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(54) **EXERCISE APPARATUS**

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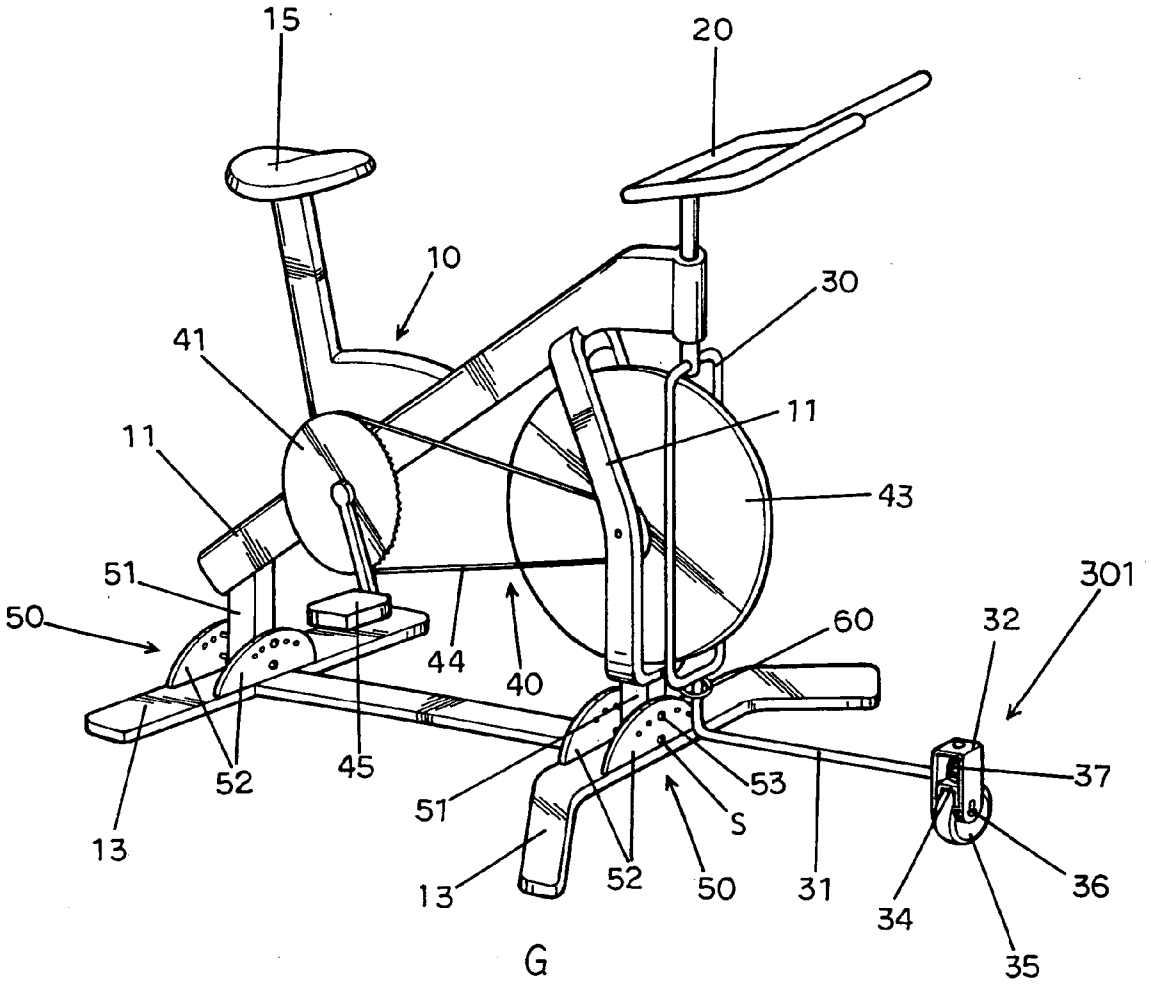
(57) **ABSTRACT**

An exercise apparatus is provided. The exercise apparatus includes a base, a bicycle frame movably mounted on the base and having a seat for seating thereon a user, and a gyratory wheel as well as a swinging unit mounted on the bicycle frame in front of the seat and rotatably mounted on the bicycle frame for balancing the user on the bicycle frame. Through the provided exercise apparatus, the exercise is more interesting, so as to virtually simulate a real bicycle riding.



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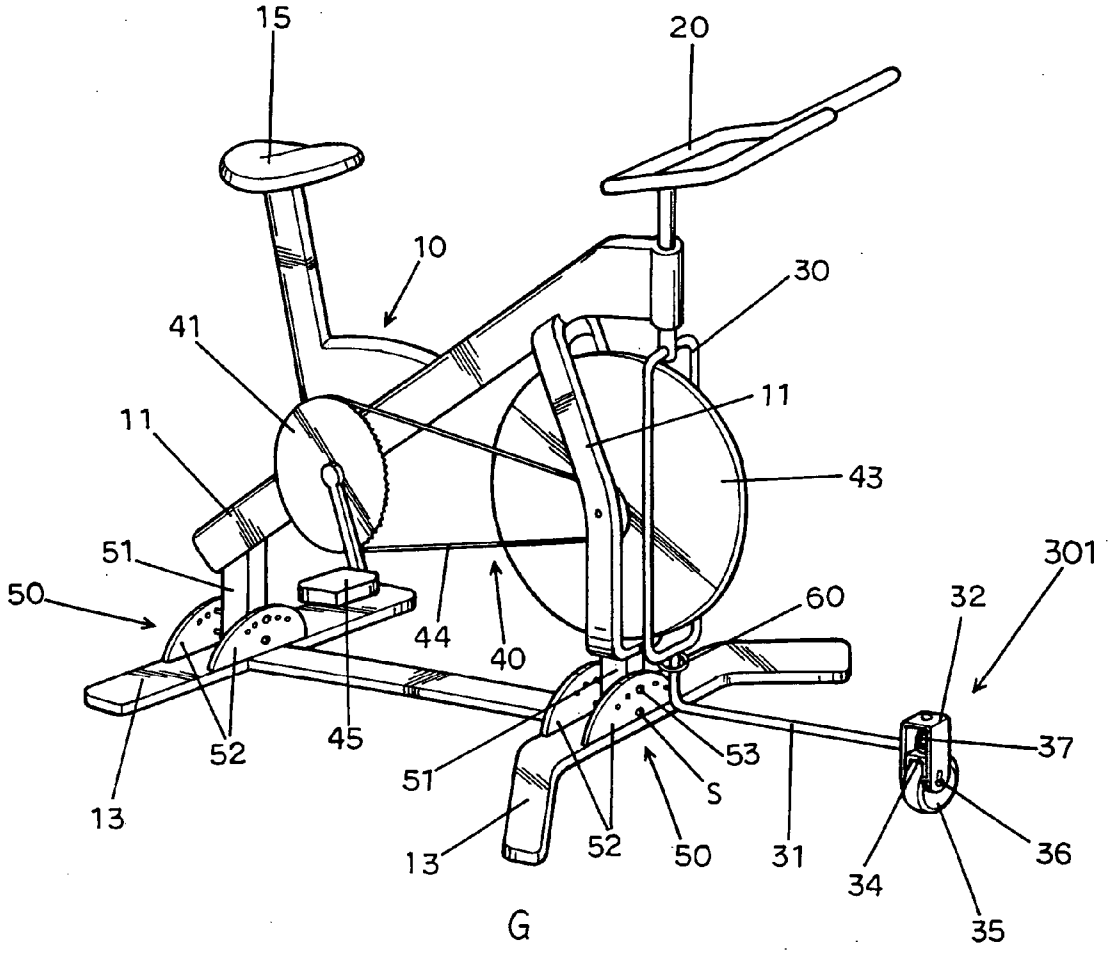
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FIG. 1

