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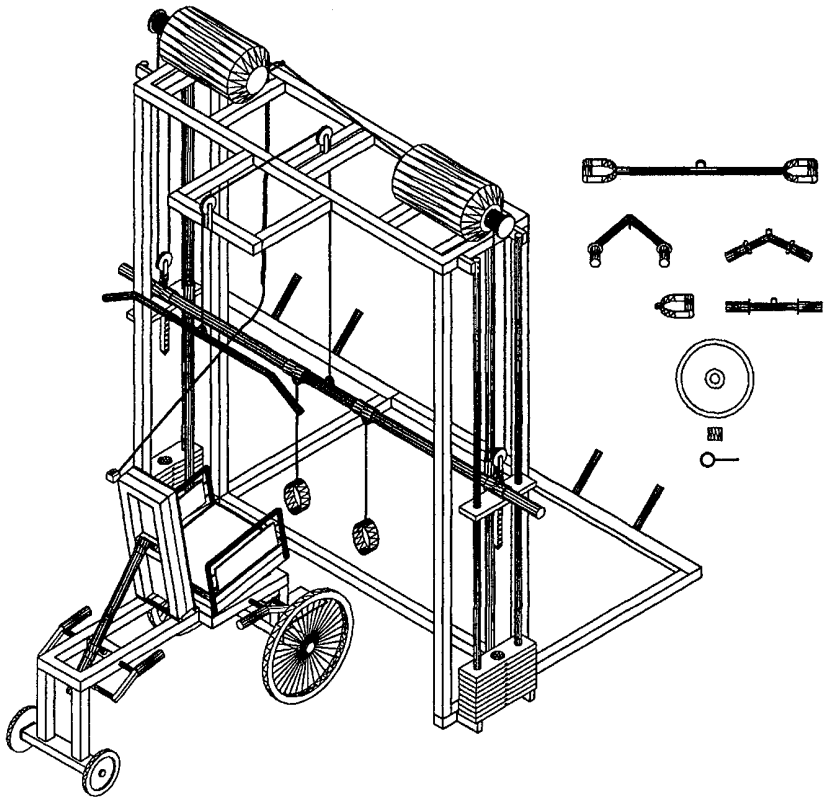
(54) Title: HORIZONTAL BAR FOR TRAINING OF PEOPLE WITH DISABILITY OF LOWER LIMBS

(57) Abstract

The horizontal bar for training of people with disability of lower limbs is composed of a base (1), two vertical pillars (2) which are composed of four tubes (3, 4, 5, 6) on the two vertical tubes (5, 6). It has dumbbells in parallelogram ribs (7) which have a hole in their middle (8) in which a tube is installed (9) which along has holes and a pin (10) that passes from the parallelogram ribs (7) and from the holes of the tube (9). Each pillar (2) has the prop (11) which ends in the base (1) and helps the support of the pillar (2). On the prop (11) we put round ribs (12) of various kilos. On each pillar between the two other vertical tubes (3, 4) one has vertical tube (13) on which we put one ring (14) which has at its edges one ball bearing (15). The two pillars (2) are joined with two horizontal tubes (16). On the horizontal tubes (16) is installed the lift (17) which has the wire–cable (18), the hook (19) and the switch (20). The horizontal tube (21) which protrudes from the outer side of the rings (14) is moved, up and down and it is stabilized at the desired height together with the tube (9), the parallelogram ribs (7) and the pin (10).



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HORIZONTAL BAR FOR TRAINING OF PEOPLE WITH DISABILITY OF LOWER LIMBS

The invention refers to an horizontal bar for training of people with disability of lower limbs and it is constituted from one base. On this base, on the right and left side, there are vertically set one pillar at each side. Each pillar has four vertical tubes, on the two vertical tubes are put dumbbells in parallelogram ribs which have a hole in their middle, in which a tube is installed having along also holes and one pin passing through the parallelogram ribs and through the holes of the tube.

Each tube has one prop that ends at the base and helps for the better support of the pillar on the base and for the installation of the dumbbells. On each pillar, among the two others vertical tubes has one vertical tube on which a ring is set, it has one ball bearing at its two edges. The two pillars are joined each other with two horizontal tubes which are put on the superior edges of each pillar. On these horizontal tubes is installed a lift the wire-cable of which has a cramp and also has a switch that gives commands for lifting or looseness of the lift's hauling up.

The rings are in every pillar and they are joined each other with one horizontal tube which protrudes from the external side of rings.

In the middle of this horizontal tube is set a hook which continues with the wire-cable which is led to the lift. The lift's switch is placed on the horizontal tube which joins the two rings.

Horizontal bar for training people with disability of lower limbs is known from the Patent 1003252. The advantage of this invention makes the people to train themselves with dumbbells, making many exercises with security.

Results for the advantage of this inventions :

1. Reinforcement of the muscular system
2. Better physical status
3. Better circulation of blood
4. Better function of the digestive system
5. Better function of the urinary system
6. Better function of the cardiovascular system

The horizontal bar for training of people with disability of inferior limbs has the feature that the lift with the wire-cable, the hook and the switch which gives the order for hauling up or for loosening of the lift, moves the horizontal tube with the rings which protrudes from the external sides of rings, up and down, with possibility for stabilizing it at the desired height.

According to the present invention, the horizontal bar for training of people with disability of lower limbs is characterized from the fact that on the horizontal tube which moves up and down and is stabilized at the desired height, a tube is set which along of it has holes which with the pin that passes through the parallelogram ribs and from it, we achieve the training with dumbbells and even on the horizontal tube we can supplementarily set round ribs of various weight.

According to the present invention, the horizontal bar for training of people with disability of lower limbs is characterized from the fact that it is also used by healthy people by putting an inclined bench under the horizontal tube which moves up and down and it is stabilized at the desired height (Figure No 4).

According to the present invention, the horizontal bar for training of people with disability of lower limbs is characterized from the fact that a hook is put which with wire-cable passes from pulleys which are installed in the tubes which join the two pillars, communicate with various bars (Figure No 5), that are used for training with many methods or by putting out the horizontal bar, we join the hook with wire-

cable which communicates with inclined bench which has a system for training of biceps, quadriceps of legs or with rowing equipment for training (Figure No 6).

According to the present invention, the horizontal bar for training of people with disability of lower limbs is characterized from the fact that there is a communication of the horizontal bar which moves up and down with wire-cable which pass from pulleys by using the system of "butterfly" for training and from the fact that we put on the horizontal tube a bench for abdominal muscles which is detached from it, after the training (Figure No 7).

According to the present invention, the horizontal bar for training of people with disability of lower limbs is characterized from the fact that the training is carried out by means of a special kind of wheelchair the level of the back and legs of which can be inclined vertically as well as horizontally. The legs of the disable are bound with rings which are connected with wire cables on the horizontal tube that moves up and down and stabilizes at the desirable height. (Figure No 8). The figure no 1 shows the face of the horizontal bar for training of people with disability of lower limbs. A simple method for applying this invention is described in the drawings.

The horizontal bar for training of people with disability of lower limbs is composed from a base (1) two vertical pillars (2) which are composed from four pillars (3,4,5,6) on the two vertical pillars (5,6) has dumbbells in parallelogram ribs (7) which a hole in the middle (8) in which a tube is put (9) which along has holes and one pin (10) that passes through the parallelogram ribs (7) and from the holes of the tube (9). Each pillars (2) has a prop (11) which ends in the base (1) and helps to the better support of the pillar (2). On the prop (11) are put round ribs (12) of various weight. On each pillar (2) among the two other vertical tubes (3,4) there is another vertical tube (13) on which are put one ring (14) which has a bearing ball in its edges (15). The two pillars (2) are joined

with two horizontal tubes (16). On the horizontal tubes (16) is installed a lift (17) which has a wire-cable (18), the hook (19) and the switch (20) which gives orders for hauling up or for loosening of the lift (17).

