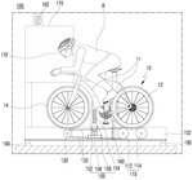
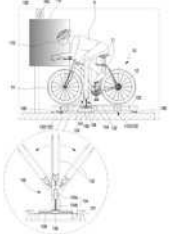
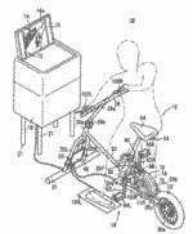
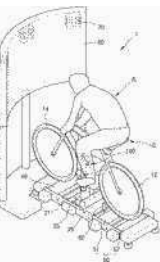
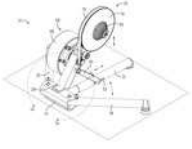
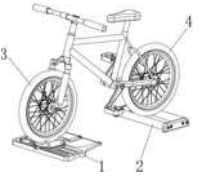
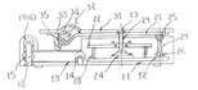
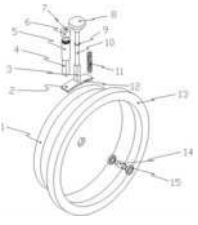
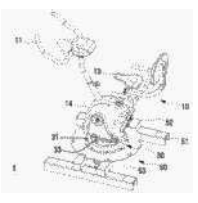
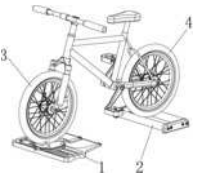
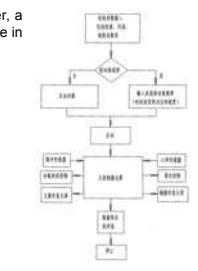
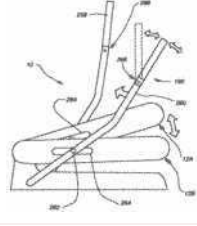
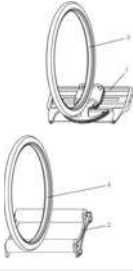
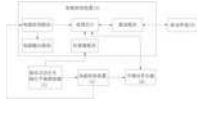
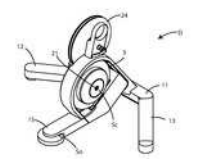
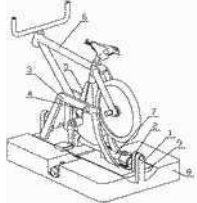
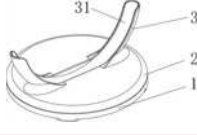
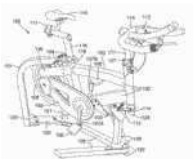
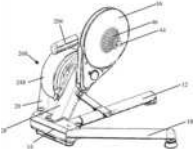
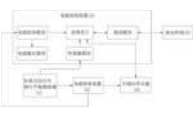
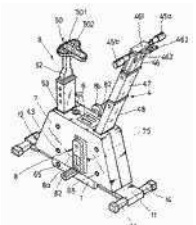
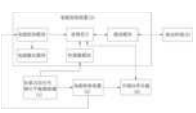
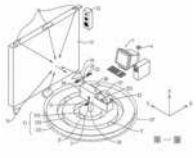


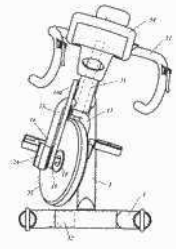
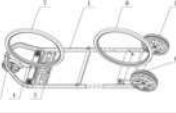
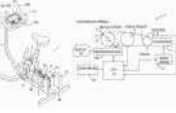
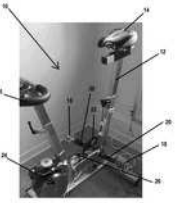
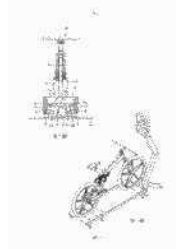
Patent families - 190 results

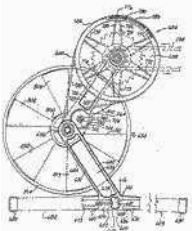
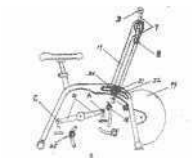
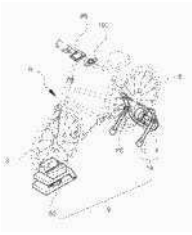
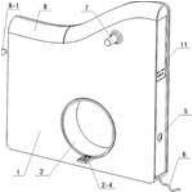
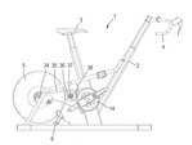
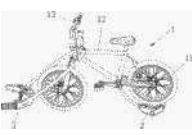
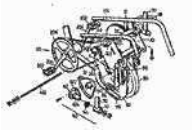
#	Title	Publication number	Publ. date	Applicant/Assignee	
1.	Virtual road surface implementation-type bicycle simulator	WO2019/022331	2019-01-31	REAL DESIGN TECHNOLOGY	100 %
A virtual road surface implementation-type bicycle simulator is disclosed. The virtual road surface implementation-type bicycle simulator, according to the present invention, comprises: a rear wheel support part for supporting the rear wheel of a fixed bicycle and rotating together according to the rotation of the rear wheel; and a road surface implementation part having a plurality of uneven portions coming in contact with the rear wheel and protruding at various heights from the outer circumferential surface of the rear wheel support part, thereby providing virtually set various road surface states to a rider having mounted the bicycle.					
					
2.	Virtual road surface implementing-type bicycle simulator	WO2020/036312	2020-02-20	LEE JOONG SIK	85 %
Disclosed is a virtual road surface implementing-type bicycle simulator. A virtual road surface implementing-type bicycle simulator according to the present invention comprises: a rear wheel supporting part which supports a rear wheel of a held bicycle and rotates together according to rotation of the rear wheel; and a road surface implementing part includes a plurality of concave-and-convex parts operated by a controlled magnetic force to protrude from the outer circumferential surface of the rear wheel supporting part, which comes into contact with the rear wheel, to various heights, thereby providing a rider with various road surface conditions which are virtually configured.					
					
3.	Bicycle simulation system	US20060270522	2006-11-30	HONDA MOTOR	85 %
To realize a light steering handle operation similar to that of a real bicycle, and to obtain an appearance similar to that of a real bicycle. A bicycle simulation system has a turnable steering handle, a left-right pair of pedals, a frame for turnably supporting the steering handle and the pedals, a monitor for displaying a scenery according to the simulated running velocity required by a first speed pickup, a controller supplying sensor signals to a main control unit which controls the monitor. The controller is provided on front forks that function as a front stand.					
					
4.	Bicycle and motorcycle riding simulation system	WO92/16267	1992-10-01	NATIONAL AMUSEMENTS WARNER BROS ENTERTAINMENT ATARI GAMES MIDWAY GAMES WEST	82 %
The simulation system comprises a bicycle or motorcycle of conventional appearance, combined with a computer and video display. It allows the user to control the video display in response to pedalling or throttle position as well as braking and steering. Furthermore means are provided to allow the user to perform a "wheelie" and to lean the cycle from side to side. In addition the computer may be connected to a motor to simulate changing road conditions such as uphill and downhill gradients.					
					
5.	Bicycle simulator	KR10-2019-0141571	2019-12-24	REAL DESIGN TECHNOLOGY	82 %
The present invention relates to a bicycle simulator. According to the present invention, the bicycle simulator comprises a frame support unit supporting a bicycle frame connecting the front and rear wheels of a mounted bicycle and a base unit supporting the frame support unit thereto. The frame support unit comprises: a first support bar connecting one end part to the bicycle frame; a second support bar fixing one end part to the base unit; and a connection unit connecting the other end part of the second support bar and the other end part of the first support bar. The first support bar is connected to rotate around one axis with respect to the second support bar. Moreover, a road surface state with an inclination is realized and various driving modes capable of adjusting an inclination angle are realized in accordance with the type of the rider, thereby providing a dynamic experience extremely similar to a real riding situation.					
					
6.	Bicycle trainer	EP3369465	2018-09-05	WAHOO FITNESS LEVEL 3 COMMUNICATIONS	81 %
A bicycle trainer including folding legs and a vertically adjustable frame member supporting an axle and cassette where a rider mounts the rear frame, such as dropouts, of a conventional bicycle with the rear wheel removed. The trainer includes a flywheel with a magnetic brake assembly controlled through an open protocol and configured to receive wireless transmitted signals from an app running on a smart phone or other such applications. The flywheel assembly also includes a bracket coupling the magnetic brake with a frame. A strain gauge is mounted on the bracket to detect torque, which is used to calculate a rider's power while using the trainer.					
					
7.	Guyed bicycle riding balance simulator	CN104174152	2014-12-03	XU YIDAN	81 %
The invention relates to a guyed bicycle riding balance simulator. The simulator comprises a balance device and a roller device, the balance device comprises a base, a slider, a rotary part, a swing part with one end fixedly connected to the rotary part and two stay cords connected between the swing part and the base. The other end of each swing part is provided with a sector part, the arc edge of the sector part is provided with a groove, the circle center of the arc edge coincides with the rotary connection point of the rotary part, two first stay cord fixing devices are further arranged at two ends of the sector part, two second stay cord fixing devices are correspondingly arranged on the base, one end of each stay cord is fixedly connected to one first stay cord fixing device, one part of each stay cord is wound in the groove of the arc edge, then the each stay cord is fixedly connected to the corresponding second stay cord fixing device on the different side with the stay cord fixing device, and the rotary part is further provided with limiting devices used for limiting left-right sliding of a bicycle front wheel. The simulator is high in simulation degree, simple in structure and low in manufacturing cost.					
					

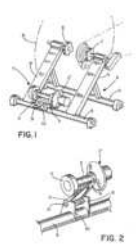
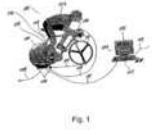
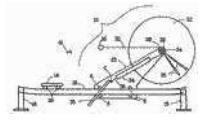
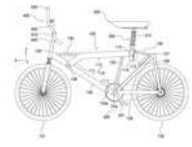
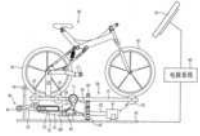
8.	Gear hobbing formula bicycle balance simulation ware of riding suitable for children	CN205649818	2016-10-19	XU FENG	81 %
The utility model relates to a gear hobbing formula bicycle balance simulation ware of riding suitable for children, this simulator include balancing unit and cylinder device, balancing unit includes base, slider, rotating member and swing, and the other end of swing is the arc and is equipped with along arc limit continuous distribution's the teeth of a cogwheel, and curved centre of a circle is coincident mutually with the rotation tie point of rotating member, has set firmly the rack on the base, still is equipped with stop device on the rotating member, the cylinder device includes frame and two cylinders, is provided with the more than one flywheel between frame and the cylinder, and the flywheel is connected the transmission with the cylinder. This simulator can utilize the inertia that sets up the flywheel between frame and cylinder to drive the cylinder in the transition zone time and rotate to driving the bicycle rear wheel and rotating, in order accomplishing a power zone to the smooth transition of another power zone, the external diameter and the quality of greatly reduced cylinder not only reduce the focus of riding of bicycle, make children, old man and beginner have more the sense of security, conveniently carry moreover and accomodate.					
					
