(No Model.)

F. HARBERS.

BOW FACING OAR.

No. 530,519. Patented Dec. 11, 1894.

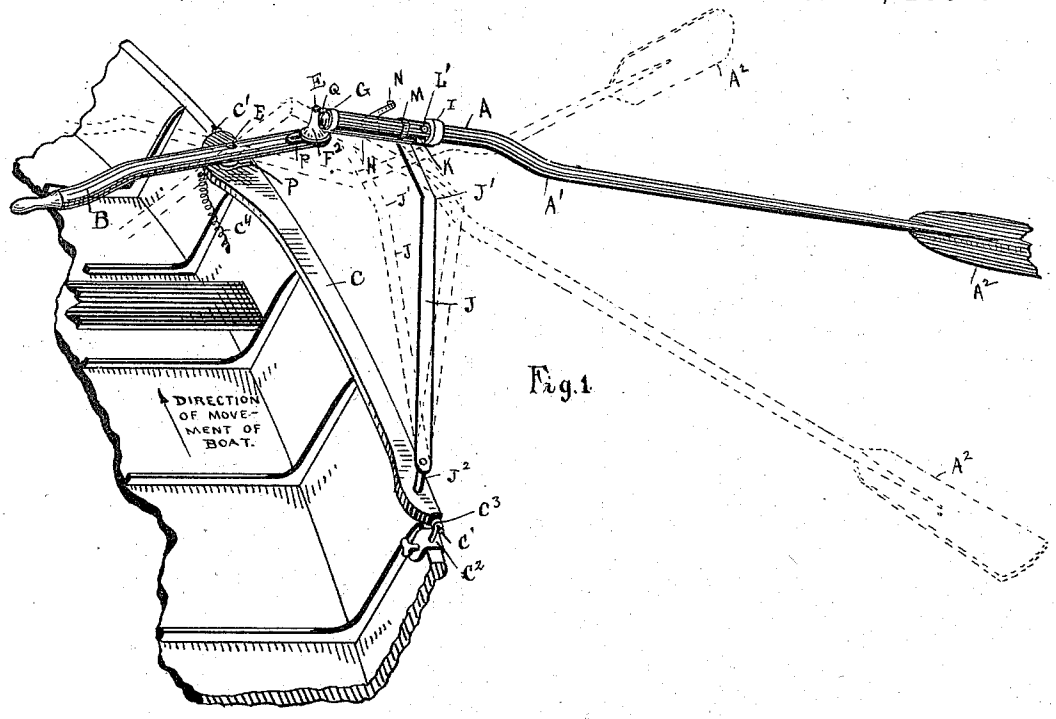


Fig. 1.

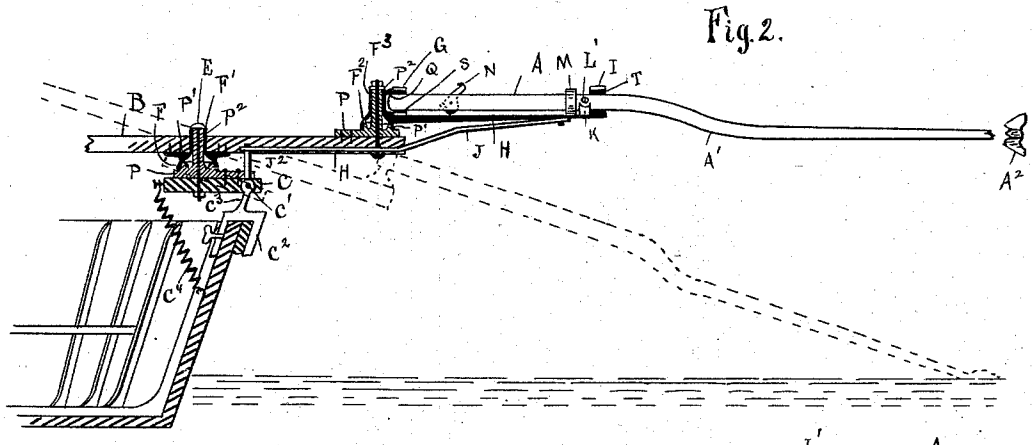


Fig. 2.

