

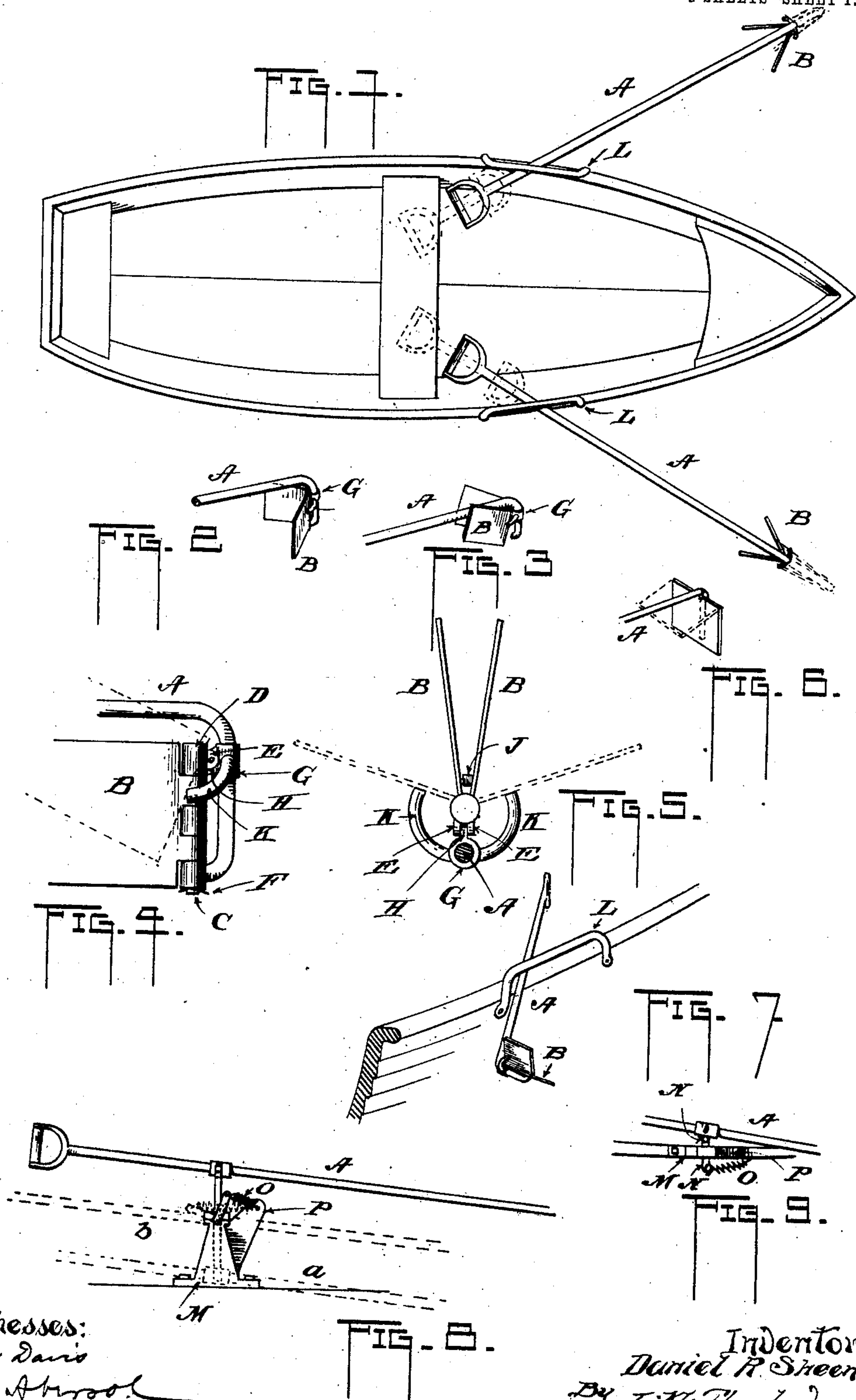
No. 826,693.

PATENTED JULY 24, 1906.

