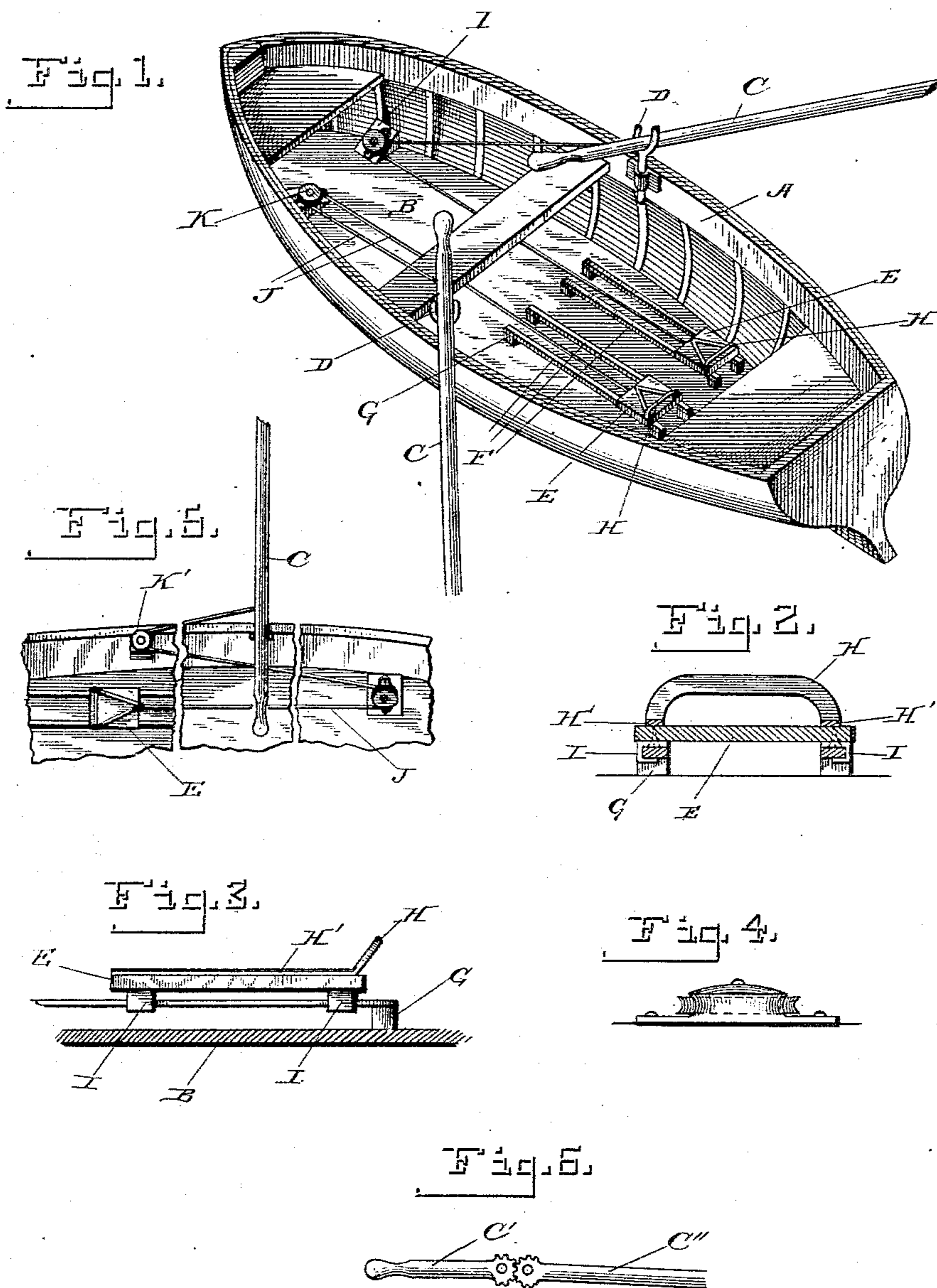


(No Model.)

A. G. SMITH.
ROWING APPARATUS.

No. 387,743.

Patented Aug. 14, 1888.



Witnesses,
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UNITED STATES PATENT OFFICE.

ARTHUR GALUSHA SMITH, OF RICHWOODS, ILLINOIS.

