

[54] ROWING APPARATUS

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[57] ABSTRACT

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A rowing apparatus for use in a rowing shell, said apparatus being a unitary structure adapted to be readily removed from the shell, in which oar-supporting single part riggers extend upwardly from the ends of a support member and outwardly over the gunwale of the shell, and are removable from the support member by an upward movement, so that said rigger may be removed to allow the shell to be stored without removing the rowing apparatus. A mechanism is also provided for vertical adjustment of the outermost ends of the riggers, to accommodate different rowing conditions.

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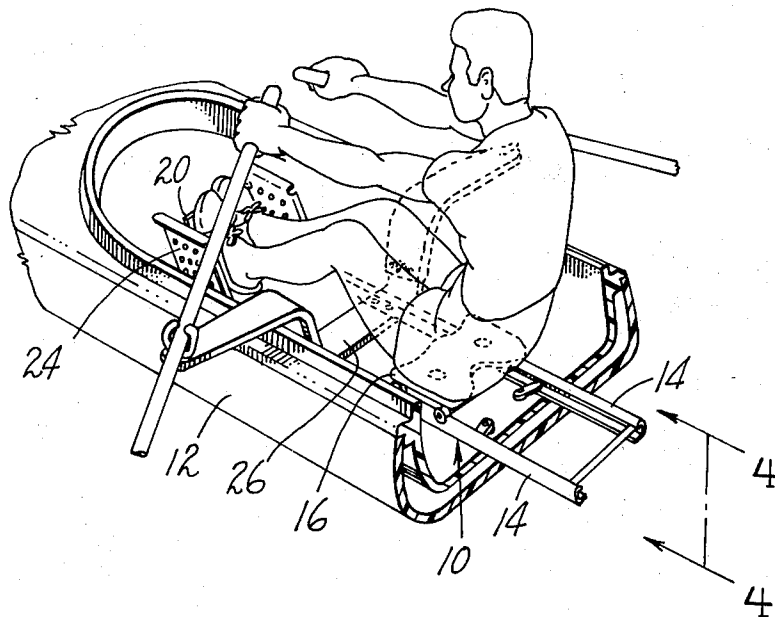
[58] Field of Search ..... 115/24.1; 416/74; 9/7

[56] References Cited

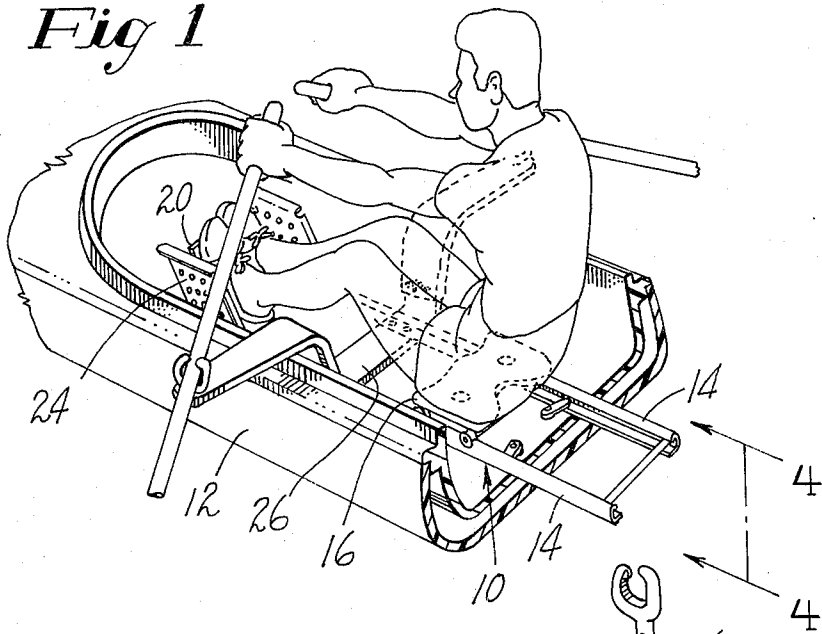
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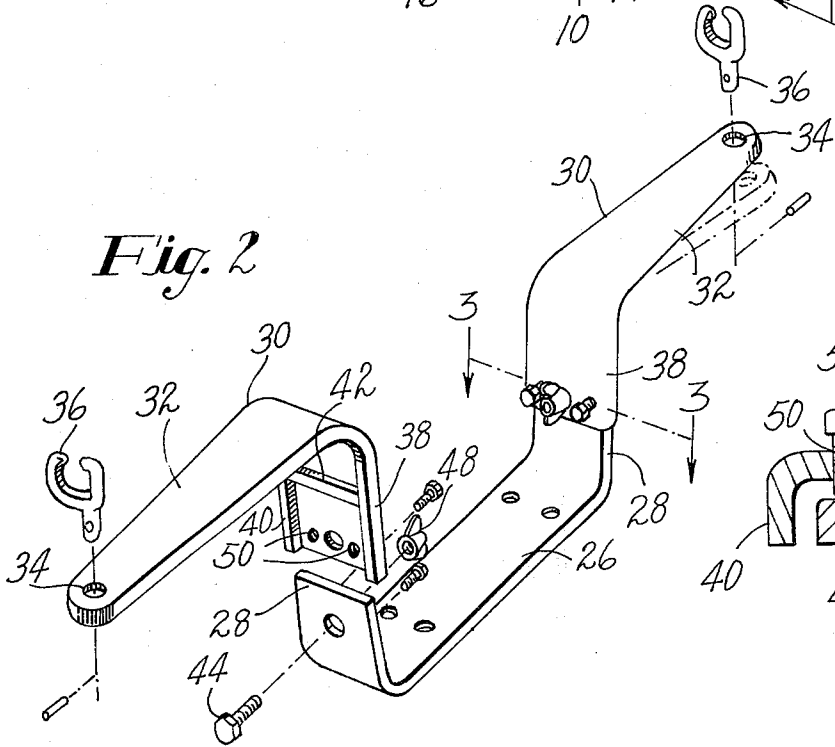
5 Claims, 4 Drawing Figures



