Dec. 21, 1948. C. H. KEARNY 2,456,637

OARLOCK SUPPORT

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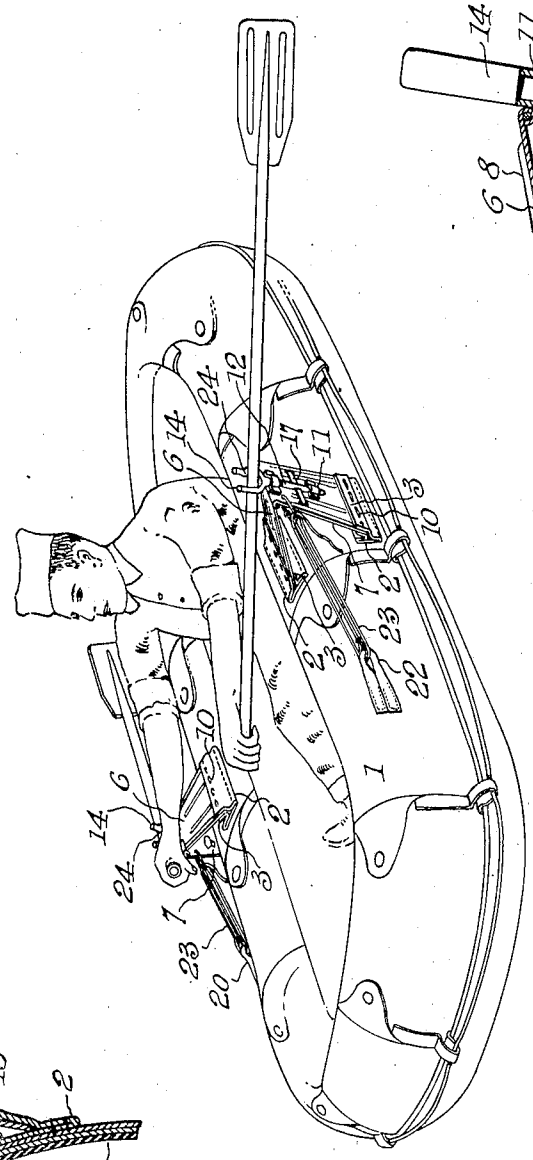


Fig. 1.

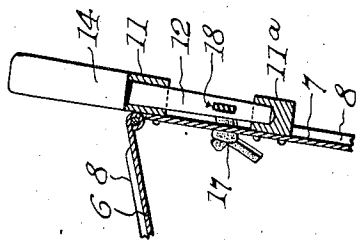


Fig. 6.

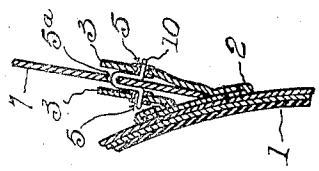


Fig. 5.

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Fig. 3.

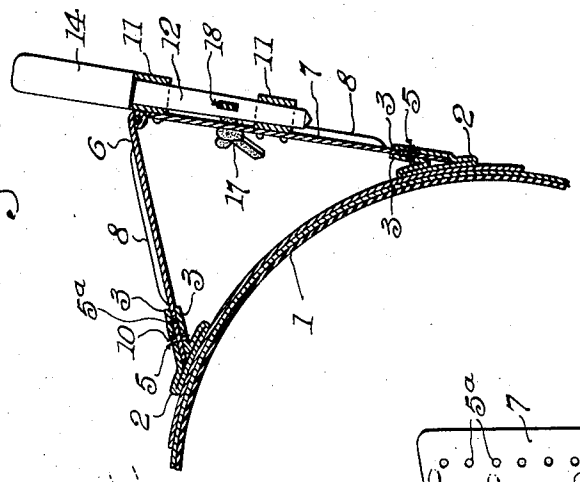


Fig. 4.

