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Description

BACKGROUND OF THE INVENTION

The present invention relates to a foldable exercise bicycle which is provided with a folding frame in order to reduce the bicycle size.

As is known there are already available exercise bicycles which conventionally comprise a frame thereon there is articulated a pedal assembly which, through a belt system, causes a flywheel to turn, the flywheel being usually arranged laterally of the pedals and at the rear thereof.

A drawback of these prior bicycles is that they have a comparatively large size since the construction of the several elements of the bicycle does not provide the possibility of folding the bicycle frame to a compact stored condition.

Actually, even if some foldable frame exercise bicycles have been designed, they have still a comparatively large size in their folded condition.

The document US-A-3 578 800 discloses a foldable exercise bicycle having substantially the features of the pre-characterizing portion of the main claim.

SUMMARY OF THE INVENTION

Accordingly, the aim of the present invention is to overcome the above mentioned drawbacks by providing a compact foldable exercise bicycle including a bicycle folding frame which can be easily and quickly folded in order to provide the bicycle with a very compact size in a stored condition thereof.

Within the scope of the above mentioned aim, a main object of the present invention is to provide such a bicycle construction which can be folded so as to reduce both its length and its height.

Another object of the present invention is to provide such an exercise bicycle which can be easily transported on a pair of wheels and which is very reliable and safe in operation.

Yet another object of the present invention is to provide such an exercise bicycle which can be easily made starting from easily available elements and materials and which, moreover, is very competitive from a mere economic standpoint.

According to one aspect of the present invention, the above mentioned aim and objects, as well as yet other objects, which will become more apparent hereinafter, are achieved by a foldable exercise bicycle having the features of the characterizing portion of claim 1.

BRIEF DESCRIPTION OF THE DRAWINGS

Further characteristics and advantages of the invention will become more apparent thereafter from the following detailed disclosure of a preferred, though not exclusive, embodiment thereof, which is illustrated, by way of an indicative, but not limitative example, in the figures of the accompanying drawings, where:

Figure 1 is a side elevation view of the exercise bicycle according to the invention, in its use condition;

Figure 2 is a further side elevation view of the exercise bicycle, in a not use or folded condition thereof;

Figure 3 is a front view of the exercise bicycle according to the invention;

and

Figure 4 is a schematic perspective view illustrating the exercise bicycle according to the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference to the above mentioned drawings, the compact foldable exercise bicycle according to the present invention, which has been generally indicated at the reference number 1, comprises a bicycle frame which includes a central body 2 which is advantageously constituted by two adjoining metal plates 3 which are connected to a saddle upright 4, advantageously made as a square cross-section tubular element, and a front bearing element, also constituted by square cross-section tubular elements.

The upright 4 and front downward leg support 5 are rigidly connected to the bicycle frame and project from said frame at two opposite sides and are advantageously parallel to one another.

More specifically, and as is shown, the front leg support 5 ends at the bottom thereof with a front cross element 6 which, preferably, is provided with wheels 7.

To the central body 2 there is articulated, at the front portion thereof, a handle upright, indicated at 10, whereas to the rear end portion of the central body 2 there is pivoted a rear leg support 11.

Advantageously, both the upright 10 and the rear leg support 11 are made of square cross-section tubular elements.

Moreover, the rear bearing element ends with a rear cross element 12 which, at the end portions thereof, is provided with bearing pads 13.

The handle upright 10 is interconnected with the rear leg support, through a tie-rod 20, which is articulated between an intermediate position of the rear leg support 11 and the bottom end of the

upright 10 so as to cause, as the frame is folded, the rear leg support 11 and the upright 10 to simultaneously turn, thereby causing the upright 10 to move toward the upright 4 and the rear leg support 11 to move toward the front downward leg support 5.

The driving gear of the room bicycle comprise pedal assemblies 40, to which there is connected a central pulley 41, and which are rotatably supported with respect to the central body 2.

On the central pulley 41 there is entrained a driving or transmission belt 45 which further extends on a roller 46 coaxial and rigid with a flywheel 47.

There is moreover provided a belt tension element indicated at the reference number 48.

On the periphery of the flywheel 27 there is entrained a braking strip element 50, which has a fixed point at its rear end portion and, at its front end portion, is connected through the interposition of a spring 51 and a flexible tie-rod, provided for adjusting the friction in order to allow the pedalling force to be adjusted.

The above mentioned flywheel 47 is supported by plates 55 which are rigid with the front bearing element 5.

