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(54) **ADJUSTABLE HANDLE SUPPORT OF AN EXERCISE APPARATUS**

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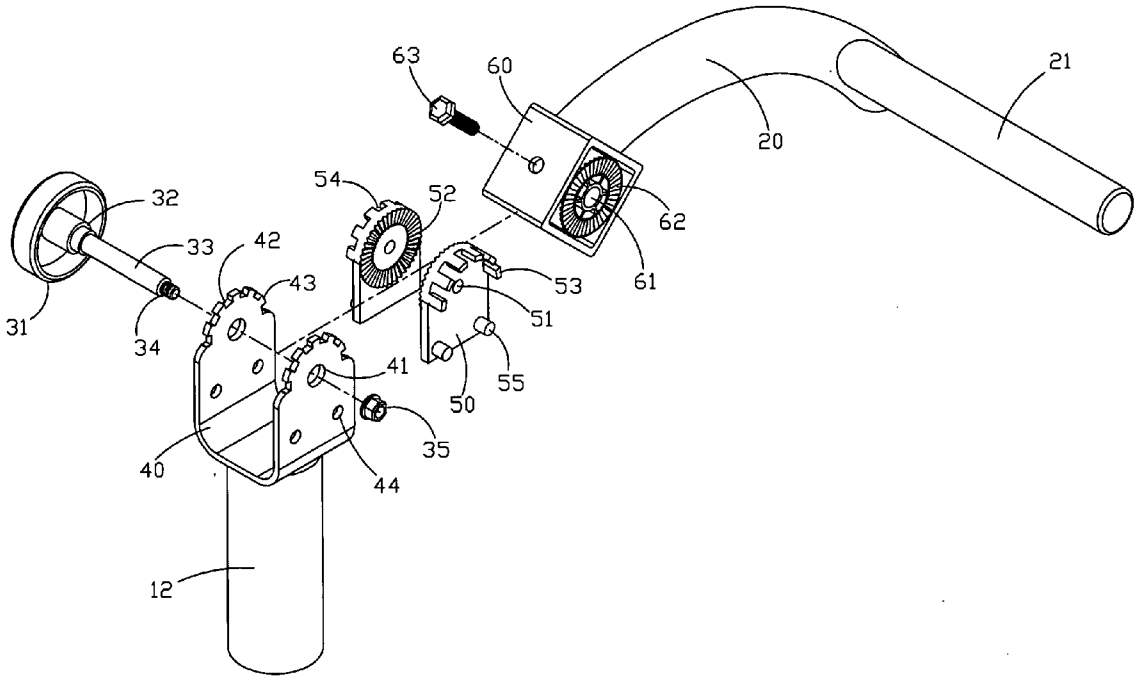
(57) **ABSTRACT**

The invention relates to an adjustable handle support of an exercise apparatus having a main frame, two rocker arms on the main frame and two planks in connection with power source (e.g. motor, flywheel, hydraulic cylinder, etc.). The rocker arms are individually movable in a swing motion or jointly movable with the planks. An adjusting mechanism is interposed between the handle support and the rocker arm for adjusting the handle support to suitable angles for different operators.