9.	Gear hobbing type bicycle-riding intelligent simulation system suitable for children	CN105727506	2016-07-06	XU FENG	81 %
The invention relates to a gear hobbing type bicycle-riding intelligent simulation system suitable for children. The gear hobbing type bicycle-riding intelligent simulation system comprises a gear hobbing type bicycle-riding balance simulation device, an intelligent control device, an electric energy converting device, an adjustable power load and mobile terminal, wherein the gear hobbing type bicycle-riding balance simulation device comprises a balance device and a roller device, the roller device comprises a frame, a roller and an inertia wheel, and the inertia wheel is in connection transmission with the roller. The gear hobbing type bicycle-riding intelligent simulation system has the advantages that the inertia of the inertia wheel is used to drive the roller to rotate during transition so as to drive the rear wheel of a bicycle to rotate, the outer diameter and weight of the roller are lowered greatly, the riding gravity center of the bicycle is lowered, children, elder people and beginners feel safe, and the system is convenient to carry and store; in addition, the system can display riding parameters in real time, the riding parameters can be set through the mobile terminal, the system can be connected with other simulation systems through the mobile terminal so as to allow users to play a game or have a match together, and the system is fun and entertaining.					
					
10.	Curved track simulation device	WO2012/111957	2012-08-23	KANG TOO HWAN KANG, Too Hwan	81 %
Disclosed is a curved track simulation device. The present invention relates to the curved track simulation device which can create a leisure sport type realistic sliding sensation while a base board is cornering to the left or right on top of a track belt and rotates forward and backward according to the left and right rotations and rolling movement, and can satisfy the functions of both amusement and exercise by enabling a track wheel, while moving left or right on the track belt, to generate frictional force and to be slid.					
					
11.	Exercise bicycle flywheel and flywheel arresting gear	CN205683477	2016-11-16	SHANDONG BRIGHTWAY FITNESS EQUIPMENT	81 %
The utility model discloses an exercise bicycle flywheel and flywheel arresting gear, its flywheel structure is that for the wheel body that ferrous metal made, the center has the axle hole of flying including the flywheel body, and separate the magnetism outer lane, for metal ring, and the cooperation of wheel profile surfaces and the fixed connection of the inner ring and the flywheel body, wherein, the radial thickness that separates the magnetism outer lane for radially separate magnetism to the flywheel body. Thereby for the flywheel structure is compacter, cooperates the arresting gear of adaptation, has better braking capacity.					
					
12.	Cable type bicycle riding balance simulator suitable for children	CN105727541	2016-07-06	XU FENG	81 %
The invention relates to a cable type bicycle riding balance simulator suitable for children. The simulator comprises a balancing device and a drum device, wherein the balancing device comprises a base, a sliding part which is connected to the base in a sliding way, a rotating member which is rotationally connected to the sliding part, an oscillating part of which one end is fixedly connected to the rotating member, and two stay cords which are connected between the oscillating part and the base; the drum device comprises a frame and two drums; more than one inertia wheel is arranged between the frame and the drums; the inertia wheel is in transmission connection with the drums. The simulator can drive the drums to rotate in a transition region through inertia of the inertia wheel arranged between the frame and the drums in order to drive a bicycle rear wheel to rotate and realize smooth transition from one force application region to another force application region, so that the outer diameters and the masses of the drums are reduced greatly, the riding gravity center of a bicycle is lowered, children, the elderly and beginners feel safer, and the simulator is convenient to carry and store.					
					
13.	Simulation simulator	KR101900344	2018-11-08	KANG, TOO HWAN	81 %
Disclosed is a tank bike simulation device. According to the present invention, the tank bike simulation device comprises: a cycle unit for implementing traveling and tilting operations; a tilt unit elastically supporting in accordance with movement of the weight of the user; a rotating unit having a thrust bearing; a base unit having a fixed track plate and a plurality of casters; a transmission shaft configured to receive pedal operation force, and having a pair of steering wheels provided at both ends while a transmission wheel is provided therebetween; and a driving shaft having a traveling wheel in rolling contact with the ground surface.					
					
14.	Hobbing type bicycle riding balance simulator suitable for children	CN105749527	2016-07-13	XU FENG	80 %
The invention relates to a hobbing type bicycle riding balance simulator suitable for children. The simulator comprises a balance device and a roller device, wherein the balance device comprises a base, a sliding member, a rotating member and a swinging member, the other end of the swinging member is in the shape of an arc, wheel teeth which are continuously distributed along an arc-shaped edge are arranged at the other end of the swinging member, and the circle center of the arc is overlapped with the rotation connection point of the rotating member; racks are fixedly arranged on the base; limiting devices are also arranged on the rotating member; the roller device comprises a machine frame and two rollers, wherein one or more inertia wheels are arranged between the machine frame and the rollers, and the inertia wheels and the rollers are in connection and transmission. According to the simulator, the rollers can be driven by the inertia of the inertia wheels arranged between the machine frame and the rollers to rotate in a transition region, so that a rear wheel of a bicycle is driven to rotate, smooth transition from one force exerting region to another force exerting region is completed, the outer diameters of the rollers are greatly reduced, the mass of the rollers is greatly reduced, and the riding gravity center of the bicycle is lowered, so that children, old people and beginners have more sense of safety, and the simulator is convenient to carry and store.					
					
15.	Bicycle simulated training apparatus	CN101041109	2007-09-26	DALIAN JIAOTONG UNIVERSITY	80 %
The invention relates to a bicycle simulator and relative operation method, wherein the simulator comprises a chassis, a support, a slope simulator, an electric driving loader, a control system, and an operation display. Compared with present technique, the invention can simulate various resistances according to the training rules, and simulate the state in slope, horizon and downward, check, display, record, analyze, and store the training parameters, to adjust the train method.					
					

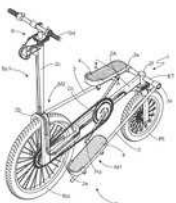
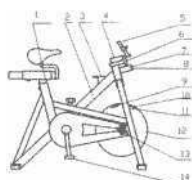
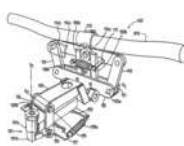
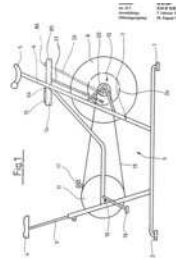
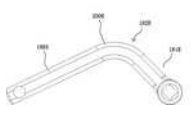
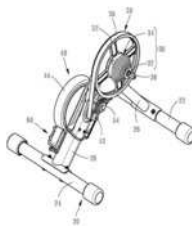
16.	Drag -line bicycle balance simulation ware of riding suitable for children	CN206652211	2017-11-21	XU FENG	80 %	
The utility model relates to a drag -line bicycle balance simulation ware of riding suitable for children, this simulator include balancing unit and cylinder device, balancing unit include slider on the base of base, sliding connection, rotate the rotating member connected on the slider, one end fixed connection on the rotating member the swing piece and connect two stay cords between swing and base, the cylinder device includes frame and two cylinders, is provided with the more than one flywheel between frame and the cylinder, and the flywheel is connected the transmission with the cylinder. This simulator can utilize the inertia that sets up the flywheel between frame and cylinder to drive the cylinder in the transition zone time and rotate to driving the bicycle rear wheel and rotating, in order accomplishing a power zone to the smooth transition of another power zone, the external diameter and the quality of great reduction cylinder not only reduce the focus of riding of bicycle, make children, old man and beginner have more the sense of security, conveniently carry moreover and accomodate.						
17.	Rolling tooth type bicycle riding balanced simulator	CN204034220	2014-12-24	XU YIDAN	80 %	
The utility model relates to a rolling tooth type bicycle riding balanced simulator. The simulator comprises a balanced device used for storing a bicycle front wheel and a roller device arranged behind the balanced device and used for storing a bicycle rear wheel. The balanced device comprises a base, a sliding piece, a rotary piece and a swing piece, the sliding piece is connected to the base in a sliding mode, the rotary piece is rotatably connected to the sliding piece, one end of the swing piece is fixedly connected to the rotary piece, the other end of the swing piece is arc and provided with wheel teeth which are continuously distributed along the arc side, the circle center of the arc side coincides with a rotary connecting point of the rotary piece, a rack meshed with the wheel teeth is fixedly arranged on the base, and a limit device is further arranged on the rotary piece and used for limiting left-right sliding of the bicycle front wheel. The simulator is high in simulation degree, simple in structure, and low in manufacturing cost.						
18.	System and method for controlling an exercise apparatus	EP1606026	2005-12-21	NAUTILUS HF HOLDINGS OCTANE FITNESS	79 %	
The various embodiments of the present invention generally provide a control system and a process for an exercise apparatus configurable into a combined treadmill and stepper mode. The apparatus may also be configured into stepper only and treadmill only modes. The apparatus generally includes a master control unit, a first sensor, in communication with the master control unit, which generates a first signal indicative of an effective tread speed for the apparatus, and a resistive element that includes at least one resistance level. Using the first signal, the resistance level, and empirical information, the amount of energy expended by a user of the apparatus may be calculated and the operation of the apparatus controlled. Various sensors, actuators and information, such as that obtained from various data structures, may be utilized in performing calculations and controlling the features, functions and operation of the apparatus.						
19.	Inhaul cable type bicycle riding balance simulator	CN204034222	2014-12-24	XU YIDAN	78 %	
The utility model relates to an inhaul cable type bicycle riding balance simulator. The simulator comprises a balance device and a roller device. The balance device comprises a base, a sliding piece, a rotary piece, a swing piece and two pull ropes, wherein one end of the swing piece is fixedly connected to the rotary piece, and the two pull ropes are connected between the swing piece and the base. A fan-shaped piece is arranged at the other end of the swing piece. A groove is formed in an arc-shaped edge of the fan-shaped piece. The center of the circle of the arc-shaped edge and the rotary connection point of the rotary piece coincide. Two first pull rope fixing devices are arranged at the two ends of the fan-shaped piece. Two second pull rope fixing devices are arranged on the base correspondingly. One end of each pull rope is fixedly connected to the corresponding first pull rope fixing device, partly wound in the groove in the corresponding arc-shaped edge and fixedly connected to the second pull rope fixing device on the different side of the corresponding first pull rope fixing device. The rotary piece is further provided with a limiting device used for limiting a front wheel of a bicycle from sliding leftwards and rightwards. The inhaul cable type bicycle riding balance simulator is high in simulation degree, simple in structure and low in manufacturing cost.						
20.	Hobbing type bicycle riding intelligent simulation system	CN105498182	2016-04-20	XU FENG	78 %	
The invention relates to a hobbing type bicycle riding intelligent simulation system. The system comprises a hobbing type bicycle riding balance simulator which is connected to an intelligent control device and an electrical energy conversion device respectively, an intelligent control device which is connected with the hobbing type bicycle riding balance simulator, the electrical energy conversion device and a power-adjustable load respectively, and is in communicating connection with a mobile terminal, the electrical energy conversion device which is connected with the hobbing type bicycle riding balance simulator, the power-adjustable load and the intelligent control device respectively, the power-adjustable load which is connected with the intelligent control device and the electrical energy conversion device respectively, and a mobile terminal which is connected with the intelligent control device. The system is provided with the intelligent control device, can be used for connecting the mobile terminal to display riding parameters in real time and setting riding parameters by virtue of the mobile terminal, and can further be used for connecting other simulation devices to carry out games or matches by virtue of the mobile terminal, and is interesting and recreational.						
21.	Improved control system of a cycling simulation device	EP3263189	2018-01-03	TECHNOGYM	78 %	
The present invention concerns an improved control system (S) of a cycling simulation device (D), said cycling simulation device (D) being of the type comprising a support frame (1), on which coupling members (25) are installed for coupling to the bicycle chain, with which a user carries out a training by acting on the respective pedals of said bicycle, a flywheel (3) rotating around a main shaft (21), connected to said coupling members (25), and braking means (40), acting on said flywheel (3), comprising: a control logic unit (U), capable of connecting in transmission and reception with a remote device (R), by which a user can set one or more training parameters, and a torque sensor (S c) for detecting and sending to said control logic unit (U) a signal related to the torque acting on said main shaft (21) during the rotation of said flywheel (3), and said control logic unit (U) being configured so as to adjust the braking force exerted by said braking means (40) on said flywheel (3) as a function of said training parameters set by said user and of said signal related to the torque acting on said main shaft (21) detected by said torque sensor (S c). The present invention also concerns a cycling simulation device (D) and a method to control said device (D).						
22.	Body-building bicycle with copied ground-type deflection bicycle body	CN102526952	2012-07-04	WU ZHENZHI	78 %	
The patent refers to the field of 'apparatus for physical training, gymnastics, swimming, climbing, or fencing; ball games; training equipment'. The invention discloses a body-building bicycle with a copied ground-type deflection bicycle body and relates to a body-building device. The body-building bicycle comprises a bicycle body and is characterized in that the lower half section of a rear slash of a triangular support is provided with a cam plate; the lower edge of the cam plate is provided with a longitudinal arc-shaped worm wheel tooth; one pair of brackets in the shape of a Chinese character 'men' are fixed on a base; the through holes of the upper cross beams of the brackets are respectively sheathed on two ends of the lateral lock shaft of the cam plate in a movable fit mode; a longitudinal worm fixed on the main shaft of a motor A on the base is meshed with the longitudinal arc-shaped worm wheel tooth on the lower edge of the cam plate; the front end part and rear end part of the base are respectively provided with an inner hinged plate; a lateral arc-shaped worm wheel tooth is fixed on the lower edge surface of the middle of the base; an additionally arranged underframe is provided with a longitudinal arc-shaped slot and a lateral rectangular slot; longitudinal hinge pins in the upper through holes of the external hinged plates respectively fixed on two ends of the longitudinal arc-shaped slot are sheathed in the through holes of the inner hinged plates; the base is in clearance fit with the interior of the longitudinal arc-shaped slot; a lateral worm is fixed on the main shaft of a motor B installed on the bottom of the rectangular slot; and the lateral worm and the lateral arc-shaped worm wheel tooth are meshed. The bicycle body can carry out lateral deflection and the combined ground-type action of bending forward and backward.						
23.	Bicycle riding balancing device, simulation system and simulation system with snail vehicle	CN108355335	2018-08-03	FUZHOU SHANLU SPORTS FACILITIES	77 %	
The invention relates to fitness equipment, in particular to a bicycle riding balancing device, a simulation system and a simulation system with a snail vehicle, and the device comprises a base, a revolving seat, a fixing assembly and a limiting assembly. According to the bicycle riding balancing device, the simulation system and the simulation system with the snail vehicle, the structure is simple, the weight is light, the manufacturing cost is low, and carrying is convenient; the riding center of gravity is low, the maximum rotation angle is limited during riding, and riding is safer; the revolving center of the revolving seat is located in the center position of the revolving seat, the abrasion of the revolving seat is reduced greatly, and the service life is prolonged.						