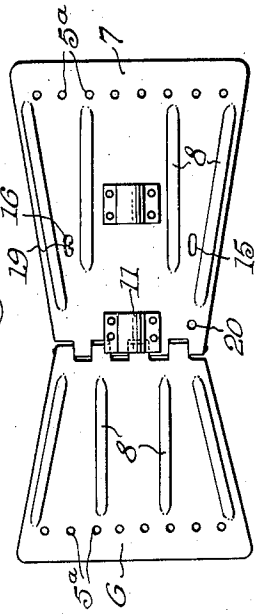
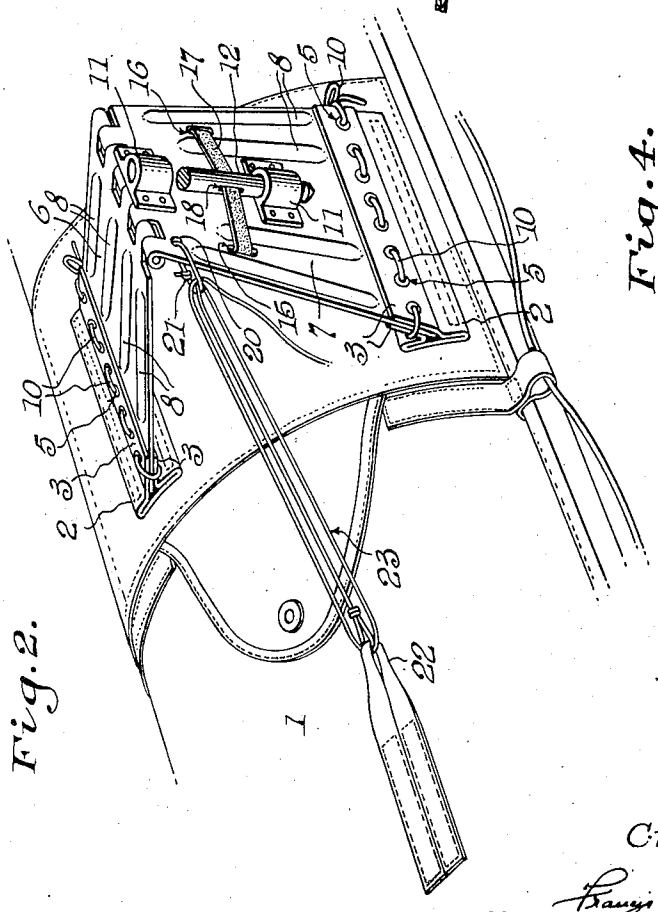


Fig. 2.



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UNITED STATES PATENT OFFICE

2,456,637

OARLOCK SUPPORT

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Application October 6, 1944, Serial No. 557,541

18 Claims. (Cl. 9—26)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

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The invention described herein may be manufactured and used by or for the Government for governmental purposes, without payment to me of any royalty thereon.

This invention relates to oar locks and their supports, more particularly it is directed to a collapsible oar lock support for inflatable boats, rafts and the like of the type disclosed in my pending application filed October 24, 1941, and bearing Serial No. 416,329, now Patent No. 2,391,906, dated January 1, 1946.

Boats of the type disclosed in the above-identified application are designed to be folded into a compact package for storage and are readily and easily inflated to form a boat which may be propelled with a paddle. This method of propulsion, in addition to being a slow, laborious task, is also unsatisfactory as it necessitates the occupant's weight being exerted on one side of the craft during paddling, and this weight being along one edge of the boat tends to overturn it. Accordingly, it has become necessary to devise some apparatus for propelling the craft which will permit the occupant to sit as nearly as possible over the boat's center of gravity, and yet be able to propel the craft. It is likewise desirable that the propelling means be in the form of oars disposed on each side of the craft to assure a truer course and increased velocity with a minimum expended effort.

The prior art discloses many oar locks and supports, most of which are securely attached to rigid, noncollapsible boat structures. Their structural details prevent the adaption of these prior devices to inflatable crafts. Oar lock supports employed with inflatable boats should be collapsible to permit the craft being folded into a small compact package when not in use, and still form a rigid supporting surface when the craft is inflated for use. Likewise, when occupying a craft of this type it is difficult to insert oars in oar locks in rough waters. It is desirable, therefore, that the oar locks be attached to the supports in such a manner that they are maintained parallel to the boat side members when not supporting an oar in rowing but permit oscillatory movement to accommodate the reciprocating angular motion of oars during rowing.

Accordingly, it is an object of this invention to provide a light, collapsible oar lock support which will assume a flat, compact condition when the craft to which it is secured is deflated, and assume a rigid condition upon inflation of the craft.