The rings (14) are joined amongst them, with an horizontal tube (21) which protrudes from the external side of the rings (14). In the middle of the horizontal tube (21) is put a hook (19) which continues with wire-cable (18) which drives the lift (17).

The switch (20) of the lift (17) is put on the horizontal tube (21).

The figure no 1 shows the method of application in order to function this invention, however, you may remove the vertical tubes (13) with the rings (14) and the bearing balls (15) and to make the invention function as the figure no 2 and even to put on the two upper parallelogram ribs (7) rings on their extreme holes (14) and bearing balls (15) and to make the invention function as the figure no 3.

On the drawings you see, we have used only one lift but we may use two lifts which are put on pillars (2) on their upper side (figure no 9) or amongst the vertical tubes (3,4) (figure no 10) and their wire-cable and the hook are put on the edges of the horizontal tube (21) and on the ribs (7) of the tube (9).

So it is moved the horizontal tube (21) with the parallelogram ribs (7), the tube (9) the pin (10) and the ribs (12), up and down and it is stabilized at the desired height.

Also, is not impeded the wire cable with the pulleys which leads to various bars (Figure no 5) and we may have two wire-cables and each of them could commence from the points where are put the wire-cables of the two lifts and with pulleys which are installed on the tubes (16) which join the pillars (2) to drive the hook and to be joined with various bars or by putting the various bars we join the hook with the wire-cable that communicates with the inclined bench which has a system for training of biceps, quadriceps or with rowing equipment (Figure no 11).

Also the two lifts and their wire-cables are not impeded to move, up and down, with possibility of stabilization at the desired height only the horizontal tube (21) with dumbbells in round ribs (12) in this way we achieve, with security, the weight lifting (figure no 12).

All those which are described according to the accessories which we put to this invention, allow it function with two lifts. In this way, we achieve many ways of training with security in combination with the horizontal tube which protrudes from the outer surface of the rings on which we put the tube with the dumbbells in parallelogram ribs with the pin and the round ribs which move up and down and which are stabilized at the desired height.

In the drawing, we have used only lifts but we may use also derricks or small wreckers or any electrically driven motor, also instead of wire-cables we may have belts or chains, or mountain wires in order to have this invention functionable.

CLAIMS

1. The horizontal bar for training of people with disability of lower limbs which is composed from the lift (17) the wire-cable (18) the hook (19) the switch (20) is characterized from the fact that the horizontal tube (21) which is joined with the rings (14) which have the bearing balls (15) and protrudes from the outer side of the rings (14) on which we put the tube (9) with the parallelogram ribs (7) with the pin (10) and the round ribs (12) are moved, up and down and they are stabilized at the desired height on the tubes (13) the tube (5) and the tube (6).

2. The horizontal bar for training of people with disability of lower limbs according to the claim no 1 is characterized from the fact that the horizontal tube (21) on which we put the tube (9) with the parallelogram ribs (7) on the extreme holes of the upper parallelogram ribs (7) where rings are put (14) with bearing ball (15) and pin (10) and the round ribs (12) are moved up and down and they are stabilized at the desired height on the tubes (5,6).

3. The horizontal bar for training of people with disability of lower limbs according to the claims no 1 and 2 is characterized from the fact that we use derricks or small wreckers or any other electrically driven motor, as well as belts or chains or mountain wire for making this invention functionable.

4. The horizontal bar for training of people with disability of lower limbs according to the claims no 1,2 and 3 is characterized from the fact that it has an inclined bench for training of chest, and it is also used from healthy people.

5. The horizontal bar for training of people with disability of lower limbs according to the claims no 1,2,3 and 4 is characterized from the fact that it has a hook with wire-cable that passes from pulleys installed on tubes (16) and which communicate with various bars or with inclined

training.

6. The horizontal bar for training of people with disability of lower limbs according to the claims no 1,2,3,4 and 5 is characterized from the fact that the horizontal bar (21) communicates with hooks and wire-cables which pass from pulleys with the training system of "butterfly".

7. The horizontal bar for training of people with disability of lower limbs according to the claims no 1,2,3,4,5 and 6 is characterized from the fact that it has a bench for abdominals and which is attached to the horizontal tube (21).

8. The horizontal bar for training of people with disability of lower limbs according to the claims no 1,2,3,4,5,6 and 7 is characterized from the fact that it has an invalid's wheelchair where the point that is put the back and the legs, is of various inclinations from vertical to horizontal and we achieve the training of chest and the passive training of legs.

9. The horizontal bar for training of people with disability of lower limbs according to the claims no 1,2,3,4,5,6,7 and 8 is characterized from the fact, that it has two lifts which with the wire-cables and the order of hauling up or for loosening of the lifting, move the horizontal bar (21) with the parallelogram ribs (7) the rings (14) the bearing balls (15) the tube (9) the pin (10) and the ribs (12), up and down and stabilizes them at the desired height.

10. The horizontal bar for training of people with disability of lower limbs is characterized from the fact that the two lifts with the wire-cables move, up and down and stabilize at the desired height only the horizontal tube (21) with the round ribs (12) for the training of the athletes of weight lifting.

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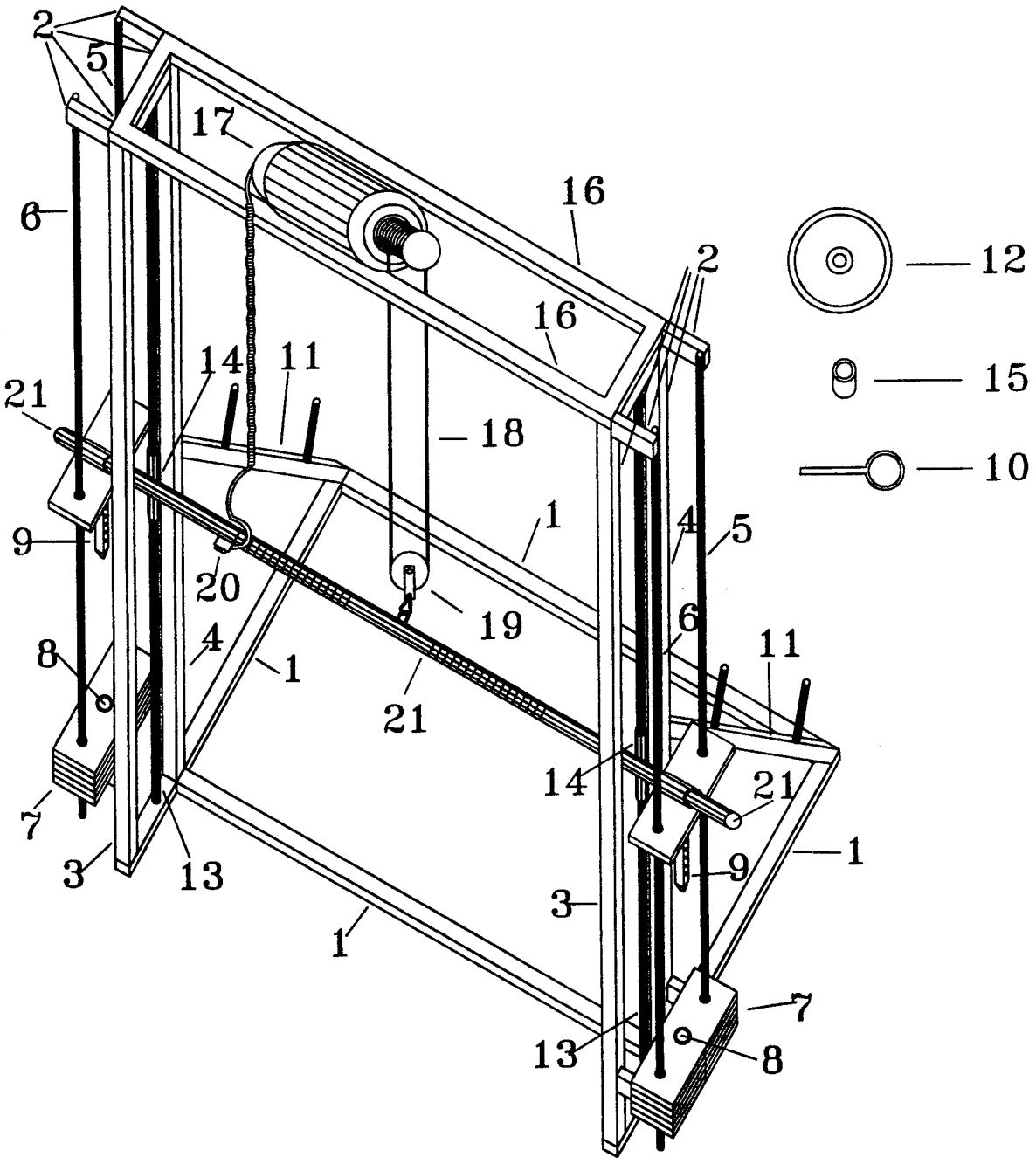
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Fig. 1

