

(No Model.)

H. W. HOEFT.
MEANS FOR PROPELLING BOATS.

No. 515,682.

Patented Feb. 27, 1894.

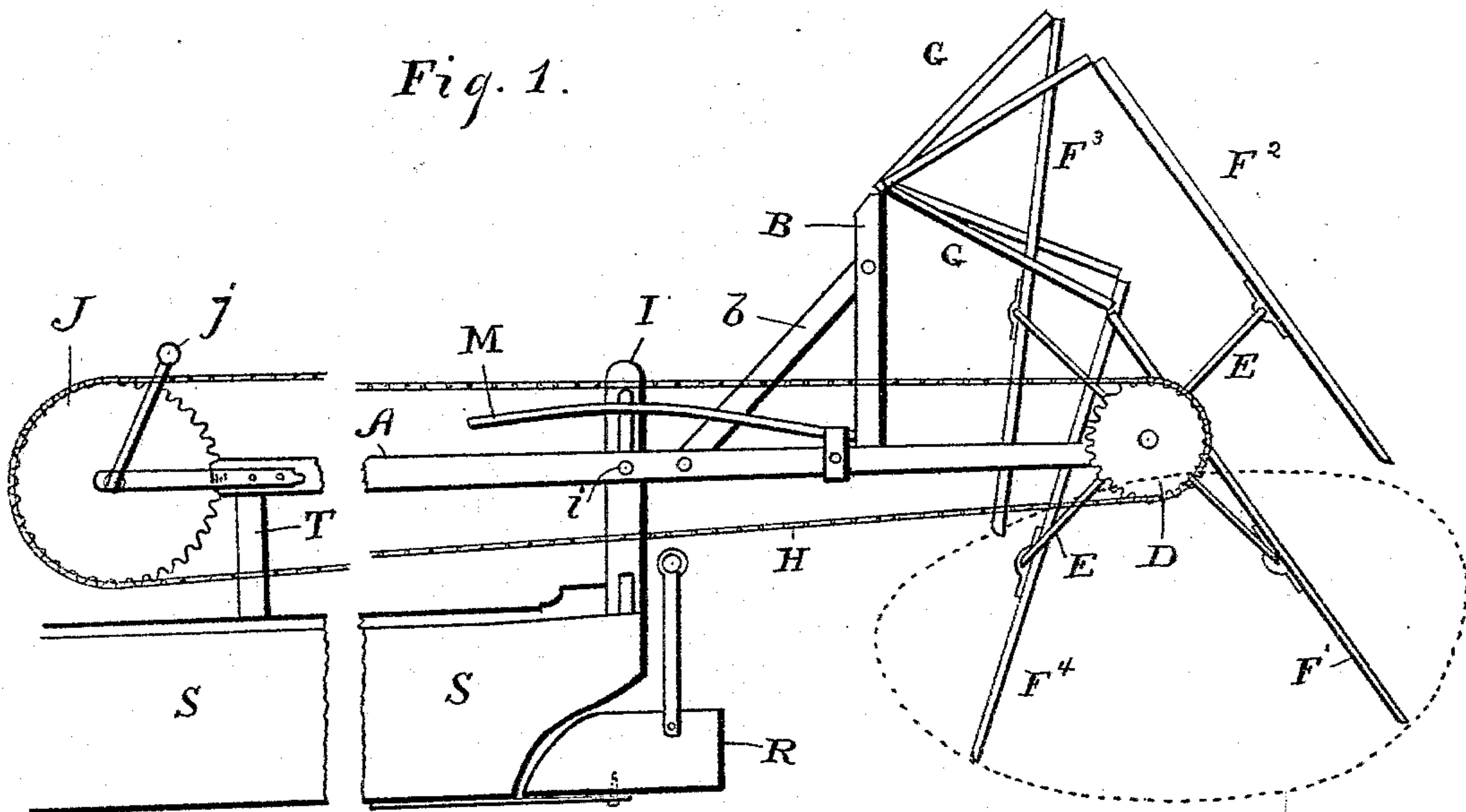
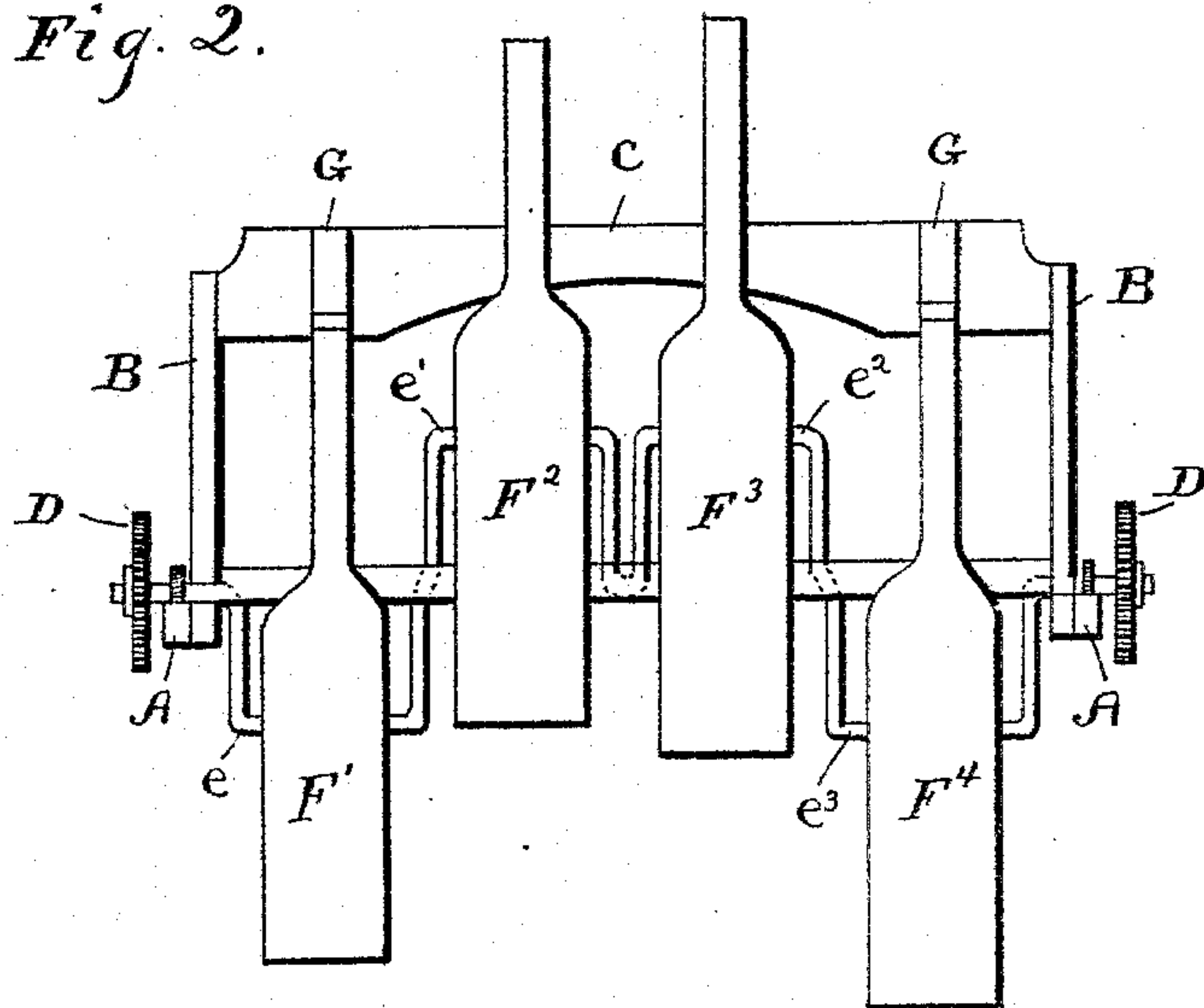


