Dec. 7, 1965 J. B. VIDACH 3,221,699

RUDDER ASSEMBLY FOR WATERCRAFT

Filed Oct. 26, 1964

FIG. 1

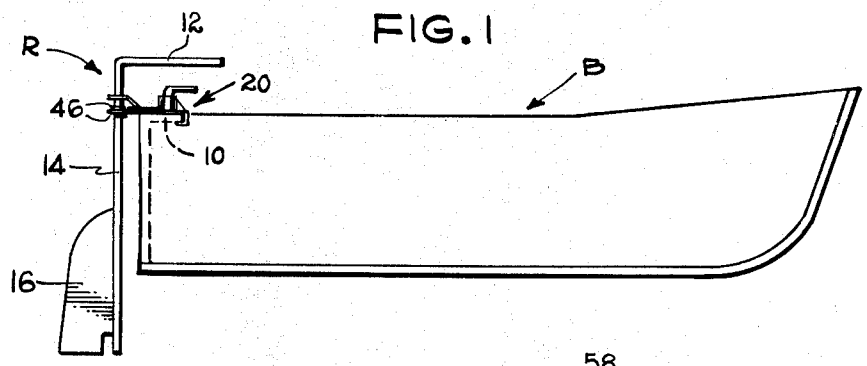


FIG. 2

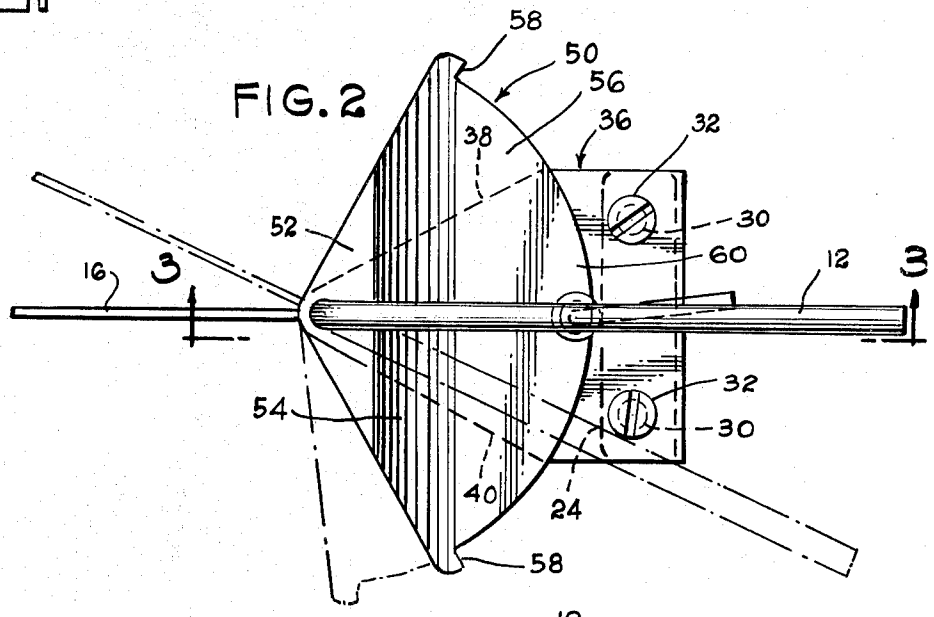
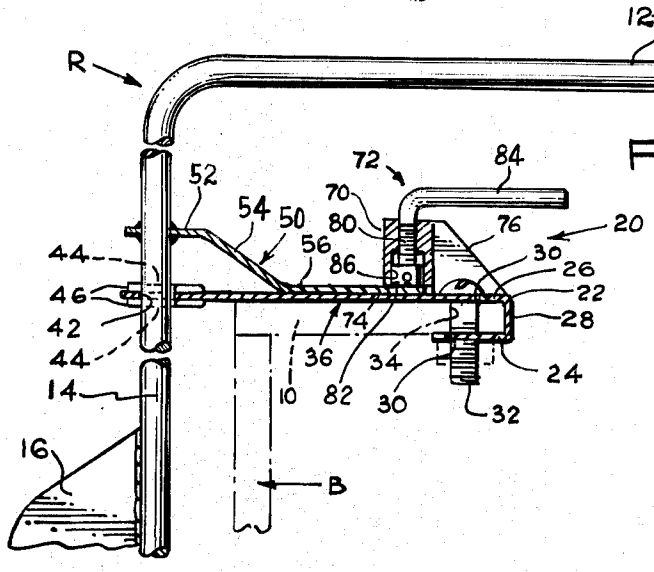