D. R. SHEEN.
BOW FACING ROWING MECHANISM.

APPLICATION FILED MAR. 3, 1905.

2 SHEETS—SHEET 1.



Witnesses:
mae Davis
E. J. Atwood

Inventor:
Daniel R. Sheen
By I. H. Thurlow,
Att'y.

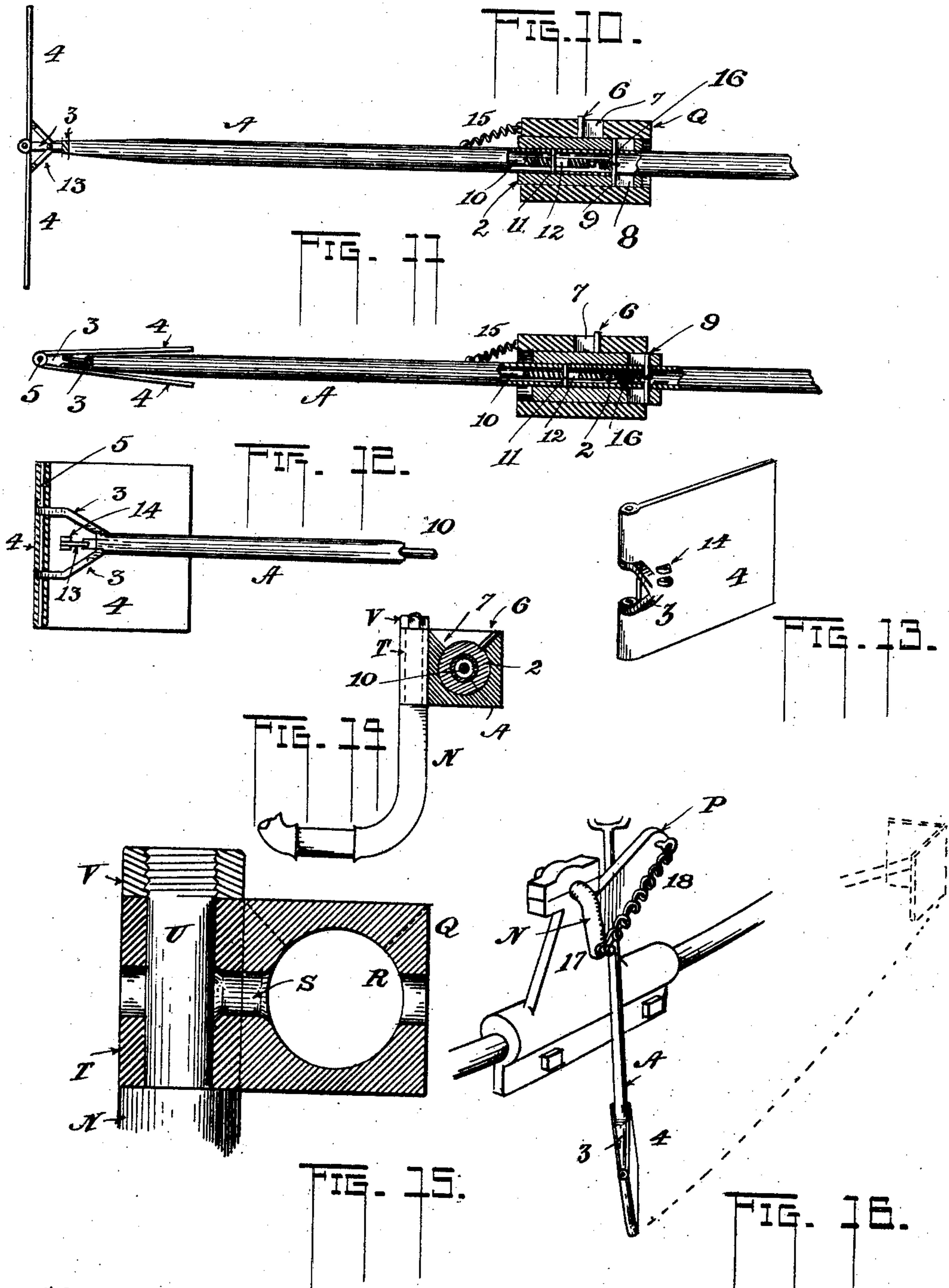
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UNITED STATES PATENT OFFICE.

