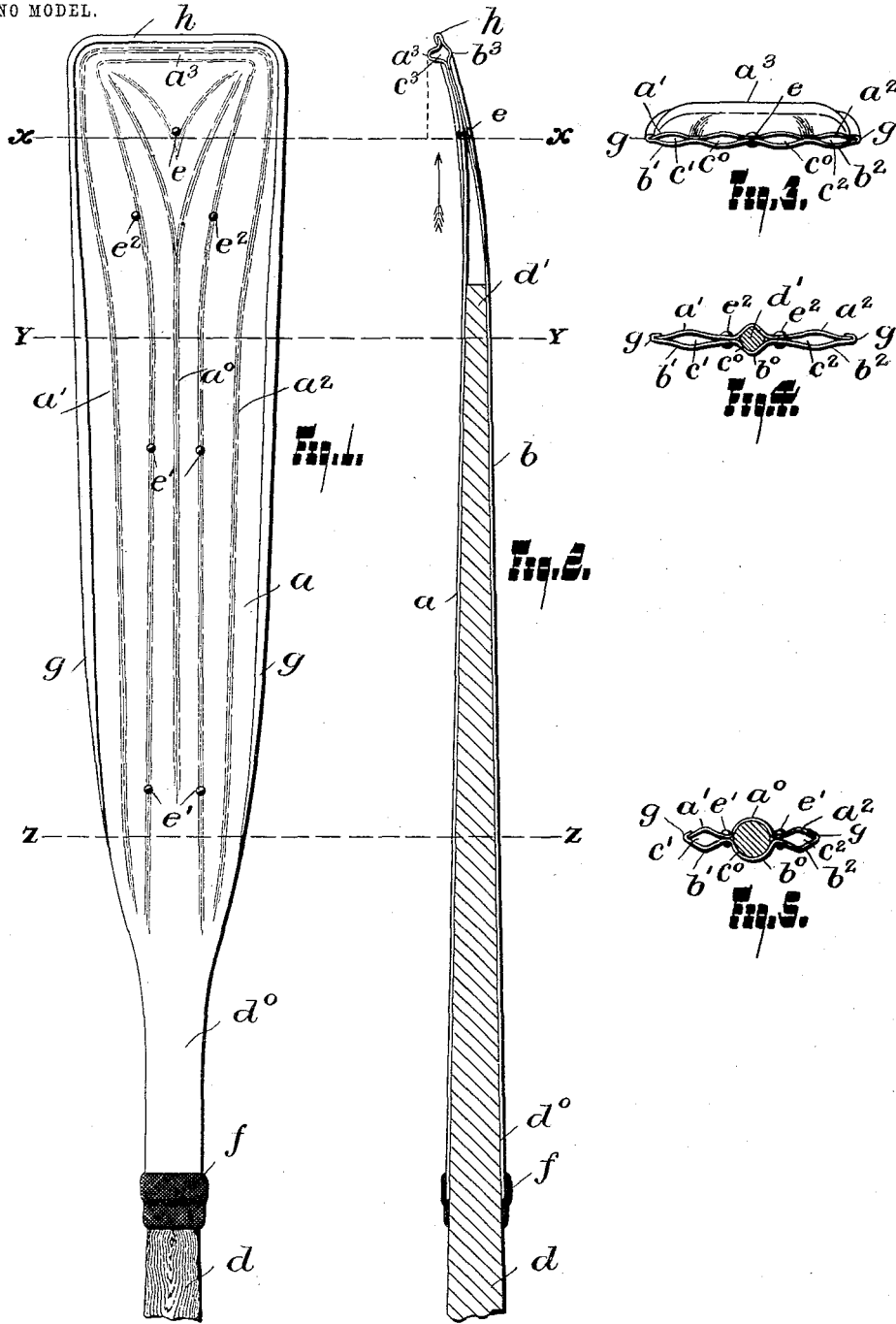


H. B. MURDOCK.

OAR OR SCULL.

APPLICATION FILED NOV. 25, 1902.

NO MODEL.



WITNESSES

H. H. Hager
Geo. A. Byrne

INVENTOR

H. B. Murdock
By *Wilkinson & Fisher*
Attorneys.

UNITED STATES PATENT OFFICE.

HORACE B. MURDOCK, OF DETROIT, MICHIGAN, ASSIGNOR TO THE
AMERICAN OAR COMPANY, OF DETROIT, MICHIGAN.

OAR OR SCULL.

SPECIFICATION forming part of Letters Patent No. 738,053, dated September 1, 1903.