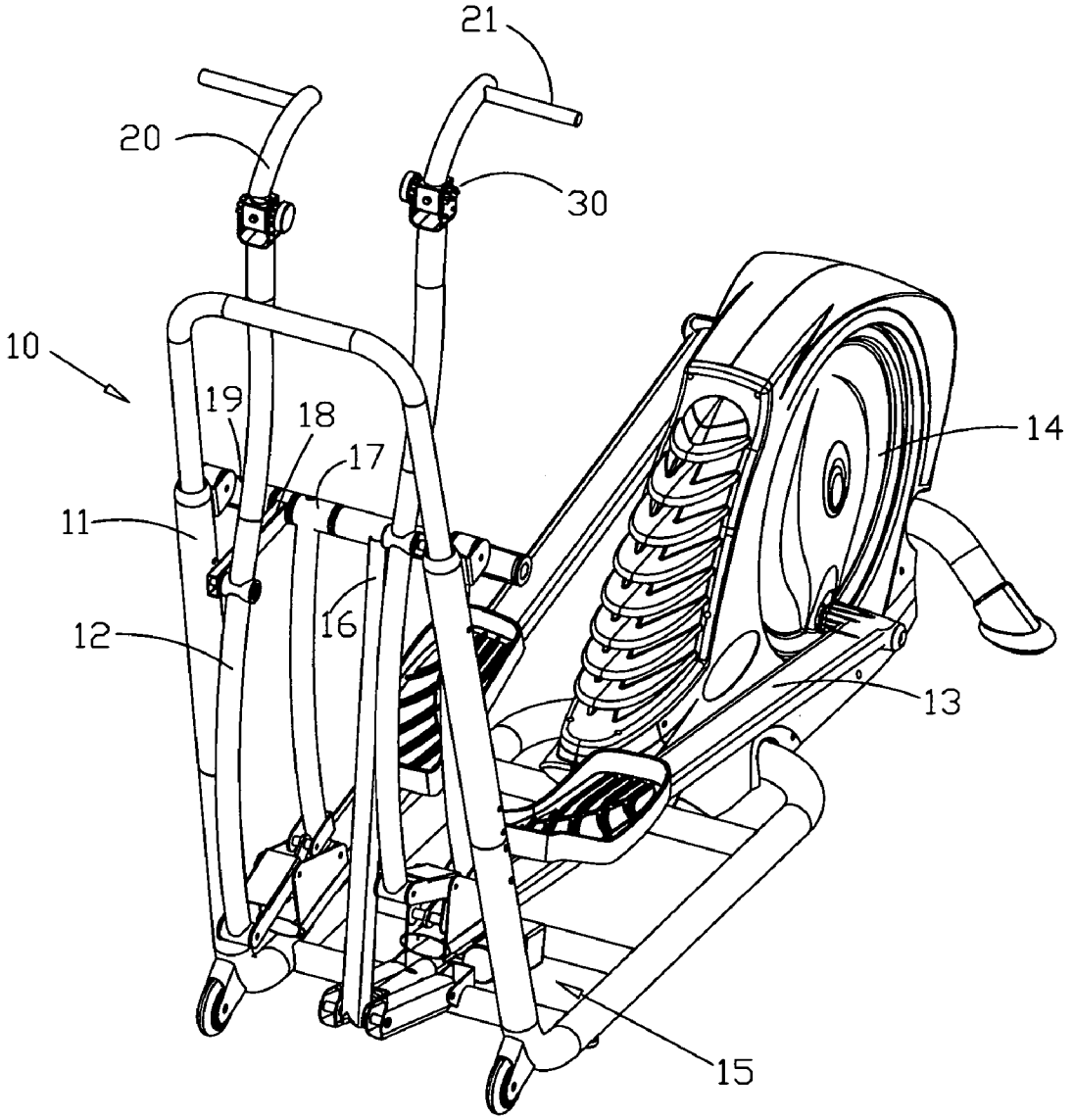


FIG.1

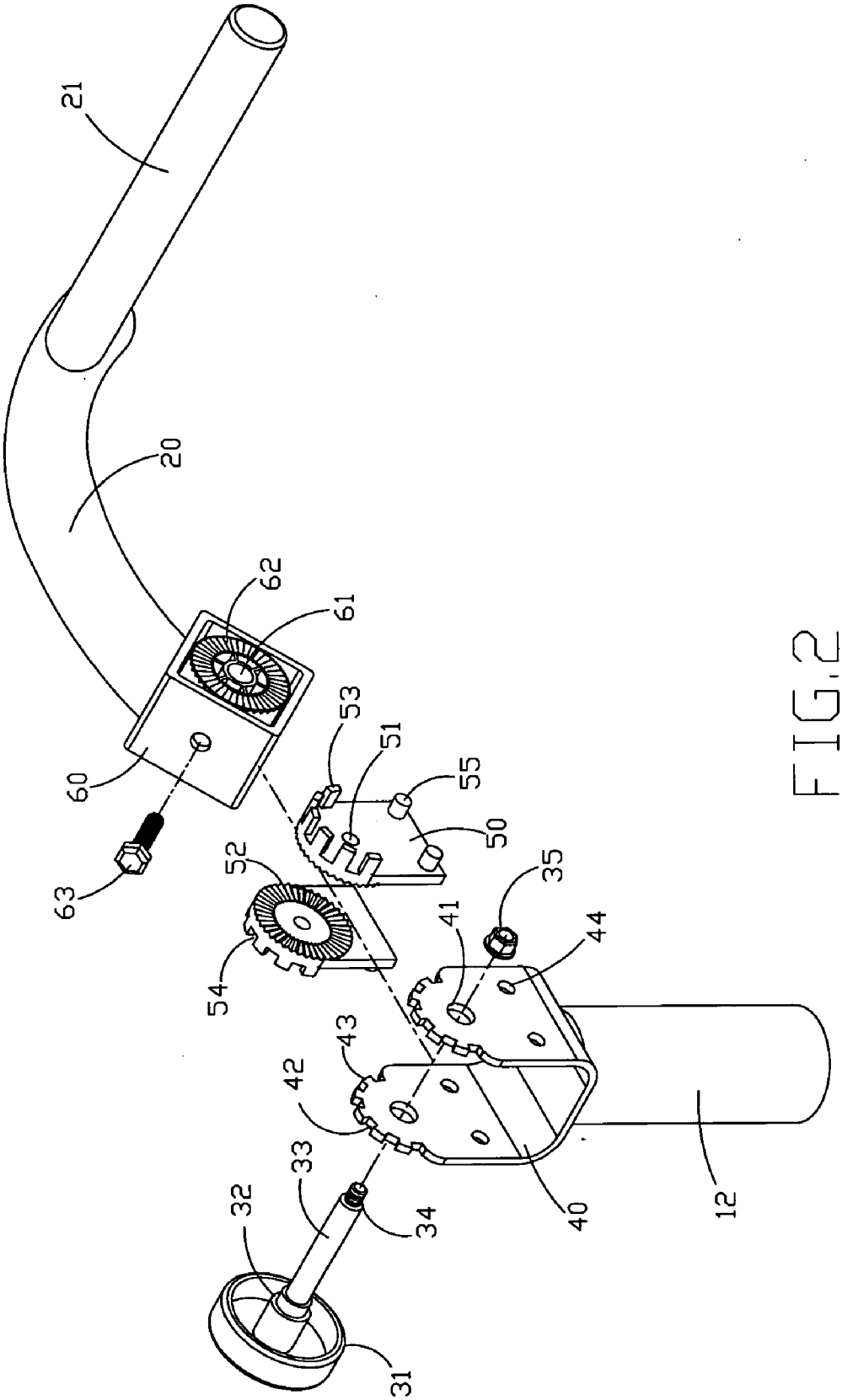


FIG. 2