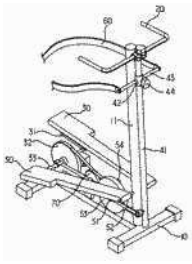
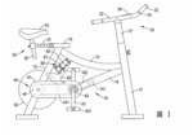
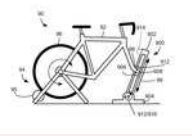
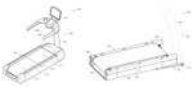
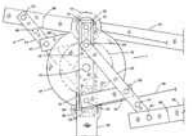
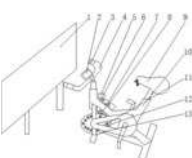
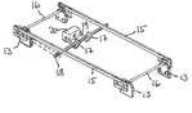
24.	Bicycle balance simulation system that rides with snail car	CN208436367	2019-01-29	FUZHOU SHANLU SPORTS FACILITIES	77 %	
The utility model relates to a body -building apparatus, in particular to bicycle balance simulation system that rides with snail car who forms a complete set and use with the bicycle: including balancing unit, snail car rack and snail car, balancing unit includes base, revolving bed, fixes subassembly and spacing subassembly, the utility model provides a pair of bicycle balance simulation systemthat rides with snail car: simple structure, light in weight, low in manufacturing cost, convenient to carry, it is low that this system not only rides the focus, and the biggest turned angle is limited when riding, and it is safer to ride, and the central point that the centre of turning circle of revolving bed is located the revolving bed puts, has reduced the wearing and tearing of revolving bed greatly, increase of service life, in addition, the snail car can be alone and the bicycle match, use as the decelerator of bicycle.						
25.	Bicycling exercise apparatus	EP2231285	2010-09-29	REALRYDER	77 %	
An apparatus permitting a user to perform a simulated bicycling exercise is provided. The design includes a frame and a first mounting point and a second mounting point configured to maintain the frame. A seat is connected to the frame and configured to support the user. A wheel is positioned in association with said frame and pedals configured to interact with the wheel, and the frame is configured to pivot about the first mounting point and second mounting point in response to leaning by the user. Handlebars may be provided that enable further force application and enhance the leaning or pivoting in the bicycle riding simulation experience.						
26.	Bicycle training machine	CN206604073	2017-11-03	WAHOO FITNESS	77 %	
The utility model discloses a bicycle training machine, it includes: frame set spare, a frame set spare supporting shaft, the rear wheel of a bicycle is suitable for and is connected to the shaft, and flywheel assembly, flywheel assembly has the flywheel member that can support on the frame set spare with rotating and for the not rotatable magnetism brake assembly of frame set spare, the flywheel component with its when the shaft rotates for the mode that magnetism brake assembly can rotate is coupled to the shaft, its characterized in that, leader are certainly frame set spare extends when bicycle training machine is in usage pattern, the handle is in at least in part and is higher than flywheel assembly's position.						
27.	Exercise cycle with planetary gear system and rolling recoiled lateral motion system	EP2569556	2013-03-20	SHINN FU RELAY FITNESS XINFU INDUSTRY	77 %	
A planetary gear system in an exercise machine featuring a flywheel; an axle shaft positioned through the center of the flywheel, a sun gear disposed on the axle shaft and fixedly attached to the flywheel, a housing disposed on the axle shaft, a planet carrier fixedly attached to the axle shaft and disposed in the housing, and a ring gear fixedly attached in the housing. One or more planet gear wheels are rotatably attached to the planet carrier. The planet gear wheels can rotate independently of the planet carrier. Rotation of the axle shaft in a first direction rotates the planet carrier in the first direction, thereby causing the planet gear wheel to rotate in a second direction within the ring gear. Rotation of the planet gear wheel in the second direction causes the sun gear and the flywheel to together rotate in the first direction.						
28.	Drag -line bicycle intelligent analog system that rides suitable for children	CN205730241	2016-11-30	XU FENG	76 %	
The utility model relates to a drag -line bicycle intelligent analog system that rides suitable for children, including drag -line bicycle ride balance simulation ware, intelligent control device, energy conversion device, adjustable power load and mobile terminal, the drag -line bicycle is ridden the balance simulation ware and is included balancing unit and cylinder device, and the cylinder device includes frame, cylinder and flywheel, and the flywheel is connected the transmission with the cylinder. This system can utilize the inertia of flywheel to drive the cylinder rotation in the transition zone time, thereby it rotates to drive the bicycle rear wheel, the external diameter and the quality of greatly reduced cylinder, not only reduce the focus of riding of bicycle, make children, old man and beginner have more the sense of security, and conveniently carry and accommodate, this system can also show the parameter of riding in real time in addition, and can be through mobile terminal to the parameter setting of riding, link to each other with other analogue means through mobile terminal and together play or compete, have interestingly and recreational.						
29.	Bicycle simulator with collapsible configuration	US5372562	1994-12-13	CHANG JOHN	76 %	
A bicycle simulator can be extended in normal use and retracted when not in use. The legs of the housing and the actuating rod, seat and handlebar housing can be retracted and stored within the box. Then the box can be easily carried by handle disposed at the upper position of the box, consequently, an easily portable bicycle simulator is achieved.						
30.	Inhaul cable type cycling intelligent simulation system applicable to children	CN105727540	2016-07-06	XU FENG	76 %	
The invention relates to an inhaul cable type cycling intelligent simulation system applicable to children. The inhaul cable type cycling intelligent simulation system comprises an inhaul cable type cycling balance simulator, an intelligent control device, an electric energy conversion device, an adjustable power load and a mobile terminal; the inhaul cycling balance simulator comprises a balancing device and a roller device, wherein the roller device comprises a frame, a roller and an inertia wheel, and the inertia wheel is in connected transmission with the roller. The system is capable of driving the roller to rotate by using the inertia wheel in a transition area, thus driving a rear wheel of a bicycle to rotate, such that the diameter and the mass of the roller are greatly reduced; the center of gravity of the bicycle is reduced, so that children, the aged and beginners feel safer; in addition, the system is convenient to carry and store. Furthermore, the system is also capable of displaying cycling parameters in real time, and setting the cycling parameters through the mobile terminal; the mobile terminal can be connected with other simulation devices together to perform a game or match to realize interestingness and entertainment.						
31.	A system to simulate a travel of a bicycle in a route along a road	TW200920451	2009-05-16	LIN XINCHANG	76 %	
A simulation of a bicycle route along the road system, including a flywheel with a fixed bicycle, a large display screen and a large-scale control of the computer screen, large display screen for playing a series of shots along the line of the landscape screen, the player of the speed of a moving step by step on the speed of the flywheel.						