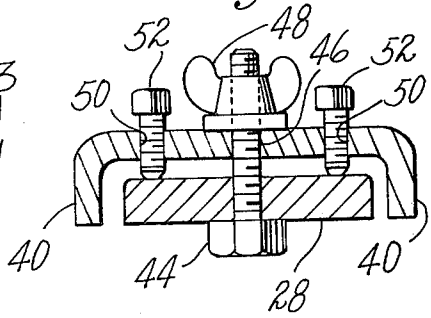
*Fig. 1*



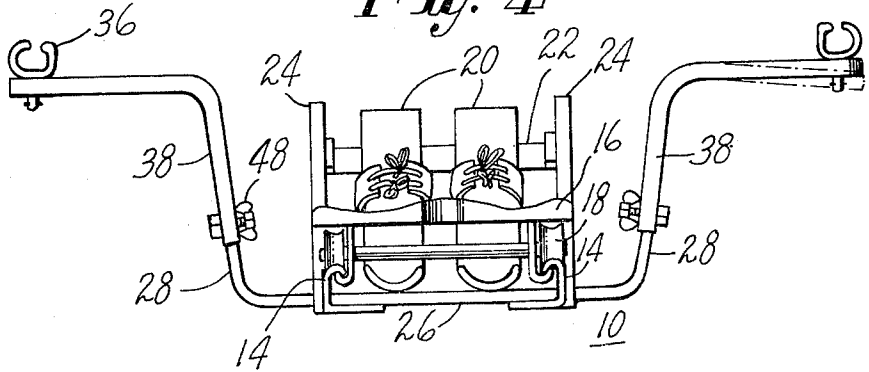
*Fig. 2*



*Fig. 3*



*Fig. 4*



## ROWING APPARATUS

### BACKGROUND OF THE INVENTION

Racing and rowing shells are often provided with a removable rowing apparatus, comprising a base having a track, a seat slidable fore and aft on the track and a pair of riggers extending from the base out over the gunwales of the shell, the oarlocks being mounted on the ends of the riggers.

Devices in present use have a number of disadvantages in that they are difficult to store and clumsy to handle, and are not adapted for use with both long rowing oars and the shorter oars used for pleasure and exercise rowing, nor do they provide means for rigger height adjustment that can be accomplished during rowing to accommodate different wave conditions, or different styles of rowing.

### SUMMARY OF THE INVENTION

This invention provides a rowing apparatus of the type described in which the base of the apparatus is provided with a pair of upwardly extending spaced members to receive rigger arms having downwardly extending inner end portions.

The riggers are supported only by the connection with the spaced members and have no connection with the gunwale of the boat. The connection between the riggers and the base is designed to allow the removal of the riggers by an upward pull, so that they can be removed without removing the entire apparatus from the boat, and also provides for pivotal adjustment in a transverse vertical plan, of the riggers in relation to the support, so that the height of the outer ends of the riggers may be varied.

### BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view, partly broken away, illustrating a rowing apparatus embodying the features of the invention assembled with a rowing shell.

FIG. 2 is an enlarged perspective view, partly disassembled, of the riggers and main supporting beam of the rowing apparatus.

FIG. 3 is a view in section taken in line 3-3 of FIG. 2.

FIG. 4 is an end view, partly broken away, of the rowing apparatus of FIG. 1.

### DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

Referring to the drawing there is illustrated a rowing apparatus 10 which is adapted for removable assembly into a rowing shell 12.

The apparatus 10 comprises a pair of longitudinal tracks 14 spaced apart by suitable means, a seat 16 supported on said track by rollers 18 and movable fore and aft on said tracks, and a pair of foot rests 20 at one end of the track. Said footrests may be adjustable both longitudinally, vertically, and angularly, by means of a pair of support bars 22 having ends secured to vertical side plates 24 which have a plurality of holes to allow attachment of the support bars 22 in any desired position. Additional holes may be drilled at any time for predetermined positive location in an optimum position for a particular oarsman.