DANIEL R. SHEEN, OF PEORIA, ILLINOIS.

BOW-FACING ROWING MECHANISM.

No. 826,693.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed March 3, 1905. Serial No. 248,354.

To all whom it may concern:

Be it known that I, DANIEL R. SHEEN, a citizen of the United States, residing at Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Bow-Facing Rowing Mechanism; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention pertains to bow-facing rowing mechanism for boats.

The invention has for one of its objects to provide simple and effective means by which the oarsman can face the bow of the boat, and thus see his course before him.

Another object is to provide rowing means that will collapse when advancing to a position for taking a stroke and will then open before entering the water.

Another object is to provide rowing means which will open and close automatically before and after a stroke.

The invention also pertains to certain details of construction which will appear as the description proceeds, aided by the accompanying drawings, in which—

Figure 1 is a top view of a boat, showing one form of rowing device. Fig. 2 is a perspective view of the said rowing device shown in its open position. Fig. 3 is a similar view showing the blades or wings of the device closed and tipped on its pivotal support. Fig. 4 is a side view of the device, enlarged. Fig. 5 is a top view of the device. Fig. 6 is a perspective view of a slightly-different form of the device. Fig. 7 is a perspective view of a portion of a boat, showing the rowing device used in a different position from that shown in Fig. 1. Fig. 8 is a side elevation of a modified form of rowing device mounted on the side of the boat. Fig. 9 is a top view of the same. Fig. 10 is a top view of another form of the rowing device, showing parts in section. Fig. 11 is a similar view, but in a slightly-altered position. Fig. 12 is a side view of the same, in part section, with parts removed. Fig. 13 is a perspective view of a blade or wing of the device. Fig. 14 is an end section of a support shown in Figs. 10 and 11, showing the same mounted on an arm. Fig. 15 is an enlarged view of parts of the arrangement shown in Fig. 14. Fig. 16 is a perspective view of the device shown in Figs. 10 and 11, mounted on a crank in a

bearing on the side of the boat, showing the position when backing the boat.

In the first three figures of the drawings, and also Figs. 4, 5, and 7, is illustrated the first form of my improved rowing mechanism, which consists in employing a straight member A, representing the shaft of the oar, having at the inner end a spade-handle in preference to the straight handle usually employed. At the outer end of the shaft the member is turned down at right angles, as in Figs. 2, 3, and 4, while in the angle formed thereby is placed a pair of blades or wings B B, hinged together at their rear edges, as shown in Fig. 4. C is a pin passing through the butts of the wings and having the head D, which is provided with a pair of lugs E E. A pin F prevents the withdrawal of the pin C, and by means of the said lugs the wings are pivotally hung from the shaft A by means of a sleeve G, having an extension at H, which the said lugs E straddle. The extremity of the shaft A is bent inward to form a rest for the bottom of the wings B, so that they may be supported in a vertical position to make up for the offset caused by the pivot members E and H.

As shown in Fig. 5, one of the wings B has a lug J on its inner surface for preventing the wings approaching each other too closely, so that when the wings tilt upward, as shown in Fig. 3, they will not strike upon the shaft A. In the figures also may be seen two curved arms K, formed with the sleeve G and extending at each side and forward, so that when the wings are open they rest against them, as in Fig. 5.

