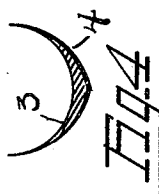
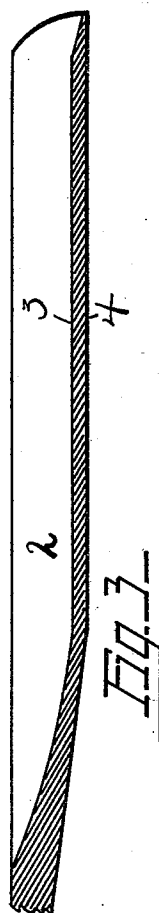
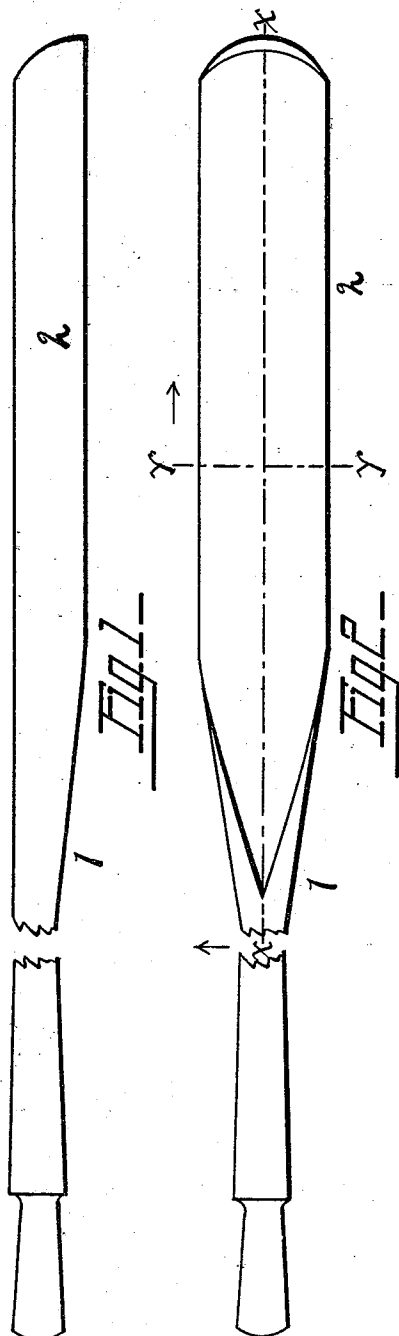


(No Model.)

T. DUNLAP.
OAR.

No. 560,980.

Patented May 26, 1896.



WITNESSES

Carl H. Keller.
Maud Schmuckert.

INVENTOR

Thomas Dunlap
By William Webster
Atty

UNITED STATES PATENT OFFICE.

THOMAS DUNLAP, OF TOLEDO, OHIO.

OAR.

SPECIFICATION forming part of Letters Patent No. 560,980, dated May 26, 1896.

Application filed April 10, 1895. Serial No. 545,128. (No model.)

To all whom it may concern:

Be it known that I, THOMAS DUNLAP, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Oars; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form part of this specification.

My invention relates to an improvement in oars, and has for its object to construct an oar having a blade of greater resistance in front when in action and less tendency to draw water after it than those heretofore in use.

The invention consists, broadly, in an oar having a blade with its front face formed so as to represent a surface molded on the lines of one-half of the interior of a cylinder, the diameter of which equals the width of the blade and the axis of which is parallel to the center line of the shaft of the oar extended. Said front face along its whole length is a single semicylindrical straight channel, not broken by ridge or depression and not deflected by spoon curves, whereby when the oar is in action the water in front of it will be prevented from upward or downward flow, thus securing increased leverage of the oar upon the oar-lock, and its upward flow will be free from friction of ridges, depressions, or spoon curves, thus facilitating its release when the stroke is being finished, and with a rear side molded on lines of equal length to the front face, parallel thereto, and so extended as to present in cross-section the exterior of an equilateral-pointed arch located sufficiently in rear of the front face to insure stability.

In the drawings, Figure 1 is a side elevation of the oar. Fig. 2 is a plan view showing the semicylindrical front face of the blade. Fig. 3 is a longitudinal vertical section of the blade on line X X of Fig. 2, and Fig. 4 is a cross-section on lines Y Y of Fig. 2.

1 on Figs. 1 and 2 designates the oar.

2 on Figs. 1, 2, and 3 designates the blade.

3 on Fig. 3 designates the bottom line of the semicylindrical straight channel in front

of the blade 2, whereby a pull on the oar may be made more effective than on an oar with a flat blade or a spoon-shaped one, whether its surface be divided by ridges or otherwise varied from the interior surface of a half-cylinder secured in lines parallel to the center line of the shaft of the oar extended. The channel so constructed has greater purchase on the water when a stroke is made by the rower, and the return of the oar in the water in front can be more easily released than from any other device heretofore used in rowing.

The face of the blade 2 is seen on Fig. 2 to be smooth, single, and uniform, without ridges, corrugations, or spoon-shaped curves, and on Fig. 3 the longitudinal lines of the channel in front of blade 2 are seen to be straight, uniform, unbroken, and parallel to the center line of the shaft of the oar extended.

3 on Fig. 4 designates the line of the channel in front of the blade 2 on the cross-section, which is seen to be a semicircle, and shows the shape of the front of the blade 2 to have but one transverse curve.

4 on Fig. 4 designates the outside line of the rear of blade 2 at cross-section, which is seen to be an equilateral-pointed arch and shows the shape of the rear side of the blade 2.

By reason of the formation of the rear side of blade 2 in shape of an equilateral-pointed arch, the oar in action leaves less vacuum behind it than any device heretofore in use in rowing.

By reason of the formation of blade 2 as above described, I am enabled to combine great rigidity and strength with a minimum weight, and a maximum resistance by the water to forward stroke of the oar with minimum draft from vacuum in rear of the blade.

What I claim is—

1. In an oar, a blade with its front face formed with a surface molded on the lines of one-half of the interior of a cylinder, the diameter of which equals the width of the blade, and the axis of which is parallel to the center line of the shaft of the oar extended.

2. In an oar, a blade formed with the rear side molded on lines longitudinally parallel to the longitudinal lines of the front face, and so drawn as to present in cross-section the outline of an equilateral-pointed arch.

3. As an article of manufacture, an oar

formed with a blade having a straight semi-cylindrical channel along its front side, and a rear side molded on lines longitudinally parallel to the longitudinal lines of the front
5 face, and so drawn as to present in cross-section the outline of an equilateral-pointed arch.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

THOMAS DUNLAP.

Witnesses:

H. VAN CAMPEN, Jr.,
ALICE E. CROOK.