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(71) Applicant **Bryan Foster Woodgate, 'Hillcrest', Pennance Road, Lanner, Redruth, Cornwall**
(72) Inventor **Bryan Foster Woodgate**
(74) Agents **M. J. Stephens & Co., Royal Building, 11 St. Andrew's Cross, Plymouth PL1 2DS**

(54) **Sculling rowlock**

(57) A rowlock for single-oar sculling of a boat comprises a U-shaped cradle (1) and a spindle (2) which projects from the closed end of the cradle in the opposite direction to the arms (3) of the latter. The inner surfaces (4) of the arms (3) are flat and mutually parallel, being interconnected in the valley of the cradle (1) by a curved surface (5) which is inclined to the axis of the spindle (2) at 45° and has a slight saddle curvature. In use, the spindle (2) is rotatably mounted in a socket at the stern of the boat and the configuration of the inner surface (4, 5) of the cradle (1) ensures that the rowlock provides sufficient leverage for an efficient sculling stroke. The parallel arms (3) allow the rowlock to swivel easily with the shaft of an oar without becoming unshipped, as is the case when conventional rowlocks with curved arms are used, and the curved surface (5) ensures that the oar is at the correct working angle.

FIG. 2

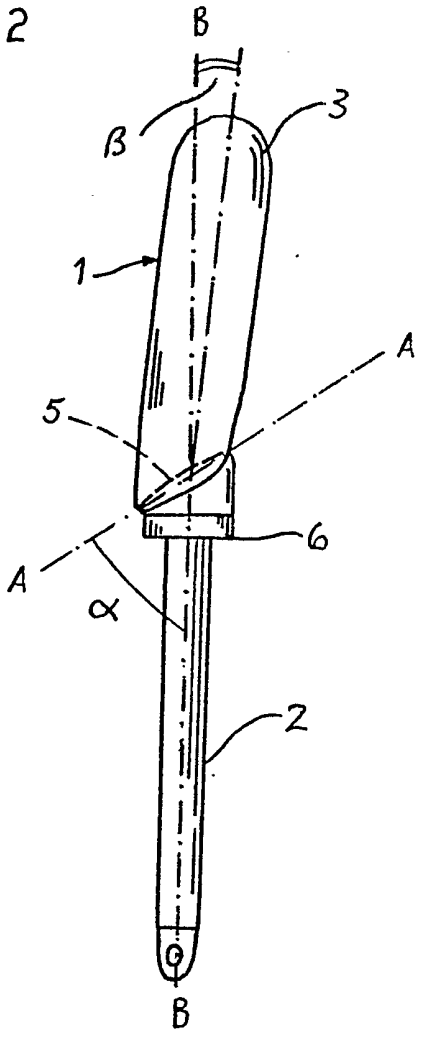

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FIG. 1

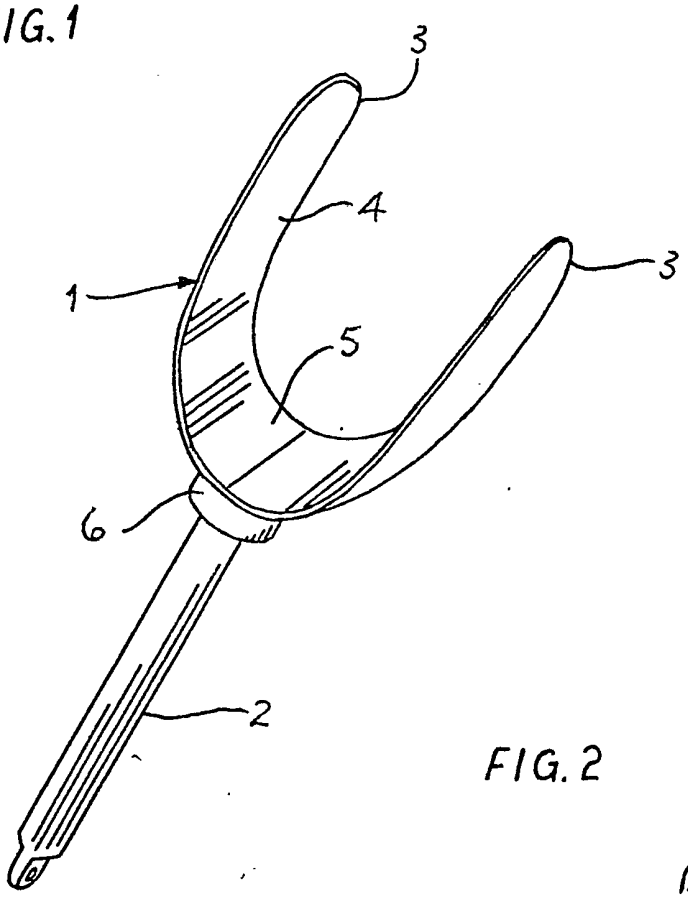
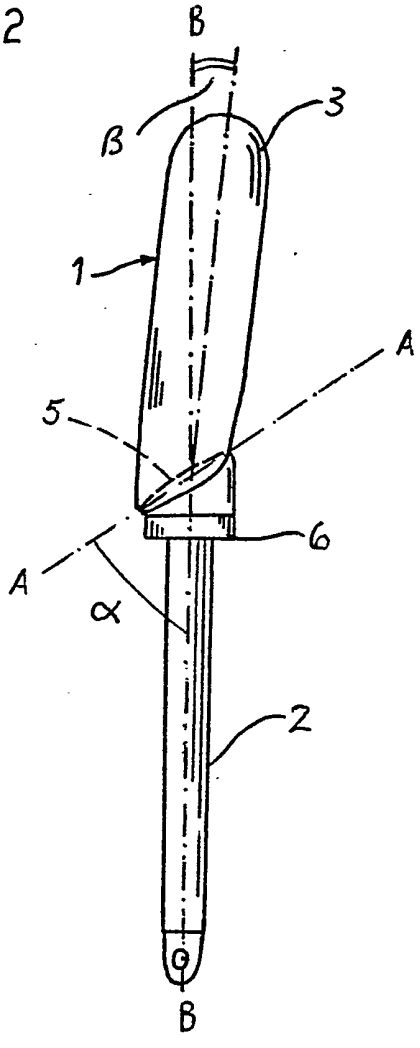