A main rigger support beam 26 is secured to the tracks 14, extending under the tracks and having a pair of upwardly turned ends 28 to receive the riggers 30.

The riggers 30 have a horizontally extending portion 32 with suitable apertures 34 in the outer end to receive an oarlock 36, and an inner downwardly projecting portion 38 for removable assembly onto an upwardly extending end 28 of the main support beam 26.

In the illustrated embodiment of the invention the beam 26 and the riggers 30 are formed of one relatively wide piece of metal such as steel or aluminum and the connection between the rigger 30 and the beam ends is designed to withstand the twisting forces applied thereto during rowing, yet allow the rigger to be readily removable and allow vertical adjustment of the outer end of the rigger.

For this purpose the downwardly extending end 38 of each rigger is provided with a pocket formed by side flanges 40 and a cross piece 42 so that when the rigger is assembled onto the beam ends 28, the cross piece 42 is disposed at the beam end and the flanges 40 are disposed on opposite sides of the beam.

To attach the rigger to the beam in such a manner as to allow both adjustability of the height of the oarlocks and easy removal, each support beam end is provided with a bolt 44 which projects therefrom through an aperture 46 in the downwardly projecting portion of the rigger, with a wing nut 48 assembled onto the end of the bolt.

Each rigger is also provided with a pair of tapped holes 50, into which are assembled adjusting screws 52.

It is often desirable to adjust the height of the oarlocks during rowing, to accommodate different water conditions. For example, in calm water, the oarlocks may be lower than in rough water. Also, since the handles of the large oars overlap, some oarsmen prefer to have one oarlock higher than the other.

To accomplish such an adjustment the wing nut 48 is loosened, which allows the outer end of the rigger to pivot downwardly about the upper end of the support beam, with the innermost end of the rigger moving inwardly away from the support beam. When the oarlock is at the desired height, the two adjusting screws are rotated by hand so that the ends thereof bear firmly against the support beam ends 28. The wing nut 48 is then tightened to cause the adjusting screws 52 to bear tightly against the supporting ends 28.

The height of the oarlocks may be raised by loosening the wing nut, backing off the adjusting screws 52 until the oarlock can be lifted to the desired height, and retightening the wing nut.

To disassembly the riggers, the wing nut 48 may be loosened, the bolt 44 removed, and the rigger pulled off the beam by a vertical motion. Hence, where the rowing shell is to be stored or handled, the riggers may be removed without the necessity of removing the entire rowing apparatus. For transporting or storing the shell with the rowing apparatus, or the rowing apparatus alone, the riggers may be re-assembled onto the support beam ends in such a manner that at least one of them projects inwardly toward the other, so that the assembly is more compact yet there is no danger of misplacing or losing the riggers.

Since certain obvious changes may be made in the rowing apparatus illustrated herein without departing from the scope of the invention, it is intended that all matter contained herein by interpreted in an illustrative and not a limiting sense.

I claim:

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1. A rowing apparatus comprising a seat and longitudinally extending means supporting the seat and allowing fore and aft movement thereof, a continuous rigid support beam extending transversely of said longitudinal means and having upturned ends at opposite sides thereof, and a pair of riggers for assembly onto said upturned ends, said riggers having an outer end portion which when assembled with the support beam ends, extends from said support beam outwardly over the gunwale of the boat, the inner end of said riggers and the ends of said support beam having connecting means permitting limited pivotal adjustment of said rigger in relation thereto only in a vertical plane to permit adjustment of the height of the outermost end of the rigger without impairing the strength in torsion of the connection between the rigger and the support beam.

2. In a rowing apparatus of the type which comprises riggers for supporting oarlocks beyond the gunwale of the boat, the improvement comprising support means for said riggers and means connecting said riggers to said supporting means, and means permitting angular adjustment of said rigger only in a vertical plane in relation to said support to adjust the height of the oarlock supporting portion of the riggers.

3. A rowing apparatus as set forth in claim 2 in which said support means and the innermost end of said rig-

gers have overlapping portions, one overlapping portion being pivoted on the other in a vertical plane and means for adjusting the angle between said overlapping portions to thereby adjust the height of the outer end of the rigger.

4. A rigger assembly for use in a rowing mechanism, comprising a rigger support in the form of a continuous rigid beam dimensioned to extend across the bottom of a rowing shell, and having upturned end portions, and a rigger assembled onto each upturned end portion, the riggers each having a downwardly extending portion for connection to the upwardly extending end portion of the rigger support, said connection between the rigger and the rigger support being shaped and arranged to resist torsional forces applied thereto during rowing and to allow for pivotal adjustment of the rigger in a vertical plane in relation to the support.

5. A rigger assembly as set out in claim 4 in which one of said portions has a recess enclosing the end of the other portion and stop means in the recess against which the end of the other portion bears when assembled, said one portion being pivotable about said stop means in a vertical plane to raise and lower the outer end of the rigger.

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