FIG. 3



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RUDDER ASSEMBLY FOR WATERCRAFT

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This invention relates to a novel rudder assembly for watercraft.

Many types of watercraft are normally sold without rudder or like means for steering them. Rowboats are exemplary of that. In many circumstances it is highly desirable for a steering mechanism such as a rudder assembly to be used with such watercraft. It is with a novel rudder assembly adaptable for rapid connection to and removal from rudderless watercraft that this invention is concerned.

The novel rudder assembly of this invention contemplates a tiller and rudder means movably mounted upon securing means for releasably securing said tiller and rudder means to a watercraft to facilitate steering said watercraft. It also contemplates means for releasably fixing the steering angle of the rudder means in any one of a large number of steering angles.

It is therefore an object of this invention to provide a novel rudder assembly for watercraft.

It is a further object of this invention to provide a novel rudder assembly releasably securable to a watercraft.

Yet another object of this invention is to provide a novel means for releasably fixing the steering angle of a rudder means for a watercraft.

Still a further object of this invention is the provision of a watercraft rudder assembly detachably mountable on a watercraft and having novel means for releasably fixing the steering angle of the rudder of said rudder assembly in any one of a large number of steering angles.

Still further objects and advantages of this invention will become apparent from the following description and drawings of which:

FIGURE 1 is a side elevation of a rudder assembly of this invention secured to the rear end of a watercraft;

FIG. 2 is a plan view of the rudder assembly of FIG. 1; and

FIG. 3 is an enlarged side sectional view of a portion of the rudder assembly and watercraft taken substantially along the line 3—3 of FIG. 2.

Referring first to FIG. 1 the rudder assembly R is adapted to be detachably mounted or releasably secured to a watercraft such as a normally rudderless rowboat B. In the illustrative embodiment the rudder assembly is secured to a transversely extending ledge **10** of rowboat B, the ledge **10** extending across the width of the rowboat and extending forwardly of the rear end of the rowboat.

The rudder assembly includes a tiller **12** and a rudder shaft **14** disposed generally at a right angle to the tiller. As illustrated tiller **12** and rudder shaft **14** are formed integrally of a rod stock bent generally to the right angle configuration. The lower end of the rudder shaft **14** is provided with a suitable rudder **16** connected thereto as by welding. Rudder **16** may be cut from plate stock or may be formed in any suitable manner and to any desired configuration. In plan view in FIG. 2 it is seen that the tiller **12** and the rudder **16** are substantially coplanar.

The means **20** for detachably mounting or releasably securing the rudder assembly to the rowboat B includes a member generally U-shaped in cross-section. U-shaped member **22** comprises a lower flange **24** and a generally parallel upper plate **26** each spaced from the other by a connecting web **28**. Flange **24** and plate **26** are each provided with a pair of aligned apertures **30** through which pins **32** are adapted to be received. The ledge

10 of rowboat B is also provided with openings **34** which may be aligned with apertures **30** so that the pins **32** will detachably mount or releasably secure the rudder assembly R to ledge **10**, hence to rowboat B. Pins **32** may take the form of threaded bolts so that cooperating nuts may be used to maintain the detachable connection between rudder assembly R and rowboat B until the rudder assembly is to be removed. Nuts are shown in phantom in FIG. 3.

