(No Model.)

J. WRIGHT.

OAR.

No. 359,374. Patented Mar. 15, 1887.

Fig. 1.

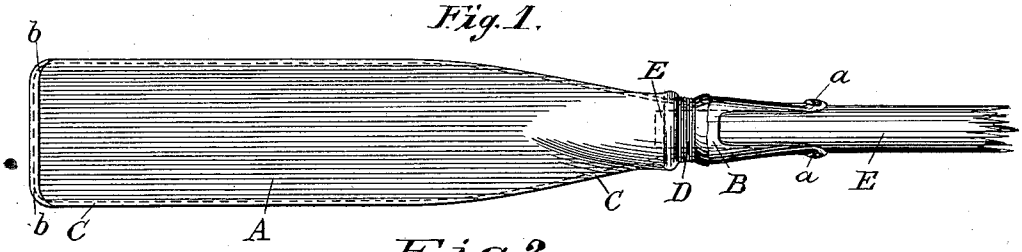


Fig. 2

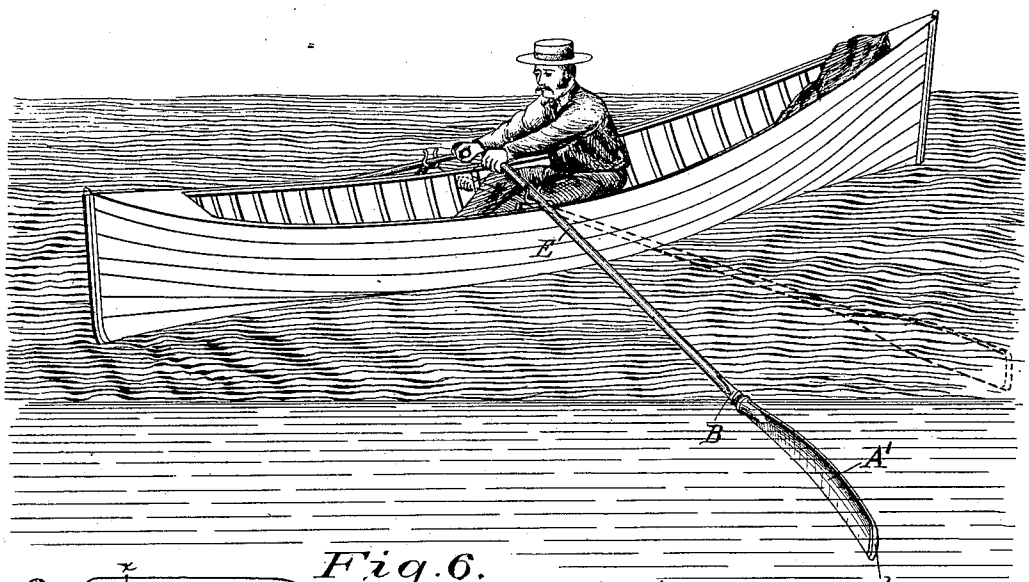


Fig. 6.

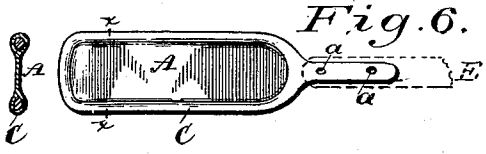


Fig. 7.



Fig. 5.



Fig. 3.

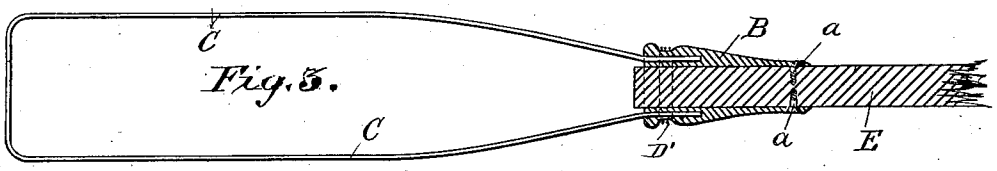
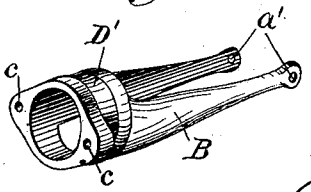


Fig. 4.



WITNESSES=

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UNITED STATES PATENT OFFICE.

JOHN WRIGHT, OF HOOSICK FALLS, NEW YORK.

OAR.

SPECIFICATION forming part of Letters Patent No. 359,374, dated March 15, 1887.

Application filed December 30, 1886. Serial No. 223,006. (No model.)