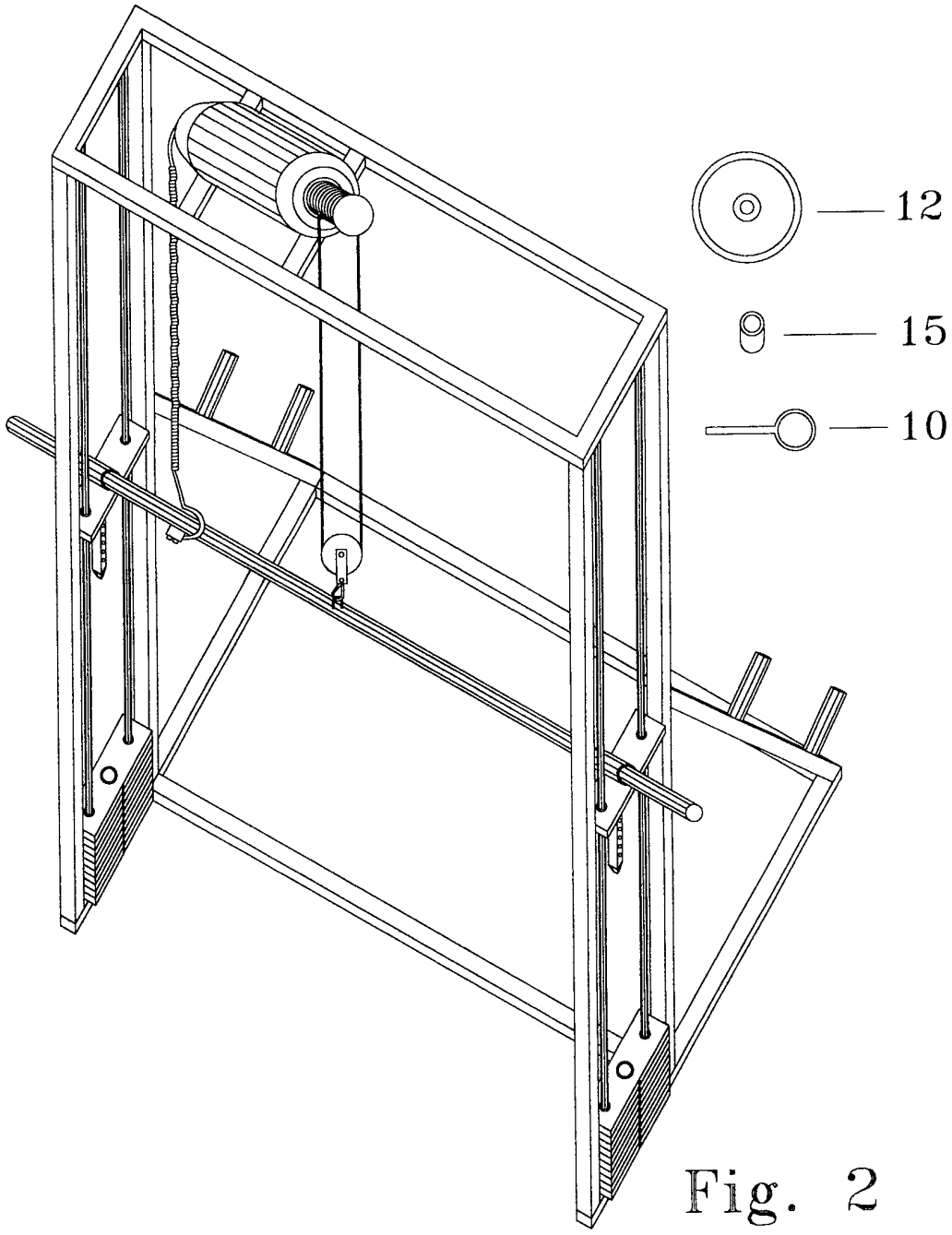

Fig. 2

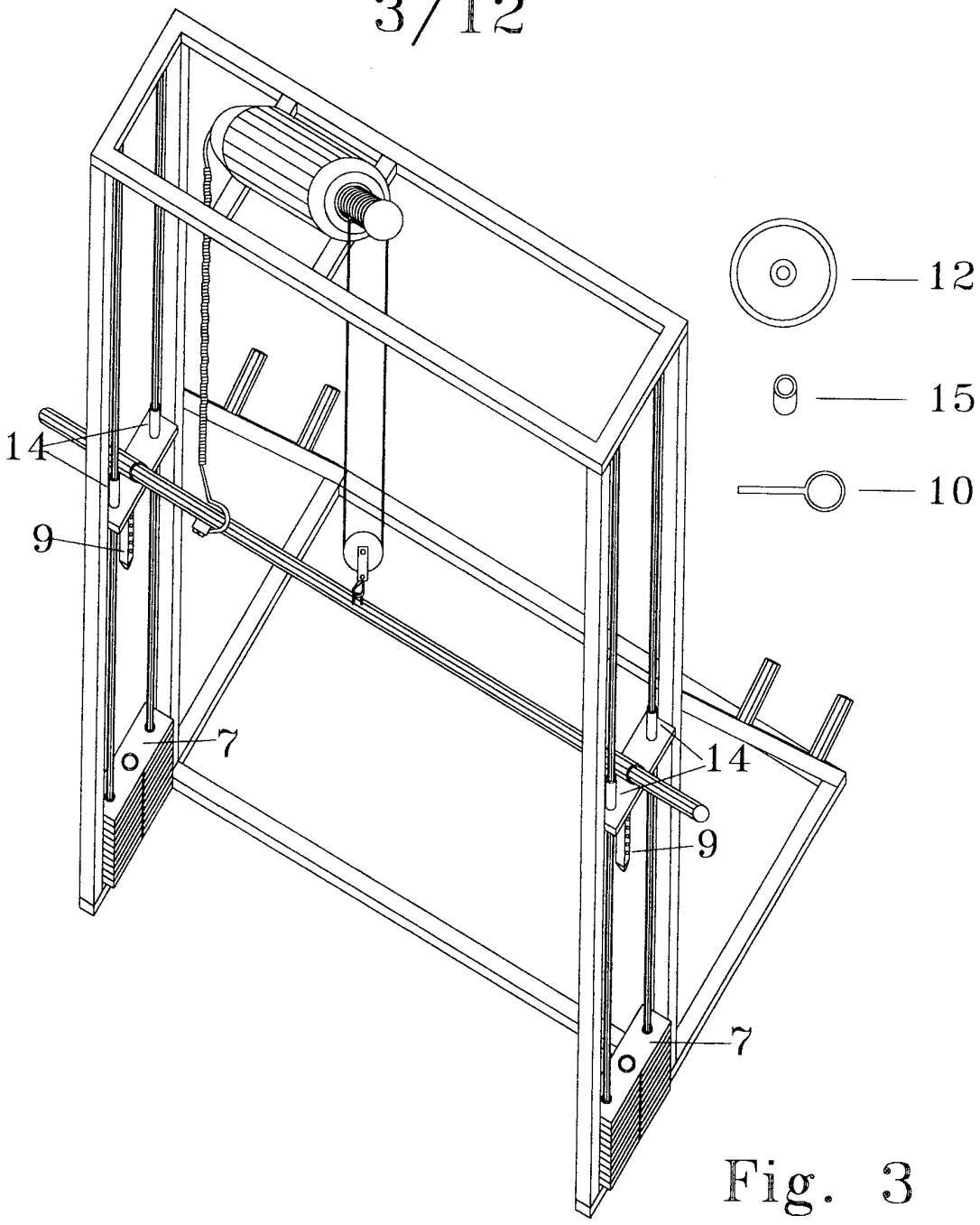

Fig. 3

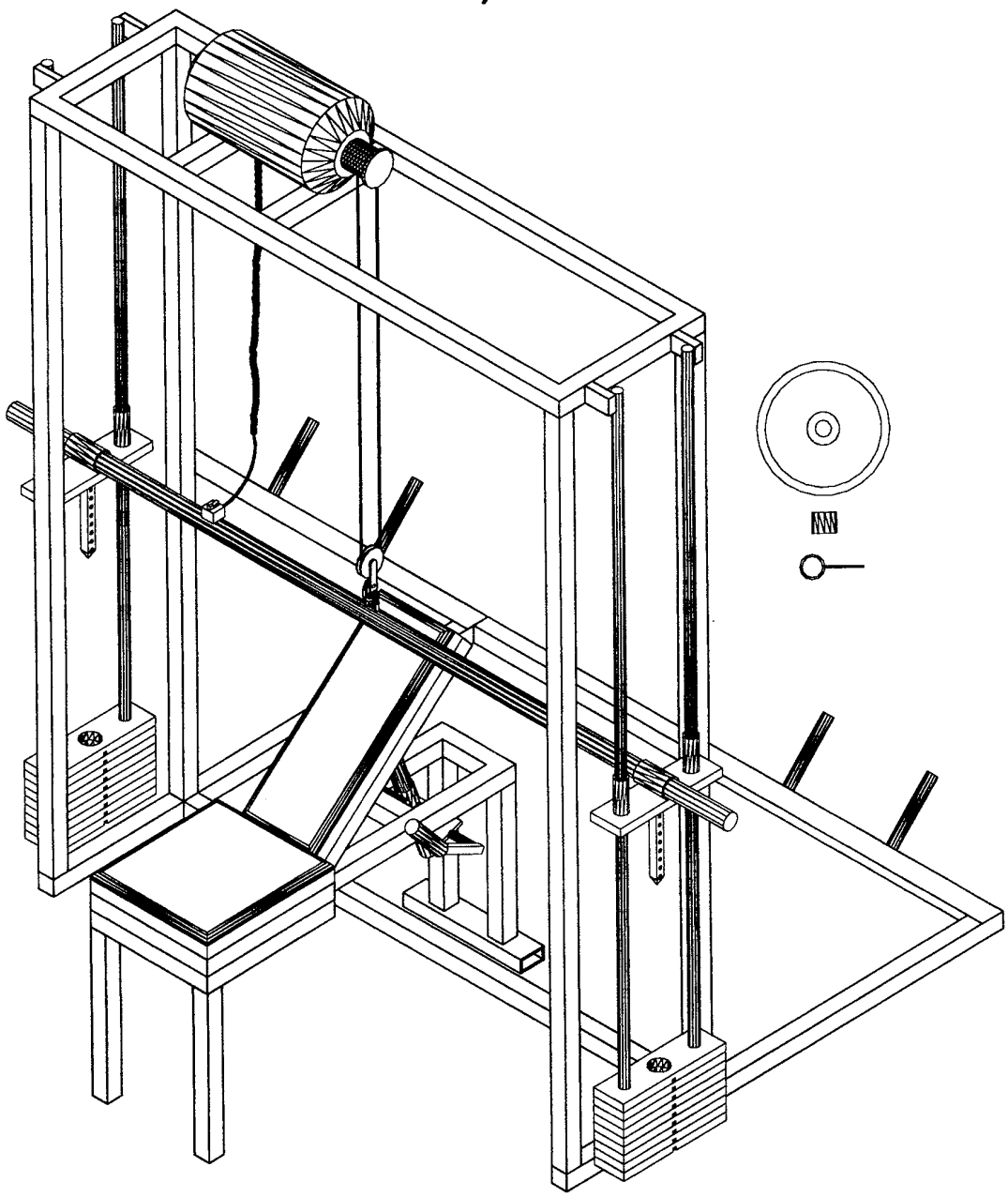

Fig. 4

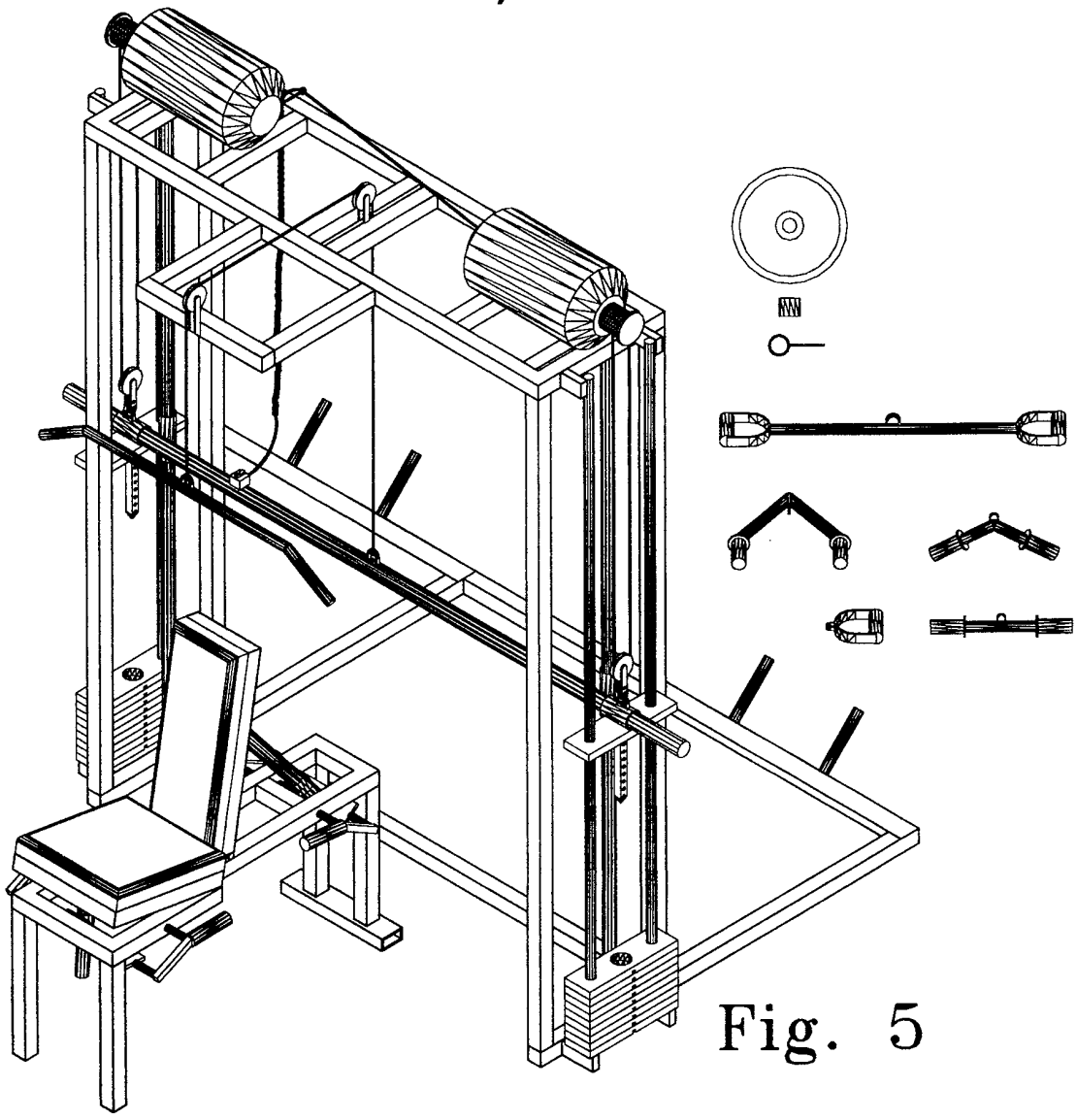

Fig. 5