Fig. 2.



WITNESSES

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MEANS FOR PROPELLING BOATS.

SPECIFICATION forming part of Letters Patent No. 515,682, dated February 27, 1894.

Application filed February 3, 1893. Serial No. 460,902. (No model.)

To all whom it may concern:

Be it known that I, HERMAN WILLIAM HOEFT, a citizen of the United States, residing at the city of La Crosse, in the county of La Crosse, State of Wisconsin, have invented certain new and useful Improvements in Means for Propelling Boats; 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 instrumentalities for propelling water craft, such as row boats, by hand or other power.

The objects of the invention are to obtain steadiness of movement, a continuous and even pull, and the maximum amount of propelling force from the paddles.

The improvement consists of the novel features and the peculiar construction and combination of the parts which will be hereinafter more fully described and claimed and which are shown in the annexed drawings, in which—

Figure 1 is a side elevation of the invention showing its application, an intermediate portion being broken away to reduce the length of the illustration. Fig. 2 is a rear end view of the invention.

The paddles or propelling mechanism are located in the stern of the boat so as not to interfere with crafts, brush, and landing sidewise. There will be four paddles, this being the least number that will bring forth a steady and continuous pull as discovered by actual demonstration. Each paddle will be mounted about midway of its ends upon a crank and will be connected at its upper end by a pitman with a suitable support. By this arrangement the working end of the paddle will travel in an orbital or elliptical path, substantially as shown by the dotted lines in Fig. 1. The paddles, F^1 , F^2 , F^3 , F^4 , are arranged side by side in parallel relation and have their upper ends reduced and connected by pitman G with a support or cross bar C which is attached at its ends to vertical standards B rising from side bars A . The standards B are suitably braced by stays b and are secured at their lower ends to the side bars A .

The crank arms e , e' , e^2 and e^3 form an integral part of a single compound crank shaft E

which is journaled near its ends on suitable bearings provided on the bars A and which is provided at its ends with sprocket wheels D around which the drive chains H pass for the purpose of transmitting motion to the crank shaft E . These crank arms e , e' , e^2 and e^3 stand at different relative angles so that the paddles will be successively brought into efficient service and returned to the starting point in such a manner that one or more will be traveling through the water and perform efficient service in the propelling of the craft while the others are returning to a point to perform efficient work.

The pitmen G are pivotally connected at one end to the upper ends of the paddles and at the other end to the support or cross bar C and are adapted to vibrate to adapt themselves to the various movements of the different paddles.

The side bars A , standards B , braces b and the cross bar C form a suitable frame or support for the propelling mechanism. This frame is vertically adjustable to raise and lower the propelling mechanism to effect a greater or less dip of the paddles. In adapting the frame to a boat, the latter is provided with suitable standards T and I , said standards forming a rest for the side bars A and the standards I being slotted at their upper ends and adapted to receive a fastening i by means of which the side bars A are adjustably secured to the said standards I . Suitable drive wheels J are provided and conveniently located to receive the drive chains H by means of which the crank shaft E is driven. These drive wheels may be operated by any well known power, and in the present instance are shown provided with a crank j by means of which they are operated by hand.

The propelling mechanism is constructed and applied to the craft so as to be readily removed when desired, and being located at the stern is out of the way and will not interfere with the loading and unloading of the boat.

In the operation of the paddles the lower ends travel in an elliptical path, the major axis of which is parallel with the surface of the water thereby obtaining the maximum amount of stroke. The elliptical path, shown by the dotted lines in Fig. 1 is effected by the

peculiar mounting of the paddles upon the crank portion of the crank shaft E and by the pitman connection G with the support or cross bar C.

5 By having the parts proportioned and disposed so that the paddles will describe the elliptical path illustrated by the dotted lines in Fig. 1, the said paddles will obtain the maximum amount of thrust or propulsion
10 power.

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

15 The herein shown and described mechanism for propelling boats consisting of vertical standards T and I, the latter having vertical slots, side bars A projecting beyond the stern of the boat, and having the forward

or inner ends supported on the standards T, and having adjustable connection with the 20 said slotted standards I, standards B rising from the side bars A and supporting a cross bar C, a crank shaft journaled in the outer ends of the side bars A and having crank 25 portions, paddles mounted between their ends on the said crank portions, pitmen connecting upper ends of the paddles with the said cross bar, and mechanism for actuating the said crank shaft, substantially as described for 30 the purpose specified.

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

HERMAN WILLIAM HOEFT.

Witnesses:

JOHN JACOB ESCH,

WALTER CLARENCE WINTER.