The bicycle further comprises a protecting casing generally indicated at the reference number 70.

The bicycle saddle 41 is connected by means of a telescopic column 72 which allows the size of the bicycle to be further reduced, in its not use condition, since the telescopic column 72 can be fully withdrawn within the upright 4.

Likewise, the handlebar 80 is connected, by means of a telescopic handlebar column 81, to the handlebar upright 10 so as to provide a desired height adjustment as well as to further reduce the bicycle size in its folded or collapsed condition.

From the above disclosure it should be apparent that the invention fully achieves the intended aim and objects.

While the invention has been disclosed and illustrated with reference to a preferred embodiment thereof, it should be apparent that the disclosed embodiment is susceptible to several modifications and variations all of which will come within the scope of the appended claims.

Claims

1. A foldable exercise bicycle comprising a folding frame having a central body (2) from which extend an upright saddle support (4), a front downward leg support (5), an upright handle support (10) and a rear downward leg support (11), said upright handle support being pivotally secured to said central body, characterized in that the saddle support (4) and the front leg

support (5) are rigidly secured to the central body (2) and the rear leg support (1) is pivotally secured to the central body (2), and in that the handle support (10) and the rear leg support (11) are pivotally connected to one another by a tie rod (20), adapted to cause the handle support (10) to move towards the saddle support (4) and the rear leg support (11) to move towards the front leg support (5) as the folding frame is folded.

2. A bicycle according to claim 1, wherein said central body (2) comprises a pair of plates (3) rigidly connected to said saddle support (4) and front downward leg support (5), which extend with a parallel relationship on opposite sides of said central body (2).

3. A bicycle according to claim 1, wherein the front downward leg support (5) is connected to a front cross element (6) provided with wheels (7).

4. A bicycle according to claim 1, wherein in said saddle support (4) there is telescopically engaged a saddle supporting column.

5. A bicycle according to claim 1, wherein said tie rod (20) is connected to an intermediate portion of said rear leg support (11) and to a bottom end portion of said handle support (10).

6. A bicycle according to claim 1, wherein said bicycle further comprises a telescopic handle column which is telescopically engaged in said handle support (10).

7. A bicycle according to claim 1, wherein said rear leg support (11) ends with a rear cross element (12) provided with bearing pads (13).

8. A bicycle according to claim 1, wherein said bicycle further comprises a pair of pedal assemblies (40) each associated with a central pulley (41) rotatably supported at a bottom portion of said central body (2), a driving belt being entrained on said pulley, said driving belt (45) being further entrained on a sprocket, rigid with a flywheel (47) arranged at a lower position with respect to said central pulley.

9. A bicycle according to claim 8, wherein said bicycle further comprises a friction strip (50) entrained on a peripheral portion of said flywheel (47) and fixedly connected at one end and having the other end thereof coupled to a tie rod through the interposition of a spring (51), there being moreover provided adjustment

means for adjusting a force provided by said tie rod and, accordingly, a friction of said friction strip (50).

10. A bicycle according to claim 1, wherein said central body (2) is provided, at the rear portion thereof, with limit hook elements which can be engaged with corresponding projections formed on said rear leg support (11), a clamping grip element being moreover provided for locking at a set position said rear leg support (11).

Patentansprüche

1. Ein faltbares Trainingsfahrrad, umfassend einen Faltrahmen mit einem zentralen Körper (2) von dem sich ein aufwärts gerichteter Sattelständer (4) erstreckt, einen vorderen, abwärts gerichteten Tragefuß (5), einen aufwärts gerichteten Griffständer (10) und einen hinteren, abwärts gerichteten Tragefuß (11), dabei ist dieser aufwärts gerichtete Griffständer schwenkbar mit diesem zentralen Körper verbunden, dadurch gekennzeichnet, daß der Sattelständer (4) und der vordere Tragefuß (5) steif mit dem zentralen Körper (2) verbunden sind und der hintere Tragefuß (1) schwenkbar mit dem zentralen Körper (2) verbunden ist, und daß der Griffständer (10) und der hintere Tragefuß (11) schwenkbar miteinander mittels einer Zugstange (20) verbunden sind, die angepaßt ist, den Griffständer (10) zum Sattelständer (4) und den hinteren Tragefuß (11) zum vorderen Tragefuß (5) zu bewegen, wenn der Faltrahmen gefaltet wird.
2. Ein Fahrrad gemäß Anspruch 1, worin dieser zentrale Körper (2) ein Paar Platten (3) umfaßt, die steif mit diesem Sattelständer (4) und dem vorderen, abwärts gerichteten Tragefuß (5) verbunden sind, und die sich in einer parallelen Beziehung auf entgegengesetzten Seiten dieses zentralen Körpers (2) erstrecken.
3. Ein Fahrrad gemäß Anspruch 1, worin der vordere, abwärts gerichtete Tragefuß (5) mit einem vorderen Querteil (6) verbunden ist, das mit Rädern (7) bereitgestellt ist.
4. Ein Fahrrad gemäß Anspruch 1, worin in diesen Sattelständer (4) ausziehbar eine Satteltragegestange eingelassen ist.
5. Ein Fahrrad gemäß Anspruch 1, worin diese Zugstange (20) mit einem mittleren Teil dieses hinteren Tragefußes (11) und mit einem unteren Endteil dieses Griffständers (10) verbunden