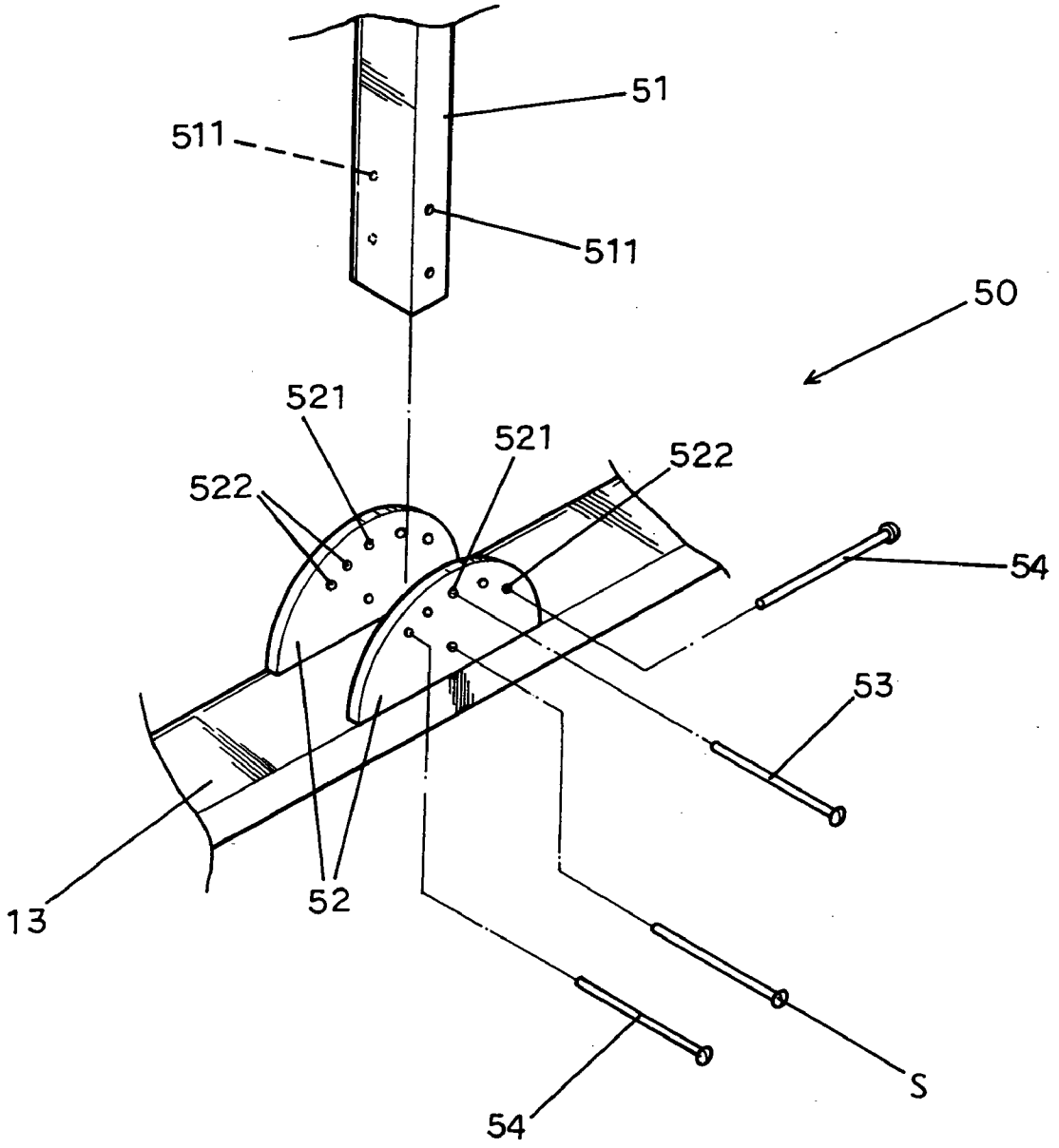

FIG. 2

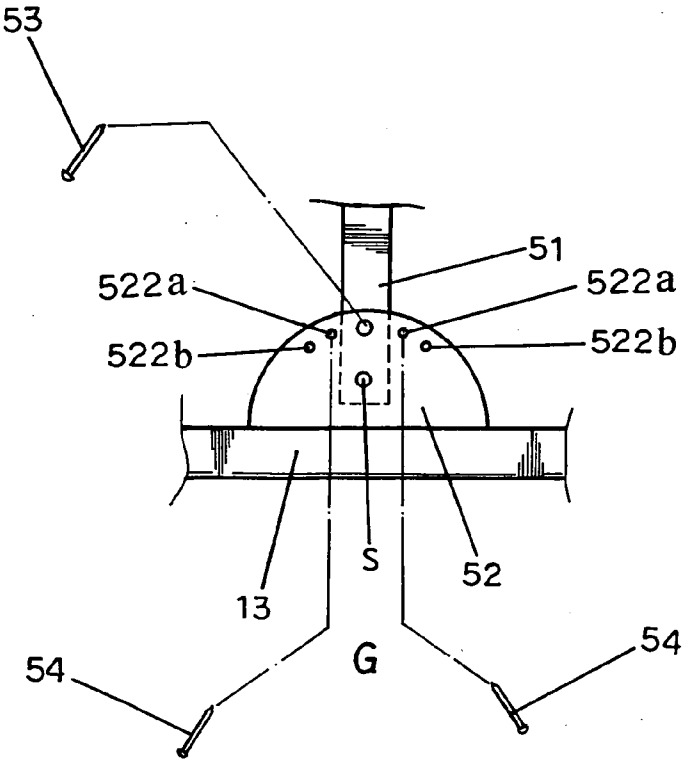

FIG. 3(a)

