

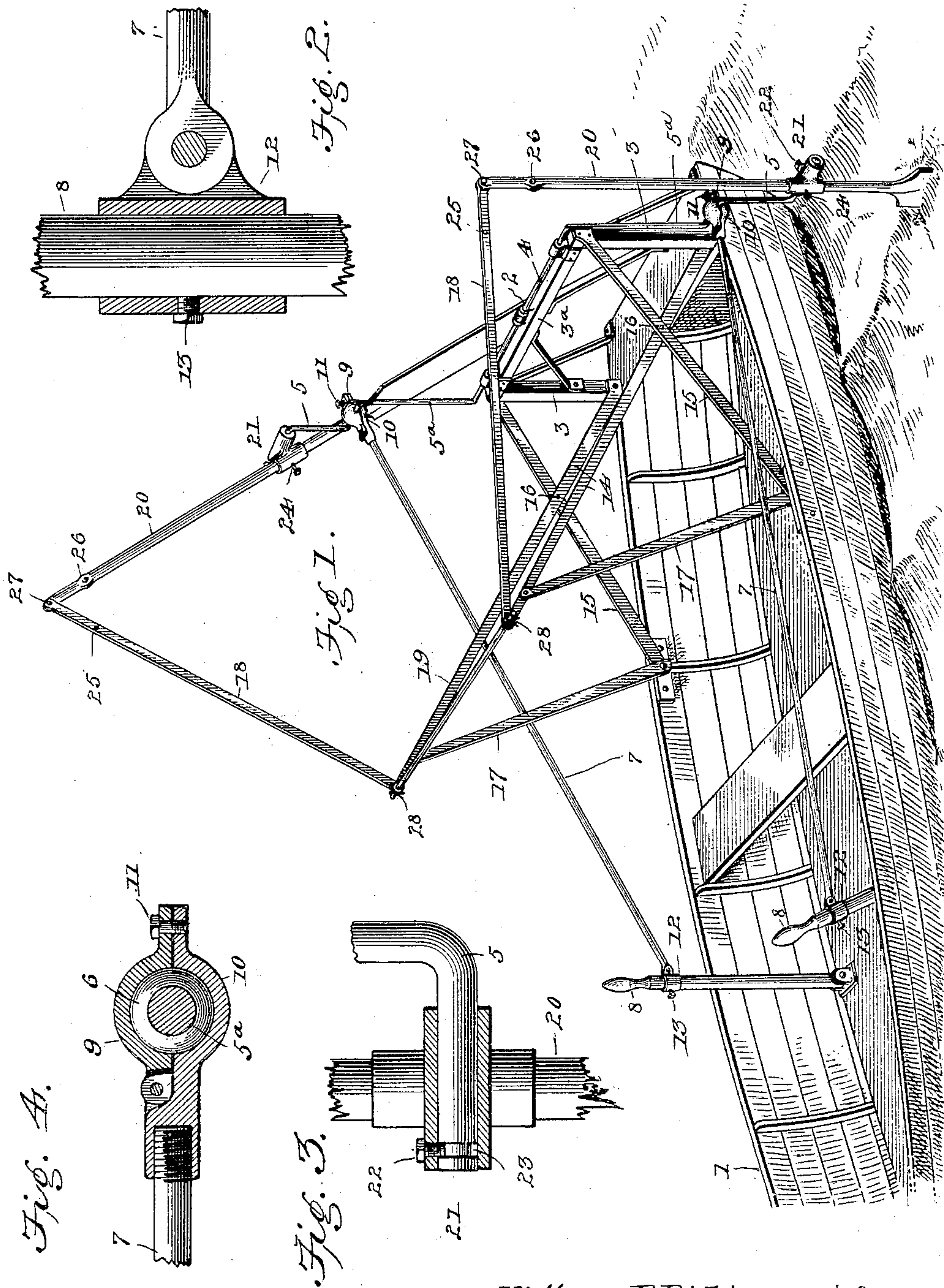
No. 611,679.

Patented Oct. 4, 1898.

W. P. DICKINSON.
PROPELLING MECHANISM.

(Application filed Mar. 31, 1898.)

(No Model.)



Witnesses

E. S. Munn
[Signature]

William P. Dickinson. Inventor

By his Attorneys,

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UNITED STATES PATENT OFFICE.

WILLIAM PUTNAM DICKINSON, OF WILMINGTON, NORTH CAROLINA.

PROPELLING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 611,679, dated October 4, 1898.

Application filed March 31, 1898. Serial No. 675,976. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PUTNAM DICKINSON, a citizen of the United States, residing at Wilmington, in the county of New Hanover and State of North Carolina, have invented a new and useful Propelling Mechanism, of which the following is a specification.

My invention relates to rowing or boat-propelling mechanism adapted to be operated manually; and the object in view is to provide a simple, inexpensive, and efficient apparatus of this class which can be applied, with slight variation of construction, to boats of different sizes and kinds, and also to provide simple means whereby adjustment may be made to vary the length and depth of the strokes of the paddles as well as the movement of the operating or hand levers to produce the desired stroke.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a perspective view of a rowing mechanism constructed in accordance with my invention applied in the operative position to a boat. Figs. 2 and 3 are detail views, respectively, of the connection between the pitman and the hand-lever and the connection of a paddle with the crank-shaft. Fig. 4 is a detail view of the connection between the rear end of a pitman and the intermediate crank.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