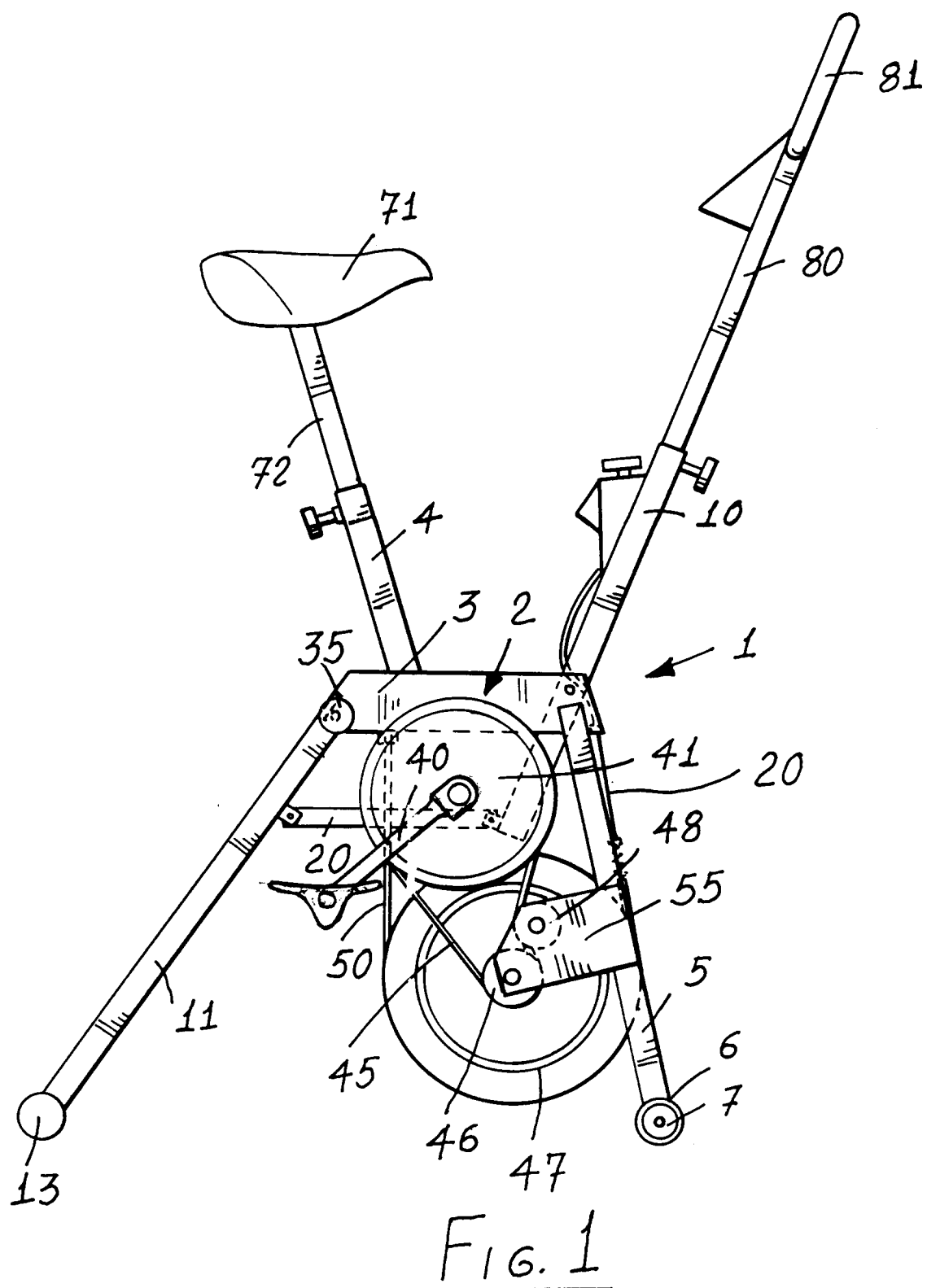
ist.

