Aug. 4, 1925. 1,548,483

G. Y. POCOCK

OAR

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Fig. 1.

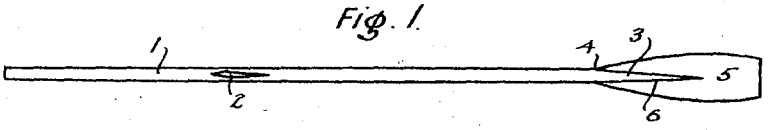


Fig. 2

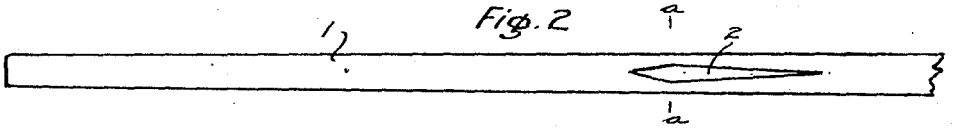


Fig. 4.

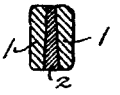


Fig. 3.

Fig. 5.

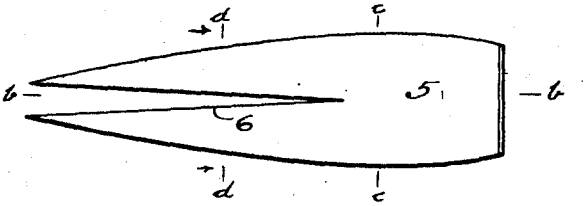


Fig. 6.

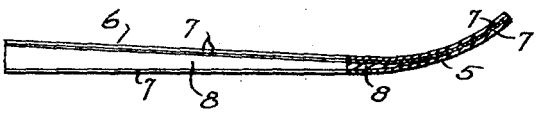


Fig. 7.

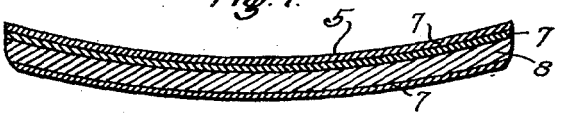
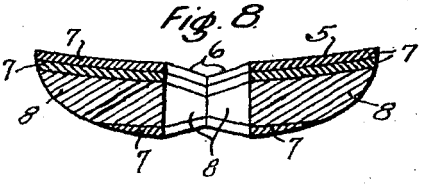


Fig. 8.



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UNITED STATES PATENT OFFICE.

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OAR.

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To all whom it may concern:

Be it known that I, GEORGE Y. POCOCK, a citizen of the United States, residing at Seattle, in the county of King, State of Washington, have invented certain new and useful Improvements in Oars, of which the following is a specification.

This invention relates to oars and sculls, and has for its objects to provide an oar construction which will be much stronger than the oar made in the usual way; to provide an oar which will take a better grip on the water; and which will be easy and cheap to make, have a long life, and be satisfactory and efficient in use.

I attain these and other objects by the devices and arrangements illustrated in the accompanying drawings, in which:—Fig. 1 is a general elevation of an oar constructed in accordance with my invention; Fig. 2 is an enlarged similar view of a portion of the loom thereof showing the reenforcement at the fulcrum; Figs. 3 and 4 are cross-sections of two alternate forms of the loom taken on the line *a—a* in Fig. 2; Fig. 5 is an elevation of the blade of my oar before it is attached to the loom; Fig. 6 is a longitudinal section thereof on the line *b—b* in Fig. 5; Fig. 7 is a cross-section thereof on the line *c—c* in Fig. 5; and Fig. 8 is a similar view on the line *d—d* in Fig. 5. Similar numerals of reference refer to similar parts throughout the several views.

Although the illustrations and description herein have special reference to oars and sculls for use in college, club or naval racing shells and practice boats, it is to be understood that the invention may be applied to the construction and manufacture of oars and sculls intended for other uses.

Heretofore the practice has been to saw the oar out of a single solid plank, the blade and the loom being of one piece and the longitudinal curvature, when viewed in side elevation or longitudinal section (as Fig. 6), has been obtained by sawing out the unnecessary wood. After the rough shape was thus formed the oar was manually brought to dimension and shape and finished off. This type of oar was the best obtainable but had two weak points, of which the first is that the violent strain applied to the loom was often sufficient to break the oar at the fulcrum. This is of such common occurrence that, for instance, some 50 oars were broken at the fulcrum last year at the University of Washington. The second weak point of these oars is due to the fact that the spoon or blade is cut and shaped from a single piece of wood and has to be very thin to make it light in order that the recovery stroke may be rapid, and therefore, when the oar is strained during the working stroke, this portion bends and, in bending, spills or loses its grip on the water and slips backward to a far greater degree than it would if it did not bend at the end. Since every inch of backward slip of the oar blade means an equal loss of distance traversed by the boat, without any substantial reduction in the work done by the rower, it follows that the boat is correspondingly retarded at each stroke and that the crew are performing the unnecessary work occasioned by the slipping oars and, to that extent, are moving the water instead of the boat. In order to overcome these two failings I have devised the following described oar.

