(No Model.)

# E. KINDSCHER.

## ROWING APPARATUS.

No. 542,197. Patented July 2, 1895.

Fig. 1

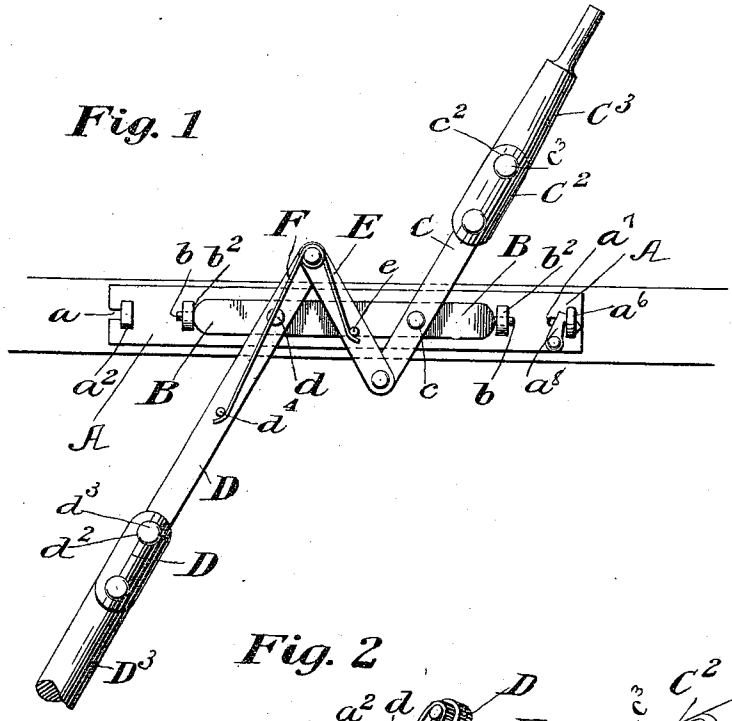
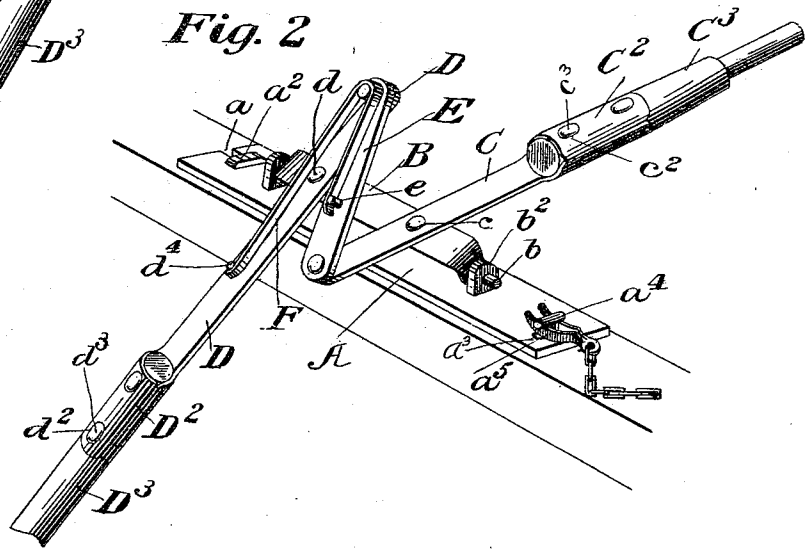



Fig. 2




WITNESSES:

J. L. Caplinger

R. F. Parry

INVENTOR

Emil Kindscher,

BY

R. F. Ryan Forth.

HIS ATTORNEY.

# UNITED STATES PATENT OFFICE.

EMIL KINDSCHER, OF BROOKLYN, NEW YORK.

## ROWING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 542,197, dated July 2, 1895.

Application filed July 14, 1894. Serial No. 517,593. (No model.)

*To all whom it may concern:*

Be it known that I, EMIL KINDSCHER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Rowing Apparatus; 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.

This invention relates to rowing apparatus.

The object is to produce a novel rowing apparatus for the sides of a boat, which shall be simple in construction, capable of ready and speedy application into place and manipulation in operation, and be efficient in service, in which there shall be such an arrangement of parts that an oarsman will be enabled to sit facing the direction of movement of the boat and be able to bring into operation the greatest possible power with a given exertion of energy, insuring great speed, with safety and saving of labor; furthermore, to produce a rowing apparatus capable of easy and speedy attachment to and detachment from the gunwale of a boat and by which, when the apparatus is so attached and in position for use, the oars will be directly in line laterally with the oarsman's seat and the sweep or stroke of the oar be in no way shortened or obstructed, and by which, also, the oar-blade may be speedily lowered into or raised from the water, and, finally, to produce a bow-facing rowing apparatus in which the ready and speedy replacement of the parts of the apparatus is permitted.