6. Ein Fahrrad gemäß Anspruch 1, worin dieses Fahrrad weiterhin eine ausziehbare Griffstange umfaßt, die ausziehbar in diesem Griffständer (10) eingelassen ist.
7. Ein Fahrrad gemäß Anspruch 1, worin dieser hintere Tragefuß (11) mit einem hinteren Querteil (12) endet, das Stützpuffer (13) umfaßt.
8. Ein Fahrrad gemäß Anspruch 1, worin dieses Fahrrad weiterhin ein Paar Pedalvorrichtungen (40) umfaßt, jede mit einer zentralen Riemenscheibe (41) verbunden, die drehbar von einem Unterteil dieses zentralen Körpers (2) getragen wird, wobei ein Antriebsriemen von dieser Riemenscheibe getragen wird, dabei wird dieser Antriebsriemen (45) weiterhin von einem Zahnkranz getragen, der steif mit einem Schwungrad (47) verbunden ist, das an einer niedrigeren Stellung bezüglich dieser zentralen Riemenscheibe angebracht ist.
9. Ein Fahrrad gemäß Anspruch 8, worin dieses Fahrrad weiterhin einen Reibungsstreifen (50) umfaßt, der von einem peripheren Teil dieses Schwungrades (47) getragen wird und fest an einem Ende verbunden ist, und dessen anderes Ende mit einer Zugstange über eine Feder (51) verbunden ist, wobei weiterhin eine Regelvorrichtung zum Einstellen einer Kraft, die durch diese Zugstange bereitgestellt wird, und folglich einer Reibung dieses Reibungsstreifens (50) bereitgestellt ist.
10. Ein Fahrrad gemäß Anspruch 1, worin dieser zentrale Körper (2) an seinem hinteren Teil mit hakenförmigen Stoßteilen bereitgestellt ist, die in entsprechende Auskragungen eingehakt werden können, die auf diesem hinteren Tragefuß (11) bereitgestellt sind, dabei ist weiterhin ein klammerndes Greifteil zum Verriegeln dieses hinteren Tragefußes (11) in einer gegebenen Stellung bereitgestellt.

Revendications

1. Une bicyclette d'entraînement repliable comprenant un châssis repliable ayant un corps central (2) dont s'étend un poinçon (4) de support de la selle, un pied de support frontal descendant (5), un poinçon (10) de support du guidon et un pied de support postérieur descendant (11), ledit poinçon de support du guidon étant fixé pivotant audit corps central, caractérisé en ce que le support de la selle (4) et le pied de support frontal (5) sont fixés rigide-