In Fig. 7 is shown the device in a different position from that in Fig. 1. In the figure last referred to the oar is positioned for a stroke to propel the boat forward, said oar being moved forward and backward in the direction of its length, as indicated in dotted lines. The action of the wings or blades is to open at the end of the forward movement by momentum, since the oar moves forward with some speed and stops suddenly to enter the water, and in stopping in this manner the tendency of the wings is to continue, which of course throws them open, they being then dipped into the water. In making the stroke in drawing the wings toward the boat the wings must open, as shown in dotted lines in Fig. 5, thus giving a large area of surface for the water. As the oar is raised from the water and again thrust forward the action de-

scribed is repeated. At each side of the boat is secured a bail L, within which the oars are designed to move, these being preferably of the form shown to give the operator plenty of movement. As a matter of fact, the handling of the oar is identical with that of the old style—that is to say, the handles describe an ellipse, being raised and pulled toward the operator and then lowered and pushed from him. When desired to back the boat, the operator merely swings the oar around at right angles, as shown in Fig. 7, giving it at the same time a quarter-turn and using the bail L as a fulcrum. By giving a quarter-turn the blades are brought to a position, as shown, where they will present their full surface to the water, and in this position the boat is backed in the same manner that a boat is rowed forward by the old form of oar. Being pivoted to the sleeve G, the wings B are free to tip when accidentally striking the water in taking the forward movement for entering the water. In this way the wind and water will not effect the oar nor impede its progress in its forward movement.

In Fig. 6 a slightly-modified form of the device is shown. It consists in pivoting a single plate to the bent arm after the manner of the sleeve G and lugs E, so that it can swing up horizontally beneath the shaft, as shown by dotted lines.

In Figs. 8 and 9 is shown a modified form of the rowing device or, rather, the support for the same. M is a bearing mounted on the gunwale of the boat, in which is mounted a U-shaped member N. (Shown more fully in Fig. 14.) One extremity of the said member carries the oar in a swiveled manner, as will be described presently. The other end of said member has attached thereto the end of a spring O, and the opposite end of the spring is attached to a forwardly-extending arm or projection P of the bearing M. The arm carrying the oar is within the boat and describes a full circle during the rowing operation. In taking the position to enter the water for a stroke the oar moves toward the right, Fig. 8, the spring O being lax; but as said oar approaches and reaches the lowest position, as shown at *a* in dotted lines, the spring is under tension. Then as the oar is pulled toward the operator during the stroke and comes to the position at *b* the spring is under the greatest strain, and as the oar is naturally pulled upward at an angle toward the operator, as represented in dotted lines at *b*, the point of attachment of the spring with the arm N is raised above a line drawn through the center of the place of attachment of the outer end of the spring with the portion P. The spring is thereby in position to retract or close, thus drawing the arm N toward the operator, who pushes the oar forward for another stroke to repeat the operation described.

By the use of the spring the arm N is prevented having a dead-center, since when said arm is pulled to its upward and backward limit the spring is free to raise and pull it forward for the next stroke. The manner of attaching the oar to the said member N may now be described in connection with the form of device shown in Figs. 10 to 16, inclusive. Fig. 15 perhaps shows the construction better than the other figures. Q is a square body having a circular opening therethrough, as at R, in which the oar is held, but permitted to turn axially. This body is pivoted by means of a rivet S to a sleeve T, mounted to turn upon a stem U on the upper end of the inner arm of the said member N. The stem is screw-threaded and provided with a nut V for holding the said sleeve in place. So arranged the body Q swings upon the sleeve T by the rivet S, and the sleeve is free to turn upon the stem U, thus giving the oar a pivotal movement in two planes at right angles to each other. By allowing an axial movement of the oar also, that member is provided with an almost universal joint, so that the operator may swing to any position or angle desired.