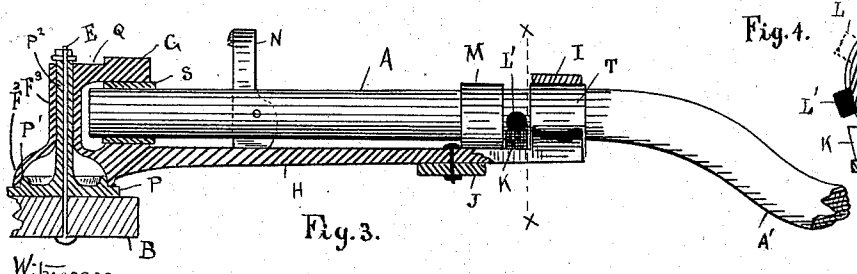


Fig. 3.

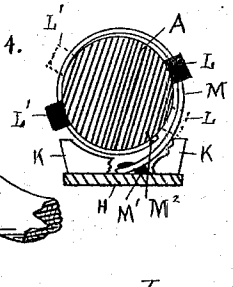


Fig. 4.

Witnesses.
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FREDERICK HARBERS, OF PEORIA, ILLINOIS.

BOW-FACING OAR.

SPECIFICATION forming part of Letters Patent No. 530,519, dated December 11, 1894.

Application filed March 15, 1894. Serial No. 503,710. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK HARBERS, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Bow-Facing Oars; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use of the same.

This invention relates to improvements in oars and has for its object to provide an oar with means for allowing a boat to proceed in the direction in which the oarsman is facing, and further, the object is to provide the oar with means whereby the oars may be feathered while passing through the air to take a stroke.

In the drawings presented herewith, Figure 1 represents a perspective view of the oar showing its application to a boat and showing its several positions in dotted lines. Fig. 2 is a side elevation of the oar showing means of mounting same on a boat as also showing its position in water in dotted lines. Fig. 3 is a side elevation of a section of the oar proper showing its position in its support and showing that support in part section. Fig. 4 is a cross section of the oar through dotted line *x x* Fig. 3.

The oar is represented at A, while B represents the operating bar which is pivoted to a swinging support C at E. This support C is attached at either end to the gunwale of the boat by the following means: A pin C′ is inserted in either end of the said support C and a clamp C^2 having a vertical eye bolt C^3 is secured on the top edge of the boat and forms a pivotal connection for the support by the pin C′ resting in the eyes of the said bolts C^3. A coil spring C^4 is attached at one end to the said support and at the other end to the side of the boat, and this spring has sufficient tension to keep the rowing mechanism balanced.

The operating bar or handle B is secured to the support C by a pivotal arrangement consisting (as shown in Fig. 2) of a plate P secured to the support C and having a raised annular flange P′ and a vertical tube portion P^2 which passes upward entirely through the bar or handle B. A cup F sets over the flange P′ and its upper portion terminates in a vertical tube portion F′ which incloses the said portion P^2, and with the said portion F is also cast a plate for securing the cup to the bar or handle and a bolt E passes entirely through the parts P and P^2 and through the support C.

It will readily be understood that the cup F bears on the plate P and moves with every motion of the bar or handle, the flange P′ keeping the said cup in its proper position. At the extreme end of the bar B is pivoted the oar A by substantially the same means as that employed for pivoting the said bar on the support C, with the exception of a plate H which is cast with the cup F^2 and extends outwardly for some distance to give the oar proper support. At the upper end of the tube portion F^3 is cast a bridge portion Q with which is cast a vertical ring G, which is also partly formed of the plate H. At the extremity of the said plate H is cast a second ring I on a line with the ring G. The rounded end of the oar A is thrust through both rings G and I and collars S and T are secured to the oar within the said rings G and I respectively.

A button or stop L L′ is placed on either side of the oar to bear against the edge of the ring I, and a stop K is cast with the plate H to form a stop for the said buttons L and L′ for the purposes hereinafter specified. A rod J is pivoted at one end to the plate H and is bent at J′ about a third of the distance between the two ends thereof and the opposite end of said rod is pivoted to a post J^2 on the end of the support C opposite the oar end.

As shown in Fig. 4 a spring M is secured at one end to the oar at M^2 and makes one turn around the oar and its free end engages a hook M′ made with the plate H.

A very important point and one on which I place a great deal of value, is the shape of the oar which causes the feathering when in operation. Just beyond the ring I the oar is bent downward from the level of its engaged end to a lower level. This bend is parallel with the oar blade A^2 so that when the blade is in a vertical position the bend A′ stands vertical.