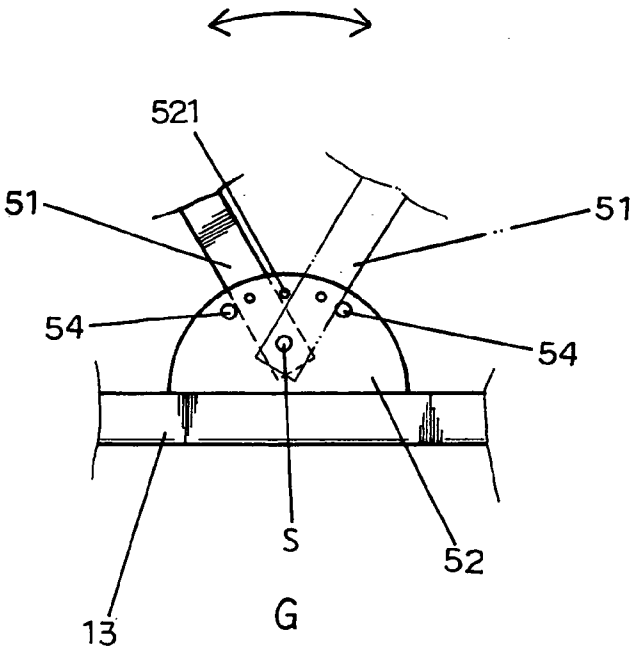

FIG. 3(b)