In the embodiment illustrated herein the upper plate **26** of the U-shaped member **22** is an integral portion of an overall plate member **36** which extends rearwardly beyond lower flange **24**. As seen in FIG. 2 plate member **36** is generally restangular in shape adjacent the upper plate **26** and then tapers to a rounded point at its rearward-most end, edges **38** and **40** converging rearwardly to that rounded point. Adjacent the rounded point, plate member **36** is formed with an aperture **42** having a diameter slightly larger than the diameter of rudder shaft **14**, the diameters being sufficiently different so that the rudder shaft **14** is easily rotated within aperture **42**. Immediately above and below aperture **42** rudder shaft **14** is provided with means for rotatably mounting the rudder shaft with respect to plate member **36**. This embodiment includes a pair of bores **44** in rudder shaft **14** and locking pins such as cotter pins **46** located within and extending outwardly of those bores, the cotter pins extending beyond the circumference of aperture **42**.

Means for releasably fixing the steering angle of the rudder in any one of a very large number of steering angles is also contemplated by this invention. To that end a locating member **50** is provided. It may be of sheet metal. It includes a generally triangular substantially horizontal rear segment **52**, a substantially trapezoidal intermediate segment **54** inclined with respect to said rear segment and a generally horizontal forward segment **56** paralleling segment **52** and having an arcuate forward edge.

The rear segment **52** is rigidly connected to rudder shaft **14** as by welding to mount the locating member **50** for rotation with the rudder shaft **14**. The intermediate segment **54** adjacent its sides is provided with abutments **58** which extend outwardly of the edge of forward segment **56** as seen in FIG. 2. The forward segment **56** includes a peripheral portion comprising a locking segment **60** generally arcuate in plan view and lying between clamping members to be described. While locking segment **60** in the illustrated embodiment is integrally formed with forward segment **56**, and indeed with locating member **50** it is contemplated that other means for securing locking segment **60** to rudder shaft **14** may be provided.

It is to be noted that forward segment **56** and the coplanar locking segment **60** lie generally parallel to and adjacent plate member **36** and upper plate **26** of U-shaped member **22**. Since the locating member **50** is connected to the rudder shaft above the plane of plate member **36** the intermediate segment **54** is inclined appropriately to bring about the desired parallel adjacent relationship between plate member **36** and forward segment **56**. The relationship also serves to maintain the generally normal relationship between the rudder shaft **14** and plate member **36** although it is contemplated that other means for maintaining the desired normal relationship to facilitate relative rotation therebetween might be substituted therefor.

Means for clamping the locking segment **60**, hence locating member **50** and rudder **16**, for releasably fixing the steering angle of the rudder in any one of a large number of steering angles, includes, cooperable threaded members **70** and **72**. Threaded member **70** is a female member internally threaded for a portion of its length. Its lower-

most end 74 is spaced from plate member 36 which directly beneath member 70 provides a clamping surface. Threaded member 70 is fixed in an upstanding position by a strut 76 which is connected to it and to upper plate 26 as by welding.

Threaded member 72 is externally threaded and includes an upstanding threaded shaft 80, a clamping foot 82 and an operating handle 84. The foot 82 is of a diameter greater than the shaft and since it may be withdrawn into the interior of threaded member 70 the lowermost internal portion of member 70 is bored at a greater diameter than the threaded diameter. The enlarged bore portion is shown at 86.

The threaded shaft 80 is movable toward and away from the clamping surface of plate member 36. The foot 82 of threaded member 72 overlies the locking segment 60 of locating member 50. When the threaded shaft 80 is rotated with respect to the threaded member 70 and advances towards the clamping surface, clamping foot 82 engages the locking segment 60 to clamp the same between clamping foot 82 and the underlying clamping surface. That serves to releasably fix the steering angle of rudder 16 at a predetermined and desired angle. To adjust the steering angle and to release the rudder so that its steering angle may be altered by moving the tiller 12 the threaded shaft 80 is rotated with respect to threaded member 70 by handle 84 to move clamping foot 82 upwardly and away from locking or clamping engagement with locking segment 60.