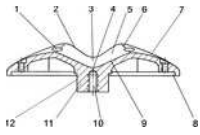
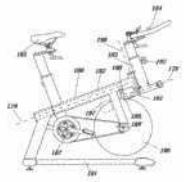
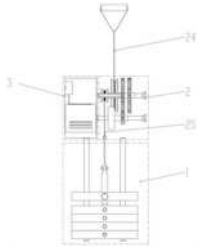
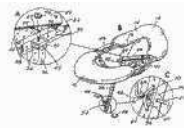
32.	Training apparatus	WO2014/084742	2014-06-05	ACTIVETAINMENT	76 %	
A training bicycle , including a first frame (1, 36) configured to be supported on a floor, a second frame (2, 37) connected to the first frame, the second frame including an axle (4) allowing the second frame to tilt relative to the first frame along an axis in the longitudinal direction of the training apparatus, a handlebar (12, 35, 77, 90) connected to the upper end of a steering shaft (11, 76), the steering shaft being rotationally connected to the second frame, a crank (26, 110) connected to the second frame, and a first flywheel (22, 41, 56, 167, 193) rotationally connected to the lower end of said steering shaft with means for transferring movement from the crank to the first flywheel .						
33.	Bicycle training device	CN104548493	2015-04-29	XU FENG	76 %	
The invention relates to a bicycle training device. The bicycle training device comprises a chassis, a front wheel connected with the front end of the chassis in rotatable mode, a rear wheel connected with the rear end of the chassis in rotatable mode, a steering device arranged between the chassis and the front wheel and a balance simulator fixed on the chassis in detachable mode, wherein the front end of the balance simulator is connected with the steering device so as to control movement of the steering device, and the rear end of the balance simulator is connected with the rear wheel so as to output power. The bicycle training device not only cooperates with a common bicycle to perform training, reduces moving speed of a bicycle , greatly shrinks a sport field, guarantees safety, but also is convenient in running, flexible in swerving, and high in simulation degree, and has interestingness and entertainment, and additionally the balance simulator can independently cooperate with a bicycle to perform training in situ.						
34.	Stationary exercise equipment	WO2009/003170	2008-12-31	RADOW, SCOTT B	76 %	
A control system and method for exercise equipment and the like provides a way to simulate a physical activity in a manner that takes into account the physics of the physical activity being simulated to provide an accurate simulation . According to one aspect of the present invention, the control system and method takes into account the physics of the corresponding physical activity to generate a virtual or predicted value of a variable such as velocity, acceleration, force, or the like. The difference between the virtual or expected physical variable and a measured variable is used as a control input to control resistance forces of the exercise equipment in a way that causes the user to experience forces that are the same or similar to the forces that would be encountered if the user were actually performing the physical activity being simulated rather than using the exercise equipment.						
35.	Stationary ergometric exercise device	EP3402579	2018-11-21	WATTBIKE IP	75 %	
A stationary ergometric exercise device (10) comprises afoot-operable drive including alternately operable drive elements in the form of foot-driven pedals (18) mounted via pedal cranks (20) to opposite sides of a drive wheel (22). A flywheel (24) is coupled to the drive wheel (22) via a gear mechanism (26), the flywheel including a magnetic rim (38). The exercise device (10) includes a brake device (40) in the form of one or more ~ o permanent magnets (44a,44b) mounted for movement by means of a motor (42) towards and away from the magnetic rim (38) of the flywheel (24) so as to selectively adjust a braking force applied to the flywheel (24) by means of the or each permanent magnet (44a,44b). 15 A measuring unit (58) is provided for measuring, in use, at least, one of drive force applied via the drive and the torque related to it, together with a measuring device (66) for measuring, in use, cadence. A command module (72) is connected to the measuring unit (58), the measuring device 20 (66) and the motor (42) of the brake device (40), and a communications module (74) is connected to the command module (72) and configured to receive command signals and transmit those command signals to the command module (72) and configured to transmit feedback signals received from the command module (72) reporting user performance. 25 The command module (72) is configured to receive measurements from the measuring unit (58) and the measuring device (66) and to use those measurements to calculate one or more performance parameters and to compare the or each performance parameter against a predetermined performance profile. The command module (72) is also configured to control the motor (42) so as to move the or each permanent magnet so (44a,44b) relative to the magnetic rim (38) of the flywheel (24) in order to adjust the braking force applied by the or each permanent magnet (44a,44b) and thereby tune the measurements received from the measuring unit (58) and the measuring device (66) so as to adjust the or each performance parameter calculated by the command module (72) to conform with the predetermined performance profile.						
36.	Indoor hypothesized training fitness vehicle system	TW200821013	2008-05-16	CYCLING & HEALTH TECHNOLOGY INDUSTRY R & D CENTER	75 %	
The present invention provides an indoor simulative fitness bicycle system. It includes a training platform with a roller bearing stand for placing bicycle , a mechanism to enable the roller bearing stand to move back and forth, left to right, and a damper that provides resistance to the rear wheel of the bicycle . A computer system coupled to the training platform controls back and forth, left to right movement and damper with simulative interacting software. Therefore, the bicycle can produce uphill, downhill, and turning modes.						
37.	Bicycle for keeping fit	CN103537068	2014-01-29	ZHEJIANG EVERBRIGHT INDUSTRY	75 %	
The invention discloses a bicycle for keeping fit. The bicycle comprises a frame, a treading motion device installed on the frame, a bicycle head device installed on the upper portion of the front part of the frame, and a seat device installed on the upper portion of the rear part of the frame. A seat supporting pipe of the seat device is fixed to a seat connecting pipe through a seat height adjusting knob, a bicycle head of the bicycle head device is fixed to a bicycle head connecting pipe through a bicycle head height adjusting knob, and a damping adjusting device for adjusting rotation damping of a flywheel is arranged above the treading motion device. The bicycle for keeping fit is precise and simple in component, convenient to assemble, stable in structure of the frame and convenient and comfortable to use, and both the height of the bicycle head device and the height of the seat device can be conveniently adjusted.						
38.	Structure of bodybuilding bicycle	CN103537066	2014-01-29	ZHEJIANG EVERBRIGHT INDUSTRY	75 %	
The invention discloses a structure of a bodybuilding bicycle . The structure of the bodybuilding bicycle comprises a bicycle frame, a pedal motion device installed on the bicycle frame, a headstock device installed at the upper portion of the front of the bicycle frame and a seat device installed at the upper portion of the back of the bicycle frame. A seat supporting pipe of the seat device is fixed to a seat connecting pipe through a seat height adjusting knob, a seat is fixed to a seat installation base, the seat installation base is connected with a seat sliding base in a sliding mode, and the seat installation base and the seat sliding base are fixedly connected through matching of a seat horizontal adjusting knob and a connecting sliding block. A headstock pipe of the headstock device is fixed to a headstock connecting pipe through a headstock height adjusting knob. A damping adjustment device for adjusting the rotation damping of a flywheel is arranged above the flywheel of the pedal motion device. The bodybuilding bicycle adopts simple parts and is convenient to assemble, the bicycle frame is stable in structure, and the height of the headstock device, the height of the seat device and the horizontal position of the seat device can be conveniently adjusted, so that the bodybuilding bicycle is convenient and comfortable to use.						

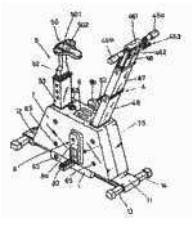
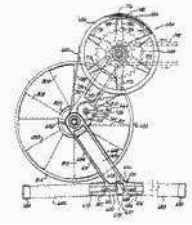
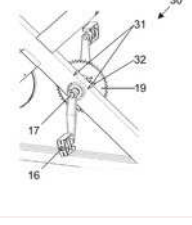
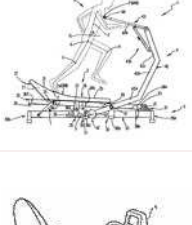
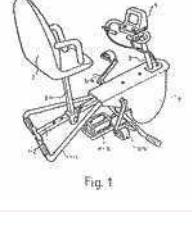
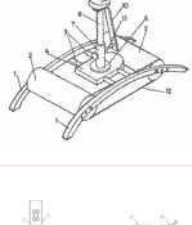
39.	Swimming simulator	KR10-1969442	2019-04-16	BAROTECH SYNERGY	74 %	
The present invention relates to a swimming simulator capable of practicing both treading and freestyle types by switching vertically or horizontally and naturally guiding movements of the shoulder and the pelvis during swimming. A direction of a direction changing drive body can be switched vertically or horizontally by driving a direction switching drive motor so that the treading exercise can be performed in a vertical standing state and the freestyle exercise can be performed in a horizontal lying state. Therefore, the swimming simulator can be used for various types of swimming exercises. COPYRIGHT KIPO 2019						
40.	Exercise system.	EP0238637	1987-09-30	BROWN LAWRENCE G	74 %	
Exercising apparatus comprising a flywheel-type energy storage and fan-type resistance load applying system (632) which is connectible to a variety of human force input systems such as leg-operated bicycle-type system, a hand operated rowing-type system, etc. through a chain-type drive system (792) which may include multiple speed and force multiplying and force controlling devices (638).						
41.	Body-building vehicle	CN1271612	2000-11-01	MENG JIE	74 %	
A multifunctional body-building vehicle can be used to simulate the sports similar to riding a running horse, rowing and in-situ walking besides the functions existing ones have. Its advantages are easy switching over between different functions, high interesting, and high effect, and it is also called a running horse machine.						
42.	Cycling stanchion type trainer controlled cycling computer	KR20120079303	2012-07-12	VFLUX	74 %	
PURPOSE: A bicycle notched trainer controlled by a cycling computer is provided to control a trainer when using the bicycle indoor and control image indication by using a cycling computer. CONSTITUTION: A bicycle notched trainer controlled by a cycling computer comprises a bicycle (B), a front-wheel trainer(60), and rear wheel trainers(18). The rear wheel traitor is fixed in the rear axle. A loading generator is installed so that the rear wheel can be put on the rigid frame. The front-wheel trainer can confirm travel information and biorhythm information. The front-wheel trainer fixes the front wheel and controls by the cycling computer. The front-wheel trainer comprises a trainer supporting plate, a lift supporting plate in which one end is installed in the hinge shaft, a front-wheel supporting part which is formed for front-wheel not to be secede, and an actuator installed at the bottom surface. COPYRIGHT KIPO 2012						
43.	Bike-riding fitness builder capable of generating electricity	CN102430224	2012-05-02	ZHENG WEIXIANG	74 %	
The patent refers to the field of 'apparatus for physical training, gymnastics, swimming, climbing, or fencing; ball games; training equipment'. The invention discloses a bike-riding fitness builder capable of generating electricity. The bike-riding fitness builder capable of generating electricity comprises a machine frame, a shell, a seat adjustment device, and a storage battery; the shell is horseback-shaped and is fixed on the machine frame; two sides of the shell are fixed with a handle respectively; the front side of the shell is provided with a storage battery adjustment instrument panel, and an output socket; the storage battery is fixed on the machine frame in the shell; the seat adjustment device is fixed on the machine frame; the profile curve of a seat is consistent with that of the shell when the seat is not adjusted; the seat adjustment device comprises the seat, a seat lifting mechanism, and an adjustment rotation handle; the bike-riding fitness builder capable of generating electricity also comprises a hollow rotation wheel, an electric generator and a pedal; an annular gear is fixed in the center of the outer surface of the hollow rotation wheel, and two sides of the outer surface of the hollow rotation wheel are provided with self-lubricating rotation materials; the hollow rotation wheel can be arranged on the machine frame in a rotatable way and is also fixed with two pedal shafts; the pedal can be sleeved on the pedal shafts in a rotatable way; the electricity generator is fixed on the machine frame; and an input end of the electricity generator is fixed with a pinion which is in gearing mesh with the annular gear. The invention provides a novel, and environment-friendly bike-riding fitness builder capable of generating electricity.						
44.	Exercise device	EP2848288	2015-03-18	ELBERSEN BEHEER	74 %	
The invention relates to an exercise device, such as a bicycle (40) or spinning bike (1), comprising a frame (2) and a set of crank arms (12) connected to a rotary shaft (10) having an imaginary rotational axis (11) stationary with respect to the frame (2). A further set of crank arms (20) is mounted eccentrically with respect to the rotational axis (11) of the shaft (10).						
45.	Single round binocular bicycle gaming device	CN206381586	2017-08-08	FUZHOU MOUNTAIN ROAD SPORTS FACILITIES	73 %	
The utility model relates to a single round binocular bicycle gaming device, including bicycle, single round binocular decelerator and ball control device, single round binocular decelerator includes that wheel and two rotations that base, rotation are connected on the base connect the cylinder on the base, and single round binocular decelerator is still including connecting in the step -down device between arbitrary cylinder and the wheel and connecting the connecting rod between base and bicycle frame, the ball control device includes the frame, embraces ball ball shooting device and controlling means. The riding speed of the device ability greatly reduced bicycle reduces the athletic ground, and decelerator and bicycle frame rigid connection, and the controllability is good, and response speed is fast, and decelerator only establishes a wheel, can swing along with the swing of bicycle, and the fidelity is high, in addition, can utilize ball control device control ball to go on removing accurately and penetrating the ball in the appointed place, has interest and sight, collects amusement and body -building in an organic whole.						
46.	Exercise bicycle	FR2645752	1990-10-19	MERIDA INDUSTRY	73 %	
Exercise bicycle including a unidirectional chain sprocket and two unidirectional gears 44 arranged on a composite shaft, and a pedalling mechanism 20. The gears are set in rotation by two levers 70, each by means of a toothed sector 50 and of a transmission 60 connected to the lever in a manner such that the lever can perform an oscillating and pivoting movement, in the manner of oars. The composite shaft drives an energy-absorbing wheel 80. <IMAGE>						

