

[54] **EXERCISING DEVICE**

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abandoned.

[52] U.S. Cl. 272/72; 272/79 R; 272/DIG. 3

[51] Int. Cl.² A63B 69/06

[58] Field of Search 272/79 R, 72, DIG. 3

[56] **References Cited**

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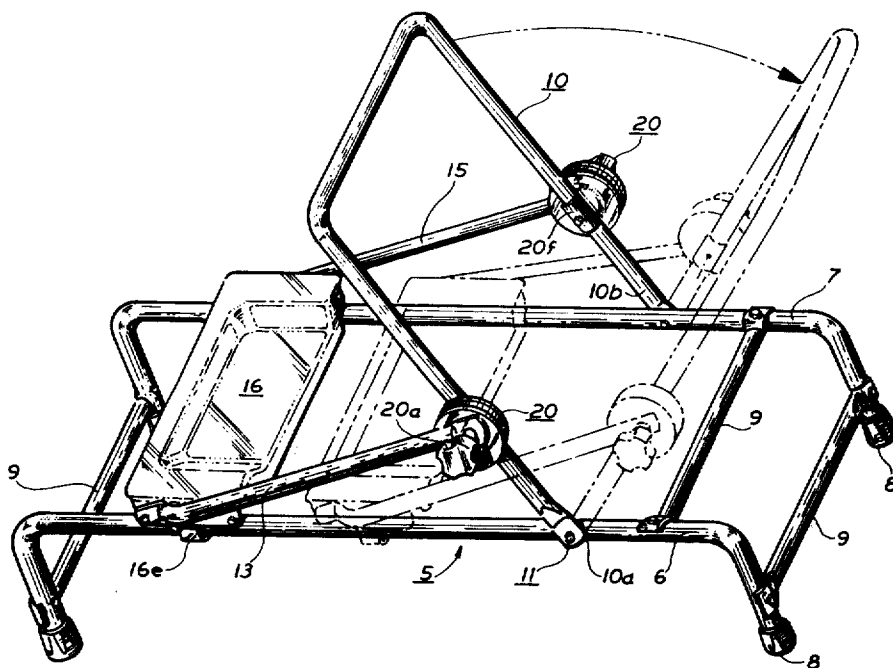
Assistant Examiner—Joseph R. Taylor

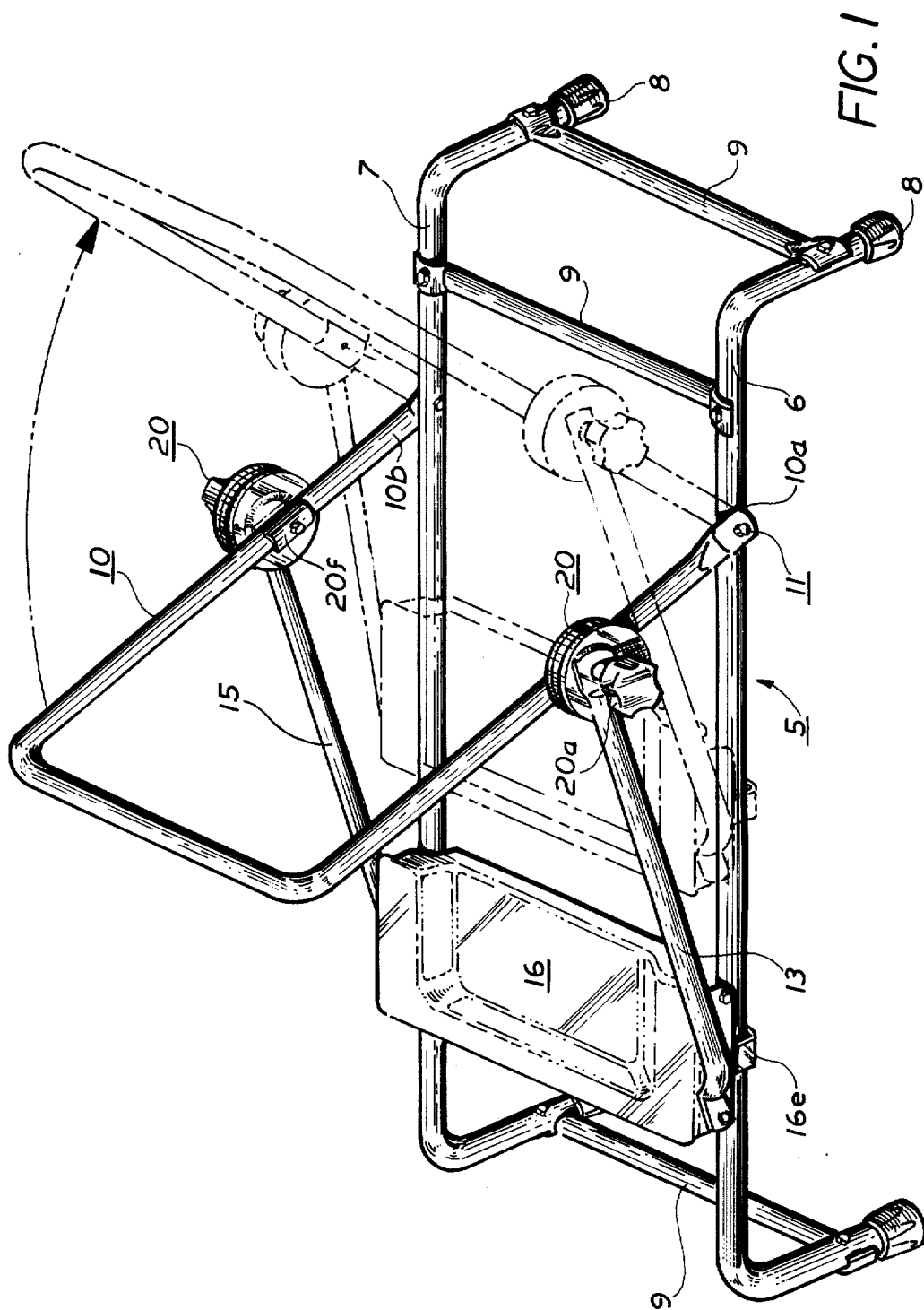
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[57] **ABSTRACT**