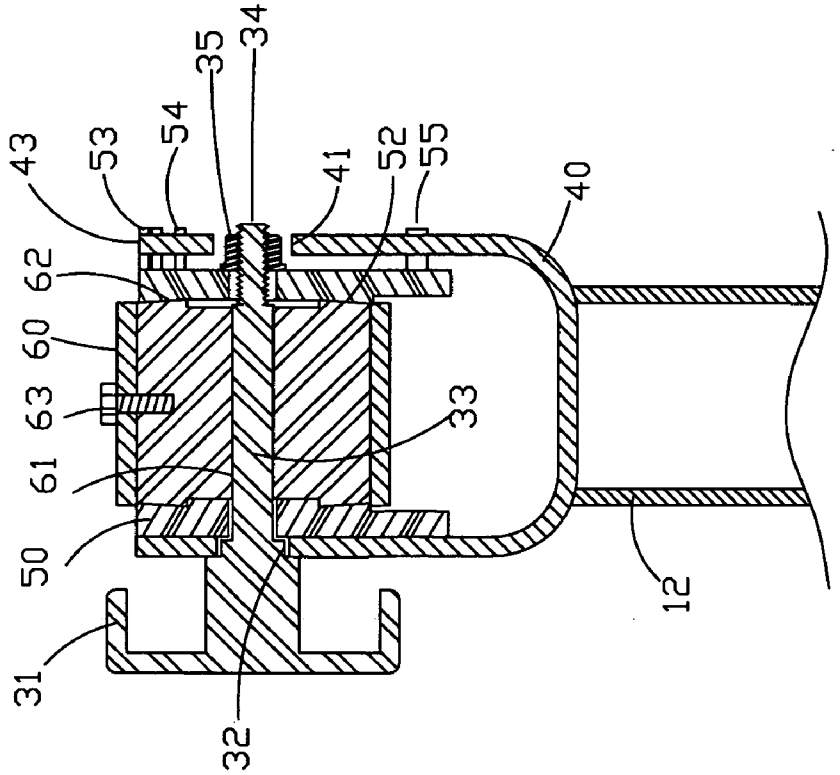

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FIG. 4