With these objects in view the invention consists, generally, in a cross-guide or rock-shaft journaled in bearings in suitable posts or lugs formed on a plate rigidly fastened to but capable of ready removal from or adjustment on the gunwale of a boat, two or more extensions or levers pivoted upon the rock-shaft and joined together by a connecting-link, means for holding the handle and oar-blade in the proper ends of the extensions or levers, a link or connecting-bar joining the two extensions or levers together, and a spring acting to open the blade-extension and the link, and, finally, in various novel details of construction.

In the accompanying drawings, forming part of this specification, and in which like letters of reference indicate corresponding parts, Figure 1 is a view in plan showing a plate rigidly fixed to the gunwale of a boat, a rock-shaft or bar journaled in bearings in posts or lugs on the gunwale-plate, a hand-extension or lever holding the end of a handle, a blade-extension or lever holding the end of an oar-blade, both extensions or levers being mounted upon the rock-shaft and connected together by a link, which is pivoted to the outer end of the hand-extension or lever and the inner end of the blade-extension or lever, showing, further, the manner of attaching the handle to the hand-extension or lever and the oar-blade to the blade-extension or lever, a spring acting to open the connecting-link and the blade-extension or lever, and a latch or catch, the hook portion of which passes through a screw-head penetrating one end of the gunwale-plate, the other end of the gunwale-plate being retained in position by a bolt or screw, which takes into a slot in the end of the plate; and Fig. 2 is a view in perspective, showing the same parts, except in place of the latch or catch device for rigidly holding the gunwale-plate upon the side of a boat a forked wedge-shaped piece, the members of the fork being designed to pass on each side of the screw under its head, the screw to take into a flat or longitudinal hole or slot in the plate.

In the drawings, A represents a plate fastened to the gunwale of a boat. In one end of this plate is a small slot $a$, into which a screw or bolt $a^2$ in the gunwale of a boat is to take when the plate is in position for use, the head of the bolt or screw being somewhat larger than the slot in the plate to retain the plate rigidly upon the gunwale. Near the edge of the other end of the gunwale-plate is a flat longitudinal hole or slot $a^3$, through which a screw or bolt $a^4$ on the gunwale is to pass. In order to rigidly hold the plate A upon the gunwale of the boat, and to prevent displacement of the same in use after the plate has been placed in position to have the screw or bolt $a^2$ take into the slot $a$, and the bolt or screw $a^4$ take into the slot or hole $a^3$, a forked wedge-shaped piece $a^5$, as shown in Fig. 2, is pushed between the under side of the head of the screw or bolt $a^4$ and the gun-

wale-plate, the members of the fork being on each side of the screw or bolt $a^4$. By this arrangement, the farther the forked wedge-shaped piece is forced under the head of the screw or bolt the greater will be the pressure upon the gunwale-plate, thus rendering the slipping or displacement of the plate impossible.

Instead of employing the forked wedge-shaped piece for retaining the end of the gunwale-plate upon the side of the boat just described, and shown in Fig. 2 of the drawings, I may use a thumb-screw $a^6$ to take through a flat hole or slot $a^7$ in the end of the plate A, after the same has been placed upon the gunwale, so that the screw or bolt $a^2$ may take into the slot $a$, the thumb-screw $a^6$ then to be given a half-turn to bring its head across the narrow sides of the flat hole or slot $a^7$. In order to prevent the turning of the thumb-screw $a^6$, I provide a latch or catch $a^8$, which is designed to have its hook portion pass through a hole or into an indentation in the head of the thumb-screw.

B indicates a rock-shaft or cross-guide, having its pivotal ends $b$ journaled in bearings $b^2$ in posts or lugs suitably sunk into or otherwise fixed in the face of the gunwale-plate A. The form of bearings of the rock-shaft shown may be varied—as, for instance, they may be in the form of ball-and-socket joints. Upon this rock-shaft or cross-guide B, at or adjacent to one end thereof, a hand-extension or lever C is pivoted, the pivot preferably consisting of a pin or post $c$, projecting from the hand-extension or lever C and taking into a hole or slot in the rock-shaft B, to enable the easy and speedy placing or removal of the hand-extension or lever upon the rock-shaft. The inner end of this hand-extension or lever C is provided with plates $C^2$, suitably shaped to receive the end of a handle $C^3$. Each of these plates is provided with holes or slots $c^2$, and through these holes and through the handle $C^3$ bolts or screws $c^3$ are to pass to rigidly hold the handle in the extension or lever. Also mounted upon the cross-guide or rock-shaft B at or adjacent to the other end thereof—that is, the end toward the stern of the boat—is a blade-extension or lever D. This blade-extension or lever D is preferably pivoted upon the rock-shaft B in a manner similar to the mounting of the hand-extension or lever C thereon—that is, by having a pin or post $d$ projecting from the blade-extension or lever and taking into a hole or slot in the rock-shaft B. The outer end of this blade-extension or lever is provided with plates $D^2$, suitably shaped to receive the end of an oar-blade $D^3$. Each of these plates is provided with holes or slots $d^2$, through which and through the oar-blade pass screws or bolts $d^3$, to firmly hold the blade in its extension in use.