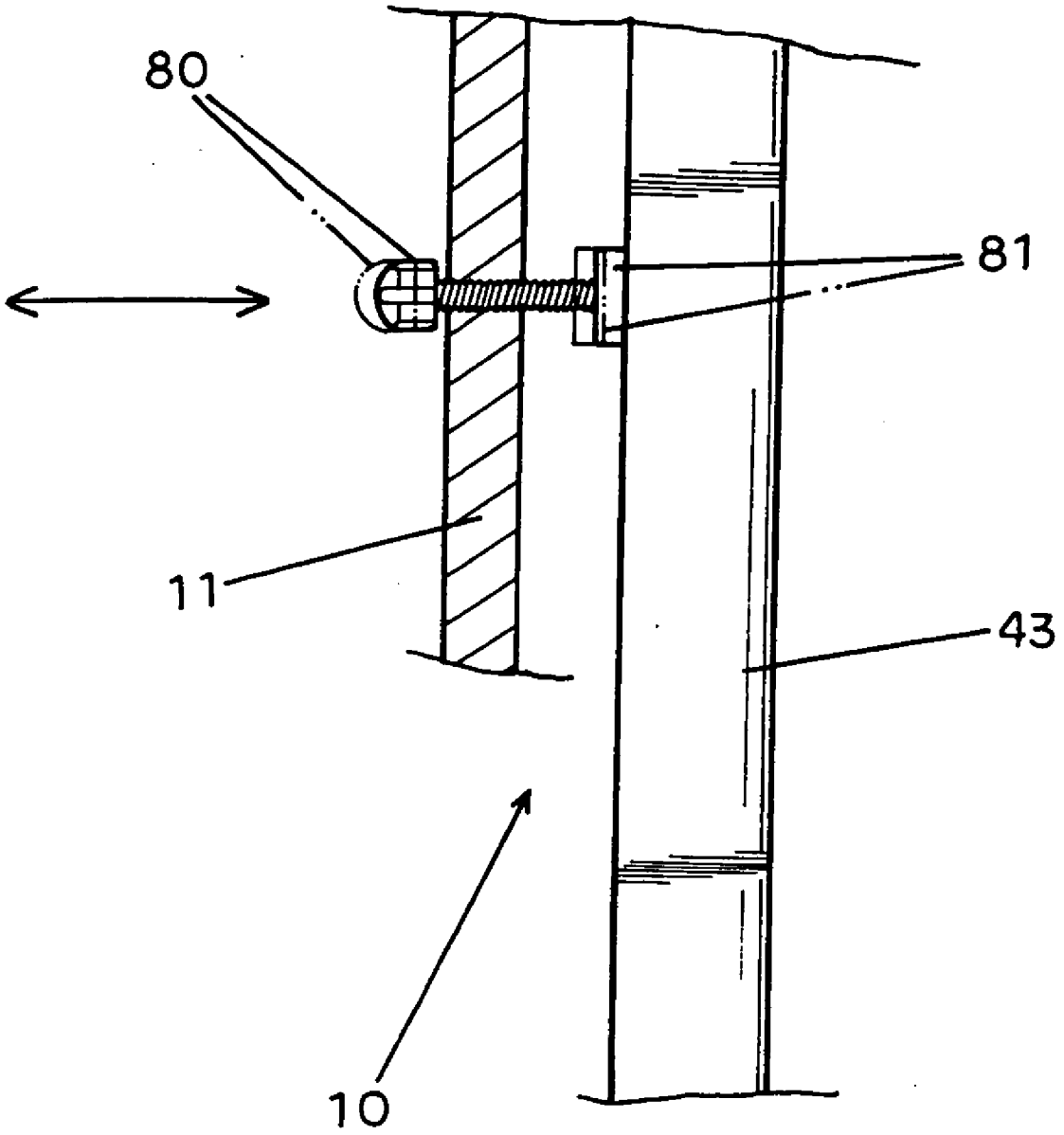

FIG. 4

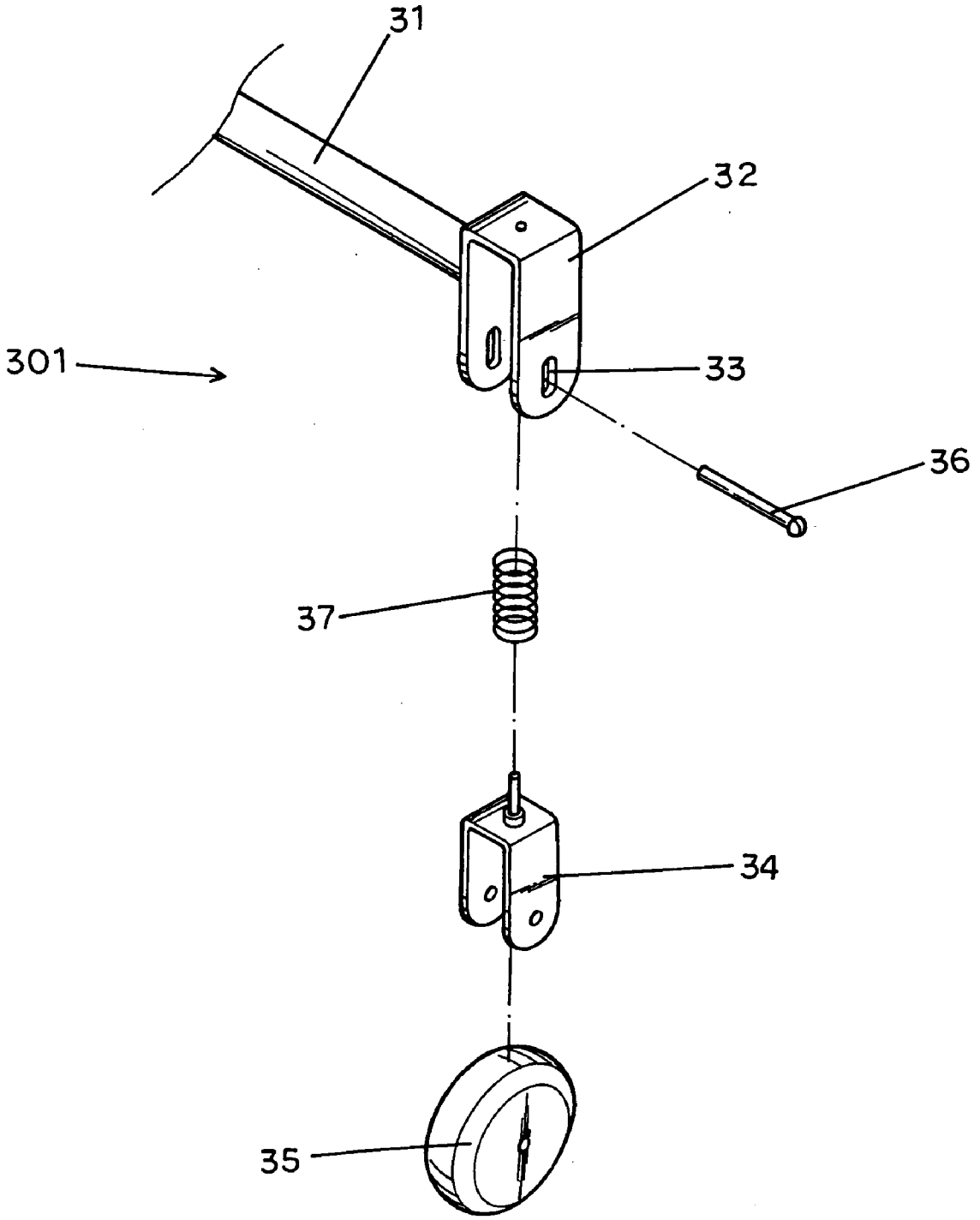

FIG. 5

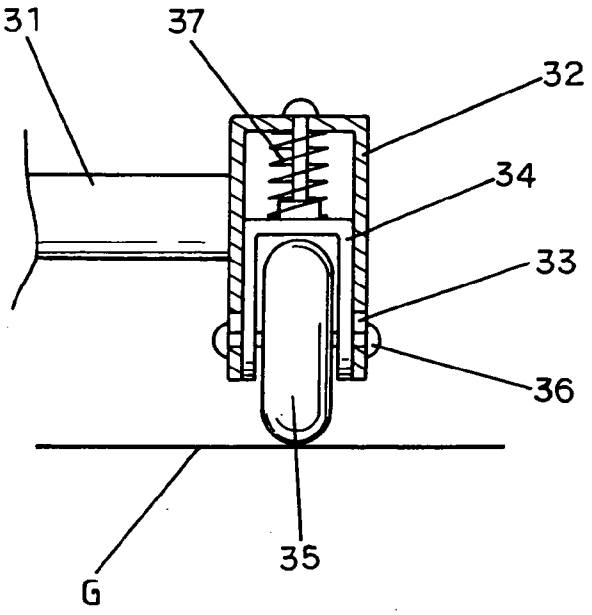

FIG. 6(a)

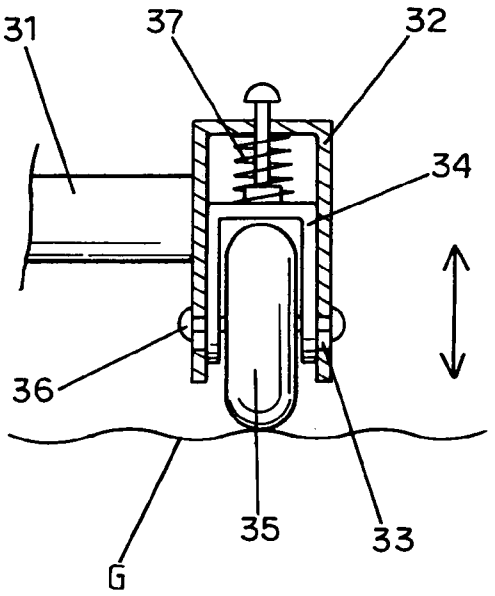

FIG. 6(b)