Another object of this invention is to provide resilient means for mounting an oar lock to the

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oar lock support whereby the oar lock is maintained in a predetermined angular relationship with the side members of a boat when not rowing and oscillates with the oar when rowing.

A further object of this invention is to provide a device of the class herein described utilizing a minimum number of parts which may be obtained by simple casting and stamping processes, and which may be conveniently and rapidly fabricated, assembled and operated.

The foregoing and other objects of this invention will be more apparent from reading the specification in connection with the drawing forming a part thereof, wherein:

Fig. 1 is a perspective view of the oar locks and their supports mounted on an inflated boat;

Fig. 2 is a partially cut-away perspective view showing details of construction of the oar lock support mounted on an inflated boat;

Fig. 3 is a vertical cross-sectional view illustrating the details of construction of the supporting plates, guide members, and oar lock unit;

Fig. 4 is a plan view of the pivotally connected supporting plates;

Fig. 5 is a detailed sectional view showing the preferred method of securing supporting plates to an inflatable boat; and

Fig. 6 is a vertical cross-sectional view illustrating a modification of the lower guide members.

In the drawings where like members are given the same reference numeral, a sectional, water repellant inflatable boat or raft 1 has a pair of collapsible oar lock supports secured to reinforced sections thereof. The oar lock support comprises two rigid plates 6 and 7 hinged together in a conventional manner and tapering outwardly from the hinged section to form flared ends. These plates 6 and 7 are preferably stamped from aluminum sheets and provided with longitudinal beads 8 to increase the rigidity of the relatively light weight plates.

Several methods and devices known in the art were tried in an effort to satisfactorily attach the supporting plates 6 and 7 to the inflatable boat 1, and the method found to be the most satisfactory was to lace the two members together in such a manner that the flared ends of the supporting plates 6 and 7 would be urged towards the boat 1. For this purpose, a plurality of apertures 5a are provided in the flared extremity of each supporting plate 6 and 7. A flexible, high tensile strength securing member 2 is folded back upon itself and stitched in such a manner that the extremities 3 are spaced apart and outwardly

extended forming a substantially U-shaped channel; and, the folded sections provide reinforced sections for stitching the securing member 2 to a reinforced section of the boat 1 at a predetermined position. The ends 3 are provided with aligned metal bound apertures 5 in the same vertical planes as the apertures 5a in the support plates 6 and 7, but are in a horizontal plane nearer the boat 1 than the support plate apertures 5a when the support plates 6 and 7 are inserted in the U-shaped channels formed by the ends 3. Thus, when the two members, namely, the securing members 2 and supporting plates 6 and 7, are laced together with a thong or cord 10, the supporting plates 6 and 7 are urged inwardly towards the boat 1 thereby providing a rigid oar lock support when the boat is inflated and a collapsed, flat structure when the boat is deflated.

To further steady the oar lock support, a guying means is provided opposed to the direction of strain of an oarsman rowing. This guying means has one of its tensional points located intermediate the oar lock support and the stern of the boat, and its other tensional point associated with the oar lock support plate 7. The first-mentioned tensional point is a flat loop 22 of highly tear-resistant material securely stitched to a reinforcement of the boat 1. The other tensional point is a loop of cord 21 inserted through an aperture 20 provided near the hinged section of the sternward edge of the outer supporting plate 7. The guy line 23 is a strong nylon cord attached to the flat loop 22 and threaded through the loops 21 and 22, respectively, several times. To assure proper tension of the guying means upon inflation of the boat, the boat should be inflated and the guying means tensioned and fastened by tying the guy line 23. Thereafter, the proper tension will be exerted to insure rigidity with each subsequent inflation.

The relative lengths of the supporting plates 6 and 7 and position of the securing members 2 on the periphery of the boat are preferably such that the outer plate 7 is pivoted outwardly so that an oar lock attached thereto will form a surface perpendicular to the axis of an oar when rowing. The oar lock fork 14 may be integrally cast with or secured to a shaft 12 adapted to be inserted through a plurality of axially aligned hollow guide members 11 securely attached to the outer plate 7. The lower guide member 11 may be modified, see Fig. 6, to provide a closed bottom bearing surface and support 11a for the oar lock shaft 12, thereby resolving the downward stress component through the shaft rather than the hinged section of the supporting plates. Another advantage of using the closed bottom lower guide member 11a is that the oar lock support may be used with various types and sizes of crafts and the oar positioned for easy rowing by providing a proper length oar lock shaft 12.