Secured to a boat 1 at its stern is a bearing-bracket 2, having terminal uprights 3, and mounted in suitable bearings on said bracket is the spindle portion 4 of a double crank-shaft, the same having terminal cranks 5 and intermediate cranks 5^a. Said intermediate cranks are provided with bearing-balls 6, and engaged therewith are the rear ends of pitmen 7, connected with operating or hand levers 8. Said pitmen are fitted at their rear ends with ball-sockets consisting of fixed and hinged sections 9 and 10 and connected by set-screws 11; whereby suitable adjustment of the socket members may be made to take up lost motion and at the same time whereby

the disconnection of a pitman from the crank-shaft may be accomplished with facility to provide for the folding of the rowing apparatus into compact form for transportation and storage. Said operating or hand levers are fulcrumed, preferably at their lower extremities, upon the boat frame or shell, and the connection between the front end of a pitman and the operating-lever is attained by means of a sleeve 12, fitted to slide upon the lever and having the extremity of the pitman pivotally mounted thereon, said sleeve being secured at the desired adjustment or at the desired interval from the fulcrum of the lever by means of a set-screw 13 or its equivalent. By the adjustment of the sleeve upon the operating-lever the leverage power in the operation of the crank-shaft may be varied to suit the conditions of operation and also the length of arm of the operator.

Extending upwardly and forwardly from the uprights 3 at the extremities of the bracket-plate are supporting-arms 14, and intersecting said arms at intermediate points are downwardly and forwardly inclined braces 15, extending from the upper ends of said uprights, the latter being preferably connected at their upper ends by a cross-bar 3^a, said supporting-arms and braces being secured at their point of intersection by means of a bolt 16 or its equivalent; also connecting the lower front end of the braces 15 with the upper front ends of the supporting-arms are braces 17, which serve to give rigidity to the entire structure, whereby the oscillatory reach-bars 18, which extend rearwardly from the upper ends of the supporting-arms, are held from unnecessary vibration. The upper ends of the supporting-arms 14 are also preferably connected transversely by a brace-rod 19.

The paddles 20 are fulcrumed at intermediate points upon the outer cranks of the shaft by means of journal-boxes 21, held in place by means of pins 22, engaging annular grooves 23, and the shanks or stems of the paddles are fitted for axial adjustment in suitable guides in the journal-boxes and are adapted to be secured at the desired adjustment by means of set-screws 24 or the equivalents thereof to vary the length of the downwardly-projecting or blade portions of the

paddles to suit the depth of the water in which the boat is being operated. The rear ends of the reach-bars 18 are connected with the upper ends of the stems or shanks of the paddles, and this connection is preferably adjustable in order to vary the inclination at which the paddles enter and leave the water. In the construction illustrated the reach-bars and paddle shanks or stems are provided with series of openings 25 and 26, either of which are adapted to register for the reception of pivot-bolts 27. The front ends of the reach-bars are fitted upon journals formed by the projecting extremities of the transverse brace-rod 19 and are held from lateral displacement by means of pins 28, engaging annular grooves in said journals.

It will be understood from the foregoing description that the oscillation of the operating or hand levers causes the communication of motion from the pitmen to the intermediate cranks of the crank-shaft, and hence to the paddles, of which the upper ends are caused to travel in an arc-shaped path by means of the reach-rods 18. The engagement of the bolts 27 with openings 25 nearer the front ends of the reach-rods will cause the positioning of the paddle-blades more in rear of the vertical planes of the fulcrum-points of the paddles, while the engagement of said bolts 27 with openings 26 nearer the fulcrums of the paddles will cause a greater sweep of the paddles in operation; also, the sweep and depth of stroke of the paddles may be varied by the adjustment of the shanks or stems thereof in the journal-boxes 21, and the necessary length of stroke of the operating-levers to cause the rotation of the crank-shaft may be varied by the adjustment of the points of connection of the pitmen with said levers.

Various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. In a propelling mechanism, the combination with a supporting-frame constructed for application to a boat contiguous to the stern thereof, of a double crank-shaft, mounted upon said frame, operating-levers fulcrumed in advance of the crank-shaft, pitmen connecting the operating-levers with the intermediate cranks of said shaft, means for va-

rying the points of connection of the pitmen with the operating-levers, paddles having their shanks or stems journaled upon the terminal cranks of the shaft, means for varying the points at which the paddle shanks or stems are connected with the shaft, and pivotal reach-rods connecting the upper ends of the paddle shanks or stems with the frame in advance of the paddles, substantially as specified.

2. In a propelling mechanism, the combination with a crank-shaft and means for communicating rotary motion thereto, of journal-boxes mounted upon cranks of said shaft and provided with guides, paddles having their shanks or stems fitted for axial adjustment in said guides, means for securing the paddle shanks or stems at the desired adjustment, and reach-rods pivotally connected to the paddle shanks or stems and extending forwardly therefrom to fixed parts of a supporting-framework, substantially as specified.

3. In a propelling mechanism, the combination with a supporting-frame, of a crank-shaft and means for communicating rotary motion thereto, reach-rods pivotally mounted at their front ends upon the frame, paddles having their shanks or stems fulcrumed upon cranks of said shaft, said paddle shanks or stems and the reach-rods being provided respectively with series of openings for registration, and pivot-bolts engaging the registering openings to vary the points of connection of the reach-rods with said shanks or stems, substantially as specified.

4. In a propelling mechanism, the combination with a supporting-frame, of a double crank-shaft mounted thereon and carrying paddles, reach-rods connecting the upper ends of the paddle shanks or stems with fixed parts of the framework, operating or hand levers, sleeves mounted for vertical adjustment upon said levers, means for securing the sleeves at the desired adjustment, and pitmen pivotally connected at their front ends to said sleeves and at their rear ends to cranks of said shaft, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM PUTNAM DICKINSON.

Witnesses:

T. C. DICKINSON,

WILLIAM F. STOKES.