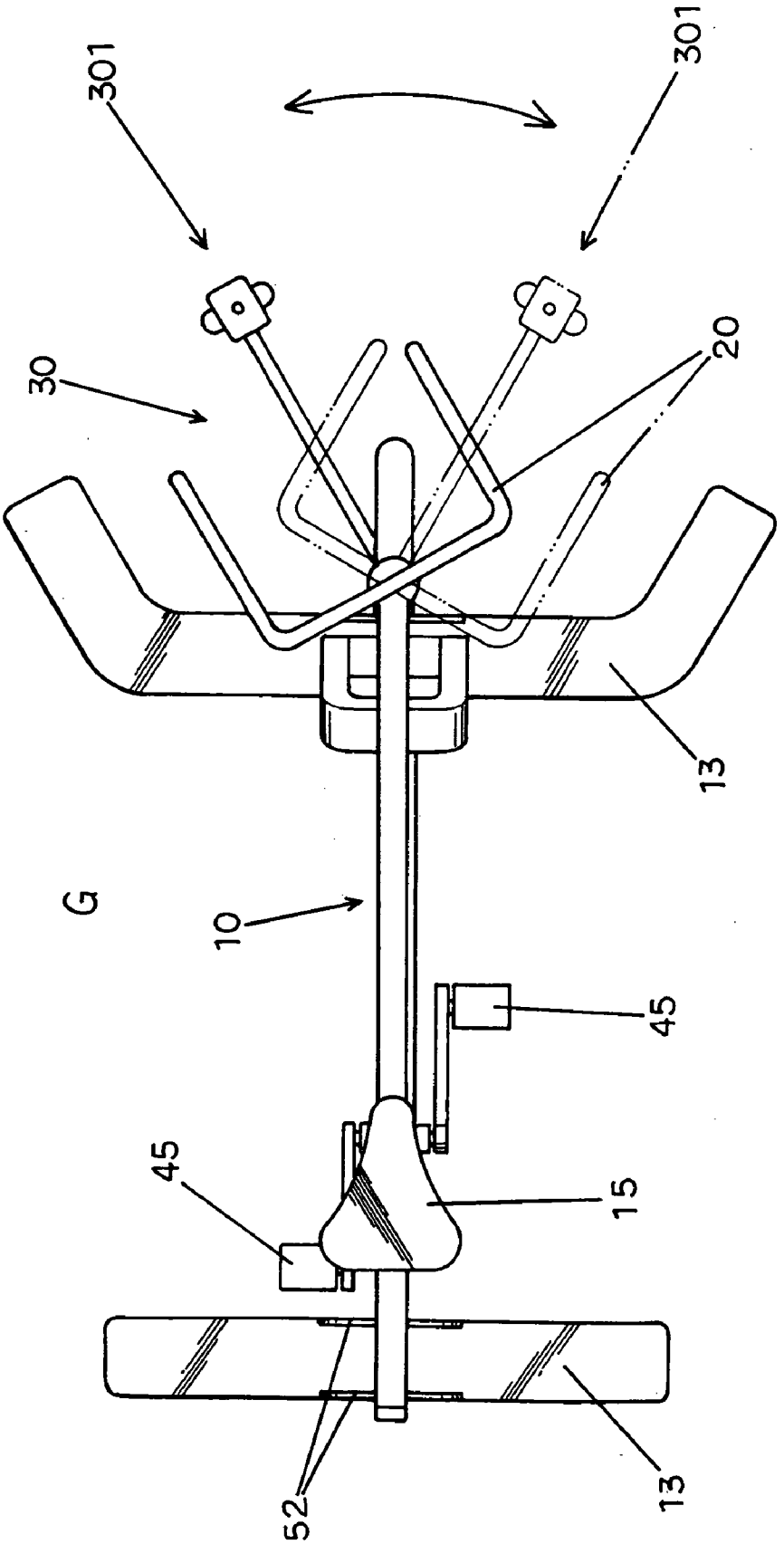

FIG. 7

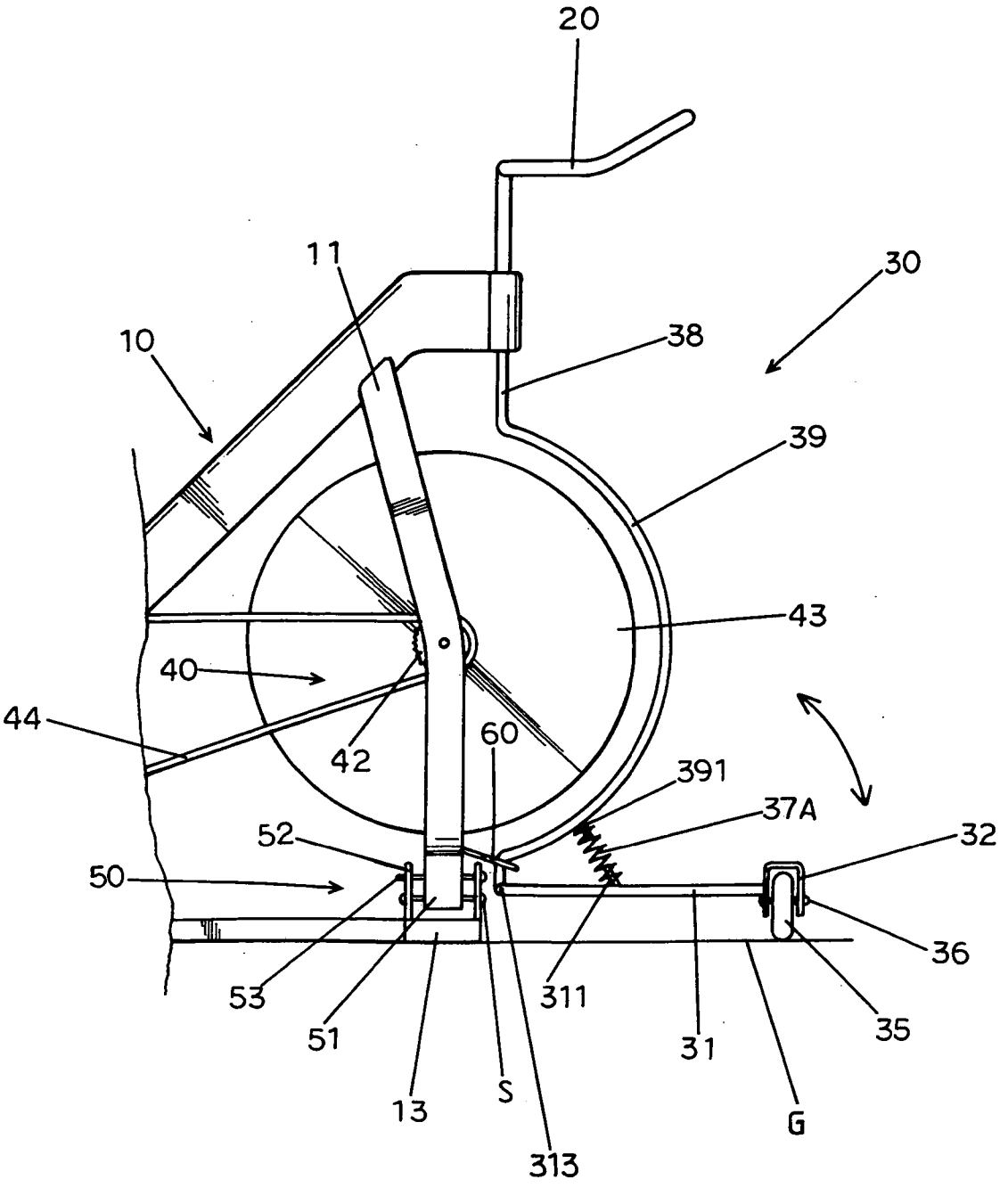
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FIG. 8