FIG. 2



SPECIFICATION

Sculling rowlock

The present invention relates to a rowlock or crutch for use on a boat which is propelled by single-oar sculling, that is, sculling using an oar or sweep which is rested at the stern of the boat and worked with a twisting stroke so that the blade follows substantially a figure-of-eight path through the water in each completed stroke.

Since the respective terms "rowlock" and "crutch" and "oar" and "sweep" are nowadays taken to be virtually synonymous, this specification will use "rowlock" and "oar" throughout.

Sculling is used particularly in small square or transom-sterned boats, such as dinghies and skiffs, which can be propelled easily by one person at the stern of the boat. These boats are used by fishermen and yachtsmen as boat-to-shore tenders and single-oar sculling is often preferred to double-oar rowing in crowded moorings or narrow waterways.

Various arrangements have been used at the sterns of boats in order to provide the necessary support and fulcrum for the oar. In wooden boats it is common practice to rest the oar in a notch in the top of the transom, although in some cases the oar may rest between a pair of thole-pins projecting upwardly from the top or capping of the transom. Since the advent of boats made from glass-reinforced plastics (fibreglass) which is generally unsuited to notching, there has been a tendency to use a conventional rowlock which is rotatable in a strengthened socket on the transom.

A typical rowlock of conventional design comprises a C- or horseshoe-shaped cradle which is generally circular in cross-section, and has a spindle which projects from the closed end of the cradle in the opposite direction to the arms. When this conventional type of rowlock is used for sculling, two drawbacks become apparent:

Firstly, the circular sectional shape of the cradle provides only a narrow zone of line contact with the oar, and thus allows undesirable relative movement between the rowlock and the oar which may result in damage to the oar and the provision of insufficient leverage for an effective sculling stroke.

Secondly, the convergence of the arms of the cradle at their free ends is not compatible with the relatively steep angle (typically 35° to 55° to the water surface) at which a sculling oar is worked. The inclination of the oar often results in a rowlock being unshaped, that is, being lifted from its socket by "hanging" on the shaft of the oar.

The object of this invention, therefore, is to provide a rowlock which is suitable for single-oar sculling and avoids the aforesaid drawbacks.

Accordingly, the present invention provides a sculling rowlock comprising a U-shaped cradle in which the shaft of an oar rests in use, and a spindle which projects from the closed end of the cradle in the opposite direction to the arms of the latter and which, in use, is rotatably mounted in a socket at the stern of a boat, the inner surface of the cradle forming a thrust-bearing surface and comprising substantially flat, mutually-parallel surfaces along the arms of the cradle, which are interconnected in the valley of the cradle by a curved surface inclined to the axis of the spindle.

When in use, the rowlock is mounted with its curved surface inclined downwardly in an outboard direction which facilitates the working of the oar at a steep angle and, together with the parallel arms, resists unshipping of the rowlock. The thrust-bearing surface as a whole provides a substantial surface area of contact with the oar, ensuring that the rowlock is swivelled by the oar with a minimum of relative movement which could result in damage to the shaft of the oar.