In order to mount the oar lock on the outer supporting plate 7 in such a manner that it will be in a predetermined angular relationship with the outer supporting plate 7 and boat 1 when not supporting an oar during rowing, and permit oscillatory movement of the lock when rowing, the outer supporting plate 7 is provided with narrow apertures 15 and 16 adapted to receive a resilient strap or band 17 inserted through a slot 18 in the oar lock shaft 12. The resilient strap 17 is then securely fastened under tension by any suitable means, such as tying the free ends of the strap together. A preferred method of securing the strap, however, is to bind one end with cord so that it will not pass through one of the apertures 15, and provide the other end with a bound eyelet or hook adapted to engage, when under tension, a stud 19 extending from the surface of the narrow aperture 16.

When rowing in rough waters, there is a tendency for the breakers to thrust the oar out of the oar lock fork. A closed oar lock fork will overcome this difficulty, but it creates an equally undesirable condition as the oar must be inserted through the oar lock fork from the outside. This requires considerable time and the use of both hands in normal water, and is practically impossible in rough waters. One of the upwardly extending prongs of the oar lock fork 14, therefore, is provided with an inwardly extending stud 24 at a point slightly greater than an oar's diameter from the bifurcation point. In rowing, the oar rests against the boward prong of the oar lock fork 14; therefore, when assembling the support, the prong having the stud 24 should be positioned boward to form a recess for the oar thereby preventing a rough sea from thrusting it from the oar lock fork.

The fabrication, assembly and operation of the oar lock support is relatively inexpensive and simple. The flexible securing members 2 provided with metal-bound apertures 5 near the longitudinal ends 3 are folded back and stitched to provide a reinforced securing surface and U-shaped channel formed by the spaced ends 3. The securing members 2 are then secured to reinforced sections of the boat 1, at predetermined positions, by multiple-stitching on each side of the channel formed by the ends 3, and through the channel section if desired. The guying loop 22 is likewise stitched to the boat in a similar manner.

The supporting plates 6 and 7 may be stamped from sheets of aluminum by a stamping process which provides the correct size and shape of the plates 6 and 7; longitudinal beads 9; apertures 5a, 15, 16 with a stud 19, and 20; and, the stamped-out hinged section. The flanges of the hinged section are rolled into registering eyelets and pinned together in a conventional manner. Guide members 11 and 11a, if a supporting guide member is desired, are cast and attached to the outer plate 7, preferably in central alignment. The plates 6 and 7 are laced to securing members 2 with a thong or strong nylon cord 10 threaded through the apertures 5 and 5a, respectively. The guying loop 21 is then threaded through aperture 20 and secured.

The oar lock fork 14 and stud 24 may be cast integrally with the shaft 12, or formed separately and fastened together in various ways, such as welded. The slot 18 in the shaft is provided at a proper distance from the shaft end to align with the strap retaining apertures 15 and 16. The shaft is then inserted in the guide members 11, and 11a if employed, and the resilient strap 17 threaded through the aperture 15, and slot 18, and secured to the stud 19 in aperture 16. The boat is then inflated and the guying line 23 secured to the guying loop 22, threaded through the guying loops 21 and 22, respectively, tensioned and fastened.

When the boat 1 is deflated, the supporting plates 6 and 7 fold into a flat surface one resting upon the other, permitting the boat and support to be folded into a compact package. Upon each subsequent inflation of the boat, the supporting plates pivot apart forming a rigid support, and

the guying means is automatically tensioned by the inflation.

Having thus described my invention, what I claim as new and wish to secure by Letters Patent is:

1. An oar lock support for a boat comprising rigid supporting members pivotally connected together at one of their ends and connected at their other ends to the boat, and guide members attached to one of said supporting members and adapted to receive a shaft inserted therein.

2. An oar lock support for a boat comprising rigid supporting members hinged together at one of their ends and connected to the boat at their other ends, and hollow guide members attached to one of said supporting members and adapted to receive a shaft inserted therein.

3. An oar lock support for a boat comprising rigid supporting members hinged together at one of their ends and connected to the boat at their other ends, and hollow guide members rigidly attached to the outside of one of said supporting members and adapted to receive a shaft.