A connecting link or shaft E, pivotally fastened at the outer end of the hand-extension or lever C and at the inner end of the blade-extension or lever D, joins these two extensions or levers together, so that upon pulling the hand-extension or lever C back from the farthest forward point of its sweep it will draw the connecting-link E toward itself—that is, toward the bow of the boat—and thereby cause the inner end of the blade-extension or lever D to move in the same direction. This blade-extension, being pivoted between its ends, forms a fulcrum, and when its inner end moves toward the bow of the boat its outer end is given a sweep or stroke toward the stern of the boat.

In order to aid in the propulsion of the boat by my novel rowing apparatus, I may provide a spring F, fastened so that its ends will bear against posts or abutments $d^4$ on the upper face of the blade-extension or lever D and against a lug or abutment $e$ on the face of the connecting-link E. When the apparatus is in the position assumed at the beginning of the stroke of the oar, the spring F will be compressed against itself, and as the stroke is being made the spring will act to force the blade-extension or lever and the connecting-link apart, thereby giving considerable movement to the blade-extension.

From the foregoing it will be seen that the oar-blade moves with the hand-extension or lever and not in opposite direction, as is the case of the ordinary oar, and this enables the rower to sit facing the bow of the boat—that is, in the direction of movement of the boat.

By pivotally mounting the rock-shaft upon the gunwale-plate the oar-blade may be lowered and raised by raising or pressing down on the handle, and also be readily and quickly withdrawn after the "recovery" without loss of speed or back-pressure on the oar-blade.

By arranging the fulcrums of the handle and blade-extensions or levers in the relation to each other and to the longitudinal center of the boat shown, I am enabled to produce the greatest possible leverage and thereby obtain the most effective stroke of the oar, and at the same time lateral displacement of the oar is quite impossible.

Although I have shown and described the preferred form of bearings for the rock-shaft and the preferred means of holding the gunwale-plate upon the side of a boat, I do not wish to be restricted to these particular forms or arrangements, as any well-known devices may be used for the same purposes.

It will be obvious that my invention may be applied to metallic as well as to wooden boats.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a rowing apparatus, the combination of a rock-shaft mounted upon a gunwale-plate, a hand and a blade-extension or lever pivotally mounted on the rock-shaft, a connecting-link joining the two levers or extensions together, plates toward the free ends of the extensions constituting means for attaching a handle and an oar-blade to and holding them

to their respective extensions, and means for removably attaching the gunwale-plate upon the side of a boat, the plate being slotted toward one end into which a bolt is to take, and perforated toward the other end into which a screw or bolt is to take to be held securely in place by a latch, substantially as and for the purpose set forth.

2. A rowing apparatus comprising a rock-shaft mounted upon a plate, a hand-extension or lever and blade-extension or lever, both extensions or levers being pivotally mounted upon the rock-shaft, a connecting-link joining the two extensions or levers together, and a spring acting to open the connecting-link and the blade-extension or lever to exert additional pressure upon the blade-extension, substantially as and for the purpose set forth.

3. A rowing apparatus comprising a rock-shaft mounted upon a suitable plate or support, a pair of levers pivotally mounted on the shaft and constituting a blade and a hand extension, a connecting-link joining the levers, and a two-armed spring secured at the juncture of the connecting-link and the blade-extension and having its members engaging abutments located respectively on the link and the blade-extension, substantially as described.

4. A bow-facing rowing apparatus, comprising a plate to be rigidly but removably fastened upon the gunwale of a boat, a rock-shaft having its pivotal ends journaled in bearings in posts or lugs on the gunwale plate, a hand-extension or lever and a blade-extension or lever, the hand and blade extensions or levers pivotally mounted upon the rock-shaft and joined together by a connecting-link which is pivoted to the outer end of the hand-extension or lever and to the inner end of the blade-extension or lever, a spring acting to open the connecting-link and the blade-extension or lever, sockets or plates on the end of the hand and blade-extensions or levers, designed to hold a handle and an oar-blade in their proper ends, and means for holding the gunwale-plate in place, substantially as and for the purpose set forth.

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

EMIL KINDSCHER.

Witnesses:

THEODORE DOERING,

BERNHARD PLOEN.