- ment au corps central (2) et le pied de support arrière (1) est fixé pivotant au corps central (2), et en ce que le support du guidon (10) et le pied de support arrière (11) sont coupés pivotants l'un à l'autre par l'intermédiaire d'un tirant (20), adapté à provoquer le mouvement du support (10) du guidon vers le support (4) de la selle, et du pied de support arrière (11) vers le pied de support (5) frontal lorsque ledit châssis est replié. 5 10
2. Une bicyclette selon la revendication 1, où ledit corps central (2) comprend une paire de plaques (3) rigidement coupées auxdits support (4) de la selle et pied de support frontal descendant (5), qui s'étendent avec une relation parallèle le long de côtés opposés dudit corps central (2). 15
3. Une bicyclette selon la revendication 1, où le pied de support frontal descendant (5) est coupé à un élément transversal frontal (6) pourvu de roues (7). 20
4. Une bicyclette selon la revendication 1, où dans ledit support (4) de la selle est enclenchée télescopique une colonne portant la selle. 25
5. Une bicyclette selon la revendication 1, où ledit tirant (20) est coupé à une partie intermédiaire dudit pied de support arrière (11) et à une extrémité inférieure dudit support (10) du guidon. 30
6. Une bicyclette selon la revendication 1, où ladite bicyclette comprend ultérieurement une colonne télescopique pour le guidon, qui est enclenchée télescopique dans ledit support (10) du guidon. 35 40
7. Une bicyclette selon la revendication 1, où ledit pied de support arrière (11) se termine en un élément transversal postérieur (12) pourvu d'amortisseurs (13) de support. 45
8. Une bicyclette selon la revendication 1, où ladite bicyclette comprend ultérieurement une paire d'assemblages à pédales (40) chacun associé à une poulie centrale (41), qui est supportée rotative par une partie de fond dudit corps central (2), une courroie de commande étant entraînée par ladite poulie, ladite courroie de commande (45) étant en plus entraînée par une roue à picots rigide d'un volant (47) situé à une position inférieure par rapport à ladite poulie centrale. 50 55
9. Une bicyclette selon la revendication 8, où ladite bicyclette comprend ultérieurement une bande à frottement (50) entraînée par une partie périphérique dudit volant (47) et couplée fixement à l'une de ses extrémités et ayant son autre extrémité coupée à un tirant par l'intermédiaire d'un ressort (51), y étant en plus prévu un dispositif de réglage pour ajuster la force mise en oeuvre par ledit tirant et, en conséquence, du frottement de ladite bande à frottement (50).
10. Une bicyclette selon la revendication 1, où ledit corps central (2) est doté, à sa partie arrière, d'éléments limiteurs à crochet qui peuvent être enclenchés dans de correspondantes parties en saillie formées sur ledit pied de support arrière (11), un élément d'accrochage par serrage étant en plus prévu pour verrouiller dans une position donnée ledit pied de support arrière (11).