An exercising device of the simulated rowing type has a generally horizontal base, a handle pivotally attached at its lower ends to the base, a seat assembly rollably mounted on the base and adjustable means connected to the seat assembly and to the handle for selecting the effort required to move the handle to a preselected frictional value.

6 Claims, 4 Drawing Figures





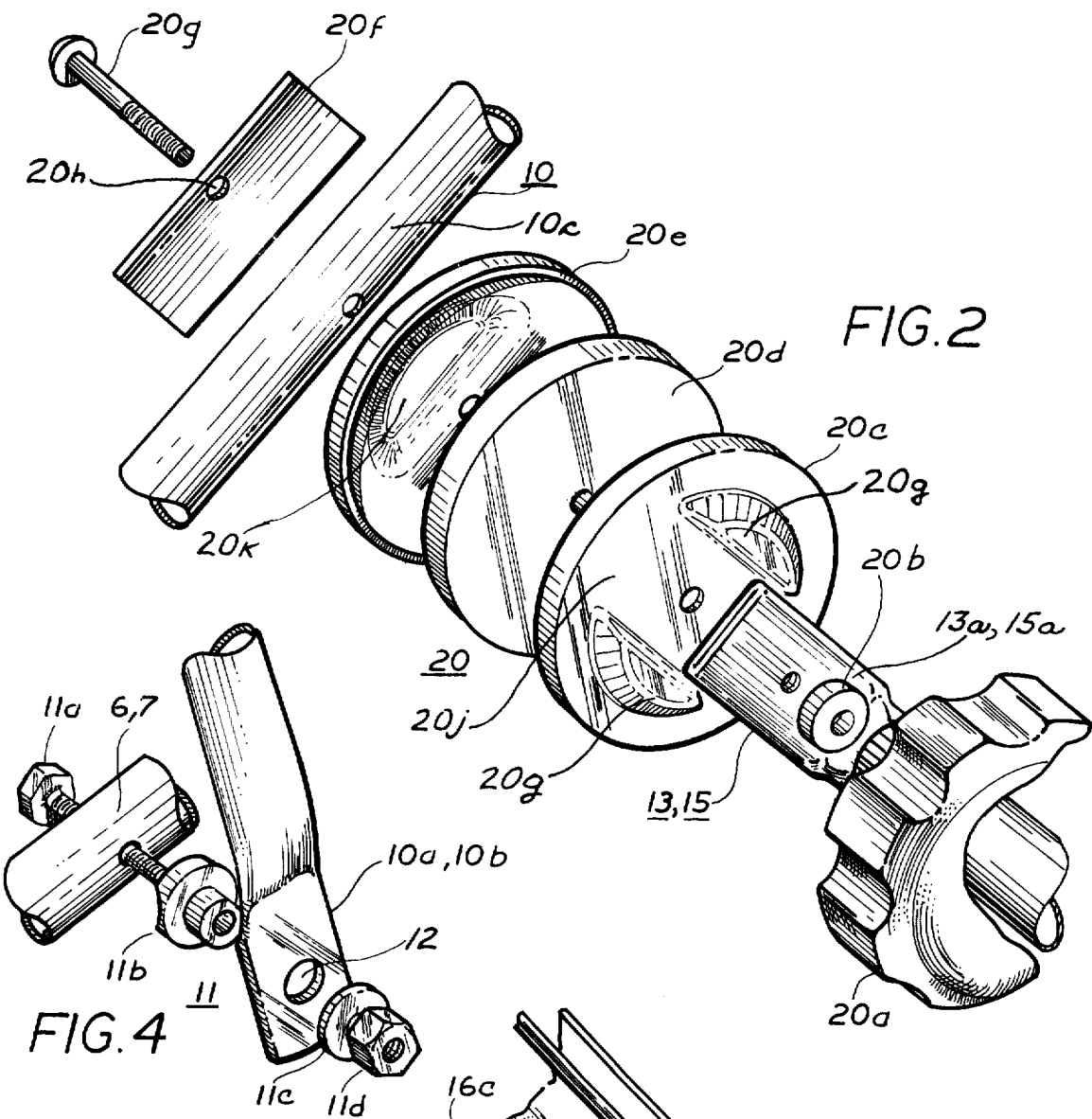


FIG. 4

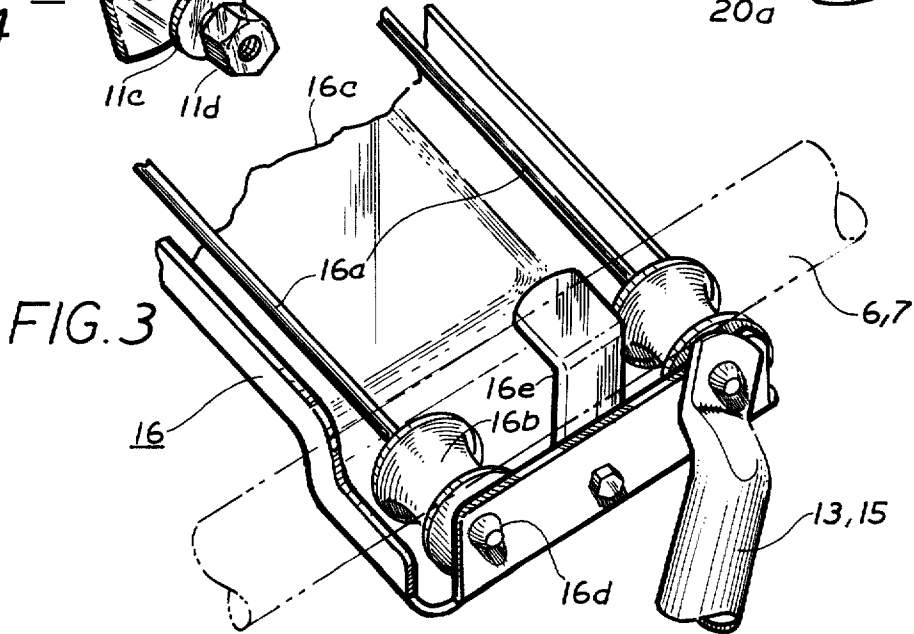


FIG. 3

EXERCISING DEVICE

This is a continuation application of Ser. No. 355,091, filed Apr. 27, 1973, and now abandoned.

BACKGROUND OF THE INVENTION**1. Field of the Invention**

This invention relates to exercising devices and in particular to a device for exercising by simulated rowing.

2. Prior Art

A number of exercising devices which simulate rowing are known in the prior art. Some of them involve pulling two oar-like objects against the weight of suspended objects, or against the friction built into the mountings of the ends of the oar-like objects. Others involve a handle whose lower end is coupled to one or more springs. When the handle is pulled back, the springs are extended and returned to their compressed position in the forward stroke of the handle. Still others have the operator seated on a seat resting, at its most rear position, atop an inclined rail that facilitates the forward stroke. Usually no means are provided for adjusting the difficulty with which the handle or simulated oars may be operated. Furthermore, these prior art devices are relatively expensive and therefore their market was limited.