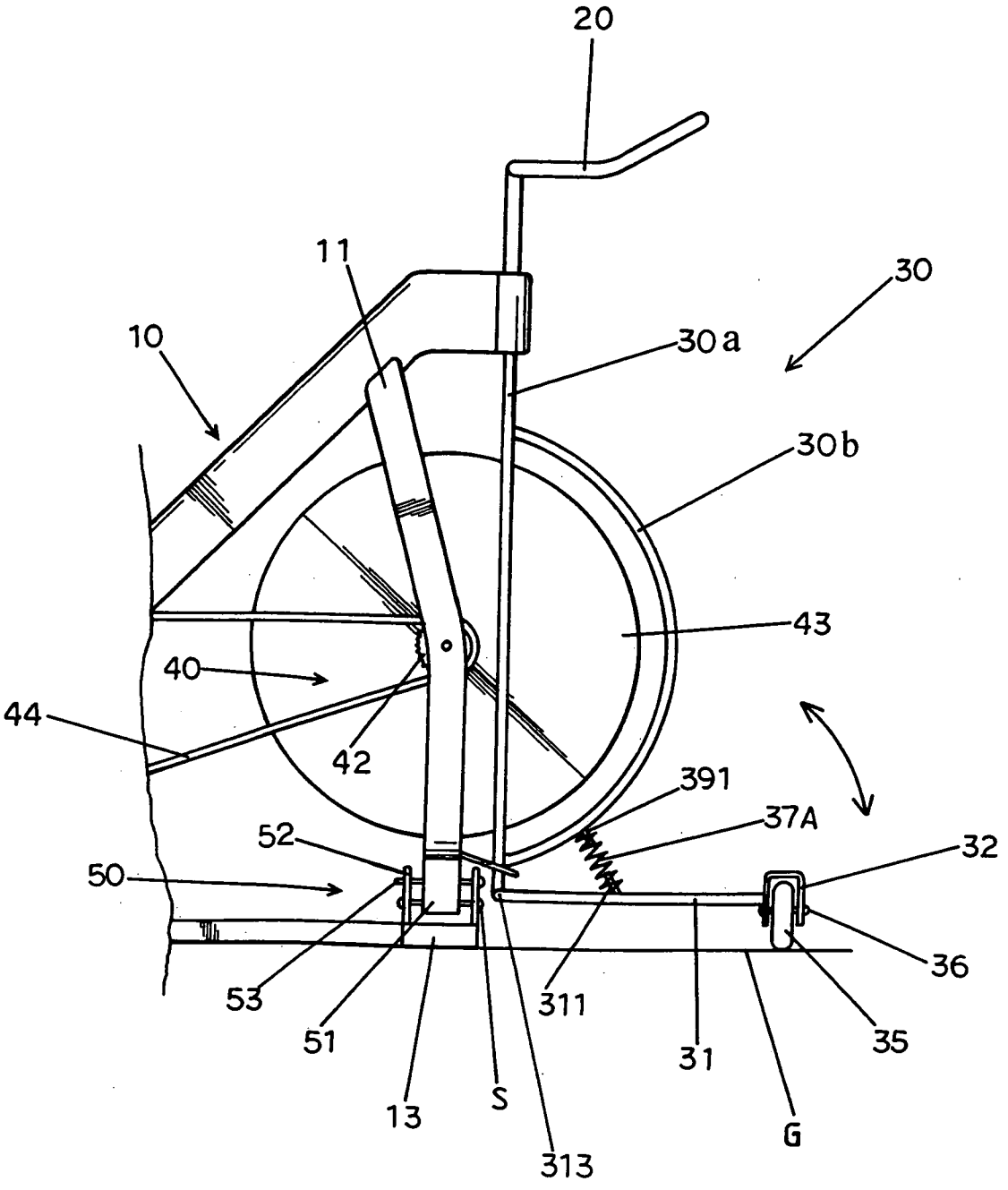
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FIG. 9

EXERCISE APPARATUS

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates to an exercise apparatus, and more particular to an exercise apparatus that virtually simulates a real bicycle riding.

[0003] 2. Description of the Prior Arts

[0004] The conventional exercise bicycles are generally operated by pedaling a rotatable wheel with a variable and adjustable resistance, so as to cause a corresponding amount of the energy consumption for the exerciser. It is so drab for the exerciser to do the body-building with such an exercise apparatus, and the exerciser may hence lose his interests thereon and give it up. However, conventional exercise bicycles only provide for an indoor exercise. The exerciser just pedals mechanically without feeling any road condition variation and acquiring any experience in handling such road conditions, which may make the exerciser lose his interests. In other words, exercising on a conventional exercise bike decreases the desire of the exerciser, and thus hinders the exerciser from developing his physical strength. In addition, a device for exercising the limbs and torso of the exerciser is disadvantageous in that the rotatable wheel thereof is positioned below the seat, which makes the exerciser fail to keep the balance while exercising.

[0005] For overcoming the mentioned disadvantage of the prior art, a novel exercise apparatus is provided in the present invention. The provided exercise apparatus is capable of providing the exerciser with an improved balance while exercising the therewith, so as to simulate a real bicycle riding and make the exerciser more interested in exercising.

SUMMARY OF THIS INVENTION

[0006] The main aspect of the present invention is to provide an exercise apparatus with which the exerciser would keep his balance while being on the bicycle frame thereof.

[0007] In accordance with a first aspect of the present invention, the exercise apparatus includes a base, a bicycle frame movably mounted on the base and having a seat for seating thereon a user, and a balance controlling device mounted on the bicycle frame in front of the seat and rotatably mounted on the bicycle frame for balancing the user on the bicycle frame.

[0008] Preferably, the exercise apparatus includes a rotating unit pivotally mounted on the bicycle frame.

[0009] Preferably, the rotating unit includes a driving wheel linked with a driven wheel.

[0010] Preferably, the bicycle frame further includes a connecting unit vertically fixing thereon the bicycle frame.

[0011] Preferably, the bicycle frame further includes a connecting unit swingably fixing thereon the bicycle frame within a limited range.

[0012] Preferably, the balance controlling device is a gyratory wheel.

[0013] Preferably, the gyratory wheel is a flywheel.

[0014] Preferably, the gyratory wheel is replaceable.

[0015] Preferably, the balance controlling device is a swinging unit.

[0016] Preferably, the swinging unit operates on a surface, which includes a frame, an adapting device movably connected on the frame, and a control device movably mounted on the frame and operable for adapting the frame on the surface to keep the bicycle frame at a balance.

[0017] Preferably, the exercise apparatus includes a retainer retaining the swinging unit to the bicycle frame.

[0018] Preferably, the balance controlling device includes a gyratory wheel and a swinging unit.

[0019] Preferably, the swinging unit rotates therethrough the gyratory wheel.

[0020] In accordance with a second aspect of the present invention, an exercise apparatus is provided. The provided exercise apparatus includes a base, a bicycle frame movably mounted on the base, and a diversifying device pivotally mounted on the bicycle frame and controlled by a user to keep the bicycle frame at a balance.

[0021] Preferably, the diversifying device is a swinging unit.

[0022] Preferably, the swinging unit is kept in front of a gyratory wheel.

[0023] In accordance with a third aspect of the present invention, an exercise apparatus is provided. The provided exercise apparatus includes a base, a bicycle frame movably mounted on the base and having a seat for seating thereon a user, and a virtually simulating device mounted on the bicycle frame in front of the seat and movably mounted on the bicycle frame to virtually simulate a real bicycle riding.

[0024] Preferably, the virtually simulating device is a gyratory wheel.

[0025] Preferably, the virtually simulating device is a swinging unit.

[0026] Preferably, the virtually simulating device includes a gyratory wheel and a swinging unit.

[0027] Preferably, the swinging unit includes a first portion rotating therethrough and a second portion kept in front of the gyratory wheel.