Application filed November 25, 1902. Serial No. 132,770. (No model.)

To all whom it may concern:

Be it known that I, HORACE B. MURDOCK, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Oars or Sculls; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in oars or sculls, and especially to that class of oars or sculls which have a metallic blade.

The general objection to oars or sculls having metallic blades is that in order that the blade may be capable of standing the great strain thereon while in use it must be constructed of heavy or thick metal; otherwise it will have a tendency to buckle or be strained out of its normal or desired shape. This is obviously a great disadvantage, as the construction of the blade of thick metal necessarily increases the weight of the oar-blade and hinders to a great extent the easy manipulation of the oar. To overcome this objection to the increased weight of the oar or scull and at the same time avail myself of the manifest advantages of using a metallic blade is one of the objects of my invention, and to this end I have designed a hollow oar-blade of such a construction as to form a truss within the oar-blade itself, so that I may utilize thin metallic sheets sufficiently trussed or braced in the manner of their construction as to withstand all normal strains thereon, and hence retain their proper lines or curves.

Another object of my invention is the method of attaching the blade to the loom or handle of the oar.

Still another object of my invention is to increase the resistance of the water against the oar, as by means of a transverse projection at the end of the blade, and thereby increase the effectiveness of the stroke.

The novel features of my invention will fully appear in the specification and will be more particularly pointed out in the claims, and in order to more clearly understand the same reference is had to the accompanying drawings, in which like letters refer to the same parts in the several views, and in which—

Figure 1 represents a top plan view of my improved oar-blade, a sufficient portion of the loom being shown to illustrate the manner of connecting the loom and blade. Fig. 2 is a central longitudinal section of the same; and Figs. 3, 4, and 5 are cross-sectional views on the lines $x x$, $y y$, and $z z$, respectively.

a is a sheet of thin metal forming the front of the blade and having a longitudinally-corrugated outer face, the raised surfaces $a' a^0 a^2$ of which are gradually flattened laterally as they approximate the outer or widened end of the blade. The face a is also provided at its outer end with a laterally-extending raised surface a^3 . b is a similar sheet of thin metal forming the back of the oar-blade and having corresponding raised surfaces $b' b^0 b^2$ and a laterally-extending raised surface b at the end thereof. The inner ends of these plates a and b are gradually reduced to form substantially semicylindrical extensions, so that when the blade is assembled, the similar parts registering, it is provided with a plurality of longitudinally-extending interior channels $c' c^0 c^2$, the transverse channel c^3 , and a central cylindrical extension d^0 for fitting the inner end of the blade to the loom d . The transverse channel c^3 is formed continuous with the longitudinal channels $a' a^2$.

Upon referring to Figs. 5, 4, and 3, respectively, it will be seen that the central channel c^0 is gradually reduced from a substantially cylindrical form to a more or less flattened form until it reaches a point near the end of the blade and beyond the inclosed gradually-tapering end d' of the loom or handle, where the front and rear sheets a and b are securely united centrally by means of a rivet e .

e' represents rivets for more securely fastening the blade to the loom or handle, as clearly indicated in Figs. 4 and 5, while e^2 represents rivets uniting and assisting to brace the metal sheets a and b beyond the reduced end d' of the loom or handle d .

f represents a gasket of rubber or other suitable material encircling the loom or handle and the end of the cylindrical extension d^0 .

In constructing the oar after the two sheets of metal have been properly shaped they are placed together in alinement and the side laps are rolled down, as indicated at g , after

which the blade is slightly sprung or spooned, which changes the lines of either relatively to each other, so that they form a truss within the substantially hollow blade. The oar is then riveted and the end laps h are rolled down, leaving the bulging or raised transverse projection a^3 at the end of the oar-blade for increasing the gripping-power of the blade with the water during the stroke. The end and side laps are then sealed by any suitable metal process—such as soldering, brazing, or galvanizing. In forming each half of the blade the metal is strained so that it acts as a truss within itself, and when the blade formed by the two sheets of metal is spooned the metal sheets also act as a truss.

By the construction adopted I am enabled to provide a blade formed from very thin metal, and consequently that part of the oar which is outboard will be very light compared to a solid metal blade or one constructed of thick sheets of metal.

It is obvious that many modifications might be made without departing from the spirit of my invention, and I do not limit myself to the details as described.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In an oar, the combination with a loom or handle, of a substantially hollow metallic blade, secured thereto, the walls thereof being so constructed as to form a transverse truss within the hollow blade itself substantially the length thereof.