47.	Variable resistance device for bicycle trainer	EP0900579	1999-03-10	ADVANCED SPORTS ENTERPRISES ELITE PERFORMANCE FIBERS	73 %	
An apparatus provides variable resistance to rotation and includes a housing having a shaft having a first portion that is rotatable in the housing and a second portion passing outwardly thereof adapted to receive the tire of a bicycle for stationary bicycle exercise. A first body in the housing is mechanically linked to the first portion of the shaft so as to be rotatable within the housing. A second body in the housing is slidably connected to the first portion of the shaft and has flat face opposed to the flat face of the first body. The second body is movable with respect to the first body to result in a variably-sized gap between the opposed faces. A spring located between the housing and the second body biases the second body toward the first body. Further mechanism is provided to permit adjustment of the gap between the first body and the second body, and a viscous fluid in the housing frictionally engages the bodies and provides resistance to their rotation, with the amount of resistance dependent upon the size of the gap. <IMAGE>						
48.	Bicycle trainer	EP1450905	2004-09-01	AWS TECHNOLOGY ACTIVEWEBSPORT	73 %	
An apparatus for training on a bicycle connected to the apparatus, so that the bicycle is tiltable in a direction transversely to a plane defined by a frame of the bicycle. The bicycle is elevated to when the bicycle frame is tilted whereby the bicycle frame, by gravity, is biased towards the non-tilted position. A bicycle computer being adapted to collect and/or display course information while the bicycle is not connected to a training device and being adapted to control resistance providing means when the bicycle is connected to the training device. A wheel for training on a bicycle comprising resistance providing means comprising secondary drive means adapted to engage with the force transferring connector of the bicycle so as to apply resistance to rotation from the resistance providing means to the primary drive means of the bicycle.						
49.	Magnetic resistance of the exercise bike of the adjustment device	JP7009363	1995-02-10	Reao one	72 %	
[Object] user exercise bike desired resistance to the movement in the course can be changed, the magnetic resistance of the bike motion of the device can be provided. PURPOSE: Magnetic guide flywheel 1 cut lines of magnetic force depending on the resistance of the bike motion by adjusting the force applied to the device. The fly-wheel of the motorcycle motion 1 over the periphery of the magnet set of one movable type 4 is provided, the magnet set 4 of one link set 5 fixed. This link set 5 one pull apart from, the swinging direction is controlled by the rod. The pull, single screw rod, the rod, the slide of the set, of the block is fixed on the substrate. The screw, rod, in the set is one guide, the screw, provided on the rod, a slide, to guide the pull block, the rod can be moved. The guide, a screw, a motor for controlling the rotation of the rod is, by electronic circuits preset, during the course of operation thereof, the rotation speed thereof is continuously changed, the flywheel, wheel 1 simulate actual road situation of a drag force to, and achieve the practical effect of the change is automatically adjusted.						
50.	Dynamically balanced rowing simulator	US5382210	1995-01-17	CASPER J. N. REKERS	72 %	
A rowing simulator which provides an oarsman with realistic resistance, motion, and feel. A curved frame supports and guides a freely sliding seat and a freely sliding energy dissipation unit. An oarsman, positioned on the seat, places his or her feet on a footrest that is part of the energy dissipating unit and pulls on a handle that simulates an oar. A chain connected to the handle causes a geared, resistance-producing flywheel to spin and a take-up device, having a series of pulleys and an elastic element, controls chain tension. During exercise, the independent seat and energy dissipating unit move apart and then together in a coordinated manner as a function of the stroke cycle of the oarsman. The curvature of the frame allows gravity to keep the oarsman in a central portion of the frame.						
51.	Fitness-type horse-riding bicycle	WO2016/064162	2016-04-28	KIM GOO KIMKIM GOO	72 %	
The present invention relates to a fitness-type horse-riding bicycle, comprising: a bicycle frame to which a front wheel and a rear wheel are rotatably coupled; a pedal-driving part which rotates the rear wheel with pedals coupled to the bicycle frame; a handle bar which is arranged at the front end of the bicycle frame and consists of a combination of 2-like and 5-like shapes; a saddle which is arranged at the upper portion of a module poster of the bicycle frame; a variable flexible module which is connected between the bicycle frame and the saddle, and selectively applies, to the saddle, a resultant force of the elastic forces of outer springs and inner springs or the elastic force of the outer springs so as to perform a two-stage vertical motion, wherein the outer springs or the inner springs are provided as a set so as to have different elastic moduli with respect to spring loads in response to a user's weight; and a module main body which is detachably coupled to a bottom support device of the variable flexible module for replacement of the outer springs or the inner springs.						
52.	Bicycling exercise apparatus with multiple element load dispersion	WO2009/154659	2009-12-23	REALRYDER REALRYDER INTERNATIONAL	72 %	
An apparatus permitting a user to perform a simulated bicycling exercise is provided. The design includes a frame and a first (lower front) mounting point including a multiple element distributed load arrangement and a second (upper rear) mounting point configured to maintain the frame a first lower front mounting point including a pin defining an axis substantially representing a line joining the second upper rear mounting point and the first lower front mounting point. The design includes a seat, a wheel, and pedals, and the frame is configured to pivot about the axis in response to leaning by the user. Handlebars may be provided that enable force application and enhance the leaning or pivoting in the bicycle riding simulation experience.						
53.	Virtual reality's exercise bicycle system for training	CN205598592	2016-09-28	SHANGHAI MENGYUN MOVE SOFT NETWORK TECHNOLOGY	72 %	
The utility model discloses a virtual reality's exercise bicycle system for training belongs to virtual reality body -building equipment technical field, include: the training platform is including cylinder cushion cap, attenuator and messenger shaking device and left and right rocking pendulum device around the cylinder cushion cap, the bicycle setting on the cylinder cushion cap, the attenuator does the backstage of bicycle provides the rotary resistance, the computery, the computery with the training platform is connected. The utility model discloses an exercise bicycle system for the training goes up a slope and the mode of riding of downhill path through the mode simulation of swaying around the cylinder cushion cap, through the motion situation of the similar mode of the riding computery that turns left and turn right of the mode simulation of left and right rocking pendulum according to the training platform, broadcasts corresponding sight to the effect of riding on the spot in person is created to the virtual mode, increases the effect of training and body -building.						

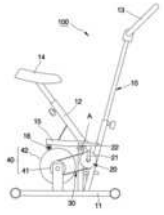
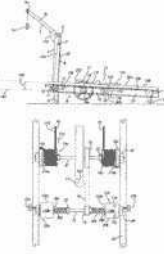
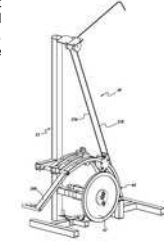
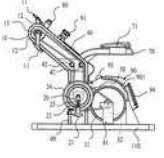
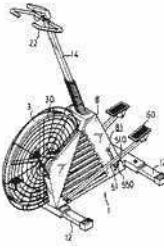
54.	Improvements made to elliptical drive mechanisms and steering mechanisms applied to velocipedes in general	EP3056420	2016-08-17	ARUANĂ ENERGIA ARUAN EN ARUANA EN ARUANA ENERGIA ES ARCHITECT ARUANA ENERGIA S	72 %	
55.	Game body building vehicle	CN2689979	2005-04-06	SUN TUXING	71 %	
56.	A handlebar assembly	EP1420859	2004-05-26	PULSE FITNESS British country bus bus 2 6 Aru Nue Bathampton St. Georges Hill 9 MICHAEL RICE RICE MICHAEL J P RICE MICHAEL JOSEPH PATRICK 1 more...	71 %	
57.	Bicycle speed reduction trainer	CN204637508	2015-09-16	XU FENG	71 %	
58.	Bicycle ergometer	DE3603853	1987-08-20	SECA 2000 HAMBURG	71 %	
59.	Sports	DE202015104201	2015-09-24	HSIUNG BOB	71 %	
60.	External magnetic resistance training device and bicycle training system using the same	TWM581923	2019-08-11	SYNDICA TECHNOLOGIES INTERNATIONAL CHANG YOW TECHNOLOGIES INTERNATIONAL	71 %	