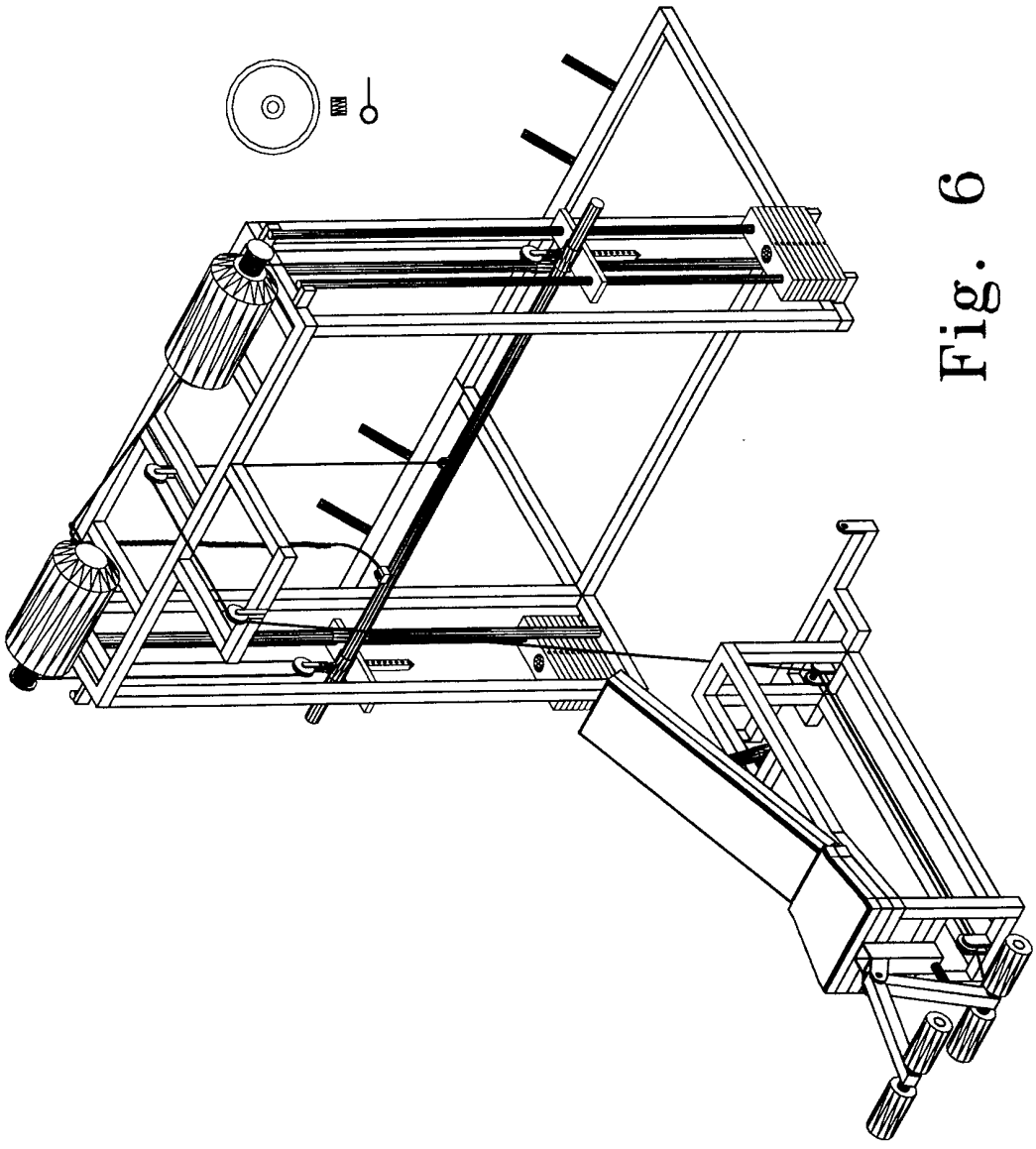

Fig. 6

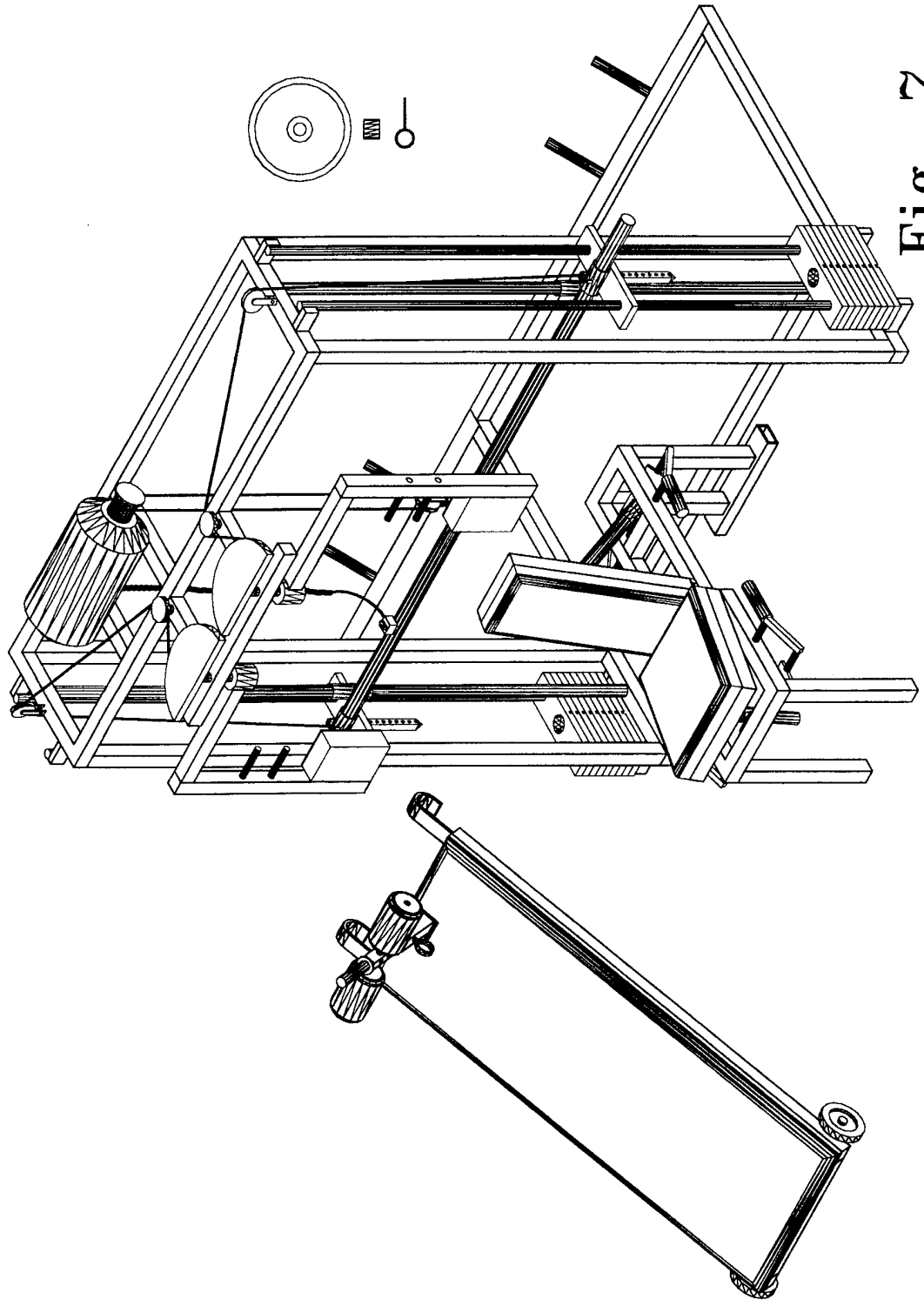

Fig. 7

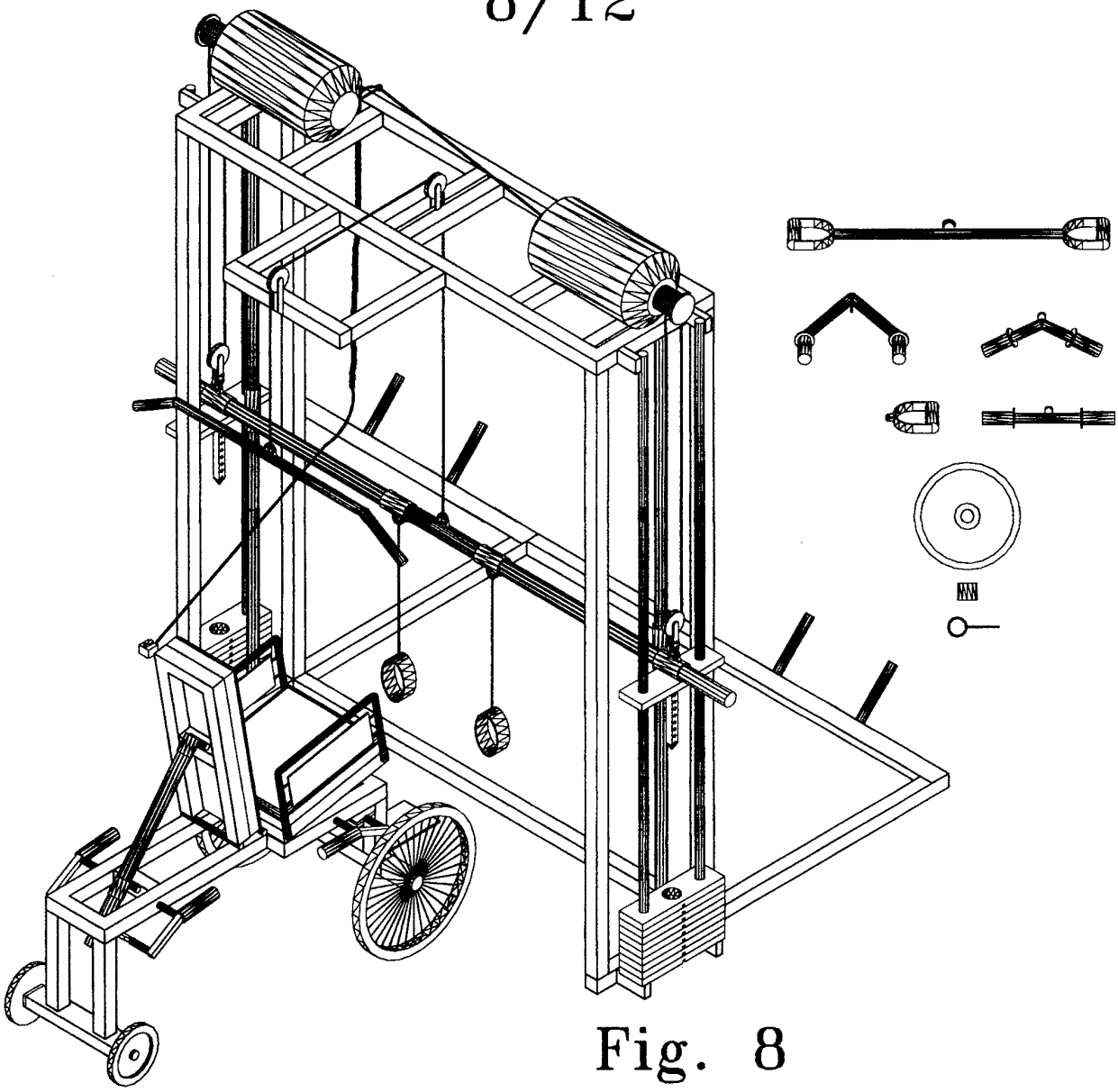

Fig. 8

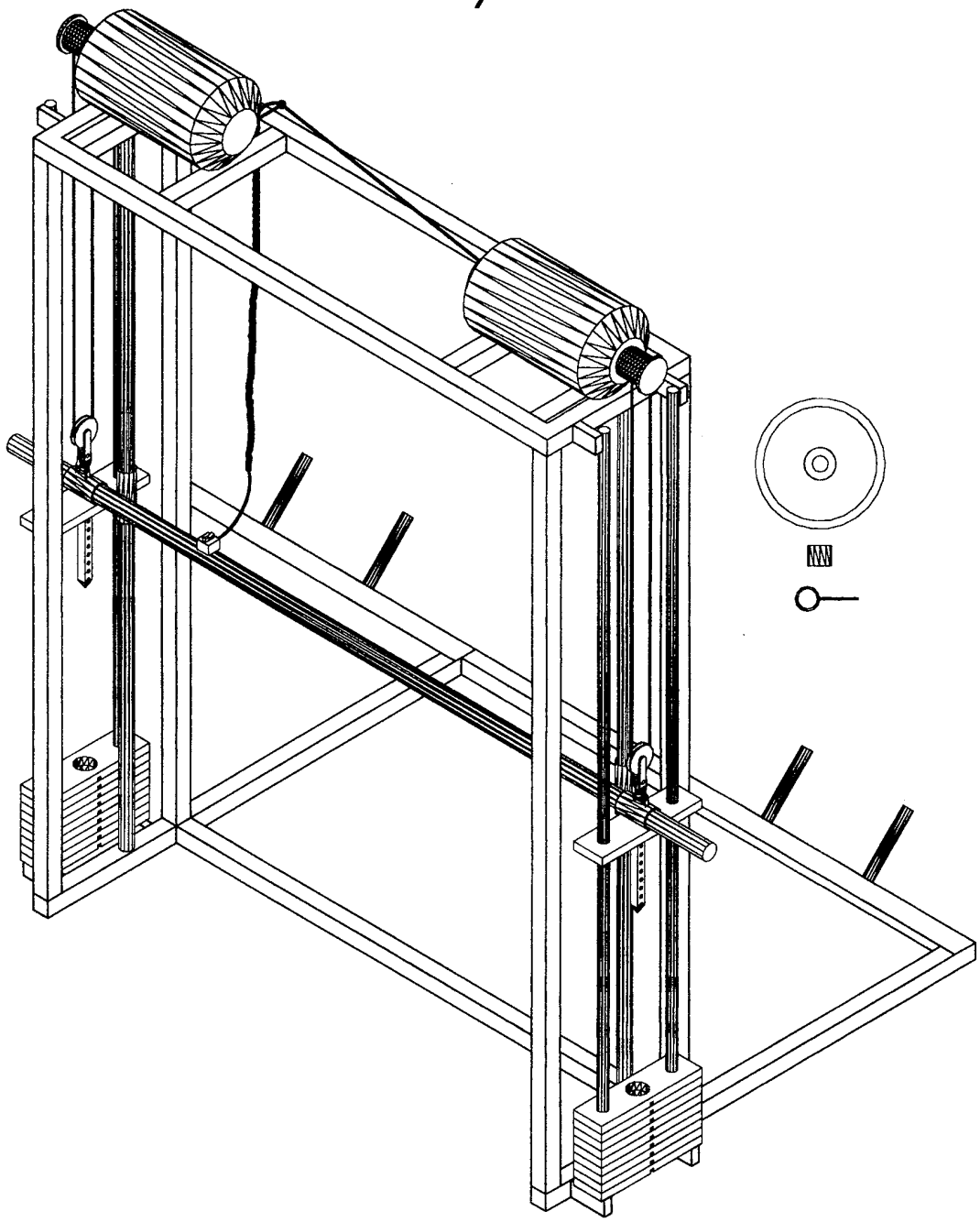

Fig. 9