In operation the oarsman handles the oars as he would an ordinary pair. In taking a stroke in the water the oar blade must of

course occupy a vertical position in order to draw water but when raising the oar out of the water and reversing the movement (the weight of the oar being below the bearing position thereof) the blade will be thrown into a horizontal position for "feathering" for the reason that as the act of reversing the handle takes place the oar hanging by a crank as it were is naturally thrown backward as the bearing portion of the oar moves forward and thus the blade gains a horizontal position and is there held by the spring M which is sufficiently strong to hold the oar in that position until the handle B is brought to rest to lower the oar into the water. As the handle and oar is brought to rest the momentum of the oar carries the oar with its blade downward against the strength of the spring into a vertical position again ready for a stroke. The weight of the oar being below the journaled end and the spring M being sufficiently strong to hold the weight of the oar when in a horizontal position, it will be seen that in whatever position the oar may be, it retains that position until moved by another action of the handle B. The buttons L and L′ before referred to being behind the ring I prevents the oar from leaving its bearings and at the same time the said buttons strike the stop K on the plate H, on either side, *i. e.:* when the oar is in a horizontal position, one of the buttons, L strikes the stop K and when thrown to the vertical position the opposite button L′ strikes the stop. The rod J besides having the bend J′ has also a downward bend as shown in Fig. 2, so that when the device is folded together parallel with the side of the boat, none of the parts interfere with one another.

When it is desired to fix the oar against feathering when going with the wind the cam N having a straight lower edge and which is pivoted to the oar, may be raised and this throws the oar into a vertical position and there firmly holds it.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a jointed oar, a handle B pivoted by suitable means on a tilting or swinging support secured to the boat, a coil spring secured at one end to the said support and at the other to the boat, an oar secured on a pivotal support by suitable means on the outer free end of said handle B, said oar having a partial revoluble movement in said pivotal support, the oar having a bend in its length whereby the blade of said oar is brought below the bearing or engaged portion thereof, for the purposes set forth and a rod bent substantially as set forth one end of said rod being pivoted to the pivoted oar support and the other to the oar pivotal support substantially in the manner and for the purposes set forth and described.

2. In a jointed oar for boats, an arm B pivotally mounted on a support C pivotally secured to the boat, substantially as set forth, the outer end of said arm B having a supporting plate connected therewith and provided with bearings, an oar having its loom journaled in said bearings, said oar having a bend beyond the journaled portion whereby the oar blade is carried below the journaled portion whereby the weight of the oar is carried below the said journaled portion substantially as and for the purposes set forth and described.

3. In a jointed oar the combination of the handle B pivotally mounted on a support C pivotally mounted on a boat, a spring C^4 secured at one end to the said support and at the other to the boat, the oar A constructed with the bend A′ substantially as set forth and for the purposes described and having its loom mounted in bearings composed of the rings G and I made with the plate H pivotally mounted on one end of the said handle B, a rod J bent at J′ substantially in the manner set forth and pivoted at one end to the said plate H and at the other by suitable means to the said support C, a stop K made with the plate H, the buttons L and L′ secured in suitable position upon the oar whereby the partial revoluble movement of the oar is limited, and a cam N pivoted to the oar for the purposes set forth and a spring surrounding the shank of the oar, one end being affixed to the oar and the other to the said plate H, all working together substantially in the manner and for the purposes specified.

4. In combination with a boat, a rowing mechanism comprising a handle B pivotally mounted on a tilting support pivoted on the boat, a pivot on one end of the handle for the oar and consisting of a flanged plate P terminating in a vertical portion P^2 secured to said handle B, a cup F seated on said plate and also terminating in a tube portion F′ inclosing said tube portion P^2, a bolt E passing through said portion P and F, a plate H carrying a ring I at its free extremity and also carrying the stop K, said plate formed with the said cup P, a ring G made with said cup P and plate H in line with said ring I, the oar A mounted within said rings G and I and provided with the bushings S and T within the said rings G and I respectively, a spring M encircling the loom of the said oar and secured at one end thereto, the other end to the plate H, the buttons L and L′ secured to the oar in proper position for the purpose set forth, a cam N pivoted to the oar for the purpose set forth, and rod J pivoted at one end to the plate H and at the other to the support C substantially in the manner and for the purposes set forth and described.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK HARBERS.

Witnesses:
G. ROOKE,
A. KEITHLEY.