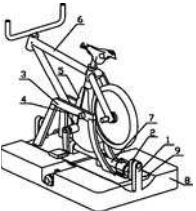
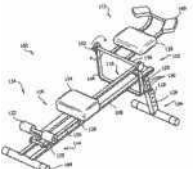
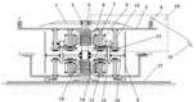
61.	Stepping body-shaping exercising machine	CN2766903	2006-03-29	HL	71 %	
The utility model relates to a stepping body-shaping and exercising machine. A handle rod is arranged on a base by the utility model, and a pair of pedal transmission mechanisms which can upward and downward move to and fro are pivoted to form a structure body which can cause a user to be able to simulate stepping walk, wherein a rocking bar is pivoted on the base and swings to and fro at high speed by being driven by the two pedal transmission mechanisms. The rocking bar is provided with a tying belt for the user to wind and hang, and high-speed vibration is generated to the user's winding and hanging position by the tying belt to obtain body-shaping effects and the effect of massage.						
62.	Flywheel apparatus	TWM451151	2013-04-21	CENTRAL TAIWAN UNIVERSITY OF SCIENCE & TECHNOLOGY	71 %	
A flywheel apparatus having heartbeat feedback and controlling function includes a frame body, a stem, a seat, a driving apparatus, a flywheel and a magnetic resistance device. The stem is inserted in a front side of the frame body. The seat is adjustably mounted on a rear side at a top of the frame body. The driving apparatus is connected to a central segment of the frame body. The flywheel is rotatably mounted on the rear side at a bottom of the frame body. The magnetic resistance device is mounted on the frame body and corresponds to the outer periphery of the flywheel, and is adjustable by the stem. The stem can measure the heartbeat frequency of a user, and adjusts the difficulty of the operation of the flywheel apparatus according to the body status of the user. Accordingly, the user can keep the body strength in best status during the training.						
63.	Bicycle climbing and descending training device	WO2019/018416	2019-01-24	WAHOO FITNESS	71 %	
A training device for use with a bicycle includes a shuttle guide member including a lower end and an upper end that define an axis therebetween. A shuttle is operably coupleable to a front end of the bicycle and translatable along the axis by a drive coupled to the shuttle. When coupled to the front end of the bicycle, translation of the shuttle along the axis by the drive results in each of a rotation of the shuttle guide member about a pivot and a change in elevation of the front end of the bicycle.						
64.	Cordless treadmill	EP3593868	2020-01-15	HUMAN POWERED FITNESS COREPACT COREPACT COREPACT MANPOWER HEALTH	71 %	
A cordless treadmill including a frame, a belt system, and a drop-in cartridge is disclosed. The cartridge includes a plurality of staggered rollers configured to provide tactile feedback to the user. The frame is adapted to receive the belt system and the cartridge as they are lowered into the frame, and the frame is adapted to place the belt of the belt system into tension as the belt system is lowered into the frame. An integrated flywheel generator system provides smooth operation of the treadmill and generates electricity to power additional systems.						
65.	Cycloidal drive for exercise apparatus	US20040102291	2004-05-27	ESCHENBACH PAUL WILLIAM	70 %	
The present invention relates to a drive mechanism that converts a force supplied from an operator or other means along a complex curve path into rotary motion. More particularly, the present invention relates to a cycloidal drive mechanism configured for an operator driven or motor driven exercise apparatus such as a stationary bicycle, recumbent stationary bicycle, cross trainer or other devices. The present invention relates to the kinematic motion control of pedals which follow more complex curves having two or more lobes and spirals. More particularly, a cycloidal drive mechanism based upon a linkage and gear pair can be incorporated into several exercise apparatus to drive a flywheel.						
66.	Vr spinning bicycle interaction system with automatic resistance control function	CN109821190	2019-05-31	FUZHOU UNIVERSITY	70 %	
The invention relates to a VR spinning bicycle interaction system with an automatic resistance control function. The system comprises a spinning bicycle composed of a handlebar, a saddle, a bicycle body, a front wheel and a rear wheel, wherein the wheels of the spinning bicycle are provided with bicycle speed detecting modules, the bicycle body is provided with a resistance control module connected with the wheels, the resistance control module comprises a motor arranged on the bicycle body, an output end of the motor is provided with a resistance adjusting brake pad located beside the front wheel, the handlebar is provided with a physiological data monitoring module, and the spinning bicycle is provided with a VR display device and is provided with an interactive control module used for connecting the bicycle speed detecting module, the resistance control module, the VR display device and the physiological data monitoring module. The VR spinning bicycle interaction system with the automatic resistance control function can automatically control the riding resistance and improve the fitness effect and gaming experience.						
67.	Hand-driven vehicle	EP1484241	2004-12-08	FRANCE BED FRANCEBED MEDICAL SERVICE	70 %	
A vehicle body (1) is provided with a rear wheel (4) at a rear portion, and a front wheel (35) coupled to a handle post (30). A swing-enabling shaft (41) is rotatably provided on the upper portion of the handle post (30). A handlebars unit (42) is attached to the swing-enabling shaft (41) such that it can swing forward and backward relative to the vehicle body (1). When the handlebars unit (42) is swung, a driving mechanism (47) is driven. The driving mechanism (47) rotates the front wheel such that the vehicle body advances, regardless of whether the handlebars unit (42) is swung forward or backward. <IMAGE>						
68.	Universal support platform for exercise bicycle and exercise system with virtual reality synchronicity	EP2961494	2016-01-06	VIRTURIDE VIRTURAJD ELELSI	70 %	
A platform assembly (1) includes a lower box (2), which is supported at the corners on inflatable feet, and a platform (3) which is tiltable relative to the lower box (2) by a lifter mechanism inside the box (2). The platform assembly (1) is universally usable to support exercise equipment, in particular exercise bicycles such as spinning cycles. A complete studio may be outfitted by supporting each of a multitude of exercise cycles (32) on a universal platform. A screen display (34) in front of the cycles plays a moving picture of a trip, which is emulated by the participants in the exercise and workout routine. The platform is raised and lowered, as well as tilted, in synchronicity with the display. On raising the front of the platform, which emulates an incline of the travel path, the resistance of the bicycle is increased.						
69.	Bicycle type training machine	US4941652	1990-07-17	NINTENDO	70 %	
A bicycle type training machine includes a crank arm secured to a rotation shaft, pedals being attached to the both free ends of the crank arm. A rotation shaft of a generator is coupled to the rotation shaft of the crank arm. Data of load amount to be loaded to the rotation shaft of the crank arm is outputted by a microcomputer. The load value data is then compared with a count value of a counter to which a pulse train is applied from a reference oscillator, and a pulse signal having the high level and the low level in accordance with a result of the comparison is outputted from a comparator. A duty ratio of the outputted pulse signal is decided by the periods of the high level and the low level and changed in accordance with the load value data. A switching transistor electrically connected in parallel to an armature of the generator is turned-on or -off in response to the high level or the low level of the pulse signal. Braking force of the generator is changed in accordance with the duty ratio of the switching transistor. Therefore, the load that is decided by the load value data from the microcomputer is loaded to the rotation shaft of the crank arm and thus the legs of the user.						

70.	Direction detection device for game machine combined exercise bike and method thereof	US20110159937	2011-06-30	HSIUNG BOB XIONG BAO	70 %	
A direction detection device is provided for a game machine combined exercise bike . The direction detection device include a detection module mounted to a direction rotation module composed of a rotatable portion and a fixed portion. The detection module includes a plurality of signal receiver elements and a signal transmitter element, which are operated in a non-contact manner and are allowed for relative rotation with respect to each other. Each signal receiver element has a range of detection. During relative rotation between the signal transmitter element and the signal receiver elements, when the signal transmitter element is moved into the detection range of one of the signal receiver elements, the signal receiver elements detect a positional message of the signal transmitter element, and the signal receiver elements applies the message to a signal processing device of the game machine, which converts the positional message into a direction signal.						
71.	Double curved surface v-type arc neck force transferring rotary table	CN102247690	2011-11-23	FUZHOU SUNUR ELECTRONIC TECHNOLOGY	70 %	
The invention relates to a double curved surface V-type arc neck force transferring rotary table, comprising a rotating shaft (11), a double curved surface V-type arc neck (3), a positioning step round (8) and six small screw holes (15) uniformly distributed in the step round as well as technological counter bored holes (1) formed at the upper end of each small screw hole. The double curved surface V-type arc neck is characterized in that a V-type angle of the cross section at the middle part of the neck is 112-146 degrees and the V-type angles of the cross sections at the two ends of the neck are 85-116 degrees; and the V-type angles of the cross sections of the neck are characterized in that the angles of sections at different positions are different in dimension, namely the angles are gradually changed from the middle part of the neck to the two ends of the neck. The length of the neck is 88-156mm, the radius of arc on a transverse section at the bottom of the neck is 8-15mm, and the radius of arc on a longitudinal section at the bottom of the neck is 272-355mm. By adopting the structure, clamping is stable without slip when the double curved surface V-type arc neck is matched with the cover tyres of front wheels of bicycles of all specifications and sizes.						
72.	Indoor exercise cycle with tilt function	EP1951385	2008-08-06	BADARNEH ZIAD ZIAD BADARNEH	70 %	
A cycle apparatus for physical exercise, rehabilitation of injuries and increased balance, the apparatus designed as a stationary exercise cycle. The apparatus consist of a first lower stable frame configured to be supported on a floor and a second upper frame rotary connected on axle fixed cantilever on first frame. The upper frame has an adjustable tilt movement relative the lower frame crosswise the flywheel 's revolving motion. Stabilizing of the upper frame is done by turning handlebars.						
73.	Improved structure of stretch/exercise bike	TWM324517	2008-01-01	DENG, RU-JUAN	70 %	
One kind of extension fitness vehicle structure improvement, including: Assumes the chair of support and handle support overlapping pin connected, on this chair support the cable muff is equipped with the chair, the position is equipped with the transmission ratio chain wheel group and transmission ratio belt pulley group, the antihunt device and symmetrical block and tackle in the pin connected place lower segment department pivot shaft in order, this transmission ratio chain wheel group in a chain wheel the axial both sides are equipped with have the curved bar of footboard, another chain wheel axial meets to be equipped with the symmetrical curved bar, may supply a connecting rod end pin connected, this connecting rod another end is the pivot shaft ties in the lower segment of department predetermined place handle support, this handle support base is the pin connected on a fixed base, and links between the handle support and chair support has an expansion to press the cylinder, based on this, causesThe whole makes the coordination and stability obtains the optimum condition, and may use the hypothesis of antihunt device, the promotion has to be resistance change function.						
74.	Power generation fitness equipment	CN110064163	2019-07-30	NORTHEASTERN UNIVERSITY OF CHINA	70 %	
The invention relates to power generation fitness equipment. The fitness equipment comprises a weight combination mechanism, a transmission speed change mechanism and a power generation and storage device, the weight combination mechanism comprises a lifting rod and weights, the transmission speed change mechanism comprises an input shaft , a first reel, a second reel, an acceleration gear set and an output shaft , and the first reel and the second reel are fixed to the input shaft . A lifting rope winds the first reel, a drawing rope winds the second reel, and the input shaft and the output shaft are connected through the acceleration gear set. The input end of the power generation and storage device is connected with the output end of the output shaft . The power generation fitness equipment can store consumed physical power during fitness exercise of the human body and convert the physical power into electric power used by electric equipment, and the purposes of energy conservation, emission reduction and body building are achieved. Multiple parts of the human body can be exercised, and the equipment is simple in structure, low in cost and suitable for large-scale application and production.						
75.	Aquatic exerciser	US4828522	1989-05-09	SANTOS T R	70 %	
The invention provides a bicycle -like pedal exerciser in a flotation structure designed for use in water. Two crescent shaped inflatable tubes are oppositely affixed in a fold-in frame horizontally disposed point to point. Hinged frame sections exposed between the flotation points and the convex inner wall tube shapes provides an operational and fixture-attach opening. A curved , flat bottom seat suspended downwardly in the opening faces a yoke-attached adjustable shaft downwardly affixed with a small flywheel turnable by bicycle -type pedals. The seat is adjustable and removable. An adjustable brake supplies a desired tension to the small flywheel . The device is operational in swimming pools or other limited water areas. The user sits or stands submerged to arm pit level and exercises by cranking the flywheel with the bicycle -like pedals. A variety of positions may be assumed for in-water therapy or for healthful exercising.						
76.	Sine drum-type physical fitness equipment with equipment display cabinet	CN107596633	2018-01-19	JISHOU UNIVERSITY	70 %	
The invention discloses a piece of sine drum-type physical fitness equipment with an equipment display cabinet. The sine drum-type physical fitness equipment comprises the equipment display cabinet and a water bed. A fitness bike is arranged on the water bed. An electromagnetic brake is disposed on a wheel of the fitness bike and can adjust the resistance of rotary motion of the wheel through electromagnetism. The fitness bike is equipped with a speed sensor which provides a speed signal to a control system so that automatic control is conveniently performed. Pedals drive a driving wheel of asine rubber drum. The driving wheel and the pedals are of an integrated structure. A driven wheel of the sine rubber drum is connected with the wheel together. A sine rubber disk pulse air-exploding device is arranged under water in the water bed. Both the sine rubber drum and the sine rubber disk pulse air-exploding device have distinct characteristics of dynamically finishing work-out and therapeutic massage in the manner of reliably matching the water bed. Unexpected working principles and effect are obtained while extremely great creativity is achieved.						