That part of the oar adapted to engage the water is called the blade or spoon; that part extending from the blade to the handle is called the loom; that part where the blade and loom meet is called the wrist; and that part which engages the oarlock or gunwale is called the fulcrum. Also, in this case, the concave surface of the blade I call the palm and the convex surface thereof the back. In this description the oar is considered as though lying in flat position, that is, the plane parallel to the general surface of the blade is considered as horizontal and that at right-angles thereto as vertical.

Referring now to the drawings, the loom 1 may be made of a single piece of wood or, if desired, it can be made of two parallel pieces, joined along the vertical longitudinal center line and routed out at those parts which are less strained. This loom 1 is made of light wood, such as spruce, and I reenforce it at the fulcrum by inserting a block 2 in the central vertical plane thereof. This block 2 is glued or otherwise cemented

in place and may be of any desired shape though I prefer to make it in diamond or double triangular plan (Figs. 1 and 2) while in section it may either have parallel sides (Fig. 3) or may be wedge-shaped (Fig. 4), in which latter case it is widest on the back side of the oar. This block 2 is preferably made of hard wood but, in certain instances, it may be made of other substances such as composition or metal. I place the widest part of the diamond block 2 exactly at the fulcrum point where the oarlock engages the oar. The blade end 3 of the loom is tapered from the wrist 4 to a chisel edge (Fig. 1) and its thickness is also tapered to correspond with the thickness of the blade from point to point therein. The loom is therefore made in a separate piece and is entirely independent of the blade, thus greatly facilitating its manufacture.

The blade 5 is provided with a central V-shaped cut 6 (Fig. 5) in which the tapered end 3 of the loom accurately fits and is glued. In order to stiffen the blade 5 against deflection under the strain in the water, without thickening it or materially altering its weight, I form said blade of a plurality of layers or laminations. As shown in the drawing, I prefer to make it of three thin laminations 7, of equal thickness, with a core 8. This core 8 is of varying thickness, being tapered down from its thickest part at the wrist 4 to a thin edge near the tip of the blade. Two thin laminations, are preferably placed on the palm side of the core 8 while one thickness thereof is placed on the back side thereof, and forms the back of the oar blade. The two outer thicknesses 7, forming the palm and back, and the core 8 are preferably arranged with the fibers parallel to the longitudinal axis of the oar while the inner thickness 7 is at right-angles thereto and lie across the blade. As shown in Figs. 6 and 8, the V-shaped cut 6 exposes a large surface of the core 8 and this gives the glue a better chance to fasten the blade to the loom than if many thin laminations should be used, but I do not wish to limit this construction to any particular number of laminations.

The shape of the blade 5 is substantially the same as the standard practice, being curved in plan (Fig. 5) and side elevation (Fig. 6) and concaved or cupped in the palm and convexed in the back (Figs. 7 and 8). It may be made of spruce or other wood, or combinations of woods, by gluing the several parts together in a properly shaped form whereby the desired degrees of curvatures may be obtained. After being thus formed it is shaped in general outline and then glued to the loom and the finishing touches applied to it and to the whole oar thus produced.

It is a well known fact that objects built up of a plurality of laminations of thin wood glued together are very strong so far as splitting is concerned, and when these laminations are curved, especially if curved on two axes, they are exceedingly stiff and therefore it will be understood that this oar is not only practically indestructible but that it also holds its shape and therefore retains its grip on the water much better than one which deflects under the strain and permits the loss of its grip thereon by its change in shape. This oar has been pronounced by crew coaches and captains, and by battleship race boat officers as a very desirable article and filling a long felt want.

Having, therefore, described my invention, what I claim is:—

1. In an oar, the combination of a loom provided at the fulcrum with an aperture; and a relatively short reenforcing block inserted therein at the point of application of the load.

2. An oar as set forth in claim 1, wherein said reenforcing block extends entirely through the loom.

3. An oar as set forth in claim 1, wherein said reenforcing block is glued in a cavity in said loom.

4. An oar as set forth in claim 1, wherein said reenforcing block is of varying width, being widest at the point of application of the load and tapered off in each direction therefrom.

5. An oar as set forth in claim 1, wherein said reenforcing block is tapered in cross-section, being widest on the back side of the oar.

6. An oar comprising a loom and a blade separately and independently formed, the blade being provided with a longitudinal recess extending entirely through the blade from front to back and receiving the adjacent end of the loom and presenting side gluing faces to the same.

7. An oar comprising a loom and a blade separately and independently formed, the loom having a tapered end and the blade being provided with a tapered longitudinal recess extending entirely through the blade from front to back and receiving the tapered end of the loom and presenting side gluing faces to the same.

8. An oar comprising a loom and a blade separately and independently formed, the loom having a tapered end and the blade being provided with a tapered longitudinal recess extending entirely through the blade from front to back and receiving the tapered end of the loom and presenting side gluing faces to the same, the front and rear faces of the loom being flush with the front and rear faces of the blade and the latter presenting smooth unbroken front and rear faces.

9. An oar blade constructed separate from

the loom and consisting of a thick core of the same width as the blade and bent to form, together with a plurality of thin laminations extending entirely across the blade, all said parts being secured together.

10. An oar blade as set forth in claim 9, wherein said core is of varying thickness, being thickest at the oar wrist and tapered towards the tip.

11. An oar blade as set forth in claim 9, wherein said core lies between two of said laminations.

GEORGE Y. POCOCK.