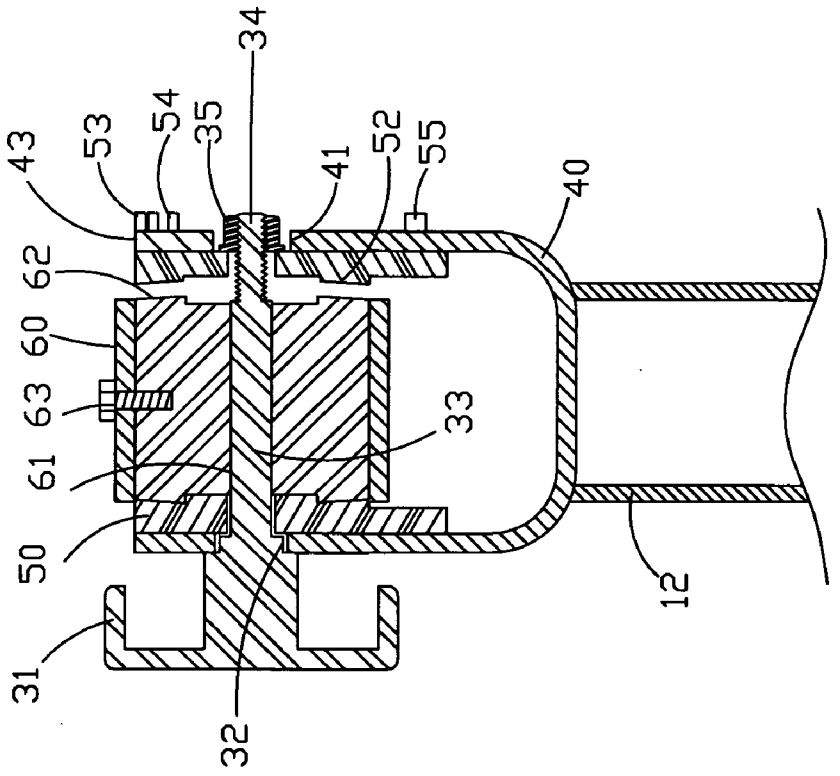
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FIG. 3