4. An oar lock support for an inflatable boat comprising rigid supporting members pivotally connected together at one of their ends and hingedly connected to the boat at their other ends, guide members secured to one of said supporting members and adapted to receive a shaft inserted therein, and fastening means for securing the said last-mentioned ends of the supporting members to the inflatable boat.

5. An oar lock support comprising pivotally connected rigid supporting members, guide members secured to one of said support members and adapted to receive a shaft, securing means attached to an inflatable boat, and means urging said supporting members into contact with said securing means attached to an inflatable boat.

6. An oar lock support comprising rigid supporting members hinged together, securing members attached to an inflatable boat, means fastening said rigid supporting members to said securing members whereby the rigid supporting members are urged toward said boat, and axially aligned hollow guide members secured to one of said supporting members.

7. An oar lock support comprising rigid supporting members, guide members secured to one of said supporting members, and lacing means securing said rigid supporting members to an inflatable boat in such a manner that said supporting means are urged towards said boat.

8. An oar lock support comprising pivotally connected rigid supporting members, guide members secured to one of said supporting members, an oar lock, and guying means connected to said supporting members and located intermediate said rigid supporting members and the stern of an inflatable boat to which the supporting members are secured.

9. An oar lock support comprising pivotally connected rigid supporting members, and lacing means securing said rigid supporting members to an inflatable boat in such a manner that said supporting members are urged toward said boat.

10. An oar lock support comprising pivotally connected rigid supporting members, securing members attached to an inflatable boat, and lacing means fastening said supporting members and said securing members together in such a manner that the supporting members are urged towards the inflatable boat.

11. In combination with an inflatable boat construction; a collapsible oar lock support comprising pivotally connected supporting members terminally attached to said boat in spaced positions, said supporting members having operable and inoperable positions, and being arranged and in a manner such that inflation of the boat construction disposes said supporting members in operable extended position and deflation restores said supporting members to inoperable collapsed position.

12. In combination with an inflatable boat construction; a collapsible oar lock support attached thereto, said support having pivotally connected members provided with means on the free ends thereof for securing said support to said boat and cooperating with said boat construction in a manner such that inflation of said boat construction disposes said support in an operable extended position and deflation collapses said support to an inoperable position.

13. An oar lock construction for a boat comprising rigid supporting members hinged together at one of their ends and hinged to the boat at their other ends, hollow guide members attached to one of said supporting members, and a bifurcated shaft inserted in said guide members.

14. An oar lock construction for an inflatable boat comprising rigid supporting members hingedly connected together at one of their ends and hingedly connected in fixed position to the boat at their other ends, guide members secured to one of said supporting members, a shaft having a bifurcated end portion inserted in said guide members, and fastening means for securing said last-mentioned ends of the supporting members to the inflatable boat.

15. An oar lock construction comprising pivotally connected rigid supporting members, guide members secured to one of said supporting members, an oar lock shaft having an oar lock fork integrally attached to said shaft, securing means attached to an inflatable boat, and means urging said supporting members into contact with said securing means attached to an inflatable boat.

16. An oar lock construction comprising rigid supporting members hinged together, securing members attached to an inflatable boat, means fastening said rigid supporting members to said securing members whereby the rigid supporting members are urged toward said boat, axially aligned hollow guide members secured to one of said supporting members, an oar lock including a shaft inserted through said guide members, and resilient means maintaining said shaft in predetermined angular relationship to said supporting members and permitting oscillatory movement of the shaft about its longitudinal axis.

17. An oar lock construction comprising pivotally connected rigid supporting members, guide members secured to one of said supporting members, a shaft inserted in said guide members and having an oar lock fork integrally attached to said shaft, resilient means maintaining said shaft in predetermined relationship with said supporting members and permitting oscillatory movement of said shaft, and lacing means securing said rigid supporting members to an inflatable boat in such a manner that said supporting members are urged toward said boat.

18. An oar lock construction comprising pivotally connected rigid supporting members, guide members secured to one of said supporting members, an oar lock including a bifurcated member integrally attached to a shaft inserted through said guide members, resilient means associated

with said shaft whereby the shaft is permitted oscillatory movement when in use and assumes a predetermined position when not in use, and guying means connected to said supporting members and located intermediate said supporting members and the stern of an inflatable boat to which the oar lock construction is secured.

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