2. In an oar, the combination with a loom or handle of a substantially hollow metallic blade secured thereto, provided with corrugated front and rear faces for forming a transverse truss within the hollow blade itself.

3. In an oar, the combination with a loom or handle, of a substantially hollow metallic blade secured thereto, provided with a longitudinally-corrugated face forming a plurality of longitudinally-disposed channels, the walls of which form a transverse truss within the blade itself substantially the length thereof.

4. In an oar, the combination with a loom or handle, of a substantially hollow metallic blade secured thereto, provided with longitudinally-corrugated front and rear faces for forming a transverse truss within the blade itself substantially the length thereof.

5. In an oar, the combination with a loom or handle, of a substantially hollow metallic blade secured thereto, provided with a longitudinally-corrugated face, forming a plurality of channels disposed longitudinally thereof, said corrugations assuming a gradually-flattened shape as they approximate the end of the blade.

6. In an oar, the combination with a loom or handle, of a substantially hollow metallic blade secured thereto, provided with longitudinally-corrugated front and rear faces, forming a plurality of channels disposed longitudinally thereof, said corrugations assum-

ing a gradually-flattened shape as they approximate the end of the blade.

7. In an oar, the combination with a loom or handle, of a substantially hollow metallic blade secured thereto and provided with a plurality of interior channels formed by the walls thereof, a cylindrical extension at the inner end thereof for receiving said loom or handle, and means for securing said handle in said blade.

8. In an oar, the combination with a loom or handle, of a substantially hollow metallic blade secured thereto and provided with a plurality of interior channels formed by the walls thereof, a cylindrical extension at the inner end thereof for receiving said loom or handle, a gasket of suitable material encircling the end of said cylindrical extension and said loom or handle, and means for retaining said loom or handle in said blade.

9. In an oar, the combination with a substantially hollow metallic blade provided with a plurality of channels extending longitudinally thereof, of a loom or handle extending a considerable distance in one of said channels, and rivets securing the front and rear faces of said blade beyond said loom or handle.

10. In an oar, the combination with a substantially hollow metallic blade provided with a plurality of channels extending longitudinally thereof formed by the walls of said blade, of a loom or handle extending a considerable distance in one of said channels, and rivets securing the front and rear surfaces of said blade beyond said loom or handle.

11. A substantially hollow blade for oars, composed of two thin sheets of metal secured together, each sheet of metal being strained in the making so as to form a truss within the metal itself.

12. A substantially hollow blade for oars, comprising two thin sheets of metal secured together and forming a transverse truss substantially the length of said blade, each sheet of metal being so strained in the making as to form a truss within itself.

13. A substantially hollow blade for oars, comprising two thin sheets of metal suitably secured together, said sheets of metal being so constructed as to form a truss within themselves, and when assembled to form a plurality of longitudinally-disposed interior channels, the walls of which form a transverse truss within the hollow blade itself, substantially the length thereof.

14. A substantially hollow blade for oars comprising two thin sheets of metal suitably secured together and provided with longitudinally-disposed interior channels the walls thereof forming a truss within the blade.

15. A substantially hollow blade for oars comprising two thin sheets of metal suitably secured together provided with longitudinally-corrugated surfaces, forming interior channels longitudinally thereof, for forming a truss within the blade.

16. A substantially hollow blade for oars comprising two thin sheets of metal suitably secured together provided with longitudinally-corrugated surfaces, forming interior channels longitudinally thereof, for forming a truss within the blade, and tying-rivets securing said metallic plates near the outer end thereof.
17. A blade for oars having a transversely-disposed rib forming a raised portion near the outer front face thereof.
18. A substantially hollow metallic blade for oars having a transverse corrugation formed on the outer front face thereof.
19. A substantially hollow blade for oars comprising two thin sheets of metal suitably secured together and provided with a transverse corrugation formed on the outer front face thereof.
20. A substantially hollow blade for oars comprising two thin sheets of metal suitably secured together provided with longitudinally-disposed interior channels the walls thereof forming a truss within the blade and a transverse corrugation formed on the outer front face thereof.
21. A substantially hollow blade for oars, comprising two thin sheets of metal so constructed and secured together as to form a plurality of longitudinally-disposed interior channels, the walls thereof forming a truss within the blade, and a transverse channel formed continuous with two of said longitudinal channels, the walls of said transverse channel forming a raised surface on the front face of said blade near the outer end thereof.

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

HORACE B. MURDOCK.

Witnesses:

M. D. LINTON,
H. H. HAGER.