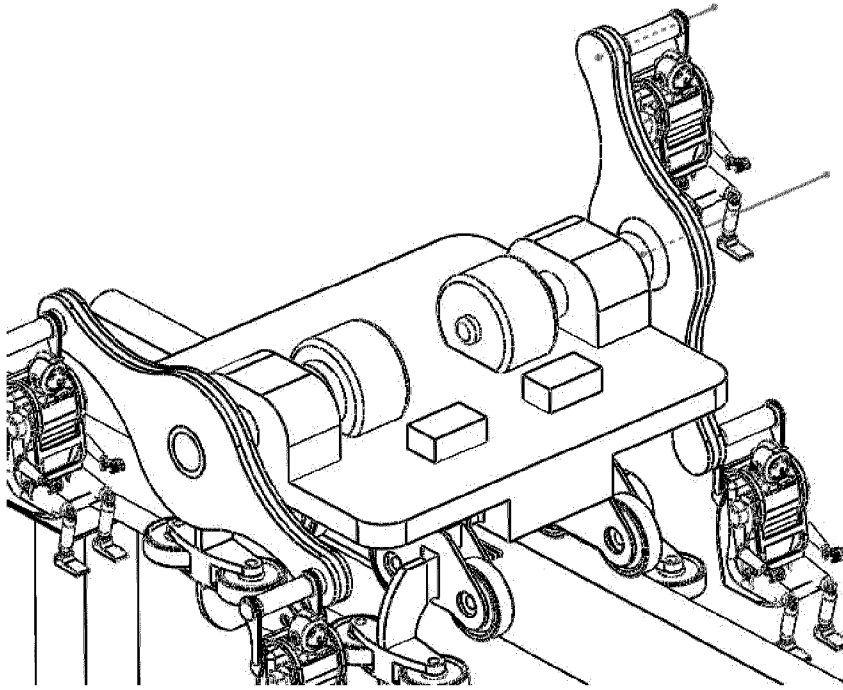


Figure 5A

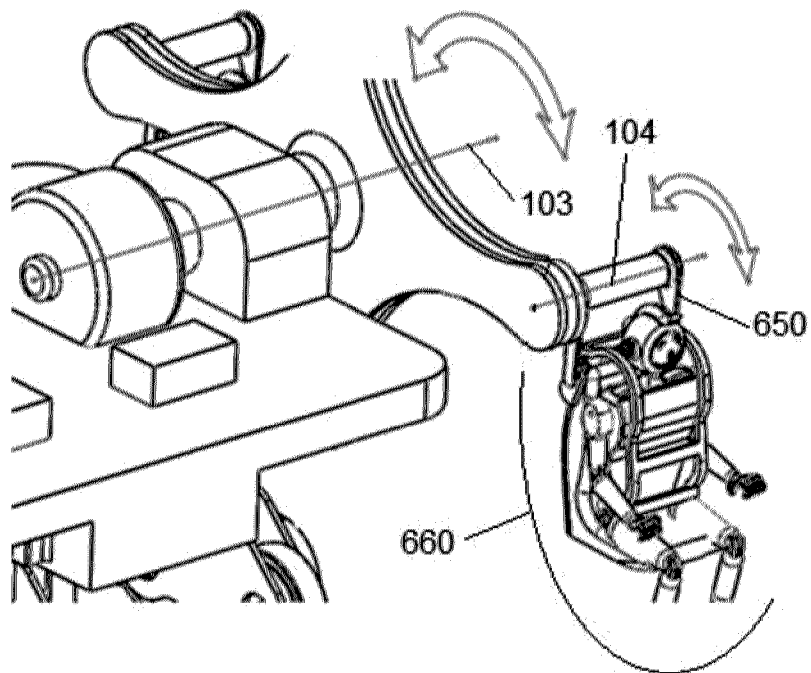


Figure 5B