[0028] The above contents and advantages of the present invention will become more readily apparent to those ordinarily skilled in the art after reviewing the following detailed descriptions and accompanying drawings, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

[0029] FIG. **1** is a perspective view of an exercise apparatus according to a first preferred embodiment of the present invention;

[0030] FIG. **2** is an exploded view of a connecting unit of the exercise apparatus according to the first preferred embodiment of the present invention;

[0031] FIGS. **3**(*a*) and **3**(*b*) are front views schematically showing the operation of the connecting unit shown in FIG. **2**;

[0032] FIG. **4** is a front view of a resistance generator arranged on a gyratory wheel of the exercise apparatus according to the first preferred embodiment of the present invention;

[0033] FIG. **5** is an exploded view of an adapting device of a swinging unit of the exercise apparatus according to the first preferred embodiment of the present invention;

[0034] FIGS. **6**(*a*) and **6**(*b*) are cross-sectional views schematically showing the operation of the adapting device shown in FIG. **5**;

[0035] FIG. **7** is a top view showing the operation of a control device with the adapting device according to the preferred embodiment of the present invention;

[0036] FIG. **8** is a side view of an exercise apparatus according to a second preferred embodiment of the present invention; and

[0037] FIG. **9** is a side view of an exercise apparatus according to a third preferred embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0038] The present invention will now be described more specifically with reference to the following embodiments. It is to be noted that the following descriptions of preferred embodiments of this invention are presented herein for purpose of illustration and description only; it is not intended to be exhaustive or to be limited to the precise form disclosed.

[0039] Please refer to FIG. **1**, which shows a perspective view of an exercise apparatus according to a first preferred embodiment of the present invention. The exercise apparatus includes a bicycle frame **10** whose shape is not limited to the disclosed one. The bicycle frame **10** includes a supporting member **11** mounted on a base **13** that is placed on a base surface G. On the bicycle frame **10**, a seat **15** is mounted thereon for seating an exerciser, and a control device **20** is pivotally mounted on a first terminal of the bicycle frame **10**, so that the exerciser can balance himself therethrough.

[0040] On the control device **20**, a swinging unit **30** whose shape is not limited to the disclosed one is connected with a first end thereof. The swinging unit **30** has a cross rod **31** on a second end thereof, which is parallel to the base surface G. Moreover, an adapting device **301** is movably connected to the cross rod **31**.

[0041] The exercise apparatus further has a rotating unit **40** including a driving wheel **41**, a driven wheel **42** and a gyratory wheel **43**. The driven wheel **42** and the gyratory wheel **43** are coaxially mounted on the bicycle frame **10**, and the driving wheel **41** is linked to the driven wheel **42** by a link **44**. A pair of pedals **45** are connected to the axial center of the driving wheel **41**. In this embodiment, the driving wheel **41** and the driven wheel **42** would be one of a gear and a pulley. The link **44** would be one of a chain and a belt, depending on the driving wheel **41** and the driven wheel **42**.

[0042] The weight of the gyratory wheel **43** will results in an inertia when the rotating unit **40** is rotated and the swinging unit **30** is suitably swung, so as to balance the bicycle frame **10** effectively and provide the exerciser with a balance when the exerciser is exercising. Besides, the exercise apparatus may includes more than one gyratory wheels **43** and the respective diameters and weights thereof are different.

[0043] A retainer **60** is provided on the supporting member **11** for holding the swinging unit **30**, so as to prevent the swinging unit **30** from bouncing up and down while swinging.

[0044] The supporting member **11** and the base **13** are connected to each other through a connecting unit **50**, which is described in detailed with reference to FIG. **2**. Please refer to FIG. **2**, which shows an exploded view of a connecting unit **50** of the exercise apparatus according to the first preferred embodiment of the present invention. The connecting unit **50** includes a supporting rod **51** and a pair of pivotal seats **52**. The supporting rod **51** has a positioning hole **511** therethrough. One end of the supporting rod **51** is connected to the supporting member **11**, and the other end thereof is inserted between the pair of pivotal seats **52** fixed on the base **13** and is pivotally fixed therebetween through a pivot S, so that the supporting rod **51** is capable of swinging about the pivot S. Moreover, there are a central hole **521** and plural holes **522** arranged at each side of the central hole **521** on the pair of pivotal seats **52**.

[0045] Please refer to FIGS. **3**(*a*) and **3**(*b*), which show front views schematically showing the operation of the connecting unit shown in FIG. **2**. As shown in FIG. **3**(*a*), if two stop levers **54** are respectively inserted into the holes **522***a* which are configured adjacent to the central hole **521**, the supporting rod **51** is able to be adjusted to a position vertical to the base surface G and fixed at this position by inserting a positioning member **53** through the positioning hole **511** and the central holes **521**.

[0046] As shown in FIG. **3**(*b*), while the two stop levers **54** are respectively inserted into the holes **522***b* on the pivotal seats **52**, the swing of the supporting rod **51** is thus limited. In other words, the supporting rod **51** would only swing in the range defined by the two stop levers **54** respectively inserted in the holes **522***b*. Therefore, the connecting unit **50** functions as a swinging angle controlling element and adjusts the swinging angle of the bicycle frame **10** as desired. It is worthy to note that the number of the connecting unit **50** is variable, which depends on an actual design therefor.

[0047] Through the connecting unit **50**, it is easy to adjust the bicycle frame **10** to fix at a position which is vertical to the base surface G, and alternatively, to swing within a limited angle. Besides, one should notice that the connecting unit **50** shown in FIGS. **2**, **3**(*a*) and **3**(*b*), is only illustrated for the preferred embodiments of the present invention. The connecting unit **50** may also include a supporting rod **51** and a pivotal seat **52**, wherein the supporting rod **51** is able to be pivoted to the pivotal seat **52** with other components.

[0048] Please refer to FIG. **4**, which shows a front view of a resistance generator arranged on a gyratory wheel of the exercise apparatus according to the first preferred embodiment of the present invention. The resistance generator **80** is

arranged on the gyratory wheel **43** so as to supply different resistance for riding. For example, the resistance is generated by the resistance generator **80** which is screwed to prop up a friction member **81**. While the resistance generator **80** is screwed toward the friction member **81**, the gyratory wheel **43** is pressed thereby, so that the resistance is increased.

[**0049**] Please refer to FIG. **5**, which shows an exploded view of an adapting device of a swinging unit of the exercise apparatus according to the first preferred embodiment of the present invention. The adapting device **301** has a first big mounting bracket **32** and a pair of opposite elongated holes **33**. A second big mounting bracket **34** is inserted into the first big mounting bracket **32** and a supporting element **35** is disposed therein. A positioning member **36** is inserted into the pair of opposite elongated holes **33** of the first big mounting bracket **32**, and thus the second big mounting bracket **34** and the supporting element **35** are assembled together. An elastic member **37** is disposed between the first big mounting bracket **32** and the second big mounting bracket **34** so as to absorb the vibration while the exercise apparatus is operated.

[**0050**] In this embodiment, the supporting element **35** is a rotatable member which contacts the base surface G, and the contact point thereof with respect to the base surface G is regarded as a supporting point. In other embodiments, however, the base surface G further includes the ground or other surfaces.