ROWING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 387,743, dated August 14, 1888.

Application filed June 2, 1888. Serial No. 275,813. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR GALUSHA SMITH, a resident of Richwoods, in the county of Peoria and State of Illinois, 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 pertains to make and use the same.

My invention is in rowing apparatus adapted to transmit directly to the oars the force exerted by the legs of the oarsman.

I am aware that sliding seats have been employed, and that this force is thus transmitted to the oars through the arms of the oarsman, and, further, that this force has been applied to sliding the oar-locks to increase the time of the oars' contact with the water; but, so far as I am aware, it is new to apply this force directly to the oars—that is, without passing it through the arms and hands—to aid the ordinary movements.

In the drawings, Figure 1 is a perspective view of a boat provided with my devices. Figs. 2, 3, 4 are details, hereinafter explained. Figs. 5, 6 show modifications of the arrangement of parts and the adaptation of the devices to a peculiar form of oar.

In all the figures where the parts appear, A is an ordinary boat, B an interior bottom board, and C are the oars, fulcrumed in the usual way in rowlocks D.

E E are sliding foot-rests, each moving upon a double track, F, fixed just above the bottom B upon supports G by bolts passing through track support and board. Each rest is secured to its track by hook-like clips I, each secured to the foot-rest and engaging one of the track-rails upon the outer side, as shown in Figs. 2, 3, which are, respectively, a section transverse to the track showing the foot-rest in position thereon and a section through board B parallel to the track, showing in side view the foot-rest and its support. A heel-supporting bar, H, is fixed to the foot-rest by convergent arms H', screwed upon the upper surface thereof, and these convergent arms, without securing the feet, so as to be a source of danger in case of accident, afford sufficient hold so that the heel may readily draw the

foot-rest forward after each backward thrust. From each foot-rest a cord, J, passes forward along the bottom of the boat to a pulley, K, fixed upon a block, L, attached to the bottom B, and thence backward and upward to the inner lever arm of the oar, where it is secured in any suitable manner.

From the construction it is plain that the foot-rests may slide along the tracks with freedom, but that they cannot be displaced either vertically or laterally. Now, if the length of the cord be such that when the inner end of the oar is pushed from the body of the oarsman the foot-rest is drawn well forward by the cord, the extension of the legs forces the foot-rests along the tracks, and necessarily draws the oar toward the body, aiding or replacing entirely the force exerted by the arms. Indeed, since the oars when arranged as in Fig. 1 are at all times guided by the hands in the usual manner the share of the work done by the arm is practically varied to suit the caprice of the oarsman; and, further, either hand or either foot, or either hand and the opposite foot simultaneously, as well as both hands or both feet, may rest while the work is done by the other members.

In Fig. 5 the cord is shown as passing from the pulley to a second pulley, K', upon the side of the boat, and thence forward to the outer lever-arm of the oar.

The device is also applicable to the jointed or bow-facing oar of Fig. 6, and to all other forms with which I am acquainted, with no change in principle, though the number and location of the fixed pulleys must be governed by the circumstances of each case. For these pulleys, whatever their number and location, simply change the direction of the force, so that it may at last act upon the oar to move it in the direction given it by the hands alone rowing in the ordinary way.

I am aware that it is not new to connect the foot-rest with the oars by devices analogous to those shown, and I do not therefore claim such connection as my invention.

What I claim is—

1. The combination, with a boat and two oars fulcrumed upon its sides, respectively, of two foot-rests sliding upon bars fixed to the bottom of the boat in rear of the oars, two in-

clined pulleys fixed to the boat in front of the oars near the junction of the bottom and sides, and two cords passing around the pulleys, respectively, and connecting each foot-rest with
5 the lever-arm of the corresponding oar.

2. The combination, with a boat and oars fulcrumed upon its sides, of sliding foot-rests secured to the bottom of the boat in the rear of the oars and each having a stop to receive
10 the thrust of the foot and a rearwardly-narrowing recess for the back of the heel, two pulleys fixed to the boat in front of the oars, and

two cords passing over the pulleys, respectively, and connecting each foot-rest with the lever arm of the corresponding oar, substantially as and for the purpose set forth. 15 .

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ARTHUR GALUSHA SMITH.

Witnesses:

O. B. GALUSHA,
GEO. T. PAGE.