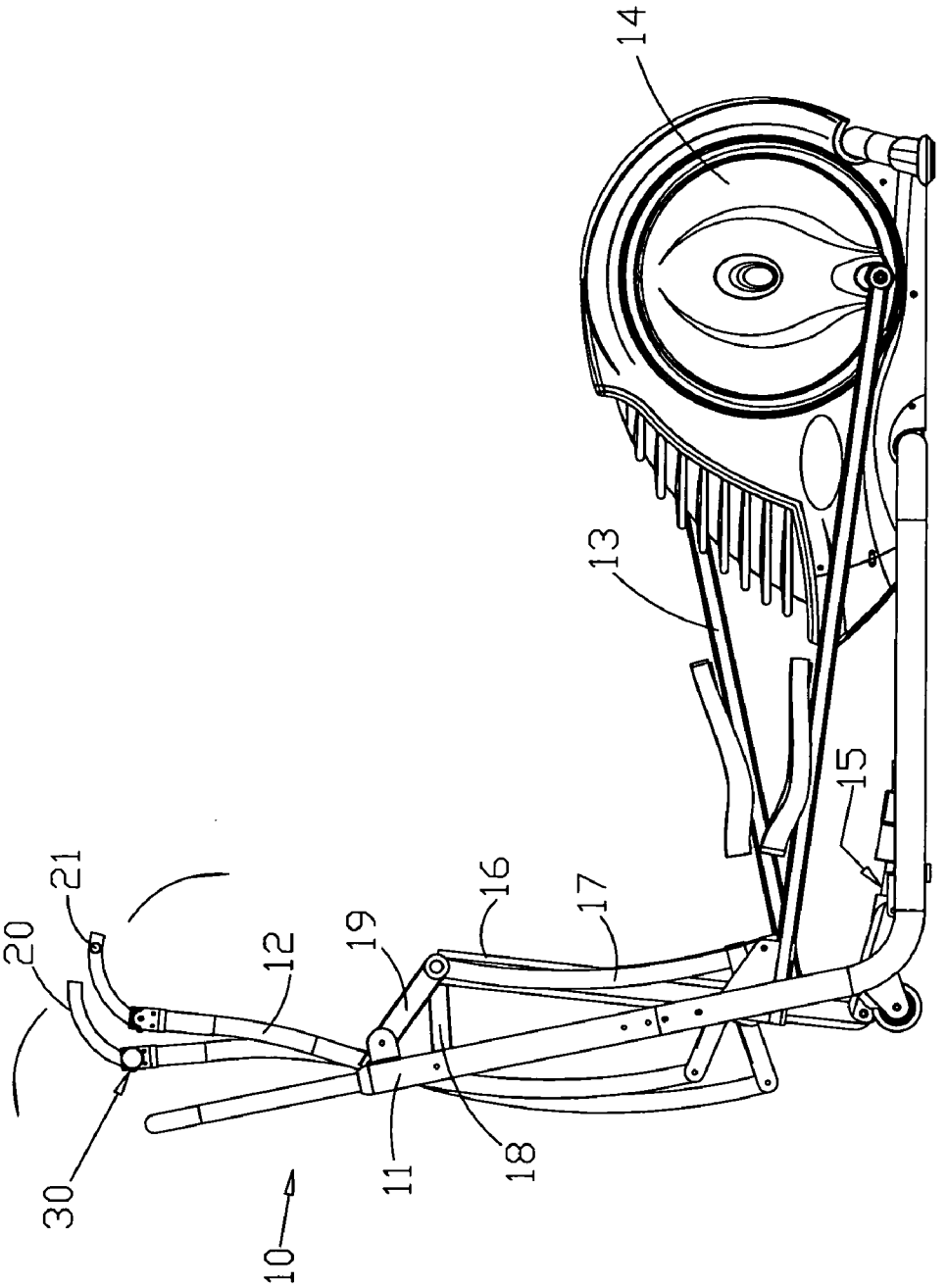

FIG.5

ADJUSTABLE HANDLE SUPPORT OF AN EXERCISE APPARATUS

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The invention relates to an adjustable handle support of an exercise apparatus, and more particularly, to an apparatus for adjusting the handle support to a suitable angle for different operators.

[0003] 2. Description of the Prior Art

[0004] Conventional oval-tracked exercise apparatuses include rocker arms that are jointly movable with the motion of the operators' feet. The rocker arms are rigidly located at a normal height to suit most operators. Due to different heights of operators, this kind of the exercise apparatus is not suitable for operators with a lower height. Therefore, it's uncomfortable for them to use the oval-tracked exercise apparatus.

[0005] In order to eliminate the aforementioned problem, the manufacturer produce different models to meet the requirement of different heights to raise their revenue. However, to reduce or to raise the height of the apparatus means that more components are required. Accordingly, this can't raise profits, but increase the manufacture cost.