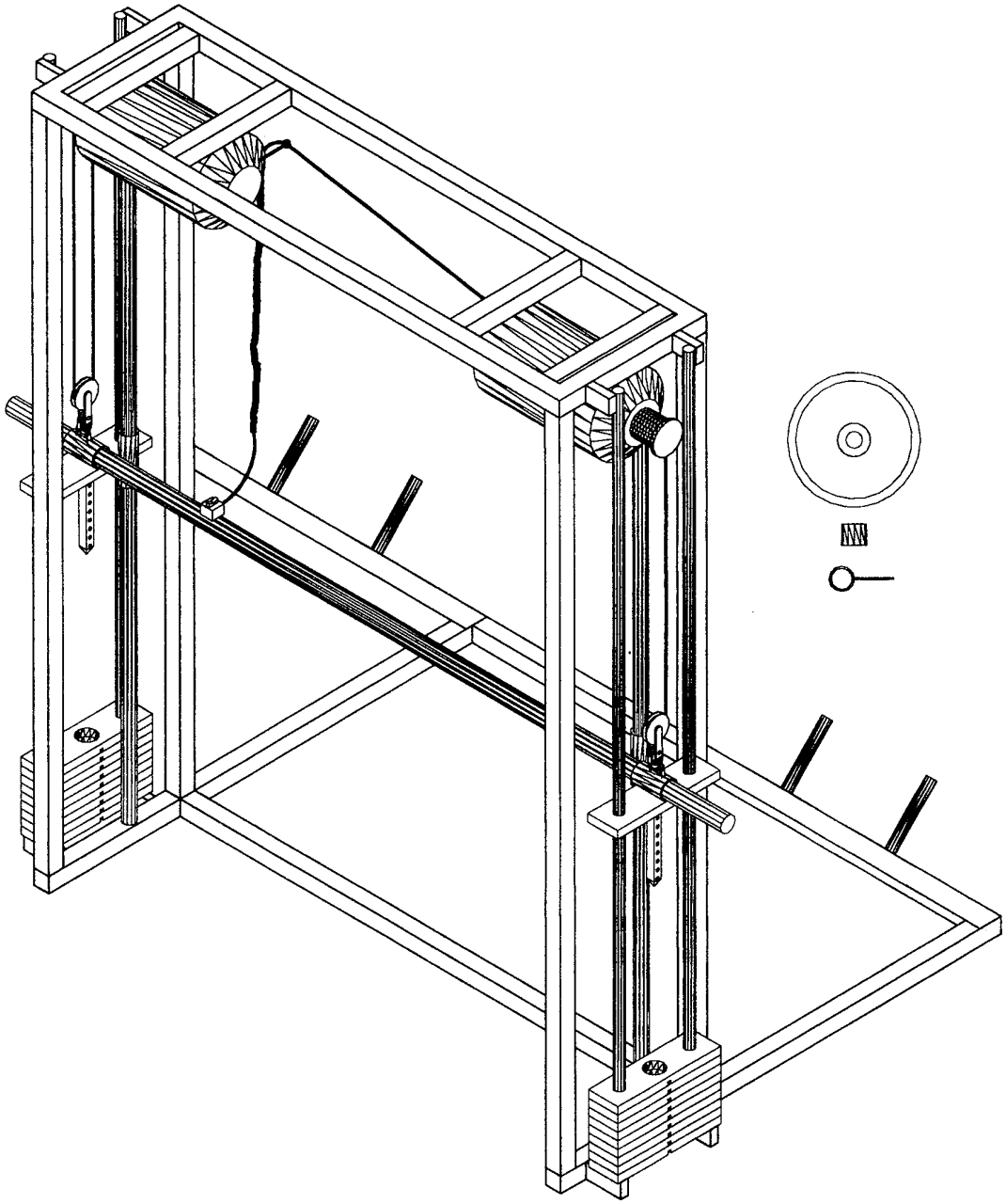

Fig. 10

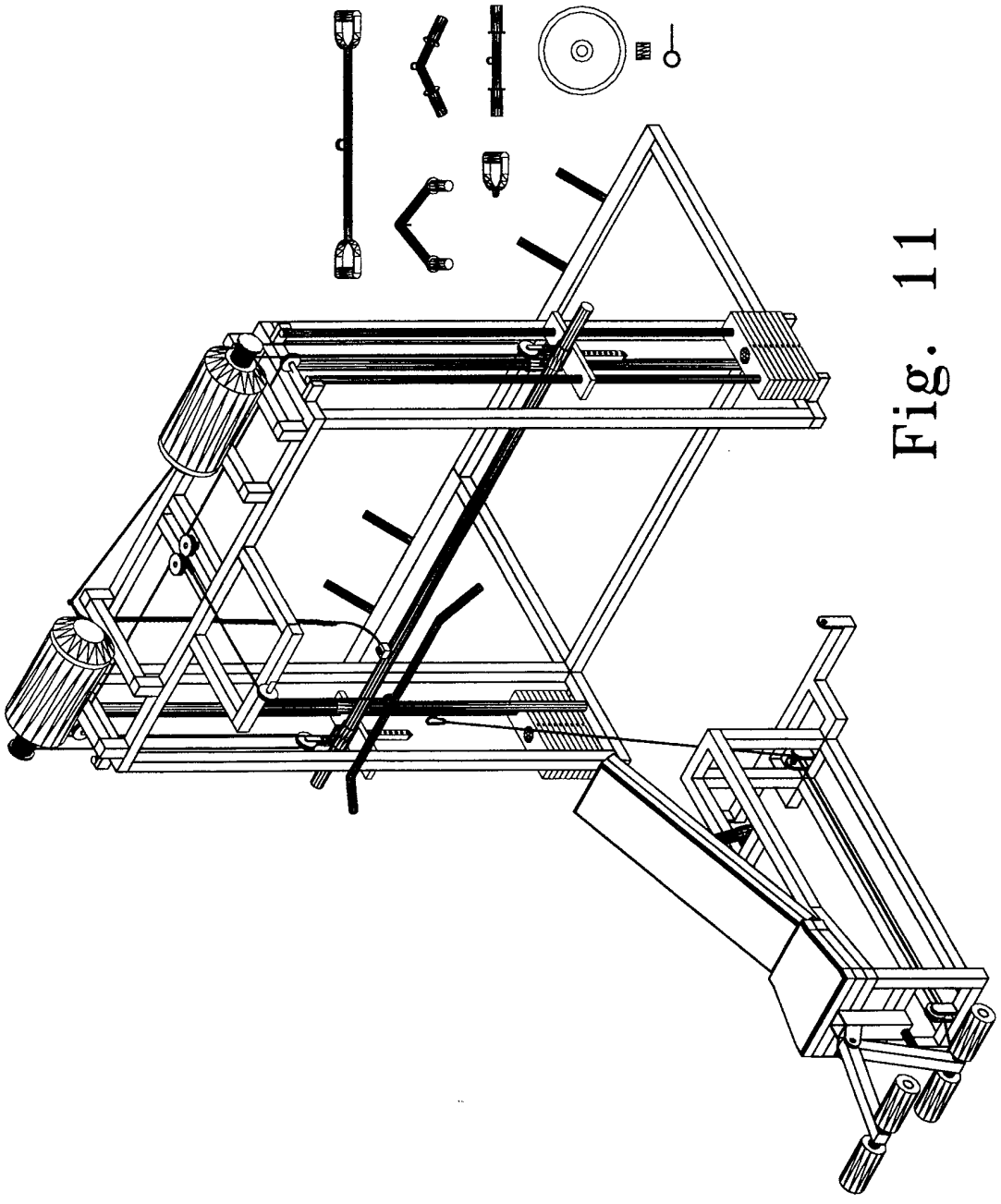

Fig. 11

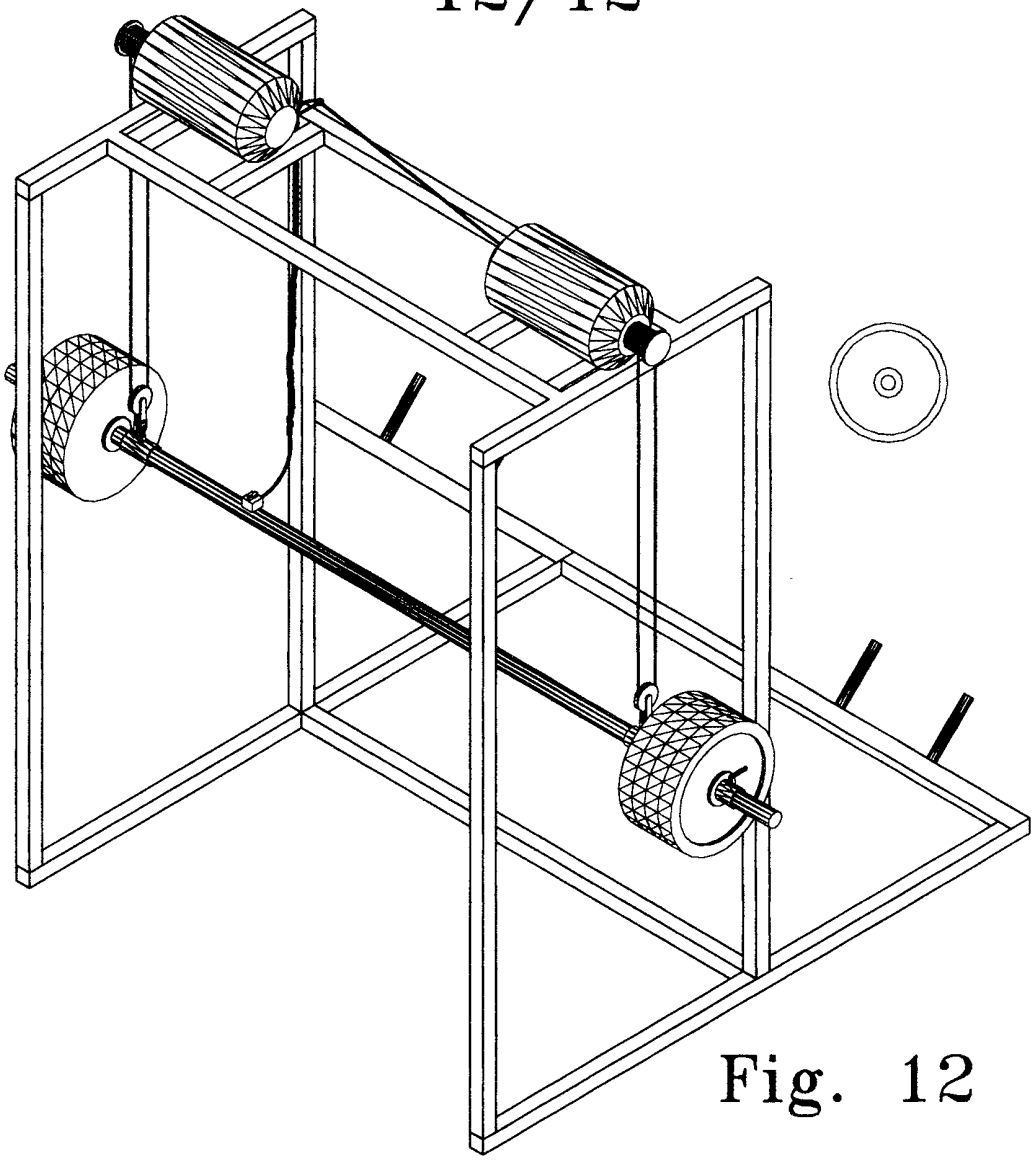

Fig. 12

INTERNATIONAL SEARCH REPORT

Internati Application No
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A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 A63B21/062 A63B21/072

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 A63B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, PAJ, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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A	US 5 184 992 A (BANKS GARY S) 9 February 1993 (1993-02-09) column 7, line 63 -column 8, line 62; figure 8 column 13, line 3 - line 9	4-7

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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