In Fig. 10 the body is indicated by Q, and within it is a sleeve 2 and within that the shaft of the oar A. At the forward end of the oar that member is bifurcated, as at 3 in Fig. 12. The two pivoted plates or wings are shown at 4, one being shown in Fig. 13. These wings are made to interlock, after the manner of a hinge, with a pin 5 for holding them together while permitting the pivotal or hinged movement. The bifurcations 3 of the oar are positioned between the interlocking portions of the wings, and the said pin 5 passes through them also. In this manner the blades are supported at the end of the oar and free to open and close. The sleeve 2 within the body Q is designed to have a longitudinal sliding movement, being limited by a pin 6 therein and a slot or open space 7 in said body Q. Said opening allows the sleeve to shift in the direction of its length, and at the same time permits the sleeve and its oar to have an axial movement, said opening being shown in both sections in Figs. 10 and 14. The sleeve is also slotted longitudinally, as at 8, and a pin 9 through the oar, which is tubular, as shown, limits the play of said oar within said sleeve. Within the tubular oar is placed a rod 10, slotted at 12, a pin 11 in the oar serving to limit the movement of the rod in the direction of its length. The opposite end of the rod has pivoted thereto two arms 13, as shown in Fig. 10, the opposite ends having pivotal connections with lugs 14 on the wings 4, Fig. 13. The body Q being mounted on the revoluble member N, hereinbefore described, is given a movement in a complete circle by pushing it toward the bow of the boat, the said member N carrying it over and

down, then backward and up and again over and down, thus carrying the paddle end of the oar forward and downward into the water for the stroke.

5 The paddles or, rather, the "wings," as I term them, are designated to open after moving forward through the air and then enter the water in that position, and after leaving the water are closed together, as shown in Fig. 11. Now when pushing the oar forward while in the position shown in Fig. 11 the spring 15, which is attached to the oar and to the body Q, is of sufficient strength to turn the member N in its bearing. Then when the end of the travel of said member is reached the spring is put under tension, and consequently yields to the strain put upon it. At this time the sleeve 2 shifts forward within the body Q, and the oar within the sleeve consequently pushing the pin 11 (against which the rod 10 normally bears) forward and also the said rod 10, the result of which is to push the wings 4 apart to the position shown in Fig. 10, after which the oars enter the water. After the stroke the oar lifts from the water and the spring 15 returns the parts to the position in Fig. 11. As the rod 10 is not controlled by the spring 15, a spring 16 is provided therefor, one end being attached to said rod and the other end to the pin 9, the purpose of which is to pull the rod after each stroke to close the wings. Fig. 16 shows the mechanism in use when backing the boat, it being only necessary to turn the oar on the pivotal joint constituted by the stem U and sleeve T before described, the bearing member 17, which corresponds to M in Fig. 8, serving as the fulcrum for the oar. Said bearing 17 is provided with means whereby it may be readily clamped to the boat. In using the oar shown in Fig. 7 it is necessary in order to present a plane surface to the water for backing purposes to give said oar a quarter-turn; but in the form in Figs. 10 to 16 the oar is merely swung around from the rowing position shown in dotted lines to the position in full lines without giving axial movement to it. The spring 18 in Fig. 16 corresponding to O in Figs. 8 and 9 is arranged in the same manner and for the same purpose as the spring in said figures and does not interfere with the movement of the oar when being operated for backing the boat.

The body Q and sleeve 2 being slotted, as described, permit the sliding parts to have free movement as far as is necessary for them to move to accomplish the opening of the wings, the several sliding parts reducing the chance of sticking or binding while in use. However, I desire to make it understood that I do not wish to confine myself to the particular construction shown in any of the figures, since changes may be made without departing from the spirit and intent of the invention.

I claim—

1. A bow-facing rowing device comprising an oar movable in the direction of its length and in the direction of movement of the boat, a pair of members pivoted to the forward end of the oar perpendicular to the surface of the water and adapted to positively open and close, automatic means shiftable within the shaft of the oar for moving the said members as set forth.

2. A bow-facing rowing mechanism comprising an oar, a crank member revoluble on the side of the boat in a vertical plane to the free end of which the oar is pivotally attached and on which it is partially revoluble axially, said crank adapted to revolve and carry the oar with it in a forward and downward direction and then backward and upward to thus constitute a full stroke of said oar, collapsible members at the outer or forward end of the oar adapted to open and close automatically, and means for assisting the oar in the raising movement on its cranked support for the purposes described.