SUMMARY OF THE INVENTION

[0006] In light of the demerits of the prior art, the invention provides an adjustable handle support of an exercise apparatus that aims to ameliorate at least some of the disadvantages of the prior art and to provide a useful alternative.

[0007] A primary objective of the invention is to provide a handle support that is adjustable to suitable heights for different operators.

[0008] Another objective of the invention is to provide a handle support that is adjustable on the rocker arm of the exercise apparatus.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] The accomplishment of this and other objects of the invention will become apparent from the following description and its accompanying drawings of which:

[0010] **FIG. 1** is a perspective view of the invention installed to an exercise apparatus;

[0011] **FIG. 2** is an exploded view of an adjusting mechanism in accordance with the invention;

[0012] **FIG. 3** is a cutaway view of the adjusting mechanism in accordance with the invention, wherein one clamping element is spaced from the cubic body;

[0013] **FIG. 4** is a cutaway view of the adjusting mechanism in accordance with the invention, wherein the clamping element is engaged with the cubic body; and

[0014] **FIG. 5** is a side view of **FIG. 1**.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0015] Referring to **FIG. 1**, the oval-tracked exercise apparatus **10** has a main frame **11**. Two rocker arms **12** are linked to the front end of two planks **13**, respectively while the rear end of the two planks **13** are attached to both sides of a flywheel **14** in such a manner so that both planks **13** are alternately movable.

[0016] The middle part of the rocker arms **12** is pivotably coupled to one end of a connecting strip **18** while the other end of the connecting strip **18** is pivotally connected to an auxiliary rod **17** and a connecting rod **19**. The whole movable configuration of the oval-tracked exercise apparatus **10** is controlled by a positioning rod **16** which is activated by a driving unit **15**. In this way, the rocker arms **12** can be moved with the planks **13** to undergo the swing motion.

[0017] In operation, the operator holds with his hands the handle **21** of the handle support **20** at the top of the rocker arms **12** for simulating a climbing action. Meanwhile, the feet of the operator tread on the planks **13** for simulating an exercise of the whole body.

[0018] Meanwhile, an adjusting mechanism **30** is interposed between the handle supports **20** and the rocker arms **12**, respectively and serves to adjust the handle **21** on the handle support **20** to suitable heights for different operators.

[0019] As shown in **FIG. 2**, the adjusting mechanism **30** includes an adjusting knob **31** in form of a cap, a stepped middle projection **32** extending toward the free end of the adjusting knob **31**, a shaft **33** extending from the middle stepped projection **32** and a threaded head **34** at the free end of the shaft **33**. A U-shaped frame **40** rigidly sits on the rocker arm **12**. A pair of shaft holes **41** is formed in the side walls of the U-shaped frame **40**. A plurality of notches **42** and teeth **43** are formed on the semicircular top of each side wall. Moreover, two locating holes **44** are formed beneath each of the shaft holes **41**.

[0020] Two clamping elements **50** each have teeth **52** on one of its sides around a shaft hole **51**. A series of uniformly spaced ridges **53** is disposed on the rim of the other side of the clamping element **50**. A notched part **54** is formed adjacent to the ridges **53**. At least one outwardly extending post **55** is located on the outer side of the clamping element **50**. The ridges **53** and the posts **55** on one of the clamping element **50** are longer than the ridges **53** and the posts **55** on the other clamping element **50**. The clamping element **50** are mounted on two side walls of the U-shaped frame **40** in such a manner that the ridges **53** are received in the notches **42** (or the teeth **43** are positioned in the notched part **54**) and the posts **55** are introduced into the locating holes **44**. In this way, both clamping elements **50** are rigidly fixed in position on the two side walls of the U-shaped frame **40**.

[0021] A cubic body **60** is mounted on the end of the handle support **20** opposing to the handle **21**. Two sides of the cubic body **60** communicate with each other through a shaft hole **61**. A series of uniformly spaced teeth **62** around the shaft hole **61** are formed on each of two sides of the cubic body **60**. A bolt **63** is screwed to the top of the cubic body **60**.