[**0051**] Please refer to FIGS. **6**(*a*) and **6**(*b*), which show cross-sectional views schematically showing the operation of the adapting device shown in FIG. **5**. If the base surface G is uneven, the elastic member **37** would absorb the vibration resulting from the supporting element **35** which moves up and down in response to the unevenness of the base surface G, so as to provide the swinging unit **30** with a stable condition for swinging as shown in FIG. **6**(*b*).

[**0052**] Please refer to FIG. **7**, which shows a top view showing the operation of a control device with the adapting device according to the preferred embodiment of the present invention. The bicycle frame **10** is to be fixed at a position which is vertical to the base surface G. The exercise apparatus would generate an inertia while the exerciser pedaling the pedals **45**. In order to keep the bicycle frame **10** at a balance, the exerciser could holds the control device **20** to make the swinging unit **30** turn left and right, so that the adapting device **301** would correspondly swing on the base surface G.

[**0053**] Please refer to FIG. **8**, which shows a side view of an exercise apparatus according to a second preferred embodiment of the present invention. The swinging unit **30** includes a straight frame **38** whose first end is connected to the control device **20**, and the second end thereof is folded into an arcuate rod **39** which is further connected to one end of the cross rod **31** with a joint **313**. The arcuate rod **39** and the cross rod **31** respectively have a locking protrusion **391** and **311**, and an elastic member **37**A is held therebetween. When the swinging unit **30** is swung, the angle between the arcuate rod **39** and the cross rod **31** is adjusted by the joint **313** in response to the absorbing of the elastic member **37**A. The supporting element **35** is pivotally disposed in the first big mounting bracket **32** at the other end of the cross rod **31**. It is worthy to note that the positioning member **36** is inserted into the holes **33** on each side of the first big mounting bracket **32**. The elastic member **37**A is used to make the supporting element **35** flexibly move above the base surface G.

[**0054**] While the bicycle frame **10** swings, the swinging unit **30** would swing left and right and the supporting element **35** contacting the base surface G is moved corresponding, so as to supply a supporting force for the bicycle frame **10**. However, the swinging of bicycle frame **10** would be slightly affected by an uneven base surface G or an excessive slant of the bicycle frame **10** which leads to an adverse manner, therefore, one inventive design in this embodiment exists in that the swinging unit **30** is provided with the elastic member **37**A. As a result, the swinging unit **30** is capable of providing a supporting effect for balancing and stabilizing the bicycle frame **10** as well as the exerciser.

[**0055**] Please refer to FIG. **9**, which shows a side view of an exercise apparatus according to a third preferred embodiment of the present invention. In this embodiment, the swinging unit **30** includes a first portion **30***a* rotating therethrough and a second portion **30***b* kept in front of said gyratory wheel **43**. Combining the absorbing effect of the elastic element **37**A and the more firmly swinging unit **30**, it should be more easily kept the bicycle frame **10** at a balance on the base surface G by using the control device **20**.

[**0056**] As the above-mentioned, the weight of the gyratory wheel would result in an inertia when the rotating unit is rotated and the swinging unit is suitably swung, so as to dynamically balance the bicycle frame and provide the exerciser with a balance when the exerciser is exercising with the exercise apparatus. Furthermore, the provided exercise apparatus also makes the exercise simulation to be more real and interesting. The bicycle frame swing left and right in a predetermined range whose swinging angle is easily adjustable and thus the riding and the quality of riding simulation are well improved. In addition, the connecting unit and the bicycle frame are able to be adjusted to stand vertically or swing laterally, and thus the swinging angle of the bicycle frame is easily controlled by the exerciser as needed.

[**0057**] While the invention has been described in terms of what is presently considered to be the most practical and preferred embodiment, it is to be understood that the invention needs not be limited to the disclosed embodiment. On the contrary, it is intended to cover various modifications and similar arrangements included within the spirit and scope of the appended claims which are to be accorded with the broadest interpretation so as to encompass all such modifications and similar structures.

What is claimed is:

1. An exercise apparatus, comprising:

a base;

a bicycle frame movably mounted on said base and having a seat for seating thereon a user; and

a balance controlling device mounted on said bicycle frame in front of said seat and rotatably mounted on said bicycle frame for balancing said user on said bicycle frame.

2. The exercise apparatus as claimed in claim 1, further comprising a rotating unit pivotally mounted on said bicycle frame.

3. The exercise apparatus as claimed in claim 2, wherein said rotating unit comprises a driving wheel linked with a driven wheel.

4. The exercise apparatus as claimed in claim 1, wherein said bicycle frame further comprises a connecting unit vertically fixing thereon said bicycle frame.

5. The exercise apparatus as claimed in claim 1, wherein said bicycle frame further comprises a connecting unit swingably fixing thereon said bicycle frame within a limited range.

6. The exercise apparatus as claimed in claim 1, wherein said balance controlling device is a gyratory wheel.

7. The exercise apparatus as claimed in claim 6, wherein said gyratory wheel is a flywheel.

8. The exercise apparatus as claimed in claim 6, wherein said gyratory wheel is replaceable.

9. The exercise apparatus as claimed in claim 1, wherein said balance controlling device is a swinging unit.

10. The exercise apparatus as claimed in claim 9, wherein said swinging unit operating on a surface, comprising:

a frame;

an adapting device movably connected on said frame; and

a control device movably mounted on said frame and operable for adapting said frame on said surface to keep said bicycle frame at a balance.

11. The exercise apparatus as claimed in claim 1, further comprising a retainer retaining said swinging unit to said bicycle frame.

12. The exercise apparatus as claimed in claim 1, wherein said balance controlling device comprises a gyratory wheel and a swinging unit.

13. The exercise apparatus as claimed in claim 12, wherein said swinging unit rotates therethrough said gyratory wheel.

14. An exercise apparatus, comprising:

a base;

a bicycle frame movably mounted on said base; and

a diversifying device pivotally mounted on said bicycle frame and controlled by a user to keep said bicycle frame at a balance.

15. The exercise apparatus as claimed in claim 14, wherein said diversifying device is a swinging unit.

16. The exercise apparatus as claimed in claim 15, wherein said swinging unit is kept in front of a gyratory wheel.

17. An exercise apparatus, comprising:

a base;

a bicycle frame movably mounted on said base and having a seat for seating thereon a user; and

a virtually simulating device mounted on said bicycle frame in front of said seat and movably mounted on said bicycle frame to virtually simulate a real bicycle riding.

18. The exercise apparatus as claimed in claim 17, wherein said virtually simulating device is a gyratory wheel.

19. The exercise apparatus as claimed in claim 17, wherein said virtually simulating device is a swinging unit.

20. The exercise apparatus as claimed in claim 17, wherein said virtually simulating device comprises a gyratory wheel and a swinging unit.

* * * * *