3. A bow-facing rowing mechanism comprising an oar extending forward in the direction of the forward movement of the boat, a support for said oar in which it is permitted an axial movement and a longitudinal movement, a cranked member on the side of the boat for carrying the said support in a circular path, said crank thereby moving the oar in a forward and downward direction to enter the water for a stroke and then carrying said oar in a backward and upward direction in the full revolution of said crank, a pair of collapsible members at the forward end of the oar, and means within the oar for operating the members in a positive manner for opening and closing them at the time and for the purposes explained.

4. A bow-facing rowing mechanism comprising a hollow oar, the same extending forward in the direction of the forward movement of the boat, a support for the oar permitting a universal movement of said oar thereon for the purposes herein explained, said oar adapted to shift within the support in a longitudinal manner, a pair of collapsible members at the forward or outer end of the oar, and shiftable means within the shaft of the oar and having connection with the said collapsible members for positively opening and closing the members at the times and for the purposes herein explained.

5. A bow-facing rowing mechanism comprising a hollow oar, the same extending forward in the direction of the forward movement of the boat, a support for the oar permitting a universal movement of said oar thereon for the purposes explained, said oar adapted to shift within the support in a longitudinal manner, a pair of collapsible members at the forward end of the oar and automatic means connected to the members and extending

within the oar for automatically and positively opening and closing the members for the purposes set forth, the oar also adapted to be swung to the side of the boat without other movement for employing the same to back the boat in the manner substantially as set forth.

6. In a bow-facing rowing mechanism a tubular oar-shaft, a pair of wings on one end thereof adapted to open and close in the position shown and a rod slidable within the shaft, toggles connecting the wings with the rod and means for automatically opening the wings through the medium of the rod at the time of taking a stroke in the water and other means acting upon said rod for closing the wings automatically when the oar leaves the water.

7. In a bow-facing rowing mechanism a hollow oar-shaft, a pair of pivoted wings at one end adapted to open and close, a shiftable rod within the shaft and having connection with the wings, a sleeve inclosing the oar-shaft and in which the latter is adapted to have longitudinal shifting movement, a member for inclosing the sleeve and in which said sleeve shifts longitudinally, the said member being carried on the boat, means for limiting the shifting movement of the sleeve, means within the member also for limiting the shifting movement of the oar within the sleeve, means also for limiting the shifting movement of the shifting-rod within the oar-shaft, a spring for connecting the oar-shaft and the member that incloses the sleeve, and a spring for connecting the sleeve and said shifting rod substantially as and for the purposes described.

8. In a bow-facing rowing mechanism a hollow oar-shaft, a pair of pivoted wings at one end adapted to open and close, a shiftable rod within the shaft and having connec-

tion with the wings, a sleeve inclosing the oar-shaft and in which the latter is adapted to have longitudinal shifting movement, a member for inclosing the sleeve and in which said sleeve shifts longitudinally, a crank carried on the boat and on which the member is swiveled substantially as described, means for limiting the shifting movement of the sleeve, means within the member also for limiting the shifting movement of the oar within the sleeve, means also for limiting the shifting movement of the shifting-rod within the oar-shaft, a spring for connecting the oar-shaft and the member that incloses the sleeve, and a spring for connecting the sleeve and said shifting-rod substantially as set forth.

9. A bow-facing rowing mechanism comprising an oar-shaft, a pair of wings hinged at one end to open and close in the manner shown, a rod within the oar-shaft, toggles connecting the rod and wings, a sleeve inclosing the oar-shaft and within which the latter is longitudinally shiftable, means for limiting such shifting movement, a member for inclosing the sleeve and in which the sleeve is adapted to rock and also have longitudinal shifting movement, means for limiting both said movements, a crank on the boat on which the member is swiveled, a spring connecting the crank and a fixed portion of the boat for the purposes described, a spring connecting the oar-shaft and the member, and a spring for shifting the rod within the oar-shaft all for the purposes set forth.

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

DANIEL R. SHEEN.

Witnesses:

E. J. ABERSOL,
L. M. THURLOW.