[0022] As shown in **FIGS. 3 through 5**, the assembly of the aforementioned members of the adjusting mechanism **30** is done in such a way that the handle support **20** with the cubic body **60** is clamped between the clamping elements **50** on both sides of the U-shaped frame **40**. Then, the shaft **33**

of the adjusting knob **31** is inserted through the shaft holes **41**, **51**, **61**, and a nut **35** is screwed on to the threaded head **34** of the shaft **33**.

[**0023**] After assembly of the adjusting mechanism **30**, the cubic body **60** is slightly spaced from the clamping element **50** with the longer ridges **53** so that the cubic body **60** is rotatable on the shaft **33** for adjusting the cubic body **60** to a most suitable position for the operator.

[**0024**] After the adjustment of the cubic body **60**, the adjusting knob **31** with the threaded head **34** can be further screwed to the nut **35** for allowing the clamping element **50** with the longer ridges **53** to move inwardly toward the cubic body **60** in such a way that the teeth **52** of the clamping elements **50** engage with the teeth **62** of the cubic body **60** in place.

[**0025**] For a further adjustment of the handle support **20**, it's only necessary to loosen the joint between the adjusting knob **31** and the nut **35** and, therefore, to disengage the teeth **52** of the clamping element **50** from the teeth **62** of the cubic body **60**. The steps in adjusting the handle support **20** are the same to the above-mentioned.

[**0026**] Concluded from the aforementioned, the invention has following effects and merits:

[**0027**] 1. A like model of rocker arm exercise apparatuses provided with the invention suits different operators with different heights. Thus, the adjustable handle support makes the exercise apparatus more universal. In addition, the adjustment of the handle support can be done by operators themselves to meet the requirements of simple operation.

[**0028**] 2. A fine adjustment is possible so that the handle support is adjustable to suitable heights for more operators.

[**0029**] Many changes and modifications in the above-described embodiments of the invention can, of course, be carried out without departing from the scope thereof. Accordingly, to promote the progress in science and the useful arts, the invention is disclosed and is intended to be limited only by the scope of the appended claims.

What is claimed is:

1. An adjustable handle support for an exercise apparatus having a main frame, two rocker arms on the main frame and two planks in connection with power source, wherein the rocker arms are individually movable in a swing motion or jointly movable with the planks, and wherein an adjusting mechanism is interposed between the handle support and the rocker arm for adjusting the handle support to a suitable angle for different operators.

2. The adjustable handle support of claim 1 wherein the adjusting mechanism comprising:

a) an adjusting knob having a stepped middle projection and a shaft, the shaft having a threaded head at the free end thereof;

b) a U-shaped frame rigidly sitting on the rocker arm, a pair of shaft holes being formed in the side walls of the U-shaped frame, a plurality of notches and teeth being provided on the semicircular top of each side wall, two locating holes being formed beneath each of the shaft holes of the U-shaped frame;

c) two clamping elements each having teeth on one of its sides around a shaft hole thereof, a series of uniformly spaced ridges being disposed on the rim of the other side of the clamping element, a notched part being formed adjacent to the ridges, at least one outwardly extending post being located on the outer side of the clamping element, whereby the clamping element are mounted on two side walls of the U-shaped frame in such a manner that the ridges are received in the notches and the posts are introduced into the locating holes so that both clamping elements are rigidly fixed in position on the two side walls of the U-shaped frame; and

d) a cubic body mounted on the end of the handle support opposing to the handle, two sides of the cubic body communicating with each other through a shaft hole, a series of uniformly spaced teeth around the shaft hole of the cubic body being formed on each of two sides of the cubic body,

whereby the handle support with the cubic body is clamped between the clamping elements on both sides of the U-shaped frame; then, the shaft of the adjusting knob is inserted through the shaft holes of the U-shaped frame, the clamping elements and the cubic body, and a nut is screwed on to the threaded head of the shaft to undergo the assembly of the adjusting mechanism.

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