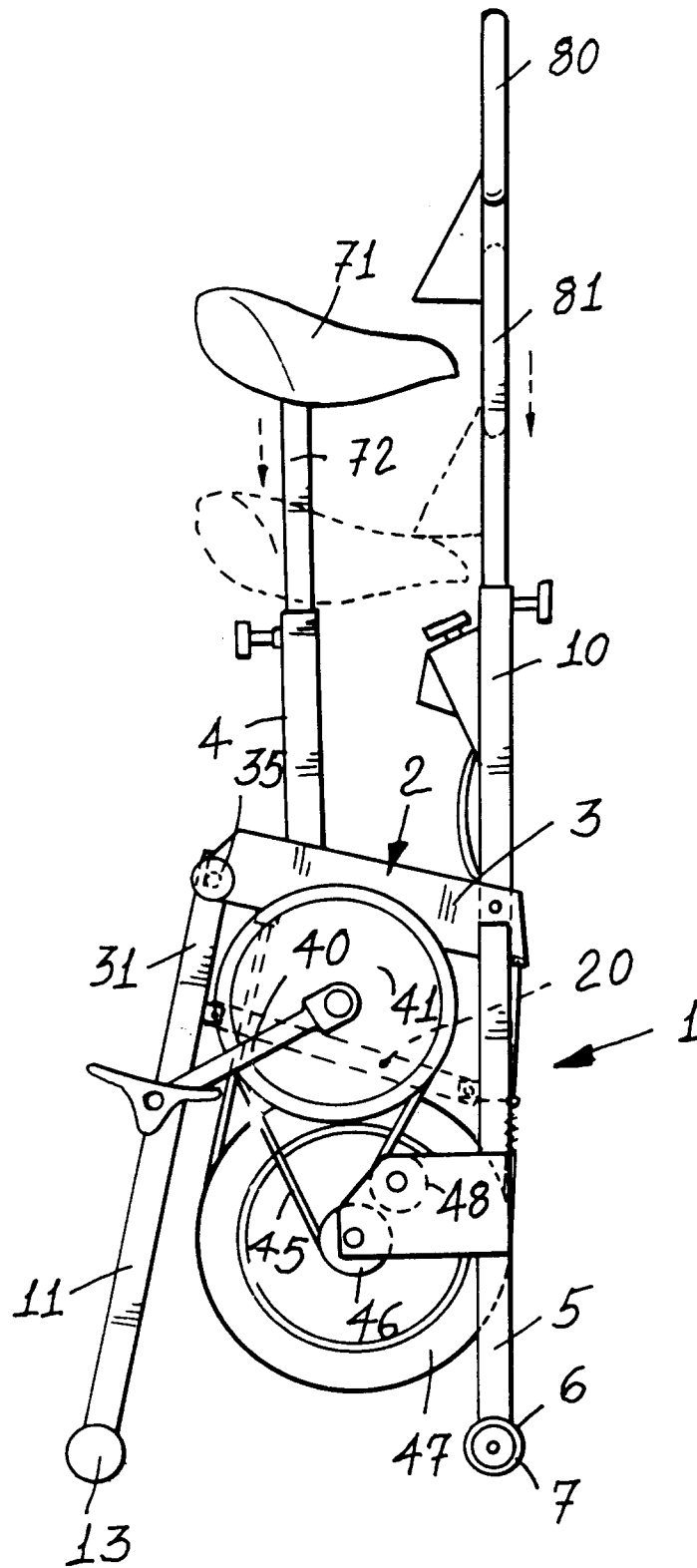


FIG. 2

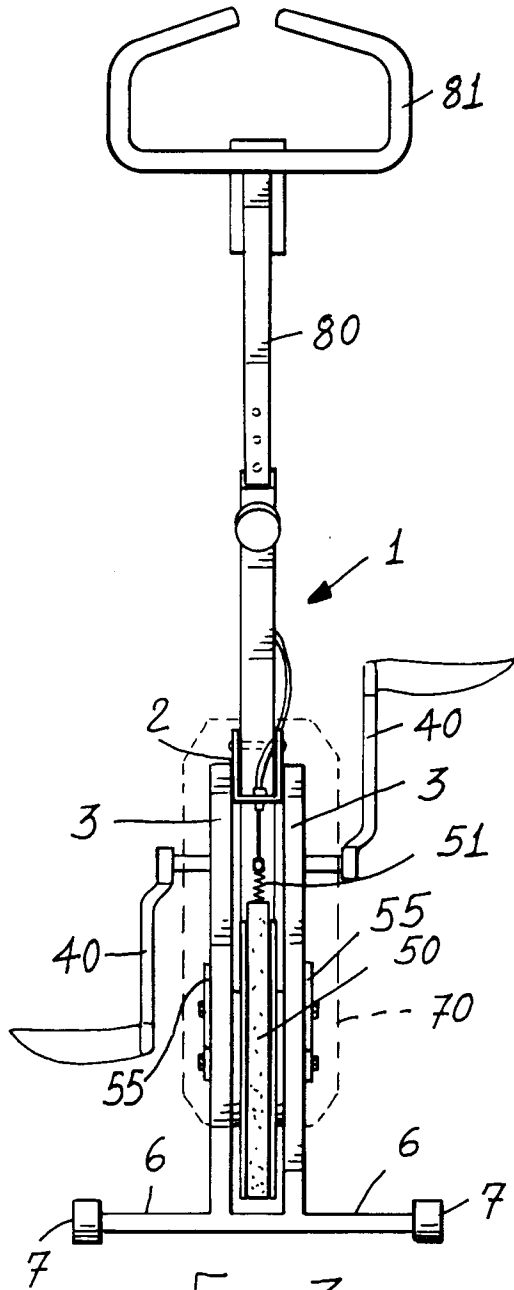


Fig. 3

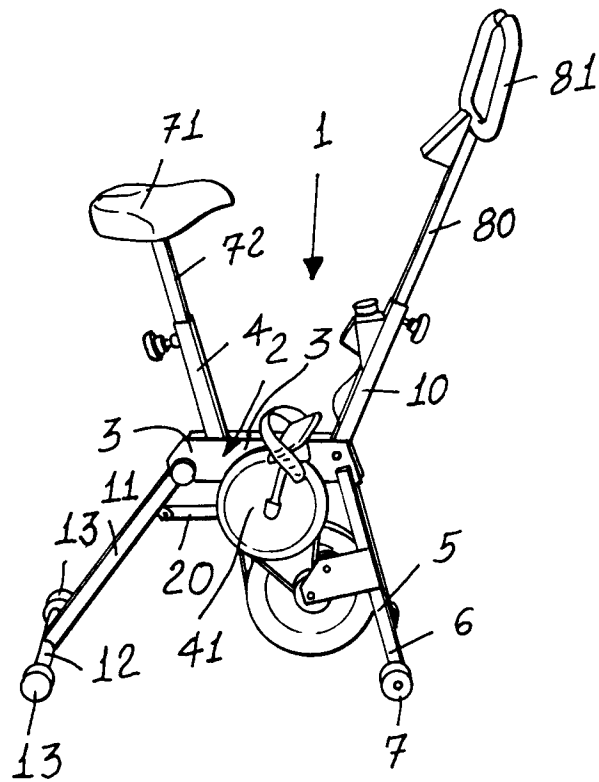


Fig. 4