77.	Portable folding body-building vehicle	CN2187965	1995-01-25	ZHANG MINGSHI	70 %	
The utility model relates to a body building bicycle , mainly comprising a base whose front and back ends are provided with extensible foot seats; a frame body arranged on the base; a transmission case arranged the frame body , and the two sides of the transmission case are provided with drive shafts; a grip seat body locked in a front U-shaped frame, and an inner pipe and a grip which can be extended upward are received and folded in the grip seat body ; a seat body locked in a rear U-shaped frame, and a seat pad and a support pipe which can be upward extended are received and folded in the seat body ; a lifting handle locked on the frame body ; two pieces of positioning plates locked on the two sides of the frame body ; two half housings coated on the frame body symmetrically; two drive handles connected with the drive shafts. The utility model can be expanded to be used or folded into a case body . The utility model has the advantages of convenient carryover and little space.						
78.	Exercise system	US4789153	1988-12-06	BROWN LAWRENCE G	70 %	
Exercising apparatus comprising a flywheel -type energy storage and fan-type resistance load applying system which is connectible to a variety of human force input systems such as a leg-operated bicycle -type system, a hand operated rowing-type system, etc. through a chain-type drive system which may include multiple speed and force multiplying and force controlling devices.						
79.	Ergometric training device	EP2183034	2010-05-12	WATTBIKE IP IAN JOHN WILSON JOHN DUDLEY WILSON UILSON DZHON DADLI UILSON JAN DZHON 2 more...	70 %	
A stationary ergometric exercise device, having a manually/foot operated drive with two drive elements (pedals) that can be alternately operated, and further having a measuring means for measuring the driving force applied by the drive or the torque force associated therewith, comprises a measuring arrangement (30) for measuring the angular position of the drive, having a pair of sensor means (31, 32), which are disposed in mutually opposed positions with respect to a wheel (19) connected to the drive such that the motions are synchronized, said positions each corresponding to a position of motion of a load change between the two drive elements (16). A computer device can receive the signals from the force measuring means and calculate therefrom the chronological sequence of the driving force, or the torque force, and variables that can be derived therefrom, and it can emit said signals alternately for a right or left extremity of an exercising person, as a function of the load changes reported by the measuring arrangement (30).						
80.	Exercise assisting device	EP2818209	2014-12-31	FUCOM FUCOM CO.,LTD.	70 %	
[PROBLEM] It becomes possible to make a user does an extremely close motion to a real motion of running, walking and so on, and makes the user a trunk-centered action with the gravity center movement by moving a table shape body and a hold body relative to a main body and regulating a forward inclination of the user, when the user whose a trunk is held moves the gravity center forward. [SOLUTION] An exercise assisting device includes a table shape body 2 which a user S steps on, a main body 3 which supports the table shape body 2 from below and a hold body 4 which is arranged on the main body 3. And the hold body 4 holds a trunk T of user S who steps on the table shape body 2 and whose the gravity center G is positioned forward than a step position F of the user S. The exercise assisting device regulates a forward inclination of the user S while moving relatively the table shape body 2 and/or the hold body 4 relative to the main body 3.						
81.	Optionally passive or active bicycle -type exerciser	EP0174747	1986-03-19	YANG TAI HER	69 %	
This invention relates to an exercise bike . Briefly, an exercise bike in accordance with the present invention comprises a frame, a first chair, a frictional flywheel , a dynamotor coupled by a pedal driving unit for producing electric power and serving as a driving source, a manually operable reaction training device, an auxiliary chair and a massage unit.						
82.	Training bench for cyclists	EP1616601	2006-01-18	MUGICA MIGUEL JACOBO SARACHO ROTAECHE LUIS	69 %	
A training bench for cyclists, comprising a framework (1) bearing rollers (2) on which the wheels of the bicycle will rest, and a central support constituted of a platform (4) which is assembled on the framework through transverse bars (3), on which it can move. The platform (4) has an elastically deformable anchoring system serving as a holding base for holding a column (7) provided at its free end with means (9) for supporting the frame of the bicycle . Said anchoring system acts as an absorption member for controlling the movement of the bicycle with regard to the platform (4) and the framework (1).						
83.	Sinusoidal roller type physical fitness device with inflatable ellipsoid	CN107456715	2017-12-12	JISHOU UNIVERSITY	69 %	
The invention discloses a sinusoidal roller type physical fitness device with an inflatable ellipsoid, including a device cabinet, a dumbbell, a fitness hammer, an inflatable ellipsoid and a water bed. The water bed is provided with an exercise bike . The wheels of the exercise bike are provided with electromagnetic brakes, and the wheel rotating resistance can be adjusted by magnetic force. The exercise bike is provided with a speed sensor, wherein the speed sensor can provide speed signals for a control system for automatic control. A pedal drive and an active wheel of the sinusoidal rubber roller with its integral structure are integrated, and a driven wheel of the sinusoidal rubber roller are integrated. The water under the water bed has a sine pulse gas explosion device. The rubber roller and the rubber plate sine pulse detonation gas device of the sinusoidal roller type physical fitness device with an inflatable ellipsoid have distinctive characteristics and the advantages that can complete the dynamic fitness and health massage are completed by reliably collaborating the waterbed and the working principle and the effect are completely unexpected, and also is extremely creative.						

84.	Computer-controlled sine roller type physical fitness device with aerated spheroid	CN107335171	2017-11-10	HE LIQUN	69 %
The invention discloses a computer-controlled sine roller type physical fitness device with an aerated spheroid. The device comprises an article storage cabinet, dumbbells, a fitness air hammer, an aerated spheroid and a water bed, wherein a fitness bicycle is arranged on the water bed; an electromagnetic brake is arranged on the wheel of the fitness bicycle; the rotation movement resistance of the wheel can be adjusted through electromagnetism; the fitness bicycle is provided with a speed sensor and a control system for providing a speed signal for convenient automatic control; the driving wheel of a sine rubber roller, which is of an integral structure with a pedal, is driven by the pedal; the driven wheel of the sine rubber roller is integrally connected with the wheel; a sine rubber disc pulse aeration device is arranged underwater inside the water bed; the fitness device is controlled by a computer. The sine rubber roller and the mechanical ultrasonic wave exciter both have outstanding characteristics and can reliably cooperate with the water bed to complete body fitness and healthcare massage, so that the device has working principles and effects beyond expectation, and has very good creativity as well.					
85.	Sinusoidal roller type physical fitness device provided with regular icosahedral balls	CN107433009	2017-12-05	JISHOU UNIVERSITY	69 %
The invention discloses a sinusoidal roller type physical fitness device provided with regular icosahedral balls. The sinusoidal roller type physical fitness device comprises an equipment display cabinet, dumbbells, exercise air hammers, inflatable ellipsoids, the regular icosahedral balls and a water bed, wherein an exercise bicycle is arranged on the water bed, an electromagnetic brake is arranged on a wheel of the exercise bicycle, the rotating motion resistance of the wheel can be adjusted through electromagnetism, the exercise bicycle is provided with a speed sensor for providing speed signals for a control system, so that automatic control can be carried out conveniently, a pedal drives a drive wheel of a sinusoidal rubber roller in an integrated structure with the pedal, and a driven wheel of the sinusoidal rubber roller and the wheel are connected into a whole; a sinusoidal rubber plate pulse aeration device is arranged underwater in the water bed. For the sinusoidal roller type physical fitness device provided with the regular icosahedral balls, the sinusoidal rubber roller and the sinusoidal rubber plate pulse aeration device have the distinct characteristics, can reliably cooperate with the water bed to dynamically complete fitness and health-care massage, have the completely extraordinary working principle and effects, and also have the extremely strong creativity.					
86.	Indoor cycle machine with curve function	KR20120130662	2012-12-03	KANG, TOO HWAN	69 %
PURPOSE: An indoor cycle machine is provided to improve rapid response and to embody cornering on a curve. CONSTITUTION: An indoor cycle machine comprises a wheel(30), a pedal(23), a steering wheel(21), a track belt(62), two idle rollers, and a drum. The wheel is positioned in the front and is rotated by the pedal. The steering wheel controls the direction of the indoor cycle machine. When the track belt is rotated by two idle rollers, a separate drum is linked so that the track belt can have inertial force. When the wheel rotates to the right and left, a saddle rotates to the right and left. COPYRIGHT KIPO 2013					
87.	Mechanical bionic fitness clothing	CN102641580	2012-08-22	BEIJING UNIVERSITY OF TECHNOLOGY	69 %
The patent refers to the field of 'apparatus for physical training, gymnastics, swimming, climbing, or fencing; ball games; training equipment'. The invention discloses mechanical bionic fitness clothing, which comprises a back board, two arm modules, two leg modules and two resistance modules, wherein the back board simulates the back of a human body, and the arm modules and the leg modules simulate arms and legs of the human body. The fitness clothing is a small multifunctional standard fitness device. When a user wears the mechanical bionic fitness clothing to do fitness exercises, six fitness modes including deep squat, hip swing, arm bending, upward lifting, bosom enlarging and leg kicking can be achieved, and the mechanical bionic fitness clothing can be folded to achieve the portable effect. By means of the fitness clothing, various different fitness strength can be set according to fitness needs to adapt to people with different heights so that humanized design is reflected. Besides, a small power generator is installed on the back board so that automatic power generation can be achieved, kinetic energy generated by human body movement is converted into electric energy for being supplied to a displaying device of the mechanical bionic fitness clothing, and efficient utilization of the energy is achieved.					
88.	Cycle-mounted powerless simulation device	KR101848427	2018-04-12	VR CARVER	69 %
The present invention relates to a cycle-mounted powerless simulation device. According to an embodiment of the present invention, the cycle-mounted powerless simulation device comprises: a base unit; a rotation unit; a gradient unit; and a driving unit. The cycle-mounted powerless simulation device of the present invention can increase user satisfaction for a product.					
89.	Exercise stand and centrifugal resistance unit for a bicycle	US20030027692	2003-02-06	PHILLIPS CAL M.	69 %
A first support arm 2 fixed to a base 1, a second support arm 3 pivotally attached to the base. A cam operated by a foot lever 6B controls the pivot position of the second arm, moving it toward or away from the first arm to clamp or release the rear axle of a bicycle between the arms. An inward-facing cup 2A, 3A on each arm holds the ends of the bicycle axle. The cups are vertically adjustable on the arms. Adjustments optimize the frame for any size bicycle wheel. A resistance unit 7 attached to the base has a tire contact roller 7E. A centrifugal clutch in the resistance unit urges a rotating friction plate against a stationary friction pad, providing ideal ride resistance ranging from zero at start-up to full hill-climbing resistance that supports a rider standing on the bicycle pedals at maximum output.					
90.	Rowing machine	WO2020/018955	2020-01-23	NAUTILUS	69 %
A rowing machine is disclosed. The rowing machine includes a frame including a base for contact with a support surface and a seat rail supported by the base. The rowing machine includes a seat configured to reciprocate back and forth along the seat rail. The rowing machine includes a rowing engine that includes at least one resistance mechanism rotatably coupled to the frame. The rowing machine includes at least one handle operatively connected to the at least one resistance mechanism, and a paddle linkage assembly operatively connecting the at least one handle to the at least one resistance mechanism such that rearward movement of the handle is resisted by the at least one resistance mechanism.					
91.	Eccentric idler	WO2013/138303	2013-09-19	KEISER	69 %
An eccentric idler is disclosed. One application of the eccentric idler is on a stationary exercise cycle. The cycle may include an eccentric driver or driven shaft rotating a belt or chain. The idler is coupled to the cycle and is configured to rotate eccentrically in contact with the belt or chain. The stationary exercise cycle of various embodiments is configured to generate reciprocating motion, thereby providing users with a vibratory exercise experience.					