The curved surface may be inclined to the axis of the spindle at any angle less than 60°, but in preferred embodiments a typical angle of inclination is substantially 45°. The curved surface may have a slight saddle curvature, so as to be slightly convex in axial section, to allow for variations in the inclination of the oar during a sculling stroke.

In order to facilitate the imparting of rotation to the rowlock by the oar, so that the rowlock follows the sweeping motion of the oar, the arms of the cradle may be raked relative to the axis of the spindle so as to be inclined inboard of the boat in use. Although the arms may lie in a plane which is inclined to the axis of the spindle at any angle between 5° and 15°, the preferable angle of inclination is substantially 9°.

A preferred embodiment of the invention will now be more particularly described, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a perspective view of a sculling rowlock according to the present invention, and

Figure 2 is a side elevational view of the rowlock of Figure 1.

Referring now to the drawings, there is shown a sculling rowlock comprising a U-shaped cradle 1 and a spindle 2 which projects from the closed end of the cradle 1 in the opposite direction to its arms 3. In use of the rowlock, the spindle 2 is mounted rotatably in a socket at the stern of a boat (not shown) and the cradle 1 acts as a support and fulcrum for the shaft of a sculling oar (not shown). The arms 3 of the cradle 1 are spaced by an amount corresponding substantially to the diameter of the oar shaft.

The inner surface of the cradle 1 forms a thrust-bearing surface comprising flat, mutually-parallel surfaces 4 along the arms 3 and a part-cylindrical surface 5 in the valley of the cradle 1. As shown in Figure 2, the generatrix A—A of the part-cylindrical surface 5 is inclined at an angle α of substantially 45° to the axis B—B of the spindle 2, whilst the surface 5 itself has a slight saddle curvature, so as to be slightly convex in axial section, as shown in broken outline.

The configuration of the inner surface of the cradle 1 ensures that the rowlock provides sufficient leverage for an efficient sculling stroke.

The spacing and substantial parallelism of the arm surfaces 4 permit the oar shaft to fit snugly into the cradle 1, thereby minimising relative lateral movement between the rowlock and the oar shaft while ensuring that the rowlock swivels with the oar during each stroke. The part cylindrical surface 5 acts as a guide to ensure the correct working angle of the oar and the slight saddle curvature of the surface 5 allows for limited variations of this angle as necessary. The force exerted by the oar on the part-cylindrical surface 5 maintains the spindle 2 in its socket and resists unshipping of the rowlock during vigorous working of the oar.

As shown in Figure 2, the arms 3 lie in a plane C which is inclined to the axis B—B of the spindle 2 at an angle β of substantially 9°, so that the arms 3 are raked inboard of the boat when the rowlock is in use. This inclination of the arms 3 facilitates the imparting of rotation to rowlock by the oar, when the sweeeping direction of the oar is reversed at opposite ends of each stroke.

In most examples, the sculling rowlock will be made from brass or a similarly corrosion-resistant metal or metal alloy, although some light-duty embodiments may be moulded in a suitably tough plastics material such as a polyamide (nylon). In the illustrated example, which is made from brass, the upper end of the spindle 2 is provided with a bearer washer or bush 6. The washer 6 is made from a wear-resistant plastics, such as nylon, which has a low coefficient of friction to ease rotation of the rowlock in its socket in use.

Although it is envisaged that the present rowlock will be used primarily in transom-sterned dinghies and skiffs, it will be appreciated that a sculling rowlock according to the invention may also be fitted to the sternpost of a double-ended boat. Furthermore, the rowlock may be particularly useful in inflatable boats which, by virtue of their design, have poor directional stability when propelled by double-oar rowing.

CLAIMS

1. A sculling rowlock comprising a U-shaped cradle in which the shaft of an oar rests in use, and a spindle which projects from the closed end of the cradle in the opposite direction to the arms of the latter and which, in use, is rotatably mounted in a socket at the stern of a boat, the inner surface of the cradle forming a thrust-bearing surface and including substantially flat mutually parallel surfaces along the arms of the cradle, which are interconnected in the valley of the cradle by a curved surface inclined to the axis of the spindle.

2. A sculling rowlock according to Claim 1, in which the curved surfaces is inclined to the axis of the spindle at substantially 45°.

3. A sculling rowlock according to Claim 1 or Claim 2, in which the curved surface has a slight saddle curvature so as to be slightly convex in axial section.

4. A sculling rowlock according to any preceding claim, in which the arms are raked relative to the axis of the spindle so as to be inclined inboard of the boat in use.

5. A sculling rowlock according to Claim 4, in which the arms are inclined to the axis of the spindle at substantially 9°.

6. A sculling rowlock substantially as herein described with reference to, and as shown in, the accompanying drawings.

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