It is the object of the present invention to provide a simulated rowing machine which may be adjusted to provide the desired degree of difficulty for the operator. It is also an object of the present invention to provide an exercising device of the simulated rowing type which is relatively simple and inexpensive to manufacture.

BRIEF SUMMARY OF THE INVENTION

An exercising device comprising a generally horizontal base, a handle pivotally mounted to the base, a seat assembly mounted for movement on the base, and means connected to the seat assembly and to the handle for moving the seat assembly back and forth. A particular feature of the invention is the means provided for adjusting the difficulty of the pulling action by selecting the desired resistance to the pivotal movement of the handle.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the apparatus as seen looking down upon it from one of its sides;

FIG. 2 is an exploded perspective view of the means whereby the resistance of the pivotal movement of the handle may be adjusted;

FIG. 3 is a perspective view of a portion of the seat assembly as seen from below the apparatus; and

FIG. 4 is an exploded sectional view of the one of the junctions of the handle with the base.

DETAILED DESCRIPTION OF THE DRAWINGS

Referring first to FIG. 1, there is shown generally at the numeral 5 the simulated rowing device according to the present invention. It comprises a base consisting of two generally horizontal and parallel inverted U-shaped, support members 6 and 7. Their lower ends, where they engage the floor or other supporting surface, are covered with appropriate rubber or similar caps 8 to prevent slippage or moving of the device on the supporting surface. The members 6 and 7 are spaced apart by three cross members or straps 9, one

of which is situated behind the seat assembly 16 near the caps 8. There is a similar spacing member 9 in the corresponding place at the front of the apparatus. The third strap 9 is attached on top of the horizontal portions of the support members 6 and 7 in front of the pivot point of the handle 10.

The handle assembly 10 is also a generally inverted U-shaped member whose lower ends 10a and 10b are attached by pivot sub-assemblies 11 to the outer sides of the horizontal sections of the support members 6 and 7 respectively. The lower, flattened end portions 10a and 10b of the handle 10, as may be seen in the enlarged view of FIG. 4, have apertures 12 formed therein through which a bolt 11a passes. The bolt also passes through aligned apertures in the support members 6 and 7, through the nylon or other plastic bushing-like members 11b, through plastic (nylon) washer 11c and its end is threaded into nut 11b which maintains the assembly together.

The seat assembly 16 may be made of metal having a depressed portion 16c. It has on its under side (FIG. 3) four rollers 16b connected in pairs on axles 16a. Two of the rollers 16b are arranged parallel with one another to ride on the upper surface of one of the support members 6, while the other two are correspondingly arranged to ride on the upper surfaces of support member 7. The axles 16a are prevented from axial movement by a plurality of appropriate fastening nuts 16d. The seat is prevented from being removed from the support members 6 and 7 by two generally L-shaped members 16e attached by bolts and nuts to the inside surfaces of the sides of the seat.

Attached to the other sides of the seat assembly 16 are two rigid connecting members 13 and 15. The upper flattened ends of the latter are respectively attached to the two variable resistance pivoting sub-assemblies 20.

The variable-resistance coupling sub-assemblies 20 are a feature of the present invention. These couplings enable the operator, by revolving knobs 20a in the appropriate directions, to increase or decrease the difficulty with which the handle 10 may be moved backward and forward. As may be seen in the enlarged view of FIG. 2, the coupling sub-assemblies each comprise an elongated threaded bolttype member 20g which is passed through the aperture 20h formed in a curved metal member 20f that fits against the inside surface of the generally vertical portions of the handle 10. Two aligned apertures 10c are formed in the handle 10 to permit the bolt 20g to enter from the inside and emerge from the outside of the handle. The bolt also passes through a central aperture in member 20e which is made of generally disc-shaped metal and has an edge portion which is extended transverse to its circular central portion. It includes two depressions formed therein which extend toward the handle 10 on either side thereof. These two depressions 20f (or protuberances as viewed from the handle 10 in FIG. 2) engage the member 20e and are spaced to prevent rotary movement of that member in response to changes in the angular position of the connecting members 13 as the handle is reciprocated. The bolt also passes through the central aperture of a generally cylindrical disc-like member 20d made of wood, for example, whose diameter is somewhat less than the diameter of the member 20e. It fits within the confines of the member 20e whose edge partially covers the edge of the disc 20d. Another