To all whom it may concern:

Be it known that I, JOHN WRIGHT, a citizen of the United States, residing at Hoosick Falls, in the county of Rensselaer, State of New York, have invented certain new and useful Improvements in Oars, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to oars and paddles; and it has for its main object the provision of an oar or paddle which shall normally offer the least resistance to its introduction into or its removal from the water, and which, when force is applied thereto in making a stroke, shall automatically assume a spoon-shape or concave form, and thus act to retain itself beneath the water, and in a position in which the greatest advantage is derived from the force expended thereon in propelling a boat or analogous vessel. In other words, the object is to provide an oar or paddle which normally assumes in the blade portion a straight flat form, which shall, when force is applied for the purpose of propulsion, assume a concave or spoon form. Other objects and advantages will appear in the following description, and the novel features thereof will be particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a side elevation of the blade portion of an oar or paddle constructed in accordance with my invention. Fig. 2 is a perspective of a person rowing a boat by means of my improved oar, the dotted lines showing the form of the blade as it is introduced into the water, and the full lines showing its form during the propelling-stroke. Fig. 3 is a vertical section of a portion of the oar provided with means for attaching one form of a blade embodying my invention. Fig. 4 is a perspective of a casting employed in the form illustrated in Fig. 2. Fig. 5 illustrates by transverse sections the forms assumed by the blade in the positions illustrated in Fig. 1. Fig. 6 is a modified construction, and Fig 7 a side elevation of the tip of the blade.

Like letters of reference indicate like parts in all the figures of the drawings.

A represents the blade of an oar constructed in accordance with my invention, the handle or body portion being represented by the part E. The blade A is constructed of any suitable flexible or elastic material—as, for example, rubber—and it is mounted or formed on the frame C, which may be connected in any suitable manner with the body E of the oar. In this instance I have shown two forms of connecting the blade to the oar; but I do not limit other novel features of my invention to any particular means for their connection to an oar.

As illustrated in Figs. 1, 2, and 3, the frame C is made of any suitable wire—for example, steel wire—which possesses sufficient rigidity, and is bent to the form of the outline of an ordinary blade, and having the ends thereof inserted in or secured to a ferrule or collar, B, secured to the body E of the oar in any suitable manner—as, for example, by screws *a*, the collar in this instance being provided with projecting arms perforated as at *a'* for the reception of the screws. It is also provided with perforations *c* for the reception of the ends of the frame C, and is circumferentially grooved, as at D', to receive a band or wire, D, for a purpose hereinafter specified. Over the frame C, as shown in Figs. 1 and 2, I draw a rubber or other elastic covering and secure the same by winding a band or wire, D, around the end thereof in the circumferential groove of the collar B, as clearly shown.

As thus far described, it will be seen that the blade of the oar when dipped into or removed from the water is straight in cross-section, as shown at the right of Fig. 5, and that when power is applied, as in making a stroke, it bulges to the rear in the direction of its movement by the pressure of the water thereupon and assumes a concave or spoon shape, as illustrated at the left of Fig. 5. So, also, at the completion of the propelling-stroke the blade automatically resumes its straight form, and can be readily lifted from the water. The advantage of the concave form in the face of the blade during a stroke is apparent, in that it acts to lock or hold the blade against a tendency to turn or "feather," thus relieving to a great extent the wrist of the oarsman.

In order to protect the tip of the blade from becoming worn, I apply thereto a sheet-metal

or other protector, *b*, which may be secured in any suitable manner—as, for example, by compressing the same upon the rubber and the inclosed frame at the end of the blade, as clearly illustrated in Fig. 7.

Instead of applying to the frame C a separate rubber tube or blank, I may vulcanize upon the frame C a body of rubber, as clearly illustrated in Fig. 6, whereby, instead of there being two plies of elastic material, there will be but a single ply, in the edges of which the frame will be embedded. In this figure, also, I illustrate another manner of connecting the blade with the oar, which involves the merging of the two opposite sides of the frame C into each other to form a tang, which tang may be inserted in a slot formed in the body of the oar and retained there by screws or bolts *a*. Said tang may be also in the form of a socket to receive the body of the oar, if desired. Other methods of connecting the blade with the oar will readily suggest themselves to skilled mechanics.

I am aware that a flexible material mounted upon ribs similar to the covering of an umbrella has been employed for use upon the hands and legs of a swimmer, but such a construction is not capable of or intended to perform the function of automatically—that is, without the use of the hand or other extraneous means—assuming a flat condition in a plane common with the direction of movement of an oar in entering and leaving the water. Oar-blades have also been constructed of sheet-steel; but this material has not the capability of locking the oar during the propelling portion of the stroke by bulging to form a bowl, which the water fills, and from which the water is expelled at the end of the stroke by the natural elasticity of the material of which the blade is made.

Having described my invention and its operation, what I claim is—

1. An oar-blade comprising a flexible material and surrounding a substantially rigid frame, substantially as specified.

2. An oar-blade consisting of a frame having an elastic covering mounted thereon, whereby the covering may stretch and relax within the frames, substantially as specified.

3. An oar-blade consisting of a rubber body portion having a frame embedded therein and near the edges thereof, substantially as specified.

4. In an oar, the combination, with the body portion, of a frame of blade form in outline, and an elastic covering mounted on the frame, substantially as specified.

5. The combination of the oar-body E, the frame C, having a blade-like shape, the elastic covering A, formed for connection with the oar-body E, and the fastening devices *a*, substantially as specified.

6. The combination of the oar-body E, collar B, having the peripheral groove D′, perforations *a*′, with the frame C, elastic covering A, and protecting-tip *b*, substantially as specified.

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

JOHN WRIGHT.

Witnesses:
E. K. McLEAN,
M. E. JOHNSTON.