As has been mentioned locking segment 60 is generally arcuate. Its radius with respect to rudder shaft 14 is selected so that in all operating positions of the rudder, that is at all steering angles, the locking segment 60 lies between clamping foot 82 and the clamping surface of plate member 36. Abutments 58 located at the very ends of the locking segment 60 serve to engage strut 76 to prevent withdrawal of the locking segment 60 from a position in which it underlies clamping foot 82. Such arrangement therefore serves to limit the angle through which rudder 16 may be moved by tiller 12 when the clamping means of this invention are out of clamping engagement with locking segment 60.

The foregoing description and drawings serve to illustrate and explain a preferred embodiment of my invention. They make clear the fact that the detachable rudder assembly of this invention is easily secured to and easily detached from a watercraft. They also serve to illustrate the ease with which a desired steering angle for the rudder itself may be selected and releasably fixed in any one of a substantially infinite number of positions within the range of about 150°. The foregoing description will also make it apparent to those skilled in the art that various modifications can be made in the structure described and illustrated without departing from the spirit and scope of the invention. Therefore the foregoing description and drawings should not be construed as limiting this invention except as appears in the following claims.

I claim:

1. In a watercraft having a rudder assembly including a tiller, a rudder shaft interconnected with said tiller and a rudder secured to said rudder shaft; means for releasably fixing the steering angle of said rudder including clamping means having cooperable members one of which members is movable toward and away from an oppositely disposed clamping surface, a locating member mounted on said rudder assembly and movable with said tiller, said member having a locking segment lying between said movable clamping means member and said oppositely disposed clamping surface in substantially all steering angles of said rudder whereby when said movable clamping means member is moved towards said oppositely disposed clamping surface the locking segment is clamped therebetween releasably fixing the steering angle of said rudder and when said movable clamping means member is moved away from said oppositely disposed clamping surface the steering angle of said rudder may be changed.

2. The device of claim 1 in which the locating member mounted on said rudder assembly and movable with said tiller is fixedly connected to said rudder shaft and said locking segment is generally arcuate in configuration.

3. A detachably mountable rudder assembly for a watercraft comprising a tiller, an interconnected rudder shaft disposed at an angle to said tiller, a rudder fixedly connected to said rudder shaft, means for releasably securing said rudder assembly to said watercraft and for rotatably mounting said rudder shaft with respect thereto, means for releasably fixing the steering angle of said rudder including clamping means having cooperable threaded members one of which members is movable toward and away from an oppositely disposed clamping surface, a locating member mounted on said rudder assembly and movable with said tiller, said member having a locking segment lying between said movable clamping means member and said oppositely disposed clamping surface in substantially all steering angles of said rudder whereby when said movable clamping means member is moved toward said oppositely disposed clamping surface the locking segment is clamped therebetween releasably fixing the steering angle of said rudder and when said movable clamping means member is moved away from said oppositely disposed clamping surface the steering angle of said rudder may be changed.

4. A detachably mountable rudder assembly for a watercraft comprising a tiller, an interconnected rudder shaft disposed at an angle to said tiller, a rudder fixedly connected to said rudder shaft, means for releasably securing said rudder assembly to said watercraft and for rotatably mounting said rudder shaft with respect thereto, said means comprising a U-shaped member having an upper plate and a lower flange and a connecting web proportioned to receive a transverse portion of said watercraft and having aligned openings through which pin means are adapted to pass to releasably secure said U-shaped member to said watercraft, the upper plate of said U-shaped member extending rearwardly beyond said lower flange and defining means cooperable with said rudder shaft for rotatably mounting said rudder shaft, means for releasably fixing the steering angle of said rudder including clamping means having cooperable members one of which members is movable toward and away from an oppositely disposed clamping surface, a locating member fixedly connected to said rudder shaft and being movable by said tiller, said locating member having a locking segment lying between said movable clamping means member and said oppositely disposed clamping surface whereby when said movable clamping means member is moved towards said oppositely disposed clamping surface the locking segment is clamped therebetween releasably fixing the steering angle of said rudder and when said movable clamping means member is moved away from said oppositely disposed clamping surface the steering angle of said rudder may be changed.

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