generally disc-like metal member 20c somewhat similar in shape to member 20e, has a central hole aligned with the apertures in members 20e and 20d. It also has an edge transverse to the circular surface whose inner diameter is slightly larger than the member 20d whose edge it partially covers when the subassembly is put together. The member 20c also includes two protuberances 20g extending on the outer side (that is, the surface closest to the members 13, 15 in FIG. 2). These protuberances are separated by a flat portion 20j whose width is just slightly larger than the width of the flattened portions 13a, 15a of the ends of the members 13 and 15. The portions 13a, 15a have holes therein which are aligned with the central apertures of the discs 20c. The bolt 20g, after passing through the members 20f, 10, 120e, 20d, 20c and the portions 13a, 15a, also passes through a roller bearing 20b whose movable side (not shown) is positioned next to the outer surfaces of the portions 13a and 15a. Finally, a knob 20a having a central threaded portion (not shown) is screwed into the outermost end of the bolt 20d.

Assuming that the operator is seated in the recessed portion 16c of the seat assembly 16 and desires to increase the difficulty with which the handle 10 may be moved, he will lean forward and with his right hand he will rotate the right knob 20a in a clockwise (as seen in FIG. 1 and FIG. 2) direction. This will increase the leftward pressure of the knob 20a on the bearing 20b which presses against the portion 13a (or 15a) which in turn presses the disc 20c tighter against the intermediate disc member 20d and against the inner disc member 20e. He will do likewise with the knob 20a of the coupling assembly 20 on his left side but in the opposite direction, that is to say, counterclockwise as seen in FIG. 1. When the handle 10 is moved back and forth, it will be seen that the member 20e remains stationary relative to the handle 10 but the member 20c rotates to the degree required by the change in the angular position of members 13 and 15. The ease of this rotation depends on the amount of friction generated between it and the intermediate member 20d. If the knob is screwed inward the friction exerted on the intermediate member 20d by the members 20e and 20c will increase the difficulty with which the handle 10 may be pivoted. This feature enables the operator to gradually increase the resistance as his strength increases through repeated use of the device, or enables different operators to adjust it to their personal preference.

This novel apparatus, unlike those in the prior art which have the movement of the seat or handle biased by a spring or gravity in the forward direction, is different in that it uses no such biasing means. The term "biasing means" means a spring, for example, attached either to the handle or seat (or both). It also includes the use of an inclined rail or track on which the seat moves, the track being considerably higher at the back than in the front so that forward movement of the seat upon it is facilitated.

By making the movement of the seat free of forward or backward bias and locating the pivot points of the handle as illustrated, the present apparatus is a rowing machine which offers considerably greater resistance in the forward direction than in the rearward direction. As a result, pushing muscles of the arm and shoulders are more exercised than the pulling muscles. As a matter of fact, the apparatus described herein can be used to supplement the action of conventional rowing machines which offer greater exercise and resistance to the pulling muscles of the arm and shoulder than to the pushing muscles.

What is claimed is:

1. An exercising device comprising:

- a. a generally horizontal and stationary base,
- b. a generally U-shaped handle whose ends are pivotally mounted to two points on said base for movement with respect thereto,
- c. a seat assembly mounted directly on said base for horizontal unbiased reciprocating movement thereon, and
- d. means pivotally connected to said seat assembly and to said handle for moving said seat assembly back and forth when said handle is moved in opposite directions.

2. The device according to claim 1 wherein said device also includes two means connected to said (d) means where the latter is connected to said handle for providing manually adjustable frictional resistance to the pivotal movement of said handle to said base.

3. The device according to claim 1 wherein said (d) means comprises two rigid members respectively connected at one of their ends to two opposed sides of said seat assembly and at their other ends to said handle, the spacing of said two rigid members and said sides providing abundant clearance for the legs of the operator to be disposed between them both.

4. The device according to claim 3 with the addition of means between said other ends and said handle for adjusting the resistance to pivotal movement of said handle.

5. The device according to claim 4 wherein there are two of said means for adjusting said resistance, each comprising a first generally disc-shaped member disposed in a fixed position against said handle, a second disc-shaped member disposed in a fixed position against said other end of said rigid member, an intermediate member between said disc-like members, and means for selectively adjusting the pressure of said second disc-like member laterally against said intermediate member.

6. The device according to claim 5 wherein said first and second disc-like members each have a pair of protuberances extending transversely to their circular surfaces, the two pairs preventing rotary movement of said members relative to said handle and to said rigid members respectively.

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