92.	For cycle bodybuilding	JP3099215	2003-11-05	HIP CORPORATE MINUTES	69 %	
PROBLEM TO BE SOLVED: Riding a bicycle or simulated Trooper to exercise at the same time to achieve the purpose for providing Bodybuilding cycle. SOLUTION: Posterosuperiorly body 10 is, a main support section 11, the driven member 12, and a handlebar 13 is provided. The driven member 12 top sheet 14 connected with the, the bottom end of the main support pivot 11 connected to, the pivot point is displayed A. The connecting rod 15 one end of the driven member 12 in close proximity to the bottom end of the fixed, the other end of the cylindrical roller 16 pivotally connected to a contact. The drive wheel 20 is rotated at the same point, the drive wheel 20 crank 21 pedal 22 and the like which are connected to the mechanism. The eccentric wheel 40 includes a main support section 11 on the pivot and against, to the side surface of the neck portion 41 having. Belt 30 by the drive wheel 20 the axis neck 41 surrounding, the drive wheel 20 is driven when the drum is rotated, the belt 30 eccentric wheel connected by transmission through 40 U-turn having raised the same part causes rotation and indirectly. SELECTED DRAWING: Fig. 2						
93.	Speed-control exercise method and apparatus	US6302829	2001-10-16	SCHMIDT DESIGN	69 %	
An exercise device usable for closely simulating natural exercise is provided. Preferably exercise is provided which presents resistance to both backward leg movement and forward leg movement. Preferably the apparatus can be configured to control speed based on the fore-aft position of the user and without the need for inputting controls, instructions or adjustments manually. Preferably, the device provides for arm exercise which permits the arms to be moved alternately, in parallel, one at a time, or not at all. In one embodiment the same resistance device which provides resistance to leg movement also provides resistance to arm movement, e.g., such that an increase in arm exercise permits a decrease in leg exercise effort while maintaining a constant level of overall effort or speed.						
94.	Dry interactive play structure having recirculating play media	WO98/36812	1998-08-27	07 12690 WHITEWATER WEST INDUSTRIES	69 %	
An interactive play system (100) and structure are provided in which a plurality of interactive play elements (200, 203, 220, 230, 240, 250, 270, 280, 290, 300, 310, 320) are provided for creating various desired effects utilizing soft foam balls (104) or other suitable "dry" play media. In one embodiment the interactive play system (100) comprises a multi-level support structure (102) on which the interactive play elements are disposed. These allow play participants to create desired play effects using a fun and familiar dry play media. Some of the play elements (240) may be multi-order play elements in that they receive play media from a first effect (246) to create yet another effect. Various automated and/or play-participant-operated conveyers and play media collection and return mechanisms (330, 332, 350, 360, 370, 380, 400, 420, 600, 630, 670, 720, 749, 799, 800) are provided throughout the structure (100) for collecting and transporting play media (104) from a source, such as a collection basin (750), to the various interactive play elements.						
95.	Hybrid resistance system	EP2861308	2015-04-22	HABING DOUGLAS JOHN HABING DOUGLAS HABING, DOUGLAS JOHN	69 %	
A resistance system, which can be suitable for incorporation in exercise equipment, is a "hybrid" resistance assembly having at least a first and a second resistance unit. The first resistance unit can be of a first type and the second resistance unit can be of a second type. The first resistance unit can be an inertial resistance unit, which incorporates an inertial load that creates resistance influenced by the inertia of a movable mass, such as a rotatable flywheel. The second resistance unit can be a static or non-inertial resistance unit, such as a displacement resistance unit, which incorporates a load that creates resistance influenced by displacement (e.g., linear or rotational displacement) of an input to the displacement resistance unit.						
96.	Total body exercise equipment	EP2769753	2014-08-27	LIM JUNG SOO LIM, JUNG-SOO LIN ZHENGZHU	69 %	
This invention is related with a total body exercise equipment, by which a person can exercise using four limbs, comprising a first crankshaft to which first crank arms having grips and a first sprocket are installed; a second crankshaft to which second crank arms having pedals, a second sprocket and a third sprocket are installed; a driven shaft to which a wheel and a driven sprocket are installed; a first driving force transmitting means so engaged with the first sprocket and the second sprocket that the torques of the first crankshaft and the second crankshaft are transmitted each other thereby the first crankshaft and the second crankshaft are linked; a second driving force transmitting means so engaged with the third sprocket and the driven sprocket that the torque of the third crankshaft is transmitted to the driven shaft thereby the driven shaft rotates; a frame to which the first and the second crankshafts are installed; a bracket on which the driven shaft is installed; and a base on which the frame and the bracket are fixed.						
97.	Exercising mechanism for simulating climbing a ladder	US4961570	1990-10-09	CHANG CHESTER	68 %	
An exerciser includes a frame body, a wheel pivotally provided on one end of the frame body, a driving mechanism including a rocker arm pivoted on each side of the frame body, and a transmission mechanism being coupled between the wheel and the driving mechanism. The wheel is actuated to rotate by an up and down movement of a free end of each rocker arm.						

98.	Exercycle with deflection exercycle body capable of imitating terrain	CN202459977	2012-10-03	WU ZHENZHI	68 %	
The utility model discloses an exercycle with a deflection exercycle body capable of imitating the terrain and relates to the field of bodybuilding equipment. The exercycle comprises an exercycle body and is characterized in that a cam plate is arranged on the lower half-section of a back slash of a scaffold; longitudinal arc worm-gear teeth are arranged on the lower edges of the cam plate; through holes formed in an upper cross beam of a pair of n-shaped brackets which are fixedly arranged in a base are in respectively moving fit and sleeved on two ends of a transverse locking shaft of the cam plate; a longitudinal worm fixed on a main shaft of a motor A on the base is meshed with the longitudinal arc worm-gear teeth on the lower edge surface of the cam plate; inner hinged plates are respectively arranged at the front end part and the rear end part of the base; transverse worm-gear teeth are fixed on the lower edge surface of the middle of the base; a longitudinal arc groove and a transverse rectangular groove are arranged on a base frame which is additionally arranged; longitudinal pins in through holes in the upper parts of the outer hinged plates which are respectively fixed at two ends of the longitudinal arc grooves are sleeved in through holes of the inner hinged plates; the base is in clearance fit and positioned in the longitudinal groove; and a transverse worm is fixedly arranged on a main shaft of a motor B arranged at the bottom of the rectangular groove and is meshed with the transverse arc worm-gear teeth. The exercycle body can do the lateral deflection and bowing forward and leaning backward composite action.						
99.	Abdominal exercise device	EP2111268	2009-10-28	COASTER HOLDINGS ROTO COOKWARE TRISTAR PRODUCTS	68 %	
An abdominal exercise device (102) for working the abdominal and oblique muscle groups includes a leg support (550) that can slide or roll along a track (108) and an upper body support (540). The abdominal exercise device (102) is configured to simulate an abdominal exercise "crunch" motion when the knees are brought within proximity of the upper body support (540).						
100.	Equal-power damping winter endurance project land special simulation training system	CN209361744	2019-09-10	JILIN INSTITUTE OF PHYSICAL EDUCATION	68 %	
The utility model provides an equal-power damping winter endurance project land special simulation training system which is composed of a top cover, a vertical shaft, a base, a gear cylinder, a gear cylinder center fixing shaft sleeve, an outer protection wall supporting plate, an outer protection wall and a plurality of equal-power output damping units. Wherein the top cover and the vertical shaft are fixed on the base, and the outer protective wall body and the outer protective wall body supporting plate are in shaft connection with the vertical shaft through the gear cylinder center fixingshaft sleeve; inner wall teeth and outer wall teeth are respectively arranged on the inner wall and the outer wall of the tooth cylinder; the plurality of isokinetic output damping units are symmetrically and uniformly distributed in an upper layer and a lower layer by taking the vertical shaft as the center; an electromagnetic damper equal-power feedback output system is adopted, an equal-moving-speed strength endurance training mode is provided for athlete training, numerical control equal-power training is applied, and the probability can be increased by 15% for special muscle groups to participate in work; a plurality of isokinetic output damping units are arranged, so that synchronous clockwise, anticlockwise and bidirectional traction and rotation training of multiple items, multiplepersons, different ages and different strengths on the same machine at the same speed is realized.						